

FIRST AMENDMENT TO
GUARANTEED ENERGY
PERFORMANCE CONTRACT

Phase II Installation and Implementation

THIS FIRST AMENDMENT TO GUARANTEED ENERGY PERFORMANCE CONTRACT (this "First Amendment" or the Phase II "Agreement") is made and entered into this 24th day of July, 2012 between the County of Cook, Illinois, an Illinois Home Rule County and unit of local government under Section 6 of Article VII of the Illinois Constitution of 1970 (the "County") and Johnson Controls Inc. (the "ESCO").

IN CONSIDERATION OF the recitals and the mutual covenants and agreements set forth herein, the Parties agree as follows:

SECTION I. RECITALS.

A. The County is the owner of the hospital and health care facilities (collectively the "Facilities") and grounds in a common campus commonly referred to as the John Stroger, Jr. Hospital of Cook County Campus (the "Campus") as further described in detail in Exhibit B.

B. The County issued a Request For Proposals ("RFP") to solicit proposals from qualified providers to provide for a guaranteed energy performance project and the ESCO was selected as a qualified provider.

C. As part of its response to the RFP, the ESCO prepared a preliminary energy analysis of the Facilities ("Preliminary Analysis") that included (i) a survey and review of available utility data and Facilities mechanical equipment, operating parameters and systems; (ii) an estimate of potential energy savings over the specified term, with detailed description of assumptions governing energy savings estimates; (iii) recommended energy conservation opportunities for the Facilities; (iv) estimated maximum cost of the energy performance contracting Services for the Facilities; (v) estimated annual measurement and verification costs; and (vi) proposed cost of the Investment Grade Audit to the County if no amendment to the Guaranteed Energy Performance Contract providing for a Phase 2 energy performing contracting services was entered into.

D. Based on the response to the RFP and the Preliminary Analysis, the ESCO was selected pursuant to the RFP process to enter into a Guaranteed Energy Performance Contract (the "GEPC") with the County for services at the Facilities.

E. Pursuant to authorization of the Board of Commissioners (the "Board"), the ESCO and the County entered into the GEPC dated July 27, 2011.

F. Phase I of the GEPC consisted of a comprehensive energy use and savings analysis of the Facilities (the "Phase I Investment Grade Audit" or "IGA" which must be performed in order to determine the feasibility of proceeding with Phase II of the Energy Performance Contracting Project.

G. Phase II of the GEPC ("Phase II Services") will consist of the installation and implementation

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- B. The County issued a Request For Proposals ("RFP") to solicit proposals from qualified providers to provide for a guaranteed energy performance project and the ESCO was selected as a qualified provider.
- C. As part of its response to the RFP, the ESCO prepared a preliminary energy analysis of the Facilities ("Preliminary Analysis") that included (i) a survey and review of available utility data and Facilities mechanical equipment, operating parameters and systems; (ii) an estimate of potential energy savings over the specified term, with detailed description of assumptions governing energy savings estimates; (iii) recommended energy conservation opportunities for the Facilities; (iv) estimated maximum cost of the energy performance contracting Services for the Facilities; (v) estimated annual measurement and verification costs; and (vi) proposed cost of the Investment Grade Audit to the County if no amendment to the Guaranteed Energy Performance Contract providing for a Phase 2 energy performing contracting services was entered into.
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of the energy conservation measures ("ECMs" and each an "ECM") at the Facilities (the "Phase II Services") to be defined in an amendment to the GEPC.

H. Section 5 of the IGA provided that if the ECMS were demonstrated to be feasible pursuant to the IGA, and if the amount of energy savings could be reasonably ascertained and guaranteed in an amount sufficient to cover all costs, including anticipated financing costs, associated with an energy performance contracting project at the Facilities, as detailed in the GEPC, the County and the ESCO intended to negotiate an amendment containing additional terms and conditions governing the GEPC, Phase II, under which the ESCO would design, procure, implement, provide training, maintain and monitor such ECMs at the Facilities and perform such other services and improvements as are agreed to by the Parties (the "Project").

I. The ESCO has prepared a report setting forth, among other things, (a) an assessment of the energy consumption characteristics of various buildings at the Facilities, (b) specific energy analysis related to the Facilities and their operations, and (c) recommendations for projects or programs to achieve cost and/or energy savings in the operation of the Facilities, together with preliminary conceptual designs for such projects or programs which meet the feasibility requirements under the GEPC, which recommendations included as an option additional ECMs at the Facilities, increasing the total costs of the Project from \$18,000,000 to \$26,497,854 over a financing term of 20 years (the "Phase I Report"). The GEPC permits the addition of "Additional Items" if such Additional Items does not cause the cost of the Project to exceed project cost savings under the performance guarantee and such additional buildings have been identified in the Phase I Report as meeting such criteria.

J. The County and the ESCO now wishes to enter into this First Amendment containing terms and conditions upon which the ESCO will perform for the County the design, engineering, installation, repairs, retrofit, performance monitoring, guarantee reconciliation, and training services set forth in the Phase I Report as the Phase II Services and more fully described in the "Scope of Services" attached hereto as Exhibit C and the other terms and provisions of this Contract (the "Project"). The Scope of Services specifically describes the energy conservation measures and related services (collectively, the "ECMs," and each, an "ECM") which the ESCO proposes to install at or in the vicinity of the Facilities.

K. The ESCO has agreed to provide a guarantee of the energy savings and operational cost reductions in the form attached hereto as Exhibit G (the "Guarantee"), based on the measurement and verification protocols and plan set forth in Exhibits H (the "Measurement and Verification Plan" or "M&V Plan"). The guarantee of energy savings and operational cost reductions is to be on an annual basis to the County as a result of the Project and the acquisition and installation of the ECMs. The ESCO will reimburse the County for any shortfall of the Guarantee as calculated per the M&V Plan.

L. The ESCO desires to undertake the Project and provide the Guarantee all in accordance with the terms and provisions of this First Amendment and the other Contract Documents.

M. The County and the ESCO wish to enter into this First Amendment, pursuant to which the ESCO will perform the Phase II Services described in this First Amendment.

N. Pursuant to Board authorization on July 24, 2012, the County Board of Commissioners has authorized the execution of this Contract by the County.

O. Section 1.3.7 of the IGA is amended through Section 2 of this First Amendment so that the "Financing Term" shall be no longer than 20 years.

P. NOW, THEREFORE, for and in consideration of the recitals and mutual covenants and agreements set forth in this First Amendment, the Parties Agree as follows:

SECTION 2. DEFINITIONS: RULES OF CONSTRUCTION.

A. Definitions. All capitalized terms used in this First Amendment shall have the meaning set forth

below, or in Exhibit C:

1. "ACM" is defined in Section 12.A.
2. "Allowance Services" means other professional services and/or items of work germane to the Contract and not otherwise included in this Contract, as further described in Section 4.B.
3. "Anti-Terrorism Laws" is defined in Section 7.F.2.
4. "Budget" means the cost of the Project as approved by the County.
5. "Building" or "Buildings" means the individual buildings in the Campus where the Project is being implemented and the Work is being done. "Buildings" for purposes of Warranty Period means the John Stroger Hospital, the Institute for Forensic Medicine, the Hektoen Building, the Ruth M. Rothstein Core Center and the Power House, each of whom are delineated in Exhibits B and C.
6. "Change Order" or "CO" means a document authorizing an increase/decrease in Contract Sum or an adjustment of Contract Time. Change Orders include only previously approved Proposal Requests and/or Construction Change Directives (CCDs). A single Change Order may include multiple PR's and/or Construction Change Directives
7. "Chief Procurement Officer" means the County's Chief Procurement Officer, whose duties and responsibilities are more particularly described in the Cook County Code, Chapter 34, Article IV.
8. "Confidential Information" is defined in Section 9.L
9. "Contract" means this First Amendment to the GEPC
10. "Contract Documents" means this Contract with the Exhibits, the Design & Engineering Documents (once approved by the County as provided in Section 7.B), any Change Orders, the GEPC (as amended by the Contract) and any other documents listed in the Contract and any modifications to the foregoing documents issued after execution of this Contract.
11. "Construction Change Directive" or "CCD" means a document used to obtain cost information from the ESCO for an immediate change and/or modification to the Contract Documents. Generally a field directed change.
12. "Construction and Installation Period" means the period during which the ESCO is conducting Construction and Installation Services at the Facilities to construct, install, equip, test and complete the Project from the Notice to Proceed to the Final Acceptance of the Project.
13. "Construction and Installation Services" means the completion of design, construction, equipping and installation of the Project on all Work Sites as required pursuant to the Contract Documents.
14. "Construction Manager" means the County's independent owner's representative selected by the County to provide oversight over all or portions of the Work as determined by the Project Director and to act in the County's stead in providing direction to the ESCO in accordance with the Contract Documents, as more fully described in Section 6.D.
15. "Construction and Installation Period" is defined in Section 3.A.
16. "Construction Operations Phasing Plan" means a construction operation phasing plan detailing the ESCO's phasing and staging of the Work at the Facilities and including the anticipated order of

construction, installation and Substantial Completion of ECMs and ECM Groupings at various Work Sites.

17. "Contract Sum" is defined in Section 4.D.
18. "Contract Time" is defined in Section 3.A.
19. "Cost Loaded Schedule" is described in Section 5.D.
20. "*COUNTY*," "*County*" or "*Owner*" means the County of Cook, a body politic and corporate of the State of Illinois. When approval or other actions are required of the County, the County shall mean the "Project Director" unless otherwise indicated in this Contract.
21. "County Consultant" includes, as applicable, a contractor engaged by the County with recognized expertise in a particular field, to provide specialized support in regard to (i) environmental assessments and, if required, the performance of Environmental Work or (ii) energy savings analysis.]
22. "County Representative" is generally defined as the Project Director, but can be a Construction Manager, as determined by the Project Director.
23. "Completion Dates" means the Completion Dates within the Project Schedule which need to be met in order for all ECMs and ECM Groupings to achieve Substantial Completion by September 17, 2014 and for the entire Project to be ready for Final Acceptance by December 16, 2014.
24. "Day(s)" shall mean calendar day(s) unless otherwise specified herein. If the date for giving of any notice required to be given, or the performance of any obligation, under this Contract falls on a Saturday, Sunday, or federal holiday, then the notice or obligation may be given or performed on the next business day after that Saturday, Sunday, or federal holiday.
25. "Deliverables" means all submissions and deliverables prepared by or on behalf of the ESCO, described in this Agreement, including but not limited to Design Materials and Project Documents and required to be provided by ESCO; provided that the third party software and materials that are proprietary to ESCO and any of its subcontractors under this Contract shall not constitute "Deliverables," but are addressed in Section 15.D. Deliverables include Electronic Deliverables and Printed Deliverables.
26. "Design & Engineering Documents" are described in Section 7.B.
27. "Design Materials" is defined in Section 15.A.
28. "Design Services" are the design and engineering services the ESCO will provide or have provided for the Project as further described in Section 7.
29. "Dispute" is described in Section 16.
30. "ECMs" and each, an "ECM", is defined in Recital G and listed in Exhibit B
31. "ECM Grouping" means a grouping of ECMs by Work Site or Facility which are sufficiently integrated as a system so that they will be tested and commissioned together in order to achieve Substantial Completion, as described in Exhibit C. Testing of ECMs and ECM Groupings shall take into account peak loads achieved in seasonal variations as described in Section 8M.
32. "Effective Date" means the date established pursuant to Section 3.B as the date when the Services under this Contract shall commence.

33. "Electronic Deliverables" shall mean Project Documents to be delivered in electronic format as further described in Section 3.G.

34. "Environmental Incentives" means all rights, credits (including tax credits), rebates, grants, benefits, reductions, offsets, and allowances and entitlements of any kind, howsoever entitled or named (including carbon credits and allowances), whether arising under federal, state or local law, international treaty, trade association membership or the like, arising from the Project or the development or installation of the ECMs and the reduction of energy usage by the Facilities. Without limiting the foregoing, Environmental Incentives include utility rebates or incentive programs, green tags, renewable energy credits, tradable renewable certificates, portfolio energy credits, the right to apply for (and entitlement to receive) incentives under any state tax credit program, grants from nongovernmental organizations, and the right to claim federal income tax credits under Sections 45 and/or 48 of the Internal Revenue Code.

35. "Environmental Reconnaissance Survey" means a survey for hazardous materials which includes, but is not limited to, asbestos containing material, lead based paint, mold, polychlorinated-biphenyl (PCB) containing equipment and materials (lighting ballasts, switchgears, transformers, and hydraulic fluids), and mercury-containing equipment and materials (mercury lamps, thermostats, switches, thermometers, regulators, and gauges) as necessary to install the proposed ECM's.

36. "Environmental Remediation" means removal or mitigation of hazardous materials and conditions which includes, but is not limited to, asbestos containing material, lead based paint, mold, polychlorinated-biphenyl (PCB) containing equipment and materials (lighting ballasts, switchgears, transformers, and hydraulic fluids), and mercury-containing equipment and materials (mercury lamps, thermostats, switches, thermometers, regulators, and gauges).

37. "ESCO Representative" is defined in Section 9C.

38. "Equitable Adjustment" is described in Section 9F.

39. "Excusable Event" is defined in Section 13.F.

40. "Facilities" means the Buildings, grounds and other improvements and real estate owned by the County comprising the Campus where the Work will be done under this Contract.

41. "Final Acceptance" means the issuance by the County of a Certificate that the Project has been completed and all requirements for such completion have been met, including Punch List items, following receipt of an application from the ESCO.

41A. "Financing Term" as the term is used in the GEPC shall mean 20 years.

42. "GEPC" or "Guaranteed Energy Performance Contract" means the "Guaranteed Energy Performance Contract between the County and the ESCO," dated July 27, 2011 which provided for Investment Grade Energy Audit Services in Phase I for the Facilities and which contemplated an amendment to be negotiated for the Phase II Services, if approved by the County.

43. "Final Acceptance Date" is the date of Final Acceptance.

44. "Guarantee" means the Guarantee attached hereto as Exhibit G whose terms are hereby incorporated into this Contract as if fully set forth herein and as if separately executed. The Guarantee sometimes referred to as the "Performance Guarantee" or the "Savings Guarantee".

45. "Guarantee Period" is the period of time when the Performance Guarantee is in effect as further

described in Exhibit G.

46. "Guarantee Period Services" means the performance guarantee, monitoring, Project modification, guarantee reconciliation, Performance Tracking Services, and other services to be performed during the Guarantee Period as described in Exhibits G, H and I of this Contract.

47. "Guaranteed Annual Savings Amount" is defined in Exhibit G.

48. "Hazardous Material" means (A) any substance which is listed, defined, designated or classified under any state, federal, or local law relating to the protection of the environment or human health as a (i) hazardous material, constituent, or waste, (ii) toxic material, substance, constituent, or waste, (iii) radioactive material, substance, constituent, or waste, (iv) dangerous material, substance, constituent, or waste, (v) pollutant, (vi) contaminant, or (vii) special waste; or (B) petroleum, petroleum products, radioactive matters, polychlorinated biphenyl, pesticides, asbestos, or asbestos-containing materials.

49. "Intellectual Property Rights" means any patents, copyrights, trademarks, service marks, trade secrets and similar and related intellectual property rights protected by law.

50. "LEED-EB" means the Leadership in Energy and Environment Design (LEED) for Existing Buildings: Operations & Maintenance Green Building Rating System developed by the U.S. Green Building Council.

51. "Manufacturers' Warranties" is defined in Section 10.F.

52. "Verification Plan" or "M&V Plan" is the plan for the verification and measurement of the performance of the ECMs and the Project set forth in Exhibit H and further described in Exhibit G.

53. "Measurement & Verification Services Payments" are the annual payments to the ESCO for Measurement & Verification Services in the amounts set forth in Exhibit I.

54. "Measurement & Verification Services" means those services to be provided by the ESCO to measure and verify the performance of the ECMs and the Project described in the Measurement and Verification Plan set forth in Exhibit H.

55. "Mold" means any type or form of fungus or similar biological material or agent, including mold, mildew, moisture, yeast and mushrooms, and any mycotoxins, spores, scents, or by-products produced or released by any of the foregoing.

56. "Notice to Proceed" means the notice to be issued by the Office of Capital Planning and Policy authorizing the ESCO to commence Services under this Contract.

57. "Notice to Proceed Date" or "NTP Date" means the date noted in the NTP issued by the Office of Capital Planning and Policy to the ESCO to begin Services under this Contract.

58. "Parties" means the ESCO and the County. "Party" means either the ESCO or the County.

59. "Performance Guarantee" is defined in Recital F.

60. "Performance Tracking Payment" is described in Section 4C and in Exhibit I.

61. "Performance Tracking Services" means those services to be provided by the ESCO to measure and verify the performance of the ECMs pursuant to the Measurement and Verification Plan described in Exhibit H.

62. "Phase I Report" means the report prepared by the ESCO dated March, 2012 that sets forth, among other things, (a) an assessment of the energy consumption characteristics of the Facilities, (b) specific energy analysis related to the Facilities and their respective operations, and (c) recommendations for projects or programs to achieve cost and/or energy savings in the operation of the Facilities, together with preliminary design materials.

63. "Printed Deliverables" shall mean text-based Project Documents such as reports, interim reports, progress reports, meeting minutes and similar materials required or requested to be provided in hard copy pursuant to Section 3.G or elsewhere in this Contract.

64. "Project" is defined in Recital H and described in Exhibit C.

65. "Project Closeout" a certificate of Final Acceptance for the entire Project has been issued by the County and all documentation required of the ESCO has been provided to the County as required by the Contract Documents.

66. "Project Closeout Items" includes, but is not limited to, all the following items, which are to be provided by the ESCO to the County: all training materials, all yet undelivered Project Documents, all construction photographs, including negatives or digital format, as applicable; a copy of the final approved Project Schedule; the as-built mark-ups required under Section 8.B.9; any and all keys and tools used by the ESCO or its Subcontractors which were paid for with County funds; and any and all keys to County facilities which are in Contractor's possession or in possession of its sub-contractors, and any of their employees.

67. "Project Director" means a representative of the County designated by the Director of Capital Planning and Policy.

68. "Project Documents" means all data, the Design & Engineering Documents, Design Materials, test results, studies, meeting minutes, all schedules, notices, logs, supplemental information and reports, and any revisions or additions to any of the foregoing prepared, developed, gathered or received by the ESCO, its subcontractors, agents and employees pursuant to this Contract..

69. "Project Schedule" means the schedule or schedules attached as Exhibit F, as it may be updated from time to time, which is a Critical path method of scheduling of all Project activities and milestones related to the design, construction, installation and implementation of the entire Project and all aspects of the Work and for each ECM, prepared by the ESCO and approved by the County in accordance with Section 5.F. The Project Schedule may include a responsibility matrix and a construction operations phasing plan, as agreed to by the Parties during approval and updating of the Project Schedule.

70. "Proposal Request" or "PR" means a document used to obtain cost information from the Contractor for work items proposed to be added to or deducted from the project that were not included in the original Contract Documents but are required to complete the Work, add or delete items from the Work or change parts of the Work.

71. "Punch List" means a list of minor items, adjustments and/or corrections of Work to be completed after Substantial Completion of each ECM or ECM Grouping and prior to Final Acceptance of the Project, which minor items, adjustments and/or corrections of Work do not prevent an ECM, ECM Grouping or the Project from being used for the respective purposes for which such ECM, ECM Grouping or the Project is intended and which will not prevent the issuance of applicable permits or certificates for such use.

72. "Records" is defined in Section 14.B.

73. "Responsibility Matrix" means a schedule which addresses and identifies all active roles for

key individuals involved in the Project.

74. "Performance Guarantee" means, as to any year in Guarantee Period, the annual guarantee of energy savings by the ESCO set forth in Exhibit G for such year.

75. "Performance Guarantee Payment" are payments to be made to the County by the ESCO in the event of Savings Shortfalls as described in Exhibit G.

76. "Savings Guarantee Commencement Date" is defined in Exhibit G.

77. "Savings Shortfalls" means shortfalls between "Guaranteed Savings" and "Verified Savings" as each are defined and described in Exhibit G which result in a Performance Guarantee Payment.

78. "Scheduled Completion Dates" means each of the Completion Dates and the Final Acceptance Date as determined in the Project Schedule.

79. "Senior Officer" means the Director of Capital Planning, the Bureau Chief of the County's Department of Economic Development, the County's Chief Procurement Officer or the President of the County or the president or any executive vice president of the ESCO.

80. "Services" or "Phase II Services" shall mean collectively the Design Services, the Construction and Installation Services, Performance Tracking Services, any Allowance Services, Maintenance Services and any other services to be provided by the ESCO or on behalf of the ESCO by a Subcontractor under this Contract as further described in the Contract Documents. The Services include, but are not limited to the provision of architectural, engineering and other professional and licensed services required to provide the complete design of the Project, including all licenses and stamps required; and the provision of all surveys and permitting services, including obtaining permits and/or approvals as required from all authorities having jurisdiction over the Project, including all trades, specialized and general, materials, labor, machinery, utilities and everything else required and incidental to provide the Project so that it may be used by the County upon Final Acceptance.

81. "Standard of Care" shall have the meaning set forth in Section 9.A.

82. "Standards of Service" shall mean the standards of service for the ECMs set forth in Exhibit R.

83. "Subcontractor" means any partnership, firm, corporation or entity other than an employee of ESCO, who contracts with ESCO to furnish services, labor, materials, or labor and materials at the Building or otherwise in connection with the Project. This term also includes subcontractors of any tier, suppliers, fabricators or manufacturers, whether or not in privity with ESCO. All Subcontractors are listed in Exhibit D, as it may be amended from time to time as permitted in this Contract

84. "Substantial Completion" means on a per Work Site or Facility basis as to any ECM or ECM Grouping, that the following has been achieved: (i) the County has determined, in consultation with the ESCO, that the Work for such ECM or ECM Grouping has been sufficiently implemented in accordance with the Contract Documents, including successful testing and commissioning of all components and systems required by the Contract Documents for such ECM or ECM Grouping to be tested and commissioned prior to Substantial Completion so that, after completion of testing and commissioning, such ECM and ECM Grouping meets all the required performance standards under Exhibit R and such ECM or ECM Grouping is fully completed except for minor items, adjustments and/or corrections which do not interfere with the use of such ECM or ECM Grouping as intended by the Project Documents; (ii) any certificates of occupancy needed in connection with the Work have been issued; (iii) the ESCO has turned over to the County all Warranty Materials related to such ECM or ECM Grouping as required in Section 8N, including the provision of all training manuals, drawings and documents required by the Project Documents, (iv) all governmental

authorities necessary have issued approval that the applicable Work to be occupied or used and (v) the County has issued a Certificate of Substantial Completion setting forth the date thereof and such Certificate has been signed by the County, the ESCO and any Construction Manager, if required by the County. For purposes of commencement of the Warranty Period described in Section 10C, "Substantial Completion" is achieved on a Building by Building basis.

85. "Substantial Completion Dates" means the respective dates on which Substantial Completion of an ECM or ECM Grouping is achieved as to a Work Site or Facility.

86. "USA Patriot Act" is defined in Section 7.F.2.

87. "Warranty Period" is defined in Section 10.C.

88. "Work" means the work and Services required by the Contract Documents during the Construction and Installation Period and the Warranty Period, including correction or replacement of work, equipment and services required pursuant to this Contract and includes all labor, materials, equipment and services provided or to be provided by ESCO to fulfill ESCO's obligations under this Contract.

89. "Work Sites" means the Buildings and Facilities or portions of Buildings and Facilities where ESCO will perform the Work and will provide the Performance Tracking Services during the Guarantee Period.

B. Priority Of Contract Documents. In the event of a conflict or inconsistency among the Contract Documents, the following order of precedence shall govern the interpretation of such documents:

a. Approved Change Orders, Amendments to this First Amendment to the GEPC and Modifications;

b. This Contract (excluding the Exhibits to the Contract);

c. Exhibit G;

c. The Exhibits to the Contract, other than Exhibits C and G;

d. Exhibit C;

e. The Design & Engineering Documents; and

f. Phase I Report.

h. The GEPC (including Attachment B Phase 2 General Conditions, as modified, to the extent not superceded by this Contract).

C. Rules Of Interpretation. The following rules of interpretation shall apply to this Contract.

1. The term "include" (in all its forms) means "include, without limitation" unless the context clearly states otherwise.

2. All references in this Contract to Sections or Exhibits, unless otherwise expressed or indicated are to the Sections or Exhibits of this Contract. Words importing persons include firms, associations, partnerships, trusts, corporations and other legal entities, including public bodies, as well as natural persons.

3. Any headings preceding the text of the Sections of this Contract, and any table of contents

or marginal notes appended to it, are solely for convenience or reference and do not constitute a part of this Contract, nor do they affect the meaning, construction or effect of this Contract.

4. Words importing the singular include the plural and vice versa. Words of the masculine gender include the correlative words of the feminine and neuter genders.

SECTION 3. EFFECTIVE DATE; CONTRACT TIME, AND SCOPE OF SERVICES .

A. **Contract Time** The "Contract Time" is the period of time from the Effective Date until the end of the Guarantee Period. The Contract Time combines the Construction and Installation Period and the Guarantee Period pursuant to the Project Schedule. The "Construction and Installation Period" is the period of time from the Notice to Proceed Date until Final Acceptance of the entire Project, which shall not be later than December 16, 2014. The "Guarantee Period" is the period of time from Performance Guarantee Commencement Date until the expiration of the Performance Guarantee, which shall be for 20years following Final Acceptance.

B. **Effective Date; Notice to Proceed.** The "Effective Date" is the date on which the County issues the written Notice to Proceed (Design Services).

C. **Scope of Services.** Exhibit C sets forth a scope of the Services to be provided under this Contract, detailing the specific tasks to be performed by ESCO. Exhibit C is intended to describe the Services in detail and not to limit the Services in any way. Therefore, if a service or task is described in this Contract but not included in Exhibit C, ESCO shall be obligated to provide the service or task. If a service or task is described in Exhibit C and not in this Contract, ESCO shall be obligated to perform the service or task. In the event of a conflict between the terms set forth in this Contract and specific items described in Exhibit C, ESCO shall perform the service or task in the manner most beneficial to the County, as determined by the Project Director.

D. **Timing of Substantial Completion.** The ESCO will achieve Substantial Completion of the ECMs and the ECM Groupings in accordance with the Project Schedule set forth in Exhibit F. Except as permitted in this Contract, Substantial Completion of the last of the ECMs and ECM Groupings shall take place no later than September 17, 2014, subject only to adjustments of the Project Schedule as permitted by Section 13.E of this Contract (the "Substantial Completion Date").

E. **Final Acceptance.** Subject only to time extensions of the Contract Time as permitted by Section 13.E of this Contract, the ESCO will successfully achieve Final Acceptance of the Project by December 16, 2014.

F. **Extraordinary Measures.** If the County determines through reasonable evidence that the performance of the Work is behind schedule such that the ESCO will be unable to achieve Substantial Completion in accordance with the Project Schedule, the County shall have the right, but no obligation, to order the ESCO in writing to take corrective measures necessary to expedite the progress of construction, including, without limitation, (i) working additional shifts or overtime, (ii) supplying additional manpower, equipment, and facilities and (iii) other similar measures (collectively "Extraordinary Measures"). The determination of whether the progress of the Work is behind schedule shall take into account any extensions in time to which the ESCO is entitled under 13.E. herein. The County is hereby permitted to continue use of Extraordinary Measures until the progress of the Work complies with the stage of completion required by the Contract Documents. The County's right to require Extraordinary Measures is solely for the purpose of ensuring the ESCO's achievement of Substantial Completion in accordance with the Project Schedule. The County may exercise its rights under or pursuant to this Section frequently as the County deems reasonably necessary to ensure that the ESCO's performance of the Work will comply with the Project Schedule and the Contract Documents.

G. Deliverables All Electronic Deliverables shall be delivered or emailed to the Project Director and any Construction Manager. When required by file size, "delivery" shall mean the physical delivery of a CD, "flash drive" or other agreed to electronic medium readable by the County in such quantities as the County may request. In addition, one reproducible copy of all Electronic Deliverables shall be provided. The ESCO shall, as a part of its Services submit copies of Printed Deliverables in such numbers as are requested by the Project Director or any Construction Manager to be submitted in hard copy. The ESCO acknowledges that Printed Deliverables may include drawings, plans and similar material that are otherwise considered Electronic Deliverables. Copying and printing of Printed Deliverables and other similar deliverables shall be printed on both sides of the paper. Paper utilized for submissions and deliverables shall be recycled paper containing at least 30 percent post-consumer content, unless use of such recycled paper is not practicable. The County reserves the right to revise these procedures, as it deems necessary. Any such revisions shall be effective upon receipt of written notice thereof from the County to the ESCO.

SECTION 4. BASIS OF COMPENSATION TO THE ESCO.

A. Compensation For Construction and Installation Services. The County will pay the ESCO for the due, proper, and complete performance of the Construction and Installation Services as required hereunder an amount not to exceed \$26,497,854 (the "Construction and Installation Amount"), such amount to be based on the Payment Schedule set forth Exhibit J. Payments of the Construction and Installation Amount shall be submitted monthly and shall be based on the percentage of Construction and Installation Services completed as determined in the Cost Loaded Schedule set forth as part of Exhibit J. The Construction and Installation Amount shall include all expenses and reimbursement .

B. Compensation For Allowance Services. When requested by the County or as recommended by the ESCO, the ESCO will provide Allowance Services. The Allowance Services shall be furnished in accordance with generally accepted practices and be fully governed by this Contract. Compensation for Allowance Services, above and beyond that required by the Contract Documents, will be either on the basis of a lump sum fee or an hourly rate of Key Personnel as negotiated between the ESCO and the County. The scope of work of the Allowance Services, and the method of compensation, will be negotiated in advance of any such service or work being performed. Invoicing and payments for Allowance Services will be made per services/work completed. The Budget for Allowance Services under this Contract shall not exceed" \$1,324,892.07. The inclusion of this line item does not obligate the County to approve its use. Funds from this category will not be expended or authorized for use by the ESCO without the advance written authorization of the County. Regardless of whether Allowance Services are rendered, the County will have no obligation to pay for Allowance Services unless the same have been specifically set forth in writing prepared by the ESCO and approved in writing by the County. The ESCO will include an allowance summary sheet provided by the County for any request for the use of Allowance Services.

C. Compensation for Performance Tracking Services. Commencing upon the Performance Guarantee Commencement Date and continuing until the expiration or earlier termination of this Contract, the ESCO will perform the Performance Tracking Services. During the Guarantee Period, the County will make annual payments to the ESCO for the Performance Tracking Services in the amounts set forth in Exhibit I (each, a "Performance Tracking Payment").

D. Contract Sum. The sum of the amounts described in paragraphs 4A-4C above shall be known as the Contract Sum.

E. Environmental Incentives. Except as set forth in this Subsection, the County will own, and may assign or sell in its sole discretion, all right, title, and interest associated with Environmental Incentives. Environmental Incentives will not be included within any calculation of savings or otherwise reduce the ESCO's responsibility for achieving the Guaranteed Annual Savings Amount or Guaranteed Project Savings Amount, as such terms are defined in Exhibit G; Notwithstanding the foregoing, the ESCO will be designated the sole beneficiary of tax deductions arising under Section 179D of the Internal Revenue Code.

Upon Final Acceptance of the Project, the County agrees to execute the required written allocation and declaration under Section 179D of the Internal Revenue Code to designate the ESCO as the beneficiary of such deductions. The ESCO will prepare the written allocation, declaration, and all accompanying documentation necessary to effectuate such designation. The County shall not have any responsibility for ensuring that the Project and/or the Facilities qualify for deductions under Section 179D of the Internal Revenue Code, nor shall the County be liable to the ESCO in any manner for the failure of the Project and/or the Facilities to qualify for such deductions.

SECTION 5. PROJECT SCHEDULE

A. Time of the Essence TIME IS OF THE ESSENCE FOR THIS CONTRACT. The ESCO agrees to commence the Work in conformity with the provisions set forth herein and to prosecute the Work with all due diligence, so as to achieve Substantial Completion of all ECMs and ECM Groupings in the Project by no later than September 17, 2014 using double shift, weekend and holiday work when necessary pursuant to the terms and conditions of this Contract.

B. Project Schedule. The Project Schedule for the entire Project has been included as Exhibit F. The Project Schedule will be updated by ESCO and submitted to the County at least monthly and, if requested by County, in electronic format. ESCO will submit a revised Project Schedule when ESCO's planned sequence is changed or when Project changes are made that affect the Project Schedule. Any changes to the Project Schedule will not be effective until such changes have been reviewed and approved by the County, which changes shall not be unreasonably withheld or delayed. When performing the Work, the ESCO will comply with the Project Schedule. The ESCO recognizes that the Work will take place in County owned Facilities which are occupied by the County and may involve sensitive on-going operations. The ESCO will be sensitive at all times to the operational needs of the County during performance of the Services and will coordinate with the County to protect the health and safety of County, its employees, residents, invitees and other persons who may be present in the Facilities during the performance of the Services, and the ESCO will avoid unreasonable inconvenience to and interference with the County's conduct of business. Any monthly updates shall not operate to extend the Project Schedule except in accordance with Section 13.E. Any revisions to the Project Schedule shall not delay, obstruct, hinder or interfere with the commencement, progress or completion of any other Work on the Project.

C. The ESCO shall submit an updated Project Schedule, including the Construction Operations Phasing Plan for approval by the County or its Program Manager within ten (10) days of execution of the Contract. The itemization and format shall be subject to the approval of the County or its Program Manager. Work shown on the schedule shall be organized by Facility and then Work Site using "hammocks" and tasks shall be indexed to a trade subcontractor. The Project Schedule shall include, as a minimum, the activities noted below and be supplemented by the ESCO to provide a complete schedule overview.

1. Preconstruction:

- Notice to Proceed
- Coordination Meeting
- Design/Permit Documents
- Obtain Permit from appropriate governing authorities
- Key Submittals
- Procurement of Long Lead Items
- Site Preparation; Demolition

2. Construction and Installation

- Equipment Installation
- Restoration of Sites to Good Condition
- Systems Test, Balance, Adjustment and Commissioning
- Application for Substantial Completion with Punch List

Substantial Completion Walkthrough and Punch List Review

Close Out
Punch List Work
Staff Training

Final Acceptance and Closeout Documentation

The Scheduled Completion Dates are clearly indicated on the Project Schedule. The Project Schedule incorporates 2.00% of the Contract Time as the original total float in determining the Scheduled Completion Dates.

D. Cost Loaded Schedules. The ESCO has prepared and the County has approved a Cost Loaded Schedules for activities related to the Construction and Installation Services (attached hereto as Exhibit J). The Cost Loaded Schedule (1) identifies the Project activities to be performed by the ESCO by ECM or ECM "Grouping, Work Site, electrical or mechanical activity and by trade together with such other detail as has been agreed to by the parties and (2) assigns a dollar value to each such activity which aggregates to the compensation amount for Construction and Installation Services as set forth in Section 4A. The ESCO shall update the Cost Loaded Schedule quarterly or when requested by the County; provided, however, that any changes in the Cost Loaded Schedule shown in such update shall not become effective unless and until such changes are first approved by the County. The County reserves the right to require reasonable revisions to the Cost Loaded Schedule in the interests of clarity or to better reflect the nature of the Project.

E. Submittals Within twenty-one (21) days after the Notice to Proceed Date, the ESCO shall submit to the County a schedule of delivery for all submittals of products and equipment required by the Contract Documents to the County. The ESCO shall include a separate transmittal letter with each submittal, identifying the item by manufacturer, model number, CAD identification number and reference to specification sections of items of construction. Each submittal shall have a chronological submittal number. As and when requested by the Project Director, the ESCO shall submit appropriate documentation for review by the County (e.g. shop drawings, product submittals, product sheets) for all materials and for all mechanical, telecommunications, plumbing, electrical, fire and security systems, equipment, fixtures, personal property, and other items, in all detail required by the Design & Engineering Documents for the ECMs, but, at a minimum, describing the following, as applicable: Physical dimensions and space required for operations, Weight; structural requirements of the Facility; Power requirements; Exhaust requirements; Water requirements; Chemical requirements; Air-conditioning requirements; Maintenance requirements; conveying system requirements; Supplies required. The ESCO shall submit copies of brochures/technical materials for each item in such Printed Deliverables or Electronic Deliverable form as the County shall reasonably request. The County reserves the right to request additional information regarding any product to be used in the Project.

F. Failure to Meet Project Schedule If the ESCO fails to accomplish portions of the Work within the period set forth in the Project Schedule, or fails to achieve Scheduled Completion Dates set forth in the Project Schedule, and if no extension of the Contract Time is agreed to by the County, the ESCO shall provide to the County upon request a written recovery plan indicating the manner in which the ESCO intends to recover the lost time in order that the Project can be completed within the Contract Time. If the ESCO fails to provide a realistic recovery plan, and if the County reasonably deems the delay to be material, then the County may declare the delay to be a default under the Contract and may proceed in accordance with Section 17.C. If the milestone dates are not achieved, then the County shall have the right to require an acceleration plan that restores the schedule and ensures meeting all subsequent milestone dates.

SECTION 6. COUNTY ROLE AND PARTICIPATION.

A. Project Director and Escorts. The County shall endeavor to render approvals, acceptances and decisions required by the ESCO in a reasonably expeditious manner for the orderly progress of the ESCO's services and the Project and in accordance with the Project Schedule; provided that there shall be no damages

for delay by the County . The Project Director shall, on behalf of the County, act as the primary point of contact for the ESCO with the County and endeavor to render decisions in a timely manner where such decisions do not result in any change or modification of the Contract Documents or of the Project. The ESCO's communications with the County, including but not limited to all reports, should be directed through the Project Director to the greatest extent possible, except for written notices, which shall be made in accordance with Section 20.J. The County may substitute a new Project Director through written notice to ESCO. The County will also provide a suitable number of escorts to accompany ESCO personnel during the Project at the Facilities in order for the ESCO to meet the Construction Schedule, such number to be determined at meetings between the County Representative and senior personnel of the ESCO, but estimated to number four full time escorts. Following Final Acceptance of the Project, the County shall provide such escorts as may be needed for the ESCO to perform the Performance Tracking Services as determined by the parties.

B. Information to ESCO. Subject to the County's security requirements at the Facilities ("County Security Requirements"), the County agrees to provide to ESCO reasonable access to the Facilities and surrounding sites and furnish information necessary for ESCO to perform its responsibilities under this Contract. Such access and information will include, but is not limited to, the following items:

- All mechanical equipment rooms in the Facilities;
- All temperature control and energy management systems which control part or all of any of the Facilities;
- Personnel with responsibility for operating and/or managing the Facilities;
- Monthly utility invoices and billing history for all of the meters listed in Exhibit C;
- Construction documents, equipment inventories, and other documents that may be helpful in evaluating a cause for adjustment as listed in Exhibit G; and
- Any data from meters or sub-meters relevant to the Performance Tracking Services.

Any information or documentation provided by the County to the ESCO relating to the Project or the Facilities is provided only for the convenience of ESCO. The County makes no representation or warranty to as to the sufficiency, completeness, or accuracy of such information. However, County understands that such data may have been used in baseline energy development and may be used in energy savings verification process.

C. Operations. The County will operate the ECMs after Final Acceptance in accordance with the manufacturers' recommendations and the procedures and operating manuals provided by the ESCO

D. Required Maintenance. Except for ECM SH-13 (as referred to in Exhibit B) the County agrees to maintain the Project and all associated equipment impacting the performance of the ECMs and the Facilities in accordance with the maintenance requirements attached as Exhibit L, with allowance for normal wear and tear. The ESCO shall maintain ECM SH-13 in accordance with Exhibit K.

E. Malfunctions. The County will notify the ESCO promptly in the event of any malfunction in the operation of the ECMs or any equipment installed by the ESCO under the Contract Documents.

F. Protection of ECMs. Except in case of emergency, the County will not remove, move, alter, turn off or otherwise significantly affect the operation of the equipment installed pursuant to the Project or the operation of the ECMs without notice to and approval of the ESCO, which shall not be unreasonably withheld.

The County shall act reasonably to protect the ECMs from damage or injury in the same fashion which it protects its own property at the corresponding Facility and shall follow the ESCO's instructions regarding actions which significantly affect the ECMs except in case of emergency. The County will not move, alter or change the ECMs in any way that reduces their level of efficiency or the savings generated by the ECM or the equipment installed pursuant to the Contract Documents without following the operational procedures provided by the ESCO or obtaining the approval of the ESCO, which shall not be unreasonably withheld.

G. Measurement and Verification System. The County shall not move, modify or otherwise alter the measurement and verification system or any component thereof without consent of the ESCO unless: (i) such action is in accordance with the operating manuals and procedures provided by the ESCO at Substantial Completion; (ii) in case of an emergency in which case the County will seek to act reasonably and contact the ESCO prior to such actions if such prior contact is possible in the reasonable opinion of the County.

H. Changes to Facilities. The County will notify the ESCO as to significant changes in one or more Facilities that would significantly change the energy usage at such Facility or Facilities.

I. Energy Usage Data. The County will make available to the ESCO, on a monthly basis for the term of this Contract, copies of all energy bills, energy usage data and such other information reasonably needed by and as requested by the ESCO to determine and satisfy its obligations under the Contract Documents.

J. Construction Manager. The County may elect to appoint an independent Construction Manager for the Project to assist the Project Director and act as an owner's representative at the Work Sites. The Project Director would inform by letter the ESCO of any appointment of a Construction Manager promptly after such appointment. Any such Construction Manager would have the authority to act on behalf of the County as its representative set forth in such appointment letter, subject to the provisions of this Section 6.J., unless otherwise modified by written instrument to the ESCO by the Project Director. The Chief Procurement Officer and the Project Director may issue instructions to the ESCO through the Construction Manager. Nothing contained in the Contract Documents shall create any contractual relationship between the Construction Manager and the ESCO. The Construction Manager shall not have the authority to stop the Work. The Construction Manager will not be responsible for and will not have control or charge of construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work and will not be responsible for the ESCO's failure to carry out the Work in accordance with the Contract Documents. The Construction Manager will not be responsible for or have control or charge over the acts or omissions of the ESCO, Subcontractors, or any of their agents or employees, or any other persons performing Work.

SECTION 7. DESIGN SERVICES

A. Work Site Visits. In performing under the the Phase I Audit Agreement and in producing the Phase I Report, the ESCO has already conducted many Work Site visits and has become thoroughly familiar with the existing conditions at the each of the Work Sites. The ESCO has also already been furnished with such as built drawings and other materials of the County related to the Work Sites. Following the Notice to Proceed, the ESCO shall complete all necessary Site Visits in order to proceed with the Design Services and Construction and Installation Services in accordance with the Project Schedule, subject to County security requirements. All Work Site visit requests by the ESCO or any Subcontractors will be handled through the Project Director or a Construction Manager and shall require at least five (5) business days advance notice to the County (unless the Project Director authorizes a shorter notice period on a case by case basis). The ESCO shall report to the County (to the extent not already in the Phase I Report) any pre-existing conditions which would adversely affect the Project and note and photograph pre-existing damage and irregularities at any of the Work Sites which could adversely affect the Project. Notwithstanding anything to the contrary contained in this Contract and without limitation on any other rights and remedies of the County, the ESCO shall be obligated at its cost and expense to revise any document prepared by the ESCO, its subcontractors, agents or employees for

the Project if the matters covered by such revisions could and should reasonably have been discovered by the ESCO in the performance and observance of its Services under this Contract.

B. Design & Engineering Documents

1. The ESCO will prepare or cause to be prepared, for written approval by the County (to the extent not already approved as part of the Phase I Audit Agreement), working designs, schematics, drawings, specifications and other documentation setting forth in detail the requirements of the construction and installation of each ECM at each Work Site or Facility in accordance with the Contract Documents ("Design & Engineering Documents"). The County shall reasonably cooperate in providing existing as built drawings and other materials relevant to the Project regarding various Work Sites or Facilities which may be needed for the ESCO to complete Design & Engineering Documents or to apply for permits for Constructions and Installation Services. The Design & Engineering Documents may be submitted in successive packages separate by ECM and by Work Site or Facility in an order agreed to by the parties for each stage of design, each of which shall address separate construction trades. The Design & Engineering Documents shall contain such content and detail as is necessary to properly complete the construction and installation of such ECM and provide information customarily necessary for the use of such documents by those in the building trades. The Design & Engineering Documents must specify lead times for product and equipment orders and, if known, the applicable cancellation fees for those equipment orders. Where required by law, the Design & Engineering Documents must bear the stamp or seal of architects or engineers licensed by the State of Illinois. The Design & Engineering Documents

2. The ESCO covenants and agrees that it will not commence the procurement or construction for any ECM at a specific Work Site until the County has approved the related Design & Engineering Documents for such ECM at such Work Site and all related permits are issued. The ESCO shall also represent with each such approval package that the Design & Engineering Documents are accurate and free from any errors or omissions and are in compliance with and accurately reflect all applicable laws in effect at the time of such submission. At any time, the ESCO will, at no expense to County, promptly modify any Design & Engineering Documents which are not in accordance with applicable laws or are inaccurate or contain errors or omissions. The ESCO acknowledges and agrees that the County will have no liability for cancellation fees applicable to equipment orders until after the County has approved the Design & Engineering Documents for such equipment on a Work Site or Facility basis.

3. The ESCO acknowledges and agrees that any review, approval, comment or evaluation by the County of any Design and Engineering Documents prepared by or on behalf of the ESCO is solely for the County's purposes in determining for its own satisfaction the suitability of the Project or portions thereof for the purposes intended therefor by the County, and may not be relied upon by the ESCO, its Subcontractors, or any other third party as a substantive review thereof. The County, in reviewing, approving, commenting on or evaluating any Design & Engineering Documents, will have no responsibility or liability for the accuracy or completeness of such documents, for any defects, deficiencies or inadequacies therein or for any failure of such documents to comply with the requirements set forth in the Contract Documents; the responsibility for all of the foregoing matters being the sole obligation of the ESCO. In no event will any review, approval, comment or evaluation by the County relieve the ESCO of any liability or responsibility under this Contract, it being understood that the County is at all times ultimately relying upon the ESCO's skill, knowledge and professional training and experience in preparing any plans, drawings, specifications or other documents.

4. Design and Engineering Documents and other Project Documents shall be considered to be complementary and what is called for by one shall be binding as if called for by the other. Should conflict occur within the Project Documents, the ESCO will be deemed to have estimated on and agreed to provide the greater quantity or better quality of materials and labor. The Work shall be executed in strict conformity with the Design and Engineering Documents. No Work shall be done without proper Design and Engineering Documents. The Design and Engineering Documents shall include, at a minimum, all relevant dimensions,

placements, clearances, methods and materials of construction. The ESCO shall determine methods and means and divisions of work among its Subcontractors.

5. Design and Engineering Documents to be Available. The ESCO shall keep one complete set of all current Design and Engineering Documents, including shop drawings, other submittals, addenda and change orders at the respective Work Sites, in order, and available to the County and any Construction Manager. The Design and Engineering Documents kept on-site shall be kept up to date by replacing obsolete sheets with revised sheets as they are issued. Office or reference copies shall retain obsolete Drawings for historical documentation purposes, which shall be clearly marked as "superceded".

SECTION 8. CONSTRUCTION AND INSTALLATION SERVICES.

A. Pre-Construction: Permits and Approvals.

1. In General. The ESCO shall secure and pay for all necessary permits (including hauling permits), approvals, assessments and charges, including, without limitation, construction building permits, required for the proper execution and completion of the Work in accordance with the Project Schedule.

2. Status Reports; Failure to Obtain Permits. The ESCO shall provide the County and any Construction Manager with a written status report on the permit review process as to all permit applications, beginning two (2) weeks after the filing of the first such application and every two (2) weeks thereafter until all necessary permits have been issued. If the ESCO requires assistance in the permitting process from the County, the ESCO shall request such assistance in writing, directed to the Project Director specifying the nature of the assistance request.

3. Copies to be Provided. A copy of each permit application shall be submitted to the County within 3 calendar days after filing for such application. A copy of the actual permit shall be submitted to the Project Director and to any Construction Manager within 3 calendar days after its receipt by ESCO. The ESCO shall also provide copies to the County and any Construction Manager of all correspondence, applications, and transmittals related to the permitting of the Project when submitting the related permit.

B. Construction and Installation Services

1. Procurement. Following receipt and review of all necessary permits and approvals to commence the Construction and Installation Services for an ECM at a Work Site or Facility, as determined by the ESCO and the Project Director, the ESCO shall proceed to procure all materials and equipment needed for such ECM in accordance with the Project Schedule. Special attention shall be given to long lead items and the County will be informed of any supplier delays in providing such items.

2. Quality of Work, Labor and Workmanship, Materials and Equipment. All Work to be performed under this Contract shall be of the highest grade workmanship and shall be executed by mechanics and artisans skilled in their respective trades. Unless otherwise specified in the Contract Documents, the ESCO shall provide and pay for all materials, labor, water, tools, equipment, light and power necessary for the execution of the Work. Unless otherwise specified, all material shall be new and of highest quality. Discontinued products, model numbers, or other out of production items will not be accepted by the County unless such consent is agreed to in writing signed by the Project Director. Materials and equipment provided by ESCO shall not be subject to any conditional bill of sale, security agreement, financing statements, chattel mortgage or other claim. The ESCO shall, if required, furnish satisfactory evidence as to the kind and quality of materials. The ESCO will only employ and permit the use of such labor as shall not result in jurisdictional disputes or strikes or cause disharmony with the tenants, other contractors, agents, and employees at the Facilities or other sites affiliated with the County. Any worker or other person involved in the performance of the Work who, in the opinion of County, is incompetent or careless in the execution of the Work or who engages in inappropriate behavior shall be immediately removed upon request of the County. The ESCO will enforce strict discipline and good order among ESCO's employees and other persons carrying out the

Work. Local preferences shall be complied with in accordance with Section 9.H.11.

3. Work to Be in Accordance with Contract Documents, regulatory codes and the Project Schedule. ESCO is responsible for the construction of the Project in accordance with the Contract Documents, including the Project Schedule. ESCO shall consult with the County and any Construction Manager regarding Work Site use and improvement; and the selection of materials, building code issues which could delay the Project, building systems and equipment. ESCO shall evaluate and make recommendations to County and any Construction Manager concerning construction feasibility, labor utilization and avoidance of labor disputes, material procurement, equipment rental or purchase, life cycle costing, phasing and early start of portions of the Work. All equipment and materials shall be installed in strict accordance with the last edition of the Code of the National Fire Protection Association. The ESCO shall comply with all code requirements for Underwriters' Laboratories, Inc. labels. The ESCO shall pay, or cause the responsible Subcontractor to pay, all fees and cost that may become necessary in complying with this Section. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Construction and Installation Services including, without limitation, all items and services which are consistent with, reasonably contemplated by, or reasonably inferable from the Contract Documents as being within the scope of the Project and the Work, whether or not such items and services are specifically mentioned therein.

4. Inspection and Responsibility The County shall have a right to inspect any Work, equipment, products and materials to be used in carrying out this Contract. The County does not assume any responsibility for the availability, quality or standards of any materials, products and equipment required under this Contract, which shall be the responsibility of the ESCO. The ESCO shall also be responsible for the quality and standards of all completed Work furnished under this Contract.

5. Delivery and Installation. The ESCO is responsible for any and all delivery and warehousing costs, charges and fees, and bears full responsibility for loss of or damage to materials, systems and equipment until acceptance at site of installation. The ESCO shall be responsible for the assembly, installation, interconnection, calibration, and start-ups including any final electrical power and/or other utility connections and mounting. All Work by the ESCO in conjunction with installation shall be in accordance with the applicable editions of all federal, state, and local codes and standards including but not limited to the Chicago Electrical Code, National Electrical Manufacturers Association and NFPA 70 - National Electrical Code.

6. Control Over Means, Methods, and Techniques. The ESCO is solely responsible for and will have control over means, methods, techniques, sequences and procedures and for coordinating all portions of the Work, unless the Contract Documents give other specific instructions concerning these matters.

7. Cutting and Patching. The ESCO will do all cutting, fitting, and patching necessary for the completion of the Work and the Project and will not alter or endanger any existing portion of the Facilities or any material or equipment installed therein without the consent of the County.

8. No Reliance Upon County Representations. The ESCO has satisfied itself, by its own independent investigation of the Work Sites and through preparation of the Phase I Report regarding all the conditions of the specific areas in the Work Sites affected by the Work to be done and materials to be furnished and has executed this Contract based solely on such investigation, study and determination made by it, and not in reliance upon any representation by County or by anyone acting for or on behalf of County.

9. As Built Mark Ups. The ESCO shall keep legible notes of all the deviations and discrepancies in the underground, concealed conditions and all items of construction and Work on field drawings (the "As-Built Mark-ups") and shall submit them to the County and to any Program Director as Work progresses for review and incorporation into final record "as built" documents. The submission of accurate As-Built Mark-ups and manufacturers' guarantees and warranties and maintenance and operating manuals by the ESCO are conditions precedent to Final Acceptance and the ESCO receiving final payment.

10. Construction Photographs. "Photographs" shall be submitted for each complete ECM system or component together with applications for Substantial Completion of such ECM. "Photographs" for purposes of this paragraph shall mean digital, professional quality color photographs. Electronic copies of "Photographs" shall be compressed to jpegs not exceeding one Mb. Each digital and hardcopy Photograph shall be clearly and legibly identified with the following information: Project Name, Date of Photograph, County Contract/document Number, relevant Facility or Facilities and/or Work Site and ECM, component/system name and direction the view is looking towards. Such information may be provided in an index or the information may be included on the digital Photograph along the bottom in such a manner so as not to obscure the subject of the Photograph. The County retains the right to request additional Photographs from the ESCO if required to verify conditions or as a condition of a Change Order. The ESCO shall provide all such Photographs at no additional cost to the County.

C. Safety.

1. In General. The ESCO is solely and completely responsible for all necessary safety precautions and programs in connection with the Work and the Work Sites, including but not limited to providing whatever protection may be necessary to prevent injury to any persons, regardless of status, whether tenants, patrons, and/or employees or business invitees of County or ESCO (including any Subcontractor) or inmates who may be present at any of the Facilities or for any loss or damage to property of the County or other persons, including all materials and equipment to be incorporated into the Work and all existing improvements which are not to be removed as part of the Work. The above requirements will apply continuously and not be limited to normal working hours. Except to the extent dictated by security considerations imposed by the County, the County and any Construction Manager or their agents shall in no event have control or charge of the construction and shall not be responsible for construction and safety means, methods, techniques, sequence or procedures, or for safety precautions or the acts or omissions of the ESCO or any other persons performing Work or their failure to perform.

2. Accident Reports. The ESCO shall give the County and any Construction Manager immediate written notification of any occurrence, on the site or otherwise, which involves the ESCO's own personnel, or those of any of its Subcontractors or material suppliers, whether said occurrence be in the nature of bodily injury to employees or third parties or property damage. Property damage is defined as including physical damage on the site and off-site, as well as "Acts of God", such as wind damage, etc. The report shall include the name of person(s) injured, name of such person(s) employer, date, time and location of occurrence, extent of injury and/or damage, name(s) of eyewitnesses, and name of anyone who treated the person(s) for injuries sustained, and such other information as may be necessary. The local police should be notified of any occurrence requiring an official police report. The accident report should indicate whether the police were notified and, if so, the number of the police report. In addition, if injuries or damage occur, the accident shall be reported immediately by telephone or messenger.

3. Protection of the Work and the Project Sites. Subject to County security requirements, the ESCO shall continuously maintain adequate protection of all the Work from damage and shall protect the County's property, including utilities located therein, from damage, injury or loss arising in connection with the Work. ESCO shall be responsible for any such damage, injury or loss, except as may be caused by agents or employees of the County and if such property is damaged, injured or destroyed by the ESCO, its Subcontractors and any of their employees, or agents, it shall be restored to a condition as good as that existing immediately prior to commencement of the Work and the ESCO shall make good all such damage or loss without additional cost to the County. Subject to applicable County security requirements related to specific Facilities or Work Sites, the ESCO shall provide and erect all necessary barricades and other protection required by the County or applicable Laws and shall also protect all walks, curbs, lamp posts, underground conduits, overhead wires, water sewer, gas mains, and other facilities until such time as they are accepted by the respective public service corporations or by the County. If not prevented by County security regulations, the ESCO shall also provide and maintain all necessary warning lights from twilight to sunrise unless otherwise directed by the Project Director

or a Construction Manager. The ESCO shall also protect from damage all parts of the Work and all materials, tools and equipment relating to the Work from freezing or inclement weather and the ESCO shall be solely responsible for the condition of such Work and materials.

4. **Adjacent Property and Utilities.** Where the ESCO's Work affects adjacent private or public property, including utilities located thereon, ESCO shall take such steps as are provided by law or as necessary to prevent damage, injury or loss. The ESCO shall be responsible for and make good any damage, injury, or loss to adjacent property resulting from ESCO's operations. The ESCO shall notify all public and private owners by registered or certified mail, return receipt requested, well in advance of commencing any Work affecting their property or utilities of the Work and its possible effect on their property. If the Work might affect any utilities, utility service, or utility equipment, the ESCO will notify the utility companies or users of such utilities which might be affected by the Work, and if such utility equipment is not needed or interferes with the execution of the Work, the ESCO, under the direction of the utility, will remove or protect such utility equipment as required by such utility companies or users of such utility equipment. ESCO shall also comply with all safety and utility shutdown requirements applicable to any Work Site. If necessary, the ESCO shall request a utility shutdown after approval by the Project Director.

5. **Safety of Employees.** The ESCO shall take all necessary precautions for the safety of employees on the Work and shall comply with all applicable Laws to prevent accidents or injury to persons on, about, or adjacent to the premises where the Work is being performed. The ESCO shall erect and properly maintain at all times, as required by the conditions and progress of the Work, all necessary safeguards. All ESCOs shall require each employee on the site to wear a safety helmet (hard hat) at all times. ESCO shall take all necessary precautions to ensure the safety of the public and of workmen on the Site, and to prevent accidents or injury to any persons on or adjacent to the Site. The ESCO shall comply with the "Williams-Steiger Occupational Safety and Health Act of 1970" ("OSHA") and all subsequent revisions thereto, and all Laws relating to safety and the prevention of accidents, and shall also utilize the "Manual of Accidental Prevention in Construction" of the Associated General Construction/Builders of America and with applicable provisions of the American Standard Safety Code for Building Construction ANSI A 10 Series. ESCO shall appoint a Superintendent for Work who is responsible for safety of employees and other persons affected by the Work and the ESCO shall require each Subcontractor to likewise designate, a responsible representative at each Work Site or Facility who shall be responsible for the promotion of safety and prevention of accidents, and shall enforce all applicable Laws. The Superintendent shall hold weekly meetings with the representatives of the various trades employed at the Site in order to ensure that all employees understand and comply with Laws, including the requirement of OSHA and "Right to Know" regulations. Such Superintendent for Work may be the superintendent referred to in Section 9.E. of this Contract.

6. **Maintenance of Public Way.** All debris of construction deposited on public ways shall be removed immediately. All vehicles engaged in the Work shall be so policed and cleaned that no debris carried from the site is deposited on the public way. The ESCO and its Subcontractors are jointly and severally liable for enforcement of these requirements.

7. **Emergency Action.** In an emergency affecting the safety of life, the Work, or adjoining property: the ESCO, without special instruction or authorization from the County, is hereby permitted to act, at its discretion, to prevent such threatened loss or injury; and shall so act, without appeal, if so instructed or authorized. Any compensation claimed by the ESCO on account of emergency work, unless such emergency work resulted from the actions or failure to act of ESCO or any Subcontractor shall be determined pursuant to the terms of the Contract Documents applicable to changes in the Work.

8. **First Aid On-Site.** ESCO shall provide and make available to all workmen reasonable medical supplies and equipment necessary to provide immediate first aid service to all persons who may be injured in connection with the Work. All medical supplies and equipment shall be supplied in accordance with standards imposed by OSHA and by any governmental agency having jurisdiction over the Site.

9. Project Safety Program. The ESCO shall, within ten (10) days of the Effective Date, submit to the Construction Manager a Project Safety Program which shall include but not be limited to, the following:

- a. Establish a program of project pre-planning for safety and hazard avoidance.
- b. Utilization of insurance company loss prevention services.
- c. Lines of ESCO's responsibilities and authority for personnel for the administration of safety program.
- d. Scheduling and conducting of safety meetings.
- e. Issuing of safety bulletins.
- f. Conducting of Weekly Tool Box Meetings.
- g. Regular inspections of the Project for safety compliance and correction of violations.
- h. Safety training of employees.
- i. A written Hazard Communication Program which is to include collection and distribution of Material Safety Data Sheets for all hazardous materials, labeling of these materials and training of employees using these materials.
- j. A fire protection plan.
- k. The use of personal protection equipment.
- l. Hard hat usage.
- m. Accident reporting and investigation.
- n. Safety guidelines and regulations.
- o. Site accessibility and cleanliness.
- p. Safety reporting and distribution including the County and Construction Manager.
- q. A site layout plan showing the location of safety facilities and safety items.

This Project Safety Program shall be enacted upon by the ESCO for the duration of the Work and shall be updated as required for changing conditions.

10. Applicable Safety Laws The ESCO shall observe and cause all tiers of Subcontractors to observe the safety provisions of applicable Laws. The ESCO shall be responsible for all safety provisions even if the applicable Law makes another party responsible for the safety provisions. Machinery, equipment, and all hazards shall be guarded (or hazards eliminated) in accordance with the safety provisions of the latest edition and any supplements thereto of the Manual of Accident Prevention in Construction, heretofore published by the Associated General Contractors of America, to the extent that such provisions are not in contravention to applicable law.

D. Cleaning and Removal of Materials and Equipment . The ESCO at its cost will at all times keep the Work Sites free from any accumulation of rubbish, debris, and waste. ESCO shall also at all times during performance of the Work, cause all debris, including but not limited to sedimentary and airborne contaminants, to be contained so that such debris does not adversely affect the environment and community in which the Work is performed. ESCO shall control dust by using water hoses to wet driveways and other areas of any Work Sites which generate dust. When reasonably directed by the County or when necessary to comply with applicable County, municipal or State of Illinois code, the ESCO shall increase its effort of dust control at no additional cost to the County. The ESCO shall also, at its cost, remove and dispose of via salvage, recycling and other methods in accordance with applicable laws and ordinance all pre-existing lamps, ballasts, chillers, heaters and other County owned equipment being replaced as a result of the Work and the installation of the ECMs. Upon completion of the Work and prior to Substantial Completion of an ECM or ECM Grouping, the ESCO will thoroughly clean all Work, remedy any defects, and leave those portions of such Facility or Work Site in which ESCO has been working regarding such Substantial Completion in broom clean or equivalent and orderly condition and shall remove all Project signs and temporary work, of every nature, from and about such Work Site or Facility. The ESCO shall also remove all tools, scaffolding and surplus materials. Without limiting the generality of the foregoing, any ceiling and wall surface, floor, window or door frames, hardware, metalwork, and glass (both sides) which are part of the Work or which have become dirty or marred as a result of ESCO's performance of the Work must be thoroughly cleaned and polished to County standards.

If ESCO fails to clean up as directed by the County during or at the completion of the Work at a Facility or Work Site, the County may perform such clean up and the cost thereof shall be charged to ESCO at no cost to the County. The ESCO shall comply with any additional requirements imposed by the Contract Documents, including "LEED" air quality and other requirements. Cleaning shall be more often as the County reasonably requires as to occupied Facilities where debris or dirt may cause health hazards.

E. Recycling. The ESCO must give preference to the use of recycled products in the performance of any Work where commercially reasonable, and must cooperate with any recycling program established for the Facilities or available through the County; provided that such preferences must be sufficient to comply with County Code requirements. Further, the ESCO will furnish documentation of disposal of recycled materials in a format and manner that (i) complies with applicable prerequisites and credits of the latest version of LEED-EB as of the date of such disposal, and (ii) is otherwise acceptable to the County.

F. Access to the Work. The ESCO shall not limit the County as to any access to the Work in preparation and progress wherever located in the Facilities, subject only to reasonable safety precautions agreed to in advance by the County through the Authorized County Representatives at the respective Facilities. Any Construction Manager, the Project Director and the Chief Procurement Officer and their authorized representatives shall at all times have access to the Work wherever it is in preparation or progress and the ESCO shall provide proper facilities for such access and for inspection. If the Contract Documents, or any Laws require any Work to be specially tested or approved, the ESCO shall give any Construction Manager and the Project Director and appropriate public authorities, timely notice of the date fixed for each inspection.

G. Use of Facilities. The ESCO shall confer with the County to ascertain full knowledge of all rules and regulations of the County facilities relative to this Contract and shall comply therewith. The ESCO will confine its equipment, apparatus, materials and operations to the portions of the Facilities identified in the Contract Documents as being Work Sites or otherwise approved by the County, and will not unreasonably encumber the portions of the Facilities within Work Sites with materials, equipment, or similar items or debris. The ESCO and all Subcontractors will use only such entrances to the Facilities as are designated by the County. All contractors and subcontractors of the ESCO shall be accountable to the Project Director while on the County's property and shall abide by all security regulations imposed by the County and the limitations of permits, ordinances and permits affecting the Facilities as well as the limits indicated by laws, ordinances, permits and/or direction of the Project Director. At all times, the ESCO will limit construction operations to methods and procedures that do not adversely and unduly affect the environment of occupied spaces within the Facilities, including but not limited to creating noise, odors, air pollution, ambient discomfort, or poor lighting. The ESCO shall not load or permit any part of any structure in the Facilities to be loaded with a weight that will endanger its safety. The ESCO and its Subcontractors, equipment or material suppliers shall not erect signs or advertising media of any nature on the premises without explicit written approval from the County. The County reserves the right to prohibit any person from entering a County facility for any reason.

H. Project Meetings. The ESCO will provide for weekly, or as mutually agreed upon, scheduled Project meetings during the Construction and Installation Period, and will give timely advance written notice and agenda of such meetings to the County and its ESCOs. The ESCO will record minutes and distribute copies of minutes of meetings to the County within five (5) business days after each meeting. The ESCO will schedule additional Project meetings if requested by the County. Times, dates and locations of meetings shall be subject to approval by the County. At the meetings, the ESCO will present a list of items completed in the week prior to such meeting, as well as a two-week look ahead schedule as a reminder of upcoming activities.

I. Progress Reports. The ESCO and its Subcontractors will furnish the County with such information as the County reasonably requests regarding the progress and execution of the Construction and Installation Services. During the Construction and Installation Period, the ESCO will provide monthly reports to the County on the status of the Work that include, without limitation: (i) a detailed description of the progress of the work for each ECM and the Project as a whole, including a critical path chart illustrating

the progress made; (ii) a statement of significant Project issues that remain unresolved and the ESCO's recommendations for resolving the same; (iii) an updated report on whether the Project remains on schedule and budget, and actions being taken to correct schedule delays and budget overruns; and (iv) a summary of any significant Project events that are scheduled to occur during the upcoming 30-day period.

J. Returns of Employment and Subcontracting. The ESCO shall provide monthly returns of employment and subcontracting to the County and any Construction Manager within 5 business days of the end of each month, starting with the month in which the Notice to Proceed is issued. The detailed form and content requirements for these reports shall be set out by the Construction Manager or County within 21 days of the Notice of Award. The information provided by the ESCO regarding employment shall include all employees of the ESCO and of Subcontractors working on the sites of the Work, and shall exclude employees engaged in off-site activity, deliverymen, and other employees occasionally visiting the site. The employee information shall include but not be limited to: weekly certified payroll reports (U.S. Department of Labor Form WH-347 or equivalent); information on each employee with regard to hours worked on the Work during the reporting period; Cook County residency, categorization by race and gender; and status as a veteran or otherwise. The information provided by the ESCO regarding subcontracting shall provide a complete itemization of the Contract Price into the ESCO's fee, bond and general conditions, and the balance into trades by first tier Subcontractors only, value of self-performed Work, and value of Work not yet subcontracted. For each first tier Subcontractor, the information to be provided shall include but not be limited to the address of the principal place of business, and status with regard to corporate ownership by females. In addition to the monthly returns, the ESCO shall promptly provide the County and any Construction Manager with such further information as shall be requested with regarding the employment and subcontracting policies and practices of the ESCO and of Subcontractors.

K. Inspection and Correction of the Work. Materials, equipment, components or completed Work which is deficient or otherwise not conforming with the Contract Documents may be rejected by the Project Director or a Construction Manager and shall be replaced by the ESCO at no cost to the County. Any materials, equipment or components rejected as not conforming to the Contract Documents shall be removed within a reasonable time from the site of the Work at the expense of the ESCO, after written notice by the County to the ESCO that such Work, equipment, materials or components have been rejected. The ESCO will promptly correct Work rejected by the County for failing to conform to the requirements of the Contract Documents, whether or not fabricated, installed or completed. If ESCO, after receipt of written notice from the County of its rejection of Work, materials, equipment or components pursuant to this Section, either: (i) has not cured such failure within seven (7) days, or (ii) if the nature of the failure is such that it is not capable of cure within seven (7) days, has not within seven (7) days reached agreement with the County for a plan to cure such failure and has not commenced and diligently and continuously pursued the cure of such failure, then the County may order the ESCO to stop the Work, or any portion thereof, until the cause for such order has been eliminated or the ESCO has provided the County with a plan for corrective action acceptable to the County in its reasonable judgment. The right of the County to stop the Work shall not, however, give rise to a duty on the part of the County to exercise this right for the benefit of the ESCO or any other person or entity. This right to stop the Work is in addition to and not in limitation of any of the rights of the County pursuant to Section 7.C or other provisions of the Contract Documents dealing with default on the part of the ESCO. If the ESCO does not remove such rejected Work, materials, equipment or components within a reasonable time, fixed by a written notice, the County may remove them and may store the materials at the expense of the ESCO. If the ESCO does not pay the expense of such removal within five (5) days thereafter, the County may, upon ten (10) day's written notice, sell such materials at auction or at private sale and shall account for the net proceeds thereof, after deducting all the costs and expenses that should have been borne by the ESCO.

L. Performance and Payment Bonds. The ESCO will, prior to performing any Construction and Installation Services, obtain and furnish to County and maintain in effect until Final Acceptance a payment and performance bond covering the faithful performance and completion of the Work required during the Construction and Installation Period and the payment of all obligations arising under this Contract during

the Construction and Installation Period. Such bond must be issued by a surety company authorized to do business in Illinois in a form acceptable to the County, which complies with the Illinois Public Construction Bond Act, 30 ILCS 550, in an amount equal to the compensation to be paid for Construction and Installation Services and shall name the County as an obligee. No notice of change order need be given to the surety company. ESCO must supply evidence satisfactory to the County that the party issuing the bonds has the authority to bind the issuing surety company. If the ESCO fails to furnish and maintain such bonds, the County may purchase such bonds on behalf of the ESCO and the ESCO must pay the cost thereof to the County upon demand.

M. Startup/Commissioning and Testing. Prior to each Substantial Completion application, the ESCO will conduct a thorough and systematic performance test of each component of the ECMs and ECM Groupings for which such Substantial Completion is being applied for accordance with Exhibit C to demonstrate that such ECM or ECM Grouping complies in all respects with the performance requirements, (including the Standards of Service in Exhibit R) of the Contract Documents and applicable manufacturer's specifications for such ECM or ECM Grouping. All tests shall be scheduled at times convenient to the County at no additional cost. Testing shall not be deemed completed as to particular ECMs or ECM Groupings which achieve peak loads on a seasonal basis until such testing is successfully conducted involving such peak loads on a seasonal basis. At least twenty (20) business days prior to a scheduled commissioning test, the ESCO will deliver to County a draft commissioning plan for each ECM or ECM Grouping being so tested also specifying the applicable Work Site or Facility. The County may require changes in an commissioning plan, provided the ESCO is provided with a written description of the changes at least ten (10) days prior to the scheduled test. The County will have the right to designate representatives to be present at any or all such tests including representatives of the manufacturers of the applicable ECMs. The ESCO, or its Subcontractor(s), must correct or adjust all deficiencies in operation of an ECM or ECM Grouping identified during the course of commissioning tests described in this Section. The ESCO shall provide certifications of completed and testing procedures for each item component and systems in an ECM or ECM Grouping to operate to manufacturer's specifications. The County further reserves the option, at the County's expense and upon prior written notice, to require testing and commission of specific ECMs or ECM Groupings by a third party commissioning entity selected from a pre-qualified list of commissioning entities provided by the County and reasonably acceptable to the ESCO.

N. Substantial Completion and Punch List.

I. Certificates of Substantial Completion. Following successful startup/commissioning and testing of an ECM or ECM Grouping pursuant to Section 8.M., the ESCO will submit to the County an application for Substantial Completion and a proposed Punch List of items to be completed or corrected prior to Final Acceptance as to such ECM or ECM Grouping on a form agreed to by the Parties of items for review. If the County concurs that the ECM or ECM Grouping has achieved Substantial Completion, the County will sign the certificate of Substantial Completion and returning it to the ESCO. If the County does not concur that the ECM or ECM Grouping has achieved Substantial Completion or that that the proposed Punch List is not complete or correct, then the County shall notify the ESCO of any objections, concerns or discrepancies as to either Substantial Completion or the proposed Punch List. Punch List items may include items related to additional testing or commissioning of ECMs at seasonal peak load; provided that the ESCO Warranty as to such ECMs shall be extended for an additional year from the date of successful testing of such peak load if the initial punch list testing for peak load for such ECMS is unable to meet applicable peak load performance standards for such ECMs. To the extent the ESCO does not dispute the objections, concerns or discrepancies raised by the County, the ESCO shall (i) promptly and diligently correct the Work as to such ECM or ECM Grouping to meet Substantial Completion and to eliminate the County's concerns and then resubmit the application for a certificate of Substantial Completion to the County as to such ECM or ECM Grouping. If the ESCO disagrees with the discrepancies raised by the County, the ESCO shall notify the County of a dispute and such dispute shall be resolved in accordance with Section 16.C. herein. The County shall endeavor to provide any objections to or comments concerning or its concurrence regarding such an application for Substantial Completion within thirty (30) days of receipt by the County of such application. Failure of the

County to respond shall not be deemed to be acceptance of any such application. The failure to include any items on a Punch List does not alter the responsibility of the ESCO to complete all Work in accordance with the Contract Documents.

2. **Delivery Documents and Sets.** At each Substantial Completion, the ESCO shall bind and turn over to the County: two (2) sets (or such greater number as may be required in the Contract Documents) of (a) the manufacturers' warranties and guarantees ("Manufacturer's Warranties") described in Exhibit K completed in favor of the County as to the ECM or ECM Grouping covered by such Substantial Completion; and (b) parts lists, and literature applicable to equipment, systems, fittings, and furnishings included in the Project for all ECMs, operating manuals, service manuals, training manuals electric, pneumatic and hydraulic schematics (whichever applicable), and troubleshooting documentation for each such ECM or ECM Grouping and each component or item of equipment installed unless otherwise noted, instructions and schedules necessary for the County's proper operation of all ECMs; (c) any Design Materials which have not been previously submitted to the County (collectively the Manufacturer's Warranties, Design Materials and such other materials is referred to as "Delivery Documents"). The binders will clearly categorize and index each piece of equipment included in an ECM or ECM Grouping included in such Substantial Completion, and shall be clearly marked noting "Project specific" equipment, model numbers, and equipment cut sheets, value tag charts, electrical panel charts and other applicable information. Such Delivery Documents will be collected and organized by the ESCO and submitted to the County prior and as a condition to the issuance of the certificate of Substantial Completion for such ECM or ECM Grouping. The County will acknowledge receipt of the sets of Delivery Documents on the set itself, and ESCO will cause six (6) copies of an acknowledged set to be made and furnish them to the County. Notwithstanding the foregoing, the ESCO will not be required to turn over additional copies of Delivery Documents at each Substantial Completion which (i) are in form and substance identical to Delivery Documents previously furnished the County for a prior Substantial Completion for the same ECM at a different Work Site and (ii) do not provide specific protection or information for ECMs or ECMs Groupings not already covered by prior delivered Delivery Documents for different ECMS or ECM Groupings.

3. **Punch List Items.** In determining Substantial Completion, the County will conduct such inspections and reviews of the installed ECM or ECM Grouping as it determines are reasonably necessary and shall produce within thirty (30) days following receipt of the application for Substantial Completion for such ECM or ECM Grouping either comments to the Punch List offered by the ESCO or the County's own Punch List regarding such ECM or ECM Grouping listing items and deficiencies to be completed prior to Final Acceptance. The County in preparing its Punch List is not limited by any "punch list items provided by the ESCO at the time of Substantial Completion for such ECM or ECM Grouping. Upon receipt of the County's comments or Punch List, the ESCO shall correct or complete the commented on items on the County's Punch List prior to a request for Final Acceptance.

O. **Final Acceptance.** Upon correction or completion of all Punch List items for all ECMs and ECM Groupings, the ESCO will submit a request for Final Acceptance to the County. The County shall endeavor to review the correction or completion of all Punch List items within thirty (30) days of the submission of such request and shall, in the absence or a breach or default by the ESCO and the fulfillment of all preconditions for Final Acceptance under the Contract, issue the Certificate of Final Completion within thirty (30) days of such submission unless there remain in the County's opinion uncorrected or uncompleted items on the Punch List. In the event of any dispute as to completion or correction of the Punch List, the dispute will be resolved pursuant to Section 16.A. Final Payment of retained amounts and other amounts owed for Services provided shall be made in accordance with Section 14.F.

P. **Additional Performance of Work Requirements.** The ESCO will comply with the County's Supplemental Conditions for Work described in Exhibit P. Certain General Conditions described in Attachment B (Design Build General Conditions) to the Phase I Audit Agreement are incorporated into this First Amendment as Described in Exhibit P.

SECTION 9. OTHER PROVISIONS RELATED TO THE SERVICES

A. **Standard of Care.** The ESCO will perform, or cause to be performed, all of the Contract Services with that degree of skill, care and diligence normally shown by (and generally accepted as being appropriate for) nationally recognized design, engineering, and construction professionals performing services and work of a scope, purpose and magnitude comparable with the Contract Services throughout the United States, in conformity with any and all professional standards applicable to such Services and in compliance with all applicable laws, codes, ordinances and industry standards related to the Project, including but not limited to zoning, building, environmental and health codes and regulations, site and easement restrictions, permit, licensing, certification and accreditation guidelines (the "Standard of Care"). Where the Construction and Installation Services require the exercise of professional skill or judgment, ESCO will cause it to be performed by professionals competent to do so and licensed by the State of Illinois in the applicable discipline, if such licensure is required by law. The ESCO represents, covenants and agrees that all of its services shall conform to the standard of care and quality which prevails among professionals of knowledge and skill providing services of the nature of the Services provided under this Contract. The ESCO will furnish efficient administration, supervision, and superintendence of all Contract Services and will use every effort to complete the Contract Services in an expeditious and economical manner consistent with the interests of the County. The ESCO shall be responsible for all services performed by subcontractors, agents and employees hired, retained or engaged by the ESCO. ESCO represents, covenants and agrees that ESCO shall cause all of its subcontractors to conform to the Standard of Care. In the event of a conflict between any applicable government or other standards or requirements, the ESCO will utilize its best judgment in accordance with the Standard of Care to apply the appropriate standard. The provisions of this Section 9.A do not limit the Standard of Care but are intended to specifically identify a requirement considered to be included within and required by the Standard of Care.

B. **Subcontractors.** The ESCO proposes to enter into subcontracts with the Subcontractors it has identified in Exhibit D for Services to be provided pursuant to this Contract. No other Subcontractors may be retained by the ESCO without prior notice to and prior acceptance by the County and the County will endeavor to provide notice of approval or disapproval within fourteen (14) days of submission and no change in any of the Key Personnel identified in attached Exhibit E affiliated with the subcontractors therein identified or other subcontractors hereafter accepted shall be made without prior written notice to and prior acceptance by the County. The County will promptly reply to the ESCO in writing stating whether or not the County, after due investigation, has reasonable objection to any such proposed person or entity. The ESCO shall not contract with any such proposed person or entity to which the County has made objection. The ESCO shall provide any and all such changes thereto to the Chief Procurement Officer promptly after the formation or execution thereof, and shall provide an updated Exhibit D to the Project Director within 30 days after the Effective Date and from time to time thereafter, as subcontracts are executed, setting forth the agreed upon compensation to be paid to each subcontractor. The terms of all such subcontracts and changes thereto must require each Subcontractor, to the extent of the Construction and Installation Services to be performed by the Subcontractor, to be bound to ESCO by the terms of the Contract Documents, and to assume toward the County all the obligations and responsibilities which ESCO, by the Contract Documents, assumes toward the County. Notwithstanding any of the foregoing, the provisions of this Section 9.B shall not apply to employment agreements between the ESCO and its employees. The ESCO will be responsible to the County for acts and omissions of the Subcontractors, their agents and employees, and any other persons performing portions of the Contract Services, and for any damages, losses, costs, and expenses resulting from such acts or omissions, to the same extent as the ESCO is responsible to the County for its acts and omissions under this Contract. Nothing contained in the Contract Documents shall create contractual relations between any Subcontractor or suppliers and the County.

C. **Key Personnel.** The ESCO has provided to the County a list of individuals whom it shall use on the Project to provide the Construction and Installation Services, a copy of which is attached as Exhibit E ("**Key Personnel**"). The ESCO shall set forth on Exhibit E a description, in reasonable detail, of the

assignment, current hourly rate to the extent required by applicable Law and the County Code, qualifications, areas of expertise and, as applicable, State of Illinois license or registration numbers of each of the Key Personnel. Exhibit E shall also identify those Key Personnel who are employees or principals of subcontractors identified pursuant to Exhibit E setting forth the same information as required of its own employees and identifying the subcontractor with which such individual is affiliated. Included within Exhibit E is a list of the ESCO's key personnel who will be responsible for supervising the performance of the Contract Services, including the job title, duties and experience of each such individual. Among such individuals there shall be appointed a principal representative of the ESCO (the "ESCO Representative") who shall be the ESCO's authorized representative, and who shall receive and initiate all communications to and from the County and be authorized to render binding decisions related to the Services. The ESCO Representative shall be on site when necessary, shall attend all design, construction and other meetings, and shall handle other responsibilities as the parties may determine. The ESCO shall not make any change or reassignment of Key Personnel and shall not make any change to the hourly rates for such personnel, without prior notice to and prior acceptance by the County. In case that any of the Key Personnel shall not at any time be able to perform his or her assigned function as described in this Contract or is no longer employed by the ESCO, the ESCO shall promptly give written notice thereof to the County and furnish an alternate individual in replacement of any such Key Personnel which alternate individual shall be acceptable to the County and shall thereafter be subject, as one of the Key Personnel, to the provisions of this Section 7C. The County may, at any time, give written notice to the ESCO requesting the removal of any of the Key Personnel or any of the ESCO's other assigned personnel from the Project. Upon receipt of such notice, the ESCO shall forthwith remove such Key Personnel or other assigned personnel and furnish to the County other acceptable personnel, which personnel shall thereafter be subject to the provisions of this Section. Such replacement must be acceptable to the County and shall upon acceptance become subject to the provisions of this Section 7C.

D. Superintendent. The ESCO shall assign a competent superintendent and any necessary assistants who will be on site at all times when Work is being performed to act on the ESCO's behalf. The superintendent and assistant superintendents, and any other individuals identified in Exhibit E, shall be included in the list of "Key Personnel". The superintendent shall represent the ESCO at the Work Sites, and all communications with the superintendent shall be as binding as if made to the ESCO. The Construction Manager, if any, and other ESCOs shall not be responsible for the acts or omissions of the superintendent or assistant superintendents. The superintendent shall be at the construction site during all normal working hours for a minimum of forty (40) hours per week and shall also be at the site during all weekend work, overtime work and special operations regardless of when performed.

E. Cooperation With Other Contractors. The ESCO shall as far as possible arrange the Work and place and dispose of the materials being used so as not to interfere with or hinder the operations of other contractors working near or in a Work Site or other portions of the Facilities. The ESCO shall assume shall protect and save harmless the County from any and all damages or claims that may arise because of inconvenience, delay or loss experienced because of the presence and operations of other contractors working within or adjacent to a Work Site or other portions of the Facilities.

F. Taxes. Unless otherwise provided in the Contract Documents, ESCO will pay all federal, state or local sales, consumer, use, and other similar taxes which are legally enacted as of the date of execution of this Contract, whether or not effective or merely scheduled to go into effect. The Contract Sum is based upon laws, codes and regulations in existence as of the date this Contract is executed. Any changes in or to applicable laws, codes, and regulations affecting the cost of the Work may entitle ESCO to an equitable adjustment in the Contract Sum and Contract Time through a Change Order. The County has provided its sales tax exemption certification related to County sales taxes for purchases of equipment, tools, materials, and supplies relating to the Project.

G. Compliance with Laws: In General. ESCO will comply with and give all notices required by applicable federal, state, county, and municipal laws, ordinances, rules, regulations, and orders (collectively, "Laws"). Assurance of compliance with this requirement by the ESCO's employees, agents and

Subcontractors shall be the responsibility of the ESCO. ESCO will promptly remedy any violation of any Laws specifically related to the Work, that comes to its attention. ESCO shall promptly, and in no event later than the close of the next business day following receipt, give notice to County by telephone, with confirmation in writing, of receipt by ESCO of any information relating to violations of Laws. If the ESCO observes that the Design & Engineering Documents are at variance with any Laws, the ESCO shall promptly notify the County and any Construction Manager in writing of any changes required in the Work. If the ESCO performs any Work knowing it to be contrary to such Laws, and without such notice to the County and any Construction Manager, the ESCO shall bear all costs arising therefrom.

H. Compliance with Law Specific Provisions The inclusion of certain specific legal requirements below or elsewhere in the Contract Documents does not limit the general requirements for compliance with law set forth in Section G. above. The following provisions provide some guidance as to certain specific provisions of law which govern this Contract but is not intended to be all-inclusive.

1. Federal Anti-Terrorism Laws. ESCO represents and warrants to, and covenants with, County that (i) neither ESCO nor any of its owners or affiliates currently are, or will be at any time during the term hereof, in violation of any laws relating to terrorism or money laundering within the meaning of federal and local terrorism laws, such as the USA Patriot Act ("Anti-Terrorism Laws") (ii) neither ESCO nor any of its owners, affiliates, investors, officers, directors, employees, vendors, subcontractors or agents is or shall be during the term hereof a "Prohibited Person" within the meaning of the Anti-Terrorism Laws; and (iii) ESCO has taken appropriate steps to understand its legal obligations under the Anti-Terrorism Laws and has implemented appropriate procedures to assure its continued compliance with such laws. At any time and from time-to-time during the term, ESCO will deliver to County within ten (10) days after receipt of a written request therefor, a written certification or such other evidence reasonably acceptable to County evidencing and confirming ESCO'S compliance with this Section.

2. Non-Discrimination. The ESCO in performing under this Contract, shall not discriminate against any worker, employee or applicant, or any member of the public because of race, creed, color, religion, age, sex, marital status, handicap, national origin, or status of discharge from military nor shall the ESCO otherwise commit an unfair employment practice. The ESCO further agrees that this Section will be incorporated in all contracts entered into with suppliers of labor, materials, equipment or services, contractors and subcontractors and all labor organizations furnishing skilled, unskilled and craft union skilled labor, or who may perform any such labor or services in connection with this Contract. The ESCO will further comply with all applicable federal and State of Illinois statutes and regulations regarding unlawful employment practices, civil rights and human rights.

3. Cook County Human Rights Ordinance (Adopted March 16, 1993); Cook County Code, Chapter 42, Section 42-30, Et Seq. No person who is a party to a contract with the County will engage in unlawful discrimination or sexual harassment against any individual in the terms or conditions of employment, credit, public accommodations, housing, or provision of County facilities, services or programs. The ESCO is to certify its compliance with these policies and its agreement to abide by such policies as a part of its contractual obligations. The ESCO further agrees that this paragraph will be incorporated in all contracts entered into with suppliers of materials or services, contractors and Subcontractors and all labor organizations furnishing skilled, unskilled and craft union skilled labor, or who may perform any such labor or services in connection with this Contract.

4. Minority And Women Business Enterprises Cook County Code, Chapter 34, Section 34-260 Et Seq.

a. Policy and Goals. It is the policy of the County to prevent discrimination in the award of, or participation in, County contracts and to eliminate arbitrary barriers for participation as both prime and subcontractors in such contracts by local businesses certified as Minority Business Enterprises (MBE) and Women-Owned Business Enterprises (WBE). In furtherance of this policy, the County Board of Commissioners has adopted by ordinance

(the "MBE/WBE Ordinance") Minority- and Women-Owned Business Enterprise provisions as part of the Cook County Procurement Code which establish a "best efforts" goal of awarding not less than twenty four percent (24%) of the annual total dollar amount of professional and consulting service contracts and sole source agreements to certified MBE firms and not less than ten percent (10%) of such service contracts and sole source agreements to certified WBE firms. The MBE/WBE Ordinance is found in the Cook County Code, Chapter 34, Sections 34-260 through 284.

b. Options for Meeting Goals. The ESCO may achieve the contract MBE/WBE participation goals by its status as a MBE or WBE; by entering into a joint venture with one or more MBE or WBE firms; by subcontracting a portion of the work to one or more MBE or WBE firms; by entering into a Mentor-Protégé Agreement with a MBE or WBE; by the indirect participation of MBE or WBE firms in other aspects of the ESCO's business; or by a combination of the foregoing.

c. Failure to Carry Out Goals a Breach. A ESCO's failure to carry out its MBE/WBE commitments, as established in its Proposal, in the course of a ESCO's performance shall constitute a material breach of the Contract, and if such breach is not appropriately cured, may result in the termination of the Contract or such other remedy authorized by the MBE/WBE Ordinance as the County deems appropriate.

d. Required Submittals. To be considered responsive to the requirements of the MBE/WBE Ordinance, the ESCO has submitted the documentation required to be submitted with proposals as described in paragraphs e, f and g below.

e. Affirmative Action Plan. The ESCO will submit with its proposal a copy of its current internal affirmative action plan. If the ESCO has no internal affirmative action plan, the ESCO will submit a statement stating why the ESCO has no such plan. In lieu of an internal affirmative action plan, the ESCO may submit a copy of its current Letter of Compliance for the United States Department of Labor, Office of Federal Contract Compliance Projects.

f. The ESCO's MBE/WBE Efforts Documentation. The ESCO will submit with its proposal, supporting documentation which evidences efforts the ESCO has taken in attempting to achieve the County's "best efforts" MBE/WBE participation goals.

g. The ESCO's Statement; Use of MBE/WBE Efforts Professionals. The ESCO will submit with its proposal, a statement which discloses how the ESCO intends to maximize the use of its MBE/WBE professionals in the course of performing the Contract.

h. Non-Compliance. The ESCO will remain in compliance with the submittals provided pursuant to the above requirements throughout the term of the Contract. If the County determines that the ESCO has failed to comply with its contractual commitments or any portion of the Ordinance, it will notify the ESCO of such non-compliance and may take any and all appropriate actions as set forth within the Ordinance.

i. Reporting/Record-Keeping Requirements. The ESCO shall comply with the reporting and record-keeping requirements as may be established by the Contract Compliance Administrator. Upon award of a contract, ESCO is responsible for acquiring all necessary County reporting and record-keeping forms which will be made available in the Office of Contract Compliance.

j. Equal Employment Opportunity. Compliance with MBE and WBE requirements will not diminish or supplant Equal Employment Opportunity and Civil Rights provisions as otherwise required by law as they relate to ESCO's and its Subcontractors' obligations.

5. Prevailing Wage Rate. Except as directed by the County to apply the requirements of the federal Davis Bacon Act (40 U.S.C. 276a-a7, as amended), as supplemented by applicable U.S. Department of Labor regulations (29 C.F.R. Part 5, Standard Provisions Applicable to Contracts Governing Federally Funded and Assisted Construction) (collectively such Act and such Regulations are referred to herein as the "Davis Bacon Requirements"), the ESCO shall comply with "AN ACT regulation wages of laborers, mechanics and other workman, employed under Contract for public works", approved June 26, 1941, as amended. Attention is called to Illinois Compiled Statutes, 820 ILCS 130, regarding "General Prevailing Hourly Rates." The most

current scale of prevailing wages under Illinois law to be paid shall be posted by the ESCO in a prominent and easily accessible place at the site of Work. If Federal wage rates apply to this Contract or portions thereof through the federal Davis Bacon Requirements, the Supplemental Conditions will so specify. The ESCO further certifies that it is familiar with, and will comply with, all applicable provisions of 30 ILCS 570/1 through 570/7 (Employment of Illinois Workers on Public Works Act) and 30ILCS 560/0.01 through 560/7 (Public Works Preference Act). Prior to issuance of the Notice to Proceed, the County will advise the ESCO which, if any, portions of the Work is subject to the requirements of the Davis Bacon Requirements and such requirements have been incorporated into the Contract as a Supplemental Condition for such portions in Exhibit P. The ESCO agrees that it will comply and its Subcontractors shall comply with the requirements of Exhibit P as and to the extent its provisions are applicable to this Contract or applicable portions thereof. In general, the Davis Bacon Requirements required contractors to pay wages to laborers and mechanics at a rate not less than the minimum wages specified in a wage determination by the United States Secretary of Labor. In addition, contractors shall be required to pay wages not less than once a week. Other Davis-Bacon Requirements are described in Exhibit P.

6. Anti-Corruption Acts. The ESCO will also comply with all applicable "Anti-Kickback" laws and regulations, including the "Anti-Kickback" Act of 1986, 41 U.S.C. §§ 51-58 (1992); 18 U.S.C. § 874 (1992); 40 U.S.C. § 276c (1986) and the Illinois Criminal Code of 1961 720ILCS 5/33E-1 et seq. If, in the performance of this Contract, any direct or indirect "kick-back" is made, as defined in any of the above mentioned laws and regulations, the County may withhold from the ESCO, out of payments due to the ESCO, an amount sufficient to pay any underpaid employees the difference between the salaries required to be paid under the law and this Contract and the salaries actually paid such employees for the total number of hours worked. The amounts withheld may be disbursed by the County for and on account of the ESCO to the respective employees to whom they are due, as determined by the County in its sole discretion.

7. Cook County Ethics Ordinance. The ESCO will comply with the Cook County Ethics Ordinance (Code, Chapter 2, Article VII, Sec. 2-560 et seq.)

8. Cook County Lobbyist Ordinance. The ESCO shall take notice of the Cook County Lobbyist Registration Ordinance (Code, Chapter 2, Article VII, Sec. 2-621 et seq.), and shall comply with all the provisions therein. The ESCO shall not, under circumstances which might reasonably be interpreted as an attempt to influence the recipient in the conduct of its duties, accept any gratuity or special favors from individuals or organizations with whom the ESCO is doing business or proposing to do business, in accomplishing the Services.

9. Steel Products Procurement. The ESCO shall comply with "An Act to promote the economy of the State of Illinois and the United States by specifying steel products produced in the United States in all contracts for construction, reconstruction, repair, improvement or maintenance of public works". Attention is called to Illinois Compiled Statutes 1992, 30 ILCS 565/1-7.

10. Employment of Veterans. The ESCO shall comply with "An Act to give preference to the veterans of the United States military and naval service in appointment and employment upon public works, by or for the use of, the State or its political subdivision", approved June 12, 1935, as amended. Attention is called to Illinois Compiled Statutes, 330 ILCS 55.

11. Cook County Residency Ordinance

a. Residency Required. As provided by Cook County Code, Chapter 34, Article IV, Division 2, Section 34-157, in the case of any construction project having an estimated contract value of \$100,000 or more, funded solely with Cook County funds, and where not otherwise prohibited by federal or state law, at least 50 percent of the total hours worked on the site of the construction project by employees of the ESCO and Sub contractors shall be performed by actual residents of the County of

Cook. "Actual Residents of the County of Cook" shall mean persons domiciled with the County of Cook. The domicile is an individual's one and only true, fixed and permanent home and principal establishment.

b. Payroll Records Required. Weekly certified payroll reports (U.S. Department of Labor Form WH-347 or equivalent) submitted to the Director of the Using Department (in triplicate) shall identify clearly the actual residence of every employee on each submitted certified payroll. Full access to the ESCO's and Subcontractor's employment records shall be granted to the Chief Procurement Officer, or any duly authorized representative thereof. The ESCO and its Subcontractors shall maintain all relevant personnel data and records for a period of at least three years after final acceptance of the Work. The ESCO shall provide verification of an employee's address by means of affidavits or other supporting documentation if requested by the County.

12. Tax and Fee Delinquency. Pursuant to Cook County Code, Chapter 34-176, the County of Cook is entitled to set off a portion of a contract price equal to the amount of the fines and penalties for each tax or fee delinquency and any debt owed by a contracting party to the County of Cook.

13. Cook County Green Construction Ordinance. The ESCO shall comply with all requirements of the Code, Chapter 30 Environment, Article IX Green Construction, Sections 30-950 through 30-955, applicable to diesel vehicle emissions.

14. Cooperation with Inspector General. The ESCO, and its Subcontractors, licensees, grantees, or persons or businesses which have a County contract, grant, license, or certification or eligibility for County contracts shall abide by all of the applicable provisions of the Office of the Independent Inspector General Ordinance (Cook County Code, Article II, Division 5, Section 2-281 *et seq.*). Failure to cooperate as required may result in monetary and/or other penalties.

15. Conflict Of Interest. The ESCO covenants that it presently has no interest and shall not acquire any interest, direct or indirect, in the Project which would conflict in any manner or degree with the performance of its services hereunder. The ESCO further covenants that in the performance of this Contract no person having any such interest shall be employed. The ESCO agrees to inform the County on a timely basis of all of the ESCO's interests, if any, which are or which the ESCO reasonably believes may be incompatible with any interest of the County. No officer, agent or employee of the County is employed by ESCO or has a financial interest directly or indirectly in this Contract or the compensation to be paid under this Contract except as may be permitted in writing by the County's Ethics Ordinance (Cook County Code, Chapter 2, Article VII). No payment, gratuity or offer of employment has been made or will be accepted in connection with this Contract by or on behalf of any Subcontractors to the ESCO or anyone associated with them, as an inducement for the award of a subcontract or order. No member of the governing body of the County or other unit of government and no other officer, employee or agent of the County or other unit of government who exercises any functions or responsibilities in connection with the Services to which this Contract pertains is permitted to have any personal interest, direct or indirect, in this Contract.

16. Cook County Living Wage Ordinance. To the extent applicable, ESCO shall comply with, and shall require its Subcontractors to comply with Section 34-160 of the Cook County Code which requires contractors using full-time non County employees providing services or labor to pay not less than the "Living Wage" to such employees, unless such wages are governed by federal or State law, the contractor is a not for profit organization, or the contract is funded with federal grants or loans. The current "Living Wage" is posted and available as described in Section 34-160.

17. County Green Building Ordinance. Such term will be deemed to include the Cook County Green Buildings Ordinance (Cook County Code, Chapter 30, Section 30-950 through 30-955). The ESCO will be familiar with such ordinance and with the U.S. Green Building Council's "LEED" Green Building Rating System, and will consult with the Project Director to determine to what extent LEED principles will be applied.

In the case of retrofit and renovation projects. The ESCO will comply with the Green Buildings Ordinance and will incorporate LEED principles into the design of the Project to the extent required by such ordinance or determined by the Project Director.

18. Disqualification For Non-Performance Cook County Ordinance Chapter 10, Section 7.3. No person or business entity will be awarded a contract or subcontract if that person or business entity has had an awarded contract terminated for cause by the County's Board of Commissioners. The period of ineligibility will continue for 24 months from the date the County's Board of Commissioners terminates the contract. The ESCO hereby represents and warrants to the County that the ESCO has not had an awarded contract terminated for cause by the County's Board of Commissioners within 24 months prior to the Effective Date.

I. Discharge of Mechanics Liens. If any mechanic's, materialman's, or other similar lien is at any time filed against the Building or any part thereof on account of any Work performed on or furnished to or claimed to be performed on or furnished to the Work at the direction of ESCO or any Subcontractor, ESCO will, upon written request from County and without cost or expense to County, promptly cause the sum to be discharged of record by payment, bond, order of a court of competent jurisdiction, or otherwise. If ESCO, having been requested by County to discharge such lien, fails to do so within ten (10) days after such written request by County, County will have the right to discharge the same by payment, bond, order of a court of competent jurisdiction, or otherwise and without regard to whether ESCO is disputing the validity or amount of the same, and the costs and expenses incurred by County in so discharging such lien shall be payable by ESCO to County upon demand. The ESCO will protect County against lien filings to the extent that payment is received for completed service or delivered equipment.

J. Publicity. Upon the reasonable request of the County, the ESCO will cooperate with and assist the County in connection with any public relations or publicity relating to the Project, including, without limitation, tours of the Facilities arranged by the County. Without the prior written consent of the County, the ESCO will not disclose details or information relating to the Project or Construction and Installation Services to the press, the public, any news-disseminating agency or any other party, except to those parties performing portions of the Contract Services, and then only to the extent required for the performance of the particular portion of the Construction and Installation Services being performed. ESCO shall have the right, with the express prior written consent of the County, to include representations of the design or construction of the Project among the ESCO's promotional and professional materials, subject to the reasonable review of the County of the applicable portions of such materials. The ESCO's materials shall not include the County's confidential or proprietary information, or any information which might adversely affect security at the Facilities.

K. Cooperation. ESCO will cooperate with and assist the County and its advisors, ESCOs, contractors, attorneys, employees, agents and representatives, at all times during the Contract Time so as to complete the Services in an efficient, timely, and economical manner. Such cooperation and assistance will include, without limitation, any cooperation or assistance required in connection with the County's efforts to obtain financing for the Project.

L. Confidential Information.

1. The term "*Confidential Information*" means any documentation or information (i) which is marked as "proprietary" or "confidential"; (ii) which is supplied orally with a contemporaneous confidential designation; or (iii) which is known by the ESCO to be confidential or proprietary information or documentation of the County. Confidential Information includes, but is not limited to, unpublished information relating to technological and scientific development, personnel or security records of individuals, anticipated material requirements or pricing actions, and knowledge of selection of contractors and subcontractors in advance of official announcement. Confidential Information does not include information that can be demonstrated: (i) to have been rightfully in the possession of the ESCO from a source other than the

County prior to the time of disclosure of said information to the ESCO under this Contract; (ii) to have been in the public domain prior to disclosure to ESCO; (iii) to have become part of the public domain after disclosure to ESCO by a publication or by any other means except an unauthorized act or omission or breach of this Contract on the part of the ESCO or the County; or (iv) to have been supplied to the ESCO without restriction by a third party who is under no obligation to the County to maintain such information in confidence.

2. The ESCO acknowledges that it may, in performing the Services, have access to or be directly or indirectly exposed to Confidential Information. The ESCO will not use any Confidential Information for personal gain or make improper use of Confidential Information, will hold confidential all Confidential Information and will not disclose or use such Confidential Information for any purpose other than the performance of the Services or under compulsion of law without express prior written consent of the County. The ESCO will use measures at least as strict as those the ESCO uses to protect its own confidential information, which measures may be subject to further requirements upon review by the County in connection with highly sensitive locations or facilities of the County as shall be determined in Project meetings. Such measures must include, without limitation, requiring employees and subcontractors of the ESCO to execute a non-disclosure agreement before obtaining access to Confidential Information. The ESCO shall not use for personal gain or make other improper use of Confidential Information which is acquired in connection with its services under the Contract. The ESCO shall comply with the applicable privacy laws and regulations affecting the County and will not disclose any of the County's records, materials, or other data to any third party, other than its attorneys or other individuals within the ESCO's related business entities who have a need to know and who agree in advance not to make further disclosure. The ESCO shall not have the right to distribute statistical analyses and reports utilizing data derived from information or data obtained from the County without the prior written approval of County, other than to its attorneys or other individuals within the ESCO's related business entities who have a need to know and who agree in advance not to make further disclosure. In the event such approval is given, any such reports published and distributed by the ESCO shall be furnished to the County without charge. In the event the ESCO or any subcontractor is presented with a *subpoena duces tecum* issued by a court or other body of applicable jurisdiction related to Confidential Information, the ESCO or such subcontractor shall provide the County with notice of such order or request for Confidential Information and shall cooperate with the County in opposing such order or request to the extent not in violation of law. The ESCO is advised that the County is subject to the provisions of the Illinois Freedom of Information Act, 5 ILCS 140/1 et seq., and that no disclosure made in good faith by the County pursuant to such Act shall be deemed to violate any confidentiality commitments made by the County to the ESCO.

M. ECM Malfunction. The ESCO agrees to compensate the County for expenses, damages to real or personal property, or lost revenues resulting from ECM malfunction to the extent caused by nonperformance or error by the ESCO or its Subcontractors.

N. Reference Standards. Reference made in the Contract Documents to standard specifications, codes, or test methods of technical societies, trade association and similar organization is to the latest revision of such standards in effect 30 calendar days prior to the date of the Contract Documents, unless specifically indicated to the contrary. If the document numbers referenced have since been changed, the current appropriate number shall apply.

O. Security Requirements. The ESCO will be required to fulfill, and to cause its Subcontractors to fulfill, all applicable security requirements of the County. Security requirements may include providing identification cards for all employees working on the Project, providing the County with photocopies of all such identification cards, employee social security numbers for purposes of background checks, and similar requirements. ESCO will indemnify, defend and hold the County harmless from any action arising out of the release of such information related to security requirements and background checks. Specific Security

requirements pertaining to the Work may be included in Special Conditions.

P. County Rules. The ESCO agrees to familiarize itself with Cook County rules and regulations and inform its employees of all County policies respecting contraband and other matter. Before commencing Work, ESCO shall confer with the official in charge of the site of the Work and ascertain full knowledge of all rules and regulations affecting working conditions.

Q. Training. The ESCO will provide to the County a description of the ongoing training requirements for the County's operations and maintenance personnel necessary to maintain proper ECM performance after Final Acceptance. The ESCO shall conduct in-service training for County personnel in the operation and use and maintenance of all ECMS, including all equipment installed as part of the Project. Training sessions shall be scheduled in coordination with and at the convenience of the County. In-service training shall be provided by ESCO for all work shifts and shall include but not be limited to, operators, technologists, building facilities managers, and security personnel. If available, videotapes for training operators and service personnel will be provided. Additional training requirements are to be listed in individual technical specifications. Prior to Substantial Completion of the Project, the ESCO shall provide for approval of the County a summary of the training to be provided under this Contract by type of ECM and by type of County employee and setting forth the hours of such training. If the County believes such training to be inadequate, the ESCO shall revise the training summary to reasonably account for the County's concerns.

R. Presentations. The ESCO shall be responsible for attending and making presentations at various meetings on an as needed basis as determined by the Project Director, including County Board, County committee and community group meetings, in order to inform and advise County officials and the public on the status of the Project. Formal presentations (which shall mean presentations to a decision-making body such as the Cook County Board of Commissioners, the Cook County Health and Hospitals System, other decision-making bodies, and committees of such bodies) will also be required and are included in the Services. In addition to formal presentations, the ESCO will meet, as requested by the Project Director, with community groups, elected and appointed officials such as the Cook County Board President, the Sheriff of Cook County, executive staff of the County and of the Cook County Health and Hospitals System and similar elected and appointed officials.

SECTION 10. WARRANTIES AND ECM REPAIR AND REPLACEMENT.

A. Warranty. For the Warranty Period as to each Building following Substantial Completion of such Building, the ESCO warrants to the County ("ESCO's Warranty") that materials and equipment furnished under Contract will be of good quality and new, that the Work will be performed in accordance with the Standard of Care and free from faults and defects, that the ECMs materials, equipment and Work will conform with the requirements and performance standards of the Contract Documents, and that the Work will be free from any encumbrances, liens, security interests, or other defects in title upon conveyance of title to the County. The warranty service under this paragraph shall include all preventive and corrective maintenance, labor, repair parts, and travel costs. All preventive maintenance services during the Warranty Period will be performed by the ESCO, at no additional charge, at the same frequency as recommended by the manufacturer's service literature or more frequently if dictated by use or the environment.

B. Exclusion from Warranty. ESCO's warranty excludes remedy for damage or defect to the extent caused by (i) material modifications to ECMs not approved or executed by ESCO or its Subcontractors; (ii) improper or insufficient maintenance or operation of the ECMs by the County or its representatives that is not in accordance with Exhibit M and not supervised or directed by ESCO or its Subcontractors; or (iii) normal wear and tear under normal usage.

C. Warranty Period. The ESCO's initial Warranty Period for all ECMs and ECM Groupings and Work in a Building ("ESCO's Warranty Period") shall be 365 days running from and after the date of Substantial Completion of all ECMs and ECM Groupings in such Building. Substantial Completion of one or

more ECMs in a Building, but not all of the ECMs in such Building, does not commence ESCO's Warranty Period for such Building.

D. The County may elect to purchase extended warranty coverage from ESCO for so long as the annual cost of the Project inclusive of such extended warranty does not exceed the annual guaranteed savings value under Exhibit G.

E. Breach of Warranty. If, at any time prior to the expiration of the Warranty Period, the County discovers any failure or breach of the ESCO's Warranty, ESCO will, upon written notice from County and at the ESCO's sole cost and expense, immediately correct such failure or breach (which corrective action must include, without limitation, any necessary removal, disassembly, reinstallation, repair, replacement, reassembly, retesting, and/or reinspection of any part or portion of the Work and any other property damaged or affected by such failure, breach, or corrective action). The ESCO will remedy any such failure or breach so as to minimize revenue loss to the County and, to the extent possible, to avoid disruptions to the operations of the County and other occupants of the Building. During the ESCO Warranty Period, the ESCO will provide such Maintenance Services within the next business day of notice from the County of the need for such repair or replacement; provided that such Warranty Maintenance Services shall be provided within eight hours in case of an emergency potentially or actually risking harm to persons or property at one or more of the Facilities as reasonably determined by the County. In the event the ESCO fails to initiate and diligently pursue corrective action within five (5) days of the ESCO's receipt of the County's notice, the County may undertake such corrective action at the ESCO's expense.

F. Manufacturers' Warranties. At each Substantial Completion of an ECM or ECM Grouping, the ESCO will provide the County with the manufacturer's warranties and guarantees applicable to such ECM or ECM Grouping as described in Exhibit R ("Manufacturers' Warranties") in accordance with Section 8.N. These Manufacturers' Warranties are in addition to and not in lieu of ESCO's Warranty set forth in Section 10.A and the County is entitled to look to ESCO for remedy in all cases where ESCO's Warranty applies regardless of whether a Manufacturer's Warranty also applies. The ESCO represents that all Manufacturers' Warranties will be for periods and contain terms not less favorable to the County than those terms which are standard for the applicable industries for projects similar to the Project, and will either be issued in the first instance in the name of and for benefit of the County, or be in a freely assignable form and be assigned to the County without limitations. The ESCO will provide to the County, at no additional cost, all updates and revisions of the Manufacturer's Warranties, as they become available. All of the above documentation and manuals become the sole property of the County. All manufacturers' alerts/recalls received by the ESCO shall be forwarded to the County within 7 days of receipt by the ESCO. The ESCO will also provide for the County, information on available extended Manufacturer's Warranties on major equipment constituting the ECMS, together with costs and information constituting a cost-benefit analysis so that the County may best determine whether or not to purchase such extended Manufacturer's Warranties.

G. Repair and Replacement of ECMs Beyond the ESCO's Warranty Period. Beyond the ESCO's Warranty Period, if the ESCO is obligated to provide Maintenance Services under Exhibit K, the ESCO will provide such Maintenance Services within the next business day of notice from the County of the need for such repair or replacement; provided that such Maintenance Services shall be provided within eight hours in case of an emergency potentially or actually risking harm to persons or property at one or more of the Facilities as reasonably determined by the County. If ESCO is not providing Maintenance Services and Manufacturers' Warranties apply to the ECM requiring repair or replacement, the County will cause the repair or replacement of the ECM in accordance with the Manufacturers' Warranties. If the ESCO is not required to repair or replace the ECM as Maintenance Services and the Manufacturers' Warranties do not apply, the ESCO and the County will agree to a schedule for the repair or replacement of the ECM, at the County's expense, that establishes reasonable timeframes for the engineering, procurement, and construction and installation associated with such work. The Parties will use good faith efforts to agree to any necessary adjustments to the energy performance calculations that account for the energy savings attributable to the period of time needed to repair or replace the

ECM. However, any such adjustments to the energy performance calculations are subject to the terms and provisions of Exhibits G and H, which require the ESCO to notify the County within thirty (30) days of the ESCO becoming aware of a possible Cause for Adjustment, and to specify all Causes for Adjustment in the annual guaranteed savings reconciliation process.

SECTION 11. INSURANCE; DAMAGE AND DESTRUCTION;
INDEMNIFICATION,

A. Insurance to be Maintained by the ESCO.

1. In General. The ESCO will maintain, at its sole cost and expense, the insurance set forth in Exhibit L from insurance companies and in a form reasonably satisfactory to County. The County will have the right to inspect and review and approve the policies in their entirety and shall be provided with copies upon request. During the Guarantee Period, the insurance coverage set forth on Exhibit L may be reduced to a level deemed necessary by the County, in its sole discretion, to protect the County from liability for acts of the ESCO and risks and indemnities assumed by the ESCO during the performance of the Guarantee Period Services. The forms of coverage, limits of liability, deductibles or self-insured portions, insurance provider and premium for such insurance coverage is subject to the County's prior review and approval. All policies required shall be on a primary and non-contributory basis with respect to any insurance or self-insurance programs carried or administered by the County. The ESCO shall require all policies of insurance that are in any way related to the Work and the Project and are secured and maintained by ESCO and all tiers of Subcontractors to include clauses providing that each insurer shall waive all of its rights of recovery, by subrogation or otherwise, against the County and its contractors, officials, agents and employees. The ESCO shall advise all insurance companies to familiarize themselves with the conditions and provisions of this Contract dealing with waivers of subrogation, insurance and indemnification. Failure of the ESCO to so notify these aforesaid insurance companies shall in no way relieve them from their obligations under this Contract.

2. No Work Without Insurance. The County will not allow the ESCO to commence, and the ESCO shall not commence any work under this Contract, until all insurance required under this Contract is purchased and evidence of such is received and approved by the Chief Procurement Officer and the Cook County Director of Risk Management. Thereafter, the ESCO shall, not less than 60 days prior to the expiration of each and any policy of insurance required hereunder or in the case ESCO replaces its insurance with another policy or another carrier, deliver to the Chief Procurement Officer evidence satisfactory to the Chief Procurement Officer of the renewal or replacement of such expiring policy. The renewal or replacement policy shall comply with the provisions of this Article 5.

3. Maintenance Of Insurance Requirements. The ESCO shall not violate or knowingly permit to be violated any condition of the policies of insurance provided by the terms of this Contract and shall at all times satisfy the requirements of the insurance companies issuing them.

4. County Wrap-Up Insurance. At the County's option, to be exercised in writing on or before the issuance of the Notice to Proceed (Construction and Installation Services), the County can direct that the ESCO and its Subcontractors performing Construction and Installation Services be insured in whole or in part through a County "wrap-up" insurance program which would replace some or all of the insurance requirements set forth in Exhibit L.

B. Damage and Destruction. The County is not liable for damage or destruction to the Work and/or to (a) any tools owned by mechanics, (b) any tools, equipment, scaffolding, staging, towers, and forms rented by ESCO, the capital value of which is not included in the Contract Sum, and (c) any structures erected for housing or convenience of workmen caused by, but not limited to, the following: fire, lightning, windstorm, hail, explosion, riot, riot attending a strike, civil commotion, aircraft, vehicles, smoke, vandalism, or malicious mischief. In no event will County be liable for

consequential, incidental, or special damages, including without limitation any delay damages, lost opportunity damages, or lost profits incurred by ESCO and/or its affiliates, subcontractors, agents, or employees in connection with this Contract.

C. Risk of Loss. Regardless of the passage of title, risk of loss and damage to the Work and the ECMs shall remain with the ESCO until the date of Final Acceptance of the entire Project.

D. Indemnification in General. The ESCO agrees to pay and reimburse and defend, indemnify, keep and hold harmless the County, its commissioners, officials, employees, agents and representatives and their respective heirs, executors, administrators, successors and assigns from and against any and all liabilities of all kinds, including but not limited to, losses, demands, obligations, costs, damages, liabilities, suits, actions, judgments, claims (including, but not limited to, claims for injury, death or damage to any person or property, the ESCO's failure to perform or cause to be performed its promises and obligations under this Contract, including its obligations to any Subcontractor, the infringement of any patents, copyrights, licenses or other intellectual property rights) and expenses, including, but not limited to, attorneys' and experts' fees and expenses at trial and on appeal and litigation expenses (collectively all such liabilities are referred to as "Losses"), arising out of or connected with: (a) the ESCO's negligent performance or nonperformance of this Contract; (b) any negligent or intentional misstatement contained in any representation made by the ESCO in or pursuant to this Contract; (c) any breach of any warranty made by the ESCO in this Contract or in any documents or certifications required by this Contract; or (d) any negligent or otherwise wrongful errors, omissions or acts of the ESCO, its Subcontractors, agents or employees; or injuries or death of any employee of ESCO or any Subcontractors under any worker's compensation statute. The ESCO expressly understands and agrees that any insurance protection required by this Contract will in no way limit its responsibilities or liabilities or serve as a limit in recovery under this Section 11.D. The provisions of this Section 11.D are applicable to the full extent allowed by the laws of the State of Illinois and not beyond any extent which would render them void or unenforceable. At the option of the County, ESCO will defend all suits related to Losses and which involve the County and will pay the expenses and costs incidental to them, but the County has the right, at its option, to participate at its cost in defense of any suit, without relieving the ESCO of any of its obligations under this Contract. Any settlement will be made only with the prior written consent of the County, if the settlement requires any action on the part of the County. To the extent permissible by law, ESCO waives any limits to its obligations to defend, indemnify, hold harmless or contribute any sums due under any Losses, including any claims by any employee of ESCO that may be subject to the Workers Compensation Act, 820 ILCS 305/1 et. seq. or any other related law or judicial decisions (such as, Kotecki v. Cyclops Welding Corporation, 146 Ill.2d 155 (1991)). The County, however, does not waive any limitations it may have on its liability under the Illinois Workers Compensation Act, the Illinois Pension Code, or any other statute or judicial decision. The indemnities in this section survive expiration or termination of this Contract for matters occurring or arising during the term of this Contract or as the result of or during ESCO's performance of Services beyond the term. ESCO waives all rights of recovery against the County which Contractor may have or acquired because of deductible clauses in or inadequacy of limits of any policies of insurance that are in any way related to the Work or the Project and that are secured and maintained by Contractor. The Contractor shall incorporate this provision into its contracts with all tiers of Subcontractors, requiring such Subcontractors to waive rights of recovery as aforesaid against the County

E. Indemnity Regarding Patents, Copyrights And Licenses. ESCO agrees to hold harmless and indemnify the County Parties from, and defend, at its own expense (including reasonable attorneys', accountants' and ESCOs' fees), against any suit or proceeding brought against any of them based upon a claim that the ownership or use of equipment, hardware and software or any part thereof utilized in performing the Work constitutes an infringement of any patent, copyright or license or any other intellectual property right. Where applicable, County or any of the County Parties shall notify ESCO in writing of any such suit or proceeding or significant threat thereof. The County hereby agrees to give ESCO information and reasonable assistance for the defense. In the event the use of any equipment,

hardware or software or any part thereof is enjoined, ESCO with all reasonable speed and due diligence shall provide or otherwise secure, at the ESCO's election, one of the following: the right to continue use of the equipment, hardware or software; an equivalent system having the specifications as provided in this Contract; or to modify the system or its component parts so that it becomes non-infringing while performing in a substantially similar manner to the original system, meeting the specifications of these Contract Documents.

F. ESCO Limitation of Liability. Notwithstanding anything to the contrary contained in this Contract, the aggregate liability of the ESCO to the County in relation to this Contract shall not exceed the Contract Sum. However, the preceding limitation shall not apply to, and no credit shall be issued against such liability limitation for: (i) the ESCO's defense and indemnity obligations set forth in Section 11E as it relates to patent and copyright infringement; (ii) the ESCO's defense and indemnity obligations set forth in Section 11D as it relates to claims by third parties for bodily injury, property damage, or otherwise; or (iii) claims which arise or result from fraudulent or unlawful acts, or the gross negligence or willful misconduct of the ESCO or its Subcontractors.

SECTION 12. ENVIRONMENTAL WORK AND HAZARDOUS MATERIALS.

A. The Work to be performed by the ESCO or to be caused to be performed by the ESCO includes the proper abatement, removal, and disposal of asbestos containing material and associated debris ("ACM") to the extent necessary to install the ECMs and complete the Project. All Work involving ACM must be performed in accordance with the ACM-related performance of work requirements described in Exhibit C and the other terms and provisions of this Contract. The ESCO shall conduct (or shall cause to be conducted by its Subcontractor) an Environmental Reconnaissance Survey within the proposed planned work area of each Facility for the purpose of identifying and recognizing any hazardous materials that may need to be abated or removed prior to the start of construction. The County has provided the ESCO with all information in the County's environmental records of hazardous materials at each Facility; however, the ESCO or its Subcontractor shall diligently assess the presence of hazardous materials that could be encountered in a Facility. Based on the Facility's past or present use and date of construction, the ESCO or its Subcontractor may conduct record review and non-invasive testing in its assessment to determine potential presence of hazardous materials as fully as possible. The ESCO shall evaluate the cost of the required hazardous waste abatement or removal, characterization, disposal and clean-up work for each Facility and incorporate the proposed environmental work into the applicable cost calculations, drawings and specifications.

B. Based on the results of the Environmental Reconnaissance Survey, the ESCO shall conduct (or shall cause to be conducted by its Subcontractor) all required Environmental Remediation within the Work area of each Facility for the purpose of abating or mitigation all hazardous materials or conditions. This includes, but is not limited to, abatement of asbestos containing material, mitigation of lead based paint hazards, mold removal, proper removal and disposal of PCB and mercury-containing equipment and materials.

C. In the event ESCO encounters any other hazardous materials during performance of the Work which were not discovered or identified during its assessments, ESCO shall stop work in the affected area and notify the County immediately in writing and by telephone or in person. The ESCO will, at the request of the County, submit a proposal to perform the removal or remediation or such other abatement and disposition of such other hazardous materials in accordance with all applicable laws and regulations. If the County accepts ESCO's proposal, as may be mutually negotiated, modified and agreed upon, then the ESCO shall perform such removal or remediation work or other abatement in accordance with the term of this Contract and such proposal as modified and negotiated. If the County performs the required remediation work either directly or through a qualified third party then the ESCO shall proceed with the Work following completion of such required remediation work. In no event shall

ESCO be required to perform Work (except for remediation and disposal work) in any area affected by hazardous materials until the ESCO is satisfied that no risk to human health and safety is present. If the County does not accept ESCO's proposal to perform the required remediation work or elect to complete such remediation by some other qualified third party, ESCO may elect to remove such Facility and scope of Work from the scope of Work and make commensurate adjustments to the other provisions of the scope of Work affected by such removal. Except as may be required by Law, ESCO and ESCO's Subcontractors, and their respective directors, officers, employees, agents, representatives, shareholders, affiliates, and assigns and successors, shall not be liable to the County for any losses, costs, damages, expenses relating to or arising from (i) the County's use, or the storage, release, discharge, handling or presence of ACM (actual or alleged and regardless of the cause of such condition) or (ii) Hazardous Materials not introduced by ESCO in its performance of the Work on, under or about the Facilities or such ACM or Hazardous Materials and that are unknown to ESCO following ESCO's original or subsequent Environmental Reconnaissance Surveys as required by this Agreement or requested by the County to the extent that the ESCO performs its Work exercising industry standard safety precautions.

D. Performance of Other Environmental Work. If the Contract Documents require ESCO to manage or perform or to have performed any Environmental Work, or if in the course of the Work Hazardous Materials or Mold are encountered requiring action, ESCO must cooperate and coordinate its Work in all respects with that of Environmental Contractors, perform its Work according to safe and approved protocols and procedures, utilize only fully qualified and licensed abaters and remediators, and sequence and perform the Work to minimize environmental contamination of the Building. The ESCO will consult with the County, including its environmental contractors, to determine whether previous abatement, remediation, stabilization, or containment work has been performed at the affected Facilities. If so, ESCO will use all available efforts to perform or to have its Work performed so as not to undo or disturb the prior work.

E. Encountering Hazardous Materials or Mold. If the ESCO encounters material in one or more Facilities reasonably believed to be a Hazardous Material or Mold that has not been identified in the Contract Documents, ESCO must immediately stop Work in the area affected and report the condition to the County Representative in writing and by telephone or in person. The County or its environmental contractors will verify the presence or absence of the Hazardous Material or Mold reported by ESCO and, if the Hazardous Material or Mold is found to be present, the County or its environmental contractors develop a plan for identifying and handling the Hazardous Material or Mold. If no plan is in place, the ESCO will await and follow directions of the County. At the request of the County, the ESCO will provide a plan for remediation of such Hazardous Material or Mold. The Work in the affected area may be resumed in the absence of the Hazardous Material or Mold, or when it has been rendered harmless.

F. Hazardous Materials Introduced to the Building by ESCO. The ESCO shall provide the County with an inventory of all Hazardous Materials or substances or products which are potentially hazardous used on a Work site or brought onto a Work site by the ESCO or Subcontractors of any tier. The ESCO shall also provide Material Safety Data Sheets (M.S.D.S.) for any Hazardous Materials or potentially hazardous products or substances for which such sheets are required by law. The ESCO shall label all containers according to the requirements of the Illinois Department of Public Health and the Illinois Department of Labor. The ESCO shall provide any special training which might be required for Cook County employees or other persons who must work or live in an area affected by Hazardous Materials or potentially hazardous products or substances. The inventory and the Material Safety Data Sheets shall be directed to Safety Manager, Risk Management Department, Cook County, 118 N. Clark Street, Chicago, Illinois 60602. Notwithstanding anything to the contrary set forth in this Section 12, if any Hazardous Materials or potentially hazardous products or substances are introduced to a Work Site after the Effective Date by the ESCO, its Subcontractors, and any party for whom they may be liable or if any Hazardous Material occurs within any Facility affected by the Work as the result of the implementation of the Project or the functioning of the ECMs, then any response, removal, cleanup, or other remedial action required by applicable law shall be performed by the ESCO at its sole cost and expense. Except as to the ESCO's initial response to

an emergency, any such remedial action(s) shall require the prior review and approval of the County.

SECTION 13. CHANGES IN THE WORK.

A. **Minor Changes in the Work.** The County may issue written field orders which interpret this Contract or order minor changes in the Work not involving an adjustment in the Contract Sum or a change in the Scheduled Completion Dates. ESCO will carry out such field orders promptly.

B. **Minor Variations.** The ESCO shall make, subject to the approval of the County and without cost to the County, such minor variations from the Design & Engineering Documents as may be necessary to obviate unforeseen interferences and shall adapt the Work to the requirements of all other trades, which together with the Work, will be necessary to complete the Work under the Contract. The County also reserves the right to request that any product, process or other recommended item for the Project be replaced with a substitute should the Project Director, the Construction Manager, if any or any County agent appointed for product review determine that the product or process does not meet applicable governmental regulations, industry standards or the needs of the Project. The County reserves the right to reject substitution requests without cause.

C. **Substitutions: Written Approval Required** The ESCO shall make no substitution for materials, equipment, supplies, articles, or processes required under this Contract from the Contract Documents unless prior written approval is given by the Project Director. It shall be the duty of the ESCO to immediately inform the Project Director of any suspected or anticipated substitutions required pursuant to the following conditions: Substitutions may be required for compliance with final interpretations of law or insurance regulations or unavailability of specified products, through no fault of ESCO or Subcontractor or because subsequent information discloses the inability of specified products to properly meet the specifications, or to fit in a designed space under the Contract Documents. "Unavailability" shall mean that the product specified is no longer available for purchase in the market place. Substitutions which result in an increase in costs or a need for a time extension shall be treated as Change Orders.

D. **Change Orders, Modifications and Written Notices.**

1. **In General.** The parties may from time to time during the term of the Contract make modifications and amendments to this Contract but only as provided in this section. Such modifications and amendments shall only be made by mutual agreement in writing with the written approval of the Chief Procurement Officer, and may require the approval of the Board as to increases as to the contract sum of the Contract or the length of any time extension for performance, in accordance with Sections 34-123 and 34-125(f) of the Cook County Procurement Code, as amended from time to time (the "Procurement Code"). The ESCO is hereby notified that, except for the specific authority granted to the Chief Procurement Officer pursuant to the Code and referenced in this Section, no County department or employee thereof has authority to make any modification or amendment to this Contract. The County will provide the format to be utilized for Proposal Request, ESCO Change Request, cost breakdowns, and Change Order Form.

2. **County Initiated Change Orders.** The County may from time to time during the term of the Contract request changes within the general scope of Work, consisting of additions, deletions or other revisions. All such changes in the Work shall be authorized by a Change Order and shall be governed by the terms and conditions of the Contract Documents including Exhibit P.3 (except as agreed to by the Parties in writing). Where a change order is deemed necessary for the successful completion of the Work, as determined by the County, ESCO shall perform the change order Work during any dispute resolution proceeding concerning the value of the change order Work. County requested changes shall be initiated by the County's issuance of a Proposal Request. The ESCO, with reasonable promptness and so as not to delay the Project, shall provide the County with a proposal including a breakdown of costs or credits for the proposed change, in the same detail and manner provided for ESCO Change Requests. In no event shall the ESCO proceed with the proposed change without a written Change Order, signed by the County,

authorizing the change in Work and adjustment of Contract Sum or Contract Time. Change Orders so issued shall be signed by the ESCO, indicating agreement with the terms of the Change Order. Change Orders accepted by the ESCO shall be construed as a waiver of all additional claims for contract adjustment related to the Work required by the Change Order. The ESCO shall carry out the Work of the Change Order promptly. Refusal or failure on the part of the ESCO to accept the terms of the Change Order shall not relieve the ESCO of duty to proceed with the prosecution of the Work as changed.

3. ESCO Initiated Change Requests. Where appropriate to the successful progress and/or completion of the Work, the ESCO may initiate a request for a Change Order, which request is referred to as a "ESCO Change Request." The ESCO shall include as much as is reasonably possible of the following information in the initial written submission of any request to the County: a detailed description of the proposed change or changes; a statement of the reasons why the proposed changes should be authorized by the County; a statement of the anticipated effect, if any, of the proposed changes on the Contract Sum and/or the Contract Time subject to Exhibit P.3 (except as agreed to by the Parties in writing), including any credits for deleted Work resulting from the proposed changes; a statement of the anticipated effect of the proposed changes in the work of any separate contractors; the ESCO's additional overhead and profit; and documentation supporting any requested changes in the Contract Sum or the Contract Time. Supporting information required to be submitted with each ESCO Change Request shall include: the anticipated total labor hours for each separate unit of Work and the related hourly billing rates; construction equipment necessary for the Work and the related costs; listing of products required for the Work, including source of purchases, quantities and costs; all of the foregoing information for each significant unit of required subcontract Work; a statement of all applicable taxes, insurance and bond costs, if any, that are directly related to the Work;

4. Deductive Work and Net Increases. When both additions and credits covering related Work or substitutions are involved in any one change or related series of changes involving one or more Work Sites, the allowance for overhead and profit shall be figured on the basis of the net increase, if any, with respect to that change or series of changes. If a change or series of changes involves only deductive Work, the credit to the County shall be the ESCO's direct costs only for the labor and materials deleted. A series of changes for this purpose includes a series of interrelated changes which arise from a change and whose costs may reasonably be calculated together.

5. Authorization to Issue Written Notices. The Director of the Office of Capital Planning and Policy, or his authorized representative, is authorized to issue all written notices to the ESCO which the County may find necessary or appropriate in connection with this Contract, except where otherwise provided.

E. Extension of Scheduled Completion Dates. ESCO hereby acknowledges that the Work of this Contract will be performed in or near Facilities occupied or operated by the County and that such occupancy or operation has been factored into the establishment of the Contract Sum and Contract Time. Accordingly, no proposed Change Order from the ESCO arising out of the normal operations and occupancy of the Site shall be considered by the County. If ESCO claims that it is entitled to an extension of one or more Scheduled Completion Date by reason of (i) the issuance of a Change Order changing the Work, or (ii) the occurrence of an Excusable Event as described in Section 13.F, ESCO will give County notice to such effect, within three (3) business days after the commencement of the event, setting forth the extension in the Scheduled Completion Dates requested by ESCO and specifying the reasons why ESCO is requesting such extension. The County, acting through the Chief Procurement Officer and the County's Director of Capital Planning will inform ESCO of the extension, if any, of the Scheduled Completion Dates which County is willing to make, and, if County is willing to extend the Scheduled Completion Dates, a Change Order shall be issued extending the Scheduled Completion Dates to the date acceptable to County. If ESCO is delayed at any time in progress of the Work by changes ordered in the Work by an Excusable Event, then the Contract Time will be extended by Change Order provided that: (i) ESCO has notified County in writing of such delay within three (3)

business days following the date when ESCO becomes aware, or should have become aware through the exercise of reasonable diligence, of such delay; (ii) ESCO has taken all reasonable steps to avoid any such delay (including its continuance); and (iii) such delay is not a theoretical delay but does actually adversely affect the critical path of the Work and the Project. Otherwise, ESCO will not be entitled to an extension of the Contract Time or of any Scheduled Completion Date for any delays in the progress of the Work. In general, any such extension will be for a period equivalent to the time lost by reason of such acts or delays.

F. Excusable Events. The occurrence of any of the following events shall constitute an Excusable Event:

1. Delays resulting from the acts or omissions of the County, to the extent such delays arise from circumstances beyond the reasonable control and without the fault or negligence of the ESCO, its Subcontractors, or other person for whom they may be liable;

2. The discovery of any Hazardous Materials or Mold in the Building sufficient to cause risk to workmen as reasonably determined by an environmental ESCO (unless the Hazardous Materials are introduced to the Building by the ESCO, its Subcontractors, or any party for whom they may be liable);

3. The occurrence of a change in Law impacting the schedule or cost for the Work, provided that a change in any income tax law or any law by which a tax is levied or assessed on the basis of the Contractor's income, profits, revenues or gross receipts shall not be an Excusable Event; or

4. Any of the following acts, events, conditions or occurrences to the extent that the same are beyond the ESCO's reasonable control, which could not have been either foreseen or avoided by the exercise of due diligence, and which has an adverse effect on the ESCO's ability to perform the Work: labor disputes (except those caused by improper acts or omissions of the ESCO), fire, earthquake, flood, cyclone, or other cataclysmic phenomenon of nature beyond the power of the ESCO to foresee or to make preparations in defense against, extraordinary delay in deliveries of materials caused by strikes, lockouts, freight embargoes or governmental acts) abnormal adverse weather conditions that affect the Work not reasonably anticipatable, or unavoidable casualties. A rain, windstorm, or other phenomenon of normal intensity, based on the National Weather Bureau Reports, for the particular locality and for the particular season of the year in which the Work is being prosecuted, shall not be construed as an "Act of God" and no extension of time will be granted for the delays resulting therefrom. No extension of time will be granted for delay or suspension of the Work due to the fault of the ESCO. No extension of time on account of a delay due to unforeseen causes will be granted unless written application is immediately submitted to the Owner. After a request for an extension of time due to an unforeseen cause is submitted, the Owner shall review such request and, either give the ESCO written notice of the extension of time, if any, to the Contract Time, or hold the request for later consideration.

G. No Damages for Delay. The County shall not be responsible for any loss, cost, expense, liability or damage sustained by ESCO through delay caused by County, by any other contractor or by the elements or any other cause. ESCO's sole remedy for delay, hindrances in the performance of Work, loss of productivity, impact damages and other consequential damages shall be an extension in the time to complete the Work. ESCO covenants and agrees to use diligent, reasonable and conscientious efforts to avoid the occurrence of any and all causes for delay and to avoid the extension of performance dates.

H. ESCO's Delay. In addition to any other right or remedy available to the County at law or in equity or under the Contract Documents, if any delay on the part of the ESCO results in any claim against the County by another contractor arising out of such delay, ESCO shall reimburse the County, or at County's

election, the County may offset against amounts due ESCO hereunder, for any and all such claims which may be enforced against the County or the Project and ESCO shall indemnify and hold the County harmless from and against any and all such claims.

SECTION 14. PAYMENTS, RECORDS AND COMPLETION.

A. Payments.

1. Progress Payments; Retention. The ESCO shall submit applications for payment for Design Services and Construction and Installation Services on the first of each month following the month in which the applicable Notice to Proceed is issued by the County based upon Work performed and completed under the Cost Loaded Schedule. Payments will be made by the County equal to ninety percent (90%) of the value of Work satisfactorily completed under the Cost Loaded Schedule as of the date of such payment application. Payments for Allowance Services shall be made monthly upon presentation of the ESCO's statement of services rendered or expenses incurred. The County will retain an amount equal to ten percent (10%) of the value of such completed Work to assure faithful performance of the Contract under the Cost Loaded Schedules until Final Acceptance, less the aggregate of all previous payment. All partial payment estimates shall be subject to correction by the final estimate.

2. Adjustments and Pro-rations. No late payment interest or penalties shall accrue for any such payment due (including any and all payments made on disputed claims) pursuant to the terms of this Contract. Payments for partial months of service will be prorated by dividing the monthly fee by the number of days in the months and multiplying the result by the number of days of service for that month. Payments may never exceed the progress of the Project. The Cost Loaded Schedule will be adjusted to reflect the subtraction or addition of monthly payment amounts, or pro-rated monthly payment amounts due to changes in the Project Schedule and as agreed upon by the ESCO and the County. The ESCO will submit an updated Cost Loaded Schedule within three (3) business days of such agreed upon adjustment.

3. Invoicing. For each payment application hereunder, the ESCO shall submit the following documentation to the Project Director. All documentation shall be provided in the County's standard format or such format as is requested by the Project Director. The County may at any time modify invoicing requirements or request additional information. Separate invoices shall be submitted for Construction and Installation Services and Allowance Services. The following requirements are related to invoices:

a. Form 29A. Invoices shall be submitted in triplicate for each payment, using County Invoice Form 29A. Invoices will include an itemization of the services provided during the period covered by such payment in accordance with the Cost Loaded Schedule.

b. Certification of Subcontractors to be Paid. ESCO shall submit a list of the Subcontractors providing services during the period covered by such payment, and the amounts billed by and to be paid to such Subcontractors. Such list shall be certified by the senior financial officer of the ESCO as true, correct and complete.

c. Lien Waivers. ESCO shall submit lien waivers executed by each Subcontractors indicating that such Subcontractor has received payment from the ESCO for the services invoiced in the previous payment and waiving liens for the work performed in such payment period.

d. Cook County Code, Chapter 34, Sec. 34-310. Pursuant to the Cook County Code, ESCO shall be required to submit itemized records as a condition of payment, indicating the dates or time period during which the services being invoiced were provided, a detailed description of the work performed for the time period being invoiced and the amount of time spent performing work for the time period in question.

4. Review of Applications for Payment. The ESCO shall review construction progress with the Project Director and any Construction Manager and submit to each of them all payment applications. The

County may reject a payment application where the supporting reports and documentation required by this Contract have not been submitted with such payment application or where the Services related to such payment application have not been performed to the satisfaction of the County until such time as the delinquent reports and documentation have been submitted or Services performed to the satisfaction of the County.

B. **Records; Right to Audit.** The ESCO shall keep and maintain careful books and records, including the Payroll Records required in Section 9.H.11, of all of its costs and expenses and payments related to the Project, the Services and the Work including, but not limited to, time sheets, payroll records, labor costs, materials and equipment costs, expense journals and billings from ESCO's contractors, Subcontractors, agents and data and information necessary to support the Performance Guarantee calculations (collectively, "Records") in accordance with generally accepted accounting principles, for a period of not less than four years following the date of Final Completion of the Project. ESCO shall require its Subcontractors to keep similar records. Upon ten (10) days written notice from the County, the ESCO shall make these records available to the County for audit, inspection and copying. The County will at all times during normal business hours and upon twenty-four (24) hours notice have access to the Records for the purpose of inspecting and auditing the same, and the ESCO shall preserve such books and records for a period of at least three (3) years after the date of Final Acceptance; provided that such provisions as to notice and business hours are subject to any more stringent requirements of Illinois law and the County Code. In addition to the requirements regarding audit of expense and payment records, ESCO agrees that the Cook County Auditor or any of its duly authorized representatives shall, for no less than three (3) years after final payment under this Contract, have access and the right to examine and copy any Records, books, documents, papers, canceled checks, bank statements, invoices, and records, including electronic records, related to this Contract or to ESCO's performance of this Contract. The ESCO shall be responsible for maintaining Records sufficient to document the costs of performance under this Contract. The ESCO shall include in all of its subcontracts under this Contract a provision to the effect that the Subcontractor agrees that the Subcontractor will be subject to the same requirements as the ESCO pursuant to this Section

C. **Limitation On Waiver Of Dispute.** Payment by the County shall not be a waiver of the County's right to audit, inspect and copy the ESCO's Records, nor shall the County's payment or the ESCO's acceptance of payment waive any disputes between the County and the ESCO, including, without limitation, any disputes as to the correctness of the ESCO's invoices, the amount due to the ESCO, or the services rendered by the ESCO under this Contract. The ESCO's compensation shall be subject to final audit and adjustment by the County. In the event the ESCO receives payment under the Contract, reimbursement for which is later disallowed by the County, the ESCO shall promptly refund the disallowed amount to the County on request, or at the County's option, the County may credit the amount disallowed from the next payment due or to become due to the ESCO under any contract with the County.

D. **Withholding Related to Unpaid Wages; Prompt Payment**

1. The charges, wages and salaries of the ESCO and the Subcontractors, agents and employees performing work under this Contract hired, retained or engaged by the ESCO will be paid by the ESCO in accordance with its contract or applicable law without deduction or rebate on any account except only such payroll deductions as are mandatory by law or permitted by applicable regulations or contract. If there is any underpayment of such charges, wages or salaries by the ESCO, and if the County determines after consulting with the ESCO that such underpayment was erroneous or without good cause, the County may withhold the amount of any underpayment from funds otherwise due or owing to the ESCO under the terms of this Contract, for direct disbursement by the County to any underpaid Subcontractors, agents or employees for and on account of the ESCO, and such disbursements will be a credit against any sums due or owing to the ESCO under the terms of this Contract. Whenever any such funds are withheld by the County, the ESCO will be entitled to have that decision reviewed pursuant to the provisions of Section 16.A.

2. ESCO acknowledges the requirements of Section 34-274 of the Procurement Code of Cook County and that failure by the ESCO to comply with such requirements may be deemed a material breach of the Contract under Section 34-274. Additionally, ESCO agrees to make payment to its Subcontractors under this Contract in connection with the Project no later than 14 days following ESCO's receipt of any payment from the County pursuant to an invoice which includes or incorporates amounts owed and to be paid to such Subcontractor;

provided (i) that such Subcontractor has provided to the ESCO all required invoicing documentation and lien waivers as required to be paid such amount under its subcontract; and (ii) there is no reasonable dispute as to amounts owing or as to the completeness and quality of the work performed or the quality or quantity of supplies or products provided pursuant to such invoicing documentation in accordance with the Section 9 of the Illinois Local Government Prompt Payment Act, 50 ILCS 505/9. The County may withhold amounts due to the ESCO under the Contract for the ESCO's own work (including overhead and profit) following notice as provided in this Contract, until breaches under this Section have been rectified.

E. Other Grounds for Withholding of Progress Payments. The Director may withhold, or on account of subsequently discovered evidence, nullify the whole or a part of any certificate for payment to such an extent may be necessary to protect the County from loss on account of any of the following: defective work not remedied; claims filed or reasonable evidence indicating probable filing of claims; a reasonable doubt that the Contract can be completed for the balance then unpaid; or evidence of damage to the work of another contractor. When all of the foregoing grounds are removed, certificates shall be issued for amounts withheld because of them.

F. Final Payment After Final Acceptance. Following Final Acceptance but before final payment is made under the Contract for the Work and as a condition precedent to such final payment, the ESCO shall furnish as Project Closeout Items waivers of all liens and satisfactory guarantees against all remaining claims on account of Work performed, tools and plant employed and material and labor furnished under the Contract, together with two (2) hard copies of "As-Built" drawings of all modified conditions associated with the Project, conforming to typical engineering standards and all keys and tools included in Project Closeout Items. The As-Built drawings shall also be submitted in an electronic format compatible with the AutoCAD or other similar system in use by the County. The County will, at the expiration of thirty (30) calendar days after Final Acceptance and receipt of such waivers and drawings, pay the whole account of remaining money due to the ESCO under the Contract for the Work up to Final Acceptance. The acceptance by the ESCO of the final payment above mentioned shall operate as and shall be a release to the County from all claims or liability under this Contract for anything done or furnished or relating to the Work, or for any act or neglect of the County relating to or connected with this Contract. If it is deemed inexpedient to correct Work injured or done not in accordance with Contract, the difference in value, together with a fair allowance for damage shall be deducted either from any retainage, pay request or Contract sums.

G. Acceptance and Payment Not to Constitute Acceptance of Defective Work. Neither the final certificate of payment nor any provision in the Contract Documents shall constitute an acceptance of Work not done in accordance with the Contract Documents or relieve the ESCO of liability in respect to any warranties or responsibility for faulty materials or workmanship and no error or oversight in delay in discovery or rejection of defective or improper Work or materials, by the County shall relieve the ESCO of any of its obligations under this Contract.

H. Offsets. All back charges to ESCO, refunds from ESCO, and other offsets against any amounts due ESCO permitted or required under the Contract Documents may be taken at any time from amounts due to ESCO under the Contract Documents once the County has determined the amount of the back charge, refund, or offset to be made

I. Funding. Payments for Services under this Contract will not exceed the applicable "not to exceed" dollar amounts shown in Section 4 without a written amendment or change order, as permitted by the County Procurement Code.

SECTION 15. DESIGN MATERIALS AND INTELLECTUAL PROPERTY.

A. Copies of Design Materials. The copies and other tangible embodiments of the drawings, specifications, designs, plans, "architectural work" (as such term is defined in the Architectural Works Copyright Protection Act of 1990) and other documents, prepared by or on behalf of the County, the ESCO, and/or Subcontractors in connection with the Project or the Services (collectively, the "Design

Materials) are deemed "work for hire" and shall remain the exclusive property of the County. The ESCO shall use its best efforts to ensure all copies of the Design Materials are delivered or returned to the County or suitably accounted for upon the County's request or upon final payment, whichever is earlier. The ESCO may retain one copy of the Design Materials for its records, but shall not use such copies for any purpose other than with respect to the Contract Services without the County's prior written consent.

B. Project Documents and Deliverables. The ESCO and the County agree that, to the extent permitted by law, the Project Documents and Deliverables which are not Design Materials and which are not already subject to Intellectual Property Protections shall, upon the preparation thereof and at all times and in all events thereafter, be conclusively deemed "works for hire" within the meaning and purview of the copyright laws of the United States. To the extent any such and Project Documents and Deliverables do not qualify as a "work made for hire", ESCO hereby irrevocably grants, assigns and transfers all rights title and interest in such Deliverables and Project Documents to the County. The County will be the sole owner of such Project Documents and Deliverables, including all components and elements in which copyrights can subsist and of all rights to apply for copyright registration or to prosecute any claims for infringement. To the extent necessary to transfer property rights in Project Documents and Deliverables to the County, this Contract constitutes a Bill of Sale from the ESCO and all of its Subcontractors in favor of the County for the Project Documents and Deliverables. The ESCO, for itself and for and on behalf of its Subcontractors, agents and employees, does hereby sell, assign and transfer to the County absolutely free and clear of all liens, interests, claims and encumbrances, all such Deliverables as and when prepared or received, subject only to a license in favor of the ESCO, its Subcontractors, agents and employees to use the same in the performance of their duties and obligations under this Contract. During the performance of the Contract, the ESCO shall be responsible of any loss or damage to the Project Documents and Deliverables while they are in ESCO's possession, and any such loss or damage shall be restored at the expense of the ESCO. The County and its designees shall be afforded full access to the Project Documents and Deliverables at all times.

C. License for the Use of Proprietary Project Documents and Deliverables As to those Project Documents and Deliverables which are already subject to any Intellectual Property Rights of the ESCO or a Subcontractor ("Proprietary Project Documents and Deliverables"), the ESCO hereby grants and will cause to be granted and delivered to the County from the ESCO and such Subcontractors a paid-up, non-exclusive, world-wide, irrevocable, transferable license, for the term of the Intellectual Property Rights, for the County to use, reproduce and have reproduced, and for the County to allow others to use, reproduce and have reproduced the Proprietary Project Documents and Deliverables and any derivative thereof, subject to the restrictions set forth below:

1. All Intellectual Property Rights in or relating to any of such Proprietary Project Documents and Deliverables shall remain the property of the ESCO or the appropriate Subcontractor, whether or not the Project is completed; and

2. The County shall not, without the prior written consent of the ESCO, use such Proprietary Project Documents and Deliverables, in whole or in part, for the construction of any other project. The County may, however, at no cost to the County, use such Proprietary Project Documents and Deliverables (i) for completion of the Project and the Services by others upon termination of this Contract or termination of the ESCO's right to perform all or any portion of the Services, and (ii) for the construction, operation, maintenance and repair of (and for additions, improvements, changes or alterations to) the Project after its completion.

D. License for Software. To the extent any ECM or any Deliverables involve the use of software which are proprietary to the ESCO (which for purposes of this Section shall include all subcontractors of ESCO under this Contract), ESCO grants the County a license for the County to operate the software as intended after

Final Acceptance of the Project. The ESCO shall provide for automatic updating and shall offer upgrades of such software and propriety materials for so long as the software is made available to customers. Unless in violation of a third party software license (which shall not be deemed to include ESCO or any Subcontractors), nothing in this Contract prevents the County from using any such software to create custom versions which are suitable for use in the Facilities or other County property.

E. License Fees, Royalties and Patents. The ESCO will pay all copyright, patent and intellectual property royalties and license fees related to the Services and the Work which are not included in the purchase price of products and equipment. All fees for any patent invention, article, or arrangement or other appurtenances that may be used upon or in any manner connected with the construction, erection, or maintenance of the Work, or any part thereof embraced in the Contract Documents, shall be included in the price stipulated in the Contract for said Work. The approval of any method of construction, invention, appliance, process, article, device, or material of any kind by the County shall only be approval of its adequacy for the Work and shall not be approval of the use thereof by the ESCO in violation of any patent or other rights of any third person. The ESCO shall indemnify and hold harmless the County for claims violations of intellectual property rights as set forth in Section 11.E.

SECTION 16 DISPUTES

A. Presentation of Dispute. Except as regards matters covered under Section 16C regarding Substantial Completion or the potential cost of Change Orders, if the ESCO disputes any decision by the County, then the ESCO shall present such dispute to the Director of the Office of Capital Planning and Policy. If any disputes remain unresolved after twenty (20) days of such presentation, the ESCO may give written notice thereof to the County, requesting that the Chief Procurement Officer decide the dispute. The notice shall include a description of the dispute, specify the provisions of this Contract relating to the dispute, and state whether the dispute was previously presented to the Director of the Office of Capital Planning and Policy. Upon request of the Chief Procurement Officer, the Director of the Office of Capital Planning and Policy shall submit to the Chief Procurement Officer a written response to the notice, and shall send a copy of the response to the ESCO. The Chief Procurement Officer's decision on the dispute shall be rendered in writing, and shall be furnished to both the Director of the Office of Capital Planning and Policy and the ESCO. Dispute resolution as provided herein shall be a condition precedent to any other action by the ESCO at law or in equity.

B. Continuation of Services. Notwithstanding any dispute, the ESCO shall continue to discharge all of its obligations, duties and responsibilities under this Contract as interpreted and directed by the Director of the Office of Capital Planning and Policy during the pendency of dispute resolution proceedings pursuant to this Section

C. Disputes Concerning Substantial Completion or the Cost of Change Orders. Any disputes concerning Substantial Completion of the Work or the cost of Change Orders will be submitted for dispute resolution to a third party professional engineering firm ("Engineer Neutral"), which firm shall be reasonably acceptable to both the ESCO and the County. The Engineer Neutral shall be authorized to make determinations and bind the Parties on issues related solely to technical interpretations regarding the adequacy of the Design & Engineering Documents or the execution and/or completion of the Work embodied in the Design & Engineering Documents as it relates to the determination of Substantial Completion or the correct calculations of the cost of potential Change Orders when the parties are in dispute on such issue. The Engineer Neutral shall not have the authority to render determinations regarding delay claims, payment disputes or any other Contract disputes that do not involve or arise out of the content of the Design & Engineering Documents and/or the quality of the execution of the Work. All disputes beyond the authority of the Engineer Neutral shall be resolved pursuant to Section 14A and the Engineer Neutral shall have no authority to order the County to enter into Change Orders or to make any payments. The determination of the Engineer Neutral with respect to the matters covered in this Section 14C will be final and not subject to further dispute by the parties. The ESCO and the County shall share equally the

costs or fees for such firm in connection with such dispute resolution process.

SECTION 17. DEFAULT AND TERMINATION.

A. Events of Default

1. Default by County. The County will be in default hereunder if any material breach of this Contract by the County occurs which is not cured by the County within ninety (90) days after written notice has been given by the ESCO to the County, setting forth the nature of such breach.

2. Default by ESCO. The following constitute material breaches of this Contract by the ESCO, which if not cured as set forth in Section 17.C.1 will constitute a "Default:"

(i) Any material misrepresentation, whether negligent or willful and whether in the inducement or in the performance, made by ESCO to the County.

(ii) ESCO's material failure to perform any of its obligations under this Contract including, but not limited to the following:

(a) Failure due to a reason or circumstances within ESCO's reasonable control to perform the Services with sufficient experienced personnel and equipment or with sufficient material to ensure the performance of the Services;

(b) Failure to perform the Services in a manner reasonably satisfactory to the Project Director, the Director of Capital Planning and Policy, or the Chief Procurement Officer or inability to perform the Services satisfactorily as a result of insolvency, change of ownership, filing for bankruptcy or assignment for the benefit of creditors;

(c) Failure to promptly re-perform within a reasonable time Services that were rejected as erroneous or unsatisfactory;

(d) Discontinuance of the Services for reasons determined by the Chief Procurement Officer to be within ESCO's reasonable control; and

(e) Failure to comply with any other material term of this Contract, including the provisions concerning insurance and nondiscrimination.

(f) Failure to provide adequate notice of a change of control of the ESCO, together with a failure of the successor entity to provide adequate assurance of continued Services meeting the requirements of this Contract within a reasonable time following such change of control.

(g) Failure to comply with Division 8 of the County Procurement Code, consisting of Chapter 34-260 to 34-289 during the performance of this Contract.

(j) ESCO's repeated or continued violations of County ordinances unrelated to performance under the Contract that in the opinion of the Chief Procurement Officer indicates a willful or reckless disregard for County laws and regulations.

B. Reimbursement. The County will be entitled to reimbursement from ESCO for any costs or expenses incurred by County due to such breach.

C. County's Remedies on Default

1. Notice and Cure. In case of an event of default, as described in Section 17A.2., the ESCO shall have thirty (30) days after written notice is given to the ESCO by the County, setting forth the nature of such default to cure such default; provide that there shall be no cure period if the ESCO fails to respond within forty-eight (48) hours in case of notice of emergency conditions or in case of fraud or willful misconduct or gross negligence on the part of the ESCO or its Subcontractors. Except for the foregoing, if the nature of such breach is such that it cannot be cured or corrected within said thirty (30) day period, the Chief Procurement Officer may grant the ESCO have any additional period reasonably necessary to cure or correct such breach, as long as ESCO has commenced to cure or correct such breach within such thirty (30) day period and does, in

fact, cure or correct such breach as soon as reasonably practicable, provided, however, that such additional period for cure shall not exceed ninety (90) days. The occurrence of any material breach permits the County at the County's sole option and discretion, to declare ESCO in default. The Chief Procurement Officer may, in his or her sole discretion, give ESCO an opportunity to cure the default within a certain period of time, which period of time will not exceed 60 days, unless extended by the Chief Procurement Officer. Whether to declare ESCO in default is within the sole discretion of the Chief Procurement Officer and neither that decision nor the factual basis for it is subject to review or challenge under the Disputes provision of this Contract. The Chief Procurement Officer will give ESCO written notice of the default, either in the form of a cure notice ("Cure Notice"), or, if no opportunity to cure will be granted, a default notice ("Default Notice"). If the Chief Procurement Officer gives a Default Notice, he or she will also indicate any present intent to terminate this Contract, and the decision to terminate (but not the decision not to terminate) is final and effective upon giving the notice. The Chief Procurement Officer may give a Default Notice if ESCO fails to effect a cure within the cure period given in a Cure Notice. When a Default Notice with intent to terminate is given, ESCO will discontinue any Services, unless otherwise directed in the notice, and deliver all materials accumulated in the performance of this Contract, whether completed or in the process, to the County. After giving a Default Notice, the County may invoke any or all of the following remedies:

2. **Right to Withhold Payments.** Except in the case and to the extent provided in Section 17.C.1, when the County elects to continue using ESCO's services, County will have the right to withhold payments owed to the ESCO until such time as the ESCO has cured the breach or noncompliance which is the subject matter of the notice.

3. **Right to Terminate.** If the ESCO fails to remedy a material breach during the cure period pursuant to Section 17.C.1, the County will have the right to terminate this Contract; provided, however, that the County will give the ESCO five (5) days prior written notice of termination. In the event of termination, the County reserves the right to elect to continue using the ESCO's services in whole or in part for the period of time necessary to allow the County to obtain and implement replacement services and therefore may specify in its notice of termination that the termination will not take effect until replacement services are obtained. The ESCO will agree to cooperate with the implementation of the replacement services should the County so request. During such transition period all terms and conditions of this Contract will be in full force and effect.

4. **Right to Continue Using Services.** In all events of termination, the County may elect to continue using the ESCO's existing services in full until the effective date of termination, as described above; increase monitoring and oversight of the ESCO's operations; or substitute County's designees for the ESCO's personnel utilizing the ESCO's facilities pending the implementation of replacement services. Any increased monitoring or oversight of the ESCO by the County will be done in a way that does not interfere with the ESCO's ability to effectively and efficiently perform its work.

5. **Non-Performance; Delays.** The ESCO will be liable to the County for reasonable expenses incurred by the County, including court costs, as the result of the ESCO's non-performance or delay in the performance of the service required by the terms of this Contract, to the extent that such expenses are not caused by persons or events beyond the ESCO's control.

6. **Compensation Due as of Termination.** All compensation due the ESCO will be calculated based upon the terms of Section 4 to the effective date of termination and will be paid to the ESCO except where the County may have a claim or dispute with regard to such payment.

7. **Taking Over of Work.** If this Contract is terminated by the County as a result of the ESCO's default and the County does not elect to continue using the ESCO's services, the termination will be effective at the expiration of the five (5) day notice period and the County may take over and complete the ESCO's work or it may contract with others for such completion. In such event, the ESCO will be liable to the County for any additional costs incurred by the County for such completion. After County has secured replacement services or taken over the work itself, the ESCO will within fourteen (14) days remove any and all of the ESCO's

personnel, products and equipment, unless such items remain with the County pursuant to the terms of this Contract.

8. Turnover of Project Documents and Deliverables. In the event of termination of this Contract by the County, all finished and unfinished documents, data, studies and reports and other Deliverables prepared by the ESCO, its Subcontractors, agents and employees and any other County property in the ESCO's custody will be transmitted to the County within seven (7) days after the date of termination of this Contract. The ESCO hereby assigns to the County all the right, title and interest of the ESCO in and to all subcontracts and consulting agreements and contracts to be effective without further action of the parties hereto upon the termination of this Contract.

9. All Remedies Available. If the Chief Procurement Officer considers it to be in the County's best interests, he or she may elect not to declare default or to terminate this Contract. The parties acknowledge that this provision is solely for the benefit of the County and that if the County permits ESCO to continue to provide the Services despite one or more events of default, ESCO is in no way relieved of any of its responsibilities, duties or obligations under this Contract, nor does the County waive or relinquish any of its rights. The remedies under the terms of this Contract are not intended to be exclusive of any other remedies provided, but each and every such remedy is cumulative and is in addition to any other remedies, existing now or later, at law, in equity or by statute, including, but not limited to, actions for damages and set-offs. No delay or omission to exercise any right or power accruing upon any event of default impairs any such right or power, nor is it a waiver of any event of neither default nor acquiescence in it, and every such right and power may be exercised from time to time and as often as the County considers expedient.

D. ESCO's Remedies. If, through no fault of ESCO, the County fails to make payments to ESCO as set forth in Section 17.A.1 and Exhibit J, ESCO may, after the expiration of the cure period described in Section 17.A.1, terminate the Contract, provided, however, that the ESCO will give the County thirty (30) days prior written notice of termination. In the event of termination the County will have the right to continue using the ESCO's services in full for a reasonable period of time until County will have replaced such services. The ESCO will agree to cooperate with the implementation of the replacement services should the County so request. During such transition period all terms and conditions of this Contract will remain in full force and effect. All compensation due the ESCO will be calculated based upon the terms of Section 4 and Exhibit J. to the date of termination and will be paid to the ESCO except where the County may have a claim or dispute with regard to such payment. ESCO shall include for termination payment materials delivered to the Facilities and applicable cancellation fees for equipment orders if lead times for those equipment orders have been provided in the Design & Engineering documents pursuant to Section 7.B of this Contract. However, no payments will be made for Work not actually performed, and no payment will be made or due for lost profits for portions of the Work not actually performed.

E. Removal of ESCO's Personnel, Property. After replacement services have been secured and are operational the ESCO will within fourteen (14) days remove any and all of ESCO's personnel, products and equipment, unless such items remain with the County pursuant to the terms of this Contract.

F. Excess Costs. The County may offset any excess costs incurred: (i) if the County terminates this Contract for default or any other reason resulting from ESCO's performance or non-performance; (ii) if the County exercises any of its remedies under Section 17.C of this Contract; or (iii) if the County has any credits due or has made any overpayments under this Contract. The County may offset such excess costs by use of any payment due for Services completed before the County terminated this Contract or before the County exercised any remedies. If the amount offset is insufficient to cover those excess costs, ESCO is liable for and will promptly remit to the County the balance upon written demand for it. This right to offset is in addition to and not a limitation of any other remedies available to the County.

G. Termination of Contract and Refund. In the event this Contract is terminated by either party, for cause or otherwise, and the County has prepaid for any Deliverables, the ESCO shall refund to the County,

on a prorated basis to the effective date of termination, all amounts prepaid for deliverables not actually provided as of the effective date of the termination. The refund shall be made within fourteen (14) days of the effective date of termination

H. Remedies Available. Subject to the requirement of dispute resolution under this Contract, the ESCO will have the right to pursue monetary remedies available in law or equity. In all cases the ESCO's damages will be those provable direct monetary damages not to exceed the value of this Contract as awarded by the County's Board of Commissioners, less the expenses saved in not having to perform this Contract. This notwithstanding, due to the critical nature of this Contract, the ESCO will not unilaterally disrupt the operation or unilaterally repossess any component thereof. ESCO agrees that no charges or claims shall be made by ESCO for any delays or hindrances whatsoever during the progress of this Contract and that, if the County terminates this Contract, the ESCO may not seek reinstatement of this Contract.

I. Termination For Convenience. The County may terminate this Contract, terminate a portion of the ESCO's services under this Contract, or reduce the scope of the Project, the ESCO's services or both, at any time by notice in writing from the County to the ESCO. If the Contract is terminated by the County (i) all services under this Contract will cease except for the completion of any reports, analyses or other tasks previously begun as requested and approved by the Project Director in the notice of termination or thereafter in writing and (ii) the ESCO shall deliver to the County all finished or unfinished documents, data, studies and reports prepared by or on behalf of the ESCO under this Contract within 10 days after the date the notice of termination is considered to be delivered or from the effective date of the termination given in the notice, and these shall be and become the property of the County. Payment for the work performed before the effective date of such termination shall be based upon services actually rendered in accordance with the Cost Loaded Schedule. Such payment so made to the ESCO shall be full settlement for services actually and satisfactorily rendered under this Contract and ESCO's sole remedy. If the County terminates a portion of the ESCO's services under this Contract or reduces the scope of the Project or the ESCO's services, the County and ESCO will negotiate in good faith a reduction in the ESCO's compensation to reflect the value of the services performed and to be performed. No amount of compensation, however, is permitted for anticipated profits or on unperformed services. The ESCO will include in its contracts with its Subcontractors a provision in form and substance equivalent to this termination provision to prevent claims against the County arising from termination of subcontracts in the event of a termination for convenience. The ESCO waives any claims against the County resulting from any subcontractor's claims due to termination for convenience. If the County's election to terminate this Contract for default under Sections 17.C.3 is determined in a court of competent jurisdiction to have been wrongful, then in that case the termination is to be considered to be termination for convenience under this Section 17.I.

J. Termination for Lack of Receipt of Necessary Approvals or Non-appropriation of Funds: Notwithstanding anything to the contrary contained in this Contract, this Contract is expressly contingent upon receipt by the County of all necessary approvals to complete the Project from applicable federal, state and local authorities; provided however, that nothing contained herein will be deemed to impose upon the County a requirement for obtaining any permits or other approvals that are generally required to be obtained by the ESCO. In the event the County does not obtain approval for the Project or any phase, portion thereof or if such approval has been cancelled, rescinded or modified, this Contract or, at the County's election, that part of this Contract attributable to the phase or portion not approved, cancelled, rescinded or modified will be terminated without further action by either party and thereupon neither party will have any further liability or obligation to the other with the exception of the payment by the County to the ESCO of Services actually rendered in accordance with the Cost Loaded Schedule. Such payment so made to the ESCO will be full settlement for services rendered under this Contract and ESCO's sole remedy. If no funds or insufficient funds are appropriated and budgeted in any fiscal period of the County for payments to be made under this Contract, then the County will notify ESCO in writing

of that occurrence, and this Contract will terminate on the earlier of the last day of the fiscal period for which sufficient appropriation was made or whenever the funds appropriated for payment under this Contract are exhausted. Payments for Services completed to the date of notification will be made to ESCO and any payment so made shall be in full settlement for services satisfactorily performed under the Contract. No payments will be made or due to ESCO and under this Contract beyond those amounts appropriated and budgeted by the County to fund payments under this Contract.

K. **Suspending the Work.** The County shall have the absolute right to suspend the Project. Where the County suspends the Project any work performed by the ESCO during such suspension period shall be at the ESCO's sole risk and the County shall not be responsible for any compensation or delay damages on account of such suspension period. The ESCO agrees to keep such Key Personnel available during all suspension periods which do not exceed ninety (90) days.

L. **Reduction of Services.** The County reserves the right to reduce the scope of services set forth in this Contract. In the event the County reduces the scope of services, the ESCO shall be entitled to compensation for Services actually rendered in accordance with Section 4 and Exhibit J.

SECTION 18. ASSIGNMENT.

A. **No ESCO Subcontracting or Assignment without Approval.** The ESCO may not assign this Contract or the Contract Documents, in whole or in part, without the prior written consent of the County, in its sole discretion, nor shall ESCO assign any moneys due or claims due or to become due to it under the Contract Documents without the prior written consent of the County, in its sole discretion. Any assignment of monies due under the Contract Documents made without the prior written consent of the County is void, and the assignee in that case acquires no rights against the County. In no case shall such consent relieve the ESCO from its obligations or change the terms of the Contract. The unauthorized assignment or sub-contracting of the Contract, in whole or in part, or the unauthorized transfer or assignment of any Contract funds, either in whole or in part, or any interest therein, which shall be due or are to become due to the ESCO shall have no effect on and are void so far as the County is concerned.

B. **County Assignment.** County may assign this Contract and the Contract Documents in its sole discretion to (i) a lender for collateral purposes, or (ii) any entity wholly owned or controlled by the County. The County may assign this Contract to any other entity approved in advance by ESCO, which approval shall not be unreasonably withheld or delayed.

C. **Permitted Assigns.** This Contract shall be binding upon, and inure to the benefit of, the successors and permitted assigns of the Parties.

SECTION 19. REPRESENTATIONS AND COVENANTS

A. **ESCO's Representation Of Authority.** The ESCO represents and warrants that the ESCO is authorized to do business in the State of Illinois and is properly licensed by all necessary governmental and public and quasi-public authorities having jurisdiction over the services required hereunder. The ESCO hereby represents and warrants that the person executing this Contract on behalf of the ESCO is duly authorized to do so and has submitted documentation evidencing such authority, and this Contract is a legal, valid and binding obligation of the ESCO, enforceable against the ESCO in accordance with its terms, subject to bankruptcy, equitable principles and laws affecting creditor's rights generally.

B. **Financial Capacity** The ESCO represents and warrants that the ESCO is financially solvent, able to pay its debts as they mature and possesses sufficient working capital to complete the services required and perform the obligations hereunder based on timely payments by the County and will promptly give to the County written notice of any material adverse change in the financial condition of the

ESCO.

C. **Joint and Several Liabilities.** Notwithstanding anything to the contrary contained in this Contract, if the entity which is the ESCO hereunder is a partnership or a joint venture, each and every covenant, agreement, indemnity and obligation of the ESCO under the terms of this Contract is a covenant, agreement, indemnity and obligation undertaken by each partner or joint venture partner, as the case may be, in the entity which is the ESCO (collectively, "Joint Venture Partners") jointly and severally, individually and collectively and all covenants, agreements, indemnities and obligations of ESCO will be performed and observed by any one of the Joint Venture Partners regardless of the performance or non-performance of such covenants, agreements, indemnities or obligations by any of the other Joint Venture Partners.

D. **Ability To Perform.** The ESCO represents and warrants that the ESCO is able to furnish the professional services, and any materials, supplies, equipment and labor required to complete the Services required hereunder and perform all of its obligations and has sufficient experience and competence to do so. All personnel providing services on the Project will be qualified by training, licensing, and experience to perform their assigned tasks.

E. **Familiarity With Project.** The ESCO represents and warrants that the ESCO is familiar with the requirements of the Project and this Contract, and has carefully examined the provisions and requirements of this Contract; it understands the nature of the Services required; from its own assessment it has satisfied itself as to the nature of all things needed for the performance of this Contract; this Contract is feasible of performance in accordance with all of its provisions and requirements, and the ESCO warrants it can and will perform, or cause to be performed, the Services in strict accordance with the provisions and requirements of this Contract; and the ESCO or its Subcontractors are experienced in the areas of planning, real estate consulting, designing, and performing architecture and engineering services in regard to these ECMs and the Services, and will employ the services of others experienced in the areas of planning, designing, and performing architecture and engineering, and other services required of the ESCO under this Contract. The ESCO has the necessary skill, financial resources and personnel to successfully complete its services under this Contract.

F. **Adequate Review.** The ESCO represents and warrants that the ESCO was given ample opportunity and time and was hereby requested by the County to review thoroughly all documents forming this Contract prior to execution of this Contract in order that it might request inclusion in this Contract of any statement, representation, promise or provision that it desired or on that it wished to place reliance. The ESCO did so review these documents, and either every such statement, representation, promise or provision has been included in this Contract or else, if omitted, the ESCO relinquishes the benefit of any such omitted statement, representation, promise or provision and is willing to perform this Contract in its entirety without claiming reliance on it or making any other claim on account of its omission.

G. **No Criminal Proceedings.** The ESCO has not received notice, or has no reasonable basis for believing, that it or any of its officers are the subject of any criminal action, complaint or investigation pertaining to any felony charge, or any civil action or claim predicated on alleged acts of anti-trust violations; business fraud; discrimination due to race, creed, color, handicap, gender, marital status, age, national origin, religious affiliation; or failure to fulfill any obligation required by law or contract pertaining to affirmative action. The ESCO will secure the same representation and warranty from its Subcontractors and agents performing the ESCO's obligations under this Contract.

H. **True and Correct Statements.** The statements of the ESCO contained herein and any and all documents submitted by or on behalf of the ESCO pursuant to this Contract are and will be true and correct in all material respects, and neither this Contract nor any of such documents omits or will omit any material fact necessary to make the statements of the ESCO contained herein or therein, when delivered to

the County, in light of the circumstances under which they were made, not misleading. The ESCO will provide prompt notice to the County whenever any representation or warranty herein ceases to be true or correct. The ESCO warrants and represents to the County that the disclosures and certifications set forth on Exhibit O are and shall remain true and correct.

I. No Auditing Services. The ESCO represents and certifies that neither it nor any of its "Affiliates" has any Contract or contract with the County regarding Auditing Services for or with the County. The ESCO will not consent to a subcontract with Subcontractors which Subcontractors or any of its "Affiliates" has an agreement or contract with the County regarding Auditing Services. The terms "Auditing Services" and "Affiliates" have the meanings set forth in Section 34-12 of the Cook County Code.

J. Additional Representations Regarding Delinquencies Under County Codes. Setoff. . ESCO represents and certifies that neither it, nor to the best of its knowledge, any of its Subcontractors, is disqualified from entering into an Contract with the County because of (a) a delinquency in the payment of any tax, fee or debt to the County or a determination of status as a "predatory lender" under Section 34-171 of the County Codes; (b) a disqualification for noncompliance with child support orders under Section 34-172 of the County Codes; (c) a disqualification for illegal activities under Section 34-173 of the County Codes; (d) a disqualification for willful violation of the Cook County Independent Attorney General Ordinance under Section 34-174 of the County Codes ;(e) has been found liable for making false statements of material fact to the County under Section 34-175 of the County Codes; or (f) disqualification due to contract default or termination for cause by the County within the last 24 months under Section 34-170 of the County Codes.

SECTION 20 OTHER CONDITIONS OR PROVISIONS.

A. Governing Law and Venue. This Contract shall be governed by the laws of Illinois. The ESCO irrevocably agrees that, subject to the County's sole and absolute election, any action or proceeding in any way, manner or respect arising out of this Contract, or arising from any dispute or controversy arising in connection with or related to this Contract, shall be litigated only in the courts having situs within the City of Chicago, the County of Cook, the State of Illinois, and the ESCO consents and submits to the jurisdiction of any local, state or federal court located within such City, County and State. The ESCO waives any right it may have to transfer or change the venue of any litigation brought against it by the County in accordance with these provisions.

B. Severability. The parties agree that to the extent a court of competent jurisdiction shall determine that any part or provision of this Contract is unenforceable as a matter of law, such part or provision of this Contract shall be deemed severable and the remainder of this Contract shall survive.

C. Waiver. No term or provision of this Contract shall be deemed waived and no breach consented to unless such waiver or consent shall be in writing and signed by the party claimed to have waived or consented. The waiver of any such provision shall not be a waiver of the provision itself or a waiver or consent to any subsequent breach.

D. Relationship of the Parties. The ESCO and its employees, agents and subcontractors are independent contractors and not employees of the County. Nothing contained in this Contract shall be deemed or construed by the parties hereto, or by any third party, as creating a relationship of principal and agent, or of partnership, or of joint venturers, or any relationship between the parties other than that of independent contractor. The rights and duties contained herein shall not inure to the benefit of any third party, except as specifically provided herein.

E. Amendment. No amendment to this Contract shall be effective until and unless reduced to writing and executed by the Parties.

F. Entire Contract. This Contract includes the Contract and the following exhibits and attachments incorporated herein by this reference: Exhibit A, Board Authorization Letter; Exhibit B List of ECMs by Building; Exhibit C Project Description and Scope of Services, Including Testing Procedures; Exhibit D List of Subcontractors by Scope of Services; Exhibit E Key Personnel; Exhibit F Project Schedule; Exhibit G Performance Guarantee; Exhibit H Measurement and Verification Plan; Exhibit I Performance Tracking Services; Exhibit J Cost Loaded Schedule and Payment Schedule; Exhibit K, Maintenance Services by ESCO and Extended Warranty Services; Exhibit L Insurance Requirements and Certificates; Exhibit M Required Maintenance by County; Exhibit N Certificate Forms; Exhibit O Economic Disclosure Statements; Exhibit P Supplemental County Conditions; Exhibit Q Modifications to Energy Audit Documentation; Exhibit R Standards of Service and Comfort; Exhibit S Forms of Performance and Payment Bonds; including Certifications and Execution Forms. It is expressly agreed that the provisions set forth in these Contract Documents, together with all attachments and Exhibits thereto, constitute all the understandings and agreements between the parties. Any prior agreements, promises, negotiations, or representations not expressly set forth in the Contract Documents are of no force and effect.

G. Statute of Limitations. Notwithstanding anything provided herein or by applicable law, the parties agree that in no event shall the statute or statutes of limitation applicable to any part of the ESCO's Work and the Work provided by the ESCO's Subcontractors, ESCOs and agents, be deemed to commence until after Final Acceptance of the entire Project.

H. Rights Cumulative. Except as otherwise provided in this Contract, (i) rights and remedies available to the County and/or the ESCO as set forth in this Contract shall be cumulative with and in addition to, and not in limitation of, any other rights or remedies available to the Parties at law and/or in equity, and (ii) any specific right or remedy conferred upon or reserved to the County and/or the ESCO in any provision of this Contract shall not preclude the concurrent or consecutive exercise of a right or remedy provided for in any other provision hereof.

I. Further Assurances. Each Party hereto shall, from time to time, at the request of the other Party and without further consideration, execute and deliver and cause to be executed and delivered such other instruments and take such other actions as the requesting Party may reasonably request to undertake the Contract Services and carry out the intent and purposes of this Contract.

J. Notices. Any information or notices required to be given under this Contract shall be in writing and shall be delivered either by (i) certified mail, return receipt requested, in which case notice shall be deemed delivered three (3) business days after deposit, postage prepaid, in the U.S. mail; (ii) a reputable messenger service or a nationally recognized overnight courier, in which case notice shall be deemed delivered one (1) business day after deposit with such messenger or courier; or (iii) personal delivery with receipt acknowledged in writing, in which case notice shall be deemed delivered when received. All notices shall be addressed as follows:

If to the County:

PURCHASING AGENT
County of Cook
1018 County Building
118 North Clark Street
Chicago, Illinois 60602
(Reference Project and County Contract Document Number)

WITH A COPY TO:
OFFICE OF CAPITAL PLANNING AND POLICY
69 West Washington Street, 30th Floor

Chicago, Illinois 60602
Attention: Director

If to ESCO:

Johnson Controls, Inc.
3007 Malmo Drive
Arlington Heights, Illinois 60005
Attention: Stroger Hospital Campus ESPC Project Manager

The foregoing addresses may be changed from time to time by notice to the other Party in the manner herein before provided for.

K. Counterparts. This Contract may be executed in counterparts, each of which shall be deemed an original, and all of which counterparts shall constitute one agreement. To facilitate execution of this Contract, the Parties may execute and exchange facsimile counterparts of the signature pages, provided originally executed signature pages are exchanged promptly thereafter.

M. Headings. The headings of articles and Sections in this Contract are included for convenience only and shall not be considered by either party in construing the meaning of this Contract.

N. Survival. All the covenants, indemnities, representations and warranties of the ESCO and the County, respectively, contained in this Contract shall survive the consummation or termination of this Contract.

O. Certifications Pursuant To County Ordinances And State Laws. Execution of this Contract shall be made by executing the Economic Disclosure Statement, including certifications and execution forms, attached to this Contract and, by this reference, incorporated into and made a part of this Contract.

P Tax And Fee Delinquency; Cook County Code, Chapter 34, Section 34-130. The County is entitled to set off a portion of a contract price equal to the amount of the fines and penalties for each tax or fee delinquency and any debt owed by a contracting party to the County. The ESCO hereby agrees that it is subject to the provisions of this Section.

Q. Disqualification For Non-Performance Cook County Ordinance Chapter 10, Section 7.3. No person or business entity will be awarded a contract or subcontract if that person or business entity has had an awarded contract terminated for cause by the County's Board of Commissioners. The period of ineligibility will continue for 24 months from the date the County's Board of Commissioners terminates the contract. The ESCO hereby represents and warrants to the County that the ESCO has not had an awarded contract terminated for cause by the County's Board of Commissioners within 24 months prior to the Effective Date.

R. Exemption from Certain Taxes. Federal Excise Tax does not apply to materials purchased by the County by virtue of Exemption Certificate No. 36-75-0038K. Retailers' Occupation Tax, Use Tax and Municipal Retailers' Occupation Tax do not apply to materials or services purchased by the County by virtue of statute. The price or prices quoted herein will include any and all other Federal and/or State, direct and/or indirect taxes which apply to this transaction. Cook County's State of Illinois Sales Tax Exemption Identification is E-9998-2013-01.

S. No Third Party Beneficiaries; Non-Liability Of Public Officials. The rights and duties contained herein will not inure to the benefit of any third party, except as specifically provided herein. ESCO and any assignee or Subcontractors of ESCO will not charge any official, employee or agent of the County personally with any liability or expenses of defense or hold any official, employee or agent of the County personally liable

to them under any term or provision of this Contract or because of the County's execution, attempted execution or any breach of this Contract.

T. **Financing Assistance.** To the extent requested by the County, the ESCO will assist the County in regard to any financing methods the County may select to finance costs of the Project. To the extent any such financing methods will result in additional direct costs to the ESCO, such additional direct costs shall be addressed through a modification or amendment to the Contract.

U. **Execution.** Execution of this First Amendment shall be made by execution of the Economic Disclosure Statement Attached hereto and made a part hereof as Exhibit O.

V. **Incorporation by Reference.** The recitals set forth on the first few pages of this Contract, as well as the following Exhibits attached hereto, are hereby incorporated into this Contract by this reference and expressly made a part of this Contract:

Exhibit A:	Board Authorization Letter
Exhibit B	Lists of ECMs by Building
Exhibit C	Project Description and Scope of Services, including Testing Procedures
Exhibit D	List of Subcontractors by Type of Service
Exhibit E	Key Personnel
Exhibit F	Project Schedule
Exhibit G	Performance Guarantee
Exhibit H	Measurement and Verification Plan
Exhibit I	Performance Tracking Services
Exhibit J	Cost Loaded Schedule and Payment Schedule; County Guidelines on Invoices
Exhibit K	Maintenance Services by ESCO and Extended Warranty Services
Exhibit L	Insurance Requirements and Certificates.
Exhibit M	Required Maintenance by County
Exhibit N	Certificate Forms
	1. Notice to Proceed
	2. Substantial Completion
	3. Final Acceptance
Exhibit O	Economic Disclosure Statements
Exhibit P	Supplemental County Conditions

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1. Prevailing Wage and Davis Bacon Provisions
 2. Special Facilities Access and Security Provisions
 3. Carryforward Provisions from Exhibit B to Phase I Audit Agreement

Exhibit Q Modifications of Energy Audit Documentation

Exhibit R Standards of Service and Comfort

Exhibit S Forms of Performance and Payment Bonds

EXHIBIT A

BOARD AGENDA
Meeting of July 10, 2012

BUREAU OF ECONOMIC DEVELOPMENT
OFFICE OF CAPITAL PLANNING AND POLICY

PROPOSED AMENDMENT

Transmitting a Communication, dated June 15, 2012 from

HERMAN BREWER, Chief, Bureau of Economic Development

requesting authorization for the Chief Procurement Officer to execute a First Amendment to the Guaranteed Energy Performance Contract (GEPC) with Johnson Controls, Inc. (JCI), Milwaukee, Wisconsin, for a Guaranteed Energy Performance Contracting Project. The GEPC was authorized by Board Action on July 27, 2011 and was executed by JCI and Cook County on July 27, 2011. Phase I of this contract provided the investment grade energy audit revised at the Stroger Hospital of Cook County Campus. This First Amendment provides for Phase II, consisting of engineering and construction services for the Energy Conservation Measures (ECM) determined via the investment grade energy audit at the Stroger Hospital of Cook County Campus. Johnson Controls, Inc. was selected through a Request for Qualifications/Request for Proposal process as highly qualified and offering a competitive price.

Reason: This contract provides for a guaranteed energy performance contracting project at the Stroger Hospital of Cook County Campus. This project has identified, and will implement energy conservation measures (ECMs) that will result in at least a 10% reduction in emissions and energy costs as compared to a Base Year, throughout a 20 year financing period. Phase I consisted of a comprehensive investment grade audit of 5 buildings on the Stroger Hospital Cook County Campus. The ECMs are estimated to achieve cost savings sufficient to cover financing of the ECMs. In Phase II, Johnson Controls, Inc. (JCI) will perform construction services necessary to implement the agreed upon ECMs. The parties have negotiated in good faith the terms of Phase II, pursuant to which JCI will perform engineering and construction services necessary to implement the agreed upon ECMs. The engineering and construction cost of the energy conservation measures will be \$26,497,854.00 with an annual projected savings of \$2,058,139.00.

This is a joint project undertaken by the Office of Capital Planning and Policy, the Department of Environmental Control and the Bureau of Finance. This is categorized as an energy efficiency project.

Estimated Fiscal Impact: \$26,497,854.00. Contract period: Two (2) years for construction, followed by 20 years of monitoring, commencing on the date of Board approval.

28000 Cook County Health & Hospitals.

This item has been approved by the Finance Committee of the Health & Hospitals System at their June 22, 2012 Meeting.

The Chief Procurement Officer concurs.

Exhibit B

ECM Tag	ECM Name
Stroger Hospital ECMs	
SH-1	Lighting Upgrades
SH-14	VAV Box Optimization
SH-15	Electronic Filter Retrofit
SH-18	Lighting Controller
SH-19	Parking Garage Lighting Retrofit
SH-20	Waste Management
SH-22	Demand Response
SH-26	Ventilation AHUs Improvement
Power House ECMs	
SH-13	Chiller Plant Optimization
SH-23	Boiler Stack Condensing Economizer
Institute of Forensic Medicine ECMs	
IFM-1	Lighting Upgrades
IFM-2b	Chiller Replacement
IFM-3	Boiler Replacement
IFM-4	Domestic Water System Upgrades
IFM-5	AHU Controls and Electronic Filter Upgrades
IFM-6	Inactive Storage Cooling System Upgrade
IFM-7	Steam Traps and Misc Upgrades
IFM-8	Receiving Dock Infrared Heaters
Hektoen Building ECMs	
HB-1	Lighting Upgrades
HB-9	Controls and AHU Upgrades
HB-13	Domestic Water Booster VSD
HB-16	Dual Duct VAV and Mixed Air Conversion
HB-18	Steam Traps and Misc Upgrades
Ruth M. Rothstein Core Center ECMs	
RRCC-1	Lighting Upgrades
RRCC-2	Controls Upgrade and Electronic Filter Retrofit
Sitewide ECMs	
SCW-6	LEED-EB & Energy Star Benchmarking
SCW-14	Utility Meters for Administration and Fantus
SCW-15	Sustainable Services

Exhibit C

Project Description and Scope of Services

Energy Conservation Measures:

STROGER HOSPITAL

SH-1: Lighting Upgrades

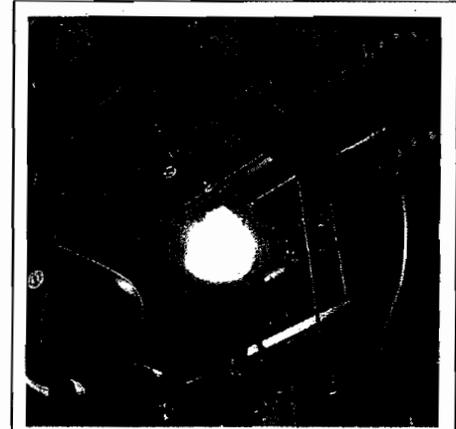
- **Existing Conditions**

A room-by-room audit has been completed for the building. Since the hospital is relatively new, the existing lighting is predominantly fluorescent type with standard F32T8 lamps and standard electronic ballasts. A few rooms do have less efficient F40T12 lamps and magnetic ballasts. Many areas are presently controlled with occupancy sensors. The existing exit fixtures have compact fluorescent lamps. The power house lighting consists of metal halide and fluorescent fixtures.

- **Recommended Solution**

It is our recommendation that the existing lighting at the main hospital be upgraded to energy efficient F28T8. The new lamps will have lower wattage than existing fixtures and also have higher life expectancy, resulting in energy and maintenance savings.

The power house lighting will also be upgraded from metal halide to fluorescent lamps to provide better light quality and lower energy costs.



Metal Halide fixtures at the Power House

Implementation and Cost Issues:

- The work shall be performed during first shift
- Temporary relocation of employees might be needed to perform work
- CCHHS personnel must provide access to all areas that require lighting upgrades
- There is no temporary storage area available for new lighting equipment

SH-14: VAV Box Optimization

- **Existing Conditions**

Currently the variable-air volume (VAV) boxes serving specific areas of the hospital have the ability to adjust to minimum airflow during unoccupied hours. However, these boxes were set to constant volume when the building was originally commissioned and are operating at maximum airflows all the time.

- **Recommended Solution**

A significant number of rooms in the hospital can be controlled with variable airflow. The VAV boxes in these areas have the ability to vary the airflow and to throttle to minimum airflow setting during unoccupied periods. By

adopting an unoccupied schedule in these particular areas that allow for it, the hospital can save on fan, boiler and chiller energy required to heat, dehumidify, and cool the extra airflow. There are approximately 500 VAV boxes that were identified in the scope. These VAV boxes are primarily located in the basement through third and the fifth floor.

Implementation and Cost Issues:

- The work shall be performed during first shift
- CCHHS personnel must provide access to all applicable areas
- Temporary relocation of employees might be needed to perform work

SH-15: Electronic Filter Retrofit

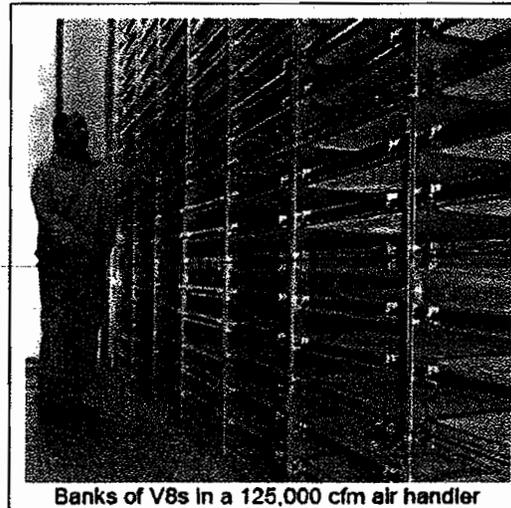
• **Existing Conditions**

The Stroger Hospital air distribution is served by thirty-nine Air Handling Units (AHUs). Thirty-six (36) of the units are equipped with 30% pre-filters and 65% medium filters and 90% final filters. Two (2) of the units are equipped with 30% pre-filters and 65% medium filters. The filters require continuous replacement annually and have a high air pressure drop which increases fan horsepower (existing supply fans have VSDs) and decreases airflow capacity. Many of the existing fan motors are operating with a motor load factor above 100% due to high system static pressure, which can greatly reduce motor life and reduce airflow required for cooling and dehumidification.

• **Recommended Solution**

The recommended solution is to remove the exiting pre-filter/medium filter and final filters and install new high efficiency electronic filters. The new filter system will dramatically reduce fan horsepower and increase fan capacity by reducing the fan static pressure.

The retrofit will be completed for all air handling units AHU-1 through AHU-38 with the exception of AHU-19 AHU-39. Air handling units AHU-19 and AHU-39 are included in this scope of work due to inaccessibility of the units.



Banks of V8s in a 125,000 cfm air handler

and
not

The new 1" pre-filters are rated at 90% efficiency and will have a dust holding capacity greater than 1,000 grams. These filters will be installed on AHU-1 through AHU-39, with the exception of AHU-19 and AHU-39. The V-Bank final filters are rated at 95% efficiency-MERV 15+ and has a dust holding capacity of greater than 2800 grams. The final filters will be installed on the same air handling units with the exception of AHU-5 and AHU-34, these two units do not have final filters

New conductors, breakers, conduit, etc. will be installed to provide power for each filter system. Each supply and exhaust/return fan will be re-balanced after completion of the installation. The scope of work includes:

- Demolish/remove existing pre-filters/medium filter section for AHU-1 thru 39, with the exception of AHU-19 and AHU-39
- Demolish/remove existing final filters for the following AHUs: AHU-1 thru 39, with the exception of AHU-5, AHU-19 AHU-34 and AHU-39.
- Furnish and install a complete Dynamic filtration system for the following:
 - ✓ V-Bank electronic Pre-filters for the following AHUs: AHU-1 thru AHU-18, AHU-20 thru AHU-38,

✓ V-Bank electronic Final filters for the following AHUs: AHU-1 thru 5, AHU-6 thru AHU-18, AHU-20 thru AHU-33 and AHU-35 thru AHU-38

- The new filters will be sized to accommodate available internal space of air handler cross section and meet air velocity design requirements

Implementation and Cost Issues:

- The work shall be performed during first and second shift.
- Some AHUs may require shutdown to complete the work
- CCHHS personnel must provide access to all applicable areas
- AHU-19 is not included in the scope of work due to inaccessibility

SH-18: Lighting Controller

- **Existing Conditions**

There is an existing lighting control panel at Stroger Hospital that controls some of the areas in the hospital and allows for scheduling of the lighting fixtures. This allows the hospital to achieve energy savings during periods of low occupancy or when parts of the hospital are closed. Currently the software is not operable and does not allow facility personnel to access the lighting schedules for modification purposes.

- **Recommended Solution**

It is our recommendation that the existing lighting controller software be upgraded with new web-based software to allow access to facility personnel. This will allow the hospital to make changes to the lighting schedules from any location.

Implementation and Cost Issues:

- The work shall be performed during first shift
- CCHHS personnel must provide access to all applicable areas

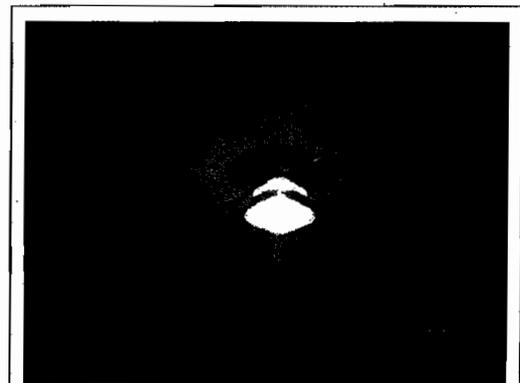
SH-19: Parking Garage Lighting Retrofit

- **Existing Conditions**

A detailed audit has been completed for the parking garage located next to Stroger Hospital. The existing garage lighting fixtures have 150-watt high pressure sodium (HPS) lamps. These lamps are old and inefficient and have a very short lamp life resulting in higher replacement and maintenance costs.

- **Recommended Solution**

It is our recommendation that the high pressure sodium fixtures in the garage be upgraded to light emitting diode (LED) fixtures. The new lamps will have significantly lower energy consumption and have a much higher lamp life. This will lead to energy and maintenance savings.



High Pressure Sodium (HPS) light fixture in the Parking Garage

Implementation and Cost Issues:

- The work shall be performed during first shift
- Temporary relocation of employees might be needed to perform work
- CCHHS personnel must provide access to all areas that require lighting upgrades

- Temporary barricades to restrict access to the Parking Garage

SH-20: Waste Management

- **Existing Conditions**

Waste Management in hospitals is frequently the forgotten utility. It is a significant monthly cost that, unlike electricity or natural gas, has the potential for fines or worse: infecting a staff member through improper handling of waste. The responsibility for the waste management is frequently shared between departments: Epidemiology for the infection control practices and Environmental Services for the day to day operation of collecting and documenting the waste stream process.

Most infection control practices around waste management are based on the Center for Disease Control recommendations. These practices however are frequently not observed as a result of lack of knowledge of the staff or sometimes over compliance in the sake of expedience (prepping for the next procedure in an operating room for example). Medical waste, if not properly managed, pose a risk to the personnel who are handling these wastes, including custodial personnel and waste collectors, as well as to those providing disposal or picking through the wastes for recyclables. Therefore, hospital waste treatment and disposal is an important part of mitigating risk to the hospital. As long as the hospital does not receive a fine for biohazard (also known as red bag) materials being discovered by the authority having jurisdiction, then the waste management practices are typically not changed.

- **Recommended Solution**

It is our recommendation that the hospital's waste practices be streamlined and overseen by a third party professional experienced in the regulations and practices of waste stream management to provide oversight. Through on-site visits, we will perform detailed waste analysis. Waste will be weighed, infractions photographed and trended, and departmental progress tracked. One infraction trended is items disposed of in regulated waste which should have been treated as general trash (such as food items or paper products in the biohazard containers). We generate infractions by department and review the progress with department heads. All of the recommendations will comply with Illinois Department of Public Health (IDPH) and federal and local authorities having jurisdiction.

We also recommend installing an autoclave on site to sterilize all the biohazard waste so allow this waste to be put into the general waste stream. This will reduce the overall costs for hauling the biohazard waste, which is more costly than hauling general trash.

Our recommendation will also focus on educating hospital staff on recommended practices (new employees or departments that are not adhering to recommendations) and monitoring savings across the entire system. Savings will be tracked and recorded on each year and quarterly summary reports shall be communicated to the hospital through Johnson Controls Performance Engineer. Annual reports shall provide monthly details of savings progress by department and savings stream.

The hospital will continue to be responsible for purchasing waste stream equipment, supplies and containers. The hospital shall order and store such items. Any changes to equipment or stocking levels of containers and re-usable supplies that are required to recognize the savings will be communicated in writing.

Implementation and Cost Issues:

- CCHHS personnel must provide access to all applicable areas
- CCHHS must identify the location of the new autoclave
- All invoices related to waste management shall be shared with JCI during the Installation and Performance periods.

SH-22: Demand Response

- **Existing Conditions**

Based on preliminary information, Stroger Hospital is an excellent candidate for both Capacity and Economic Demand Response programs available in the COMED zone: Capacity and Economic Demand Response. Sufficient load to provide the financial incentive for participation is the first criteria for participation. Stroger Hospital's peak load is approximately 10,500 kW, which provides ample potential load drop for both programs. The second criteria is for a substantial portion of that load to be curtailable (available reduce) when called on either by the grid operator or by Stroger management. Stroger Hospital has backup generator capacity of 3,000 kW that can be used to shift load from the grid. Chillers can also be used to pre-cool facilities prior to an event or economic opportunity and then allow for that load to be reduced or curtailed during an event or voluntary load drop. Many other sources of curtailable load can be identified during a curtailment planning session. It is with these existing "Demand Side Resources" that Stroger Hospital can earn revenue without additional investment. By working with CCHHS personnel, JCI can establish an optimum plan to extract the greatest reward with the least amount of effort.

- **Recommended Solution**

It is our recommendation that the hospital implement the following programs to realize savings. In order to capture and transmit interval data from the main meter, a data logger is required. JCI and EnergyConnect will determine if an upgrade of the main utility meter is also required. A description of the metering solutions is provided in the Appendix.

Capacity Program

For the PJM Capacity program, the peak load is estimated to be 10,500 kW and the Committed Load Drop, using backup generators and chillers is estimated to be 2,630 kW. This was determined from conversations with Stroger management. A curtailment planning session with the customer will be needed in order to identify all curtailable loads and suitability for curtailment. The PLC (Peak Load Contribution) for utility customers is determined based on an average of the load that is drawn on the 5 hours on 5 separate days in the summer when the highest load on the grid occurs for the previous year. These "PLC" hours are representative of when an event is likely to occur; therefore, this is a good indication of what the load is that can be shed during an event. The PLC represents the maximum curtailment that PJM (the Grid Operator) will allow for that facility. The PLC also establishes the baseline from which the load drop will be measured. Once the total committed load drop is determined, a FSL (Firm Service Level) is established with the addition of a loss factor which adjusts for the difference between power generated at the utility and power delivered to the facility.

Description	Load (kW)
2011 PLC Value	10,500
Backup Generators	3,000
Chillers	TBD
Air-Handling Units	TBD
Lighting	TBD
Total Committed Load Drop (CLD)*	2,630
Firm Service Level** (estimate - need loss factor)	10,500

* The maximum benefit achieved is based on the registered Committed Load Drop (CLD).

** This estimate will be adjusted based on the loss factor and further discussion with Stroger personnel

The PJM Capacity program requires the Customer to reduce demand for electricity up to 10 times each year when called for a reduction. In addition, the Customer is required to demonstrate the ability to reduce demand for electricity during a test to verify the reduction capability. Terms used herein are defined as follows:

- a. Peak Load Contribution (PLC) – The electrical peak demand as calculated by the Customer's energy supplier or utility.
- b. Firm Service Level (FSL) – The electric demand level to which the Property shall reduce if notified by ECI of an Event.
- c. Committed Load Drop (CLD) – The electric demand level which is the basis of payment for the Capacity Demand Response program.
- d. Event – A notice from ECI to the Customer during the months of June through September, that, upon 2 hours notice, the Customer shall reduce electric demand to the Firm Service Level or by the Guaranteed Load Drop kW for up to a six (6) hour period between 12pm and 8pm Eastern Time, Monday to Friday, on the day of the Event.

For the PJM Capacity program, the Customer is required to reduce electricity load during a test or an Event. Participation is mandatory when a test or Event is called. Notice of a test or Event shall be delivered by email, pager and/or automated phone call. The Customer is then obligated, upon 2 hours notice of an Event, to reduce electric load to the specified Firm Service Level or by the Guaranteed Load Drop for the shorter of:

- a. six (6) hours from the commencement of the Event; or
- b. until 8 PM Eastern Time on the day of the Event; or
- c. until ECI notifies the Customer the Event is over

The Customer shall provide a Letter of Authorization to their energy supplier or utility authorizing them to provide the Customer's PLC to Johnson Controls through EnergyConnect. Each year, Johnson Controls shall work with the Customer to identify the appropriate FSL and CLD and calculate the Estimated Total Payment for each year.

For multiple locations in the same PJM zone served by a common Load Serving Entity (LSE), Customer shall be allowed to aggregate each location's performance and receive payment for Capacity proportional to the committed kW reduction at the stated Capacity Prices per kW.

Economic Program

The Economic Program (referred to as FlexConnect in the GridConnect agreement) provides Customers the option to voluntarily respond to changes in wholesale prices in the PJM region by reducing consumption and receiving a payment for the reduction. Johnson Controls shall collect Customer meter data and calculate a "Customer Base Line" ("CBL"). Johnson Controls shall post this data on a dedicated secure web page accessed through the GridConnect platform and train the customer on how to submit load reduction to PJM. The customer shall receive the full LMP (Locational Marginal Price – wholesale pricing of electricity) less \$.025 for each kW of electrical load reduced below the CBL. The payment details are shown in Appendix 2 of the GridConnect agreement.

- The customer schedules any hours of reduction through the GridConnect web interface.
- Reductions can be updated up to five (5) minutes prior to the hour of reduction.
- Reductions can be planned and entered up to six (6) days in advance.
- Curtailment plans for various reductions must be registered in GridConnect prior to program participation.

Johnson Controls shall provide notification to the Customer of opportunities to reduce electrical load below the CBL based on predetermined forecast electricity pricing criteria. The Customer shall notify Johnson Controls with its intent to curtail usage and will confirm they have implemented a curtailment strategy through the GridConnect

web interface. The PJM Economic Load Response Program is voluntary and the Customer may elect to participate or not in demand reduction without risk or penalty.

The value of participation is dependent on grid conditions, the wholesale price of electricity and the amount and duration of load drop that can be achieved each time. Since participation in the program is voluntary, Johnson Controls will hold no liability to produce these incentives and can only guarantee the reduction of electric loads as a result of the implemented strategies. If such changes occur to the program or participation, the annual reconciliation report will reflect those changes.

There are many variables outside the control of Johnson Controls which will determine the overall benefit from this measure. These include:

- Any program rule changes by PJM may impact how much, how often and by which method (i.e., using backup generation) the customer is able to participate. When rules like this change, Johnson Controls will inform the customer of the impact to the benefits. However, Johnson Controls cannot be responsible for any negative impacts rule changes may have. In addition, Johnson Controls shall not be responsible in the event PJM does not make demand response programs available beyond 2014.
- Johnson Controls reserves the right to make an adjustment in the case where the Customer's PLC is reduced in any year from the amount stated in the contract.
- If the customer chooses not to participate in the program when called upon for any reason, Johnson Controls cannot be responsible for the reduced benefit that the Customer will receive.
- PJM may choose at their discretion to change the rates by which payments to the customer are determined. If rates change, Johnson Controls will inform the customer of any impact it may have on the program. However, Johnson Controls cannot be responsible for any negative impacts rule changes may have.
- If applicable environmental regulatory requirements change regarding using generators for PJM demand response programs, Johnson Controls cannot be responsible for the reduction in any benefits from the program.
- Johnson Controls will not be responsible for any future price fluctuations for natural gas or fuel oil that may affect the overall benefit associated with the PJM demand response programs.
- Johnson Controls is not responsible for any unrealized project benefits resulting from not renewing the GridConnect agreement at the end of any contract year.

SH-26: Ventilation AHUs Improvement

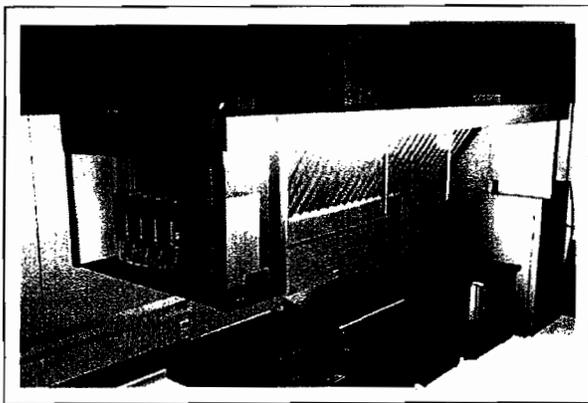
- **Existing Conditions**

The kitchen is equipped with two kitchen hoods that include a large canopy hood for cooking equipment and a smaller hood serving the warmer. The hoods are connected to a common exhaust duct served by exhaust fan KE-1 and a 100% make up air unit AH-19. The fans operate 24 hours per day year round consuming significant electrical and natural gas energy.

The loading dock at the hospital is served by an exhaust fan and a 100% make up air unit, AH-39. The fans operate 24 hours per day year round consuming significant electrical and natural gas energy.

- **Recommended Solution**

A variable air volume control system will be installed to control the exhaust fan and make up air handling units serving the kitchen and the loading dock. This scope will include the installation of a variable speed drive on the kitchen hood exhaust and make-up air fan, in combination with heat and optic sensors in the kitchen hood. The loading dock exhaust and make-up air fans will also be equipped with variable speed drives in combination with carbon monoxide (CO) sensors. The sensors in both areas will reduce and increase fan speed based on the amount of heat and smoke/vapor that is produced. The fans will increase in speed based on input from the sensors. During the periods when the kitchen and loading dock are not in use, the exhaust and make up air fans will reduce to a minimal airflow setpoint. Energy savings are realized due to the reduced ventilation load and lower energy consumption by the fans.



Layout of the proposed kitchen ventilation system

Implementation and Cost Issues:

The implementation process for this ECM is as follows:

- The work shall be performed during first shift

POWER HOUSE

SH-13: Chiller Plant Optimization

- **Existing Conditions**

The existing chilled water plant consists of six 1,250 ton capacity Carrier centrifugal chillers that do not have isolation valves. Each chiller has a dedicated constant speed pump with one balancing valve at 100% open position, and there is no chilled water by-pass. Secondary zones are served by variable speed secondary pumps, and all loads are served by dedicated two-way valves.

There are three cooling towers with four cells equipped with variable speed fan (total of 12 fans.) There is also a cooling tower bypass valve (one) installed for cold weather startup. A constant speed condenser water (CDW) pump is dedicated per chiller, a total of 7 including the backup pump.



The chilled water (CHW) system exhibits the typical energy related conditions associated with the primary secondary hydronic model. Energy efficiency is further compromised by oversized equipment, manual sequencing and modifications to the original design including flow limiting valves and secondary bridge control. Existing operating conditions waste pump power and prevent proper chiller loading, as follows:

Chiller plant will gain additional efficiency from control optimization.

- **CHW loop:** The principal symptoms of excess flow and low CHW temperature differential (ΔT).
- **Chillers:** The plant operates year round; the winter load is less than 600 tons to serve medical equipment and electric room cooling. The Chillers operate inefficiently at this low load.
- **CDW loop:** The constant flow condenser water (CDW) loop efficiency can also be improved. We recommend converting to variable flow and installing control algorithms to optimize the CDW temperature.

- **Recommended Solution**

It is our recommendation that new control strategies be implemented for the existing chilled water system that will increase the overall efficiency of the chilled water plant by increasing the CHW temperature differential, thereby reducing equipment runtime.

- Replace two existing chillers with new high efficiency chillers with variable speed drive (VSD) controls for low load operation. These chillers will be specified to operate down to 50°F condenser water temperature
- Header primary pumps into two groups of three pumps to serve two groups of three chillers
- Replace flow limiting valves with two position control valves
- Add two position control valves on the cooling towers to enable automatic operation
- Remove the modulating valve at each bridge and relocate it to the bridge bypass line
- Control / Instrumentation
 - ✓ Install VSDs on each primary CHW pump and each CDW pump – total of 12
 - ✓ Install DP transmitters across the condenser and evaporator of each chiller – total of 12
 - ✓ Install Control Engine Optimization System (CEO) and establish communications with Metasys via BACnet IP
 - ✓ Implement adaptive control strategies including algorithms for the following:
 - Sequence chillers to assure most efficient loading
 - Reset CHW temperature
 - Regulate cooling tower and chiller operation to optimize CDW temperature
 - Coordination/control of all CHW pumps to maximize overall efficiency
- Replace three way valves on five (5) air-handling units in new Fantus Clinic mechanical room with two way valves
- Provide testing, balancing, commissioning, start-up and onsite training for the new system

Implementation and Cost Issues:

- The work shall be performed during first shift
- CCHHS personnel must provide access to all applicable areas

SH-23: Boiler Stack Condensing Economizer

- **Existing Conditions**

The average boiler flue gas temperature is approximately 390°F. This hot air is currently getting exhausted directly outside via the boiler flue stack. There are two boiler stack economizers on two of the boilers that capture

some of that heat and transfer it to the boiler feed water system. But this only captures a fraction of the potential heat available and discharges the rest. The existing burners on the boilers are original and are in fair operating condition.

- **Recommended Solution**

The intent of this energy retrofit is to recover the existing boilers' flue gas heat and replace three (3) burners with high efficiency low turndown burners. This recommendation will recover heat lost through the flue gases and increase the burner efficiency by operating at low O₂ levels.

The recovered heat will be used to heat kitchen domestic hot water, make-up water to condensate tank, and increase the feedwater temperature to boilers. This is "free heat" that can be used within the building to reduce the boiler load. The scope of work is as follows:

- Install a new high efficiency, condensing heat recovery heat exchanger (HR HX) on roof of the Power House. This system will have an approximate capacity of 5.32 MMBtuh and will be used to capture heat off of boiler flue gases
- Provide boiler breaching modifications to install new duct to the condensing heat recovery heat exchanger. The system shall include a by-pass as indicated in the sample drawing.
 - ✓ Boiler breaching after the condensing heat recovery system shall be stainless steel construction
- Two new hot water loops shall be installed as part of this recommendation:
 - ✓ The high temperature hot water circuit shall be installed to heat the boiler feed water. The existing boiler feed water shall be directed through the HR HX and will be heated to the higher temperatures, and then pumped into the boilers
 - ✓ A low temperature closed loop hot water circuit will be used for the following:
 - Heat the domestic cold water going into the existing condensate surge tank located in the basement of the Power House. A new heat exchanger, HTX-1, will be installed as part of this system.
 - Pre-heat the domestic cold water before it goes to the kitchen water heater. A new heat exchanger, HTX-2, will be installed to provide back-up heat to the low temperature loop using steam heat.
 - Two (2) pumps with variable speed drives (VSDs) will be provided for the low temperature closed loop hot water circuit
- Demolish existing burners on Boilers 3, 5, and 6.
- Furnish and install new high efficiency burner package with low turndown, variable speed drive and new control package
- Provide testing, balancing, commissioning, training and start-up of the new system

Implementation and Cost Issues:

The implementation process for this ECM is as follows:

- The work shall be performed during first shift
- CCHHS personnel must provide access to all applicable areas

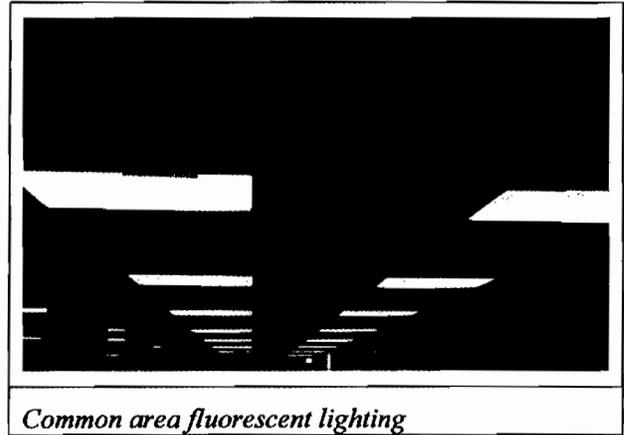
IFM-1: Lighting Upgrades

- **Existing Conditions**

A room-by-room audit has been completed for the building. The existing lighting is predominantly fluorescent type with standard F40T12 lamps and standard magnetic ballasts. The existing exit fixtures have compact fluorescent lamps.

- **Recommended Solution**

The existing fluorescent fixtures will be upgraded to T8 lamps and electronic ballasts. Exit signs will be converted to LED fixtures (100,000 hour life) with battery backup to reduce electric consumption. The new lamps will be lower wattage, have longer life, and provide electric savings.



Implementation and Cost Issues:

- The work shall be performed during first shift
- Temporary relocation of employees might be needed to perform work
- CCHHS personnel must provide access to all areas that require lighting upgrades

- **Existing Conditions**

Cooling for Institute of Forensic Medicine building is provided by a central chilled water plant consisting of two (2) single stage low pressure water-cooled steam absorption chillers. Each chiller has an original design cooling capacity of 280 tons. These chillers operate at much higher costs than electric chillers manufactured today. The chilled water distribution system consists of two constant volume primary chilled water pumps. Currently, one chiller can handle majority of the cooling required in the building. Operating the two chillers requires a high degree of maintenance costs due to their age and availability of parts.

- **Recommended Solution**

The recommendation is to remove one chiller (other chiller to remain as backup) and install a new electric chiller with variable speed control sized at 280 tons to handle 100% of the load. With the variable speed control this chiller will operate at significantly lower costs at all loads. The piping system will be converted to a primary/variable flow secondary system that will maximize the capacity of the new equipment by taking advantage of system diversity.

- Demolish one (1) existing low-pressure steam absorption chiller and provide a new 280-ton multi-stack electric chiller
- The chilled water and condenser water pump motors will be replaced with new higher efficiency inverter duty motors and be equipped with VSDs
- VSDs will be installed on the two cooling tower fans

- A new connection will be made to the main electrical distribution system with a new secondary electrical panel including breakers, conduit, conductors, etc to serve the new electric chiller
- The existing 3-way control valves will be replaced with 2-way valves on seven (7) AHUs
- The pneumatic controls will be replaced with new DDC controls. The new DDC controls points including the new chiller panel will be mapped to the new BAS described in ECM IFM-5
- Provide startup, commissioning and balancing for each component in the system

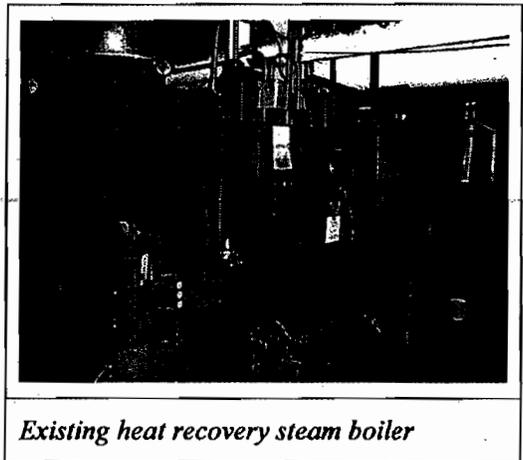
Implementation and Cost Issues:

- The work shall be performed during first shift
- CCHHS personnel must provide access to all applicable areas
- Elevators will be used to move equipment to the basement

IFM-3: Boiler Replacement

• **Existing Conditions**

The Institute of Forensic Medicine building heating is served by a low pressure steam boiler system consisting of two (2) Eclipse heat recovery steam boilers rated at 8,400 MBh each. The boilers' large surface area and high skin losses reduces the efficiency of the heating system and creates high space temperatures that affects the electronic equipment nearby. The heat recovery system has not been operable for several years. The complex operating controls requires higher maintenance and parts are difficult to obtain. One boiler is operated at a time, with the second boiler providing 100% backup. The boilers also serve the domestic hot water heating system through a shell and tube heat exchanger.



Existing heat recovery steam boiler

• **Recommended Solution**

The recommendation is to remove one of the boilers and install two smaller boilers of higher efficiency. The new boilers will serve the heating load while the remaining steam boiler can be used for backup. The parts can be scavenged from the boiler that is being removed. New DDC controls will be installed to operate the two new boilers and feedwater system efficiently to serve the heating load. Reduced runtime for the steam boilers will increase their life expectancy. The scope of work is as follows:

- Demolish and remove one low pressure steam boiler from site
- Furnish and install two new boilers on new concrete pads
 - ✓ Each boiler will be rated at 2,560 MBh output
 - ✓ Provide required steam, condensate, flue and gas piping with required accessories and support
- Connect electrical power, controls, feedwater connections, and steam header modifications to allow automated operation of the boiler system
- Connect the new boiler system and feedwater equipment to the new BAS for monitoring and control
- Provide startup, commissioning and balancing for each component in the system

Implementation and Cost Issues:

- The work shall be performed during first shift
- CCHHS personnel must provide access to all applicable areas

IFM-4: Domestic Water System Upgrades

- **Existing Conditions**

Currently, there are two separate domestic water heating systems at Forensic Medicine Building. There is a gas-fired hot water heater for the building that provides domestic hot water for conventional uses such as lavatories, sinks, etc. This system uses a booster pump package that is constant volume and operates at constant load at all times.

The smaller domestic water heating system is comprised of electric hot water heaters and is used to serve the Autopsy Rooms. There is a dedicated domestic water tank that serves the spray fixtures in the Autopsy Rooms with a water booster pump with an air-gap water supply. The existing pump motors run continuously 7 days per week at full load. The existing operation is inefficient, resulting in high electric use.

- **Recommended Solution** The recommendation is to replace the two domestic hot water heating systems with a new gas fired domestic water heater to operate in series with the existing domestic hot water heat exchanger. This will allow the large steam boilers to be shut down during the summer period and use the smaller higher efficiency heaters to serve the domestic hot water load. We will also replace the existing Pacific Pumping Co. booster pump package with a new system equipped with variable speed drives (VSD). The Autopsy Room domestic water booster pump motor shall be replaced with a high efficiency inverter duty rated motor and a new VSD will be installed to control the water supply pressure.
- Demolish two (2) existing steam to hot water converters for the main domestic hot water heating system. Install two (2) new hot water heaters in the penthouse mechanical room, each rated for 120 MBH input. Provide required piping and connect to existing domestic hot water system.
- Demolish and remove the existing Pacific Pumping Co. booster pump package. Furnish and install a new booster pump package with VSD to provide domestic water for the building.
- Demolish and remove one (1) existing shell/tube heat exchanger and the two (2) electric hot water heaters serving the Autopsy Rooms. Install two (2) new hot water heaters in the penthouse mechanical room, each rated for 100 MBH input. Provide required piping and connect to existing domestic hot water system.
- Remove the two (2) existing motors from Autopsy Room booster pump. Furnish and install two (2) new high efficiency inverter duty rated motors and variable speed drives (VSDs) for the Autopsy Room booster pumps. Install DDC controls including new pressure sensor, controller and programming to control the pump speeds to maintain proper water pressure.
- Provide startup, commissioning and balancing for each component in the system.

Implementation and Cost Issues:

- The work shall be performed during low occupancy periods
- Work related to Autopsy Pumps shall be coordinated with the Medical Examiner office
- Elevators shall be used to move equipment to the basement and the penthouse
- CCHHS personnel must provide access to all applicable areas

IFM-5: AHU Controls and Electronic Filter Upgrades

- **Existing Conditions**

There are five (5) main HVAC multi-zone AHUs that supply air to main spaces throughout the building. These are tagged MZ-1 through MZ-5. There are two constant volume single zone HVAC AHUs that are tagged AC-1 and AC-2. In addition, there are two heating only constant volume units, HV-1 and HV-2, which operate at 100% ventilation air. All the units are controlled with pneumatic controls system. This operation is not only inefficient, but also reduces the equipment life expectancy.

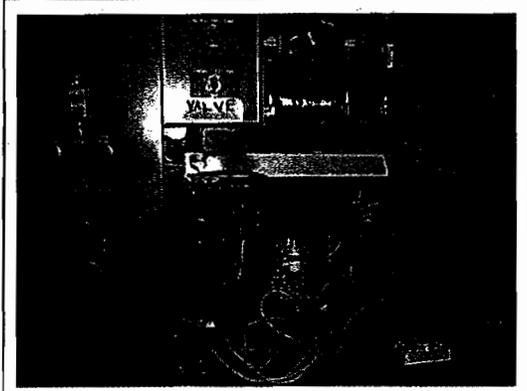
Additionally, the five multi-zone units (MZ-1 thru MZ-5) as well as two other units (AC-1 and AC-2) are equipped with pre-filters that require regular replacement as they become plugged. These filters have a high air pressure drop which increases fan horsepower and decreases airflow capacity.

There is no Building Automation System (BAS) in place for monitoring or scheduling any of these units. Several of the pneumatic components are in need of replacement and calibration. The condition of the temperature control system has led to higher electric and natural gas energy consumption. This is due in large part to high runtimes of equipment, inefficient ventilation air control, no reset of air and water temperature.

• **Recommended Solution**

The intent of this energy retrofit is to replace existing pre-filters in seven of the units (MZ-1 thru MZ-5, AC-1 and AC-2) with high efficiency electronic filters. The new filters will reduce pressure drop across the system and lower fan energy consumption. New conductors, breakers, conduit, etc. will be installed to provide power for each filter system. Each fan will be re-balanced after completion of the installation.

This recommendation also includes converting the existing pneumatic control system to Direct Digital Controls (DDC) along with a new BAS. The new temperature controls system will provide scheduling of air-handling units to meet the current occupancy schedule of the spaces.



Original Controllers

TAG	SERVES	Supply CFM	TSP	Supply Fan HP	Return Fan HP	Notes
MZ-1	1st & 2nd Floors	19,550	4.4	30	10	Day Night Scheduling with Reduced VSD Speed & Close OAD (50%)
MZ-2	Basement & 1st Floor	11,380	4.49	20	5	Day Night Scheduling with Reduced VSD Speed (50%)
MZ-3	1st Floor	17,990	4.65	25	15	Duct Isolation, Dampers to close at night, VSD to control SP Setpoint
MZ-4	2nd Floor	6,810	4.25	15	5	Day Night Scheduling with Reduced VSD Speed (50%)
MZ-5	2nd Floor	16,830	4.09	20	10	Day Night Scheduling with Reduced VSD Speed (50%)
AC-2	Basement - Conference Room	4,570	3.68	7.5	2	Day Night Scheduling with Reduced VSD Speed (50%)
HV-2	Basement Mechanical Rm	6,430	1.65	7.5	N/A	Day Night Scheduling with Reduced VSD Speed (50%)

The units listed above will also be retrofitted with new controls strategies such as reset of temperatures, closing ventilation dampers when the space is unoccupied, and reducing fan speeds with variable speed drives (VSDs). The scope of work will include:

- Remove existing supply and return fan motors for MZ-1 through MZ-5. Furnish and install premium efficiency inverter duty motors, rated at same HP. Install variable speed drives on all new motors.
- Install isolation damper in ductwork for MZ-3. Cut into existing zone supply ductwork and install four (4) new control dampers.
- Remove existing supply fan motors for AC-1, AC-2, HV-1, and HV-2. Furnish and install premium efficiency inverter duty motors, rated at same HP. Install variable speed drives on all new motors.
- Replace pneumatic controllers, devices, sensors, actuators with new DDC controls for the units listed in the table above.

- Replace ventilation damper actuators. Dampers shall close during low/no occupancy.
- Provide new electronic filters for the AHUs
 - ✓ Remove existing pre-filters from units MZ-1 thru MZ-5, AC-1 and AC-2.
 - ✓ Furnish and install new Dynamic V8 filters, with face areas sized to accommodate available internal space of air handler cross section
- Provide complete installation of filter assemblies, field power wiring, controls hardware and software, etc.
- Install a new BAS workstation in the Engineers Office including computer and printer
- Provide software and programming to operate HVAC system with temperature resets for air and water, optimal scheduling of HVAC units and monitoring of equipment
- Provide startup, commissioning, testing and balancing for all the units after completion of work

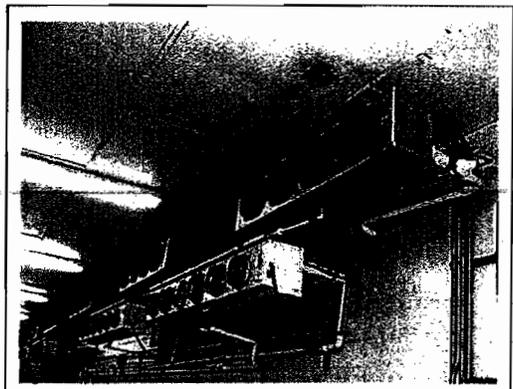
Implementation and Cost Issues:

- The work shall be performed during first and second shift
- Some AHUs will require temporary shutdown to complete the work
- CCHHS personnel must provide access to all applicable areas

IFM-6: Inactive Storage Cooling System Upgrade

• **Existing Conditions**

The Inactive Storage Area is maintained at 45°F 24 hours per day. The existing cooling system consists of a primary and secondary cooling system. The primary system consists of six (6) fan coil units in the Inactive Storage area. These fan coil units are direct expansion (DX) type and are served by air-cooled condensing units located on the roof. The secondary cooling system consists of four (4) fan coil units in the Inactive Storage area. These units are also DX type and are served by a water cooled condensing unit located in the basement mechanical room. The secondary system is an emergency back-up cooling system.



Existing cooling system in the Inactive Storage at Institute of Forensic Medicine

The primary cooling system is in deteriorating condition. The evaporator fan cooling units and condensing units are past their useful life and their reliability is poor. The refrigerant piping system and DX coils frequently experience leaks and compressor failure occurs each year. Due to the poor condition of the equipment, there are many times throughout the year that the cooling system is ineffective and the room temperature rises above the 45°F required for this area.

• **Recommended Solution**

The recommendation is to remove the existing primary DX cooling system and install an entirely new system including evaporator fan cooling units, condensing units, refrigerant piping and accessories and controls. The new system will provide reliability and reduce any operational and maintenance issues associated with the existing cooling system. The scope will include the following:

- Demolish and remove the existing primary DX cooling system and the associated fan coil units, refrigerant piping, etc. Disconnect associated controls and accessories. Provide temporary continuous cooling using the existing backup chiller
- Furnish and install four (4) new 7.5 ton fan coil units (FCU) in Inactive Storage area and two (2) new 15 ton air-cooled condensing units (ACCU)
- The new refrigerant shall be R-404A. Provide new refrigerant piping from one ACCU to two FCUs to provide redundancy

- Provide controls to operate the new cooling system
- Provide startup, testing, and commissioning for the new system

Implementation and Cost Issues:

- The work shall be performed during first shift
- All work shall be coordinated with the Medical Examiner office
- CCHHS personnel must provide access to all applicable areas
- Temporary cooling shall be provided using the existing backup chiller

IFM-7: Steam Traps and Misc Upgrades

- **Existing Conditions**

A steam survey was completed for Institute of Forensic Medicine to identify savings related to the steam distribution system. This includes steam traps and pipe insulation.

Forty-two (42) mechanical traps (Bimetallic, float and thermostatic, and thermodynamic) and 11 check valves were identified. Fifteen traps were abandoned in place. The traps were tested with an infrared gun and ultrasonic listening device. The tested traps had the following failure rates: 3% plugged, 3% blowing, and 12% leaking. These failure rates have been applied to the traps that were not in operation at the time of the survey.

- **Recommended Solution**

The intent of this energy retrofit is to replace faulty traps, insulate bare piping and valves. The scope of work includes:

- 42 mechanical traps will be replaced with new traps.
- 11 check valves being used as vacuum breakers will be replaced with vacuum breakers
- ~~A total of 30 thermal blanket systems will be installed on the valves and fittings identified during the survey. The thermal blanket system consists of:~~
 - Outer jacket made of silicone impregnated fiberglass cloth
 - Embossed identification plate
 - Blanket insulation will overlap existing insulation by 2"
 - Wire ties for removal and installation

Implementation and Cost Issues:

- The work shall be performed during first shift
- CCHHS personnel must provide access to all applicable areas

IFM-8: Receiving Dock Infrared Heaters

- **Existing Conditions**

There are eight (8) electric infrared heaters located at the receiving dock of the Forensic Medicine building. These heaters were installed to heat the area during the winter months, but are no longer in operating condition. This has resulted in accumulation of snow and caused slippery conditions.

- **Recommended Solution**

It is our recommendation that the existing infrared heaters be replaced with new heaters. The new system will have a snow and ice sensor control system to ensure that the area is heating during the winter. The scope of work includes:

- Demolish and remove eight (8) existing electric radiant heaters

- **Furnish and install new electric infrared heating system**
 - ✓ The new heaters shall be 5,000 watts each, with two (2) 2,500 watt lamps in each fixture
 - ✓ The heaters shall have stainless steel enclosure
 - ✓ A contactor panel shall be provided to turn the heaters on and off
 - ✓ The heaters shall be equipped with a snow and ice sensor control system
- The electrical circuits are in good operating condition and do not need any work or modification
- Provide testing, startup, and commissioning of the new system

Implementation and Cost Issues:

- The work shall be performed during first shift
- CCHHS personnel must provide access to all applicable areas

HEKTOEN BUILDING

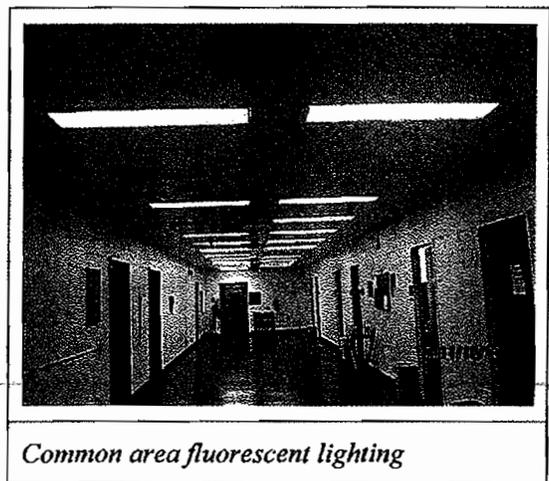
HB-1: Lighting Upgrades

• **Existing Conditions**

A room-by-room audit has been completed for the building. The building has older inefficient T12 fluorescent lamps and magnetic ballasts. Also, there are a number of incandescent bulbs still in use. The existing exit fixtures have compact fluorescent lamps.

• **Recommended Solution**

All of existing fluorescent fixtures will be retrofitted with new high efficiency, low watt F32T8-25 watt lamps and electronic ballasts. The incandescent lamps will be replaced with compact fluorescent lamps (CFL). Exit signs will be converted to LED fixtures (100,000 hour life) with battery backup for improved safety and to reduce electric consumption. The new lamps will have lower wattage, longer life and provide electric savings.



Common area fluorescent lighting

Implementation and Cost Issues:

- The work shall be performed during first shift
- Temporary relocation of employees might be needed to perform work
- CCHHS personnel must provide access to all areas that require lighting upgrades

HB-9: Controls and AHU Upgrades

• Existing Conditions

The existing air handling units (AHUs) throughout the building do not have direct digital controls (DDC). The existing pneumatic system that is controlling these units is in working condition but does not allow any energy saving control strategies or allow the units to be shut down during unoccupied periods of the day, resulting in unnecessary operation and high energy costs. Also, it was observed during the walkthroughs that some of the sensors were not working correctly.

• Recommended Solution

The intent of this energy retrofit is to extend the existing DDC in the penthouse to the 2nd floor and 10th floor mechanical rooms. Because the existing pneumatic controls appear to be in fair condition, we propose to allow this system to continue to control the AHUs. However, we will provide some minimal control

points at each AHU for monitoring the status of the units and to turn them off during unoccupied times. This will provide an economic upgrade to the existing units, while adding energy saving occupied/unoccupied sequence to the existing units, and allow for future expansion of the DDC system. The scope of work includes:

- Demolish and remove all of the existing pneumatic controls and replace with DDC controllers. Provide a new DDC BAS for the building.
- New Control Valves: Provide new electric / DDC control valves for all coil banks to remain. This includes coils in AHUs and coils in downstream, hot deck / cold deck coil banks.
 - ✓ Furnish all new electric / DDC control valves
 - ✓ Steam Pre-Heat: (6) control valve assemblies required, each 1/3 – 2/3
 - ✓ Pre-Cool-CHW: (5) control valve assemblies required
 - ✓ Cold Deck CHW: (8) control valve assemblies required
 - ✓ Hot Deck Steam: (8) control valve assemblies required, each 1/3 – 2/3
- OAI Dampers: OAI dampers in all (9) AHUs shall remain as is. Clean dampers and make sure linkages and blades work properly. Provide new DDC actuators and controls.
- Replace Steam Heat Coils in two of the AHUs: S-8 and S-9.
 - ✓ Disconnect steam and condensate piping, break apart AHU housing / casing, and remove the steam heat coil bank
 - ✓ Furnish and install new Steam Heat coils. After new coil bank is installed, repair / patch the housing by installing patch pieces to close all openings. Reconnect all steam and condensate piping, provide new steam traps
- Remove Steam Heat Coils in five of the AHUs: S3, S4, S6, S7, and S8.
 - ✓ Disconnect steam and condensate piping, break apart AHU housing / casing, and remove the steam heat coil bank
 - ✓ After steam heat coil bank is removed, repair/patch housing by installing patch pieces to close all openings
- Perform a thorough inspection check of all (9) AHUs and matching return/exhaust fans. Clean heating and cooling coils, provide new air filters, check all electrical connections, provide new belts, grease bearings, clean cooling coil drain pan, clean dampers, provide minor repairs (if needed) to doors and latches.
 - ✓ If any MAJOR mechanical or electrical problems outside our scope of work are discovered, such problems shall be disclosed in a service narrative. An estimate for repair or replacement shall be provided.

Implementation and Cost Issues:

- The work shall be performed during first shift



Existing control panel for an air-handling unit at Hektoen Building

- Some AHUs may require temporary shutdown to complete the work
- CCHHS personnel must provide access to all applicable areas

HB-13: Domestic Water Booster VSD

- **Existing Conditions**

The existing domestic water booster system in the building consists of two (2) redundant 25 Hp constant volume pumps. These pumps maintain pressure throughout building, particularly higher floors, for sinks, lavatories, and showers. The two existing motors are standard efficiency motors, meaning there is room for energy improvement by upgrading the motors alone.

- **Recommended Solution**

The intent of this energy retrofit is to replace the existing domestic water booster system with a new booster pumping package with variable speed drive (VSD). This would provide energy savings due to higher efficiency motors and reduced pumping power. The scope of work includes:

- Disconnect and remove two exiting booster pumps rated at 460 / 3 / 25 Hp and all associated pump accessories. Disconnect power connection from the existing unit.
- Install new booster pump package with VSD on a 6" skid. Unit to be sized at 40 GPM & 60 psig. Reconnect power connection to the new pump package.
- Provide and install new piping connections and provide insulation on new piping and at point of connection to existing. Existing pressure tank to be abandoned in place.
- Provide commissioning and start-up for the new system.



Domestic water pumps providing water pressure for the building

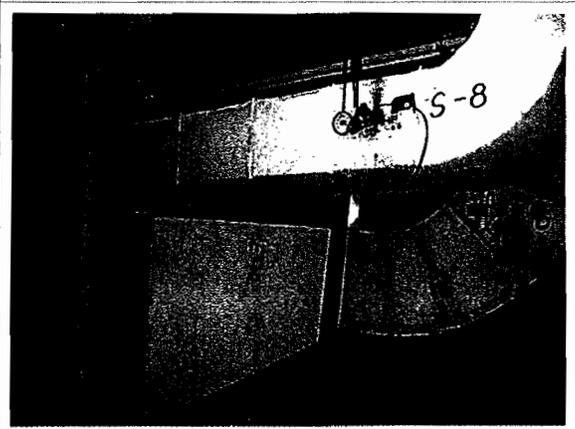
Implementation and Cost Issues:

- The work shall be performed during low occupancy periods
- CCHHS personnel must provide access to all applicable areas

HB-16: Dual Duct VAV and Mixed Air Conversion

- **Existing Conditions**

There are nine (9) total AHUs in the facility. These units have bag type pre-filters, which cause a large pressure drop across the unit, resulting in higher fan energy consumption. The units S-2, S-3, S-6, S-7, and S-8 are currently dual duct constant volume units with dual duct boxes for each zone. Air-handling units S-3, S-6, S-7 and S-8 are 100% OA units. Each unit has a general exhaust fan that exhausts air from the space the units serve. The existing dual duct boxes are controlled by a thermostat in the space they are serving. None of these boxes and thermostats are currently in working condition. The thermostat controls a damper in both the cold deck (supplying cool air) and a damper in the hot deck (supplying warm air). In order to provide heating, the thermostat signals the cold deck damper to close and the hot deck damper to open. When cooling is required in the space, the thermostat signals the opposite to happen.



S-8 (AHU-8) is an example of a dual duct unit. There are two individual ducts routed down: one is the hot deck, the other is the cold deck

- **Recommended Solution**

The intent of this energy retrofit is to replace existing bag type pre-filters in all nine (9) units with high efficiency electronic filters. The new filters will reduce pressure drop across the system and lower fan energy consumption.

We also propose to convert units S-2, S-3, S-6, S-7, and S-8 that are currently dual duct constant volume units to variable air volume (VAV) units. The dual duct constant volume boxes will be replaced with new single duct VAV cooling only boxes. The existing hot deck ductwork shall be abandoned in place and the existing cold deck ductwork shall supply air to the single duct VAV boxes during heating and cooling season. The four units with 100% OA (S-3, S-6, S-7 and S-8) will also be retrofitted with return air provision. The corresponding general exhaust fans will be demolished and replaced with new return/exhaust fans. New return air ductwork will be installed from return/exhaust fan discharge to AHU intake plenum.

The existing supply and return motors for the five dual duct constant volume AHUs will be replaced with inverter duty motors and retrofitted with variable speed drives (VSDs) to reduce fan speeds based on occupancy loads. The scope of work for this recommendation includes the following:

- Replace original dual duct boxes with VAV boxes
 - ✓ There are approximately 203 dual duct (DD) boxes at the facility. 35 of these boxes have been recently replaced with new DD boxes and shall remain in place
 - ✓ Demolish and remove 168 DD boxes. Provide new VAV cooling only boxes
- Convert five (5) units (S-2, S-3, S-6, S-7, and S-8) from dual duct distribution to VAV operation
 - ✓ Demolish and remove hot deck and cold deck coil banks, downstream of main supply fan
 - ✓ Extend new duct from fan discharge to existing cold deck supply deck. The existing hot deck ductwork shall be abandoned in place
 - ✓ For unit S-2, once the dual duct coil arrangement is removed, the unit does not have heating or cooling. Furnish and install a new steam pre-heat coil and a new CHW cooling coil and install these coils in the fan suction, in the main housing. New AHU controls shall be provided for MAT, DAT, coil freeze stat, etc.
- Convert four (4) units (S-3, S-4, S-6, S-7, and S-8) from 100% OA units to mixed air units,
 - ✓ Demolish and remove four (4) existing general exhaust fans (EF-2, EF-6, EF-7 and EF-9)
 - ✓ Furnish and install new return/exhaust fans. The new fans shall be inline fans (centrifugal or axial), sized to the specific duty of the modified VAV AHU
 - ✓ Install new return air ductwork from new return/exhaust fan discharge to AHU intake plenum
 - ✓ Existing exhaust air and OA dampers shall remain in place and be reused with the new configuration. Clean dampers, check and adjust linkages and jack shafts to make sure dampers operate freely and properly
 - ✓ Provide new return air dampers, electronic actuators and controls

- Provide new motors and VSDs on supply and return/exhaust fans for all five (5) air-handling units (S-2, S-3, S-6, S-7, and S-8)
- Provide new electronic filters for the AHUs
 - ✓ Remove existing pre-filters from units S-1 thru S-9.
 - ✓ Furnish and install new Dynamic V8 filters, with face areas sized to accommodate available internal space of air handler cross section
 - ✓ Provide complete installation of filter assemblies, field power wiring, controls hardware and software, etc.

Implementation and Cost Issues:

- The work shall be performed during first and second shift to ensure minimal disruption
- Temporary relocation of employees might be needed to complete the work
- CCHHS personnel must provide access to all applicable areas

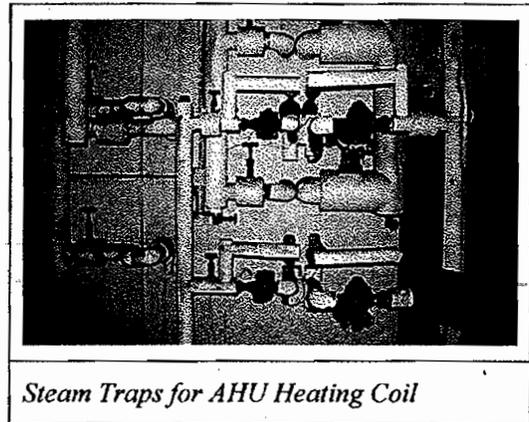
HB-18: Steam Traps and Misc Upgrades

• **Existing Conditions**

A steam survey was completed for the Hektoen Building to identify savings related to the steam distribution system. This includes steam traps and pipe insulation.

The steam system currently operates at steam pressure of 60 psi. This pressure is no longer required to meet the heating needs of the building and can be lowered to typical operating pressure.

There are 185 mechanical traps (Bimetallic, float and thermostatic, and thermodynamic) and 158 thermostatic traps identified. The traps were tested with an infrared gun and ultrasonic listening device. The tested traps had the following failure rates: 1% plugged, 6% blowing, and 5% leaking. These failure rates have been applied to the traps that were not in operation at the time of the survey.



Steam Traps for AHU Heating Coil

There are approximately 160 feet of piping and 30 steam valves that are un-insulated.

• **Recommended Solution**

The intent of this energy retrofit is to replace faulty traps, insulate bare piping and valves. The scope of work includes:

- 185 mechanical traps will be replaced with new traps.
- 158 thermostatic traps will be rebuilt using Tunstall retrofit kit
- A total of 30 thermal blanket systems will be installed on the valves and fittings identified during the survey. The thermal blanket system consists of:
 - 1" fiberglass insulation
 - Outer jacket made of silicone impregnated fiberglass cloth
 - Embossed identification plate
 - Blanket insulation will overlap existing insulation by 2"
 - Wire ties for removal and installation
- Piping insulation will be installed on 160 feet of steam and condensate piping. The installation includes 2" fiberglass insulation on the identified un-insulated condensate and steam pipes.
- The steam pressure will be reduced to 15 psi.

-
- ✓ There are three (3) existing steam PRV stations, basement, 2nd Floor and 10th Floor that will be removed.
 - ✓ The following modifications will be required the following:
 - Increase steam outlet nozzle size from current 6" to an approx 10" to 12" nozzle size
 - Lower the operating water level thru adjusting water column operating and safety controls
 - Change steam safety valves, safety valve outlet quantities and sizes.
 - Burner modifications to adjust for differences in steam pressure and firing control

Implementation and Cost Issues:

- The work shall be performed during first shift
- CCHHS personnel must provide access to all applicable areas

RUTH M. ROTHSTEIN CORE CENTER

RRCC-1: Lighting Upgrades

- **Existing Conditions**

A room-by-room audit has been completed for the building. The existing lighting is predominantly fluorescent type with standard T8 lamps and electronic ballasts. There were few occupancy sensors installed in the building. The existing exit fixtures have compact fluorescent lamps.

- **Recommended Solution**

It is our recommendation that the existing T8 fluorescent fixtures will be retrofitted with new high efficiency, low watt T8 lamp. All the incandescent bulbs will get replaced with compact fluorescent lamps (CFLs). Exit signs will be converted to LED fixtures with battery backup to reduce electric consumption. Retrofitting the building with high efficient lighting system will provide the clinic with a standardized inventory energy and maintenance savings as well as improved aesthetics value.

Implementation and Cost Issues:

- The work shall be performed during first shift
- Temporary relocation of employees might be needed to perform work
- CCHHS personnel must provide access to all areas that require lighting upgrades

RRCC-2: Controls Upgrade and Electronic Filter Retrofit

- **Existing Conditions**

There are two main air handling units (AHUs) located in the penthouse mechanical room at Core Center. These air-handling units are variable air volume units with VSDs on supply and return/exhaust fans. Both AHUs have pre-filter and final filter that require continuous replacement as they become plugged. These filters have a high air pressure drop which increases fan horsepower (existing fans have VSDs) and decreases airflow capacity. There is an existing DDC control system, which is tied into the Metasys

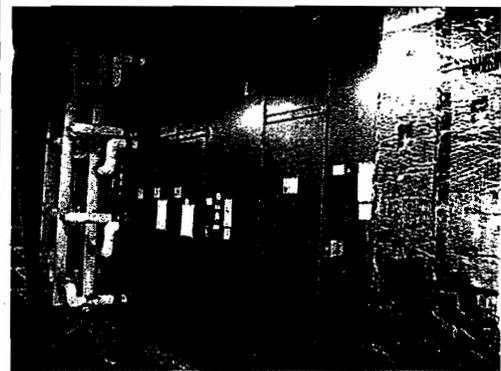
system with the workstation located in the penthouse.

There is no night setback in place for the VAV box airflow and space temperature.

- **Recommended Solution**

The recommended solution is to remove the existing pre- and final filters and install new high efficiency electronic filters. The new filter system will dramatically reduce fan horsepower and increase fan capacity. The retrofit will be completed for both air-handling units in the penthouse, AHU-1 and AHU-2. The new 1" pre-filters and 2" final filters both have a rating of MERV 15+. New conductors, breakers, conduit, etc. will be installed to provide power for each filter system. Each fan will be re-balanced after completion of the installation.

We also propose to provide additional controls upgrade at each AHU for providing night setback for VAV boxes and AHUs. This will provide an economical upgrade to the existing units, while adding energy saving occupied/unoccupied sequence to the existing controls.



AHU-1 in the penthouse mechanical room

Implementation and Cost Issues:

- The work shall be performed during first and second shift to ensure minimal disruption
- Temporary relocation of employees might be needed to complete the work
- CCHHS personnel must provide access to all applicable areas

SITEWIDE ECMS

SCW-6: LEED-EB and Energy Star Benchmarking

Energy Star Accreditation Plan

The intent is to establish Energy Star rating for all the buildings in the IGA contract (Durand Building has been excluded since it is no longer in use). The benchmarking analysis will show the impact that the energy conservation measures will have on the performance of the buildings as described in 2.3.1.q) Energy System Baseline and Energy Star Benchmarking of the Phase 1 report. The Energy Star rating will be generated on a building by building basis. SCW-14: Utility Meters for Administration and Fantus has been included in order to provide sub-meters at Administration Building and Fantus Clinic. Administration Building is served by the Power House heating system, while Fantus Clinic is served by the Power House heating and cooling systems. The sub-meters will help us determine how much energy is being consumed by these two buildings individually, which will then allow us to provide an accurate Energy Star benchmarking. The plan for Energy Star benchmarking is as follows:

1. Portfolio Manager shall be used to establish existing Energy Star rating for all the buildings. The building information is provided below.
 - a. The existing rating shall be established using the electric and natural gas utility data provided by Cook County to Johnson Controls.
 - b. The existing rating will be generated for each building separately.

Building Name	Building Address	Square Footage	Building Use
Stroger Hospital	1901 W. Harrison	1,206,000	Hospital
Forensic Medicine	2121 W. Harrison	82,671	Medical Office
Hektoen Bldg	627 S. Wood	159,800	Office
Administration Bldg	1900 W. Polk	321,100	Office
Fantus Clinic	621 S. Winchester	206,700	Medical Office
CORE Center	2020 W. Harrison	60,000	Medical Office

2. Portfolio Manager shall be used to establish proposed Energy Star rating for all the buildings. The proposed rating shall be established using the anticipated electric and natural gas data if all the energy conservation measures (ECMs) are implemented.
 - a. The anticipated electric and natural gas usage shall be the difference between the existing base year energy usage and the potential savings calculated by Johnson Controls.
 - b. The proposed rating shall be generated for each building separately.

LEED Accreditation Plan

During the IGA phase, a detailed analysis was conducted to find out if Stroger Hospital qualifies for LEED certification. In order to become eligible for the certification, a facility must achieve a minimum Energy Star rating of 69. Based on our analysis, the hospital currently does not qualify for a LEED certification due to a low Energy Star rating. LEED accreditation is not part of the scope of the project.

SCW-14: Utility Meters

Utility Meters for Administration and Fantus has been included in order to provide sub-meters at Administration Building and Fantus Clinic. Administration Building is served by the Power House heating system, while Fantus Clinic is served by the Power House heating and cooling systems. The sub-meters will help us determine how much energy is being consumed by these two buildings, which will then allow us to provide an accurate Energy Star benchmarking for all other facilities.

SCW-15: Sustainability Services

Green Workshop Series

Our goal is to create a series of workshops to establish a more sustainable hospital. Our education series of interactive seminars, coupled with collaborative establishments of baseline procurement and cleaning practices will allow us to track and improve the hospital's best green practices. Our strategy is as follows:

Quarterly Sessions:

6 Sessions Total - Each 1 hour in length.

Each session can be held during a lunch hour to allow for the majority of respective teams to attend. The sessions will require the attendance of the top Administrators and/or the Operational Staffs, Employees in General, Maintenance Staffs and vendors. Topics include:

WELCOME TO THE GREENING OF STROGER HOSPITAL

This workshop introduces all of the hospital team to the collaborative efforts allow Stroger to save money and the planet. We'll explain the reasoning and rationale as well as the journey from performance contracting to eliminating Styrofoam cups. Attendees : Administration, Staff, Employees

THE BASICS OF HOSPITAL GREEN

We'll review the three basic principals of green healthcare facilities, the statistics supporting improved healthcare in green hospitals and the cost savings associated with these actions. We will work with all appropriate departments to develop baselines to measure the accomplishments of this new green direction. Attendees: Administration, Staff, Employees

GREEN HOSPITAL PROCUREMENT PRACTICES

Specifically addressing the appropriate audience, we will discuss the basic concerns of revising procurement practices: Price, corporate commitment, knowledge, availability, alternatives and old habits. Attendees : Administration, Vendors, Suppliers

HOSPITAL WASTE REDUCTION

With top management support, we will incorporate a waste reduction process within the hospital, developing a written pollution prevention plan, and training employees in pollution prevention will save the hospital a great deal of money. Attendees: Staff, Maintenance, Waste Hauling Vendors

GREEN HOSPITAL CLEANING

Discussing the basic of green cleaning, disinfecting, and antimicrobials products will be one of the primary topics. We will also address the green movement in healthcare such as LEED standards and Green Seal standards. Attendees: Custodial Engineers, Maintenance Staff

GREEN HOSPITALS, GREEN PATIENTS, GREEN VISITORS

Concentrating on the experience of those that visit the hospital will be the primary focus. From signage to help all visitors participate in the *green* experience to working with the employees that greet the general public, we will make sure that everyone understands the costs and many benefits of going green. Attendees: Some Administration, Front desk staff

Workshop Deliverables:

6 presentations, 1 Procurement Baseline Audit, 1 Waste Baseline Audit, Tracking tools for E-Waste, Green Cleaning Strategy, Quarterly Progress Reports, Green Signage Recommendations.

Green Operations Manual

While the performance contract is in effect, the Stroger Hospital green team is formed, the workshop and the LEED Assessment work has begun we will create a green operations and management practices manual for Stroger Hospital. The project team will summarize findings and develop a Green Operations and Management Practices (O&M) Manual describing the industry's best practice with specifics that support the County's Best Practices. This manual will assist Stroger Hospital administrators, medical personnel, managers, facility operators and maintenance personnel in preferred protocols as defined by the American Hospital Association and Cook Counties.

Green Manual Deliverables:

Three hard copies and one electronic copy of the Green Operations & Maintenance Handbook for Stroger Hospital.

Stroger Hospital Green Team Consulting

Essential to a successful green environment is an internal Green Team. Ideally, it is comprised of representatives from each division of the hospital's staff. Authority to suggest environmentally friendly policies to top administrators for approval is also important. This *Green Team* will work directly with the TAG's Consultants, Johnson Controls and other experts engaged in achieving a green community. Upon completion of our consulting services, this Green Team should remain intact. While less frequent meetings would be acceptable, a green hospital is an ongoing, ever evolving process.

Customer Responsibilities for All ECMs

- Customer will make reasonable effort to provide on-site storage office space and temporary parking

On-Going Service

On-going service contracts through the contract term including, M&V, Chiller Service and Optimization and Waste Management are discussed in Exhibit K.

Commissioning Plan – Testing Procedures

The commissioning plan ensures that systems are designed, installed, functionally tested in all modes of operation, and are capable of being operated and maintained in conformity with the design intent (i.e., appropriate lighting levels, cooling capacity, prescribed temperatures, time schedules, etc.). Commissioning provides a process for achieving, verifying, and documenting the performance of building systems.

The Commissioning Plan, which will be updated after approval of the Design and Construction Package, provides the formal Commissioning program to ensure that the ECMs are properly implemented, that ECM performance meets or exceeds levels specified in the Final Proposal, and that contract requirements are met. The Commissioning Plan includes team member roles and responsibilities; the Commissioning schedule; descriptions of specific Commissioning steps and requirements; and sample performance and function verification forms.

COMMISSIONING SCOPE

The commissioning objectives during implementation of the ECMs are:

Ensure that applicable equipment and systems are installed properly and receive adequate operational checkout by installing contractors.

Verify and document proper performance of equipment, systems and assemblies, and that each ECM is expected to perform as proposed.

Ensure that O&M documentation left on site is complete.

Ensure that the Owner's operating personnel are adequately trained.

Commissioning will be completed for each ECM and documentation will be organized by ECM in the Commissioning Report. Details of the commissioning are provided in each ECM's Commissioning Plan. Each

ECM in a building will be fully commissioned before the building will be signed off by the owner as substantially complete.

COMMISSIONING SCHEDULE

The initial commissioning activities are summarized in the table below. A more detailed schedule is developed and maintained as construction progresses.

Table 2: Commissioning Activity Summary

Task/ Activity
Kickoff meeting
Submittals obtained and reviewed
Controls integration meeting
Review on the draft Commissioning Plan
Revised Commissioning Plan
Begin construction site visits/inspections
Construction checklist forms developed and distributed
Startup and initial checkout plans
Startup and initial checkout executed
Testing & Balancing
Functional performance tests executed
O&M documentation review and verification
Training and training verification
Final commissioning report

ROLES AND RESPONSIBILITIES

The members of the commissioning team consist of the Johnson Control's Commissioning Authority (CA), Project Manager, Project Assurance Engineer, Cook County Representative, the mechanical contractor, electrical contractor, TAB representative, controls contractor, any other installing subcontractors or suppliers of commissioned equipment or assemblies.

INSTALLATION, STARTUP, AND INITIAL CHECKOUT

This phase is conducted primarily by the contractor(s) for each ECM, utilizing manufacturer's start-up procedures and documentation forms provided or approved by Johnson Controls.

A key element in this phase is the completion of construction checklists, or pre-functional inspection forms. Construction checklists are primarily static inspections and procedures to prepare the equipment or system for initial operation (e.g., oil levels OK, fan belt tension, labels affixed, gages in place, sensor calibration, etc.). However, some construction checklist items entail simple testing of the function of a component, a piece of equipment or system (such as measuring the voltage imbalance on a three phase pump motor of a chiller system).

Construction checklists augment and are combined with the manufacturer's start-up checklist.

Each piece of equipment receives full construction checkout by the Contractor. No sampling strategies are used.

In general, the construction checklist for a given system must be successfully completed prior to formal functional performance testing of equipment or subsystems of the given system.

This project requires the execution of installation and checkout procedures be documented in writing by the installing technician.

Construction checklists are important to ensure that the equipment and systems are ready to operate and that functional performance testing may proceed.

DEVELOPMENT OF FUNCTIONAL TEST AND VERIFICATION PROCEDURES

Functional testing is the dynamic testing of systems (rather than just components) under full operation. Systems are tested under various modes, such as during low cooling or heating loads, high loads, component failures, unoccupied, varying outside air temperatures, fire alarm, power failure, etc. The systems are run through all of the control system's sequences of operation and components are verified to be responding as the sequences state. The CA writes step-by-step functional test procedures and documentation formats for all commissioned equipment and assemblies, and common contractor tests such as duct; piping tests and the contractors' initial equipment checkout tests. Functional testing will include manual functional testing, energy management control system trending and may include stand-alone data-logger monitoring. For some systems, the CA directs, oversees and documents the actual testing, which is usually performed by the installing contractor or vendor. For other systems, the contractor conducts and documents the tests with just limited spot witnessing by the CA

If we uncover during the testing of an ECM a problem with a previously tested ECM, we will resolve and re-test the previously tested ECM.

Some samples of testing procedures developed for other projects are included on the following pages. These functional tests will be tailored to the project during implementation and prior to commissioning.

Functional Checklist

Project _____

BUILDING AUTOMATION SYSTEM

Entire Building

Only Floor or Zone _____

Associated checklists: _____

1. Submittal / Approvals

Submittal. The above equipment and systems integral to them are complete and ready for functional testing. The checklist items are complete and have been checked off only by parties having direct knowledge of the event, as marked below, respective to each responsible contractor. This prefunctional checklist is submitted for approval, subject to an attached list of outstanding items yet to be completed. A Statement of Correction will be submitted upon completion of any outstanding areas. None of the outstanding items preclude safe and reliable functional tests being performed. _____ List attached.

Mechanical Contractor	Date	Controls Contractor	Date
Electrical Contractor	Date	Sheet Metal Contractor	Date
TAB Contractor	Date	General Contractor	Date

Prefunctional checklist items are to be completed as part of startup & initial checkout, preparatory to functional testing.

- This checklist does not take the place of the manufacturer's recommended checkout and startup procedures or report.
- Items that do not apply shall be noted with the reasons on this form (N/A = not applicable, BO = by others).
- If this form is not used for documenting, one of similar rigor shall be used.
- Contractors assigned responsibility for sections of the checklist shall be responsible to see that checklist items by their subcontractors are completed and checked off.
- "Contr." column or abbreviations in brackets to the right of an item refer to the contractor responsible to verify completion of this item. A/E = architect/engineer, All = all contractors, CA = commissioning agent, CC = controls contractor, EC = electrical contractor, GC = general contractor, MC = mechanical contractor, SC = sheet metal contractor, TAB = test and balance contractor, _____ = _____.

Approvals. This filled-out checklist has been reviewed. Its completion is approved with the exceptions noted below.

Commissioning Agent	Date	Owner's Representative	Date
---------------------	------	------------------------	------

2. Documentation submitted and approved:

[All]

- | | |
|---|---|
| <input type="checkbox"/> manufacturer's cut sheets | <input type="checkbox"/> performance data |
| <input type="checkbox"/> installation and checkout manual and plan | <input type="checkbox"/> operating manual |
| <input type="checkbox"/> full written sequences and list of all control strategies | <input type="checkbox"/> completed control drawings |
| <input type="checkbox"/> written copy of all control parameters, settings and setpoints | <input type="checkbox"/> design criteria |
| <input type="checkbox"/> O&M manual | <input type="checkbox"/> full descriptive points list |

- **Documentation complete as per contract documents** YES NO

3. Model verification

[Contr = _____]

	As Specified	As Submitted	As Installed
Manufacturer			
Model No.			
Serial No.	n/a	n/a	
CPU			
Monitor			
Other primary features:			

- **The equipment installed matches the specifications for given trade**..... YES NO

4. Initial Setup and Checkout

4.1. User Terminal Interface and Sub-Panel Checks

Check if Okay. Enter comment or note number if deficient.

Check	Y/N	Contr.
General appearance good, no apparent damage		
Equipment labels affixed		
Layout and location of control panels matches drawings		
Areas or equipment panels serve clear in control drawings		
Wiring labeled inside panels (to controlled components)		
Controlled components labeled/tagged		
BAS connection made to labeled terminal(s) as shown on drawings		
Shielded wiring used on electronic sensors		
110 volt AC power available to panel		
Psig compressed air available to panel (if applicable)		
Battery backup in place and operable		
Panels properly grounded		
Environmental conditions according to manufacturer's requirements		
Date and time correct		

- The above setup and checkout was successfully completed for given trade ___ YES ___ NO

4.2. Device and Point Checkout

[CC]

The following procedures are required to be performed and documented for each and every point in the control system. The following procedures are minimum requirements. The control contractor is encouraged to identify better and more comprehensive checkout procedures in their submitted plan. These procedures are not a substitute for the manufacturer's recommended start-up and checkout procedures, but are to be combined with them, as applicable. The documentation may be provided on the vendor's stock form, as long as all the information in the sample table below can be clearly documented on the form.

Similar checkout and calibration requirements are found on the equipment prefunctional checklists. Redundant documentation is not required. Cross reference, by name and form number, to other forms that contain documentation left blank on the current form.

Procedures

1. [Wire] Verify that the wiring is correct to each point.
2. [Actu] If the device is or has an actuator, verify full free movement through its full range.
3. [Addr] Verify that the software address is correct.
4. [Load] For devices with a controller, verify that current software program with proper setpoints has been downloaded.
5. [DevCal] Device stroke/range calibration. This applies to all controlled valves, dampers, fans, pumps, actuators, etc. Simulate maximum and minimum transmitter signal values and verify minimum and maximum controller output values and positively verify each and every control device minimum and maximum stroke and capacity range. Follow procedure 6.2 below.
6. [SensLoc] Verify that all sensor locations are appropriate and away from causes of erratic operation.
7. [SensCal] Sensor calibration. Calibrate or verify calibration of all sensors and thermostats, including temperature, pressure, flow, current, kW, rpm, Hertz, etc. Verify that the sensor readings in the control system are within the sensor accuracies specified in this section, using hand-held or other external measuring instruments. Follow procedure 6.1 below.
8. [OperCk] For controlled devices (dampers, valves, actuators, VAV boxes, etc.), after mechanical equipment control becomes operational, perform an operational test of each control loop. Follow procedure 6.2 below. Operational checks are preparatory to the later *functional testing*.

Other Abbreviations:

[BAS] Building automation system or gage-read value.

[instru]..... instrument (calibrated) read value.

[Ofset]..... Offset programmed into the point to correct the calibration.

--SAMPLE FORM-- Controls Checkout Documentation Table

Point ID	Object	Field Device Type	Hardware Checks			Load	Dev Cal	Sens Loc	SensCal			Final Check	
			Wire	Actu	Addr				BAS	Instru	Offset	Oper Ck	
			1	2	3	4	5	6	7	7	7	8	9
AI-1	ZN-T (zone T)	PhJack	√	na	√	na	na	√	70.2F	71.4F	+1.2F	na	
3-2a	RA-DPR (damper)	PNEU	√	√	√	na	√	na	na	na	na	√	

• **The initial setup and checkout has been successfully completed as described in Section 4.2 and Section 6 and documented on attached forms.....** YES NO

5. Pneumatic System Pressure Test []

The entire pneumatic system servicing the controls shall be pressure tested as follows:

- 5.1. Test the high pressure air piping at [150 psi] . Maintain the pressure for 2 hours without loss of pressure. Correct and retest the system if any loss of pressure is indicated. **Pass? (Y/N)** _____
- 5.2. Test the low pressure control tubing at [30 psi] . Maintain pressure for 2 hours without pumping. If the pressure drops more than 1 psi, correct leak and retest until successful. **Pass? (Y/N)** _____

• **The pneumatic system pressure tests were successfully completed.....** YES NO

6. Sensor and Actuator Calibration []

All field-installed temperature, relative humidity, CO, CO₂ and pressure sensors and gages, and all actuators (dampers and valves) shall be calibrated using the methods and tolerances given in the "Calibration and Leak-by Test Procedures" document. All test instruments shall have had a certified calibration within the last 12 months. Sensors installed in a packaged unit at the factory with calibration certification provided need not be field calibrated. All calibrations shall be fully documented, including initial and final readings, offsets etc., on prefunctional checklist or other suitable forms.

-- END OF CHECKLIST --

- o. **Packaged Control Program Review.** Review the packaged control program(s) for this equipment. Parameters, setpoints and logic sequences appear to follow the specified written sequences.
- p. **Record made of All Values for Current Setpoints (SPt), Control Parameters, Limits, Delays, Lockouts, Schedules, Etc. Changed to Accomodate Testing:**

Parameter	Pre-Test Values	Returned to Pre-Test Values <input checked="" type="checkbox"/>						
Space Temp. Setpts								
Boiler enable OSAT setpoint								
Capacity (%) on lead condensing boiler when lag condensing boiler will start:								
Capacity (%) on HWB 1 & 2 at which time HWB-3; 4 or 5 stage up								
Time delay between stages								
Setpoint range for condensing boilers:	120F-180F							
Differential pressure setpoint: Basement:								
Penthouse:								
Supply temp. reset schedule:	<table border="1"> <tr> <td>OSAT</td> <td>HWST</td> </tr> <tr> <td>25F</td> <td>180F</td> </tr> <tr> <td>65F</td> <td>140F</td> </tr> </table>	OSAT	HWST	25F	180F	65F	140F	
OSAT	HWST							
25F	180F							
65F	140F							
Changes for False Loading:								

3. Sensor Calibration Checks. Check the sensors listed below for calibration and adequate location. This is a sampling check of calibrations done during prefunctional checklisting.

"In calibration" means making a reading with a calibrated test instrument within 6 inches of the site sensor. Verify that the sensor reading (via the permanent thermostat, gage or building automation system (BAS)) compared to the test instrument-measured value is within the tolerances specified in the prefunctional checklist requirements (). If not, install offset in BAS, calibrate or replace sensor. Use the same test instruments as used for the original calibration, if possible.

Sensor & Location	Location OK ¹	1st Gage or BAS Value		Instrument Measured Value		Final Gage or BAS Value		Pass Y/N?
OSAT								
HWST (bldg loop)								
HWRT (bldg loop)								
HWB-1 & 2		B-1	B-2	B-1	B-2	B-1	B-2	
Gage supply temperature								
BAS supply temperature								
Main HW supply temp (HWS-T-1)								
HWB-3; 4; 5		B-3	B-4	B-5	B-3	B-4	B-5	
Gage supply temperature								
BAS supply temperature								

Sensor & Location	Location OK ¹	1st Gage or BAS Value	Instrument Measured Value	Final Gage or BAS Value	Pass Y/N?
Main HWS temp. (HWS-T)					
Main HWR temp. (HWR-T)					
HW-DP in Boiler Rm.		BAS:	³ TAB:		
HW DP in Penthouse		BAS:	³ TAB:		
HW DP in Basement		BAS:	³ TAB:		
HW Flow		BAS:	³ TAB:		
² VFD HWP-6		BAS:	VFD Panel:		
² VFD HWP-7		BAS:	VFD Panel:		
² VFD HWP-8		BAS:	VFD Panel:		

¹Sensor location is appropriate and away from causes of erratic operation.

²At any speed.

³During TAB, the TAB contractor shall compare their instrument readings with BAS readings.

4. Device Calibration Checks. The actuators or devices listed below checked for calibration. This is a spot check on a sample of the calibrations done during prefunctional checklisting and startup.

"In calibration" means observing a readout in the BAS and going to the actuator or controlled device and verifying that the BAS reading is correct. For items out of calibration or adjustment, fix now if easy, via an offset in the BAS, or a mechanical fix.

Device or Actuator & Location	Procedure / State	Expected Value	Site Observation	Final Values	Pass Y/N

5. Verification of Misc. Prefunctional Checks.

Misc. site checks of the prefunctional checklist and startup reports completed successfully. Pass? Y / N _____

General Conditions of Test and Seasonal Testing

The primary testing will occur during typical winter weather with significant heating loads. Because the boiler will be operated year-round, the trends described in Procedures 19 and 28a will be repeated during warmer weather to ensure that boiler use is minimized during the off-season.

False Loading. Be prepared to raise the space temperature setpoints to cause a real load on the heating system. Also, be prepared to manually lock the economizers in full open position and to lock the minimum OSA fan dampers in full open position to increase the heating load.

Trending During Testing. Prior to beginning testing, set up the following trends:

1. Secondary Pumping: HWP 6, 7; 8 speed, HW-DP setpoint, HW-DP pressure, penthouse loop DP, basement loop DP, all heating coil valve positions for AHU-5, 6, 11 and 12, and heating water flow (HW-F). Trend at 5 minute intervals during testing.

2. HWS-T Control. Trend the HWS-T and OSAT at 5 minute intervals during the testing to verify constancy of HWS-T.

6. Testing Procedures and Record

Proced. No. & Spec. Seq. ID ¹	Req ID No. ²	Test Procedure ³ (including special conditions)	Expected and Actual Response ⁴ [Write ACTUAL response in brackets or circle]	Pass Y/N	Note #
Staging Up					
1 Seq. 1-4		1) During OSAT < 65F, manually shut OFF boilers and keep pumps running on manual to lower boiler water temperature to < 120F. 2) With the boilers OFF, and boiler water temperature < 120F, overwrite the OSAT to be 66F and turn all systems to auto. 3) Overwrite the OSAT to be 64F.	2) Boilers and all pumps should remain OFF. 3) A secondary pump should start. After _____ [] minutes delay, SF-3, HWP-1 AND HWP-2 and B-1 or B-2 start.		
2 Seq. 5		Observe the command to the condensing boilers. Release the overwritten OSAT to be actual.	The command should be between 120F and 180F [].		
3 Seq. 6, 7, 8		Lower the delay time between all stages to 3 minutes. Observe the staging of the condensing boilers.	When the lead condensing boiler reaches 68% []%, the lag condensing boiler starts. When both condensing boilers reach 95% []%, for 3 minutes [], the lead main HW boiler pump starts [B-___ and HWP-___] and the lead boiler fires at low [] fire. Just prior to the main lead boiler starting the loop HWS temp. (HWS-T) is [] F & the return (HWR-T) is [] F.		
4 Seq. 9		Observe the modulation of the condensing boilers.	Just after the lead main boiler starts, the condensing boilers should reduce from 95% loading []. Two minutes after the lead main boiler starts, the loop HWS temp. (HWS-T) is [] F & the return (HWR-T) is [] F. By this time HWS-T should be within 3F of the temp. prior to the boiler staging.		

Proced. No. & Spec. Seq. ID ¹	Req ID No. ²	Test Procedure ³ (including special conditions)	Expected and Actual Response ⁴ [Write ACTUAL response in brackets or circle]	Pass Y/N	Note #
5 Seq. 10; 12		Continue observing during staging. Increase building load, as necessary, using methods above (list): _____ _____ _____	When both condensing boilers reach 95% [_____] for 3 minutes [_____] , the lead main boiler stages up to high [_____] fire. The condensing boilers modulate back. If both boilers are < 68% loaded [_____] for _____ minutes [_____] , one stages OFF.		
6 Seq. 11; 12		First lag boiler, low fire.	When both condensing boilers reach 95% [_____] for 3 minutes [_____] , the first lag main boiler starts at low [_____] fire. The condensing boilers modulate back. If both boilers are < 68% loaded [_____] for _____ minutes [_____] , one stages OFF.		
7 Seq. 11; 12		First lag boiler, high fire.	When both condensing boilers reach 95% [_____] for 3 minutes [_____] , the first lag main boiler stages up to high [_____] fire. The condensing boilers modulate back. If both boilers are < 68% loaded [_____] for _____ minutes [_____] , one stages OFF.		
8 Seq. 11; 12		Second lag boiler, low fire.	When both condensing boilers reach 95% [_____] for 3 minutes [_____] , the second lag main boiler starts at low [_____] fire. The condensing boilers modulate back. If both boilers are < 68% loaded [_____] for _____ minutes [_____] , one stages OFF.		
9 Seq. 11; 12		Second lag boiler, high fire.	When both condensing boilers reach 95% [_____] for 3 minutes [_____] , the second lag main boiler stages up to high [_____] fire. The condensing boilers modulate back. If both boilers are < 68% loaded [_____] for _____ minutes [_____] , one stages OFF.		
Staging Down Remove all false loading to cause no call for heating. (explain procedures)					

Proced. No. & Spec. Seq. ID ¹	Req ID No. ²	Test Procedure ³ (including special conditions)	Expected and Actual Response ⁴ [Write ACTUAL response in brackets or circle]	Pass Y/N	Note #
10 Seq. 13; 14		Second lag main boiler drops to low fire.	When condensing boiler setpoint drops to 120F [____F] for 3 minutes [____], the second lag main boiler drops to low fire. The condensing boilers modulate up to maintain their setpoint.		
11 Seq. 13; 14		Second lag main boiler drops OFF.	When condensing boiler setpoint drops to 120F [____F] for 3 minutes [____], the second lag main boiler drops OFF line. The condensing boilers modulate up to maintain their setpoint.		
12 Seq. 13; 14		First lag main boiler drops to low fire.	When condensing boiler setpoint drops to 120F [____F] for 3 minutes [____], the first lag main boiler drops to low fire. The condensing boilers modulate up to maintain their setpoint.		
13 Seq. 13; 14		First lag main boiler drops OFF.	When condensing boiler setpoint drops to 120F [____F] for 3 minutes [____], the first lag main boiler drops OFF line. The condensing boilers modulate up to maintain their setpoint.		
14 Seq. 13; 14		Lead main boiler drops to low fire.	When condensing boiler setpoint drops to 120F [____F] for 3 minutes [____], the lead main boiler drops to low fire. The condensing boilers modulate up to maintain their setpoint.		
15 Seq. 13; 14		Lead main boiler drops OFF.	When condensing boiler setpoint drops to 120F [____F] for 3 minutes [____], the lead main boiler drops OFF line. The condensing boilers modulate up to maintain their setpoint.		

Proced. No. & Spec. Seq. ID ¹	Req ID No. ²	Test Procedure ³ (including special conditions)	Expected and Actual Response ⁴ [Write ACTUAL response in brackets or circle]	Pass Y/N	Note #
16 Seq. 12; 15		Condensing boilers cycling OFF. Continue dropping the load or overwrite the HWS-T to be just high enough for the loop to be satisfied and no need for boilers.	When the condensing boilers are at 68% [____%], one condensing boiler drops OFF line. When the condensing boiler setpoint drops to 120F [____F] for 3 minutes [____], the last condensing boiler and HWP-1; 2 drop OFF [____] and SF-3 shuts OFF [____].		
17 Seq. 16		Return the systems to normal, keeping the delay time at 3 minutes. Let boilers start. Overwrite the OSAT to be 67F and the HWS-T to be 5F greater than the current setpoint of ____F.	After ____ minutes [____], all boilers shut OFF.		
Misc. Sequences					
18 Seq. 17		<u>HWST Reset.</u> Overwrite the OSAT to be 15F, 25F, 40F; 65F. For each, record the HWS-T setpoint command on the graph below with a small box on the graph below.	All values should fall within 2F of the reset line.		
19 Seq. 17		<u>Trend Log.</u> Trend (not during testing) the OSAT, the HWS-T, HWS-T setpoint and the HWS-T minus HWS-T setpoint (the variance from setpoint), at 15 minute intervals from Thursday noon to Saturday noon.	All the (HWS-T minus HWS-T setpoint) values should be + or - 2F. Largest undershoot: [____F]. Largest overshoot [____F]. Number of values out of desired range (+/-2F): [____ data points] out of [____] total points = [____%] outside specified range.		
<u>HWST Reset Chart.</u> For each observation, mark the HWS-T setpoint with a box.			All values should fall within 2F of the reset line specified in the sequences.		

Proced. No. & Spec. Seq. ID ¹	Req ID No. ²	Test Procedure ³ (including special conditions)	Expected and Actual Response ⁴ [Write ACTUAL response in brackets or circle]	Pass Y/N	Note #
		<p>180 F</p> <p>170 F</p> <p>HWST Set Point and Temp</p> <p>150 F</p> <p>140 F</p> <p>20 F 30 F 40 F 50 F 60 F 70 F</p> <p style="text-align: center;">Outside Air Temperature</p>			
20 Seq. 18-19		<p><u>Loop DP Control via Trending.</u></p> <p>Observe the Secondary Pumping trend logs performed during testing, specified in the General Conditions of Test section above.</p>	<p>The running secondary pump ramps up in speed to maintain the loop DP setpoint farthest from setpoint (bsmt or penthouse sensors).</p> <p>Observe that overshoot or undershoot of the two loop differential pressures (DP) is within +/- 10% of the setpoint magnitude.</p> <p>Bsmt greatest undershoot: [] psi = []%.</p> <p>Bsmt greatest overshoot: [] psi = []%.</p> <p>Penthouse greatest undershoot: [] psi = []%.</p> <p>Penthouse greatest overshoot: [] psi = []%.</p> <p>Number of values out of desired range (+/- 10%): [] data points] out of [] total points = []% outside specified range.</p>		

Proced. No. & Spec. Seq. ID ¹	Req ID No. ²	Test Procedure ³ (including special conditions)	Expected and Actual Response ⁴ [Write ACTUAL response in brackets or circle]	Pass Y/N	Note #
21 Seq. 20		<p>Variable Speed Drive (VFD) on HWP-6.</p> <p>(Note: VFD operation with multiple HW pumps operating is tested in procedures ____ and ____.</p> <p>1. Carefully go over prefunctional checklist and programming record and identify anomalies. Record the low limits.</p> <p>2. With only boiler associated with HWP-6 running and other boilers manually OFF, reduce all heating load or manually lower pump and remote differential pressure setpoints. See how low VFD will go. (This could be done during the Staging Down procedures above.)</p> <p>3. Call for moderate heating or increase differential pressure setpoints.</p> <p>4. Call for maximum cooling or increase differential pressure setpoints (keeping only 1 boiler ON).</p> <p>5. Switch VFD into bypass operation, if feature available.</p>	<p>Motor manufacturer's recommended speed low limit = [_____ % of max.].</p> <p>1. Low limit setting in drive: [_____ Hz, rpm = _____ % of maximum]. Provide reasons for low limit not being at motor mfr's low limit.</p> <p>List any anomalies noticed in programming:</p> <p>Also review any BAS software low limiting parameters. Verify that they are not unnecessarily preventing pumps to modulate down to their safe minimum.</p> <p>2. Lowest speed drive will go: [_____ Hz, rpm].</p> <p>Is this within 3 Hz of the low limit setting (or within a range equal to 5% of maximum speed)?</p> <p>Is pump and remote dP SP maintained without hunting?</p> <p>3. Does VFD motor ramp up accordingly in a reasonable time?</p> <p>Is pump and remote dP SPT maintained without hunting? (This is verified in Procedure 20.)</p> <p>4. Does VFD motor ramp to full speed in a reasonable time?</p> <p>Is pump and remote dP SPT maintained without hunting? (This is verified in Procedure 20.)</p> <p>5. Verify that pump works in bypass mode.</p>		

Proced. No. & Spec. Seq. ID ¹	Req ID No. ²	Test Procedure ³ (including special conditions)	Expected and Actual Response ⁴ [Write ACTUAL response in brackets or circle]	Pass Y/N	Note #
22 Seq. 20		<p>Variable Speed Drive (VFD) on HWP-7.</p> <p>(Note: VFD operation with multiple HW pumps operating is tested in procedures ____ and ____.)</p> <p>1. Carefully go over prefunctional checklist and programming record and identify anomalies. Record the low limits.</p> <p>2. With only boiler associated with HWP-7 running and other boilers manually OFF, reduce all heating load or manually lower pump and remote differential pressure setpoints. See how low VFD will go. (This could be done during the Staging Down procedures above.)</p> <p>3. Call for moderate heating or increase differential pressure setpoints.</p> <p>4. Call for maximum cooling or increase differential pressure setpoints (keeping only 1 boiler ON).</p> <p>5. Switch VFD into bypass operation, if feature available.</p>	<p>Motor manufacturer's recommended speed low limit = [_____] % of max.].</p> <p>1. Low limit setting in drive: [_____] Hz, rpm = _____ % of maximum]. Provide reasons for low limit not being at motor mfr's low limit.</p> <p>List any anomalies noticed in programming:</p> <p>Also review any BAS software low limiting parameters. Verify that they are not unnecessarily preventing pumps to modulate down to their safe minimum.</p> <p>2. Lowest speed drive will go: [_____] Hz, rpm].</p> <p>Is this within 3 Hz of the low limit setting (or within a range equal to 5% of maximum speed)?</p> <p>Is pump and remote dP SP maintained without hunting?</p> <p>3. Does VFD motor ramp up accordingly in a reasonable time?</p> <p>Is pump and remote dP SPt maintained without hunting? (This is verified in Procedure 20.)</p> <p>4. Does VFD motor ramp to full speed in a reasonable time?</p> <p>Is pump and remote dP SPt maintained without hunting? (This is verified in Procedure 20.)</p> <p>5. Verify that pump works in bypass mode.</p>		

Proced. No. & Spec. Seq. ID ¹	Req ID No. ²	Test Procedure ³ (including special conditions)	Expected and Actual Response ⁴ [Write ACTUAL response in brackets or circle]	Pass Y/N	Note #
23 Seq. 20		<p>Variable Speed Drive (VFD) on HWP-8.</p> <p>(Note: VFD operation with multiple HW pumps operating is tested in procedures ____ and ____.</p> <p>1. Carefully go over prefunctional checklist and programming record and identify anomalies. Record the low limits.</p> <p>2. With only boiler associated with HWP-8 running and other boilers manually OFF, reduce all heating load or manually lower pump and remote differential pressure setpoints. See how low VFD will go. (This could be done during the Staging Down procedures above.)</p> <p>3. Call for moderate heating or increase differential pressure setpoints.</p> <p>4. Call for maximum cooling or increase differential pressure setpoints (keeping only 1 boiler ON).</p> <p>5. Switch VFD into bypass operation, if feature available.</p>	<p>Motor manufacturer's recommended speed low limit = [_____ % of max.].</p> <p>1. Low limit setting in drive: [_____ Hz, rpm = _____ % of maximum]. Provide reasons for low limit not being at motor mfr's low limit.</p> <p>List any anomalies noticed in programming:</p> <p>Also review any BAS software low limiting parameters. Verify that they are not unnecessarily preventing pumps to modulate down to their safe minimum.</p> <p>2. Lowest speed drive will go: [_____ Hz, rpm].</p> <p>Is this within 3 Hz of the low limit setting (or within a range equal to 5% of maximum speed)?</p> <p>Is pump and remote dP SP maintained without hunting?</p> <p>3. Does VFD motor ramp up accordingly in a reasonable time?</p> <p>Is pump and remote dP SPt maintained without hunting? (This is verified in Procedure 20.)</p> <p>4. Does VFD motor ramp to full speed in a reasonable time?</p> <p>Is pump and remote dP SPT maintained without hunting? (This is verified in Procedure 20.)</p> <p>5. Verify that pump works in bypass mode.</p>		

Proced. No. & Spec. Seq. ID ¹	Req ID No. ²	Test Procedure ³ (including special conditions)	Expected and Actual Response ⁴ [Write ACTUAL response in brackets or circle]	Pass Y/N	Note #
24 Seq. 20-21		<u>Staging Up of Secondary Pumps (via Trending.)</u> Observe the Secondary Pumping trend logs performed during testing, specified in the General Conditions of Test section above. Three pumps ON.	From the trends, with only one secondary pump ON, when the flow at HW-F exceeds the rated gpm, _____ of one pump [_____ gpm; _____ rpm or Hz], for _____ minutes [_____], the first lag pump starts [_____] and both equalize in rpm or Hz [_____, _____]. With two secondary pumps ON, when the flow at HW-F exceeds the rated gpm of both ON pumps, _____ [_____ gpm; _____ rpm or Hz], for _____ minutes [_____], the last lag pump starts [_____] and all three equalize in rpm or Hz [_____, _____].		
25 Seq. 22		<u>Staging Down of Secondary Pumps (via Trending.)</u> Observe the Secondary Pumping trend logs performed during testing, specified in the General Conditions of Test section above. Staging from two to one pump.	From the trends, with three secondary pumps ON, when the flow at HW-F is less than the rated gpm of all ON pumps, _____ [_____ gpm; _____ rpm or Hz], by _____ gpm [_____], for _____ minutes [_____], the last lag pump stops [_____] and the remaining equalize in rpm or Hz [_____, _____]. With two secondary pumps ON, when the flow at HW-F is less than the rated gpm of both ON pumps, _____ [_____ gpm; _____ rpm or Hz], by _____ gpm [_____], for _____ minutes [_____], the last lag pump stops [_____].		
Unoccupied Mode					
26 Seq. 24		Change the current time to be unoccupied. Manually shut OFF AHU-5, 6, 11; 12. Overwrite the OSAT to be 50F. Set the boilers and pumps to normal.	Boilers and pumps should not come ON.		
27 Seq. 25		<u>NLL.</u> Continuing from Procedure 26, in the unoccupied mode, manually start one of the heating AHU's (_____).	Secondary pump(s) start [_____], EF-3 starts [_____], B-1 or B-2 start [_____] and the HWS-T setpoint is at 180F [_____ F].		

Proced. No. & Spec. Seq. ID ¹	Req ID No. ²	Test Procedure ³ (including special conditions)	Expected and Actual Response ⁴ [Write ACTUAL response in brackets or circle]	Pass Y/N	Note #
28 Seq. 25		<u>NLL</u> . Continuing from Procedure 27, in the unoccupied mode, manually shut OFF the ON heating AHU(s) (_____).	All boilers stop [____], secondary pump(s) stop [____], EF-3 stops [____].		
28a Seq. 25		<u>Trend Log</u> . Trend (not during testing) the OSAT, the status of each boiler, rpm of each secondary HW pump, and the status of AHU-5, 6, 11; 12, at 15 minute intervals from Thursday noon to Saturday noon. Combine trend with that of Procedure 19 if desired.	Verify that the boilers are going ON and OFF according to the sequences and above criteria during unoccupied periods.		
Alarms and Safeties					
29 Seq. 26	15555 .3.3.D	With at least one boiler ON in auto mode, manually shut OFF SF-3.	Boilers and primary pumps should shut down and an alarm should be registered in the BAS.		
30 Seq. 26	15555 .3.3.D	With the B-1 or B-2 ON, manually shut it OFF.	Lag B-1 or B-2 shall start and an alarm is generated in the BAS.		
31 Seq. 26	15555 .3.3.D	With each main boiler at a time ON and acting as lead, manually shut it OFF.	Lag boiler and pump shall start and an alarm is generated in the BAS. B-3____, B-4____, B-5____		
32 Seq. 26	15555 .3.3.D	With each main boiler at a time ON and acting as lead, manually shut its pump OFF.	Lag boiler and pump shall start and an alarm is generated in the BAS. HWP-3____, HWP-4____, HWP-5____		
33 Seq. 27	15555 .3.3.D	With boilers in auto., shut OFF one of the ON secondary HW pumps.	The lag secondary pump is started and an alarm is generated in the BAS.		
34 Seq. 28	15555 .3.3.D	<u>Low water</u> . For each boiler when ON, unhook the wire to the low water sensor to initiate an alarm. Manually reset.	Boiler burners shut OFF and an alarm is generated in the BAS. B-1____ B-3____ B-2____ B-4____ B-5____		
35 Seq. 28	15555 .3.3.D	<u>High limit</u> . For each boiler when ON, lower the high limit setting to the current water temperature to initiate an alarm and shutdown. Manually reset.	Boiler burners shut OFF and an alarm is generated in the BAS. B-1____ B-3____ B-2____ B-4____ B-5____		

Proced. No. & Spec. Seq. ID ¹	Req ID No. ²	Test Procedure ³ (including special conditions)	Expected and Actual Response ⁴ [Write ACTUAL response in brackets or circle]	Pass Y/N	Note #
36	15555 .3.3.D	<u>Low draft safety switch.</u> Tested in Procedure ____ below.			
37	15555 .3.3.D	<u>Fuel system safety.</u> For each boiler, when ON, jump or remove wires or close gas valve, as appropriate, to simulate an unsafe gas condition.	Boiler shuts OFF and an alarm is generated in BAS. B-1 _____ B-3 _____ B-2 _____ B-4 _____ B- _____ 5 _____		
38	15555 .3.3.D	<u>Flame safety controls.</u> For each boiler, when ON, demonstrate the function of the flame safety controls by simulating an alarm condition.	Boiler shuts OFF and an alarm is generated in BAS. B-1 _____ B-3 _____ B-2 _____ B-4 _____ B- _____ 5 _____		
39	15555 .3.3.D	Lift lever of each pressure relief valve.	Each releases water.		
40	15555 2.2.K	Demonstrate the function of the smoke density indicator and transmitter.	Functions per spec.		
41 Seq. 29		Tested above.			
42 Seq. 30		Tested with safeties above.			
43 Seq. 31		Tested with fire alarm test.			
44	15555 .3.3.E	<u>Boiler efficiency tests</u> specified shall be conducted by the supplier and full procedures and documentation of results attached.	Procedures documented and approved? ____ Results of tests documented sufficiently? ____ Results of tests within specified tolerances? (list)		

Proced. No. & Spec. Seq. ID ¹	Req ID No. ²	Test Procedure ³ (including special conditions)	Expected and Actual Response ⁴ [Write ACTUAL response in brackets or circle]	Pass Y/N	Note #
45	15555 .3.3.E	<u>Combustion efficiency and analysis tests</u> specified shall be conducted by the supplier and full procedures and documentation of results attached.	Procedures documented and approved? _____ Results of tests documented sufficiently? _____ Results of tests within specified tolerances? (list)		
46	15555 2.2.H. 4	<u>Flue draft control.</u> The function and performance of the flue draft controls, safeties, annunciators and alarms for the main boilers shall be demonstrated (with owner witnesses) and documented by the supplier. Full procedures and documentation of results should be attached.	Procedures documented and approved? _____ Results of tests documented sufficiently? _____ Results of tests within tolerances? (list)		
47	--	Return all changed control parameters and conditions to their pre-test values⁵	Check off in table of Section 2 above when completed		

MONITORING AND TREND LOGGING. Monitoring via BAS trend logs are required per General Test Conditions and test Procedures 19, 20, 24, 25, 28a. Attach representative graphs or columnar data and explanatory analysis to this test report. Columnar and electronic data shall have time in the left column and 4 to 6 columns of different parameters to the right. All abbreviations shall have definitions provided and all setpoints and schedules for each parameter shall be attached.

****Abbreviations:** HWS-T = hot water supply temperature to the building, SPt = setpoint, BAS = building automation system.

¹Sequences of operation attached to this test.

²Mode or function ID being tested from testing requirements section of the project Specifications.

³Step-by-step procedures for manual testing, trend logging or data-logger monitoring.

⁴Include tolerances for a passing condition. Fill-in spaces or lines not in brackets denote sequence parameters still to be specified by the A/E, controls contractor or vendor. Write "Via BAS" for verifications of device position from BAS readout or "Via obs" for actual observation or from test instrument reading.

⁵Record any permanently changed parameter values and submit changes to Owner.

A summary of deficiencies identified during testing is attached

-- END OF TEST --

Functional Checklist

Project _____

CHILLER #'s _____

Associated checklists: Cooling Tower, Chilled & Condenser Water Piping, CHW and CDW Pumps

1. Submittal / Approvals

Submittal. The above equipment and systems integral to them are complete and ready for functional testing. The checklist items are complete and have been checked off only by parties having direct knowledge of the event, as marked below, respective to each responsible contractor. This prefunctional checklist is submitted for approval, subject to an attached list of outstanding items yet to be completed. A Statement of Correction will be submitted upon completion of any outstanding areas. None of the outstanding items preclude safe and reliable functional tests being performed. _____ List attached.

_____ Mechanical Contractor	_____ Date	_____ Controls Contractor	_____ Date
_____ Electrical Contractor	_____ Date	_____ Sheet Metal Contractor	_____ Date
_____ TAB Contractor	_____ Date	_____ General Contractor	_____ Date

Prefunctional checklist items are to be completed as part of startup & initial checkout, preparatory to functional testing.

- This checklist does not take the place of the manufacturer's recommended checkout and startup procedures or report.
- Items that do not apply shall be noted with the reasons on this form (N/A = not applicable, BO = by others).
- If this form is not used for documenting, one of similar rigor shall be used.
- Contractors assigned responsibility for sections of the checklist shall be responsible to see that checklist items by their subcontractors are completed and checked off.
- "Contr." column or abbreviations in brackets to the right of an item refer to the contractor responsible to verify completion of this item. A/E = architect/engineer, All = all contractors, CA = commissioning agent, CC = controls contractor, EC = electrical contractor, GC = general contractor, MC = mechanical contractor, SC = sheet metal contractor, TAB = test and balance contractor, _____ = _____.

Approvals. This filled-out checklist has been reviewed. Its completion is approved with the exceptions noted below.

_____ Commissioning Agent	_____ Date	_____ Owner's Representative	_____ Date
------------------------------	---------------	---------------------------------	---------------

2. Requested documentation submitted

Check if Okay. Enter comment or note number if deficient.

Check	Equip Tag->						Contr.
Manufacturer's cut sheets							
Performance data (fan curves, coil data, etc.)							
Installation and startup manual and plan							
Sequences and control strategies							
O&M manuals							

• Documentation complete as per contract documents YES NO

3. Model verification

[Contr = _____]

1 = as specified, 2 = as submitted, 3 = as installed. Check if Okay. Enter note number if deficient.

Equip Tag-->							
1							
Manuf. 2							
3							
Model 1							
2							
3							
Serial # 3							
1							
Capacity 2							
3							
Volts/Ph/A 1							
2							
3							
Refrigerant 1							
2							
3							
Starter Model 1							
2							
3							
1							
2							
3							

• The equipment installed matches the specifications for given trade..... YES NO

4. Installation Checks

Check if Okay. Enter comment or note number if deficient.

Check	Equip Tag->						Contr.
General Installation							
General appearance good, no apparent damage							
Proper vibration isolaters installed and adjusted							
Seismic restraints in place							
Isolation valves and balancing valves installed							
Pipe fittings and accessories complete							
Pipes not supported on chiller							
Hydronic system flushing complete and strainers cleaned							
Cooling tower or condenser system checked out							
Evaporator air vent provided							
Water cooled condenser air vent provided							
Refrigerant relief pipe extended to outside							
Thermometers installed							
Pressure gages installed							

Check if Okay. Enter comment or note number if deficient.

Check	Equip Tag->							Contr.
Test plugs installed near all control sensors and as per spec								
Flow switch installed as required								
Flow meters installed								
Proper refrigerant level								
No refrigerant leakage								
Proper oil types								
Proper oil level								
Purge unit installed, if specified								
Piping type and flow direction labeled on piping								
Equipment labels affixed								
Oil heater installed properly								
Size of overcurrent heater in motor starter correct								
Oil filter clean								
Electrical and Controls								
Power wiring installed properly								
All electrical components grounded properly								
Control wiring and control system hooked up								
Sensors calibrated (see calibration section below)								
Control system interlocks hooked up and functional								
Smoke detectors in place								
All control devices, pneumatic tubing and wiring complete								
Safeties installed and safe operating ranges for this equipment provided to the commissioning agent								
Chilled water piping and pumps prefunctional checklists completed								

• **The checklist items of Part 4 are all successfully completed for given trade.** ___ YES ___ NO

• **5. Operational Checks** (These augment mfr's list. This is not the functional performance testing.)

Check if Okay. Enter comment or note number if deficient.

Check	Equip Tag->							Contr.
Measure line to line voltage phase imbalance for compressor: (%Imbalance = 100 x (avg. - lowest) / avg.) Record imbalance of compressor. Imbalance less than 2%?								
Record full load running amps for compressor. _____ rated FL amps x _____ svc factor = _____ (Max amps). Running less than max?								
No unusual noise and vibration when running								
Compressor interlocking with oil pressure								
Adequate oil pressure when compressor shaft is turning								
Prerotation vane closed before compressor reaches full speed								
Prerotation vane steady when load changes								
Specified sequences of operation and operating schedules have been implemented with all variations documented								
Specified point-to-point checks have been completed and documentation record submitted for this system								

Check if Okay. Enter comment or note number if deficient.

Check	Equip Tag->						Contr.
Startup report completed with this checklist attached. (Includes full listing of all internal settings with notes as to which settings are BAS controlled or monitored and which are integral.							
Startup report includes written certification from chiller manufacturer that all specified features, controls and safeties have been installed and are functioning properly and that the installation and application comply with the manufacturer's recommendations.							
Piping gages, BAS and chiller panel temperature and pressure readouts match (see calibration section below)							

6. Sensor and Actuator Calibration []

All field-installed temperature, relative humidity, CO, CO₂ and pressure sensors and gages, and all actuators (dampers and valves) on this piece of equipment shall be calibrated using the methods and tolerances given in the Calibration and Leak-by Test Procedures document. All test instruments shall have had a certified calibration within the last 12 months: Y/N _____. Sensors installed *in* the unit at the factory with calibration certification provided need not be field calibrated.

Sensor or Actuator & Location	Location OK	1st Gage or BAS Value	Instr. Meas'd Value	Final Gage or BAS Value	Pass Y/N?

Sensor & Location	Location OK	1st Gage or BAS Value	Instr. Meas'd Value	Final Gage or BAS Value	Pass Y/N?

Gage reading = reading of the permanent gage on the equipment. BAS = building automation system. Instr. = testing instrument. Visual = actual observation. The Contractor's own sensor check-out sheets may be used in lieu of the above, if the same recording fields are included and the referenced procedures are followed.

- All sensors are calibrated within required tolerances..... YES NO

7. General Conditions of Test and Seasonal Testing

If the primary testing occurs during a season other than the summer, the chillers will be tested during peak summer loads to insure they are capable of achieving their design full load capacities.

-- END OF CHECKLIST --

Functional Test

Project _____

TERMINAL UNITS (VAV Dual Duct, no coil) DATA COMMON FOR ALL UNITS

1. Participants (fill out once, to cover all TU's)

<u>Party</u>	<u>Participation</u>	<u>Party</u>	<u>Participation</u>

Party filling out this form and witnessing testing _____
 Dates of tests _____ Dates of tests _____

2. Test Prerequisites (fill out once, to cover all TU's)

- a. The following have been started up and startup reports and prefunctional checklists submitted and approved:
 - ___ All terminal units, except _____
 - ___ All air handlers serving terminal units, except _____
- b. ___ All control system functions for this and all interlocking systems are programmed and operable per contract documents, including final setpoints and schedules and with debugging, loop tuning and sensor and device calibrations completed.

Controls Contractor Signature or Verbal Date
- c. ___ Airside test and balance calibration of BAS readings of TU flows complete (system total flow need not be complete).
- d. ___ All A/E punchlist items for this equipment corrected.
- e. ___ These functional test procedures reviewed and approved by installing contractor.
- f. ___ Test requirements and sequences of operation attached.
- g. ___ Schedules and setpoints attached.
- h. ___ Have all energy savings control strategies, setpoints and schedules been incorporated that this TU and control system are capable of? If not, list recommendations below.
- i. ___ The controller & actuator runtime accumulator set to 0 after prefunctional checkout of the entire system.
- j. ___ Obtain and review the full program of 5% (randomly chosen) of all TU's of each type (parameters & setpoints, etc.). Examine variances. Clarify as needed, reconcile and document differences with controls contractor. If too many corrections exist with this sample, controls contractor shall recheck all programming.

3. Sampling and Additional Testing.

The terminal unit testing requirements in the specifications call for a random sample of _____% of all TU's of each type to be tested. Total number to be tested of this type = _____. The specifications also require that if _____% of the sampled TU's fail in the testing (any No Pass items), then another _____% of the total population must be tested. This applies to the subsections of the test, i.e., if sub-sections fail, only subsections of additional TU's need to be tested. Record results in the table below.

Sub-Section	% Failed of 1st Sample	% Failed of 2nd Sample
I. Sensor calibration		

Sub-Section	% Failed of 1st Sample	% Failed of 2nd Sample
IV. Programming		

II. Actuator calibration		
III. Static inspections		

V. Functional tests		

Functional Test Record

Project _____

TERMINAL UNIT _____ (DD, VAV Dual Duct)

Common values for all terminal units are recorded on the Cover Sheet. The following pages of procedures are to be filled out for each TU tested.

Seasonal Testing and General Conditions of Test

Air handler or rooftop unit and boiler (if applicable) should be running in normal and occupied mode, unless noted. The tests may be performed in any season, if any temperature lockouts can be overridden.

Testing Procedures and Record

____ Computer printout or list made and attached of the current TU setpoints and control parameters and schedules, lockouts, etc. of other systems that may be changed to accomodate testing.

I. Sensor Calibration Checks. Check the sensors listed below for calibration and adequate location.

"In calibration" means making a reading with a calibrated test instrument within 6 inches of the site sensor. Verify that the sensor reading (via the permanent thermostat, gage or building automation system (BAS)) compared to the test instrument-measured value is within the tolerances specified in the prefunctional checklist requirements (_____). If not, install offset in BAS, calibrate or replace sensor. Use the same test instruments as used for the original calibration, if possible.

Sensor & Location	Location OK ¹	1st Gage or BAS Value	Instrument Measured Value	Final Gage or BAS Value	Pass Y/N?
Space temp.					

¹ Sensor location is appropriate and away from causes of erratic operation.

II. Device Calibration Checks.

1. Heating Damper Minimum Positive Closure Verification. For terminal units with a 0 (zero) cfm minimum heating cfm setpoint: With hot and cold decks operating, lower the space temperature setpoint 20F. Visually verify that the heating damper is shut tight and feel that no warm air is passing through damper. If damper is not accessible, close the return air isolation damper, measure the temperature at the cold duct inlet to the box and compare to the temperature at the discharge. If discharge temperature is more than 0.5F greater than the cooling inlet, leakage may be occurring and the unit fails this test.

PASS? (Y/N) _____

Proced. No. & Spec. Seq. ID ¹	Req ID No. ²	Test Procedure ³ (including special conditions)	Expected and Actual Response ⁴ [Write ACTUAL response or finding in brackets or circle]	Pass Y/N & Note #
III. STATIC INSPECTIONS				
1.		Verify sufficient clearance around equipment for servicing.		
2.		Verify installation of specified sound wrapping and joint sealant.		
3.		Unit secured per spec.		
4.		Model and tag checked against plans & equipment list. TU & valve tags affixed.		

Proced. No. & Spec. Seq. ID ¹	Req ID No. ²	Test Procedure ³ (including special conditions)	Expected and Actual Response ⁴ [Write ACTUAL response or finding in brackets or circle]	Pass Y/N & Note #
5.		Verify that inlet conditions are OK: Smooth, round, straight duct for at least 3 duct diameters when possible and 2 diameters minimum for velocity pressure sensor and 3 to 5 diameters for single point electronic sensors, else airflow straighteners.		
6.		<u>Auto TU Diagnostics</u> . In the control system diagnostics, check the controller and actuator accumulated run times, the moving avg. flow error and moving avg. space temp. deviation from setpoint.	The ratio of actuator to controller runtime should be ideally < 3% & < 5% is acceptable. [_____%]. Moving avg. flow error should be < 10% of max. cooling cfm [_____%]. The moving avg. space temp. deviation should be < 3F [____F].	
IV. CONTROL PROGRAMMING.				
In the procedures of this section, compare specified written sequences and parameters with that found programmed in the TU or BAS. Variances that, in the CA's opinion, reduce performance, must be corrected. Variances that make no difference or enhance performance pass. Document all variances.				
7.		Control drawing sequences of operation	Per spec and detail adequate.	
8.		Verify that the TU address matches the TU location and ID on the plan drawings and control drawings.	Address matches.	
9.		Verify that the TU max and min setpoints in the BAS match the latest plan drawings and balance report (TAB).	<u>Cooling:</u> Drawing max = _____ min = _____ BAS max = [_____] min = [_____] TAB max = _____ min = _____ <u>Heating:</u> Drawing max = _____ min = _____ BAS max = [_____] min = [_____] TAB max = _____ min = _____	
10.		Temperature adjustment range by tenants (indicate if a setting was spec'd)	Spec'd or reasonable value _____ Found [_____] _____	
11.		Cooling-- occupied zone temp. setpoint (indicate if a setting was spec'd)	Spec'd or reasonable value _____ Found [_____] _____	
12.		Unoccupied zone temperature setpoint (indicate if a setting was spec'd)	Spec'd or reasonable value _____ Found [_____] _____	
13.		Occupied zone temp. bias (deadband) (indicate if a setting was spec'd)	Spec'd or reasonable value _____ Found [_____] _____	
14.		Unoccupied zone temp. bias (deadband) (indicate if a setting was spec'd)	Spec'd or reasonable value _____ Found [_____] _____	
15.		Cooling space setpoint proportional band (indicate if a setting was spec'd)	Spec'd or reasonable value _____ Found [_____] _____	
16.		Heating space setpoint proportional band (indicate if a setting was spec'd)	Spec'd or reasonable value _____ Found [_____] _____	
17.		Cooling cfm proportional band (indicate if a setting was spec'd)	Spec'd or reasonable value _____ Found [_____] _____	
18.		Heating cfm proportional band (indicate if a setting was spec'd)	Spec'd or reasonable value _____ Found [_____] _____	
19.		Auto-zero function schedule set and enabled.	Set and enabled.	

Proced. No. & Spec. Seq. ID ¹	Req ID No. ²	Test Procedure ³ (including special conditions)	Expected and Actual Response ⁴ [Write ACTUAL response or finding in brackets or circle]	Pass Y/N & Note #
20.		Duct area at flow station (sf)	Clg: Prints _____ Found [_____] Htg: Prints _____ Found [_____]	
21.		Verify that BAS TU K factor is within 20% of K on the submitted control drawings, unless explained by TAB.	Cooling: Drawing K = _____ BAS K = [_____] TAB K = _____ Heating: Drawing K = _____ BAS K = [_____] TAB K = _____	
22.		Damper stroke time (Spec'd value comes from controller spec, unless oval duct, which should then be timed)	Spec'd _____ Found [_____]	
23.				
V. FUNCTIONAL TESTING.				
24.		<u>CFM Capacity Test, Cooling.</u> For TU's controlled from DDC flow stations: With the duct SP setpoint being met, lower space setpoint 20F and observe in BAS that cooling flow goes to maximum and heating flow goes to minimum. For TU's controlled by damper position only, observe that the damper goes to min. and max. as expected.	Specified max. cooling cfm = _____ Achieved cfm or position = [_____] Within deadband (if DDC)? _____ Specified min. heating cfm = _____ Achieved cfm or position = [_____] Within deadband? (if DDC) _____	
25.		<u>CFM Capacity Test, Heating.</u> For TU's controlled from DDC flow stations: With the duct SP setpoint being met, raise space setpoint 20F and observe in BAS that heating flow goes to maximum and cooling flow goes to minimum. For TU's controlled by damper position only, observe that the damper goes to min. and max. as expected. Return setpoints to normal.	Specified max. htg cfm = _____ Achieved cfm or position = [_____] Within deadband (if DDC)? _____ Specified min. clg cfm = _____ Achieved cfm or position = [_____] Within deadband? (if DDC) _____	
26.		(Verify for only 1/2 of the tested TU's) <u>Warmup cycle—heating.</u> Adjust schedule or time so TU will be in warmup mode. Adjust the space setpoint to be 5F above space.	Does the TU damper go to heating minimum?	
27.		(Verify for only 1/2 of the tested TU's) <u>Warmup cycle—cooling.</u> Adjust schedule or time so TU will be in warmup mode. Adjust the space setpoint to be 5F below space.	Does the TU damper go to cooling maximum?	
28.		<u>Interlocks.</u> This unit is interlocked with radiant panel or fin tube heating (Y/N) _____. If Yes, the fin tube or radiant panel functional tests will verify the interlocks with the TU.	TU operates normally during cycling ON and OFF of radiant panels and fin tubes.	

Proced. No. & Spec. Seq. ID ¹	Req ID No. ²	Test Procedure ³ (including special conditions)	Expected and Actual Response ⁴ [Write ACTUAL response or finding in brackets or circle]	Pass Y/N & Note #
29.		<p><u>Night High Limit Operation.</u> Schedule the space so it is in unoccupied mode. Change the NHL setpoint () so it engages the NHL functions. _____</p> <p>a. Change the zone unoccupied setpoint to be 20F below the space temp. Observe in BAS that cooling flow goes to maximum and heating flow goes to minimum.</p> <p>b. Change the zone unoccupied setpoint (if used, else use occupied setpoint) to be = to the space temp. Observe in the BAS that the cooling and heating flows go to min.</p> <p>For TU's controlled by damper position only, observe that the dampers go to their expected positions.</p>	<p>a. Specified max. unoccupied cooling cfm = _____ Achieved cfm or position= [] Within deadband (if DDC)? _____ Specified min. heating cfm = _____ Achieved cfm or position = [] Within deadband? (if DDC) _____</p> <p>b. Cooling and heating flows or positions go to minimum. []</p> <p>c. TU remains in normal mode until NHL setpoint minus offset is reached by the determining zones, when AHU and TU will shut down.</p>	
30.		<p><u>Night Low Limit Operation.</u> Schedule the space so it is in unoccupied mode. Change the NLL setpoint () so it engages the NLL functions. _____</p> <p>a. Change the zone unoccupied setpoint (if used, else use occupied setpoint) to be 20F above the space temp. Observe in BAS that heating flow goes to maximum and cooling flow goes to minimum.</p> <p>b. Change the zone unoccupied setpoint to be = to the space temp. Observe in the BAS that the cooling and heating flows go to min.</p> <p>For TU's controlled by damper position only, observe that the dampers go to their expected positions.</p>	<p>a. Specified max. unoccupied heating cfm = _____ Achieved cfm or position= [] Within deadband (if DDC)? _____ Specified min. cooling cfm = _____ Achieved cfm or position = [] Within deadband? (if DDC) _____</p> <p>b. Cooling and heating flows or positions go to minimum. []</p> <p>c. TU remains in normal mode until NLL setpoint + offset is reached by the determining zones, when AHU and TU will shut down.</p>	
31.		<p><u>Trending: Damper Control.</u></p> <p>Over an 26 hour occupied and unoccupied period, trend at 2 min. intervals, the hot and cold damper positions or cfm, the dampers or cfm commands, the space temperature, OSAT and the duct static pressure at the controlling sensor.</p>	<p>Compare actuals to cfm and space temp. setpoints. Compare to the schedule. Observe that there is little or no overshoot of space temperature or hunting of the damper or valve, that cfm is within its deadband and that the heating and cooling cfm's change from heating to cooling as the space temp goes outside deadbands.</p>	
32.		<p>(Trend for only 1/2 of the tested TU's)</p> <p><u>Trending General.</u> Over a 3 day period, during near design conditions for heating and cooling, trend space temp. at 10 minute intervals.</p> <p>Omit this test if auto diagnostics has a moving avg. space temp. deviation log and it was completed.</p>	<p>Observe that the space temp. does not drift more than 1°F outside the deadband range around the setpoint.</p>	

Proced. No. & Spec. Seq. ID ¹	Req ID No. ²	Test Procedure ³ (including special conditions)	Expected and Actual Response ⁴ [Write ACTUAL response or finding in brackets or circle]	Pass Y/N & Note #
33.				
34.	--	Return all changed control parameters and conditions to their pre-test values ⁵	Check off in program printout when completed	

MONITORING AND TREND LOGGING

Monitoring via BAS trend logs are required for test procedures 31 and 32. Attach representative graphs or columnar data and explanatory analysis to this test report. The data should have time down the left column and four to six columns of parameters to the right. Provide a key to all abbreviations and attach setpoints and schedules for all trended parameters.

****Abbreviations:** BAS = building automation system, CA = commissioning agent, HCV = heating coil valve, TU = terminal unit, SA = supply air, plan drawing = building drawings and schedules from design engineer.

¹Sequences of operation attached to this test.

²Mode or function ID being tested from testing requirements section of the project Specifications.

³Step-by-step procedures for manual testing, trend logging or data-logger monitoring.

⁴Include tolerances for a passing condition. Fill-in spaces or lines not in brackets denote sequence parameters still to be specified by the A/E, controls contractor or vendor. Write "Via BAS" for verifications of device position from BAS readout or "Via obs" for actual observation or from test instrument reading.

⁵Record any permanently changed parameter values and submit changes to Owner.

-- END OF TEST --

Functional Test Record

Project _____

ELECTRONIC FILTERS

Prior to powering up units on job site

1. Physically inspect installation; check that all units are sealed to prevent bypass including the area surrounding the V8 modules as well as where individual modules (12 or 18" in height) come in contact with each other. In the event there are any gaps or sealant is missing, use 3M aluminum tape (1/2") or equivalent to seal.
2. Check to make sure all modules have Dynamic V8 media in place and all latches are closed.
3. Check all plug-in wiring between modules and confirm they are properly connected. Refer to the wiring diagram in the Dynamic V8 submittal for the job. If diagram is not available contact Dynamic for job specific information.
4. Check incoming and outgoing 24 wiring back to Dynamic control panel and/or 24 volt transformer.
5. If a door safety-interlock switch is installed, check to make sure it is wired properly and operable.
6. If a NEMA-rated outdoor enclosure is required, check integrity of seal on enclosure.
7. Make sure all connections to control panel/24 volt transformer are correct and that the installation is properly grounded.
8. Make sure power disconnect switch is properly installed and that the incoming line voltage to the 24 volt transformer/control panel is properly fused (20 amp dedicated circuit recommended) and that the incoming line power matches the amperage and voltage specified on the control panel/24 volt transformer.

Powering up units

1. Note: control panels and 24 volt transformers may vary and some jobs may have multiple control panels. Some jobs will use 24 volt transformers without control panels. Some control panels will have either one or two visible LED lights on the front. Refer to the wiring diagram provided as part of the V8 submittal for specific design.
2. Turn on main supply providing incoming power to 24 volt transformer/control panel. All LED lights should come on when powered up. CP-75ANW and CP-300A power supplies will have (1) or (3) red LED indicators respectively which indicate that power is being delivered to the power supply itself. CP-75, CP-150, and CP-300 control panels will have (1), (2), or (3) red LED indicator lights and a corresponding number of blue lights. The bluelight is the air cleaner status indicator and shows that the electrical circuit between all the modules is operating properly. If any of the LED lights are inoperable, power down the system and check the electrical connections. If the problem persists when the equipment is restarted, contact Dynamic.
3. Check output from the transformer/control panel and verify it is 24vac +/- ___?

4. With power on and all LED lights operating, physically inspect all individual V8 modules from the filter access section (where media will be changed out). Typically this is the upstream side of the filter module but in some cases the V8s may be serviced from the downstream side. Each module will have red indicators on them, 12" high modules will have (1) LED indicator on the front of the module, and 18" high modules will have two (2) LED indicators on the front of the module. Check to make sure all LED lights are operating. If an LED light is not operating, check the electrical connections to that module; if the problem persists, shut down the power and check to make sure that all media is properly seated in the frame for that module and that contact is being made between the "button" on the media where current is delivered and a similar "button" on the frame itself. Once verified, turn on power again. If LED lights remain inoperable, contact Dynamic.

5. Check operation of manahelic gauges to determine initial s.p. drop through the Dynamic system. Make sure gauges have been properly calibrated. Gauges may be located on the air handler itself or integrated into the control panel. Record the initial static pressure drop and date unit has been
6. placed into service. This information should be maintained in a log at the air handler and used to facilitate appropriate change-out of V8 media. Check the Dynamic submittal for the recommended final static pressure drop. If this information is not available, contact Dynamic.
7. If the system is connected to digital readouts that monitor static pressure drop through the automated building control system, take initial s.p. drop readings mechanically and verify that the digital readouts are calibrated properly.

General Notes:

- If V8s are to be operated during the construction phase, MERV 8 or equivalent Prefilter must be in place to protect the media. Typically, many V8 installations do not use a prefilter in normal operations.
- V8 media has an exceptionally long life compared to standard passive media. It is important that the maintenance and facilities staff understand the differences between the Dynamic V8 and high efficiency passive filtration.
- Because of the long media life (typically 3 years or longer) it is recommended that spare media not be purchased at time of installation. If spare media was required at time of purchase, make sure to store in a safe location and clearly mark as V8 replacement media. When media is required, contact the representative that provided the V8s for installation. Media requirements are maintained by job name and location.

Unit Tag Number						
Modules installed in the proper numbered order						
Area surrounding the modules flashed and sealed						
Gaps between the modules sealed						
All media installed and latches closed						
Jumper wires between the modules connected						
Connections to the control panel or 24 volt power source						
Output from control panel or transformer is 24 volts						
Incoming voltage to the control panel properly fused						
Red LED power indicators on control panel lit						
Blue return indicating lights on control panel lit						
Red LED indicator lights on each module lit						
For Systems With Static Pressure Gauges						
Initial Static Pressure drop through the Dynamic system						
Start up date:						
Performed by:						

Add unit tag numbers and check off each step. When complete, date and sign and fax to 609-924-8524 or email to pcartularo@dynamic.com

TREND POINT MONITORING SETUP

System points are monitored via the building automation system after systems are in normal operation and manual functional testing and other adjusting of set points and schedules is basically complete. This is normally a few weeks after substantial completion. The Commissioning Authority provides a list of desired monitored points to the Controls Contractor who sets up the trends (typically for 1 - 2 weeks). The data is downloaded and provided to the CA in a prescribed format for use in graphing spreadsheets. The CA analyzes the data looking to verify proper operation and identify operational problems. A summary of findings is included in the Commissioning Report. The points to be monitored are generally identified in the testing requirements in the specifications, but this list will be modified from information gathered during manual testing. Often a second round of monitoring is needed to look into problem areas and to verify corrections of identified issues. During opposite season testing, and possibly during swing seasons, additional trending and analysis may be completed. The CC may not have to set up these trends, if the facility staff is able to.

Trending of at least one space temperature, occupied and unoccupied temperature set point, and status (run-time) of all controlled equipment for each of the buildings will be performed on 1-hour intervals.

TESTS OVERSEEN BY THE CA

For functional tests the Commissioning Authority oversees, the CA schedules the tests through the Mechanical Contractor or Controls Contractor. Tests are scheduled to maximize convenience for the CA and the Contractors and to facilitate meeting schedule deadlines, without compromising the testing rigor.

Tests on portions of partially complete systems will be avoided and allowed only at the CA's discretion. The CA oversees, witnesses, and documents the functional testing according to the specifications and the Commissioning Plan. The Subcontractors execute most tests. The CA executes, at their discretion, tests on some equipment, systems or components that are not controlled by the building automation system. The controls contractor shall be available by cell phone when they are not present at a functional test of equipment they interface with.

The control system is tested before it is used to verify performance of other components or systems. The air balancing and water balancing is completed and debugged before functional testing of air-related or water-related equipment or systems. Testing proceeds from components to subsystems to systems and finally to interlocks and connections between systems.

The Contractor provides proficient staff to execute tests that have sufficient time allocated to prevent interruption from other responsibilities.

TESTS OVERSEEN BY THE CONTRACTORS

For tests overseen and documented by the Contractor, the Commissioning Authority includes these tests in the project schedule and provides 5 business days notice to Cook County prior to testing. The Contractor executes and documents the tests. The CA may witness part of the testing. The Contractor submits test documentation to the CA for review and approval within 5 business days of the initial round of testing of each piece of equipment. Issues of deviation from expected or proper performance and procedures that were not attempted or completed are noted and a schedule for their resolution and retesting provided.

TEST WITNESSING BY COOK COUNTY REPRESENTATIVE

Johnson Controls will notify Cook County at least 5 days prior to performing commissioning-related field measurements and invite the appropriate County representatives to witness the measurements and inspections.

ISSUES, DEFICIENCIES, AND RETESTING

The CA (or Contractor when applicable) documents the results of the test on the test forms. Needed small changes or corrections of minor deficiencies identified are made *during* the tests at the discretion of the CA. Deficiencies or other issues needing resolution are noted and reported to the CA. Deficiencies will be addressed and resolved according to its relative priority. Once the issue has been resolved or the required change completed, the Contractor notifies the CA so that testing can resume. The CA will schedule retesting through the Contractor.

SAMPLING

Multiple identical pieces of non-life-safety or otherwise non-critical equipment may be functionally tested using a sampling strategy. Sampling strategies are to be approved in advance by the CA and Cook County.

O&M MANUALS, WARRANTIES, AND AS-BUILTS

O&M manuals, warranty documentation, and as-built drawings and schedules will be provided prior to the scheduled training activities.

TRAINING AND ORIENTATION OF OWNER PERSONNEL

Training of Cook County personnel will occur before Substantial Completion of each building. A log of the training activities, participants, and systems covered will be maintained by the CA. This training log will be included in the Commissioning Report.

The Energy Conservation Measure based, site-specific training proposed for this project will be conducted at each facility. The training plan will be submitted ten days prior to the start of each training session. The training elements will be based on the ECM equipment being installed and will be detailed with support material such as O&M manuals and other product data sheets. The equipment and system training will be performed by a combination of equipment providers, mechanical contractor, controls contractor and the Johnson Controls project manager.

Johnson Controls will be responsible for the organization and scheduling of all training sessions. This will include coordination of personnel, books and manuals, training location and documentation of all training sessions.

Training will include equipment/hardware descriptions, maintenance procedures, operational review/parameters, DDC controllers, Control System user interface, and the full sequence of operations for the entire system.

Johnson Controls will accommodate as many attendees from the Stroger staff as deemed necessary by Cook County.

COMMISSIONING REPORT

The Commissioning Report will include the completed Pre-Functional Inspection and Functional Test results, manufacturer's start-up documentation, and a deficiencies and corrective action log, organized for each ECM.

The Commissioning Report will be completed and submitted in accordance with the specifications listed in the Master Contract.

SUBSTANTIAL COMPLETION AND FINAL ACCEPTANCE

The following are required for Substantial Completion:

Functional testing and verification shall be complete on all commissioned systems and assemblies with outstanding issues identified and a schedule for their completion and retesting submitted to and approved by the Owner.

Training of owner personnel shall be completed according to the training plan with a schedule for the outstanding training submitted to and approved by the Owner.

All O&M manuals shall have been approved by the Owner and final copies submitted to the Owner. This shall exclude as-built documentation.

Completion of trend logs and functional testing, verification of later controls training sessions and review of as-built documentation shall be expected.

The same section requires the following for Final Acceptance:

Training of Owner personnel shall be completed according to the training plan.

All O&M manuals shall have been approved by the Owner and final copies, including as-built documentation, submitted to the Owner.

ECM SPECIFIC COMMISSIONING STRATEGIES

STROGER HOSPITAL

SH-1: Lighting Upgrades

The lighting upgrades at Stroger Hospital will be commissioned based on a visual inspection to ensure that all the lamps and ballasts have been properly installed and are operating as intended.

SH-14: VAV Box Optimization

The goal of VAV Box Optimization commissioning is to ensure that selected existing constant volume boxes are reprogrammed to act as variable air volume boxes during unoccupied periods.

- The commissioning technician will write a standard test procedure for testing the VAV box operation after the VAV conversion has been completed. All of the boxes will be tested at the BAS work station and their pass/fail will be recorded.
- For the VAV boxes that failed, the commissioning technician will lead the effort to troubleshoot the causes and establish a fix for each box. It is anticipated that the failed boxes may have to be inspected as part of the troubleshooting.

SH-15: Electronic Filter Retrofit

The goal of electronic filter commissioning is to ensure that the equipment was installed per manufacturer's specifications and will perform as intended. The following are a list of some of the testing and performance check activities. The installation is verified and documented by the installing contractor.

- Once the air-handling units are retrofitted with the new filters, a visual inspection of all units is conducted to ensure that the filters were installed per the specifications. Visually verify that all air cleaners are operating properly by observing system status lights.
- The functional performance verification includes field tests that are intended to verify that the AHUs operate as they were intended to operate. During this verification, pressure drop across each unit is measured to determine the motor load.

The commissioning deliverable includes a commissioning report which documents all of the findings from the above tests and system check.

SH-18: Lighting Controller

The lighting controller upgrade will be commissioned based on a visual inspection to ensure that the new software is operating as intended and the facility personnel can access all applicable lighting controls.

- Verify programmed lighting schedules

SH-19: Parking Garage Lighting Retrofit

The lighting upgrades at the Parking Garage will be commissioned based on a visual inspection to ensure that all the lamps and ballasts have been properly installed and are operating as intended.

SH-20: Waste Management

There are no commissioning activities associated with this ECM. A waste management specialist will make regularly scheduled site visits to ensure that the hospital is following the guidelines and procedures recommended by Johnson Controls. Annual reconciliation reports will be provided that show the savings realized by Stroger Hospital.

SH-22: Demand Response

Demand Response program does not require any commissioning activities. Johnson Controls and EnergyConnect will work with the Hospital personnel to ensure that the hospital is taking advantage of the curtailment program and implementing required tests.

SH-26: Ventilation AHUs Improvement

The goal of commissioning for this ECM is to ensure that the equipment was installed per manufacturer's specifications and will perform as intended. The installing contractor will verify that the units were retrofitted with variable speed drives and are operating per the new sequence of operations. The functional performance activities include trending the fan status, fan speed and motor kW to ensure that the system is realizing the savings that were guaranteed in the contract. The commissioning deliverable includes a commissioning report which documents all of the findings from the above tests and system check.

POWER HOUSE

SH-13: Chiller Plant Optimization

The goal of chiller plant commissioning is to ensure that the equipment was installed per manufacturer's specifications and will perform as intended. The following are a list of some of the testing and performance check activities. The installation is verified and documented by the installing contractor.

- The controls are calibrated through various calibration procedures. The evaporative and condensing water temperatures are measured and documented during the calibration process.
- The functional performance verification includes field tests that are intended to verify that the chillers operate as they were intended to operate based on new setpoints and control sequences as specified. During this verification, amperage and volts are measured.

- Condenser water flow rates and chilled water temps are measured and documented. The chiller is tested under load to check shut down and start up sequences, reset schedules and checked for reaching and maintaining set points. The commissioning deliverable includes a commissioning report which documents all of the findings from the above tests and system check.
- Chiller plant sequences of operation will be tested to insure proper automatic operation. Any deviation will be noted and corrected.

SH-23: Boiler Stack Condensing Economizer

The goal of boiler stack condensing economizer commissioning is to ensure that the equipment was installed per manufacturer's specifications and will perform as intended. The proposed sequence of operation will be tested to verify functionality of the system. The installation is verified and documented by the installing contractor. The commissioning deliverable includes a commissioning report which documents all of the findings from the above tests and system check.

INSTITUTE OF FORENSIC MEDICINE

IFM-1: Lighting Upgrades

The lighting upgrades at Forensic Medicine building will be commissioned based on a visual inspection to ensure that all the lamps and ballasts have been properly installed and are operating as intended.

The goal of chiller commissioning is to ensure that the equipment was installed per manufacturer's specifications and will perform as intended. The following are a list of some of the testing and performance check activities. The installation is verified and documented by the installing contractor.

- The controls are calibrated through various calibration procedures. The evaporative and condensing water temperatures are measured and documented during the calibration process.
- The functional performance verification includes field tests that are intended to verify that the chillers operate as they were intended to operate based on new setpoints and control sequences as specified. During this verification, amperage and volts are measured.
- Condenser water flow rates and chilled water temps are measured and documented. The chiller is tested under load to check shut down and start up sequences, reset schedules and checked for reaching and maintaining set points. The commissioning deliverable includes a commissioning report which documents all of the findings from the above tests and system check.

IFM-3: Boiler Replacement

The goal of boiler commissioning is to ensure that the equipment was installed per manufacturer's specifications and will perform as intended. The following are a list of some of the testing and performance check activities.

- Commissioning for steam boiler will begin at the factory and includes full operational tests as well as test on control, safety, and protection devices in accordance with the specification. Pressure test of all associated piping will take place prior to insulation.

- In the boiler system the burner will be inspected. The ignition system and safety shut down device will be tested. The fuel oil and gas system will be pressure tested. The hot water steam testing includes water chemical and water level and feed system control test.
- The thermal performance will be assessed and measured. Fire rate readings will be taken. Items such as combustion air, liquid fuel, gas fuel temperatures will be checked. The boiler will be calibrated with and not limited to tachometers, ammeters, insulation tester, pressure gauges, flow meter and any other necessary testing equipment. The commissioning deliverable includes a commissioning report which documents all of the findings from the above tests and system check.

IFM-4: Domestic Water System Upgrades

The goal of commissioning for this ECM is to ensure that the equipment was installed per manufacturer's specifications and will perform as intended. The functional performance activities include trending the motor status, motor speed and motor kW to ensure that the system is realizing the savings that were guaranteed in the contract. The commissioning deliverable includes a commissioning report which documents all of the findings from the above tests and system check.

IFM-5: AHU Controls Upgrade

The goal of AHU controls upgrade commissioning is to ensure that the equipment was installed per manufacturer's specifications and will perform as intended. The following are a list of some of the testing and performance check activities.

Multi-zone Ventilation Unit:

The following items will be verified:

- All temperature sensors can be read at the BAS and are within acceptable ranges
- All valves and relays are functioning properly
- All dampers operate freely and completely open and close
- All safeties function per factory specifications
- All VMA controllers and damper actuator to four zone isolation dampers are programmed with required setpoints and time schedules

Make-up Heating Ventilation Unit:

The following items will be verified:

- All temperature sensors can be read at the BAS and are within acceptable ranges
- All valves and relays are functioning properly
- All dampers operate freely and completely open and close
- The data connection between all variable speed drives
- All safeties function per factory specifications

All findings will be reviewed and documented for record. Any deficiencies or deviations from the original design will be corrected. Any corrective actions will be documented in the final commissioning report.

IFM-6: Inactive Storage Cooling System Upgrade

The goal of the cooling system upgrade commissioning is to ensure that the equipment was installed per manufacturer's specifications and will perform as intended. After supplier and manufacturer preliminary, visual and electrical checks are performed, a series of functional tests are carried out. Static pressure test, dynamic rotation tests and inspection of welds in piped services are recorded and documented. Pressure and leak tests of refrigerating piping systems are carried out on completion of the system, before the piping is insulated. System evacuation, dehydration and charging with refrigerant shall be carried out by skilled and experienced personnel. The following are measured and recorded:

- Starting and running current, high and low pressure cut-out, compressor suction and discharge pressure, evaporator entering and leaving coil temperature, condenser entering and leaving coil temperature, both wet and dry bulb and air flow rate.

After recommended tests and checks are complete any deficiencies are documented, corrected and recorded in the commissioning report.

IFM-7: Steam Traps and Misc Upgrades

The goal of this ECM is to ensure that the equipment was installed per manufacturer's specifications and will perform as intended. The following are a list of some of the testing and performance check activities.

- Commissioning for steam traps will include field verification of the new traps to ensure that the scope of work has been completed and the specifications have been followed.
- The commissioning deliverable includes a commissioning report which documents all of the findings from the above tests and system check.

IFM-8: Receiving Dock Infrared Heaters

The goal of this ECM is to replace the existing infrared heaters located at the receiving dock. The commissioning agent will verify the installation and ensure that the equipment was installed per manufacturer's specifications. After recommended tests and checks are complete any deficiencies are documented, corrected and recorded in the commissioning report.

HEKTOEN BUILDING

HB-1: Lighting Upgrades

The lighting upgrades at Hektoen Building will be commissioned based on a visual inspection to ensure that all the lamps and ballasts have been properly installed and are operating as intended.

HB-9: Controls and AHU Upgrades

The goal of controls and AHU upgrades commissioning is to ensure that the equipment was installed per manufacturer's specifications and will perform as intended. The following are a list of some of the testing and performance check activities. The following items will be verified:

- All temperature sensors can be read at the BAS and are within acceptable ranges
- All valves and relays are functioning properly
- All dampers operate freely and completely open and close
- The data connection between all variable speed drives

- All safeties function per factory specifications

All findings will be reviewed and documented for record. Any deficiencies or deviations from the original design will be corrected. Any corrective actions will be documented in the final commissioning report.

HB-13: Domestic Water Booster VSD

The goal of commissioning for this ECM is to ensure that the equipment was installed per manufacturer's specifications and will perform as intended. The functional performance activities include trending the motor status, motor speed and motor kW to ensure that the system is realizing the savings that were guaranteed in the contract. The commissioning deliverable includes a commissioning report which documents all of the findings from the above tests and system check.

HB-16: Dual Duct VAV and Mixed Air Conversion

The goal of dual duct conversion commissioning is to ensure that the equipment was installed per manufacturer's specifications and will perform as intended. A representative percentage of the units will be checked for the purpose of commissioning. A system readiness check which includes checking fan motors, locations, pressure test, insulation check, damper functionality is performed. After the system readiness check is complete, a through test and balance report is generated. Electrical and controls sequencing is a key element in the commissioning process. During this check controls devices are calibrated and programmed. Any applicable control sensors are checked as well. Any deficiencies found during the commissioning process are documented, corrected and finalized in the commissioning report.

VAV box controls will be verified through trending and exception reports through the operator workstation of the BAS system.

HB-18: Steam Traps and Misc Upgrades

The goal of this ECM is to ensure that the equipment was installed per manufacturer's specifications and will perform as intended. The following are a list of some of the testing and performance check activities.

- Commissioning for steam traps will include field verification of the new traps to ensure that the scope of work has been completed and the specifications have been followed.
- The commissioning deliverable includes a commissioning report which documents all of the findings from the above tests and system check.

RUTH M. ROTHSTEIN CORE CENTER

RRCC-1: Lighting Upgrades

The lighting upgrades at Core Center will be commissioned based on a visual inspection to ensure that all the lamps and ballasts have been properly installed and are operating as intended.

RRCC-2: Controls Upgrade and Electronic Filter Retrofit

The goal of controls upgrade and electronic filter commissioning is to ensure that the equipment and controls were installed per manufacturer's specifications and will perform as intended. The following are

a list of some of the testing and performance check activities. The installation is verified and documented by the installing contractor.

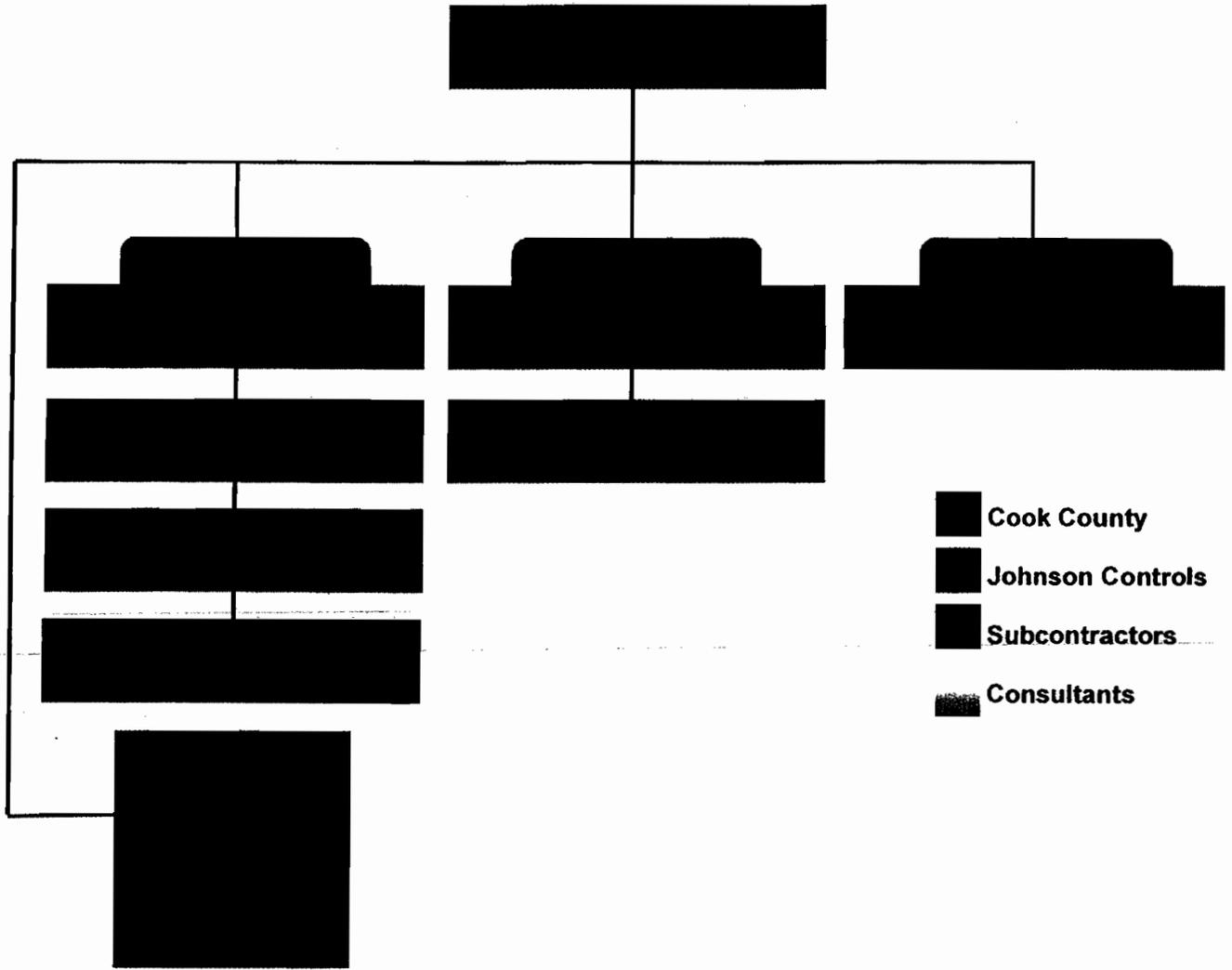
- Once the air-handling units are retrofitted with the new filters, a visual inspection of all units is conducted to ensure that the filters were installed per the specifications. Visually verify that all air cleaners are operating properly by observing system status lights.
- The functional performance verification includes field tests that are intended to verify that the AHUs operate as they were intended to operate. During this verification, pressure drop across each unit is measured to determine the motor load.
- In addition, the following controls setpoints will be verified:
 - All temperature sensors can be read at the BAS and are within acceptable ranges
 - All valves and relays are functioning properly
 - All dampers operate freely and completely open and close
 - All safeties function per factory specifications
 - All new points have been programmed into the FMS

Exhibit D

List of Subcontractors

Subcontractor	Work / Trade	WBE	Percent Participation	MBE	Percent Participation
Hill Mechanical Corporation	Mechanical				
All-Tech Electrical	Electrical	X	2.67%		
Stevenson Crane	Cranes	X	0.10%		
TAC Construction	General Construction	X	1.12%		
Autumn Construction	Construction Management, HVAC/Mechanical Work	X	1.28%		
CT Mechanical	HVAC Construction, Subcontract Management	X	1.19%		
Universal Insulation	Pipe and duct Insulation			X	0.91%
Primera Engineers	Engineering and Design			X	2.23%
Diversified General Contractors	Construction Management, HVAC/Mechanical Work			X	4.98%
Vargas Mechanical	Construction Management, HVAC/Mechanical Work			X	7.37%
DeKayo Corp	Construction Management, HVAC/Mechanical Work			X	1.30%
M Cannon Roofing	Roofing				
Nickelson Industrial Service	Demolition				
Hill Mechanical Services	Cutting and Coring Work, Air and Water, Test and Balance				
JP Larsen Inc	Fire Stopping				
J-Mac	Construction Services	X	0.07%		
Suarez Electric Company	Electrical			X	1.98%
Bonaparte Corporation	Electrical			X	0.68%
Evergreen Supply Company	Lighting and Electrical Supply	X	2.66%		
Applied Controls and Contracting Services	Electrical			X	1.74%
Pace Systems Inc.	Electrical			X	0.90%
Code Engineering	Electrical			X	0.94%
Power and Communication Systems	Electrical			X	0.45%
T.A.G	Sustainable Services	X	0.99%		
R.D Resources	Energy Consulting			X	0.05%
Level-1 Global Solutions	Information Technology/ Networking Consulting			X	0.19%
Ardmore Associates	Construction Management				
Enviropius Inc.	Environmental Remediation	X	0.09%		
Regulatory Compliance Management, Inc.	Environmental Health and Safety Services			X	0.29%
HTS Chicago	HVAC Services				
Total			10.17%		24.01%

Exhibit E - Key Personnel



		<p>Consultants</p> <p><i>MEP Engineering</i> Primera Engineering (MBE)</p> <p><i>Energy Star</i> RLD (MBE)</p> <p><i>Environmental Consulting</i> RCM</p> <p><i>Sustainability Consulting</i> TAG (WBE)</p>	
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John H. Stroger Hospital Complex Cook County Project Schedule
Guar. Energy Performance Contract - Exhibit F

ID	Task Name	Duration	Start	Finish	Predecessors	2012	2013	2014
180	4.3.2.4 Floor 1	3d	Thu 3/21/13	Tue 3/26/13	179			
181	4.3.2.5 Floor 2	5d	Tue 3/26/13	Tue 4/2/13	180			
182	4.3.2.6 Floor 3	4d	Tue 4/2/13	Mon 4/8/13	181			
183	4.3.2.7 Floor 4	4d	Mon 4/8/13	Fri 4/12/13	182			
184	4.3.2.8 Floor 5	5d	Fri 4/12/13	Fri 4/19/13	183			
185	4.3.2.8 Floor 6	5d	Fri 4/19/13	Fri 4/26/13	184			
186	4.3.2.10 Floor 7	5d	Fri 4/26/13	Fri 5/3/13	185			
187	4.3.2.11 Floor 8	4d	Fri 5/3/13	Thu 5/16/13	186			
188	4.3.2.12 Floor 9	5d	Thu 5/16/13	Wed 5/22/13	187			
189	4.3.2.13 Floor 10 mechanical	4d	Thu 5/16/13	Mon 6/10/13	188			
190	4.3.3 HB - 9 Controls and AHU Upgrade	190.94d	Mon 6/10/13	Mon 6/10/13	3FS-8mo			
191	4.3.3.1 Mechanical (control valves, coil replacement)	78.94d	Mon 6/10/13	Mon 6/10/13				
192	4.3.3.1.1 Engineering / Review	4w	Mon 6/10/13	Fri 7/5/13				
193	4.3.3.1.2 Material Procurement	5.79w	Mon 7/8/13	Thu 8/15/13				
194	4.3.3.1.3 Environmental	5d	Thu 8/15/13	Thu 8/22/13				
195	4.3.3.1.4 7.2.1.1 Mechanical Install	6w	Thu 8/15/13	Thu 9/26/13				
196	4.3.3.2 Controls for refurbished AHU	66d	Thu 9/5/13	Thu 10/31/13				
197	4.3.3.2.1 Installation	3w	Thu 10/31/13	Thu 11/21/13				
198	4.3.3.2.2 Programming & Validation	2w	Thu 11/21/13	Thu 12/5/13				
199	4.3.3.2.3 Testing and Verification	20d	Thu 11/21/13	Mon 1/6/14				
200	4.3.3.3 Network upgrade	12d	Thu 12/19/13	Mon 1/6/14				
201	4.3.3.3.1 Installation	69.53d	Mon 12/24/12	Fri 3/29/13				
202	4.3.3.3.2 Programming & Validation	2w	Mon 12/24/12	Fri 1/4/13				
203	4.3.4 HB - 13 Domestic water booster pump package	6w	Mon 1/7/13	Fri 2/15/13				
204	4.3.4.1 Engineering / Review	5d	Mon 2/18/13	Fri 2/22/13				
205	4.3.4.2 Equipment Procurement	2.91w	Mon 2/18/13	Fri 3/8/13				
206	4.3.4.3 Environmental	2w	Fri 3/8/13	Fri 3/22/13				
207	4.3.4.4 Plumbing/Mechanical	1w	Fri 3/22/13	Fri 3/29/13				
208	4.3.4.5 Controls Installation	402.6d	Mon 1/21/13	Wed 6/6/14				
209	4.3.4.6 Testing and Verification	50d	Mon 1/21/13	Fri 3/29/13				
210	4.3.5 HB - 16 Dual duct VAV and Mixed Air Conversion	42.6d	Mon 4/1/13	Wed 5/29/13				
211	4.3.5.1 Engineering / Review	12.5d	Wed 5/29/13	Mon 6/17/13				
212	4.3.5.2 Equipment Procurement	13.5mo	Wed 5/29/13	Wed 6/11/14				
213	4.3.5.3 Environmental	305d	Wed 6/6/13	Wed 6/6/14				
214	4.3.5.4 Mechanical Modifications per box	14.4mo	Wed 6/5/13	Mon 7/1/14				
215	4.3.5.5 Controls	15mo	Wed 6/12/13	Wed 6/6/14				
216	4.3.5.5.1 Installation	15mo	Wed 6/12/13	Wed 6/6/14				
217	4.3.5.5.2 Programming & Validation	340d	Mon 6/10/13	Fri 9/13/13				
218	4.3.5.6 Balancing	14w	Mon 6/10/13	Fri 12/6/13				
219	4.3.6 HB-16A AHU Replacement	9mo	Mon 12/9/13	Fri 12/6/13				
220	4.3.6.1 Design and Engineering	9mo	Mon 12/9/13	Fri 12/6/13				
221	4.3.6.2 Equipment Procurement	9mo	Mon 12/9/13	Fri 12/6/13				
222	4.3.6.3 Mechanical Install (based on 1 unit per 5 weeks)	79.22d	Mon 12/23/13	Fri 8/29/14				
223	4.3.6.4 Controls	9mo	Mon 12/23/13	Fri 8/29/14				
224	4.3.6.4.1 Installation	9mo	Mon 12/23/13	Fri 8/29/14				
225	4.3.6.4.2 Programming & Validation	9mo	Mon 12/23/13	Fri 8/29/14				
226	4.3.6.4.3 Testing and Verification	9mo	Mon 12/23/13	Fri 8/29/14				
227	4.3.7 HB - 18 Steam traps and misc upgrades	3.35w	Mon 1/20/14	Fri 9/26/14				
228	4.3.7.1 Environmental	5d	Mon 4/15/13	Fri 8/2/13				
229	4.3.7.2 Install Steam Traps	3.5w	Mon 5/13/13	Tue 6/4/13				
230	4.3.7.3 HP Steam Piping Near Boiler	3.5w	Tue 6/4/13	Fri 6/28/13				
231	4.3.7.4 Delete Steam PRV Stations	5w	Fri 6/28/13	Fri 8/2/13				
232	4.3.8 Closure	22d	Mon 9/29/14	Tue 10/28/14				
233	4.3.8.1 Testing & Punch List	10d	Mon 9/29/14	Fri 10/10/14				
234	4.3.8.2 Post Measurements & Commissioning	10d	Mon 10/13/14	Fri 10/24/14				
235	4.3.8.3 Final Inspection	5d	Mon 10/13/14	Fri 10/17/14				
236	4.3.8.4 Training	2d	Mon 10/27/14	Tue 10/28/14				
237	4.3.8.5 Acceptance	0d	Tue 10/28/14	Tue 10/28/14				
238	4.4 Ruth M. Rothstein Core Center	206.21d	Fri 11/16/12	Tue 9/3/13				
239	4.4.1 Pre Installation	0d	Fri 11/16/12	Fri 11/16/12				
240	4.4.1.1 Permits and access coordinated	0d	Fri 11/16/12	Fri 11/16/12				

John H. Stroger Hospital Complex Cook County Project Schedule Contract - Exhibit F

Current Γ
Status
Tue 7/17/12
Sat 6/16/12



ID	Task Name	Duration	Start	Finish	Predecessors	2012	2013	2014
241	4.4.1.2 Environmental Compliance	0d	Fri 1/18/12	Fri 1/18/12	2FS-75d			
242	4.4.2.1 Lighting Upgrades	49:38d	Mon 11/26/12	Fri 2/7/13				
243	4.4.2.1 Lighting Design	2w	Mon 11/26/12	Fri 12/7/12	3FS-1mo			
244	4.4.2.2 Material Procurement	5:13w	Mon 12/10/12	Mon 1/14/13	243			
245	4.4.2.3 Floor 1	3:44d	Mon 1/14/13	Fri 1/18/13	244			
246	4.4.2.4 Floor 2	3:44d	Fri 1/18/13	Wed 1/23/13	245			
247	4.4.2.5 Floor 3	3:44d	Wed 1/23/13	Mon 1/28/13	246			
248	4.4.2.6 Floor 4	3:44d	Mon 1/28/13	Fri 2/1/13	247			
249	4.4.3 RRC-2 Controls Upgrades and Electronic Filter	19d	Mon 12/24/12	Fri 8/2/13				
250	4.4.3.1 Engineering / Review	8w	Mon 12/24/12	Fri 2/15/13	3FS-2mo			
251	4.4.3.2 Equipment Procurement	10w	Mon 2/18/13	Fri 4/26/13	250			
252	4.4.3.3 Demo/Install for new filters	6:97w	Mon 4/29/13	Fri 8/14/13	251			
253	4.4.3.4 Testing and Verification	1:58w	Fri 8/14/13	Fri 8/23/13	252			
254	4.4.3.5 Night setback on tests	5w	Fri 8/23/13	Fri 8/30/13	253			
255	4.4.4 Closure	22d	Fri 8/23/13	Tue 9/3/13	254			
256	4.4.4.1 Testing & Punch List	10d	Fri 8/23/13	Fri 8/16/13	249			
257	4.4.4.2 Post Measurements & Commissioning	10d	Fri 8/23/13	Fri 8/30/13	256			
258	4.4.4.3 Final Inspection	5d	Fri 8/16/13	Fri 8/23/13	258			
259	4.4.4.4 Training	2d	Fri 8/30/13	Tue 9/3/13	257			
260	4.4.4.5 Acceptance	0d	Tue 9/3/13	Tue 9/3/13	259			
261	4.5 Pre Installation	510:57d	Fri 8/17/12	Mon 8/14/14				
262	4.5.1.1 Permits and access coordinated	0d	Fri 8/17/12	Fri 8/17/12	2FS-10d			
263	4.5.1.2 Environmental Compliance	0d	Fri 8/17/12	Fri 8/17/12	2FS-10d			
264	4.5.2 SCW - 6 LEED EB Energy Star Benchmarking	0d	Fri 8/17/12	Fri 8/17/12	2FS-10d			
265		510:57d	Mon 8/20/12	Mon 8/14/14				
266	4.5.2.1 Initial assessment	14d	Mon 8/20/12	Thu 9/6/12	2FS-10d			
267	4.5.2.2 Final evaluation	16:87d	Fri 7/11/14	Mon 8/4/14	266FS-480d			
268	4.5.3 SCW - 15 Sustainable Services	231:06d	Mon 10/29/12	Wed 11/7/13				
269	4.5.3.1 Workshop 1	7:29d	Mon 10/29/12	Wed 11/7/13	3			
270	4.5.3.2 Workshop 2	6:89d	Fri 12/28/12	Tue 1/8/13	269FS-37d			
271	4.5.3.3 Workshop 3	6:89d	Fri 3/1/13	Tue 3/12/13	270FS-38d			
272	4.5.3.4 Workshop 4	6:89d	Fri 5/3/13	Tue 5/14/13	271FS-38d			
273	4.5.3.5 Workshop 5	6:89d	Fri 7/5/13	Tue 7/16/13	272FS-38d			
274	4.5.3.6 Workshop 6	6:89d	Fri 9/6/13	Tue 9/17/13	273FS-38d			
275	4.5.3.7 Workshop (7-10 TBD)	0d	Tue 9/17/13	Tue 9/17/13	274			
276	4.5.4 SCW - 14 Utility Meter Installation	53:15d	Mon 3/18/13	Thu 5/30/13				
277	4.5.4.1 Installation	33:15d	Mon 3/18/13	Thu 5/2/13	3FS-5mo			
278	4.5.4.2 Programming & Validation	10d	Thu 5/2/13	Thu 5/16/13	277			
279	4.5.4.3 Testing and Verification	10d	Thu 5/16/13	Thu 5/30/13	278			
280	4.5.5 Closure	22d	Thu 9/17/13	Thu 10/17/13				
281	4.5.5.1 Testing & Punch List	10d	Tue 9/17/13	Tue 10/1/13	268			
282	4.5.5.2 Post Measurements & Commissioning	10d	Tue 10/1/13	Tue 10/15/13	281			
283	4.5.5.3 Final Inspection	5d	Tue 10/1/13	Tue 10/8/13	281			
284	4.5.5.4 Training	2d	Tue 10/15/13	Thu 10/17/13	282			
285	4.5.5.5 Acceptance	0d	Thu 10/17/13	Thu 10/17/13	284			
286	Project Closeout	65d	Wed 8/17/14	Tue 12/16/14				
287	5.1 Administrative Closeout	50d	Wed 8/17/14	Tue 11/25/14				
288	5.1.1 Complete Subcontracts Closeout	20d	Wed 10/29/14	Tue 11/25/14	28			
289	5.1.2 Terminate Leases/Services	30d	Wed 10/29/14	Tue 11/25/14	28			
290	5.1.3 Equipment Warranties	30d	Wed 10/29/14	Tue 11/25/14	28			
291	5.2 Demobilize Project Site	30d	Wed 10/29/14	Tue 11/25/14	28			
292	5.2.1 Remove Excess Material	10d	Wed 10/29/14	Tue 11/25/14	28			
293	5.2.2 Project Office & Temp Facil	20d	Wed 10/29/14	Tue 11/25/14	28			
294	5.3 Documentation	35d	Wed 10/29/14	Tue 12/16/14	28FF			
295	5.3.1 Final Testing & Commissioning	20d	Wed 10/29/14	Tue 11/25/14	28			
296	5.3.2 As-Built Drawings	20d	Wed 10/29/14	Tue 11/25/14	28			
297	5.3.3 O&M Manuals	10d	Wed 11/26/14	Tue 12/9/14	295,296			
298	5.3.4 Certificate of Acceptance	5d	Wed 10/29/14	Tue 11/4/14	28			
299	5.3.5 Files Archive	5d	Wed 12/10/14	Tue 12/16/14	297			

NOTE: Project Schedule is based on reasonable and timely access to all worksite areas.
Contract #: 14K7-0111

EXHIBIT G
Performance Guarantee
JOHNSON CONTROLS, INC.

GUARANTY OF ENERGY COST SAVINGS

1. DEFINITIONS

When used in this Agreement, the following capitalized words shall have the meaning ascribed to them below:

"Baseline Period" is the period of time that defines the Baseline Usage and is representative of the Facilities operations, consumption, and usage that is used as the benchmark for determining cost avoidance.

"Baseline Usage" is the calculated energy usage of the Facilities prior to the implementation of the ECMs.

"Baseline Demand" is the calculated energy demand of a piece of equipment or a site prior to the implementation of the ECMs. Baseline physical conditions, such as equipment counts, nameplate data, and control strategies, will typically be determined through building occupancy, energy end-use survey and plug load surveys of the Facilities.

"Energy and Operational Cost Avoidance Guarantee Practices" are those practices identified in The Schedule of Savings, intended to achieve avoided costs in energy and/or operating expenses.

"Energy Costs" may include the cost of electricity and fuels to operate HVAC equipment, cogeneration system, facility mechanical and lighting systems, and energy management systems, and the cost of water and sewer usage, as applicable.

"ECM" the Energy Conservation Measure (ECM) is the installation of equipment or systems, or modification of equipment or systems as described in Attachment B.

"Facilities" shall mean those described in Attachment A.

"First Guarantee Period" is defined as the period beginning on the first (1st) day of the month following the date of execution of the Delivery and Acceptance Certificate (Attachment E-2) upon Substantial Completion of this Project by the County and ending on the day prior to the first (1st) twelve-month anniversary thereof.

"Guarantee Period" is defined as the First Guarantee Period and each of the successive twelve (12) month periods commencing on the anniversary of the commencement of the First Guarantee Period throughout the Term of this Agreement.

"Guaranteed Savings" is defined as the amount of avoided Energy and Operational Costs guaranteed to the COUNTY in each Guarantee Period.

"Guaranteed Savings Reconciliation Report" is defined as the process and report for determining the Verified Savings in each Guarantee Period and reconciling it to the Guaranteed Savings in the same Guarantee Period.

"IPMVP" shall mean the International Performance Measurement and Verification Protocol and its Measurement and Verification Guidelines for energy savings performance contract projects. The IPMVP guidelines classify measurement & verification approaches as Option A, Option B, Option C, and Option D.

"Measurement and Verification Plan" (M&V Plan) is defined as the plan providing details on how the Guarantee Savings will be verified.

"Measured Savings Amount" Savings to the Customer resulting from the implementation of the Project, measured and calculated in accordance with Exhibit C, Subsection 3.B, multiplied by the rates for each energy savings category set forth in Subsection.

Non-measured Savings Amount Savings to the Customer resulting from the implementation of the Project in the amounts stipulated in Subsection.

"Operational Costs" shall include the cost of operating and maintaining the Facilities, such as, but not limited to, the cost of inside and outside labor to repair and maintain Covered Systems and Equipment, the cost of custodial supplies, the cost of replacement parts, the cost of deferred maintenance, the cost of lamp and ballast disposal, and the cost of new capital equipment as defined for each ECM in Section 4, Schedule of Values.

"Term" shall be (20) years from acceptance.

"Verified Savings" is defined as the summation of avoided Energy and Operational Costs as determined by the Measurement & Verification Plan for the Facilities in each Guarantee Period as a result of the ECMs provided by ESCO.

2. TERM AND TERMINATION

2.1 **Guarantee Term.** The Term of this Guarantee shall commence on the first day of the month following the date of execution of the Final Acceptance certificate upon Final Acceptance of this Project by the County and shall terminate at the end of **20** years unless terminated earlier as provided for herein.

2.2 **Guarantee Termination.** Should this Agreement be terminated (including, as applicable, the Maintenance or Measurement & Verification Services) in whole or in part for any reason prior to the end of the Term, the Guaranteed Savings for the Guarantee Period in which such termination becomes effective shall be prorated as of the effective date of such termination, with a reasonable adjustment for seasonal fluctuations, if any, in Energy and Operational Costs, and the Guaranteed Savings for all subsequent Guarantee Periods shall be null and void.

3. SAVINGS GUARANTEE

3.1 **Guaranteed Annual Savings Amount:** The Guaranteed Annual Savings Amount for each Performance Guarantee Year is set forth on the following table

Performance Guarantee Year	Guaranteed Energy and Demand			Operation and Maintenance Savings	Utility Savings	Guaranteed Annual Savings Amount
	kWh	kW	Therms			
1	12,558,539	2,198	843,321	\$1,309,823.00	\$1,253,405.99	\$2,563,228.99
2	12,558,539	2,198	843,321	\$363,004.88	\$1,290,463.11	\$1,653,467.99
3	12,558,539	2,198	843,321	\$326,146.17	\$1,328,632.63	\$1,654,778.80
4	12,558,539	2,198	843,321	\$335,931.01	\$1,367,948.40	\$1,703,879.41
5	12,558,539	2,198	843,321	\$346,008.78	\$1,408,445.30	\$1,754,454.08
6	12,558,539	2,198	843,321	\$356,389.07	\$1,450,159.32	\$1,806,548.39
7	12,558,539	2,198	843,321	\$367,080.68	\$1,493,127.54	\$1,860,208.22
8	12,558,539	2,198	843,321	\$378,093.67	\$1,537,388.17	\$1,915,481.84
9	12,558,539	2,198	843,321	\$389,436.33	\$1,582,980.63	\$1,972,416.95
10	12,558,539	2,198	843,321	\$401,119.20	\$1,629,945.52	\$2,031,064.71
11	12,558,539	2,198	843,321	\$355,998.07	\$1,678,324.72	\$2,034,322.79
12	12,558,539	2,198	843,321	\$366,678.02	\$1,728,161.39	\$2,094,839.41
13	12,558,539	2,198	843,321	\$377,678.36	\$1,779,500.04	\$2,157,178.39
14	12,558,539	2,198	843,321	\$389,008.71	\$1,832,386.52	\$2,221,395.23
15	12,558,539	2,198	843,321	\$400,678.97	\$1,886,868.14	\$2,287,547.10
16	12,558,539	2,198	843,321	\$412,699.34	\$1,942,993.63	\$2,355,692.97
17	12,558,539	2,198	843,321	\$425,080.32	\$2,000,813.26	\$2,425,893.57
18	12,558,539	2,198	843,321	\$437,832.73	\$2,060,378.83	\$2,498,211.56
19	12,558,539	2,198	843,321	\$450,967.71	\$2,121,743.77	\$2,572,711.48
20	12,558,539	2,198	843,321	\$464,496.74	\$2,184,963.13	\$2,649,459.87
Total	251,170,785	43,963	16,866,416	\$8,654,151.72	\$33,558,630.03	\$42,212,781.75

Guaranteed Project Savings Amount: \$ 42,212,781.75.

3.1.1 Additional Savings. Additional energy and/or operational cost avoidance that can be demonstrated as a result of ESCO's efforts that result in no additional costs to County beyond the costs identified in this Agreement will be included in the Guarantee Savings Reconciliation Report for the applicable Guarantee Period (s).

3.1.2 Verified Savings. The Guaranteed Savings in each Guarantee Period are considered satisfied if the Verified Savings for such Guarantee Period equals or exceeds the Guaranteed Savings for such Guarantee Period.

3.1.3 Savings Shortfalls. In the event that the Verified Savings in any Guarantee Period is less than the Guaranteed Savings required for that Guarantee Period ("Savings Shortfall"), ESCO shall, upon receipt of written demand from County, compensate County the amount of any such shortfall, limited by the value of the guarantee, within thirty (30) calendar days ("Savings Guarantee Payment"). Resulting compensation shall be ESCO's sole liability for any shortfall in the Guaranteed Savings.

3.2 Savings Reconciliation Documentation. ESCO will provide County with a Guarantee Savings Reconciliation Report after each Guarantee Period within 90 days. County will assist ESCO in generating the savings reconciliation report by providing ESCO's receipt thereof, together with access to relevant records relating to such Energy and Operating Costs. County will also assist ESCO by permitting access to any energy billing information, maintenance records, drawings, or other data deemed necessary by ESCO to generate the said report. Data and calculations utilized by ESCO in the preparation of its Guarantee Savings Reconciliation Report will be made available to County, along with such explanations and clarifications as County may reasonably request.

3.2.1 Acceptance of Guarantee Savings Reconciliation Report. At the end of each Guarantee Period, County will endeavor to review the Guarantee Savings Reconciliation Report within forty-five (45) days and provide written notice to ESCO of non-acceptance of the Guarantee Savings Reconciliation Report for that Guarantee Year. Failure of the County to respond to a Guarantee Savings Reconciliation Report within the forty-five (45) of the receipt of a Guarantee Savings Reconciliation Report shall not constitute the deemed acceptance of the Report and its findings by the County; provided that the ESCO may escalate a response from the County by contacting the County's Director of Capital Planning or by seeking Dispute Resolution under Section 16A. It is further agreed that if the County does not respond to a Guarantee Savings Reconciliation Report within one hundred and eighty (180) days, then the County may not challenge such Guarantee Reconciliation Report in the absence of fraud or willful misconduct on the part of the ESCO.

3.2.2 Guarantee Savings Reconciliation. Verified Savings will be determined in accordance with the methodology(s), operating parameters, formulas, and constants as described below and/or defined in the Measurement & Verification Plan and/or additional methodologies defined by ESCO that may be negotiated with County at any time. Actual savings reduction in utility bills may vary from the Verified Savings for reasons outside of ESCO's control including but not limited to: changes in energy and other utility rates and tariffs, changes in County operating schedules and usage patterns, changes in County loads due to addition or reductions in energy and water consuming devices, changes in building occupancy rates, changes in weather, impacts due to the operations of ECMs, impacts due to the maintenance of ECMs maintained by County, and additions to and/or reduction in facility space usage. For the purposes of calculating any shortfalls or excesses of Verified Savings versus Guaranteed Savings, the Measurement & Verification Plan will be utilized.

3.2.3 Activities and Events Adversely Impacting Savings. County must promptly notify ESCO of any activities known to County, which adversely impacts ESCO's ability to realize the Guaranteed Savings and ESCO shall be entitled, subject to review and adjustment pursuant to Section 3.2.4, to reduce the Guaranteed Savings by the amount of any such adverse impact to the extent that such adverse impact is beyond ESCO's reasonable control.

3.2.4 Guarantee Adjustment. ESCO's Guaranteed Savings obligations under this Agreement are contingent upon: (1) County following the operations and maintenance requirements for the ECMs in accordance with the Agreement; (2) no material alterations or additions being made by the County (or its agents and contractors not under the control of the ESCO) without prior notice and written agreement of the Parties; and (3) County sending all current utility bills to ESCO within two (2) weeks after receipt. To the extent that the County defaults or fails to perform fully any of its obligations under this Agreement, ESCO may, in its sole discretion, adjust the Guaranteed Savings obligation; provided, however, that no adjustment hereunder shall be effective unless ESCO has first provided the County with specific documentation of the proposed adjustments to the Guaranteed Savings and the County has had the opportunity to review the proposed adjustments with an experienced M & V expert and to discuss those adjustments with the ESCO and with written notice of County's default(s) or failure(s) to perform and County has failed to cure its default(s) and failure(s) to perform within thirty (30) days after receipt of such notice.

3.2.5 Energy Rates

The unit utility costs for the Baseline period are set forth below as "Base Utility Cost" and shall be used for all calculations. The Base Utility Cost shall be escalated annually by the mutually agreed upon table below. O&M savings shall also be escalated based on the table below.

Annual Escalation Rates	
Natural Gas	2.50%
Electricity	3.25%
O&M savings	3%

Utility cost for each type of utility represents the 12 month average utility costs as defined in the table below.

Rate	Stroger Hospital	Power House	Parking Garage	Forensic Medicine	Hektoen Building	Core Center
\$ / therm	\$0.5803	\$0.5803	\$0.5803	\$0.5803	\$0.5803	\$0.5803
\$ / kW (Actual Demand)	\$3.31	\$3.31	\$3.31	\$4.99	\$5.44	\$5.44
\$ / kW (PLC)	\$5.76	\$5.76	\$5.76	\$5.38	\$5.38	\$5.95
\$ / kW (Total)	\$9.07	\$9.07	\$9.07	\$10.37	\$10.82	\$11.39
\$ / kWh On-Peak	\$0.0634	\$0.0634	\$0.0634	\$0.0646	\$0.0867	\$0.0643
\$ / kWh Off-Peak	\$0.0487	\$0.0487	\$0.0487	\$0.0499	\$0.0722	\$0.0496
Blended \$ / kWh	\$0.0531	\$0.0531	\$0.0531	\$0.0580	\$0.0813	\$0.0589

Blended Utility Rates were used in calculations where the equipment is running 24 / 7. Blending is based on 10 hours on peak Monday through Friday and all other hours are off-peak. All other ECMs utilize the appropriate on-peak or off-peak rate dependant on when during the day the savings occur

The PLC (Peak Load Contribution) for utility customers is determined based on an average of the load that is drawn on the 5 hours on 5 separate days in the summer when the highest load on the grid occurs for the previous year. \$/kW for PLC has been included in lighting savings due to the relatively high coincidental demand factor.

John H. Stroger Jr., Hospital & Powerhouse	7/1/2010	7/1/2011	7/31/2010	7/31/2011
Institute of Forensic Medicine	8/2/2010	8/3/2011	7/31/2010	7/31/2011
Hektoen Building	8/26/2009	8/25/2010	6/9/2009	6/9/2010
Ruth M. Rothstein CORE Center	8/13/2010	8/15/2011	7/31/2010	7/31/2011

The following table includes the twelve month totals of kWh and therms as well as peak demand (kW) for the four buildings considered.

Building Name	Annual Electric Use (kWh)	Peak Demand (kW)	Annual Gas Use (therms)	Electric Cost (\$)	Natural Gas Cost (\$)	Total Utility Cost (\$)
Stroger Hospital, Power House, Parking Garage	57,079,358	11,557	3,703,157	\$4,655,364	\$2,261,038	\$6,916,402
Institute of Forensic Medicine	2,371,804	398	225,874	\$194,338	\$142,822	\$337,159
Hektoen Building	3,523,799	847	330,709	\$358,392	\$252,599	\$610,991
Ruth M. Rothstein Core Center	2,615,142	686	114,084	\$251,929	\$77,310	\$329,239

4. MEASUREMENT & VERIFICATION PLAN

4.1 Measurement and Verification. ESCO and the County agree that the Verified Savings will be determined using the following Measurement and Verification Plan. Through this plan, the Guaranteed Annual Savings generated by the ECMs installed in the Facilities will be verified using the methods defined in the M & V Plan constituting Exhibit H.

Measurement & Verification Plan: ESCO and the County agree that the Verified Savings by ECM will be determined using the following Measurement & Verification plans further described in Exhibit H. Through this plan, the guaranteed savings generated by the ECMs installed in the Facilities will be validated. The M&V methodologies proposed for these ECMs are based on the version 2010 of the IPMVP Measurement and Verification Guidelines. The objective of the plan is to quantify the actual electrical and fossil fuel savings and compare those to the specific Baseline Usage for each Facility, the difference of which is the Verified Savings.

During the term of the Agreement, ESCO will make adjustments to energy savings due to changes in building occupancy, weather data, and utility rate schedules, etc. The unit costs of energy will be applied to the energy savings calculated by this M&V plan. Current utility cost will be used as a basis for determining the unit cost, with floor and ceiling prices set by baseline rate information, presented herein this Attachment.

4.2 M&V Descriptions:

Refer to exhibit H.

5.0 INSTALLATION PERIOD SAVINGS:

Construction and Installation Period Savings will belong exclusively to the County and will not be added to the Project Savings Amount for any Performance Guarantee Year.

6.0 ADDITIONAL SAVINGS:

In the event that the Project Savings Amount exceeds the Guaranteed Annual Savings Amount in any Performance Guarantee Year, the excess savings shall belong and accrue to the County and shall not

reduce the ESCO's liability for achieving the Project Savings Amount in any other Performance Guarantee Year.

7.0 PROJECT MODIFICATIONS TO REDUCE PERFORMANCE GUARANTEE PAYMENT OBLIGATIONS:

The mutual goal of the Parties is to maximize the Project Savings Amount. Therefore, the ESCO will have the right, at all times during the Guarantee Term, subject to the County's written approval, to modify the scope of the Project, to modify or replace any of the ECMs or install additional ECMs and to revise any procedures for the operation of the ECMs or implement other procedures at the Building provided that: (i) such actions by the ESCO do not result in modifying the standards of comfort and service set forth in Exhibit T without the express written approval of the County; (ii) such actions do not detrimentally impact Work Site operations or use and occupancy of the Facilities; (iii) such actions are necessary to enable the ESCO to achieve the Guaranteed Annual Savings Amount; and (iv) any costs incurred relative to such modifications, additions or replacements of the ECMs, or operational changes or new procedures or additional maintenance necessitated by the ECMs, shall be the sole responsibility of the ESCO. All modifications, additions or replacements of the ECMs or revisions to operating or other procedures will be described in a supplemental schedule(s) to be provided to the County for approval, which will not be unreasonably withheld or delayed, and incorporated into this Contract through a Change Order, and the work related to such modifications, additions, or replacements shall be carried out in accordance with all of the terms and provisions of the Contract applicable to the performance of Work. Any replacement ECM shall be new and have equal or better potential to reduce energy consumption at the Building than the ECM being replaced. As part of any Project scope modifications, the ESCO shall update any and all software during the implementation necessary for the operation of the ECMs. All replacements of and alterations or additions to the ECMs shall become part of the ECMs described in Exhibit B and shall become the property of the County.

8.0 DISPUTES REGARDING ENERGY PERFORMANCE CALCULATIONS:

Any disputes concerning the calculation of the Prior Year Calculations, Causes for Adjustment, or other energy or consumption calculations described in Exhibit H shall be resolved as follows:

1. First, the Parties will use good faith efforts to resolve such dispute within twenty (20) days of written notification from the other Party of the dispute.
2. If the Parties are unable to resolve the matter within a twenty (20) day period, the dispute shall be submitted to the Engineer Neutral (as described in Section 16.C of the Contract). The determination of the Engineer Neutral will be final and binding upon both the County and the ESCO. ESCO and the County will each be responsible for half of the fees of the Engineer Neutral.

The disputed calculation shall not take effect until there is a final adjudication or resolution of the dispute.

Exhibit H
Measurement and Verification Plan

The table below includes measured and non-measured benefits for the project for each year of the guarantee.

TABLE-1

Year	Non-Measured	Option A Measured	Total	Non-Measured	Option A Measured	Option C Measured	Total	Non-Measured	Total
	O&M ***	O&M ***	O&M ***	Utility Cost Avoidance *	Future Capital Cost Avoidance **	Benefits			
1	\$154,823.00	\$105,000.00	\$259,823.00	\$12,428.00	\$495,223.00	\$745,754.99	\$1,253,405.99	\$1,050,000.00	\$2,563,228.99
2	\$235,542.38	\$127,462.50	\$363,004.88	\$12,831.91	\$511,356.96	\$766,274.25	\$1,290,463.11	\$0.00	\$1,653,467.99
3	\$194,859.79	\$131,286.38	\$326,146.17	\$13,248.95	\$528,016.25	\$787,367.44	\$1,328,632.63	\$0.00	\$1,654,778.80
4	\$200,706.05	\$135,224.97	\$335,931.01	\$13,679.54	\$545,217.97	\$809,050.89	\$1,367,948.40	\$0.00	\$1,703,879.41
5	\$206,727.07	\$139,281.72	\$346,008.78	\$14,124.12	\$562,979.78	\$831,341.40	\$1,408,445.30	\$0.00	\$1,754,454.08
6	\$212,928.90	\$143,460.17	\$356,389.07	\$14,583.16	\$581,319.90	\$854,256.26	\$1,450,159.32	\$0.00	\$1,806,548.39
7	\$219,316.71	\$147,763.97	\$367,080.68	\$15,057.11	\$600,257.16	\$877,813.27	\$1,493,127.54	\$0.00	\$1,860,208.22
8	\$225,896.78	\$152,196.89	\$378,093.67	\$15,546.47	\$619,810.99	\$902,030.71	\$1,537,388.17	\$0.00	\$1,915,481.84
9	\$232,673.53	\$156,762.80	\$389,436.33	\$16,051.73	\$640,001.46	\$926,927.44	\$1,582,980.63	\$0.00	\$1,972,416.95
10	\$239,653.52	\$161,465.68	\$401,119.20	\$16,573.41	\$660,849.28	\$952,522.83	\$1,629,945.52	\$0.00	\$2,031,064.71
11	\$189,688.42	\$166,309.65	\$355,998.07	\$17,112.04	\$682,375.85	\$978,836.83	\$1,678,324.72	\$0.00	\$2,034,322.79
12	\$195,379.07	\$171,298.94	\$366,678.02	\$17,668.18	\$704,603.26	\$1,005,889.95	\$1,728,161.39	\$0.00	\$2,094,839.41
13	\$201,240.45	\$176,437.91	\$377,678.36	\$18,242.40	\$727,554.31	\$1,033,703.33	\$1,779,500.04	\$0.00	\$2,157,178.39
14	\$207,277.66	\$181,731.05	\$389,008.71	\$18,835.28	\$751,252.56	\$1,062,298.69	\$1,832,386.52	\$0.00	\$2,221,395.23
15	\$213,495.99	\$187,182.98	\$400,678.97	\$19,447.42	\$775,722.32	\$1,091,698.40	\$1,886,868.14	\$0.00	\$2,287,547.10
16	\$219,900.87	\$192,798.47	\$412,699.34	\$20,079.47	\$800,988.69	\$1,121,925.47	\$1,942,993.63	\$0.00	\$2,355,692.97
17	\$226,497.90	\$198,582.42	\$425,080.32	\$20,732.05	\$827,077.62	\$1,153,003.59	\$2,000,813.26	\$0.00	\$2,425,893.57
18	\$233,292.83	\$204,539.89	\$437,832.73	\$21,405.84	\$854,015.85	\$1,184,957.15	\$2,060,378.83	\$0.00	\$2,498,211.56
19	\$240,291.62	\$210,676.09	\$450,967.71	\$22,101.53	\$881,831.02	\$1,217,811.22	\$2,121,743.77	\$0.00	\$2,572,711.48
20	\$247,500.37	\$216,996.37	\$464,496.74	\$22,819.83	\$910,551.69	\$1,251,591.61	\$2,184,963.13	\$0.00	\$2,649,459.87
Total	\$4,297,692.88	\$3,306,458.84	\$7,604,151.72	\$342,568.42	\$13,661,005.91	\$19,555,055.70	\$33,558,630.03	\$1,050,000.00	\$42,212,781.75

*Utility Cost Avoidance figures in the table above are based on anticipated increases in unit energy costs as set forth in the table in Exhibit G section 3.2.5.

** Future Capital Cost Avoidance is a Non-Measured Project Benefit.

***Operations & Maintenance Cost Avoidance figures in the table above are based on a mutually agreed fixed annual escalation rate of three percent (3%).

Project Savings are classified as measured benefits and non-measured benefits. Measured benefits are further classified by the M&V methodology selected; for this project, it is either

option A or option C. Table 2 describes non-measured savings. Table 3 describes Option-A measured savings. Table 4 describes Option-C measured savings. The M&V plans for measured savings are included after Table 4.

NON-MEASURED PROJECT BENEFITS – TABLE 2

ECM Tag	ECM Name	Year 1 Non-Measured Benefits (\$)	Description of Non-Measured Benefits
SH-1	Lighting Upgrades	\$13,600	There are material savings associated with a reduction in lamp and ballast costs. The new lamps and ballasts have longer operating life.
SH-15	Electronic Filter Retrofit	\$59,500	There are material savings associated with filter replacement. The new filters have longer operating life.
SH-19	Parking Garage Lighting Retrofit	\$6,303	There are material savings associated with a reduction in lamp and ballast costs. The new lamps and ballasts have longer operating life.
SH-20	Waste Management	\$35,000	There are material savings associated with a reduction in sharps containers by training hospital staff for maximizing sharps container capacity. Savings are also achieved through training by eliminating the improper disposal of reusable supplies.
SH-22	Demand Response	\$19,927	Revenue is realized through producing 2.6MW load during "demand reduction events" via utilizing back-up generators.
IFM-1	Lighting Upgrades	\$1,289	There are material savings associated with a reduction in lamp and ballast costs. The new lamps and ballasts have longer operating life.
IFM-4	Domestic Water System Upgrades	\$4,477	Electric energy savings will be realized from reduced pumping energy by utilizing a Variable Speed Drive.
IFM-5	AHU Controls and Electronic Filter Upgrades	\$2,388	There are material savings associated with filter replacement. The new filters have longer operating life.
HB-1	Lighting Upgrades	\$4,263	There are material savings associated with a reduction in lamp and ballast costs. The new lamps and ballasts have longer operating life.
HB-13	Domestic Water Booster VSD	\$7,951	Electric energy savings will be realized from reduced pumping energy by utilizing a Variable Speed Drive.
HB-16	Dual Duct VAV and Mixed Air Conversion	\$6,200	There are material savings associated with filter replacement. The new filters have longer operating life.
RRCC-1	Lighting Upgrades	\$661	There are material savings associated with a reduction in lamp and ballast costs. The new lamps and ballasts have longer operating life.
RRCC-2	Controls Upgrade and Electronic Filter Retrofit	\$5,692	There are material savings associated with filter replacement. The new filters have longer operating life.
	Total Year 1 Non-Measured Benefits	\$167,251	

There is a non-measured \$1,050,000 future capital cost avoidance (based on 3.5% annual interest rate) included for this project.

SH-18 (Lighting Controller), IFM-6 (Inactive Storage Cooling System Upgrade), IFM-8 (Receiving Dock Infrared Heaters), SCW-6 (Leed EB/Energy Star Benchmarking), SCW-14 (Utility meters for Administration/Fantus) and SCW-14 (Sustainable services) do not have energy and operational savings associated with them. There is no M&V associated with these ECMs.

Lighting Material Savings (Applies to SH-1, SH-19, IFM-1, HB-1, and RRCC-1)

Material costs associated with replacing existing lamps and ballasts over the guarantee term are compared with material costs associated with replacing post-retrofit lamps and ballasts over the guarantee term. The difference in material costs is then annualized to arrive at the non-measured lighting material savings. Lamp/ballast replacement frequency is contingent upon expected life and hours of operation.

Electronic Filter Upgrades Material Savings (Applies to SH-15, IFM-5, HB-16, and RRCC-2)

Material costs associated with replacing existing filters over the guarantee term are compared with material costs associated with replacing post-retrofit filters over the guarantee term. The difference in material costs is then annualized to arrive at the non-measured electronic filters material savings.

Waste Management Upgrades (SH-20)

Non-measured savings for waste management includes a reduction in the quantity of sharps containers that are used in the facility along with a reduction in disposal of reusable items. Savings associated with sharps containers are based on Stroger Hospital census and typical costs. Savings associated with reduced disposal of reusable items is based on two samples taken during the IGA. Reusable items include non-disposable medical, surgical, laundry, kitchen supplies etc. that are thrown away instead of being cleaned and reused.

Demand Response (SH-22)

These non-measured benefits are derived from a facility's participation in a Grid Reliability Program known as the Emergency Capacity Program. This intent of this program is to avert electrical blackouts and brownouts by having program participants temporarily reduce a portion of their load in the event of a grid emergency. This program is funded by the grid operator PJM, and payments are made to participants who are on standby to respond to a Grid Emergency. Payment amounts are based on the MW reduction commitment made by the participant during an emergency event. Payment amounts are a function of the \$/MW prices set by PJM, which change on an annual basis. Revenue projections are very conservative and any revenue realized in excess of these projection are passed directly through to the client.

Domestic Water System Upgrades (IFM-4)

Annual electrical energy associated with the existing domestic water pumps is compared with the annual post-retrofit electrical energy for the domestic water pumps with Variable Speed Drives (VSDs). The difference in the annual electrical energy (kWh) is multiplied with the unit cost of energy (\$/kWh) to arrive at annual non-measured electrical cost savings.

Domestic Water Booster VSD (HB-13)

Annual electrical energy associated with the existing domestic water booster pump package and the autopsy booster pump is compared with the annual post-retrofit electrical energy for the domestic water pumps with Variable Speed Drives (VSDs) and the autopsy pumps with VSD. The difference in the annual electrical energy (kWh) is multiplied with the unit cost of energy (\$/kWh) to arrive at annual non-measured electrical cost savings.

Customer has furnished information to JCI, which forms the basis of the Non-Measured Project Benefits. Customer agrees that the Non-Measured Project Benefits are reasonable and that the installation of the Improvement Measures will enable Customer to take actions that will result in the achievement of such Non-Measured Project Benefits. Following the verification of the installation and operation of the non-measured ECMs listed in Table-2, no further M&V activities will be undertaken during the guarantee period.

Option A

Partially Measured Retrofit Isolation

The M&V methodology is consistent with Option A as described in the International Measurement and Verification Protocol (IPMVP) and titled Concepts and Options for Determining Energy and Water Savings Volume 1 - September 2010, Efficiency Valuation Organization. Measured Project Benefits from the following ECMs will be calculated using Option A:

ECM Tag	ECM Name	Year 1 Benefits (\$)
SH-1	Lighting Upgrades	\$59,294
SH-14	VAV Box Optimization	\$50,074
SH-15	Electronic Filter Retrofit	\$141,299
SH-19	Parking Garage Lighting Retrofit	\$41,343
SH-20	Waste Management	\$105,000
SH-26	Ventilation AHUs Improvement	\$16,755
IFM-1	Lighting Upgrades	\$15,729
HB-1	Lighting Upgrades	\$59,944
HB-9	Controls and AHU Upgrades (Electric)	\$67,122
HB-16	Dual Duct VAV and Mixed Air Conversion (Electric)	\$40,244
RRCC-1	Lighting Upgrades	\$3,419
	Total Year-1 Option-A Measured Savings	\$600,223

**Option C
Whole Facility**

The M&V methodology is consistent with Option C as described in the International Measurement and Verification Protocol (IPMVP) and titled Concepts and Options for Determining Energy and Water Savings Volume 1, - September 2010, Efficiency Valuation Organization.

Option C involves use of utility meters or whole building sub-meters to assess the energy performance of a total building. Option C assesses the impact of any type of ECM, but not individually if more than one is applied to an energy meter. This option determines the collective Measured Project Benefits of all ECMs applied to the part of the facility monitored by the energy meter. Also, since whole building meters are used, Measured Project Benefits reported under Option C include the impact of any other change made in facility energy use (positive or negative).

Measured Project Benefits from the following Improvement Measures will be calculated using Option C:

Building	ECM Tag	ECM Name	Year 1 Option C Electric Benefits (\$)	Year 1 Option C Gas Benefits (\$)	Year 1 Option C Total Energy Benefits (\$)
Powerhouse	SH-13	Chiller Plant Optimization	\$223,135	\$0	\$223,135
Powerhouse	SH-23	Boiler Stack Condensing Economizer	-\$6,684	\$307,955	\$301,271
Powerhouse	Powerhouse	Total Year-1 Option-C Measured Savings	\$216,451	\$307,955	\$524,406
Institute of Forensic Medicine	IFM-2b	Chiller Replacement	-\$29,608	\$55,014	\$25,406
Institute of Forensic Medicine	IFM-3	Boiler Replacement	\$0	\$6,028	\$6,028
Institute of Forensic Medicine	IFM-5	AHU Controls and Electronic Filter Upgrades	\$23,525	\$9,941	\$33,466
Institute of Forensic Medicine	IFM-7	Steam Traps and Misc Upgrades	\$0	\$3,304	\$3,304
Institute of Forensic Medicine	Institute of Forensic Medicine	Total Year-1 Option-C Measured Savings	-\$6,083	\$74,287	\$68,204
Hektoen Building	HB-9	Controls and AHU Upgrades (Gas)	\$0	\$39,585	\$39,585
Hektoen Building	HB-16	Dual Duct VAV and Mixed Air Conversion (Gas)	\$0	\$19,693	\$19,693
Hektoen Building	HB-18	Steam Traps and Misc Upgrades	\$0	\$36,170	\$36,170
Hektoen Building	Hektoen Building	Total Year-1 Option-C Measured Savings	\$0	\$95,448	\$95,448
Ruth Rothstein Core Center	RRCC-2	Controls Upgrade and Electronic Filter Retrofit	\$39,683	\$18,014	\$57,697
Ruth Rothstein Core Center	Ruth Rothstein Core Center	Total Year-1 Option-C Measured Savings	\$39,683	\$18,014	\$57,697
Total Stroger Hospital Campus		Total Year-1 Option-C Measured Savings	\$250,051	\$495,704	\$745,755

Calculation of Base Line and Utility Project Benefits

A. Objectives

In order to accurately assess the effectiveness of a performance contract, it is necessary to be able to make comparisons of pre-retrofit and post-retrofit conditions under similar terms and conditions. To do this, Baselines are established to document pre-retrofit conditions and serve as the basis for post-retrofit analysis. For the purpose of this schedule "Baseline" is defined as a specific period of time and any data, used for, or resulting from, the analysis of that period.

The following methodology will be used to calculate unit Project Benefits:

- a. The program applies baseline data for the specified "tuning period" to the regression calculation detailed in 1(c) or 1(d).
- b. The program attempts to establish a relationship between utility consumption or demand and the independent variable(s) (e.g. HDD, CDD, User defined1, etc.). Coefficient(s) of consumption per unit will be tuned and documented for variables where such a relationship can be established and will be included as a part of this agreement

c. During the post retrofit period the pre-retrofit coefficients and the post retrofit variable data are applied to the regression calculation to adjust for differences in conditions. This projects an adjusted baseline which represents what would have been consumed had no ECM been implemented.

d. The units saved are equal to this adjusted baseline minus the actual consumption for the billing period. The adjusted baseline referred to in this document is equivalent to the "baseline scenario" in Metrix™.

The regression analysis methodology used in this agreement is capable of making adjustments for changes in base load, heating degree-days, cooling degree-days, and up to three other variables. The inclusion of any variables will be mutually agreed upon by JCI and the Customer and supported by regression analysis documentation. In addition, some consumption may be allocated to tuning period modifications if any are defined.

B. Application of Regression Analysis Calculation

1. Definitions

(a) Base Line - The Base Line(s) illustrates the relationship(s) of each utility consumption to independent variables during a representative pre-retrofit tuning period. The Base Line is determined by utilizing the Regression Analysis Calculations defined in sections 1(c) and 1(d).

(b) Adjusted Base Line - The Adjusted Base Line(s) estimates post-retrofit utility consumption using the same Regression Analysis Calculation plus any modifications (as described in section 2(c)). The Adjusted Base Line represents an estimate of utility consumption had no ECMs been implemented.

(c) Regression Analysis Calculation - Regression Analysis is the means by which the relationship(s) between utility consumption and other variables is determined. The relationships were established using Abraxas Energy Consulting Inc.'s Metrix™ utility accounting software program. Following is the equation utilized to both establish the Base Line and serve as the basis for post-retrofit analysis:

The inputs and outputs to the equation vary depending on whether the equation is being applied to the pre-retrofit tuning period or the post retrofit tracking period. Once the coefficients B , D_H , D_C , D_1 , D_2 , D_3 and the base temperatures T_{B_H} , T_{B_C} have been obtained by regression, they remain fixed and are used to derive adjusted meter consumption for all future time periods.

$$E = B * \Delta t + D_H * HDD(T_{B_H}) + D_C * CDD(T_{B_C}) + D_1 * U_1 + D_2 * U_2 + D_3 * U_3$$

where:

E = Adjusted Base Line Consumption throughput through meter. During the post retrofit period this value represents what the consumption would have been under current conditions (weather, etc.) had no ECMs (FIMs) been implemented.

B = Base load consumption per unit of time (Utility Units/day), that part of the meter consumption that is independent of (cannot be correlated to) any of the independent variables, including the degree-days. This consumption will be present no matter what the weather conditions or other independent variables are. This fixed value, dependent only on the number of days in the period being evaluated, is determined when defining the Base Line.

Δt = Time interval (days) in analysis period.

D_H, D_C = Coefficients for Heating and Cooling Degree-days (Utility units/deg-day). These fixed values, which are determined when defining the Base Line, define the sensitivity of consumption to changes in weather.

HDD, CDD = Heating and Cooling degree-days ($^{\circ}\text{F-day}$ or $^{\circ}\text{C-day}$) for the period being analyzed;

T_{B_H}, T_{B_C} = Heating and Cooling degree-day base (or balance point) temperatures ($^{\circ}\text{F}$ or $^{\circ}\text{C}$) upon which the HDD and CDD values are derived. These balance point temperatures represent the outdoor air temperature at which utility consumption or demand begins to react to any further change in outdoor temperature. When outdoor air temperature is equal to balance point temperature heat loss = heat gain.

DI = Coefficients for user defined variable I (I=1,2,3 for any one meter). These coefficients (or relationships) are determined when defining the Base Line.

UI = Value of independent user variable I (I=1,2,3 for any one meter) for the period being analyzed.

A maximum of three optional user defined variables (e.g., occupancy hours, production rates, square footage) can be included in the fit to any one-meter.

(d) Regression Analysis Calculation for Demand - The Metrix™ program treats demand differently than consumption since demand is an instantaneous value and consumption is a value totaled over time. As can be seen in the following calculation, demand is not dependent on the number of days in the billing period. Rather, demand is a

function of a fixed base load component and a variable component, which is sensitive to changes in the independent variables. Instead of cumulative degree-days, the regression calculation for demand uses the average temperature difference between the balance point temperature and the average daily temperature. The average temperature difference is calculated by dividing the total DD in the billing period by the # of days in the period as shown in the following equation. The units for the heating and cooling coefficients are kW per DD per day. The equation shows kW as the demand unit but any appropriate demand unit may be used.

$$kW_{base} = \text{Offset_Coefficient} + \text{DD_Coefficient} \times \left(\frac{\text{DD}_{per}}{\# \text{Days}_{per}} \right)$$

kW_{base} = kW for the baseline scenario for the current bill period (per)

Offset_Coefficient = the demand value that is not associated to weather

DD_Coefficient = relationship of demand to weather (e.g. kW/DD)

DD(per) = degree days for the current bill period (heating or cooling)

#Days(per) = number of days in the current bill period

2. Base Line Calculations

Following is a summary of how a Base Line is developed:

2a. Select a Tuning Period - The first step in developing a Base Line is to identify a pre-retrofit period of time that is representative of physical and operational conditions within the premises. In Metrix™, this period of time is known as the Tuning Period.

2b. Identify Relationships of Consumption to Independent Variables - The Regression Analysis Calculation shown in section 1(c) or 1(d) is then applied to each individual utility item during the selected Tuning Period against one or more independent variables. The resultant relationship(s) of utility consumption as a function of time, weather and other independent variable(s) is represented by the Regression Analysis Calculation.

2c. Modifications to the Base Line A modification is made up of a # of units to be applied, a time period to apply the units, and a description of why the modification is being applied.

(1) **Annual Periodic Modifications.** Annual Periodic Modifications are used to adjust the base line consumption for anomalies that occurred during the Tuning Period because of operational procedures or abnormal conditions that occurred. These “out of line” consumption periods cause the regression equation to over or under predict consumption. A modification helps to fit the equation’s predicted value to the actual value that occurred

during the tuning period. Future consumption can be predicted with a high degree of confidence once the predicted and actual tuning period consumption is matched properly.

(2) Additional Modifications. During the term of the Agreement, it may also be necessary to make modifications to the base line, as a result of physical or operational changes within the premises that are beyond the agreed upon conditions.

3. Utility Consumption Project Benefits

For each time period being evaluated, an Adjusted Base Line is calculated by performing the Regression Analysis and applying to it any necessary modifications. This Adjusted Base Line represents the utility consumption that would have occurred if the retrofits had not been implemented. Utility consumption Project Benefits is the difference between the Adjusted Base Line consumption and the actual post-retrofit consumption for the same period.

4. Utility Cost Project Benefits

Utility cost Project Benefits are the result of applying the contract specified minimum utility unit costs to the utility units or the future commodity unit cost if greater than the minimum utility unit cost. The following describes the four possible cost calculation methods:

1 - Single Rate - The "single utility rate" method uses the rate modeling capabilities of the Metrix program. This method applies the same rate to all of the scenarios within the program.

2 - Multiple Rates - The "multiple utility rate" method also uses the rate modeling capabilities of the Metrix program. This method allows different rates to be attached to the scenarios within the Metrix program. This method may be used if Project Benefits are expected from a JCI initiated rate change.

3 - Average Cost of Consumption and Average cost of Demand - The "average cost per unit" method allows the program to calculate Project Benefits using a simpler strategy. Dollar Project Benefits are equal to the physical unit difference between the baseline scenario and the actual scenario (units saved) multiplied by the appropriate unit cost. The appropriate unit cost is equal to the average unit cost for the current billing period or the minimum unit cost whichever is greater.

4 - Average Cost of Consumption - The "average cost of consumption" blended method allows the program to calculate Project Benefits using the same strategy as the "average cost per unit" method shown above. The only differences being that the blended method only needs to track consumption and it combines the consumption and demand costs before calculating the average unit cost. The appropriate unit cost is equal to the average

blended unit cost for the current billing period or the minimum unit cost whichever is greater.

Total dollar Project Benefits is the sum of the utility cost Project Benefits from each utility type plus any other Project Benefits as identified in attachment(s).

5. Miscellaneous Adjustments

5a. The various obligations and commitments undertaken by JCI in this Performance Contract are based in part on the assumption that Customer's Facilities are and will remain in full compliance with all applicable building codes, all equipment of Customer will be maintained in proper operating condition, and all equipment of the Customer will be operated in accordance with the terms of this Agreement. In the event JCI determines or becomes aware that building codes are not being adhered to or that the Customer's equipment is not being maintained in proper operating condition or that the Customer's equipment is not being operated as agreed, JCI shall be entitled to make such adjustments as may be necessary to the calculations used to determine energy Project Benefits in order to reflect the effects of non-compliance with building codes and/or improper operating condition of Customer's equipment.

5b. The services performed and Equipment provided by JCI under this Agreement are intended to operate and be used as a total package to achieve optimum energy efficiency for Customer under this Performance Contract. In the event Customer disables, disconnects, or otherwise ceases to use or overrides any or all service(s) or Equipment provided by JCI under this Performance Contract, JCI shall be entitled to make such adjustments as may be necessary to the calculations used to determine energy Project Benefits in order to reflect the effects of such action by Customer.

5c. Customer and JCI acknowledge that the method of billing used by the applicable utility providing the energy source may be modified or subject to variation during the term of this Performance Contract. In such event, the calculations used to determine energy Project Benefits shall be subject to such adjustments as necessary to equate the modified or varied method of billing to the method in effect at the time the relevant billing variables were incorporated into this Performance Contract.

ECM SH-1: LIGHTING UPGRADE

I. M&V Plan

The M&V methodology is consistent with Option A as described in the International Measurement and Verification Protocol (IPMVP) and titled Concepts and Options for Determining Energy and Water Savings Volume 1 - September 2010, Efficiency Valuation Organization.

2. Energy Baseline Development

During the detailed audit of each building, the type and number of each lighting fixture was documented and recorded to develop the baseline. Sample power measurements will be taken for each significant fixture type. Light fixture operating hours were determined by interviews with the building, lighting/occupancy logging data, and observations.

3. Proposed Energy Savings

The savings for this measure are the electricity reduction for lighting and cooling and an increase in natural gas usage due to a heating penalty.

These savings are achieved by implementing lighting improvement strategies including efficient lamps, ballasts and occupancy sensors. Pre-retrofit and post-retrofit watts per fixture are based on industry standards and will be measured. The savings are calculated by multiplying the difference of pre-retrofit watts per fixture and post-retrofit watts per fixture by the number of fixtures, the cost per unit of electric consumption, and the hours of operation. The demand savings are calculated by multiplying the difference of pre-retrofit watts per fixture and post-retrofit watts per fixture by the number of fixtures, the cost per unit of electric demand per month, electrical coincidental demand diversity factor, and the number of months in a year.

Engineering calculations use pre & post-retrofit measurements and non-measured inputs as detailed below.

Lighting Upgrades Benefits:

$$\text{Electric Energy, kWh Savings}_t = \sum_u [(kW/Fixture_{pre-retrofit} \times Quantity_{pre-retrofit} - kW/Fixture_{post} \times Quantity_{post}) \times \text{Hours of Operation}]_{t,u}$$

$$\text{Electric Demand, kWSavings}_t = \sum_u [(kW/Fixture_{pre-retrofit} \times Quantity_{pre-retrofit} - kW/Fixture_{post} \times Quantity_{post}) \times \text{Coincidental Demand Diversity Factor} \times 12 \text{ months}]_{t,u}$$

$kWh Savings_t$ = kilowatt-hour savings realized during the post-installation time period t , and is the sum of on-peak ($kWh-Savings_{on-peak}$) and off-peak kWh saved ($kWh-Savings_{off-peak}$) during this period.

$kW/Fixture_{pre-retrofit}$ = lighting pre-retrofit demand per fixture for usage group u

$kW/Fixture_{post}$ = lighting demand per fixture during post-installation period for usage group u

$Quantity_{pre-retrofit}$ = quantity of affected fixtures before the lighting retrofit for usage group u , adjusted for inoperative and non-operative lighting fixtures

$Quantity_{post}$ = quantity of affected fixtures after the lighting retrofit for usage group u

$Hours\ of\ Operation$ = number of operating hours during the time period t for the usage group u , and is the sum of on-peak and off-peak hours during this period.

Utility Benefit (\$) = $[kWh-Savings_{on-peak} \times \$/kWh_{on-peak}] + [kWh-Savings_{off-peak} \times \$/kWh_{off-peak}] + (kW-Savings \times \$/kW)$

Measured variables:

- Fixture wattage, pre and post retrofit (one-time)

Non-Measured variables, assumptions and stipulations:

- Unit cost of electricity and natural gas
- Coincidental Demand Diversity Factor
- Fixture – Operating Hours (See Lighting Appendix IGA)

4. Performance Period Verification Activities

4.1 Intent of Performance Period Verification Activities

The intent of the Performance Period verification activities is to ensure that the lighting equipment is performing as specified in the Contract. One-time pre and post measurements will be taken during the installation period. No measurements will be made during the Performance Period. The calculations will not be updated during the Performance Period.

Lighting systems in each area will be visually inspected annually to ensure that energy-efficient equipment is used to replace ballasts and/or lamps that burn out and that all occupancy sensors are properly controlling the fixtures. Johnson Controls will also request lighting equipment inventory and purchase records for review on a quarterly basis. The results of the annual inspections and data review will be reported in the Annual Report.

4.2 Performance Period System Performance Factors

The Performance Period factors include fixture wattage (efficiency), and lighting fixture operating hours (lighting/occupancy logging data).

4.3 Schedule of Performance Period Verification Activities

The customer will provide equipment inventory, purchase, and O&M records annually. The walk-through inspection of a sample of spaces will take place prior to the anniversary of Annual Report due date.

4.4 Performance Period Data to be Collected

The specific Performance Period inspections are detailed on Table 1.

Table 1: Performance Period Data Collection for SH-1

Building	Equipment Parameter Monitored	Monitoring Point	Monitoring Equipment	Duration	Frequency	Interval	Notes
JSH	Visual Inspection of Light Fixture	Field Equipment	Visual	Instantaneous	Annually	N/A	Visually inspect sample of fixtures.
JSH	Review of Inventory and Purchase Records	Data Provided by Cook County	N/A	N/A	Annually	N/A	Review inventory and lighting material purchase records.

ECM SH-13: CHILLER PLANT OPTIMIZATION

1. M&V Plan

1.1 M&V Guideline and Option

The M&V methodology is consistent with Option C as described in the International Measurement and Verification Protocol (IPMVP) and titled Concepts and Options for Determining Energy and Water Savings Volume 1, - September 2010, Efficiency Valuation Organization.

2. Energy Baseline Development

During the detailed audit the following information was collected to establish the baseline including nameplate data and manufacturer data for all equipment associated with the Chiller Plant, trend data of the chilled/condenser water temperatures, chiller log data, and interviews with plant personnel regarding the operation sequences and field observations.

3. Proposed Energy Savings Calculations and Methodology

3.1 Proposed Savings

The savings for this measure is a reduction in electricity that is associated with pump VSDs, operation of the new VSD chillers during low-load and winter hours and optimum control of the chilled water plant.

4. Performance Period Verification Activities

4.1 Intent of Performance Period Verification Activities

The intent of the performance period verification activities is to ensure that the chiller plant equipment is performing as specified in the contract. Measurements will be made during the performance period. The calculations will not be updated during the performance period.

Trend data and visual inspections will be reviewed annually to ensure that the chiller plant is operated in an energy-efficient manner. The results of the annual inspections and data review will be reported in the Annual Report.

4.2 Performance Period System Performance Factors

The factors impacting performance period energy savings includes changes to the sequencing of chillers and pumps, operating hours of the cooling system, cooling loads, temperature and pressure set points and AHU operation and control.

4.3 Schedule of Performance Period Verification Activities

The equipment inventory and O&M records will be requested annually. The walk-through inspection of a chiller plant will take place prior to the anniversary of Annual Report due date.

4.4 Government Witnessing of Performance Period Measurements

Cook County personnel are encouraged to witness the Performance Period inspections.

4.5 Performance Period Data to be Collected

The electric consumption from the utility bills will be used to confirm the actual savings.

Performance trends used to verify the system operation and savings include:

- Primary and secondary chilled water pumps
- Cooling tower status
- Condenser water pumps VSD data (status, kW, % speed, hours)
- Chiller supply and return water temperatures
- Condenser supply and return water temperatures
- Chiller VSD panel (status, kW, % speed, hours)

The specific Performance Period inspections are detailed on Table 1.

Table 1: Performance Period Data Inspection for SH-13

Equipment Parameter Monitored	Monitoring Point	Monitoring Equipment	Duration	Frequency	Interval	Notes
Visual Inspection of Chiller Plant and related Equipment	Field Equipment	Visual	Instantaneous	Annually	N/A	Visually inspect all new equipment in the chiller plant
Operational Check of Setpoints and Scheduling	Through Metasys	Metasys Control System	N/A	Annually	N/A	Check that setpoints and schedules are in compliance design.
Review of O&M Records	Field Records	N/A	N/A	Annually	N/A	Review O&M records.

ECM SH-14: VAV BOX OPTIMIZATION

1. M&V Plan

The M&V methodology is consistent with Option A as described in the International Measurement and Verification Protocol (IPMVP) and titled Concepts and Options for Determining Energy and Water Savings Volume 1, - September 2010, Efficiency Valuation Organization.

2. Energy Baseline Development

During the detailed audit the following information was gathered to establish the baseline including VAV Box schedules from design drawings, floor plans and room names from design drawings, motor kW read from VSD panels and sample trend data of AHUs and vav boxes.

3. Proposed Energy Savings Calculations and Methodology

The savings for this measure is a reduction in supply and return fan horsepower during low load periods.

Electric energy savings are achieved by reduced fan speed which is due to a decrease in airflow through VAV box re-programming.

The savings for this recommendation were calculated using the following equations. All assumptions are provided in the supporting calculations.

Pre-Retrofit Fan Motor Energy, kWh = Motor kW_{measured} x (Pre-retrofit % Fan Speed)^{2.4} x Pre-retrofit Operating Hours

Post-Retrofit Fan Motor Energy, kWh = Motor kW_{measured} x (Annual Average Post Retrofit % Fan Speed)^{2.4} x Post Retrofit Operating Hours

Fan Motor Energy Saved, kWh = Pre-Retrofit Fan Motor Energy - Post-Retrofit Fan Motor Energy

Fan Motor Energy \$ Saved = Fan Motor Energy Saved x \$/kWh_{blended}

Measured variables:

- Motor kW_{measured} (only pre-retrofit measurements will be used, since we are not replacing fans/motors)
- Annual Average Post Retrofit % Fan Speed (hourly % Fan Speed reading will be trended and averaged over 8,760 hours at the end of each year of the guarantee)

Non-Measured variables, assumptions and stipulations:

- > Pre-retrofit operating hours and Post-retrofit operating hours are 8,760 hours per year
- > Pre-retrofit % Fan Speed is 100%.

4. Performance Period Verification Activities

4.1 Intent of Performance Period Verification Activities

The intent of the performance period verification activities is to ensure that the VAV Boxes are performing as specified in the contract. Measurements will be made during the performance period. The calculations will be updated during the performance period.

Trend data and visual inspections will be reviewed annually to ensure that the VAV Boxes and air handling units are operated in an energy-efficient manner. The results of the annual inspections and data review will be reported in the Annual Report.

4.2 Performance Period System Performance Factors

Variables affecting the post-installation energy include changes in VAV Box, set points and schedules, AHU supply air temperatures, occupancy, airside static pressure and space heating and cooling loads.

4.3 Schedule of Performance Period Verification Activities

The equipment inventory and O&M records will be requested annually. The walk-through inspection of VAV Boxes will take place prior to the anniversary of Annual Report due date.

4.4 Government Witnessing of Performance Period Measurements

Cook County personnel are encouraged to witness the Performance Period inspections.

4.5 Performance Period Data to be Collected

Trend data form BAS will be collected to calculate actual savings used to verify the system operation including:

- AHU's status and hours of operation
- VAV Boxes status, % Open, and hours
- Airflow and static pressure
- AHU temperatures

The measured variable data listed above will be collected to update the calculations in Option A:

The specific Performance Period inspections are detailed on Table 1.

Table 1: Performance Period Data Inspection for SH-14

Equipment Parameter Monitored	Monitoring Point	Monitoring Equipment	Duration	Frequency	Interval	Notes
Visual Inspection of VAV Box and related Equipment	Field Equipment	Visual	Instantaneous	Annually	N/A	Visually inspect a sample of the VAV Boxes
Operational Check of Setpoints and Scheduling	Through BAS	BAS Control System	N/A	Annually	N/A	Check that setpoints and schedules are in compliance design.
Review of O&M Records	Field Records	N/A	N/A	Annually	N/A	Review O&M records.

ECM SH-15: ELECTRONIC FILTER RETROFIT

1. M&V Plan

1.1 M&V Guideline and Option

The M&V methodology is consistent with Option A as described in the International Measurement and Verification Protocol (IPMVP) and titled Concepts and Options for Determining Energy and Water Savings Volume 1, - September 2010, Efficiency Valuation Organization.

2. Energy Baseline Development

During the detailed audit nameplate data for motors and filter sections along with sample measurements of several motors kW were taken to develop the baseline. Cook County personnel provided and or witnessed electrical measurements of several motors located in various mechanical rooms.

3. Proposed Energy Savings Calculations and Methodology

3.1 Proposed Savings

The savings for this measure is a reduction in the electric consumption that was calculated with a decrease in filter static pressure loss and associated fan motor loads.

Electric energy savings are achieved by reduced fan speed which is due to a decrease in static pressure drop through the filters.

Pre-Retrofit Fan Filter Horse Power = Pre-Retrofit Supply Airflow rate (CFM) x Pre-Retrofit Filter Static Pressure Drop (in. w.c) / (6,356 x Fan efficiency)

Post-Retrofit Fan Filter Horse Power = Post-Retrofit Supply Airflow rate (CFM) x Post-Retrofit Filter Static Pressure Drop (in. w.c) / (6,356 x Fan efficiency)

Fan Filter Horse Power Savings = Pre-Retrofit Fan Filter Horse Power - Post-Retrofit Fan Filter Horse Power

Fan Filter kW Savings = Fan Filter Horse Power Savings x 0.746 (kW/HP) / Motor Efficiency

Fan Filter Motor Energy Saved, kWh = Fan Filter kW Savings x Operating Hours

Electrical Demand Cost Savings (\$) = Fan Filter kW Savings x Coincidental Demand Diversity Factor x \$/kW x 12 months/year

Electrical Consumption Cost Savings (\$) = Fan Filter Motor Energy Saved, kWh x Coincidental Demand Diversity Factor x \$/kWh_{blended}

Electrical Cost Savings (\$) = Electrical Demand Cost Savings (\$) + Electrical Consumption Cost Savings (\$)

Measured variables:

- One-time Pre-Retrofit and One-time Post-Retrofit Filter Static Pressure-Drop for each AHU

Non-Measured variables, assumptions and stipulations:

- Pre-retrofit operating hours and post-retrofit operating hours are 8,760 hours per year
- Average Pre-Retrofit and Post-Retrofit air flow for AHUs (with pre-filter and final filter) = 1,068,921 CFM
- Average Pre-Retrofit and Post-Retrofit air flow for AHUs (with pre-filter only) = 73,600 CFM

- Pre-Retrofit and Post-Retrofit motor efficiency = 90%
- Pre-Retrofit and Post-Retrofit fan efficiency = 70%

4. Performance Period Verification Activities

4.1 Intent of Performance Period Verification Activities

The intent of the performance period verification activities is to ensure that the Dynamic Filters are performing as specified in the contract. No measurements will be made during the performance period. The calculations will not be updated during the performance period.

Trend data and visual inspections will be reviewed annually to ensure that the Dynamic Filters operated in an energy-efficient manner. The results of the annual inspections and data review will be reported in the Annual Report.

4.2 Performance Period System Performance Factors

Variables affecting the post-installation energy include changes motor loads,, airside system static pressure set points, maintaining operation of VSD and filter changeouts.

4.3 Schedule of Performance Period Verification Activities

The equipment inventory and purchase records will be requested annually. The walk-through inspection of a electronic filters will take place prior to the anniversary of Annual Report due date.

4.4 Performance Period Data to be Collected

Trend data form Metasys will be collected to calculate actual savings and to verify the system operation include:

- AHU's status
- Fan VSD panel (status, fan kW, % speed)
- One-time Air Pressure Drop (APD)
- Filter Type and Size

The measured variable data listed above will be collected to update the calculations in Option A:

The specific Performance Period inspections are detailed on Table 4.

Table 4: Performance Period Data Inspection for SH-15

Equipment Parameter Monitored	Monitoring Point	Monitoring Equipment	Duration	Frequency	Interval	Notes

Visual Inspection of Filters and related Equipment	Field Equipment	Visual	Instantaneous	Annually	N/A	Visually inspect all new equipment in the AHU
Operational Check of Setpoints and Scheduling	Through Metasys	Metasys Control System	N/A	Annually	N/A	Check that setpoints and schedules are in compliance design.
Review of O&M Records	Field Records	N/A	N/A	Annually	N/A	Review O&M records.

ECM SH-19: PARKING GARAGE LIGHTING UPGRADE

1. M&V Plan

The M&V methodology is consistent with Option A as described in the International Measurement and Verification Protocol (IPMVP) and titled Concepts and Options for Determining Energy and Water Savings Volume 1 - September 2010, Efficiency Valuation Organization.

2. Energy Baseline Development

During the detailed audit of the parking garage, the type and number of each lighting fixture was documented and recorded. Sample power measurements will be taken for each significant fixture type. Light fixture operating hours were determined by interviews with the building, lighting/occupancy logging data, and observations.

3. Proposed Energy Savings

The savings for this measure are the electricity energy and demand reduction for lighting. These savings are achieved by implementing lighting improvement strategies including efficient lamps and ballasts. Pre-retrofit and post-retrofit watts per fixture are based on industry standards and will be measured. The savings are calculated by multiplying the difference of pre-retrofit watts per fixture and post-retrofit watts per fixture by the number of fixtures, the cost per unit of electric consumption, and the hours of operation. The demand savings are calculated by multiplying the difference of pre-retrofit watts per fixture and post-retrofit watts per fixture by the number of fixtures, the cost per unit of electric demand per month, electrical coincidental demand diversity factor, and the number of months in a year.

Engineering calculations use pre & post-retrofit measurements and non-measured inputs as detailed below.

Lighting Upgrades Benefits:

$$\text{Electric Energy, kWh Savings}_t = \sum_u [(\text{kW/Fixture}_{\text{pre-retrofit}} \times \text{Quantity}_{\text{pre-retrofit}} - \text{kW/Fixture}_{\text{post}} \times \text{Quantity}_{\text{post}}) \times \text{Hours of Operation}]_{t,u}$$

$$\text{Electric Demand, kW Savings}_t = \sum_u [(\text{kW/Fixture}_{\text{pre-retrofit}} \times \text{Quantity}_{\text{pre-retrofit}} - \text{kW/Fixture}_{\text{post}} \times \text{Quantity}_{\text{post}}) \times \text{Coincidental Demand Diversity Factor} \times 12 \text{ months}]_{t,u}$$

kWh Savings_t = kilowatt-hour savings realized during the post-installation time period *t*, and is the sum of on-peak (kWh-Savings_{on-peak}) and off-peak kWh saved (kWh-Savings_{off-peak}) during this period.

kW/Fixture_{pre-retrofit} = lighting pre-retrofit demand per fixture for usage group *u*

kW/Fixture_{post} = lighting demand per fixture during post-installation period for usage group *u*

Quantity_{pre-retrofit} = quantity of affected fixtures before the lighting retrofit for usage group *u*, adjusted for inoperative and nonoperative lighting fixtures.

Quantity_{post} = quantity of affected fixtures after the lighting retrofit for usage group *u*

Hours of Operation = number of operating hours during the time period *t* for the usage group *u*, and is the sum of on-peak and off-peak hours during this period.

Utility Benefit (\$) = [kWh-Savings_{on-peak} × \$/kWh_{on-peak}] + [kWh-Savings_{off-peak} × \$/kWh_{off-peak}] + (kW-Savings × \$/kW)

Measured variables:

- Fixture wattage, pre and post retrofit (one time)

Non-Measured variables, assumptions and stipulations:

- Unit cost of electricity
- Coincidental Demand Diversity Factor
- Fixture – Operating Hours (See Lighting Appendix IGA)

4. Performance Period Verification Activities

4.1 Intent of Performance Period Verification Activities

The intent of the Performance Period verification activities is to ensure that the lighting equipment is performing as specified in the Contract. No measurements will be made during the Performance Period. The calculations will not be updated during the Performance Period.

Lighting systems in each area will be visually inspected annually to ensure that energy-efficient equipment is used to replace ballasts and/or lamps that burn out and that all occupancy sensors are properly controlling the fixtures. Johnson Controls will also request lighting equipment inventory and purchase records for review on a quarterly basis. The results of the annual inspections and data review will be reported in the Annual Report.

4.2 Performance Period System Performance Factors

The Performance Period factors include space light levels, fixture wattage (efficiency), and lighting fixture operating hours (lighting/occupancy logging data).

4.3 Schedule of Performance Period Verification Activities

The customer will provide equipment inventory, purchase, and O&M records annually. The walk-through inspection of a sample of spaces will take place prior to the anniversary of Annual Report due date.

4.4 Performance Period Data to be Collected

The specific Performance Period inspections are detailed on Table 1.

Table 1: Performance Period Data Collection for SH-19

Equipment Parameter Monitored	Monitoring Point	Monitoring Equipment	Duration	Frequency	Interval	Notes
Visual Inspection of Light Fixture	Field Equipment	Visual	Instantaneous	Annually	N/A	Visually inspect sample of fixtures
Review of Inventory and Purchase Records	Data Provided by Cook County	N/A	N/A	Annually	N/A	Review inventory and lighting material purchase records.

ECM SH-20 WASTE MANGAMENT

1. M&V Plan

The M&V methodology is consistent with Option A as described in the International Measurement and Verification Protocol (IPMVP) and titled Concepts and Options for Determining Energy and Water Savings Volume 1, - September 2010, Efficiency Valuation Organization.

2. Energy Baseline Development

During the detailed audit Waste Component by Weight, Waste Handling, Disposal Cost, Waste Supplies and, Improperly Disposed Reusable items for the hospital along with waste sampling of various departments were taken to develop the baseline. Cook County personnel provided and or witnessed the waste sampling of various departments in hospital.

3. Proposed Energy Savings Calculations and Methodology

The savings for this measure is a reduction in waste removal cost associated with the new waste management program.

Measured savings for this ECM comes from four areas; waste segregation, auto-claving, general waste equipment, and waste supplies.

1. **Waste Segregation:** The savings are realized through routing a part of the general waste that was incorrectly disposed-off as regulated medical waste to the general waste stream.

GW = pounds/year of general waste

\$/GW = cost per pound of general waste

GWINRMW = pounds/year of general waste in regulated medical waste stream

\$/RMW = pounds/year of regulated medical waste

Pre Cost = $(GW - GWINRMW) \times \$/GW + GWINRMW \times \$/RMW$

Post Cost = $GW \times \$/GW$

Savings = Pre Cost - Post Cost

$= (GW - GWINRMW) \times \$/GW + GWINRMW \times \$/RMW - GW \times \$/GW$

$$= \text{GWINRMW} \times (\$/\text{RMW} - \$/\text{GW})$$

Measured Variables:

GWINRMW will be measured annually.

Non-Measured variables, assumptions and stipulations:

$$\$/\text{GW} = \$0.097/\text{lb}, \$/\text{RMW} = \$0.197/\text{lb}$$

2. **Autoclaving:** The savings are realized through routing parts of the regulated medical waste through the autoclave, thereby classifying the waste as general waste.

RMW = lb/year of regulated medical waste that will go to the autoclave to be heat treated and allowed to be classified as general waste.

$\$/\text{RMW}$ = cost per pound of regulated medical waste

$\$/\text{ACW}$ = cost per pound of waste after autoclaving

Pre-Retrofit = $\text{RMW} \times \$/\text{RMW}$

Post-Retrofit = $\text{RMW} \times \$/\text{ACW}$

Savings = Pre-Retrofit Cost – Post-Retrofit Cost

$$= \text{RMW} \times \$/\text{RMW} - \text{RMW} \times \$/\text{ACW}$$

$$= \text{RMW} \times (\$/\text{RMW} - \$/\text{ACW})$$

Measured Variables

RMW will be measured annually.

Non-Measured variables, assumptions and stipulations:

$$\$/\text{RMW} = \$0.197/\text{lb}, \$/\text{ACW} = \$0.128/\text{lb}$$

3. **General Waste Equipment:** The savings are realized by reducing the number of pulls/year (and hence costs) for waste haul off-site for cardboard by utilizing the cardboard baler that exists on-site.

$\text{NPULL}_{\text{pre}}$ = Number of Pulls per year pre-retrofit.

$\text{NPULL}_{\text{post}}$ = Number of Pulls per year post-retrofit.

Pre-Retrofit Costs = $\text{NPULL}_{\text{pre}} \times \$/\text{pull}$

$$\text{Post-Retrofit Costs} = \text{NPULL}_{\text{post}} \times \$/\text{pull}$$

$$\begin{aligned} \text{Savings} &= \text{Pre-Retrofit Costs} - \text{Post-Retrofit Costs} \\ &= (\text{NPULL}_{\text{pre}} - \text{NPULL}_{\text{post}}) \times \$/\text{pull} \end{aligned}$$

Measured Variables:

$\text{NPULL}_{\text{post}}$ will be measured annually.

Non-Measured variables, assumptions and stipulations:

$$\text{NPULL}_{\text{pre}} = 6 \text{ visits/week} \times 52 \text{ weeks/year} = 312 \text{ visits/year}$$

4. **Cardboard Recycling:** The benefits are realized through the revenue generated by selling cardboard to a recycler.

$\text{EHC} = \text{Existing Cardboard Hauling Cost}$

$\text{CR} = \text{tons/year of cardboard recycled}$

$\$/\text{CR} = \text{cost/ton of cardboard recycling}$

$\text{Pre Costs} = \text{EHC}$

$\text{Post Costs} = \text{CR} \times \$/\text{CR}$

$\text{Savings} = \text{EHC} - \text{CR} \times \$/\text{CR}$

Measured Variables:

$\text{CR} = \text{tons/year of cardboard recycled annually}$

Non-Measured variables, assumptions and stipulations:

$$\text{EHC} = \$41,800, \$/\text{CR} = \$30/\text{ton}$$

4. **Performance Period Verification Activities**

4.1 **Intent of Performance Period Verification Activities**

The intent of the performance period verification activities is to ensure that the Waste Management Program is performing as specified in the contract. Measurements will be made during the performance period. The calculations will be updated annually during the performance period.

Review of invoices and visual inspections will be reviewed annually to ensure that the Autoclave is operated in an energy-efficient manner. The results of the annual inspections and data review will be reported in the Annual Report.

4.2 Performance Period System Performance Factors

Variables affecting the post- Waste Management Program include changes in Occupancy Rate, procurement procedures surgical procedures and patient loads. waste component weight, Waste Handling procedures, proper maintenance of autoclave and vendor contracts.

4.3 Schedule of Performance Period Verification Activities

The invoices and O&M records will be requested Quarterly. The walk-through inspection of the Autoclave and route for pickup of Autoclaved regulated medical waste will take place prior to the anniversary of Annual Report due date.

4.5 Performance Period Data to be Collected

Autoclave log data, Pre Autoclaved Biohazard weight, Cardboard Bailer Income, Red bag and Sharps waste invoices will be provided by JSH. Waste management reporting will be submitted to provide the savings for Waste Supplies and improperly disposed reusables.

The measurable data listed above will be used in the calculations to confirm the savings calculations and verification of operation.

Performance Period inspections are detailed on Table 1.

Table 1: Performance Period Data Inspection for SH-20

Equipment Parameter Monitored	Monitoring Point	Monitoring Equipment	Duration	Frequency	Interval	Notes
Visual Inspection of Autoclave and related Equipment	Field Equipment	Visual	Instantaneous	Annually	N/A	Visually inspect all new equipment Autoclave
Operational Check of Setpoints and Scheduling	Through Autoclave Logs	Metasys Control System	N/A	Annually or Based on the results from review of O&M Records	N/A	Check that setpoints and schedules are in compliance design.
Review of O&M Records	Field Records	N/A	N/A	Quarterly	N/A	Review O&M records.

ECM SH-23: BOILER STACK CONDENSING ECONOMIZER

1. M&V Plan

1.1 M&V Guideline and Option

The M&V methodology is consistent with Option C as described in the International Measurement and Verification Protocol (IPMVP) and titled Concepts and Options for Determining Energy and Water Savings Volume 1, - September 2010, Efficiency Valuation Organization.

2. Energy Baseline Development

During the detailed audit the following information was collected to establish the baseline that includes nameplate data for each boiler, boiler log data, equipment schedules for heat load information, field observations of system temperatures and pressures, trend data for steam pressures/flow/temperatures.

3. Proposed Energy Savings Calculations and Methodology

3.1 Proposed Savings

The savings for this measure is a reduction in natural gas consumption associated with the heat recovery of the condensing heat recovery and the installation of high efficiency boiler gas burners. An electric penalty is included for the addition of pumps and fan motors.

4. Performance Period Verification Activities

4.1 Intent of Performance Period Verification Activities

The intent of the performance period verification activities is to ensure that the Boiler Stack Condensing Economizer is performing as specified in the contract. The calculations will not be updated during the performance period.

Trend data and visual inspections will be reviewed annually to ensure that the Boiler Stack Condensing Economizer is operated in an energy-efficient manner. The results of the annual inspections and data review will be reported in the Annual Report.

4.2 Performance Period System Performance Factors

Variables affecting the post-installation energy include changes in boiler performance. Changes related to boiler performance that changes operating hydrogen content of the fuel, the fuel firing rate, the percent of excess oxygen in the flue gases, and the stack gas temperature and boiler efficiency will affect the post-installation energy use. Hours were confirmed with Cook County personnel.

4.3 Schedule of Performance Period Verification Activities

The equipment inventory and purchase records will be requested annually. The walk-through inspection of a Boiler Stack Condensing Economizer will take place prior to the anniversary of Annual Report due date.

4.5 Performance Period Data to be collected

The electric and natural gas consumption from the utility bills will be used to confirm the actual savings.

Performance trends used to verify the system operation and savings include:

- Economizer entering and leaving water temperature
- Steam pressures and condensate/feedwater temperatures, Average Steam Flow, Lbs/Hr
- New Burner Panel (Status, temperatures, % load, O2 levels)
- Boiler status and sequencing
- Boiler Status and hours of operation

The specific Performance Period inspections are detailed on Table 1.

Table 1: Performance Period Data Inspection for SH-23 ECM

Equipment Parameter Monitored	Monitoring Point	Monitoring Equipment	Duration	Frequency	Interval	Notes
Visual Inspection of Boiler Stack Condensing Economizer and related Equipment	Field Equipment	Visual	Instantaneous	Annually	N/A	Visually inspect all new equipment in the boiler plant
Operational Check of Setpoints and Scheduling	Through Metasys	Metasys Control System	N/A	Annually	N/A	Check that setpoints and schedules are in compliance design.
Review of O&M Records	Field Records	N/A	N/A	Annually	N/A	Review O&M records.

ECM SH-26: VENTILATION AHUS IMPROVEMENT

1. M&V Plan

1.1 M&V Guideline and Option

The M&V methodology is consistent with Option A as described in the International Measurement and Verification Protocol (IPMVP) and titled Concepts and Options for Determining Energy and Water Savings Volume 1, - September 2010, Efficiency Valuation Organization.

2. Energy Baseline Development

During the detailed audit the following information was gathered to establish the baseline including nameplate data for each fan motor, ventilation airflow rates from design drawings, field observations of systems and interviews with hospital personnel to confirm operating schedules.

3. Proposed Energy Savings Calculations and Methodology

3.1 Proposed Savings

The savings for this measure is a reduction in the electricity consumption related to decreased fan motor loads and cooling of ventilation air during low occupancy periods. Additionally natural gas savings are a result of reduced heating of ventilation air during low occupancy periods.

Electric energy savings are achieved by reduced fan speed which is due to the installation of Variable Speed Drives on the AHUs. In addition, Electrical energy savings (from Cooling) and Natural Gas energy savings (from Heating) will be realized due to reduced ventilation airflow. The savings for this recommendation were calculated using the following equations. All assumptions are provided in the supporting calculations.

Fan Energy Savings

Pre-Retrofit Fan Motor Energy, kWh = Motor kW_{measured} x (Pre-retrofit % Fan Speed)^{2.4} x Pre-retrofit Operating Hours

Post-Retrofit Fan Motor Energy, kWh = Motor kW_{measured} x (Annual Average Post Retrofit % Fan Speed)^{2.4} x Post Retrofit Operating Hours

Fan Motor Energy Saved, kWh = Pre-Retrofit Fan Motor Energy - Post-Retrofit Fan Motor Energy

Fan Motor Energy \$ Saved = Fan Motor Energy Saved x \$/kWh_{blended}

Electric Cooling Energy Savings

Pre-Retrofit Electric Cooling kWh = Fan Ventilation Airflow (Cfm) x (Pre-Retrofit % Fan Speed) x 1.08 x (OAT_{cooling} - SAT_{cooling}) / 12,000 x kW/Ton for Cooling System x Annual Cooling Hours

Post-Retrofit Electric Cooling kWh = Fan Ventilation Airflow (Cfm) x (Annual Average Post-Retrofit % Fan Speed) x 1.08 x (OAT_{cooling} - SAT_{cooling}) / 12,000 x kW/Ton for Cooling System x Annual Cooling Hours

Electric Cooling Energy Saved, kWh = Pre-Retrofit Electric Cooling kWh - Post-Retrofit Electric Cooling kWh

Electric Cooling Energy \$ Saved = Electric Cooling Energy Saved x \$/kWh_{blended}

Natural Gas Energy Savings

Pre-Retrofit Natural Gas Heating, Therms = Fan Ventilation Airflow (Cfm) x (Pre-Retrofit % Fan Speed) x 1.08 x (SAT_{heating} - OAT_{heating}) x yearly heating hours / (10⁵ x heating efficiency)

Post-Retrofit Natural Gas Heating, Therms = Fan Ventilation Airflow (Cfm) x (Annual Average Post-Retrofit % Fan Speed) x 1.08 x (SAT_{heating} - OAT_{heating}) x yearly heating hours / (10⁵ x heating efficiency)

Natural Gas Heating Energy Saved, Therms = Pre-Retrofit Natural Gas Heating, Therms - Post-Retrofit Natural Gas Heating, Therms

Natural Gas Heating \$ Saved = Natural Gas Heating Energy Saved, Therms X \$/Therm

Measured variables:

- Motor kW_{measured} (only pre-retrofit measurements will be used, since we are not replacing fans/motors)
- Annual Average Post Retrofit % Fan Speed (hourly % Fan Speed reading will be trended and averaged over 8,760 hours at the end of the each year of the guarantee)

Non-Measured variables, assumptions and stipulations:

For Kitchen AHU and Loading Dock AHU

- Operating Hours = 8,760 hours per year
- Annual heating hours = 3,800

- Pre-Retrofit % Fan Speed is 100%
- Ventilation heating outdoor air temperature (OAT_{heating}) = 36°F
- Ventilation heating supply air temperature (SAT_{heating}) = 70°F
- Average heating system efficiency = 80%

For Kitchen AHU

- Fan Ventilation Air Flow = 15,090 CFM
- Annual cooling hours = 3,600
- Ventilation cooling outdoor air temperature (OAT_{cooling}) = 75°F
- Ventilation cooling supply air temperature (SAT_{cooling}) = 56°F
- Average cooling system efficiency = 0.80 kW/ton

Loading Dock AHU (Heating only unit)

- Fan Ventilation Air Flow = 28,000 CFM

4. Performance Period Verification Activities

4.1 Intent of Performance Period Verification Activities

The intent of the performance period verification activities is to ensure that the Ventilation AHUs are performing as specified in the contract. No measurements will be made during the performance period. The calculations will be updated during the performance period.

Trend data and visual inspections will be reviewed annually to ensure that the Ventilation AHUs operated in an energy-efficient manner. The results of the annual inspections and data review will be reported in the Annual Report.

4.2 Performance Period System Performance Factors

Variables affecting the post-installation energy include changes in AHU schedules, BAS setpoints, modification to units, changes in airside static pressure, loss of temperature controls, space use and maintenance of equipment.

4.3 Schedule of Performance Period Verification Activities

The equipment inventory and purchase records will be requested annually. The walk-through inspection of a Ventilation AHUs will take place prior to the anniversary of Annual Report due date.

4.4 Performance Period Data to be Collected

The measured items listed above will be collected to calculate actual savings.

The following trends will be gathered to verify the system operation

- Kitchen and Garage AHUs, supply and exhaust fan status and hours of operation
- Supply and exhaust fan VSDs panel (status, kW, CO level, % speed,)

The specific Performance Period inspections are detailed on Table 1.

Table 1: Performance Period Data Inspection for SH-26 ECM

Equipment Parameter Monitored	Monitoring Point	Monitoring Equipment	Duration	Frequency	Interval	Notes
Visual Inspection of AHU's and related Equipment	Field Equipment	Visual	Instantaneous	Annually	N/A	Visually inspect all new equipment in the chiller plant
Operational Check of Setpoints and Scheduling	Through Metasys	Metasys Control System	N/A	Annually	N/A	Check that setpoints and schedules are in compliance design.
Review of O&M Records	Field Records	N/A	N/A	Annually	N/A	Review O&M records.

ECM IFM-1: LIGHTING UPGRADE

1. M&V Plan

The M&V methodology is consistent with Option A as described in the International Measurement and Verification Protocol (IPMVP) and titled Concepts and Options for Determining Energy and Water Savings Volume 1 - September 2010, Efficiency Valuation Organization.

2. Energy Baseline Development

During the detailed audit of the Institute of Forensic Medicine building, the type and number of each lighting fixture was documented and recorded. Sample power measurements will be taken for each significant fixture type. Light fixture operating hours were determined by interviews with the building, lighting/occupancy logging data, and observations.

3. Proposed Energy Savings

The savings for this measure includes a reduction in electric energy and demand associated with lighting and cooling system and an increase in natural gas energy associated to the heating penalty.

These savings are achieved by implementing lighting improvement strategies including efficient lamps, ballasts and occupancy sensors. Pre-retrofit and post-retrofit watts per fixture are based on industry standards and will be measured. The savings are calculated by multiplying the difference of pre-retrofit watts per fixture and post-retrofit watts per fixture by the number of fixtures, the cost per unit of electric consumption, and the hours of operation. The demand savings are calculated by multiplying the difference of pre-retrofit watts per fixture and post-

retrofit watts per fixture by the number of fixtures, the cost per unit of electric demand per month, electrical coincidental demand diversity factor, and the number of months in a year.

Engineering calculations use pre & post-retrofit measurements and non-measured inputs as detailed below.

Lighting Upgrades Benefits:

$$\text{Electric Energy, kWh Savings}_t = \sum_u [(kW/\text{Fixture}_{pre-retrofit} \times \text{Quantity}_{pre-retrofit} - kW/\text{Fixture}_{post} \times \text{Quantity}_{post}) \times \text{Hours of Operation}]_{t,u}$$

$$\text{Electric Demand, kW Savings}_t = \sum_u [(kW/\text{Fixture}_{pre-retrofit} \times \text{Quantity}_{pre-retrofit} - kW/\text{Fixture}_{post} \times \text{Quantity}_{post}) \times \text{Coincidental Demand Diversity Factor} \times 12 \text{ months}]_{t,u}$$

kWh Savings_t = kilowatt-hour savings realized during the post-installation time period *t*, and is the sum of on-peak (kWh-Savings_{on-peak}) and off-peak kWh saved (kWh-Savings_{off-peak}) during this period.

kW/Fixture_{pre-retrofit} = lighting pre-retrofit demand per fixture for usage group *u*

kW/Fixture_{post} = lighting demand per fixture during post-installation period for usage group *u*

Quantity_{pre-retrofit} = quantity of affected fixtures before the lighting retrofit for usage group *u*, adjusted for inoperative and nonoperative lighting fixtures

Quantity_{post} = quantity of affected fixtures after the lighting retrofit for usage group *u*

Hours of Operation = number of operating hours during the time period *t* for the usage group *u*, and is the sum of on-peak and off-peak hours during this period.

$$\text{Utility Benefit (\$)} = [\text{kWh-Savings}_{on-peak} \times \$/\text{kWh}_{on-peak}] + [\text{kWh-Savings}_{off-peak} \times \$/\text{kWh}_{off-peak}] + (\text{kW-Savings} \times \$/\text{kW})$$

Measured variables:

- Fixture wattage, pre and post retrofit (one time)

Non-Measured variables, assumptions and stipulations:

- Unit cost of natural gas and electricity
- Coincidental Demand Diversity Factor
- Fixture – Operating Hours (See Lighting Appendix IGA)

4. Performance Period Verification Activities

4.1 Intent of Performance Period Verification Activities

The intent of the Performance Period verification activities is to ensure that the lighting equipment is performing as specified in the Contract. One-time pre and post measurements will be taken during the installation period. No measurements will be made during the Performance Period. The calculations will not be updated during the Performance Period.

Lighting systems in each area will be visually inspected annually to ensure that energy-efficient equipment is used to replace ballasts and/or lamps that burn out and that all occupancy sensors are properly controlling the fixtures. Johnson Controls will also request lighting equipment inventory and purchase records for review on a quarterly basis. The results of the annual inspections and data review will be reported in the Annual Report.

4.2 Performance Period System Performance Factors

See 4.3 below.

4.3 Schedule of Performance Period Verification Activities

The customer will provide equipment inventory, purchase, and O&M records annually. The walk-through inspection of a sample of spaces will take place prior to the anniversary of Annual Report due date.

4.4 Performance Period Data to be Collected

The specific Performance Period inspections are detailed on Table 1.

Table 1: Performance Period Data Collection for IFM-1 ECM

Equipment Parameter Monitored	Monitoring Point	Monitoring Equipment	Duration	Frequency	Interval	Notes
Visual Inspection of Light Fixture	Field Equipment	Visual	Instantaneous	Annually	N/A	Visually inspect sample of fixtures
Review of Inventory and Purchase Records	Data Provided by Cook County	N/A	N/A	Annually	N/A	Review inventory and lighting material purchase records.

ECM IFM-2B: CHILLER REPLACEMENT

1. M&V Plan

The M&V methodology is consistent with Option C as described in the International Measurement and Verification Protocol (IPMVP) and titled Concepts and Options for Determining Energy and Water Savings Volume 1, - September 2010, Efficiency Valuation Organization.

2. Energy Baseline Development

During the detailed audit nameplate data was gathered for the existing chilled water plant equipment. This includes chillers, tower fan motor, primary chilled water pump and condenser water pump motors. System Information was gathered for flow, chilled water supply and return temperatures, condenser water supply and return temperatures, status.

The cooling load profile, sequence of operations and operating period was determined with maintenance personnel, log data and trend data. Information was gathered on the chillers, pumps, and cooling towers. This data was entered into the bin data spreadsheet to calculate the Baseline electrical and natural gas energy consumption for the chiller plant.

3. Proposed Energy Savings

The savings for this measure include a reduction in natural gas consumption by eliminating the steam absorption chiller. An electric energy penalty is the result of installing a new electric cooling system. A reduction in electric energy is a result of installing higher efficiency motors with VSDs on pumps and cooling tower fans.

4. Performance Period Verification Activities

4.1 Intent of Performance Period Verification Activities

The intent of the performance period verification activities is to ensure that the new cooling system design and control is performing as specified in the IGA.

Trend data and visual inspections will be reviewed annually to ensure that the proposed system will be operated in an energy-efficient manner. The results of the annual inspections and data review will be reported in the Annual Report.

4.2 Performance Period System Performance Factors

Variables affecting the post-installation energy include changes in the BAS set points, building occupancy schedule, maintenance of the HVAC components, sequencing of chillers and pumps and operating hours.

4.3 Schedule of Performance Period Verification Activities

The equipment inventory and O&M records will be requested annually. The walk-through inspection of the air distribution and temperature control system will take place prior to the anniversary of Annual Report due date.

4.4 Performance Period Data to be Collected

The electric and natural gas utility bills will be collected and used to confirm energy savings.

Trend data from the BAS will be collected to verify system operations including:

- Status of major equipment to establish Hours of operation
- Pump motor VSD %Speed
- Temperature Control set points, chilled and condenser water temperatures

The specific Performance Period inspections are detailed on Table 1.

Table 1: Performance Period Data Inspection for IFM-2A ECM

Equipment Parameter Monitored	Monitoring Point	Monitoring Equipment	Duration	Frequency	Interval	Notes
Visual Inspection of Cooling System and related Equipment	Field Equipment	Visual	Instantaneous	Annually	N/A	Visually inspect all new equipment in the mechanical rooms
Operational Check of Setpoints and Scheduling	Through BAS	BAS Control System	N/A	Annually	N/A	Check that setpoints and schedules are in compliance design.
Review of O&M Records	Field Records	N/A	N/A	Annually	N/A	Review O&M records.

ECM IFM-3: BOILER REPLACEMENT

1. M&V Plan

The M&V methodology is consistent with Option C as described in the International Measurement and Verification Protocol (IPMVP) and titled Concepts and Options for Determining Energy and Water Savings Volume 1, - September 2010, Efficiency Valuation Organization.

2. Energy Baseline Development

During the detailed audit the information gathered includes equipment nameplate data and observations of pressure and temperature gauges which used in the development of baseline.

3. Proposed Energy Savings Calculations and Methodology

The savings for this measure include a reduction in natural gas energy associated with the increased efficiency of the new boilers.

4. Performance Period Verification Activities

4.1 Intent of Performance Period Verification Activities

The intent of the performance period verification activities is to ensure that the boilers are performing as specified in the IGA. The calculations will not be updated during the performance period.

Trend data and visual inspections will be reviewed annually to ensure that the proposed system will be operated in an energy-efficient manner. The results of the annual inspections and data review will be reported in the Annual Report.

4.2 Performance Period System Performance Factors

Variables affecting the post-installation energy include changes in the BAS setpoints, building occupancy schedule, maintenance of the HVAC components, increased make up water and steam pressure, .

4.3 Schedule of Performance Period Verification Activities

The equipment inventory and O&M records will be requested annually. The walk-through inspection of the boilers system will take place prior to the anniversary of Annual Report due date.

4.4 Performance Period Data Collected

The natural gas utility bills will be collected and used to confirm the actual savings.

Trend data from Metasys will be collected and used to verify the system operations include:

- Hours per Year of Boiler Operation
- Steam Heat Content
- Steam Production Rate
- Steam Loss (lbs/hr) based on Boiler Operating Pressure

The specific Performance Period inspections are detailed on Table 1.

Table 1: Performance Period Data Inspection for IFM-3 ECM

Equipment Parameter Monitored	Monitoring Point	Monitoring Equipment	Duration	Frequency	Interval	Notes
Visual Inspection of Boiler's and related Equipment	Field Equipment	Visual	Instantaneous	Annually	N/A	Visually inspect all new equipment in the mechanical penthouse
Operational Check of Setpoints and Scheduling	Through Metasys	Metasys Control System	N/A	Annually	N/A	Check that setpoints and schedules are in compliance design.
Review of O&M Records	Field Records	N/A	N/A	Annually	N/A	Review O&M records.

ECM IFM-5: AHU CONTROLS AND ELECTRONIC FILTER UPGRADE

1. Overview of ECM and M&V Plan

The M&V methodology is consistent with Option C as described in the International Measurement and Verification Protocol (IPMVP) and titled Concepts and Options for Determining Energy and Water Savings Volume 1, - September 2010, Efficiency Valuation Organization.

2. Energy Baseline Development

During the detailed audit the information gathered includes AHU nameplate data, equipment schedules and measurements of the filter sections.

3. Proposed Energy Savings Calculations and Methodology

The savings for this measure include a reduction in electric energy associated with a decrease in fan motor energy and ventilation cooling. A reduction in natural gas energy is a result of reduced ventilation heating requirements.

4. Performance Period Verification Activities

4.1 Intent of Performance Period Verification Activities

The intent of the performance period verification activities is to ensure that the air handling units and new electronic filter are performing as specified in the IGA. The calculations will not be updated during the performance period.

Trend data and visual inspections will be reviewed annually to ensure that the proposed system will be operated in an energy-efficient manner. The results of the annual inspections and data review will be reported in the Annual Report.

4.2 Performance Period System Performance Factors

Variables affecting the post-installation energy include changes in the BAS setpoints, building occupancy schedule, maintenance of the HVAC and control components.

4.3 Schedule of Performance Period Verification Activities

The equipment inventory and purchase records will be requested annually. The walk-through inspection of the air distribution and temperature control system will take place prior to the anniversary of Annual Report due date.

4.4 Government Witnessing of Performance Period Measurements

Cook County personnel are encouraged to witness the Performance Period inspections.

4.5 Performance Period Data to be Collected

The natural gas utility bills will be collected and used to confirm the actual savings.

Trend data from Metasys will be collected to verify the system operations including:

- AHU supply and exhaust/return fan status and hours of operation
- AHU supply and exhaust/return fan VFDs panel (status, kW, % of speed, airflow, static pressure, system temperatures)
- One-time Filter Air Pressure Drop (APD)

The specific Performance Period inspections are detailed on Table 1.

Table 1: Performance Period Data Inspection for IFM-5 ECM

Equipment Parameter Monitored	Monitoring Point	Monitoring Equipment	Duration	Frequency	Interval	Notes
Visual Inspection of AHU's and related Equipment	Field Equipment	Visual	Instantaneous	Annually	N/A	Visually inspect all new equipment in the mechanical penthouse
Operational Check of Setpoints and Scheduling	Through Metasys	Metasys Control System	N/A	Annually	N/A	Check that setpoints and schedules are in compliance design.
Review of O&M Records	Field Records	N/A	N/A	Annually	N/A	Review O&M records.

ECM IFM-7: STEAM TRAPS AND MISC UPGRADES

1. M&V Plan

The M&V methodology is consistent with Option C as described in the International Measurement and Verification Protocol (IPMVP) and titled Concepts and Options for Determining Energy and Water Savings Volume 1, - September 2010, Efficiency Valuation Organization.

2. Energy Baseline Development

During the detailed audit nameplate data for each Steam Traps along with sample measurements of several Steam Traps were taken to develop the baseline.

3. Proposed Energy Savings Calculations and Methodology

The savings for this measure result in a reduction in natural gas energy associated with the insulation of bare pipe and fittings, new traps and converting the existing 60 psi steam down to 15 psi steam.

4. Performance Period Verification Activities

4.1 Intent of Performance Period Verification Activities

The intent of the performance period verification activities is to ensure that the Steam Trap's are performing with minimal steam losses, steam system operates at 15 psi and new insulation remains intact. No measurements will be made during the performance period. The calculations will not be updated during the performance period. The results of the annual inspections and utility review will be reported in the Annual Report.

4.2 Performance Period System Performance Factors

Variables affecting the post-installation energy include changes in space temperature, weather, trap maintenance, operating hours of heating system, steam pressure, and Boiler Efficiency.

4.3 Schedule of Performance Period Verification Activities

The equipment inventory and O&M records will be requested annually. The walk-through inspection of a Steam Trap, operating steam pressures and condensate return tanks (relief vents) will take place prior to the anniversary of Annual Report due date.

4.4 Performance Period Data to be Collected

The natural gas consumption taken from the utility bills will be used to determine annual saving. The specific Performance Period inspections are detailed on Table 1.

Table 1: Performance Period Data Collection for IFM-7 ECM

Equipment Parameter Monitored	Monitoring Point	Monitoring Equipment	Duration	Frequency	Interval	Notes
Visual Inspection of Steam Traps and related Equipment	Field Equipment	Visual	Instantaneous	Annually	N/A	Visually inspect all new equipment in the traps

Operational Check of Setpoints and Scheduling	Through BAS and or Boiler Logs	BAS Control System	N/A	Annually	N/A	Check that setpoints and schedules are in compliance design.
Review of O&M Records	Field Records	N/A	N/A	Annually	N/A	Review O&M records.

ECM HB-1: LIGHTING UPGRADE

1. M&V Plan

The M&V methodology is consistent with Option A as described in the International Measurement and Verification Protocol (IPMVP) and titled Concepts and Options for Determining Energy and Water Savings Volume 1 - September 2010, Efficiency Valuation Organization.

2. Energy Baseline Development

During the detailed, the type and number of each lighting fixture was documented and recorded. Sample power measurements will be taken for each significant fixture type. Light fixture operating hours were determined by interviews with the building, lighting/occupancy logging data, and observations.

3. Proposed Energy Savings

The savings for this measure are the electricity reduction for lighting and cooling and an increase in natural gas due to heating penalty.

These savings are achieved by implementing lighting improvement strategies including efficient lamps, ballasts and occupancy sensors. Pre-retrofit and post-retrofit watts per fixture are based on industry standards and will be measured. The savings are calculated by multiplying the difference of pre-retrofit watts per fixture and post-retrofit watts per fixture by the number of fixtures, the cost per unit of electric consumption, and the hours of operation. The demand savings are calculated by multiplying the difference of pre-retrofit watts per fixture and post-retrofit watts per fixture by the number of fixtures, the cost per unit of electric demand per month, electrical coincidental demand diversity factor, and the number of months in a year.

Engineering calculations use pre & post-retrofit measurements and non-measured inputs as detailed below.

Lighting Upgrades Benefits:

$$\text{Electric Energy, kWh Savings}_t = \sum_u [(\text{kW/Fixture}_{\text{pre-retrofit}} \times \text{Quantity}_{\text{pre-retrofit}} - \text{kW/Fixture}_{\text{post}} \times \text{Quantity}_{\text{post}}) \times \text{Hours of Operation}]_{t,u}$$

$$\text{Electric Demand, kW Savings}_t = \sum_u [(\text{kW/Fixture}_{\text{pre-retrofit}} \times \text{Quantity}_{\text{pre-retrofit}} - \text{kW/Fixture}_{\text{post}} \times \text{Quantity}_{\text{post}}) \times \text{Coincidental Demand Diversity Factor} \times 12 \text{ months}]_{t,u}$$

kWh Savings_t = kilowatt-hour savings realized during the post-installation time period *t*, and is the sum of on-peak (kWh-Savings_{on-peak}) and off-peak kWh saved (kWh-Savings_{off-peak}) during this period.

kW/Fixture_{pre-retrofit} = lighting pre-retrofit demand per fixture for usage group *u*

kW/Fixture_{post} = lighting demand per fixture during post-installation period for usage group *u*

Quantity_{pre-retrofit} = quantity of affected fixtures before the lighting retrofit for usage group *u*, adjusted for inoperative and nonoperative lighting fixtures

Quantity_{post} = quantity of affected fixtures after the lighting retrofit for usage group *u*

Hours of Operation = number of operating hours during the time period *t* for the usage group *u*, and is the sum of on-peak and off-peak hours during this period.

Utility Benefit (\$) = [kWh-Savings_{on-peak} x \$/kWh_{on-peak}] + [kWh-Savings_{off-peak} x \$/kWh_{off-peak}] + (kW-Savings x \$/kW)

Measured variables:

- Fixture wattage, pre and post retrofit (one time)

Non-Measured variables, assumptions and stipulations:

- Unit cost of electricity and natural gas
- Coincidental Demand Diversity Factor
- Fixture – Operating Hours (See Lighting Appendix IGA)

4. Performance Period Verification Activities

4.1 Intent of Performance Period Verification Activities

The intent of the Performance Period verification activities is to ensure that the lighting equipment is performing as specified in the Contract. One-time pre and post measurements will

be taken during the installation period. No measurements will be made during the Performance Period. The calculations will not be updated during the Performance Period.

Lighting systems in each area will be visually inspected annually to ensure that energy-efficient equipment is used to replace ballasts and/or lamps that burn out and that all occupancy sensors are properly controlling the fixtures. Johnson Controls will also request lighting equipment inventory and purchase records for review on a quarterly basis. The results of the annual inspections and data review will be reported in the Annual Report.

4.2 Performance Period System Performance Factors

See 4.3 below.

4.3 Schedule of Performance Period Verification Activities

The customer will provide equipment inventory, purchase, and O&M records annually. The walk-through inspection of a sample of spaces will take place prior to the anniversary of Annual Report due date.

4.4 Performance Period Data to be Collected

The specific Performance Period inspections are detailed on Table 1.

Table 1: Performance Period Data Collection for HB-1 ECM

Equipment Parameter Monitored	Monitoring Point	Monitoring Equipment	Duration	Frequency	Interval	Notes
Visual Inspection of Light Fixture	Field Equipment	Visual	Instantaneous	Annually	N/A	Visually inspect sample of fixtures
Review of Inventory and Purchase Records	Data Provided by Cook County	N/A	N/A	Annually	N/A	Review inventory and lighting material purchase records.

ECM HB-9: CONTROLS AND AHU UPGRADES

1. M&V Plan

1.1 M&V Guideline and Option

The M&V methodology is consistent with Option A (Electric) and C (Natural Gas) Measured as described in the International Measurement and Verification Protocol (IPMVP) and titled

2. Energy Baseline Development

During the detailed audit nameplate data for each AHU's along of the AHU's and various Controls points were taken to develop the baseline. Cook County personnel provided access to mechanical rooms for walkthrough and or witnessed trend data collection for the Controls and AHU Upgrades.

3. Proposed Energy Savings Calculations and Methodology

3.1 Proposed Savings

The savings for this measure include a reduction in electricity and natural gas due to a decrease in fan speed during un-occupied hours. Natural Gas savings follow the Option C methodology as described above. Option A methodology applies to the electric savings and is described below.

Option A

Electric energy savings are achieved by reduced fan speed during un-occupied hours which is accomplished by the installation of Variable Speed Drives (VSD) on the AHU supply and return fan motors. Additional electrical energy savings are a result of reducing ventilation and it's cooling requirements, due to reduced ventilation airflow during un-occupied hours. The savings for this recommendation were calculated using the following equations. All assumptions are provided in the supporting calculations.

Fan Energy Savings

Pre-Retrofit Fan Motor Energy, kWh = Pre-Retrofit Motor kW_{measured} x (Pre-retrofit % Fan Speed)^{2.4} x Pre-retrofit Fan Operating Hours

Post-Retrofit Fan Motor Energy, kWh = Post-Retrofit Motor kW_{measured} x (Annual Average Post Retrofit % Fan Speed)^{2.4} x Post Retrofit Fan Operating Hours

Fan Motor Energy Saved, kWh = Pre-Retrofit Fan Motor Energy - Post-Retrofit Fan Motor Energy

Fan Motor Energy \$ Saved = Fan Motor Energy Saved x \$/kWh_{off-peak}

Electric Cooling Energy Savings

Pre-Retrofit Electric Cooling kWh = Fan Ventilation Airflow (Cfm) x (Pre-Retrofit % Fan Speed) x 4.5 x $\sum(h_{\text{cooling-bin hours}} - h_{\text{cooling SAT}}) / 12,000$ x Average Cooling System Efficiency x Annual Cooling Hours

Post-Retrofit Electric Cooling kWh = Fan Ventilation Airflow (Cfm) x (Annual Average Post-Retrofit % Fan Speed) x 4.5 x $\sum(h_{\text{cooling-bin hours}} - h_{\text{cooling SAT}}) / 12,000$ x Average Cooling System Efficiency x Annual Cooling Hours

Electric Cooling Energy Saved, kWh = Pre-Retrofit Electric Cooling kWh - Post-Retrofit Electric Cooling kWh

Electric Cooling Energy \$ Saved = Electric Cooling Energy Saved x \$/kWh_{off-peak}

Measured variables:

- Pre-Retrofit Motor kW_{measured} one time
- Post-Retrofit Motor kW_{measured} one time
- Annual Average Post Retrofit % Fan Speed (hourly % Fan Speed reading will be trended and averaged over 4,992 hours at the end of each year of the guarantee)

Non-Measured variables, assumptions and stipulations:

- Pre-Retrofit and Post-Retrofit Fan Operating Hours = 4,992 hours per year (these are the unoccupied fan hours of operation)
- Annual cooling hours (Pre-Retrofit and Post-Retrofit) = 1,968 hours (these are the unoccupied cooling hours of operation)
- Pre-Retrofit % Fan Speed is 100%
- Fan Ventilation Airflow (Cfm) = 96,894 CFM
- Enthalpy of cooling supply air temperature ($h_{\text{cooling-SAT}}$) = 22 Btu/lb
- Average cooling system efficiency = 0.90 kW/ton

4. Performance Period Verification Activities

4.1 Intent of Performance Period Verification Activities

The intent of the performance period verification activities is to ensure that the AHU's and Temperature Control system is performing as specified in the contract. The calculations will be updated during the performance period for the Option A portion of the savings.

Visual inspections will be reviewed annually to ensure that the AHU's and temperature controls are operated in an energy-efficient manner. The results of the annual inspections and review of trend data will be reported in the Annual Report.

4.2 Performance Period System Performance Factors

Variables affecting the post-installation energy include a change in run time hours, system static pressure set points, temperature set points.

4.3 Schedule of Performance Period Verification Activities

The equipment inventory and O&M records will be requested annually. The walk-through inspection of AHU's and temperature controls system will take place prior to the anniversary of Annual Report due date.

4.4 Performance Period Data to be Collected

Natural gas utility bills will be collected and used to verify the energy savings for the Option C M&V savings.

Trend data from the BAS will be collected to verify the system operation and includes:

- AHU's status and hours of operation
- Operating air temperatures
- Damper position

The measured variable data will be collected to update the calculations in Option A:

The specific Performance Period inspections are detailed on Table 1.

Table 1: Performance Period Data Inspection for HB-9 ECM

Equipment Parameter Monitored	Monitoring Point	Monitoring Equipment	Duration	Frequency	Interval	Notes
Visual Inspection of AHU's and related Controls Equipment	Field Equipment	Visual	Instantaneous	Annually	N/A	Visually inspect all new equipment in AHU's and related Controls Equipment
Operational Check of Setpoints and Scheduling	Through BAS	BAS Control System	N/A	Annually	N/A	Check that setpoints and schedules are in compliance design.
Review of O&M Records	Field Records	N/A	N/A	Annually	N/A	Review O&M records.

ECM HB-16: DUAL DUCT VAV AND MIXED AIR

1. M&V Plan

1.1 M&V Guideline and Option

The M&V methodologies are consistent with Option A (Electric) and C (Natural Gas) as described in the International Measurement and Verification Protocol (IPMVP) and titled Concepts and Options for Determining Energy and Water Savings Volume 1, - September 2010, Efficiency Valuation Organization.

2. Energy Baseline Development

During the detailed audit nameplate data for each VAV Box and AHU's were gathered to develop the baseline.

3. Proposed Energy Savings Calculations and Methodology

3.1 Proposed Savings

The savings for this measure includes a reduction in electricity and natural gas energy due to a decrease fan speed for the Dual Duct VAV Conversion. Electric and natural gas savings are also realized due to a reduction in the heating and cooling of ventilation air. Natural Gas savings follow the Option C methodology as described above. Option A methodology applies to the electric savings and is described below.

Option A

Electric energy savings are achieved by reduced fan speed which is due to the installation of Variable Speed Drives on the AHUs. In addition, electrical energy savings from cooling are realized from the conversion of 100% ventilation units to mixed air units. The savings for this recommendation were calculated using the following equations. All assumptions are provided in the supporting calculations.

Fan Energy Savings

Pre-Retrofit Fan Motor Energy, kWh = Pre-Retrofit Motor kW_{measured} x (Pre-retrofit % Fan Speed)^{2.4} x Pre-retrofit Fan Operating Hours

Post-Retrofit Fan Motor Energy, kWh = Post-Retrofit Motor kW_{measured} x (Annual Average Post Retrofit % Fan Speed)^{2.4} x Post Retrofit Fan Operating Hours

Fan Motor Energy Saved, kWh = Pre-Retrofit Fan Motor Energy - Post-Retrofit Fan Motor Energy

Fan Motor Energy \$ Saved = Fan Motor Energy Saved x \$/kWh_{peak}

Electric Cooling Energy Savings

Pre-Retrofit Electric Cooling kWh = Fan Ventilation Airflow (Cfm) x (Annual Average Pre-Retrofit % Fan Speed) x 4.5 x $\sum (h_{\text{cooling-bin hours}} - h_{\text{cooling SAT}}) / 12,000$ x Average Cooling System Efficiency x Annual Cooling Hours

Post-Retrofit Electric Cooling kWh = Fan Ventilation Airflow (Cfm) x (Annual Average Post-Retrofit % Fan Speed) x 4.5 x $\sum (h_{\text{cooling-bin hours}} - h_{\text{cooling SAT}}) / 12,000$ x Average Cooling System Efficiency x Annual Cooling Hours

Electric Cooling Energy Saved, kWh = Pre-Retrofit Electric Cooling kWh - Post-Retrofit Electric Cooling kWh

Electric Cooling Energy \$ Saved = Electric Cooling Energy Saved x \$/kWh_{off-peak}

Measured variables:

- Pre-Retrofit Motor kW_{measured} (one time)
- Post-Retrofit Motor kW_{measured} (one time)
- Annual Average Post Retrofit % Fan Speed (hourly % Fan Speed reading will be trended and averaged over 3,851 hours at the end of the first year of the guarantee)

Non-Measured variables, assumptions and stipulations:

- Pre-Retrofit and Post-Retrofit Fan Operating Hours = 3,851 hours per year (these are the occupied fan hours of operation)
- Annual cooling hours (Pre-Retrofit and Post-Retrofit) = 1,578 hours (these are the occupied cooling hours of operation)
- Pre-Retrofit % Fan Speed is 100%
- \$/kWh_{on-peak} = \$0.0867 / kWh
- Pre-Retrofit Fan Ventilation Airflow (Cfm), Unoccupied Mode = 80,842 CFM
- Post-Retrofit Fan Ventilation Airflow (Cfm), Unoccupied Mode = 39,166 CFM
- Enthalpy of cooling supply air temperature ($h_{\text{cooling SAT}}$) = 22 Btu/lb
- Average cooling system efficiency = 0.90 kW/ton

4. Performance Period Verification Activities

4.1 Intent of Performance Period Verification Activities

The intent of the performance period verification activities is to ensure that the Dual Duct VAV and mixed air Conversion is performing as specified in the contract. No measurements will be made during the performance period. The calculations will be updated during the performance period for the Option A portion of the savings.

Trend data and visual inspections will be reviewed annually to ensure that the Dual Duct VAV and mixed air conversion is operated in an energy-efficient manner. The results of the annual inspections and trend data review will be reported in the Annual Report.

4.2 Performance Period System Performance Factors

Variables affecting the post-installation energy include static pressure setpoints, hours of operation, space and AHU temperature setpoints. Changes to these variables will affect the post-installation energy use.

4.3 Schedule of Performance Period Verification Activities

The equipment inventory and O&M will be requested annually from the customer. The walk-through inspection of the air handling units, Dual Duct VAV box conversion and mixed air conversion will take place prior to the anniversary of Annual Report due date.

4.4 Performance Period Data to be Collected

Natural Gas utility bills will be collected and used to verify the energy savings for the Option C M&V savings.

Trend data from the BAS will be collected used to verify the system operation and energy calculations include:

- AHU's status and hours of operation
- Operating Temperatures
- Damper position
- VSD kW, % Load, speed, and status

The measured variable data listed above will be collected to update the calculations in Option A.

The specific Performance Period inspections are detailed on Table 1.

Table 1: Performance Period Data Inspection for HB-16 ECM

Equipment Parameter Monitored	Monitoring Point	Monitoring Equipment	Duration	Frequency	Interval	Notes
Visual Inspection of Dual Duct VAV Conversion and related Equipment	Field Equipment	Visual	Instantaneous	Annually	N/A	Visually inspect the Dual Duct VAV Conversion and related Equipment
Operational Check of Setpoints and Scheduling	Through BAS	BAS Control System	N/A	Annually	N/A	Check that setpoints and schedules are in compliance design.
Review of O&M Records	Field Records	N/A	N/A	Annually	N/A	Review O&M records.

ECM HB-18: STEAM TRAPS AND MISC UPGRADES

1. M&V Plan

The M&V methodology is consistent with Option C as described in the International Measurement and Verification Protocol (IPMVP) and titled Concepts and Options for Determining Energy and Water Savings Volume 1, - September 2010, Efficiency Valuation Organization.

2. Energy Baseline Development

During the detailed audit nameplate data for each Steam Traps along with sample measurements of several Steam Traps were taken to develop the baseline.

3. Proposed Energy Savings Calculations and Methodology

The savings for this measure result in a reduction in natural gas energy associated with the insulation of bare pipe and fittings, new traps and converting the existing 60 psi steam down to 15 psi steam.

4. Performance Period Verification Activities

4.1 Intent of Performance Period Verification Activities

The intent of the performance period verification activities is to ensure that the Steam Trap's are performing with minimal steam losses, steam system operates at 15 psi and new insulation remains intact. No measurements will be made during the performance period. The calculations will not be updated during the performance period. The results of the annual inspections and utility review will be reported in the Annual Report.

4.2 Performance Period System Performance Factors

Variables affecting the post-installation energy include changes in space temperature, weather, trap maintenance, operating hours of heating system, steam pressure, and Boiler Efficiency.

4.3 Schedule of Performance Period Verification Activities

The equipment inventory and O&M records will be requested annually. The walk-through inspection of a Steam Trap, operating steam pressures and condensate return tanks (relief vents) will take place prior to the anniversary of Annual Report due date.

4.4 Performance Period Data to be Collected

The natural gas consumption taken from the utility bills will be used to determine annual saving. The specific Performance Period inspections are detailed on Table 1.

Table 1: Performance Period Data Collection for HB-18 ECM

Equipment Parameter Monitored	Monitoring Point	Monitoring Equipment	Duration	Frequency	Interval	Notes
Visual Inspection of Steam Traps and related Equipment	Field Equipment	Visual	Instantaneous	Annually	N/A	Visually inspect all new equipment in the traps
Operational Check of Setpoints and Scheduling	Through BAS and or Boiler Logs	BAS Control System	N/A	Annually	N/A	Check that setpoints and schedules are in compliance design.
Review of O&M Records	Field Records	N/A	N/A	Annually	N/A	Review O&M records.

ECM RRCC-1: LIGHTING UPGRADE

1. M&V Plan

The M&V methodology is consistent with Option A as described in the International Measurement and Verification Protocol (IPMVP) and titled Concepts and Options for Determining Energy and Water Savings Volume 1 - September 2010, Efficiency Valuation Organization.

2. Energy Baseline Development

During the detailed audit the type and number of each lighting fixture was documented and recorded. Sample power measurements will be taken for each significant fixture type. Light fixture operating hours were determined by interviews with the building, lighting/occupancy logging data, and observations.

3. Proposed Energy Savings

Energy savings for this measure includes a reduction electricity reduction for lighting and cooling. A heating penalty resulting in an increase in natural gas usage is included.

These savings are achieved by implementing lighting improvement strategies including efficient lamps, ballasts and occupancy sensors. Pre-retrofit and post-retrofit watts per fixture are based on industry standards and will be measured. The savings are calculated by multiplying the difference of pre-retrofit watts per fixture and post-retrofit watts per fixture by the number of fixtures, the cost per unit of electric consumption, and the hours of operation. The demand savings are calculated by multiplying the difference of pre-retrofit watts per fixture and post-retrofit watts per fixture by the number of fixtures, the cost per unit of electric demand per month, electrical coincidental demand diversity factor, and the number of months in a year.

Engineering calculations use pre & post-retrofit measurements and non-measured inputs as detailed below.

Lighting Upgrades Benefits:

$$\text{Electric Energy, kWh Savings}_t = \sum_u [(kW/\text{Fixture}_{pre-retrofit} \times \text{Quantity}_{pre-retrofit} - kW/\text{Fixture}_{post} \times \text{Quantity}_{post}) \times \text{Hours of Operation}]_{t,u}$$

$$\text{Electric Demand, kW Savings}_t = \sum_u [(kW/\text{Fixture}_{pre-retrofit} \times \text{Quantity}_{pre-retrofit} - kW/\text{Fixture}_{post} \times \text{Quantity}_{post})$$

x Coincidental Demand Diversity Factor x 12 months]_{t,u}

kWh Savings_t = kilowatt-hour savings realized during the post-installation time period *t*, and is the sum of on-peak (*kWh-Savings_{on-peak}*) and off-peak *kWh* saved (*kWh-Savings_{off-peak}*) during this period.

kW/Fixture_{pre-retrofit} = lighting pre-retrofit demand per fixture for usage group *u*

kW/Fixture_{post} = lighting demand per fixture during post-installation period for usage group *u*

Quantity_{pre-retrofit} = quantity of affected fixtures before the lighting retrofit for usage group *u*, adjusted for inoperative and nonoperative lighting fixtures

Quantity_{post} = quantity of affected fixtures after the lighting retrofit for usage group *u*

Hours of Operation = number of operating hours during the time period *t* for the usage group *u*, and is the sum of on-peak and off-peak hours during this period.

Utility Benefit (\$) = [*kWh-Savings_{on-peak}* x \$/*kWh_{on-peak}*] + [*kWh-Savings_{off-peak}* x \$/*kWh_{off-peak}*]
+ (*kW-Savings* x \$/*kW*)

Measured variables:

- Fixture wattage, pre and post retrofit (one time)

Non-Measured variables, assumptions and stipulations:

- Unit cost of natural gas and electricity
- Coincidental Demand Diversity Factor Fixture – Operating Hours (See Lighting Appendix - IGA)

4. Performance Period Verification Activities

4.1 Intent of Performance Period Verification Activities

The intent of the Performance Period verification activities is to ensure that the lighting equipment is performing as specified in the Contract. One-time pre- and post measurements will be taken during the installation period. No measurements will be made during the Performance Period. The calculations will not be updated during the Performance Period.

Lighting systems in each area will be visually inspected annually to ensure that energy-efficient equipment is used to replace ballasts and/or lamps that burn out and that all occupancy sensors are properly controlling the fixtures. Johnson Controls will also request lighting equipment inventory and purchase records for review on a quarterly basis. The results of the annual inspections and data review will be reported in the Annual Report.

4.2 Performance Period System Performance Factors

See 4.3 below.

4.3 Schedule of Performance Period Verification Activities

The customer will provide equipment inventory, purchase, and O&M records annually. The walk-through inspection of a sample of spaces will take place prior to the anniversary of Annual Report due date.

4.4 Performance Period Data to be Collected

The specific Performance Period inspections are detailed on Table 1.

Table 1: Performance Period Data Collection for RRCC-1 ECM

Equipment Parameter Monitored	Monitoring Point	Monitoring Equipment	Duration	Frequency	Interval	Notes
Visual Inspection of Light Fixture	Field Equipment	Visual	Instantaneous	Annually	N/A	Visually inspect sample of fixtures
Review of Inventory and Purchase Records	Data Provided by Cook County	N/A	N/A	Annually	N/A	Review inventory and lighting material purchase records.

ECM RRCC-2: CONTROLS UPGRADE & HE FILTER

1. M&V Plan

The M&V methodology is consistent with Option C as described in the International Measurement and Verification Protocol (IPMVP) and titled Concepts and Options for Determining Energy and Water Savings Volume 1, - September 2010, Efficiency Valuation Organization.

2. Energy Baseline Development

During the detailed audit nameplate data for motors, design drawings, trend data and filter measurements along with sample measurements of the fan motor kW were taken to develop the baseline.

3. Proposed Energy Savings Calculations and Methodology

The savings for this measure include a reduction in electric energy, electric demand and natural gas energy associated with reduced fan motor speed and ventilation.

4. Performance Period Verification Activities

4.1 Intent of Performance Period Verification Activities

The intent of the performance period verification activities is to ensure that improvements to the temperature controls for each VAV air handling units and the installation of electronic filters are performing as specified in the contract. A one-time measurement of air pressure drop for the filters will be taken. Measurements will be made during the performance period. The calculations will not be updated during the performance period.

The gathering of trend data and visual inspections will be reviewed annually to ensure that the proposed system will be operated in an energy-efficient manner. The results of the annual inspections and data review will be reported in the Annual Report.

4.2 Performance Period System Performance Factors

Variables affecting the post-installation energy include changes in the BAS pressure and temperature setpoints, building occupancy schedule, maintenance of the HVAC components and flow requirements

4.3 Schedule of Performance Period Verification Activities

The equipment inventory and purchase records will be requested annually. The walk-through inspection of the air distribution and temperature control system will take place prior to the anniversary of Annual Report due date.

4.4 Performance Period Data to be Collected

The natural gas and electric utility bills will be collected and used to verify energy savings.

Trend data from the BAS will be collected and used to verify the system operations including:

- AHU-1 and AHU-2 supply and exhaust/return fan status and hours of operation
- AHU-1 and AHU-2 supply and exhaust fan VFDs panel (status, kW, % of speed, airflow, system temperatures)
- One-time Air Pressure Drop (APD)
- Filter configuration

The specific Performance Period inspections are detailed on Table 1.

Table 1: Performance Period Data Inspection for RRCC-2

Equipment Parameter Monitored	Monitoring Point	Monitoring Equipment	Duration	Frequency	Interval	Notes
Visual Inspection of AHU's and related Equipment	Field Equipment	Visual	Instantaneous	Annually	N/A	Visually inspect all new equipment in the mechanical penthouse
Operational Check of Setpoints and Scheduling	Through BAS	BAS Control System	N/A	Annually	N/A	Check that setpoints and schedules are in compliance design.
Review of O&M Records	Field Records	N/A	N/A	Annually	N/A	Review O&M records.

Exhibit I
Performance Tracking Services

1.1 MEASUREMENT AND VERIFICATION SERVICES

JCI will provide the M&V Services set forth below in connection with the Performance Guarantee. During the Performance Period, a JCI Performance Assurance Engineer will track Measured Project Benefits. JCI will annually report the Measured Project Benefits achieved and Non-Measured Project Benefits applicable to the Project, to Customer within 90 days of the commencement of the Guarantee Term. Updates of key ECM variables will be provided per Table 1: Schedule of Verification Reporting Activities.

1. For specified Improvement Measures utilizing an "Option A" M&V protocol, JCI will:
 - A. conduct pre and post installation measurements required under this Agreement;
 - B. confirm the building management system employs the trend of key variables, control strategies and set points specified in this Agreement; and
 - C. analyze actual as-built information and adjust the Baseline and/or Measured Project Benefits to conform to actual installation conditions (e.g., final lighting and water benefits calculations will be determined from the as-built information to reflect the actual mix of retrofits encountered during installation).
2. For specified Improvement Measures utilizing an "Option C" M&V protocol, JCI will:
 - A. conduct pre and post installation verification required under this Agreement;
 - B. confirm the building management system employs the trend of key variables, control strategies and set points specified in this Agreement; and
 - C. input customer provided utility data in Metrix™ on a quarterly basis to determine annual savings. Metrix™ is a Utility Accounting Software Program used by Johnson Controls to track "Option C" savings.
3. For specified Improvement Measures utilizing an "Non-Measured", JCI will:
 - A. Verify installation and operation required under this Agreement.

1.2 SCHEDULE AND REPORTING FOR VERIFICATION ACTIVITIES

Requirements for Witnessing of Measurements

Johnson Controls encourages John H. Stroger Hospital witnessing of Baseline, Post-Installation and annual verification measurements. While Hospital personnel did not witness all of the Baseline measurements and data collection, the Baseline measurements were reviewed with Hospital personnel during the Baseline workshop and concurrence was obtained.

Johnson Controls will notify John H. Stroger Hospital at least one week prior to performing verification measurements and inspections. This notification will serve as an invitation to the Government to witness the measurements and inspections.

Upon Substantial Completion, the Project Manager will prepare the required Certificate of Substantial Completion. The Performance Assurance Engineer will then furnish an Annual Project Benefits report, and review with the Owner/ Customer.

Schedule of Verification Reporting Activities**

The schedule of Verification Reporting Activities is presented in Table 1.

Table 1: Schedule of Verification Reporting Activities

Item	Time of Submission	Hospital Review
Annual Report *	90 Days after the completion of Performance Year	45 Days
Quarterly Updates	30 Days after the completion of the Quarter in Years 1 and 2	30 Days
Semi-Annual Update	30 Days after the completion of June in Years 3 and Forward	30 Days

*Includes Carbon Reduction Tracking: Use of the Energy Project Green House Gas (GHG) Calculator - US Version 5.1 to track carbon reduction.

**The Annual Report, Quarterly and Semi-Annual Updates will meet the content and format requirements agreed upon by John H. Stroger Hospital and Johnson Controls.

All payments pursuant to this Exhibit I are subject to the Termination and Suspension provisions contained within the First Amendment to Guaranteed Energy Performance Contract.

1.3 CUSTOMER RESPONSIBILITIES

In order for JCI to perform its obligations under this Agreement with respect to the Work, the Assured Performance Guarantee, and the M&V Services, in addition to items mentioned in Exhibit G and elsewhere in the contract, the Customer shall be responsible for:

1. Provide contact person, facility access, and personnel support for facility walkthrough.
2. Ensure that site operations personnel are properly trained throughout the term of this agreement.
3. Customer shall not substitute equipment with less efficient performance ratings when performing repairs to equipment or systems under this contract.
4. Provide Quarterly copies of demand and preventive maintenance records for equipment under this contract to verify that maintenance is being performed.
5. Providing and maintaining a dedicated telephone line and/or TCP/IP remote connection to facilitate remote monitoring of relevant equipment.

Exhibit I
Performance Tracking Services

1.1 MEASUREMENT AND VERIFICATION SERVICES

JCI will provide the M&V Services set forth below in connection with the Performance Guarantee. During the Performance Period, a JCI Performance Assurance Engineer will track Measured Project Benefits. JCI will annually report the Measured Project Benefits achieved and Non-Measured Project Benefits applicable to the Project, to Customer within 90 days of the commencement of the Guarantee Term. Updates of key ECM variables will be provided per Table 1: Schedule of Verification Reporting Activities.

1. For specified Improvement Measures utilizing an "Option A" M&V protocol, JCI will:
 - A. conduct pre and post installation measurements required under this Agreement;
 - B. confirm the building management system employs the trend of key variables, control strategies and set points specified in this Agreement; and
 - C. analyze actual as-built information and adjust the Baseline and/or Measured Project Benefits to conform to actual installation conditions (e.g., final lighting and water benefits calculations will be determined from the as-built information to reflect the actual mix of retrofits encountered during installation).
2. For specified Improvement Measures utilizing an "Option C" M&V protocol, JCI will:
 - A. conduct pre and post installation verification required under this Agreement;
 - B. confirm the building management system employs the trend of key variables, control strategies and set points specified in this Agreement; and
 - C. input customer provided utility data in Metrix™ on a quarterly basis to determine annual savings. Metrix™ is a Utility Accounting Software Program used by Johnson Controls to track "Option C" savings.
3. For specified Improvement Measures utilizing an "Non-Measured", JCI will:
 - A. Verify installation and operation required under this Agreement.

1.2 SCHEDULE AND REPORTING FOR VERIFICATION ACTIVITIES

Requirements for Witnessing of Measurements

Johnson Controls encourages John H. Stroger Hospital witnessing of Baseline, Post-Installation and annual verification measurements. While Hospital personnel did not witness all of the Baseline measurements and data collection, the Baseline measurements were reviewed with Hospital personnel during the Baseline workshop and concurrence was obtained.

Johnson Controls will notify John H. Stroger Hospital at least one week prior to performing verification measurements and inspections. This notification will serve as an invitation to the Government to witness the measurements and inspections.

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*Includes Carbon Reduction Tracking: Use of the Energy Project Green House Gas (GHG) Calculator - US Version 5.1 to track carbon reduction.

**The Annual Report, Quarterly and Semi-Annual Updates will meet the content and format requirements agreed upon by John H. Stroger Hospital and Johnson Controls.

All payments pursuant to this Exhibit I are subject to the Termination and Suspension provisions contained within the First Amendment to Guaranteed Energy Performance Contract.

1.3 CUSTOMER RESPONSIBILITIES

In order for JCI to perform its obligations under this Agreement with respect to the Work, the Assured Performance Guarantee, and the M&V Services, in addition to items mentioned in Exhibit G and elsewhere in the contract, the Customer shall be responsible for:

1. Provide contact person, facility access, and personnel support for facility walkthrough.
2. Ensure that site operations personnel are properly trained throughout the term of this agreement.
3. Customer shall not substitute equipment with less efficient performance ratings when performing repairs to equipment or systems under this contract.
4. Provide Quarterly copies of demand and preventive maintenance records for equipment under this contract to verify that maintenance is being performed.
5. Providing and maintaining a dedicated telephone line and/or TCP/IP remote connection to facilitate remote monitoring of relevant equipment.

CONTINUATION SHEET

AIA Document G702 - APPLICATION AND CERTIFICATION FOR PAYMENT.

containing Contractor's signed certification is attached.

In tabulations below, amounts are stated to the nearest dollar.

Use Column 1 on Contracts where variable retainage for line items may apply.

Exhibit J.2 - Schedule of Values

Payments are applied for per and made per progress only

APPLICATION NO: 1

APPLICATION DATE:

PERIOD TO:

ARCHITECT'S PROJECT NO:

PAGE 2 OF 2 PAGES

A ITEM NO.	B DESCRIPTION OF WORK	C SCHEDULED VALUE	D FROM PREVIOUS APPLICATION (D + E)	E WORK COMPLETED THIS PERIOD	F MATERIALS PRESENTLY STORED (NOT IN D, OR E)	G TOTAL COMPLETED AND STORED TO DATE (D+E+F)	H BALANCE TO FINISH (C - G)	I RETAINAGE
	Stroger Hospital Campus GEPC							0
SH-1	Lighting Upgrades	\$1,287,572.00				\$0.00	\$1,287,572.00	\$0.00
SH-13	Chiller Plant Optimization	\$2,356,466.00				\$0.00	\$2,356,466.00	\$0.00
SH-14	VAV Box Optimization	\$276,015.00				\$0.00	\$276,015.00	\$0.00
SH-15	Electronic Filter Retrofit	\$1,585,716.00				\$0.00	\$1,585,716.00	\$0.00
SH-18	Lighting Controller	\$28,349.00				\$0.00	\$28,349.00	\$0.00
SH-19	Parking Garage Lighting Retrofit	\$384,349.00				\$0.00	\$384,349.00	\$0.00
SH-20	Waste Management	\$282,109.00				\$0.00	\$282,109.00	\$0.00
SH-22	Demand Response	\$27,000.00				\$0.00	\$27,000.00	\$0.00
SH-23	Boiler Slack Condensing Economizer	\$2,477,320.00				\$0.00	\$2,477,320.00	\$0.00
SH-26	Ventilization AHU's Improvement	\$89,775.00				\$0.00	\$89,775.00	\$0.00
	Institute of Forensic Medicine							
IMF-1	Lighting Upgrades	\$136,545.00				\$0.00	\$136,545.00	\$0.00
IFM-2	Chiller Replacement	\$912,260.00				\$0.00	\$912,260.00	\$0.00
IFM-3	Boiler Replacement	\$344,550.00				\$0.00	\$344,550.00	\$0.00
IFM-4	Domestic Water System Upgrades	\$293,057.00				\$0.00	\$293,057.00	\$0.00
IFM-5	AHU Controls and Electronic Filter Upgrades	\$366,099.00				\$0.00	\$366,099.00	\$0.00
IFM-6	Inertive Storage Cooling System Upgrades	\$214,480.00				\$0.00	\$214,480.00	\$0.00
IFM-7	Steam Traps and Misc Upgrades	\$29,813.00				\$0.00	\$29,813.00	\$0.00
IFM-8	Receiving Dock Infrared Heaters	\$26,100.00				\$0.00	\$26,100.00	\$0.00
	Hektoen Building							
HB-1	Lighting Upgrades	\$320,277.00				\$0.00	\$320,277.00	\$0.00
HB-9	Controls and AHU Upgrades	\$722,478.00				\$0.00	\$722,478.00	\$0.00
HB-13	Domestic Water Booster VSD	\$63,528.00				\$0.00	\$63,528.00	\$0.00
HB-16	Dual Duct VAV and Mixed Air Conversion	\$2,893,726.00				\$0.00	\$2,893,726.00	\$0.00
HB-18	Steam Traps and Misc Upgrades	\$522,241.00				\$0.00	\$522,241.00	\$0.00
	Ruth M. Rothstein Core Center							
RRCC-1	Lighting Upgrades	\$72,564.00				\$0.00	\$72,564.00	\$0.00
RRCC-2	Controls Upgrade and Electronic Filter Retrofit	\$171,449.00				\$0.00	\$171,449.00	\$0.00
	Campus Wide ECM's							
SCW-6	LEED-EB & Energy Star Benchmarking	\$36,000.00				\$0.00	\$36,000.00	\$0.00
SCW-14	Utility Meters for Administration and Fautus Bldgs	\$82,587.00				\$0.00	\$82,587.00	\$0.00
SCW-15	Sustainability Services	\$182,438.00				\$0.00	\$182,438.00	\$0.00
	Other							
	Mobilization	\$2,652,360.00				\$0.00	\$2,652,360.00	\$0.00
	Investment Grade Audit	\$128,722.00				\$0.00	\$128,722.00	\$0.00
	Design and Engineering	\$1,296,848.00				\$0.00	\$1,296,848.00	\$0.00
	Construction Management	\$972,636.00				\$0.00	\$972,636.00	\$0.00
	Staff and Project Expenses	\$648,424.00				\$0.00	\$648,424.00	\$0.00

CONTINUATION SHEET

Exhibit J.2 - Schedule of Values

PAGE 2 OF 2 PAGES

AIA Document G702, APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor's signed certification is attached.

Payments are applied for per and made per progress only

APPLICATION NO: 1

In tabulations below, amounts are stated to the nearest dollar.

APPLICATION DATE:

PERIOD TO:

ARCHITECT'S PROJECT NO:

A ITEM NO.	B DESCRIPTION OF WORK	C SCHEDULED VALUE	E WORK COMPLETED		F MATERIALS PRESENTLY STORED (NOT IN D OR E)	G TOTAL COMPLETED AND STORED TO DATE (D+E+F)	H BALANCE TO FINISH (C - G)	I RETAINAGE
			D FROM PREVIOUS APPLICATION (D + E)	% (G ÷ C)				
	System Commissioning	\$324,212.00				\$0.00	\$324,212.00	\$0.00
	First Year Training Fees and M&V	\$324,212.00				\$0.00	\$324,212.00	\$0.00
	Contingency Costs	\$2,022,976.00				\$0.00	\$2,022,976.00	\$0.00
	Overhead	\$1,618,389.00				\$0.00	\$1,618,389.00	\$0.00
	Profit					\$0.00		\$0.00
	Sheet Totals	\$26,497,854.00	\$0.00	\$0.00	\$0.00	\$0.00	\$26,497,854.00	\$0.00



**COOK COUNTY OFFICE OF CAPITAL PLANNING AND POLICY
PAYMENT APPLICATION GUIDELINE PACKAGE
GENERAL CONTRACTOR & DESIGN-BUILDER**

This Payment Application Packet is provided as a courtesy to facilitate the payment application process for you. Following is a checklist of the items required to be included in payment applications to the County. Please become familiar with the General Condition "Payment to Contractor". The County retains the right to request additional documentation.

Include all items in the order specified below. Do not leave anything out. Missing items will cause the payment application to be returned for completion. Do not change the number of originals and copies required.

ITEM	DESCRIPTION	NO. OF ORIGINALS REQUIRED
1.	Cover Letter w/check list (sample included).....	1
2.	Cook County Voucher Form 29A (sample included-use electronic form from OCPP).....	1
3.	Contractor's Invoice (Include Payment Application Number)	1
4.	NOTARIZED Letter stating compliance with Cook County resident requirements (sample included)..... Only the Prime provides the Notarized letter. The certification includes all the subs that performed work on the project during the current pay period.	1
5.	NOTARIZED Application and Certificate for Payment (per AIA Document G702) (sample included).....	1
6.	Schedule of Values and Retainage (per AIA Document G703) (sample included).....	1
7.	Sworn Statement for Contractor and Subcontractor to Owner (Tops Form 3466 or per GC-16)	1
8.	Contractor's NOTARIZED Waiver of Lien to Date / Final Waivers	1
9.	All Subcontractor's & Supplier's NOTARIZED Waivers of Lien to Date / Final Waivers	1
	> This item must be included for the subcontractors and suppliers who performed work on the project that was invoiced on the previous payment application.	
	> The Waivers must be equal to the amounts shown on the previous payment application for any particular subcontractor or supplier.	
10.	Contractor's NOTARIZED Payroll	1
	<i>Include the addresses</i> of all employees that have worked on the project during the current pay period	
11.	Sub-contractor's NOTARIZED Payroll	1
	> This item must be included for subcontractors that performed work on the project during the pay period being applied for, and the work is invoiced on the payment application.	
	> This item <i>must include the addresses</i> of all the subcontractor's employees that have worked on the project during the pay period being applied for	
12.	Updated and Labeled Photographs for the current month (2-hardcopies and 1 -digital copy on CD).....	←
	> Photographs must be submitted once a month whether a payment application is submitted/ approved or not. Photographs, including electronic photographs, must be neatly labeled, identified and dated.	

IMPORTANT INFORMATION REGARDING PAYMENT APPLICATIONS:

1. **This packet and these guidelines have been compiled solely for your convenience:** The County reserves the right to request additional documentation and/or to revise the requirements contained in this packet at any time. It is the Contractor's responsibility to become familiar with the Conditions of the Contract as they relate to these items.
2. **Do not change any information on the checklist:** These are the documents and minimum quantities required by the County to process your payment application. There may be times when an item is not applicable. For example: No subs worked for the prime during the payment application period. Mark item 11 "NA" and provide a one-line explanation at the bottom of the page.
3. **The contract requires a payment application be submitted once per month:** Leave enough time for the Consultant (if applicable) to review and sign your payment application, and for any corrections to be made if necessary. Payment applications for each month must be submitted separately. Do not combine multiple months into any one-payment application.
4. **Payment applications for amounts of \$100,000.00 and more are required to have Board approval:** Payment applications that are required to have Board approval are placed on the Board agenda after being reviewed by the departments noted in item 9 below. Payment applications for \$100,000.00 or more are to be submitted at least 35 calendar days in advance of a Board meeting. Upcoming Board meetings can be found on the following web site:
<http://www.cookctyclerk.com/countyboard/boardmeetings/Pages/default.aspx>
5. **After the payment application is complete:**
 - a. **Contractors:** Submit the payment application to the AE/consultant for the project. The AE/Consultant for the project must thoroughly review your payment application for completeness and accuracy and certify it. Leave enough time for the AE to do this so that it can be submitted by the required date. The AE forwards the certified payment application to the Office of Capital Planning and Policy.
 - b. **Design-Builders:** Submit the payment application directly to the County.
6. **Submit the completed payment application directly to:**

Ms. Danielle Opyt
Administrative Assistant
Cook County Office of Capital Planning and Policy
69 W. Washington Street, 30th Floor
Chicago, IL 60602
7. **DO NOT give the payment application to the Project Director, or any other County representative:** The Administrative Assistant will log in your payment application and forward it to the Project Director for review. The County will not be responsible for delays in processing applications if this procedure is not followed.
8. **Incomplete or incorrect applications for payment will be returned for completion/correction:** Due to the high volume of paperwork received each day, incorrect payment applications will not be held by, or corrected by, the County.
9. **Processing of a payment application:** All payment applications, whether or not they have to be approved by the Board, are first reviewed by the Office of Capital Planning and Policy. They are also reviewed and processed by other departments including the Purchasing Agent, the Auditor and the Comptroller/Finance. The County makes reasonable efforts to directly process payment applications. Late submittals, errors and audits and unforeseen circumstances are a few reasons why the process could be delayed.
10. **Checking on the status of a payment application:** After submitting a payment application, please allow a minimum of 60 days before calling to check on the status of a payment. The Administrative Assistant (Office of Capital Planning and Policy) can be reached at 312.603.0348 and has access only to the following information:
 - a. Whether or not a payment application has been passed on by Capital Planning and Policy for processing and if not, why.
 - b. Whether or not a check has been posted (but does not have access to the information as to when it will be mailed)

All other questions regarding your payment application must be directed to the Project Director for this project.
11. **COMMONLY ASKED QUESTIONS & SAMPLE FORMATS:** Please review the following commonly asked questions and sample formats included with these guidelines for your convenience.

COMMONLY ASKED QUESTIONS REGARDING PAYMENT APPLICATIONS:

1. If I submit a payment application on March 4 (2002), can I submit another one on March 22 (2002)?

No. The contract calls for payment applications be submitted once a month. The next payment application can be submitted on April 5 (2002).

2. Why does it take so long for a payment application to be processed

Once the payment application is logged in by the administrative assistant, it is reviewed and signed by the OCPP Project Director, Deputy Director and Director. It is then transmitted to the Purchasing Agent, the Comptroller and the Clerk of the Board for processing and addition to the Board Agenda.

3. When are subcontractors / suppliers waivers of liens due?

This item must be included for the subcontractors and suppliers who performed work on the project that was invoiced on the previous payment application. FOR EXAMPLE:

<u>Subcontractor</u>	<u>Pay App #</u>	<u>Amount claimed for this subcontractor</u>	<u>Include Waiver of Lien with Pay App Number</u>	<u>Waiver Amount</u>
Plug & Plumb Inc.	1	\$45,000.00	2	\$45,000.00
Hotwire Electric Co.	2	\$62,000.00	3	\$62,000.00
Plug & Plumb Inc.	2	\$28,000.00	3	\$28,000.00

4. When are the Final Waivers of Lien Due?

Per the Contract, the Final Waivers of Lien must be submitted with the Final Payment Application.

5. If I forget to include a Subcontractor's Waiver of Lien to Date can I include it with the next payment application?

No. Your payment application will be returned to you to add the forgotten Waiver.

6. If payment applications are due once a month and I submit my payment application by a deadline date but it is incorrect, or incomplete, will it be considered to have met the required monthly submittal?

No. The submittal date will be considered to be the date the payment application is submitted complete and correct.

7. If for some reason, I miss submitting a payment application on time can I roll it up into the next one?

No. Keep the payment applications for each month separate.

8. Can I give my payment application to the Project Director for this project?

No. It must be submitted directly to the Administrative Assistant.

9. If I submit my payment application but forget the voucher 29A, or an invoice, or something else, will it be held until I can send the forgotten item/s in?

No. It will be returned as incomplete. The County processes a high volume of paperwork each day. There is no system to file or hold incomplete / incorrect payment applications. The County cannot be responsible for lost payment applications.

SAMPLE COVER LETTER WITH CHECKLIST
DO NOT CHANGE QUANTITIES OF ORIGINALS AND COPIES

Date: _____

To: Ms. Elizabeth Melas
Deputy Director
Office of Capital Planning & Policy
69 W. Washington St., 30th Floor
Chicago, IL, 60602

Subject: Payment Application No: _____ Submittal No: _____ for Pay Period _____ to _____
Project: _____
General Contractor: _____ Contract No. _____

Dear Ms. Melas:

Enclosed is a Payment Application for the above referenced project. The following items are included:

CHECK	ITEM	ORIGINALS
_____	Cook County Voucher Form 29A	1
_____	Contractor's or Design-Builder's Invoice	1
_____	NOTARIZED Letter stating compliance with Cook County resident requirement	1
_____	NOTARIZED Application and Certificate for Payment (AIA DOCUMENT G702).....	1
_____	Schedule of Values and Retainage (AIA DOCUMENT G703)	1
_____	Contractor's Sworn Statement or Frank R. Walker Company Form 59 (per GC-16).....	1
_____	Waiver of Lien, or Waiver of Lien to Date (NOTARIZED originals)	1
_____	Subcontractor's & Suppliers Waivers of Lien, or Waivers of Lien to Date NOTARIZED	1
_____	Contractor's or Design-Builder's Certified (NOTARIZED) Payroll	1
_____	Sub-contractor's Certified (NOTARIZED) Payroll	1
_____	Updated Photographs (2-sets of hardcopies and 1-CD with digital copies).....	←

Sincerely yours,

SIGNATURE

PRINT NAME

TITLE

SAMPLE 29A VOUCHER
REQUEST ELECTRONIC FORM SHOWN BELOW FROM YOUR PROJECT DIRECTOR

QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
<p>GENERAL CONTRACTOR'S PAYMENT APPLICATION NO. _____</p> <p>County Contract No. _____</p> <p>Authorized by the Cook County Board on: _____ MONTH, DAY & YEAR</p> <p>Project Name & Location(s): _____</p> <p>_____</p> <p>OCCP Project Director: _____</p> <p>FOR THE FOLLOWING PERIOD:</p> <p>_____ through _____</p> <p>MONTH, DAY & YEAR MONTH, DAY & YEAR</p> <p>Summary Description of Services Rendered for this Period:</p> <p>_____</p>	<p>FOR COUNTY USE ONLY</p> <p>DEPARTMENT _____</p> <p>ACCOUNT _____</p>	<p>Cost Center _____</p>	<p>TOTAL: 0.00</p>
<p>DEPARTMENT APPROVAL:</p> <p>DIRECTOR: Bruce Washington</p> <p>DATE: _____</p>	<p>PROJECT DIRECTOR: _____ INITIALS _____ DATE: _____</p> <p>DEPUTY DIRECTOR: _____</p> <p>FINANCIAL CONTROL: _____</p>	<p>EXAMINED AND APPROVED:</p> <p>AUDITOR _____</p> <p>COMPTROLLER _____</p>	
<p>WE HEREBY CERTIFY THAT THIS INVOICE IS RENDERED IN FULL CONFORMITY WITH THE PURCHASE ORDER OR CONTRACT AND MEETS THE SPECIFICATIONS CONTAINED THEREIN. FEDERAL REGULATIONS ARE ALSO COMPLIED WITH.</p> <p><i>Sign Here</i></p> <p>VENDOR'S SIGNATURE _____</p>		<p>I HEREBY CERTIFY THAT I HAVE EXAMINED THE RECEIVING REPORT FROM THE USING DEPARTMENT AND IT AGREES WITH THIS INVOICE AND THAT SATISFACTORY EVIDENCE IS ATTACHED HEREWITH OF RECEIPT OF GOODS AND OR SERVICES.</p> <p>PURCHASING AGENT _____</p>	

IMPORTANT:

1. Provide all of the information shown in dashed squares above. Incomplete or incorrect forms will cause the payment application to be returned for revision.
2. Address and deliver the payment application directly to the Administrative Assistant at the Office of Capital Planning and Policy. The County will not be responsible for delays in processing payment applications that have been sent or given to any other County representative.
3. Remember to sign the Voucher.

SAMPLE CERTIFIED LETTER FORMAT

CONTRACTOR OR DESIGN-BUILDER'S LETTERHEAD

Date

Cook County
Office of Capital Planning & Policy
69 W. Washington St., 30th Floor
Chicago, IL, 60602

RE: Payment Application No. _____ for Pay Period _____ to _____
 Project Name and Location _____
 Cook County Contract No. _____ Best Bet's Invoice No. _____

To Whom it May Concern:

To the best of our knowledge a least fifty percent of the total work on the above referenced project has been or will be performed by residents of Cook County.

SAMPLE ONLY

To be signed by appropriate company representative
Include Title

Signed, Subscribed
&
Notarized

APPLICATION AND CERTIFICATE FOR PAYMENT

TO OWNER:

County of Cook
69 W. Washington St. 30th Floor
Chicago, IL 60602

PROJECT:

FROM CONTRACTOR:

VIA ARCHITECT:

APPLICATION NO:

DISTRIBUTION

PERIOD TO:

OWNER

PROJECT NO:

ARCHITECT

CONTRACT DATE:

CONTRACTOR

CONTRACT NO:

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM

2. Net Change by Change Orders

3. CONTRACT SUM TO DATE (Line 1+2)

4. TOTAL COMPLETED & STORED TO DATE
(Column G on G703)

5. RETAINAGE:

a. 10% of Completed Work
(Columns D + E on G 703)

b. 10% of Stored Material
(Column F on G703)

Total Retainage (Line 5a + 5b or
Total in Column I of G703)

6. TOTAL EARNED LESS RETAINAGE
(Line 4 less Line 5 Total)

7. LESS PREVIOUS CERTIFICATES FOR PAYMENT
(Line 6 from prior Certificate)

8. CURRENT PAYMENT DUE

9. BALANCE TO FINISH, INCLUDING RETAINAGE
(Line 3 less Line 6)

CHANGE ORDER SUMMARY

ADDITIONS

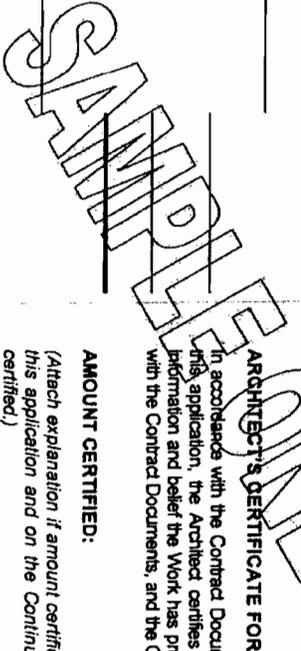
DEDUCTIONS

Total changes approved in previous months by Owner

Total Approved this Month

TOTALS

NET CHANGES by Change Orders



The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief, the Work covered by this application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____ Date: _____

State of: _____

County of: _____

Subscribed and sworn to before me this _____ day of _____

Notary Public: _____ SEAL: _____

My Commission Expires _____

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED:

(Attach explanation if amount certified differs from the amount applied for. Initial all figures in this application and on the Continuation Sheet that are changed to conform to the amount certified.)

ARCHITECT: _____

By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

SCHEDULE OF VALUES AND RETAINAGE (SAMPLE OF AIA DOCUMENT G702)

Document G702, APPLICATION & CERTIFICATION FOR PAYMENT, containing the Contractor's signed Certification is attached. In tabulations below, amounts are stated to the nearest dollar. Use Column I on Contracts where variable retainage for line items apply.

APPLICATION NUMBER:
APPLICATION DATE:
PERIOD TO:
ARCHITECT'S PROJECT NO:

A ITEM NO.	B DESCRIPTION OF WORK	C SCHEDULED VALUE	D FROM PREVIOUS APPLICATION (D+E)	E WORK COMPLETED		F MATERIALS PRESENTLY STORED (NOT IN D OR E)	G TOTAL COMPLETED AND STORED TO DATE (D+E+F)	H % (G + C)	I BALANCE TO FINISH (C-G)	RETAINAGE
				THIS APPLICATION	THIS PERIOD					
SAMPLE ONLY										
TOTALS										

Exhibit K

Extended Warranty and Maintenance Services

The following table provides manufacturer's warranty information that may extend beyond the 1 year parts and labor warranty set forth in the contract. Any manufacturer's warranties that extend beyond the 1 year warranty are for parts only and do not include labor. Manufacturer's warranty start dates vary based on manufacturer specific terms and conditions.

Table 1: Manufacturer's Warranty Information

ECM Tag	ECM Name	Warranty Details
SH-1	Lighting Upgrades	LED Lamps - 5 years, All Other Lamps - 2 years, Ballasts - 5 years
SH-13	Chiller Plant Optimization	JCI Controls Equipment - 2 years
SH-13	Chiller Plant Optimization	JCI Controls Equipment - 2 years, Chillers - 20 years
SH-14	VAV Box Optimization	JCI Controls Equipment - 2 years
SH-15	Electronic Filter Retrofit	Electronic Filters - 5 years
SH-19	Parking Garage Lighting Retrofit	LED Lamps - 5 years, All Other Lamps - 2 years, Ballasts - 5 years
SH-23	Boiler Stack Condensing Economizer	JCI Controls Equipment - 2 years
SH-26	Ventilation AHUs Improvement	JCI Controls Equipment - 2 years
IFM-1	Lighting Upgrades	LED Lamps - 5 years, All Other Lamps - 2 years, Ballasts - 5 years
IFM-2b	Chiller Replacement	JCI Controls Equipment - 2 years
IFM-3	Boiler Replacement	JCI Controls Equipment - 2 years
IFM-4	Domestic Water System Upgrades	JCI Controls Equipment - 2 years
IFM-5	AHU Controls and Electronic Filter Upgrades	JCI Controls Equipment - 2 years, Electronic Filters - 5 years
IFM-6	Inactive Storage Cooling System Upgrade	JCI Controls Equipment - 2 years
IFM-7	Steam Traps and Misc Upgrades	Steam Traps - 2 years
IFM-8	Receiving Dock Infrared Heaters	Infrared Heaters - 4 years
HB-1	Lighting Upgrades	LED Lamps - 5 years, All Other Lamps - 2 years, Ballasts - 5 years
HB-9	Controls and AHU Upgrades	JCI Controls Equipment - 2 years
HB-13	Domestic Water Booster VSD	JCI Controls Equipment - 2 years
HB-16	Dual Duct VAV and Mixed Air Conversion	JCI Controls Equipment - 2 years, Electronic Filters - 5 years
HB-18	Steam Traps and Misc Upgrades	Steam Traps - 2 years
RRCC-1	Lighting Upgrades	LED Lamps - 5 years, All Other Lamps - 2 years, Ballasts - 5 years
RRCC-2	Controls Upgrade and Electronic Filter Retrofit	JCI Controls Equipment - 2 years, Electronic Filters - 5 years
SCW-14	Utility Meters for Administration and Fantus	JCI Controls Equipment - 2 years

Maintenance Services:

There are two areas of service that occur annually during the contract term. They include:

1. Performance Management, including
 - a. Measurement and Verification Services,
 - b. Waste Management Oversight, and
 - c. Chiller Optimization Management
2. York Chiller Maintenance

The summary of annual costs for the on-going service is shown in the table at the end of the exhibit.

1. Performance Management

a. Measurement and Verification Scope of Services

See Exhibit I Performance Tracking Services for a detailed description of M&V Services.

b. Waste Management

The following steps will be taken to implement the JCI Hospital Waste Management Program. The frequency of these steps is outlined in the table below, unless stated otherwise:

- Proper segregation: We will prepare poster sized laminated waste handling guidelines to be posted in soiled utility rooms and other appropriate locations.
- Surveys to identify waste infractions that are in variance with the waste handling guideline standards.
- Hold leadership meetings with a 10 minute Power Point presentation of the waste program's objectives and benefits, describe substantial savings and safety benefits.
- Annually conduct a one day - 3 shift "Waste Champion" seminar on site with 20 minute sessions on the hour from 6 AM to 7 PM. JCI will instruct each department manager to send an appropriate representative from each shift to the hourly session of their choice.
 - Arrange for a "report card" leadership meeting presentation and a 3 shift "retraining" session at the start of each new contract year.
- Conduct surveys of waste facilities and practices of each department to identify waste handling infractions.
- Conduct a statistical sample survey of each JSH department's waste to identify waste handling infractions. Digital photographs of each department's waste infractions will be incorporated into the monthly department reports.
- A brief waste infraction report will be presented to and reviewed with each department manager. This review takes 1 - 3 minutes. The managers are instructed to then review the reports with their staffs at staff meetings over the 3 shifts. The reports utilize bar charts to show infraction totals, details, and how each department compares with all of the other departments.
- We will utilize hospital records and data to provide savings verification reports.
- Arrange for a "report card" leadership meeting presentation and a 3 shift "retraining" session at the start of each new contract year

The services above will be performed annually for the term of the project. At any year during the guarantee period should Cook County cancel the Waste Management services, all savings for this ECM (SH-20) would be classified as non-measured savings and deemed achieved for the

remaining term of the guarantee. These services will be provided for the number of visits shown in the table below.

Year	Number of Visits
1	12
2	6
3	4
4	4
5	3
6	3
7	3
8	3
9	3
10	3
11	3
12	3
13	3
14	3
15	3
16	3
17	3
18	3
19	3
20	3

Owner Requirements:

- Hospital to provide all waste management records and data required for verification of savings.
- Assign employees for Waste Champions. These “waste champions” serve as a conduit of the program’s details to their fellow staff members when our monthly reports are reviewed. As part of the Annual M&V review, Johnson Controls will request access to the maintenance system with the assistance of CC Medical Campus personnel to review software records and verify that maintenance is being performed

c. Chiller Optimization Service

- Includes monthly remote monitoring and two on-site visits of up to three days per visit

2. York Chiller Maintenance

- All 5 inspections will be done in accordance with York Manufactured chiller recommendations, JCI/York Factory trained service technicians will check in and out with engineering each visit and report findings to engineer or owner upon completion of inspection.
- Includes March or April Startup inspection (1 inspection)
- Includes July and September running inspections with one annual oil/refrigerant sample and analysis with a copy of report and recommendations annually to owner (inspection 2 and 3)
- Includes November or December shutdown inspection (inspection 4)
- Includes Winter Maintenance inspection including leak check machine, go through controls and panel, make adjustments or recommend changes to owner (inspection 5)
- Includes parts and labor warranty for 20 years (excluding tubes or water side

maintenance/treatment by owner)

- OWNER IS RESPONSIBLE FOR WATER TREATMENT, ANNUAL HEAD REMOVAL, HEAD GASKETS, TUBE CLEANING, AND HEAD REPLACEMENT, AND PERFORMING EDDY CURRENT TESTING ON ALL TUBES EVERY 3 YEARS.
- CHILLER SERVICE WARRANTY IS BASED ON YORK FACTORY SERVICE COMPLETING ALL SERVICE, MAINTENANCE (EXCEPT HEADS AND TUBES) AND REPAIRS. ANY WORK DONE ON CHILLERS BY OUTSIDE CONTRACTORS WILL VOID 20 YEAR WARRANTY.

Annual Service Costs

Performance Management						
Year	M&V (A)	Chiller Optimization Service (B)	Waste Mangement (C)	M&V, Waste Management, Chiller Plant Monitoring (A+B+C)	Chiller Maintenance (D)	Total Annual Cost (A+B+C+D)
Year 1	\$ 90,970	\$ 15,000	\$ 90,000	\$195,970	\$12,425	\$208,395
Year 2	\$ 93,699	\$ 15,450	\$ 60,000	\$169,149	\$12,798	\$181,947
Year 3	\$ 60,414	\$ 15,914	\$ 60,000	\$136,328	\$13,182	\$149,509
Year 4	\$ 62,226	\$ 16,391	\$ 45,000	\$123,617	\$13,577	\$137,194
Year 5	\$ 64,093	\$ 16,883	\$ 45,000	\$125,976	\$13,984	\$139,960
Year 6	\$ 66,016	\$ 17,389	\$ 45,000	\$128,405	\$14,404	\$142,809
Year 7	\$ 67,996	\$ 17,911	\$ 45,000	\$130,907	\$14,836	\$145,743
Year 8	\$ 70,036	\$ 18,448	\$ 45,000	\$133,484	\$15,281	\$148,766
Year 9	\$ 72,137	\$ 19,002	\$ 45,000	\$136,139	\$15,740	\$151,879
Year 10	\$ 74,302	\$ 19,572	\$ 45,000	\$138,873	\$166,656	\$305,529
Year 11	\$ 76,531	\$ 20,159	\$ 45,000	\$141,689	\$16,698	\$158,388
Year 12	\$ 78,827	\$ 20,764	\$ 45,000	\$144,590	\$17,199	\$161,789
Year 13	\$ 81,191	\$ 21,386	\$ 45,000	\$147,578	\$17,715	\$165,293
Year 14	\$ 83,627	\$ 22,028	\$ 45,000	\$150,655	\$18,247	\$168,902
Year 15	\$ 86,136	\$ 22,689	\$ 45,000	\$153,825	\$18,794	\$172,619
Year 16	\$ 88,720	\$ 23,370	\$ 45,000	\$157,090	\$19,358	\$176,447
Year 17	\$ 91,382	\$ 24,071	\$ 45,000	\$160,452	\$19,938	\$180,391
Year 18	\$ 94,123	\$ 24,793	\$ 45,000	\$163,916	\$20,537	\$184,452
Year 19	\$ 96,947	\$ 25,536	\$ 45,000	\$167,483	\$21,153	\$188,636
Year 20	\$ 99,855	\$ 26,303	\$ 45,000	\$171,158	\$21,787	\$192,945
Totals	\$ 1,599,229	\$ 403,056	\$ 975,000	\$ 2,977,284	\$484,309	\$3,461,593

All payments pursuant to this Exhibit K are subject to the Termination and Suspension provisions contained within the First Amendment to Guaranteed Energy Performance Contract

EXHIBIT L

INSURANCE REQUIREMENTS

A. General Insurance Requirements

Prior to the commencement of the Work, the ESCO shall secure and thereafter shall maintain at all times during the term of this Contract insurance policies in accordance with all the requirements of this Exhibit L. The insurance purchased and maintained by the ESCO shall be on a primary and non-contributory basis and shall not be excess or pro rata to any other insurance issued or maintained by Cook County. The ESCO's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability. The insurance may be provided in a policy or policies, primary and excess. Nothing contained in these insurance requirements is to be construed as limiting the extent of the ESCO's responsibility for the payment of damages resulting from the operations of this Contract.

B. Specific Coverages Required

The specific policies required are set forth below, and the limits of liability shall be as stated below, unless, prior to commencement of any Work, written approval is granted by the County Director of Risk Management for variation from those limits.

1. Workers Compensation Insurance

Workers Compensation and Employer Liability insurance is required in accordance with the Laws of the State of Illinois or any other applicable jurisdiction, including the following.

- Employers' Liability coverage with limits of \$1,000,000 each accident, \$1,000,000 each employee, and \$1,000,000 policy limit for disease
- Broad form all states coverage
- Waiver of Subrogation

2. Commercial General Liability Insurance

An occurrence form Commercial General Liability Insurance policy is required to cover bodily injury and property damage. The General Liability coverage shall not be less than \$1,000,000 per occurrence and \$2,000,000 in the aggregate with the following provisions included:

- All premises and operations
- Explosion, collapse and underground damage
- ESCO's Protective coverage for independent Contractors and Subcontractors of the ESCO
- Contractual liability for the obligations assumed in, Indemnity, Subrogation and Waiver, Waiver of Recovery, and this Exhibit L, Insurance Requirements

- Personal Injury Liability Endorsement with no exclusions pertaining to employment and contractual obligations
- Broad Form Property Damage Liability
- Products and Completed Operations coverage (maintained for the same or greater limits, for a minimum of 2 years following Project completion).
- Railroad Protective Liability: Where such exposure exists, the ESCO will provide coverage in the name of each railroad company having jurisdiction over right-of-way across which Work under the Contract is to be performed.
- The limits of insurance shall be provided on a “per project aggregate” basis

3. Comprehensive Automobile Liability Insurance

When any motor vehicles are used in connection with the Services to be performed, the ESCO shall secure Comprehensive Automobile Insurance to cover all owned, non-owned and hired automobiles, trucks, and trailers. The limits shall not be less than the following:

- Liability - All Autos: Bodily Injury & Property -
\$ 1,000,000 per Occurrence
- Uninsured/Motorists: Per Illinois Requirements

4. ESCO’s Pollution Liability Insurance – ESCO does not maintain a separate policy of pollution liability insurance. The insurance pursuant to this section will be provided through ESCO’s Commercial General Liability Insurance and Umbrella Coverage according to the terms of the policies.

The policy(ies) will provide coverage for sums the ESCO becomes legally obligated to pay as loss as a result of claims for bodily injury, property damage or clean-up costs caused by a pollution incident. Pollution incidents will include the discharge, dispersal, release or escape of any solid, liquid, gaseous or thermal irritant or contaminant, including but not limited to smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, medical waste, waste materials, lead, asbestos, silica, hydrocarbons and microbial matter. Microbial matter includes fungi, bacterial or viral matter which reproduces through the release of spores or the splitting of cells or other means, including but not limited to mold, mildew and viruses, whether or not such microbial matter is living.

Cook County and their agents will be included as additional insureds on the ESCO’s pollution liability and the coverage afforded the additional insureds under this policy will state that it is primary and non-contributory.

ESCO waives and will require its pollution liability insurer to waive their rights of subrogation against Cook County and its agents for claims insured by the ESCO's pollution liability insurance.

If the policy is a 'claims made' form or if any coverage under this policy is written as 'claims made', coverage will be maintained for three years after project completion.

5. Professional Errors and Omissions Liability Insurance

The ESCO shall maintain Professional Errors and Omissions Liability Insurance with limits not less than \$2,000,000 per occurrence and \$2,000,000 in the aggregate, with a deductible of no more than \$100,000 per negligent act, error or omission and in the aggregate. Such insurance will be provided on a claims made basis and shall be kept in force for a period not less than three years beyond the earlier to occur of Final Acceptance of the entire Project or termination of the Project. To the extent available, such insurance shall be retroactive to the date that the ESCO commences Services pursuant to this Contract. The ESCO shall annually provide the County with proof of renewal. The deductible shall be the responsibility of the ESCO.

6. Umbrella Excess Liability Insurance

Umbrella Excess Liability Insurance shall be required in addition to coverage specified pursuant to Sections B.1 through B. 4 above, applying to the County, any Program Manager, the ESCO and Subcontractors of any tier in the amounts stated below:

\$10,000,000 each occurrence for all liability

\$10,000,000 in the aggregate per policy year

\$10,000,000 Products/Completed Operations aggregate

The limits of insurance shall be provided on a "per project" basis.

Subcontractors of any tier will be required to provide Umbrella Excess Liability Insurance in the amounts stated below:

\$2,000,000 each occurrence for all liability

\$2,000,000 in the aggregate per policy year

\$2,000,000 Products/Completed Operations aggregate

The limits of insurance shall be provided on a "per project" basis.

7. Builders' Risk Insurance/Installation Floater Insurance

Either Builders' Risk Insurance or Installation Floater Insurance is required on an all risk form, including flood and earthquake, for 100% of the completed value of the Work, unless otherwise

specified in the Special Conditions. A Builders' Risk policy shall be required for construction of a building or an addition to a structure. Installation Floater Insurance shall be required for renovation projects. Further provisions regarding such insurance will be set forth in the Special Conditions. Such policy shall include as named insured parties the County and all Subcontractors, as their interests may appear. The policy deductible shall not exceed \$50,000, unless otherwise set forth in Special Conditions, and the ESCO shall be responsible for payment of the deductible in the event of covered loss. The policy shall also include loss of use to protect the County from being financially harmed because of delay due to an insured loss in the building improvements under construction. The off-site and in-transit limit will be sufficient to cover the value of the largest component. Upon request, the ESCO will furnish County with the cost of the premium and deductible for the Builders' Risk or Installation Floater policy.

Additional Insured Parties

The following shall be added as additional insured parties on the Commercial General Liability, Automobile and Umbrella Liability policies.

- The County of Cook, Illinois
- Commissioners, Officials and Employees of Cook County
- Any Program Manager, its sub-consultants, and their respective partners, officers and employees
- Others as may be specified in the Contract Documents

The additional insured parties shall have the rights of an Additional Insured as provided by ISO endorsement CG 20 10 and CG 20 37 or their equivalent. No other form will be accepted without express prior written approval of Cook County Risk Management. All liability policies shall entirely delete ISO endorsements CG21 34 and CG21 39, and any other endorsement or policy provision which limits or excludes products liability, completed operations, or contractual liability coverage. The coverage provided to the additional insured parties by the ESCO's insurance will be on a primary and non-contributory basis and not excess or pro rata to any other insurance issued to Cook County.

Damage Claims

The ESCO shall furnish to the Owner written acknowledgement of receipt from the insurance carrier for each damage claim involving the Work, including the insurance carrier's assigned claim number. Upon request, the ESCO or its insurance carrier shall also furnish to the Owner a status report on all damage claims, including inspections made, the disposition of claims, and what action has been taken towards settlement of each claim. If the ESCO fails to furnish the acknowledgment of any report the Owner may withhold the amount of such damage claims from any subsequent payment request, to be held until full compliance.

Payment

All insurance policies required hereunder shall be paid for by the ESCO. The cost of such insurance policies will not be a specific bid item, but the cost of such insurance will be covered in the various unit prices bid or in the total cost of construction as appropriate. No overhead or profit elements will be allowed on insurance premiums or self-insured retention.

Additional ESCO Obligations Regarding Insurance

Nothing contained in these insurance requirements is to be construed as limiting the extent of the ESCO's responsibility for payment of damages resulting from operations under this Contract. The ESCO shall advise all insurance companies to familiarize themselves with the conditions and provisions of this Contract dealing with waivers of subrogation, insurance and indemnification. ESCO and all Subcontractors shall not violate or knowingly permit to be violated any condition of the policies of insurance provided by the terms of this Contract and shall at all times satisfy any requirements of the insurance companies issuing them.

Applicability to Subcontractors

ESCO shall require all Subcontractors to obtain and provide evidence of insurance policies described in Sections B.1 through B.4 prior to the commencement of any Work or presence on the site of such Subcontractor. The insurance carried by Subcontractors shall meet all the requirements of this Exhibit L unless otherwise provided in the Contract. All requirements imposed by the policies referred to above upon and to be performed by ESCO shall likewise be imposed upon, assumed and performed by each of the Subcontractors. ESCO and each Subcontractor shall execute with their Subcontractors a written agreement which shall include all such requirements. Any "hold harmless" and "indemnity" clause must benefit and not be detrimental in any way to the County, its other ESCOs, any Program Manager and others so specifically identified in this Contract.

Tools and Equipment

The ESCO shall secure, pay for and maintain, and shall require its Subcontractors to maintain, property casualty insurance as necessary to protect the ESCO and Subcontractors against loss of owned or rented capital equipment and tools, including any tools owned by mechanics, and any tools, equipment, scaffolding, stagings, towers, and forms owned or rented by the ESCO and Subcontractors. The requirement to secure and maintain such insurance is solely for the benefit of the ESCO and Subcontractors. Failure of the ESCO and Subcontractors to secure such insurance or to maintain adequate levels of coverage shall not obligate the Owner, Program Manager, and the Architect for any loss of owned or rented equipment. If the ESCO or any

Subcontractors secures such insurance, the insurance policy shall include a waiver of subrogation clause as follows: "It is agreed that in no event shall this insurance company have any right to recovery against the Owner and any Program Manager."

Insurance Notices and Certificates

All policies of insurance which ESCO may be required under terms of this Contract to secure and maintain shall be endorsed to provide that the insurance company shall notify the Program Manager, Director and the Chief Procurement Officer at least 90 days prior to the effective date of any cancellation or modification of such policies; provided, however, that only 30 days notice shall be required for cancellation due to non-payment of premium. ESCO is required to furnish certificates of insurance to the County prior to execution of the Contract by the County, and shall provide an updated certificate of insurance no later than 30 days prior to the expiration date of any policy showing that such policy has been renewed or replaced. Prior to the date on which ESCO or any Subcontractor commences performance of its part of the Work, ESCO shall cause to be furnished to the County any updates of such certificates of insurance maintained by the ESCO and shall submit certificates of insurance for each Subcontractor in connection with the performance of the Work. As and when the County may direct, copies of insurance policies and endorsements shall be submitted to the County. All policies, endorsements, and certificates of insurance submitted to the County shall be in a form and content acceptable to the County.

EVIDENCE OF INSURANCE

ESCO must submit evidence of insurance in a form acceptable to the County prior to the Effective Date. The ESCO shall furnish to the Chief Procurement Officer and to the County's Director of Risk Management certificates of insurance, issued by an insurance company authorized to do business under the laws of the State of Illinois, accepted by the County and meeting the requirements of and shall have a financial rating no lower than VII and a policy holder's service rating no lower than (A-) as listed in A.M. Best's Key Rating Guide, current edition or interim report. Such policies shall provide that no cancellation or modification of the policies shall occur without at least sixty (60) calendar days prior written notice given to the County; provided, however that only 30 days notice shall be required for cancellation due to non-payment of premium. The receipt of any certificate of insurance does not constitute agreement by the County that the insurance requirements have been fully met or that the insurance policies indicated on the certificate of insurance are in compliance with insurance required above. In no event shall any failure of the County to receive certificates of insurance required hereof or to demand receipt of such Certificates of Insurance be construed as a waiver of ESCO's obligations to obtain insurance pursuant to these insurance requirements. The County shall have the right to modify, delete, alter or change these insurance requirements and shall provide JCI with no less than thirty (30) days written notice of any such modification, deletion, alteration or change.



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
07/18/2012

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Marsh USA Inc. 411 E. Wisconsin Avenue Suite 1600 Milwaukee, WI 53202 Attn: JCI.Certrequest@marsh.com 011077--ISO-11-12 2PZJ-0 11-12		CONTACT NAME: PHONE (A/C, No, Ext): FAX (A/C, No): E-MAIL ADDRESS:	
INSURED Johnson Controls, Inc. York International Corporation Attn: Corp. Risk Mgmt. X-92 P.O. Box 591 Milwaukee, WI 53201		INSURER(S) AFFORDING COVERAGE NAIC #	
		INSURER A : ACE American Insurance Company	22667
		INSURER B : Sentry Insurance A Mutual Co	24988
		INSURER C : Indemnity Insurance Company Of North America	43575
		INSURER D : ACE Property & Casualty Insurance Company	20699
		INSURER E :	
		INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** CHI-004458048-01 **REVISION NUMBER: 2**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Contractual Liability <input checked="" type="checkbox"/> XCU Included GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC			HD0G25531693	10/01/2011	10/01/2012	EACH OCCURRENCE \$ 5,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 5,000,000 MED EXP (Any one person) \$ 50,000 PERSONAL & ADV INJURY \$ 5,000,000 GENERAL AGGREGATE \$ 5,000,000 PRODUCTS - COMPROP AGG \$ 5,000,000 \$
B	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS			90-04606-01 90-04606-02 (MA)	10/01/2011 10/01/2011	10/01/2012 10/01/2012	COMBINED SINGLE LIMIT (Ea accident) \$ 5,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
D	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTIONS			XOOG25833284	10/01/2011	10/01/2012	EACH OCCURRENCE \$ 10,000,000 AGGREGATE \$ 10,000,000 \$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A	WLRC46483704 (CA,AZ,MA) SCFC46770729 (WI) WLRC46770742 (AOS - See page 2) WCUC46772374 (Excess WC - OH, WA)	10/01/2011 10/01/2011 10/01/2011 10/01/2011	10/01/2012 10/01/2012 10/01/2012 10/01/2012	<input checked="" type="checkbox"/> WC STATU-TORY LIMITS <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)
Re: JCI Contract Number 2PZJ-0004, Project Location: John H. Stroger, Jr., Hospital of Cook County Campus
The County of Cook, Illinois, Commissioners, Officials and Employees of Cook County, Any Program Manager, its sub-consultants, and their respective partners, officers and employees and others as may be specified in the Contract Documents are included as additional insured per the attached. The Umbrella / Excess Liability policy, if required by written contract, includes coverage for Additional Insureds, but for no broader coverage than is provided by the Additional Insured provisions of the General Liability and Auto Liability policies.

CERTIFICATE HOLDER Cook County, Illinois Director of Capital Planning 69 West Washington, Suite 3000 Chicago, IL 60602	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE of Marsh USA Inc. Manashi Mukherjee <i>Manashi Mukherjee</i>
---	---

AGENCY CUSTOMER ID: 011077

LOC #: Milwaukee



ADDITIONAL REMARKS SCHEDULE

Page 2 of 2

AGENCY Marsh USA Inc.		NAMED INSURED Johnson Controls, Inc. York International Corporation ABN: Corp. Risk Mgmt. X-92 P.O. Box 591 Milwaukee, WI 53201	
POLICY NUMBER		EFFECTIVE DATE:	
CARRIER	NAIC CODE		

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,
FORM NUMBER: 25 FORM TITLE: Certificate of Liability Insurance

WORKERS COMPENSATION

Workers Compensation "AOS" Policy includes coverage for the following states: AK, AL, AR, CO, CT, DC, DE, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MD, ME, MI, MN, MO, MS, MT, NC, NE, NH, NJ, NM, NV, NY, OK, OR, PA, RI, SC, SD, TN, TX, UT, VA, VT, WV

PRIMARY COVERAGE

The General Liability and Automobile Liability policies are primary and not excess of or contributing with other insurance or self-insurance, where required by written lease or written contract.

WAIVER OF SUBROGATION

The General Liability, Automobile Liability, Workers Compensation and Employers Liability policies include a waiver of subrogation in favor of the certificate holder and additional insureds to the extent required by written contract.

ADDITIONAL INSURED - AUTOMOBILE LIABILITY

The Automobile Liability policy, if required by written contract, includes coverage for Additional Insureds as required by such contract.

ADDITIONAL INSURED - GENERAL LIABILITY

For General Liability, if required by contract, the following are included as additional insureds, as required pursuant to a contract with a named insured, per attached Policy Endorsements A5 (ISO CG 20 10 07 04) and A5A (ISO CG 20 37 07 04): THE CERTIFICATE HOLDER LISTED ON THIS CERTIFICATE OF LIABILITY INSURANCE, AND EACH OTHER PERSON OR ORGANIZATION REQUIRED TO BE INCLUDED AS AN ADDITIONAL INSURED PURSUANT TO A CONTRACT WITH THE NAMED INSURED.



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
07/18/2012

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Marsh USA Inc. 411 E. Wisconsin Avenue Suite 1600 Milwaukee, WI 53202 Attn: JCI.Certrequest@marsh.com 011077-PROF-12-13 2PZJ-0 12-13		CONTACT NAME: PHONE (A/C, No, Ext): E-MAIL: ADDRESS:		FAX (A/C, No):	
INSURED Johnson Controls, Inc. York International Corporation Attn: Corp. Risk Mgmt. X-92 P.O. Box 591 Milwaukee, WI 53201		INSURER(S) AFFORDING COVERAGE		NAIC #	
		INSURER A : Executive Risk Indemnity Inc		35181	
		INSURER B :			
		INSURER C :			
		INSURER D :			
		INSURER E :			
		INSURER F :			

COVERAGES **CERTIFICATE NUMBER:** CH-004458049-01 **REVISION NUMBER:** 4

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	GENERAL LIABILITY <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC						EACH OCCURRENCE	\$
							DAMAGE TO RENTED PREMISES (Ea occurrence)	\$
							MED EXP (Any one person)	\$
							PERSONAL & ADV INJURY	\$
							GENERAL AGGREGATE	\$
							PRODUCTS - COMP/OP AGG	\$
								\$
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS						COMBINED SINGLE LIMIT (Ea accident)	\$
							BODILY INJURY (Per person)	\$
							BODILY INJURY (Per accident)	\$
							PROPERTY DAMAGE (Per accident)	\$
								\$
	<input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input type="checkbox"/> RETENTION \$						EACH OCCURRENCE	\$
							AGGREGATE	\$
								\$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below						WC STATU-TORY LIMITS	OTH-ER
							E.L. EACH ACCIDENT	\$
							E.L. DISEASE - EA EMPLOYEE	\$
							E.L. DISEASE - POLICY LIMIT	\$
A	Professional Liability (claims made coverage)			8170-3052	02/01/2012	02/01/2013	Each Claim or Related Claim	2,000,000
							Aggregate	2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Re: JCI Contract Number 2PZJ-0004, Project Location: John H. Stroger, Jr., Hospital of Cook County Campus

CERTIFICATE HOLDER

Cook County, Illinois
 Director of Capital Planning
 69 West Washington, Suite 3000
 Chicago, IL 60602

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE
 of Marsh USA Inc.

Manashi Mukherjee
Manashi Mukherjee

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ADDITIONAL INSURED - OWNERS, LESSEES OR CONTRACTORS - SCHEDULED PERSON OR ORGANIZATION

Named Insured Johnson Controls, Inc.			Endorsement Number 1
Policy Symbol HDO	Policy Number G25531693	Policy Period 10/01/2011 to 10/01/2012	Effective Date of Endorsement
Issued By (Name of Insurance Company) ACE American Insurance Company			

Insert the policy number. The remainder of the information is to be completed only when this endorsement is issued subsequent to the preparation of the policy.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name of Additional Insured Person(s) Or Organization(s): Each person or organization required by contract, if not specifically included in any other Additional Insured endorsement.
Location(s) Of Covered Operations As required by contract.
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

Endorsement #A5
CG 20 10 07 04

ADDITIONAL INSURED - OWNERS, LESSEES OR CONTRACTORS - SCHEDULED PERSON OR ORGANIZATION

<p>A. Section II - Who is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part by:</p> <ol style="list-style-type: none"> 1. Your acts or omissions; or 2. The acts or omissions of those acting on your behalf; in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above. 	<p>B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:</p> <p>This insurance does not apply to "bodily injury" or "property damage" occurring after:</p> <ol style="list-style-type: none"> 1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or 2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.
--	--

Authorized Agent

ADDITIONAL INSURED - OWNERS, LESSEES OR CONTRACTORS - COMPLETED OPERATIONS

Named Insured		Johnson Controls, Inc.	Endorsement Number	2
Policy Symbol	Policy Number	Policy Period	Effective Date of Endorsement	
HDO	G25531693	10/01/2011 to 10/01/2012		
Issued By (Name of Insurance Company)				
ACE American Insurance Company				

Insert the policy number. The remainder of the information is to be completed only when this endorsement is issued subsequent to the preparation of the policy.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name of Additional Insured Person(s) Or Organization(s): Each person or organization required by contract, if not specifically included in any other Additional Insured endorsement.
Location(s) Of Covered Operations As required by contract.
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

Endorsement #A5A
CG 20 37 07 04

ADDITIONAL INSURED - OWNERS, LESSEES OR CONTRACTORS - COMPLETED OPERATIONS
Section II - Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury" or "property damage" caused, in whole or in part, by "your work" at the location designated and described in the schedule of this endorsement performed for that additional insured and included in the "products-completed operations hazard."

Authorized Agent

FACTORY MUTUAL INSURANCE COMPANY



300 South Northwest Highway
Park Ridge, IL 60068
Tel: 847-430-7000
Fax: 847-430-7198

POLICY INFORMATION FORM

This Policy Information Form confirms the stated coverage as of the date issued and does not amend, extend, or alter the coverage offered by the policies listed herein.

TITLE OF INSURED:

Johnson Controls, Inc.

Policy No: US: FD387 / Canada: FD389

Effective: 1 October, 2011

Account No: 1-02013

Expires: 1 October, 2012

Location of Property Covered:

1901 W. Harrison Street
Chicago, IL 60612

COVERAGE IN FORCE: (Subject to limits of liability, deductibles and all conditions in the policy)

Insurance Provided:	Peril:	Limit of Liability:
Property Damage	All Risk	\$10,000,000 per installation location \$10,000,000 per conveyance

This Policy Insures the Following Kinds of Property:

Contract No. 2PZJ-0004

Effective Date: 7/18/2012

Estimated Completion Date: 10/1/2014

Description of Property: John H. Stroger, Jr., Hospital of Cook County Campus

Mailing:

ATTN: Director of Capital Planning

Cook County, Illinois
69 West Washington, Suite 3000
Chicago, IL 60602

By:

Authorized Signature

Timothy Kelly

7/18/2012

Date

FACTORY MUTUAL INSURANCE COMPANY



300 South Northwest Highway
Park Ridge, IL 60068
Tel: 847-430-7000
Fax: 847-430-7198

POLICY INFORMATION FORM

This Policy Information Form confirms the stated coverage as of the date issued and does not amend, extend, or alter the coverage offered by the policies listed herein.

TITLE OF INSURED:

Johnson Controls, Inc.

Policy No: US: FD387 / Canada: FD389

Effective: 1 October, 2011

Account No: 1-02013

Expires: 1 October, 2012

Location of Property Covered:

1901 W. Harrison Street
Chicago, IL 60612

COVERAGE IN FORCE: (Subject to limits of liability, deductibles and all conditions in the policy)

Insurance Provided:

Peril:

Limit of Liability:

Property Damage

All Risk

\$10,000,000 per installation location
\$10,000,000 per conveyance

This Policy Insures the Following Kinds of Property:

Contract No. 2PZJ-0004

Effective Date: 7/20/2012

Estimated Completion Date: 10/1/2014

Description of Property: Hektoen Building

Mailing:

ATTN: Director of Capital Planning

Cook County, Illinois
69 West Washington, Suite 3000
Chicago, IL 60602

By:

Authorized Signature

Timothy Kelly

7/20/2012

Date

FACTORY MUTUAL INSURANCE COMPANY



300 South Northwest Highway
Park Ridge, IL 60068
Tel: 847-430-7000
Fax: 847-430-7198

POLICY INFORMATION FORM

This Policy Information Form confirms the stated coverage as of the date issued and does not amend, extend, or alter the coverage offered by the policies listed herein.

TITLE OF INSURED:

Johnson Controls, Inc.

Policy No: US: FD387 / Canada: FD389 **Effective:** 1 October, 2011
Account No: 1-02013 **Expires:** 1 October, 2012

Location of Property Covered:

1901 W. Harrison Street
Chicago, IL 60612

COVERAGE IN FORCE: (Subject to limits of liability, deductibles and all conditions in the policy)

Insurance Provided:	Peril:	Limit of Liability:
Property Damage	All Risk	\$10,000,000 per installation location \$10,000,000 per conveyance

This Policy Insures the Following Kinds of Property:

Contract No. 2PZJ-0004

Effective Date: 7/20/2012
Estimated Completion Date: 10/1/2014

Description of Property: John H. Stroger, Jr., Hospital of Cook County

Mailing:

ATTN: Director of Capital Planning

Cook County, Illinois
69 West Washington, Suite 3000
Chicago, IL 60602

By:

Authorized Signature

Timothy Kelly

7/20/2012

Date

FACTORY MUTUAL INSURANCE COMPANY



300 South Northwest Highway
Park Ridge, IL 60068
Tel: 847-430-7000
Fax: 847-430-7198

POLICY INFORMATION FORM

This Policy Information Form confirms the stated coverage as of the date issued and does not amend, extend, or alter the coverage offered by the policies listed herein.

TITLE OF INSURED:

Johnson Controls, Inc.

Policy No: US: FD387 / Canada: FD389 **Effective:** 1 October, 2011
Account No: 1-02013 **Expires:** 1 October, 2012

Location of Property Covered:

1901 W. Harrison Street
Chicago, IL 60612

COVERAGE IN FORCE: (Subject to limits of liability, deductibles and all conditions in the policy)

Insurance Provided:	Peril:	Limit of Liability:
Property Damage	All Risk	\$10,000,000 per installation location \$10,000,000 per conveyance

This Policy Insures the Following Kinds of Property:

Contract No. 2PZJ-0004

Effective Date: 7/20/2012

Estimated Completion Date: 10/1/2014

Description of Property: Ruth M. Rothstein CORE Center

Mailing:

ATTN: Director of Capital Planning

Cook County, Illinois
69 West Washington, Suite 3000
Chicago, IL 60602

By:

Authorized Signature

Timothy Kelly

7/20/2012

Date

FACTORY MUTUAL INSURANCE COMPANY



300 South Northwest Highway
Park Ridge, IL 60068
Tel: 847-430-7000
Fax: 847-430-7198

POLICY INFORMATION FORM

This Policy Information Form confirms the stated coverage as of the date issued and does not amend, extend, or alter the coverage offered by the policies listed herein.

TITLE OF INSURED:

Johnson Controls, Inc.

Policy No: US: FD387 / Canada: FD389

Effective: 1 October, 2011

Account No: 1-02013

Expires: 1 October, 2012

Location of Property Covered:

1901 W. Harrison Street
Chicago, IL 60612

COVERAGE IN FORCE: (Subject to limits of liability, deductibles and all conditions in the policy)

Insurance Provided:	Peril:	Limit of Liability:
Property Damage	All Risk	\$10,000,000 per installation location \$10,000,000 per conveyance

This Policy Insures the Following Kinds of Property:

Contract No. 2PZJ-0004

Effective Date: 7/20/2012

Estimated Completion Date: 10/1/2014

Description of Property: Institute of Forensic Medicine

Mailing:

ATTN: Director of Capital Planning

Cook County, Illinois
69 West Washington, Suite 3000
Chicago, IL 60602

By:

Authorized Signature

Timothy Kelly

7/20/2012

Date

FACTORY MUTUAL INSURANCE COMPANY



300 South Northwest Highway
Park Ridge, IL 60068
Tel: 847-430-7000
Fax: 847-430-7198

POLICY INFORMATION FORM

This Policy Information Form confirms the stated coverage as of the date issued and does not amend, extend, or alter the coverage offered by the policies listed herein.

TITLE OF INSURED:

Johnson Controls, Inc.

Policy No: US: FD387 / Canada: FD389

Effective: 1 October, 2011

Account No: 1-02013

Expires: 1 October, 2012

Location of Property Covered:

1901 W. Harrison Street
Chicago, IL 60612

COVERAGE IN FORCE: (Subject to limits of liability, deductibles and all conditions in the policy)

Insurance Provided:	Peril:	Limit of Liability:
Property Damage	All Risk	\$10,000,000 per installation location \$10,000,000 per conveyance

This Policy Insures the Following Kinds of Property:

Contract No. 2PZJ-0004

Effective Date: 7/20/2012

Estimated Completion Date: 10/1/2014

Description of Property: Powerhouse

Mailing:

ATTN: Director of Capital Planning

Cook County, Illinois
69 West Washington, Suite 3000
Chicago, IL 60602

By:

Authorized Signature

Timothy Kelly

7/20/2012

Date

Exhibit M

Facility Operations and Maintenance Procedures Affected

The following lists detail the changes in maintenance that can be expected with each of the ECMs. During training Johnson Controls will present to the County O&M manuals that detail the manufacturer recommended maintenance procedures for any equipment being provided under the contract.

1. Stroger Hospital

SH-1: Lighting Upgrades

Existing Conditions:

- Approximately 25% of the lamps are being replaced annually
- Approximately 10% of the ballasts are being replaced annually

Proposed Conditions:

- The new lamps have a projected life of 30,000 hours resulting in no replacement for approximately 5 years
- The new ballasts have a projected life of 100,000 hours resulting in no replacement for approximately 10 years

SH-14: VAV Box Optimization

The implementation of this ECM will not affect any facility operations or maintenance procedures.

SH-15: Electronic Filter Retrofit

The following are the new maintenance procedures:

- The new filter system will reduce existing filter material cost
- The new electronic filters will require cleaning once per year

SH-18: Lighting Controller

The implementation of this ECM will not affect any facility operations or maintenance procedures.

SH-19: Parking Garage Lighting Retrofit

Existing Conditions:

- Approximately 25% of the lamps are being replaced annually
- Approximately 10% of the ballasts are being replaced annually

Proposed Conditions:

- The new LED fixtures have a life between 150,000 to 200,000 hours eliminating replacement of lamps and ballast for approximately 20 years

SH-20: Waste Management

The following new equipment will require maintenance

- Autoclave

SH-22: Demand Response

Training on GridConnect will be provided. All Capacity and Economic Demand Response activity is managed via GridConnect.

SH-26: Ventilation AHUs Improvement

Maintenance will be required for the following additional equipment:

- Smoke and heat sensors
- Variable Speed Drives for the exhaust fans and make-up air handling unit

2. Power House

SH-13: Chiller Plant Optimization

There will be two new chillers installed as part of this ECM. These chillers will have parts and labor covered for the duration of the Performance Period, including chiller teardown at Year 10. This is covered under our proposed annual service maintenance contract included in the cash flow.

The following additional equipment will be installed and will require maintenance:

- Variable Frequency Drives
- Control Valves

SH-23: Boiler Stack Condensing Economizer

Operation of the existing boilers located in the Power House will require a change in operation due to the new equipment, control strategies and sequence of operations. There will be no change in maintenance procedures due to this energy conservation measure.

3. Institute of Forensic Medicine

IFM-1: Lighting Upgrades

Existing Conditions:

- Approximately 25% of the lamps are being replaced annually

- Approximately 10% of the ballasts are being replaced annually

Proposed Conditions:

- The new lamps have a projected life of 30,000 hours resulting in no replacement for approximately 5 years
- The new ballasts have a projected life of 100,000 hours resulting in no replacement for approximately 20 years

IFM-2b: Chiller Replacement

Maintenance costs will decrease by eliminating or reducing operating hours for the steam absorption chiller due to the addition of electric chiller. The following new equipment will require maintenance

- Variable speed drives for the chilled water pumps
- Variable speed drives for the cooling tower fans

IFM-3: Boiler Replacement

Maintenance costs from vendors will decrease by eliminating the operation of the Eclipse boilers. The new boilers will operate with less complexity but need to be monitored to ensure that they are operating as intended.

IFM-4: Domestic Water System Upgrades

The following new equipment will require maintenance

- Main booster pump package serving the main building. The pump motor will be equipped with a variable speed drive
- Variable speed drives for the domestic water booster system serving the Autopsy Rooms

IFM-5: AHU Controls Upgrade

This ECM will positively affect the facility operations with the replacement of the older pneumatic controls with new DDC controls and monitoring capabilities to allow for proactive maintenance. The following new equipment will require maintenance

- Variable speed drives for the AHUs

IFM-6: Inactive Storage Cooling System Upgrade

The maintenance cost from vendors required for repair and replacement will be eliminated. The projected life of the new equipment is 20 years but will need to be monitored to allow for proactive maintenance.

IFM-7: Steam Traps and Misc Upgrades

The facility operations and maintenance will experience a decrease in failed traps and maintenance calls related to poor heating in the spaces. No additional maintenance is required.

IFM-8: Receiving Dock Infrared Heaters

The facility operations and maintenance will experience a decrease in failed traps and maintenance calls related to poor heating in the spaces. No additional maintenance is required.

4. Hektoen Building

HB-1: Lighting Upgrades

Existing Conditions:

- Approximately 25% of the lamps are being replaced annually
- Approximately 10% of the ballasts are being replaced annually

Proposed Conditions:

- The new lamps have a projected life of 30,000 hours resulting in no replacement for approximately 5 years
- The new ballasts have a projected life of 100,000 hours resulting in no replacement for approximately 20 years

HB-9: Controls and AHU Upgrades

This energy retrofit will allow the building staff to monitor and control the air-handling units through the BAS. There will be no change in maintenance procedures or facility operations.

HB-13: Domestic Water Booster VSD

There will be no change in facility operations due to the implementation of this ECM. Periodic maintenance will be required for the new VSDs.

HB-16: Dual Duct VAV and Mixed Air Conversion

The upgrade of controls (AHU and VAV boxes) will automate the temperature control of the space reducing maintenance.

Additional maintenance will be required for new variable speed drives and proactive maintenance on the new VAV boxes and radiation control valves.

HB-16a: AHU Replacement

There will be no change in facility operations due to the implementation of this ECM.

HB-18: Steam Traps and Misc Upgrades

The facility operations and maintenance will experience a decrease in failed traps and maintenance calls related to poor heating in the spaces. No additional maintenance from the hospital staff is required.

5. Ruth M. Rothstein Core Center

RRCC-1: Lighting Upgrades

Existing Conditions:

- Approximately 25% of the lamps are being replaced annually
- Approximately 10% of the ballasts are being replaced annually

Proposed Conditions:

- The new lamps have a projected life of 30,000 hours resulting in no replacement for approximately 5 years
- The new ballasts have a projected life of 100,000 hours resulting in no replacement for approximately 20 years

RRCC-2: Controls Upgrade and Electronic Filter Retrofit

The following are the new maintenance procedures:

- The new filter system will reduce existing filter material cost
- The new electronic filters will require cleaning once per year

Exhibit M

Facility Operations and Maintenance Procedures Affected

The following lists detail the changes in maintenance that can be expected with each of the ECMs. During training Johnson Controls will present to the County O&M manuals that detail the manufacturer recommended maintenance procedures for any equipment being provided under the contract.

1. Stroger Hospital

SH-1: Lighting Upgrades

Existing Conditions:

- Approximately 25% of the lamps are being replaced annually
- Approximately 10% of the ballasts are being replaced annually

Proposed Conditions:

- The new lamps have a projected life of 30,000 hours resulting in no replacement for approximately 5 years
- The new ballasts have a projected life of 100,000 hours resulting in no replacement for approximately 10 years

SH-14: VAV Box Optimization

The implementation of this ECM will not affect any facility operations or maintenance procedures.

SH-15: Electronic Filter Retrofit

The following are the new maintenance procedures:

- The new filter system will reduce existing filter material cost
- The new electronic filters will require cleaning once per year

SH-18: Lighting Controller

The implementation of this ECM will not affect any facility operations or maintenance procedures.

SH-19: Parking Garage Lighting Retrofit

Existing Conditions:

- Approximately 25% of the lamps are being replaced annually
- Approximately 10% of the ballasts are being replaced annually

Proposed Conditions:

- The new LED fixtures have a life between 150,000 to 200,000 hours eliminating replacement of lamps and ballast for approximately 20 years

SH-20: Waste Management

The following new equipment will require maintenance

- Autoclave

SH-22: Demand Response

Training on GridConnect will be provided. All Capacity and Economic Demand Response activity is managed via GridConnect.

SH-26: Ventilation AHUs Improvement

Maintenance will be required for the following additional equipment:

- Smoke and heat sensors
- Variable Speed Drives for the exhaust fans and make-up air handling unit

2. Power House

SH-13: Chiller Plant Optimization

There will be two new chillers installed as part of this ECM. These chillers will have parts and labor covered for the duration of the Performance Period, including chiller teardown at Year 10. This is covered under our proposed annual service maintenance contract included in the cash flow.

The following additional equipment will be installed and will require maintenance:

- Variable Frequency Drives
- Control Valves

SH-23: Boiler Stack Condensing Economizer

Operation of the existing boilers located in the Power House will require a change in operation due to the new equipment, control strategies and sequence of operations. There will be no change in maintenance procedures due to this energy conservation measure.

3. Institute of Forensic Medicine

IFM-1: Lighting Upgrades

Existing Conditions:

- Approximately 25% of the lamps are being replaced annually

- Approximately 10% of the ballasts are being replaced annually

Proposed Conditions:

- The new lamps have a projected life of 30,000 hours resulting in no replacement for approximately 5 years
- The new ballasts have a projected life of 100,000 hours resulting in no replacement for approximately 20 years

IFM-2b: Chiller Replacement

Maintenance costs will decrease by eliminating or reducing operating hours for the steam absorption chiller due to the addition of electric chiller. The following new equipment will require maintenance

- Variable speed drives for the chilled water pumps
- Variable speed drives for the cooling tower fans

IFM-3: Boiler Replacement

Maintenance costs from vendors will decrease by eliminating the operation of the Eclipse boilers. The new boilers will operate with less complexity but need to be monitored to ensure that they are operating as intended.

IFM-4: Domestic Water System Upgrades

The following new equipment will require maintenance

- Main booster pump package serving the main building. The pump motor will be equipped with a variable speed drive
- Variable speed drives for the domestic water booster system serving the Autopsy Rooms

IFM-5: AHU Controls Upgrade

This ECM will positively affect the facility operations with the replacement of the older pneumatic controls with new DDC controls and monitoring capabilities to allow for proactive maintenance. The following new equipment will require maintenance

- Variable speed drives for the AHUs

IFM-6: Inactive Storage Cooling System Upgrade

The maintenance cost from vendors required for repair and replacement will be eliminated. The projected life of the new equipment is 20 years but will need to be monitored to allow for proactive maintenance.

IFM-7: Steam Traps and Misc Upgrades

The facility operations and maintenance will experience a decrease in failed traps and maintenance calls related to poor heating in the spaces. No additional maintenance is required.

IFM-8: Receiving Dock Infrared Heaters

The facility operations and maintenance will experience a decrease in failed traps and maintenance calls related to poor heating in the spaces. No additional maintenance is required.

4. Hektoen Building

HB-1: Lighting Upgrades

Existing Conditions:

- Approximately 25% of the lamps are being replaced annually
- Approximately 10% of the ballasts are being replaced annually

Proposed Conditions:

- The new lamps have a projected life of 30,000 hours resulting in no replacement for approximately 5 years
- The new ballasts have a projected life of 100,000 hours resulting in no replacement for approximately 20 years

HB-9: Controls and AHU Upgrades

This energy retrofit will allow the building staff to monitor and control the air-handling units through the BAS. There will be no change in maintenance procedures or facility operations.

HB-13: Domestic Water Booster VSD

There will be no change in facility operations due to the implementation of this ECM. Periodic maintenance will be required for the new VSDs.

HB-16: Dual Duct VAV and Mixed Air Conversion

The upgrade of controls (AHU and VAV boxes) will automate the temperature control of the space reducing maintenance.

Additional maintenance will be required for new variable speed drives and proactive maintenance on the new VAV boxes and radiation control valves.

HB-16a: AHU Replacement

There will be no change in facility operations due to the implementation of this ECM.

HB-18: Steam Traps and Misc Upgrades

The facility operations and maintenance will experience a decrease in failed traps and maintenance calls related to poor heating in the spaces. No additional maintenance from the hospital staff is required.

5. Ruth M. Rothstein Core Center

RRCC-1: Lighting Upgrades

Existing Conditions:

- Approximately 25% of the lamps are being replaced annually
- Approximately 10% of the ballasts are being replaced annually

Proposed Conditions:

- The new lamps have a projected life of 30,000 hours resulting in no replacement for approximately 5 years
- The new ballasts have a projected life of 100,000 hours resulting in no replacement for approximately 20 years

RRCC-2: Controls Upgrade and Electronic Filter Retrofit

The following are the new maintenance procedures:

- The new filter system will reduce existing filter material cost
- The new electronic filters will require cleaning once per year

Exhibit N

Certificate Forms

NOTICE TO PROCEED

[Address of ESCO]

Dear _____:

Guaranteed Energy Performance Contract:Phase II Services
[name of Project]

Notice To Proceed/ Contract Number _____

On July __, 2012, the Cook County Board of Commissioners awarded a contract to [ESCO] in the total amount of _____) for the above referenced project. The breakout of the total awarded contract is as follows:

- Construction and Installation Contract Work: = \$ _____
- 20 year Measurement and Verification: = \$ _____
- ~~The Phase I Audit for the Project was completed in 2012.~~

Therefore per the terms of the negotiated contract, the **NOTICE to PROCEED** Date (for Phase II Services) is _____. The ESCO has ____ days to achieve Substantial Completion for all ECMs in all Buildings (as defined in the contract Calendar Day resulting in Substantial Completion by _____. Final Acceptance of the Project is to be achieved by _____.

Please call me at 312/603-____, if you have any questions regarding this matter.

THE COUNTY OF COOK

(Name)
(Title)

Date: _____

**DELIVERY AND ACCEPTANCE CERTIFICATE
UPON SUBSTANTIAL COMPLETION**

The County of Cook hereby acknowledges receipt of the Energy Conservation Measure(s) (the "ECM(s)") set forth below and described in Exhibits B and C in the First Amendment to the Guaranteed Energy Performance Contract (the " First Amendment ") between the County of Cook and _____ (the "ESCO") as fully installed and in good working condition as required under the First Amendment, which are listed and attached hereto. The County of Cook hereby accepts the ECM(s) listed below and located in _____ (the "Building") after full inspection thereof as satisfactory for all purposes of the First Amendment. Payments under the First Amendment are determined in accordance with Section 14 of the First Amendment The ESCO has represented that all ECMs listed below which must be tested together in order to be successfully commissioned pursuant to the First Amendment ("ECM Groupings") have been so tested and commissioned so that the County of Cook has possession of such ECMs and may use them for their intended uses, subject to punchlist Work.

The Acceptance of Substantial Completion of the ECMs listed in Attachment 1 [**constitutes**] [**does not constitute**] Substantial Completion of all ECMs in the Building under the Project. The ESCO Warranty for Substantial Completion of ECMs commences upon Substantial Completion of all ECMs in a Building.

Substantial Completion Date: _____

ECM(s): _____

Date Accepted by The County of Cook: _____

Accepted for: **The County of Cook**

Accepted by: _____

Name: _____

Title: _____

Note: ECM(s) and the Building to which this Delivery and Acceptance Certificate relates is/are attached hereto as Attachment 1.

ATTACHMENT 1

Building _____

ECM Description

Remaining ECMS to be Completed in Building

**FINAL DELIVERY AND ACCEPTANCE CERTIFICATE
FINAL ACCEPTANCE OF PROJECT**

The County of Cook hereby acknowledges Final Acceptance of the Energy Conservation Measures (the "ECMs") described in Attachment 1 to this Certificate constituting all ECMs described in Exhibits B and C to the First Amendment to Guaranteed Energy Performance Contract (the "First Amendment") between the County of Cook and _____ (the "ESCO"). The date of Final Acceptance is the date certified by the County of Cook that the entire Project as described in the First Amendment has been installed, functionally tested, Substantially Completed and all punchlist items completed in accordance with the Contract Documents. The County of Cook hereby accepts the ECMs listed hereto after full inspection thereof as satisfactory for all purposes of the Agreement so that the County of Cook has possession of such ECMs, the Work and the entire Project and may use them for their intended uses. Payment(s) to be made upon achievement of Final Acceptance shall be made upon satisfaction of all conditions required under Section 14F of the First Amendment in accordance with such Section.

Date Accepted by The County of Cook: _____

Accepted for: **The County of Cook**

Accepted by: _____

Name: _____

Title: _____

Note: ECMs to which this Delivery and Acceptance Certificate relates are attached hereto as Attachment 1.

ATTACHMENT 1

[List of all ECMs by Building, together with dates of Substantial Completion]

**ECONOMIC DISCLOSURE STATEMENT
AND EXECUTION DOCUMENT
INDEX**

Section	Description	Pages
Instructions	Instructions for Completion of EDS	EDS i - ii
1	MBE/WBE Utilization Plan	EDS 1
2	Letter of Intent	EDS 2
3	Petition for Reduction/Waiver of MBE/WBE Participation Goals	EDS 3
4	Certifications	EDS 4, 5
5	Economic and Other Disclosures, Affidavit of Child Support Obligations and Disclosure of Ownership Interest	EDS 6-12
6	Sole Proprietor Signature Page	EDS 13a/b/c
7	Partnership Signature Page	EDS 14/a/b/c
8	Limited Liability Corporation Signature Page	EDS 15a/b/c
9	Corporation Signature Page	EDS 16a/b/c
10	Cook County Signature Page	EDS 17

**INSTRUCTIONS FOR COMPLETION OF
ECONOMIC DISCLOSURE STATEMENT AND EXECUTION DOCUMENT**

This Economic Disclosure Statement and Execution Document ("EDS") is to be completed and executed by every Bidder on a County contract, every party responding to a Request for Proposals or Request for Qualifications ("Proposer"), and others as required by the Chief Procurement Officer. If the Undersigned is awarded a contract pursuant to the procurement process for which this EDS was submitted (the "Contract"), this Economic Disclosure Statement and Execution Document shall stand as the Undersigned's execution of the Contract.

Definitions. Capitalized terms used in this EDS and not otherwise defined herein shall have the meanings given to such terms in the Instructions to Bidders, General Conditions, Request for Proposals, Request for Qualifications, or other documents, as applicable.

"Affiliated Entity" means a person or entity that, directly or indirectly: controls the Bidder, is controlled by the Bidder, or is, with the Bidder, under common control of another person or entity. Indicia of control include, without limitation, interlocking management or ownership; identity of interests among family members; shared facilities and equipment; common use of employees; and organization of a business entity following the ineligibility of a business entity to do business with the County under the standards set forth in the Certifications included in this EDS, using substantially the same management, ownership or principals as the ineligible entity.

"Bidder," "Proposer," "Undersigned," or "Applicant," is the person or entity executing this EDS. Upon award and execution of a Contract by the County, the Bidder, Proposer, Undersigned or Applicant, as the case may be, shall become the Contractor or Contracting Party.

"Proposal," for purposes of this EDS, is the Undersigned's complete response to an RFP/RFQ, or if no RFQ/RFP was issued by the County, the "Proposal" is such other proposal, quote or offer submitted by the Undersigned, and in any event a "Proposal" includes this EDS .

"Code" means the Code of Ordinances, Cook County, Illinois available through the Cook County Clerk's Office website (<http://www.cookctyclerk.com/sub/ordinances.asp>). This page can also be accessed by going to www.cookctyclerk.com, clicking on the tab labeled "County Board Proceedings," and then clicking on the link to "Cook County Ordinances."

"Contractor" or "Contracting Party" means the Bidder, Proposer or Applicant with whom the County has entered into a Contract.

"EDS" means this complete Economic Disclosure Statement and Execution Document, including all sections listed in the Index and any attachments.

"Lobby" or "lobbying" means to, for compensation, attempt to influence a County official or County employee with respect to any County matter.

"Lobbyist" means any person or entity who lobbies.

"Prohibited Acts" means any of the actions or occurrences which form the basis for disqualification under the Code, or under the Certifications hereinafter set forth.

Sections 1 through 3: MBE/WBE Documentation. Sections 1 and 2 must be completed in order to satisfy the requirements of the County's MBE/WBE Ordinance, as set forth in the Contract Documents, if applicable. If the Undersigned believes a waiver is appropriate and necessary, Section 3, the Petition for Waiver of MBE/WBE Participation must be completed.

Section 4: Certifications. Section 4 sets forth certifications that are required for contracting parties under the Code. Execution of this EDS constitutes a warranty that all the statements and certifications contained, and all the facts stated, in the Certifications are true, correct and complete as of the date of execution.

Section 5: Economic and Other Disclosures Statement. Section 5 is the County's required Economic and Other Disclosures Statement form. Execution of this EDS constitutes a warranty that all the information provided in the EDS is true, correct and complete as of the date of execution, and binds the Undersigned to the warranties, representations, agreements and acknowledgements contained therein.

**INSTRUCTIONS FOR COMPLETION OF
ECONOMIC DISCLOSURE STATEMENT AND EXECUTION DOCUMENT**

Sections 6, 7, 8, 9: Execution Forms. The Bidder executes this EDS, and the Contract, by completing and signing three copies of the appropriate Signature Page. Section 6 is the form for a sole proprietor; Section 7 is the form for a partnership or joint venture; Section 8 is the form for a Limited Liability Corporation, and Section 9 is the form for a corporation. Proper execution requires **THREE ORIGINALS**; therefore, the appropriate Signature Page must be filled in, three copies made, and all three copies must be properly signed, notarized and submitted. The forms may be printed and completed by typing or hand writing the information required.

Required Updates. The information provided in this EDS will be kept current. In the event of any change in any information provided, including but not limited to any change which would render inaccurate or incomplete any certification or statement made in this EDS, the Undersigned will supplement this EDS up to the time the County takes action, by filing an amended EDS or such other documentation as is requested.

Additional Information. The County's Governmental Ethics and Campaign Financing Ordinances, impose certain duties and obligations on persons or entities seeking County contracts, work, business, or transactions. For further information please contact the Director of Ethics at (312) 603-4304 (69 W. Washington St. Suite 3040, Chicago, IL 60602) or visit our web-site at www.cookcountygov.com and go to the Ethics Department link. The Bidder must comply fully with the applicable ordinances.

MBE/WBE UTILIZATION PLAN (SECTION 1)

BIDDER/PROPOSER HEREBY STATES that all MBE/WBE firms included in this Plan are certified MBEs/WBEs by at least one of the entities listed in the General Conditions.

I. BIDDER/PROPOSER MBE/WBE STATUS: (check the appropriate line)

- Bidder/Proposer is a certified MBE or WBE firm. (If so, attach copy of appropriate Letter of Certification)
- Bidder/Proposer is a Joint Venture and one or more Joint Venture partners are certified MBEs or WBEs. (If so, attach copies of Letter(s) of Certification, a copy of Joint Venture Agreement clearly describing the role of the MBE/WBE firm(s) and its ownership interest in the Joint Venture and a completed Joint Venture Affidavit - available from the Office of Contract Compliance)
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II. Direct Participation of MBE/WBE Firms Indirect Participation of MBE/WBE Firms

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MBEs/WBEs that will perform as subcontractors/suppliers/consultants include the following:

MBE/WBE Firm: All Tech Energy, Inc. (WBE)
Address: 1000 East State Parkway, Suite C, Schaumburg, IL 60173
E-mail: lmarcin@alltechenergy.com
Contact Person: Kathy Esposito Phone: 847/882-0500
Dollar Amount Participation: \$ 707,965
Percent Amount of Participation: 2.67 %

*Letter of Intent attached? Yes No
*Letter of Certification attached? Yes No

MBE/WBE Firm: Applied Controls & Contracting Services (MBE)
Address: 539-542 West Taft Dr., South Holland, IL 60473
E-mail: gkinnison@accshome.com
Contact Person: George Kinnison Phone: 708-596-7400
Dollar Amount Participation: \$ 460,688
Percent Amount of Participation: 1.74 %

*Letter of Intent attached? Yes No
*Letter of Certification attached? Yes No

Attach additional sheets as needed.

*Additionally, all Letters of Intent, Letters of Certification and documentation of Good Faith Efforts omitted from this bid/proposal **must** be submitted to the Office of Contract Compliance so as to assure receipt by the Contract Compliance Administrator not later than three (3) business days after the Bid Opening date.

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MBEs/WBEs that will perform as subcontractors/suppliers/consultants include the following:

MBE/WBE Firm: Autumn Construction Services (WBE)

Address: 1400 East Touhy Ave., Des Plaines, IL 60018

E-mail: autumns@comcast.net

Contact Person: Susan Nelson Phone: 630-588-9585

Dollar Amount Participation: \$ 340,000

Percent Amount of Participation: 1.28 %

*Letter of Intent attached? Yes No

*Letter of Certification attached? Yes No

MBE/WBE Firm: Bonaparte Corporation (MBE)

Address: 1455 S. Michigan Ave., Chicago, IL 60605

E-mail: bonacorp@bonapartecorp.com

Contact Person: William Bonaparte, Jr. Phone: 312-431-9750

Dollar Amount Participation: \$ 180,357

Percent Amount of Participation: 0.68 %

*Letter of Intent attached? Yes No

*Letter of Certification attached? Yes No

Attach additional sheets as needed.

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MBEs/WBEs that will perform as subcontractors/suppliers/consultants include the following:

MBE/WBE Firm: Code Engineering Services (MBE)

Address: 2021 Midwest Road, Suite 200, Oakbrook, IL 60523

E-mail: code.sim@comcast.net

Contact Person: Sim Dawson Phone: 630-953-8586

Dollar Amount Participation: \$ 249,823

Percent Amount of Participation: 0.94 %

*Letter of Intent attached? Yes No
*Letter of Certification attached? Yes No

MBE/WBE Firm: CT Mechanical, LLC. (WBE)

Address: 199 S. Addison Road, Suite 107A, Wood Dale, IL 60191

E-mail: ctojava@ctmechanicalwbe.com

Contact Person: Catherine Tojaga Phone: 630-227-1700

Dollar Amount Participation: \$ 315,000

Percent Amount of Participation: 1.19 %

*Letter of Intent attached? Yes No
*Letter of Certification attached? Yes No

Attach additional sheets as needed.

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MBEs/WBEs that will perform as subcontractors/suppliers/consultants include the following:

MBE/WBE Firm: Dekayo Corporation (MBE)

Address: 15425 S. Cherrywood Ct., Orland Park, IL 60426-4006

E-mail: dortiz@dekayocorp.com

Contact Person: Darrell Ortiz Phone: 708-595-8250

Dollar Amount Participation: \$ 345,000

Percent Amount of Participation: 1.30 %

*Letter of Intent attached? Yes No
*Letter of Certification attached? Yes No

MBE/WBE Firm: Diversified General Contractors (MBE)

Address: 17935 Chappel Ave., Lansing, IL 60438

E-mail: dcs.dgc@comcast.net

Contact Person: Melvin Armstrong Phone: 708-474-2905

Dollar Amount Participation: \$ 1,319,266

Percent Amount of Participation: 4.98 %

*Letter of Intent attached? Yes No
*Letter of Certification attached? Yes No

Attach additional sheets as needed.

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MBEs/WBEs that will perform as subcontractors/suppliers/consultants include the following:

MBE/WBE Firm: Envioplus, Inc. (MBE)

Address: 8044 Lawndale Ave., Skokie, IL 60076

E-mail: _____

Contact Person: Salvador Garcia Phone: 847-475-0022

Dollar Amount Participation: \$ 75,761

Percent Amount of Participation: 0.29 %

*Letter of Intent attached? Yes No _____
*Letter of Certification attached? Yes No _____

MBE/WBE Firm: Evergreen Supply Company (WBE)

Address: 9901 S. Torrence Ave., Chicago, IL 60617

E-mail: wprice@evergreensupply.com

Contact Person: Patricia Gallagher Phone: 773-375-4750

Dollar Amount Participation: \$ 705,800

Percent Amount of Participation: 2.66 %

*Letter of Intent attached? Yes No _____
*Letter of Certification attached? Yes No _____

Attach additional sheets as needed.

*Additionally, all Letters of Intent, Letters of Certification and documentation of Good Faith Efforts omitted from this bid/proposal must be submitted to the Office of Contract Compliance so as to assure receipt by the Contract Compliance Administrator not later than three (3) business days after the Bid Opening date.

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MBEs/WBEs that will perform as subcontractors/suppliers/consultants include the following:

MBE/WBE Firm: J-Mac Associates (WBE)

Address: One North 050 Gary Ave, Carol Stream, IL 60188

E-mail: phyllis@jmac-ltd.com

Contact Person: Phyllis McGlynn Phone: 630-690-2500 Ext. 25

Dollar Amount Participation: \$ 19,800

Percent Amount of Participation: .07 %

*Letter of Intent attached? Yes X No _____
*Letter of Certification attached? Yes X No _____

MBE/WBE Firm: Pace Systems, Inc. (MBE)

Address: 2040 Corporate Lane, Naperville, IL 60563-9691

E-mail: linda@mcity.com

Contact Person: Wayne H. Liu Phone: 630-395-2260

Dollar Amount Participation: \$ 238,697

Percent Amount of Participation: 0.90 %

*Letter of Intent attached? Yes X No _____
*Letter of Certification attached? Yes X No _____

Attach additional sheets as needed.

***Additionally, all Letters of Intent, Letters of Certification and documentation of Good Faith Efforts omitted from this bid/proposal must be submitted to the Office of Contract Compliance so as to assure receipt by the Contract Compliance Administrator not later than three (3) business days after the Bid Opening date.**

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MBEs/WBEs that will perform as subcontractors/suppliers/consultants include the following:

MBE/WBE Firm: PCS Power & Communications Solutions, Inc. (MBE)

Address: 279 E. Helen Road, Palatine, IL 60067

E-mail: delcastillo@pcsolutions.com

Contact Person: Edward del Castillo Phone: 847-358-8900

Dollar Amount Participation: \$ 119,550

Percent Amount of Participation: 0.45 %

*Letter of Intent attached? Yes X No _____
*Letter of Certification attached? Yes X No _____

MBE/WBE Firm: Primera Engineers, Limited (MBE)

Address: 100 S. Wacker Drive, Chicago, IL 60606

E-mail: _____

Contact Person: Michael DeSantiago Phone: 312-606-0910

Dollar Amount Participation: \$ 589,700

Percent Amount of Participation: 2.23 %

*Letter of Intent attached? Yes X No _____
*Letter of Certification attached? Yes X No _____

Attach additional sheets as needed.

*Additionally, all Letters of Intent, Letters of Certification and documentation of Good Faith Efforts omitted from this bid/proposal must be submitted to the Office of Contract Compliance so as to assure receipt by the Contract Compliance Administrator not later than three (3) business days after the Bid Opening date.

MBE/WBE UTILIZATION PLAN (SECTION 1)

BIDDER/PROPOSER HEREBY STATES that all MBE/WBE firms included in this Plan are certified MBEs/WBEs by at least one of the entities listed in the General Conditions.

I. BIDDER/PROPOSER MBE/WBE STATUS: (check the appropriate line)

- Bidder/Proposer is a certified MBE or WBE firm. (If so, attach copy of appropriate Letter of Certification)
- Bidder/Proposer is a Joint Venture and one or more Joint Venture partners are certified MBEs or WBEs. (If so, attach copies of Letter(s) of Certification, a copy of Joint Venture Agreement clearly describing the role of the MBE/WBE firm(s) and its ownership interest in the Joint Venture and a completed Joint Venture Affidavit - available from the Office of Contract Compliance)
- Bidder/Proposer is not a certified MBE or WBE firm, nor a Joint Venture with MBE/WBE partners, but will utilize MBE and WBE firms either directly or indirectly in the performance of the Contract. (If so, complete Sections II and III).

II. Direct Participation of MBE/WBE Firms Indirect Participation of MBE/WBE Firms

Where goals have not been achieved through direct participation, Bidder/Proposer shall include documentation outlining efforts to achieve Direct Participation at the time of Bid/Proposal submission. Indirect Participation will only be considered after all efforts to achieve Direct Participation have been exhausted. Only after written documentation of Good Faith Efforts is received will Indirect Participation be considered.

MBEs/WBEs that will perform as subcontractors/suppliers/consultants include the following:

MBE/WBE Firm: RLD Resources LLC (MBE)
Address: 333 N. Michigan Ave., Suite 1810, Chicago, IL 60601-3947
E-mail: rdent@rldresources.com
Contact Person: Richard Dent Phone: 312-785-0798

Dollar Amount Participation: \$ 12,500

Percent Amount of Participation: 0.05 %

*Letter of Intent attached? Yes X No _____
*Letter of Certification attached? Yes X No _____

MBE/WBE Firm: Suarez Electric Company (MBE)
Address: 4439 W. Montrose Ave., Chicago, IL 60641-2024
E-mail: dsuarez@suarezelectric.com
Contact Person: David M. Suarez Phone: 773-202-9077

Dollar Amount Participation: \$ 524,634

Percent Amount of Participation: 1.98 %

*Letter of Intent attached? Yes X No _____
*Letter of Certification attached? Yes X No _____

Attach additional sheets as needed.

***Additionally, all Letters of Intent, Letters of Certification and documentation of Good Faith Efforts omitted from this bid/proposal must be submitted to the Office of Contract Compliance so as to assure receipt by the Contract Compliance Administrator not later than three (3) business days after the Bid Opening date.**

MBEWBE UTILIZATION PLAN (SECTION 1)

BIDDER/PROPOSER HEREBY STATES that all MBE/WBE firms included in this Plan are certified MBEs/WBEs by at least one of the entities listed in the General Conditions.

I. BIDDER/PROPOSER MBE/WBE STATUS: (check the appropriate line)

- Bidder/Proposer is a certified MBE or WBE firm. (If so, attach copy of appropriate Letter of Certification)
- Bidder/Proposer is a Joint Venture and one or more Joint Venture partners are certified MBEs or WBEs. (If so, attach copies of Letter(s) of Certification, a copy of Joint Venture Agreement clearly describing the role of the MBE/WBE firm(s) and its ownership interest in the Joint Venture and a completed Joint Venture Affidavit - available from the Office of Contract Compliance)
- Bidder/Proposer is not a certified MBE or WBE firm, nor a Joint Venture with MBE/WBE partners, but will utilize MBE and WBE firms either directly or indirectly in the performance of the Contract. (If so, complete Sections II and III).

II. Direct Participation of MBE/WBE Firms Indirect Participation of MBE/WBE Firms

Where goals have not been achieved through direct participation, Bidder/Proposer shall include documentation outlining efforts to achieve Direct Participation at the time of Bid/Proposal submission. Indirect Participation will only be considered after all efforts to achieve Direct Participation have been exhausted. Only after written documentation of Good Faith Efforts is received will Indirect Participation be considered.

MBEs/WBEs that will perform as subcontractors/suppliers/consultants include the following:

MBE/WBE Firm: TAC Construction Company (WBE)

Address: 7701 West 99th Street, Hickory Hills, IL 60457-2329

E-mail: tacwbe@global.net

Contact Person: Theresa A. Costello Phone: 708-599-7313

Dollar Amount Participation: \$ 296,000

Percent Amount of Participation: 1.12 %

*Letter of Intent attached? Yes X No _____
*Letter of Certification attached? Yes X No _____

MBE/WBE Firm: T.A.G Properties, Inc. (WBE)

Address: 2241 South Wabash, Chicago, IL 60605

E-mail: aford@thisistag.com

Contact Person: Angela Ford Phone: 312-791-9100

Dollar Amount Participation: \$ 262,710

Percent Amount of Participation: 0.99 %

*Letter of Intent attached? Yes X No _____
*Letter of Certification attached? Yes _____ No X

Attach additional sheets as needed.

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MBE/WBE UTILIZATION PLAN (SECTION 1)

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- Bidder/Proposer is not a certified MBE or WBE firm, nor a Joint Venture with MBE/WBE partners, but will utilize MBE and WBE firms either directly or indirectly in the performance of the Contract. (If so, complete Sections II and III).

II. Direct Participation of MBE/WBE Firms Indirect Participation of MBE/WBE Firms

Where goals have not been achieved through direct participation, Bidder/Proposer shall include documentation outlining efforts to achieve Direct Participation at the time of Bid/Proposal submission. Indirect Participation will only be considered after all efforts to achieve Direct Participation have been exhausted. Only after written documentation of Good Faith Efforts is received will Indirect Participation be considered.

MBEs/WBEs that will perform as subcontractors/suppliers/consultants include the following:

MBE/WBE Firm: Universal Insulation, Inc. (MBE)

Address: 1385 101st Street, Suite D, Lemont, IL 60439-9674

E-mail: aarmijo@universalco.net

Contact Person: Anthony Armijo Phone: 630-972-0906

Dollar Amount Participation: \$ 241,200

Percent Amount of Participation: 0.91 %

*Letter of Intent attached? Yes No

*Letter of Certification attached? Yes No

MBE/WBE Firm: Vargas Mechanical Inc. (MBE)

Address: 5875 N. Lincoln Ave., Suite 128, Chicago, IL 60659-4614

E-mail: vargasmechanical@sbcglobal.net

Contact Person: Carlos E. Vargas Phone: 773-506-0336

Dollar Amount Participation: \$ 1,953,395

Percent Amount of Participation: 7.37 %

*Letter of Intent attached? Yes No

*Letter of Certification attached? Yes No

Attach additional sheets as needed.

***Additionally, all Letters of Intent, Letters of Certification and documentation of Good Faith Efforts omitted from this bid/proposal must be submitted to the Office of Contract Compliance so as to assure receipt by the Contract Compliance Administrator not later than three (3) business days after the Bid Opening date.**

MBE/WBE UTILIZATION PLAN (SECTION 1)

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I. BIDDER/PROPOSER MBE/WBE STATUS: (check the appropriate line)

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- Bidder/Proposer is a Joint Venture and one or more Joint Venture partners are certified MBEs or WBEs. (If so, attach copies of Letter(s) of Certification, a copy of Joint Venture Agreement clearly describing the role of the MBE/WBE firm(s) and its ownership interest in the Joint Venture and a completed Joint Venture Affidavit - available from the Office of Contract Compliance)
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II. Direct Participation of MBE/WBE Firms Indirect Participation of MBE/WBE Firms

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MBEs/WBEs that will perform as subcontractors/suppliers/consultants include the following:

MBE/WBE Firm: Level-1 Global Solutions (MBE)
Address: 3 First National Plaza, 70 W Madison Suite 1400, Chicago, IL 60606
E-mail: tdm@level-1.com

Contact Person: Thomas McElroy Phone: 312-644-9400

Dollar Amount Participation: \$ 50,000

Percent Amount of Participation: .19 %

*Letter of Intent attached? Yes X No _____
*Letter of Certification attached? Yes _____ No X

MBE/WBE Firm: Ardmore Associates (WBE)
Address: 33 N Dearborn St., Suite 1720, Chicago, IL 60602
E-mail: cthomas@ardmoreassociates.com

Contact Person: Cheryl Thomas Phone: 312-795-1400

Dollar Amount Participation: \$ 25,000

Percent Amount of Participation: .09 %

*Letter of Intent attached? Yes X No _____
*Letter of Certification attached? Yes X No _____

Attach additional sheets as needed.

*Additionally, all Letters of Intent, Letters of Certification and documentation of Good Faith Efforts omitted from this bid/proposal must be submitted to the Office of Contract Compliance so as to assure receipt by the Contract Compliance Administrator not later than three (3) business days after the Bid Opening date.

MBE/WBE UTILIZATION PLAN (SECTION 1)

BIDDER/PROPOSER HEREBY STATES that all MBE/WBE firms included in this Plan are certified MBEs/WBEs by at least one of the entities listed in the General Conditions.

I. BIDDER/PROPOSER MBE/WBE STATUS: (check the appropriate line)

- Bidder/Proposer is a certified MBE or WBE firm. (If so, attach copy of appropriate Letter of Certification)
- Bidder/Proposer is a Joint Venture and one or more Joint Venture partners are certified MBEs or WBEs. (If so, attach copies of Letter(s) of Certification, a copy of Joint Venture Agreement clearly describing the role of the MBE/WBE firm(s) and its ownership interest in the Joint Venture and a completed Joint Venture Affidavit - available from the Office of Contract Compliance)
- Bidder/Proposer is not a certified MBE or WBE firm, nor a Joint Venture with MBE/WBE partners, but will utilize MBE and WBE firms either directly or indirectly in the performance of the Contract. (If so, complete Sections II and III).

II. Direct Participation of MBE/WBE Firms Indirect Participation of MBE/WBE Firms

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MBEs/WBEs that will perform as subcontractors/suppliers/consultants include the following:

MBE/WBE Firm: Stevenson Crane (WBE)

Address: 410 Stevenson Drive, Bolingbrook, IL 60440

E-mail: donna@stevensoncrane.com

Contact Person: Donna Stevenson Phone: 630-972-9199

Dollar Amount Participation: \$ 27,500

Percent Amount of Participation: .10 %

*Letter of Intent attached? Yes No

*Letter of Certification attached? Yes No

MBE/WBE Firm: _____

Address: _____

E-mail: _____

Contact Person: _____ Phone: _____

Dollar Amount Participation: \$ _____

Percent Amount of Participation: _____ %

*Letter of Intent attached? Yes _____ No _____

*Letter of Certification attached? Yes _____ No _____

Attach additional sheets as needed.

***Additionally, all Letters of Intent, Letters of Certification and documentation of Good Faith Efforts omitted from this bid/proposal must be submitted to the Office of Contract Compliance so as to assure receipt by the Contract Compliance Administrator not later than three (3) business days after the Bid Opening date.**



CITY OF CHICAGO
OFFICE OF COMPLIANCE

December 2, 2011

Kathy Esposito
All Tech Energy, Inc.
1000 East State Parkway, Suite C
Schaumburg, IL 60173-6408

Annual Certificate Expires: December 1, 2012

Dear Kathy Esposito:

Congratulations on your continued eligibility for certification as a **Women Business Enterprise (WBE)** by the City of Chicago. This certification is valid until **December 1, 2012**.

You have an affirmative duty to file for recertification 60 days prior to the date of expiration. Therefore, you must file for recertification by **10/1/2012**.

It is important to note that you also have an ongoing affirmative duty to notify the City of Chicago of any changes in ownership or control of your firm, or any other fact affecting your firm's eligibility for certification within 10 days of such change. These changes may include but are not limited to a change of address, change of business structure, change in ownership or ownership structure, change of business operations, and/or gross receipts that exceed the program threshold.

Please note – you shall be deemed to have had your certification lapse and will be ineligible to participate as a MBE/WBE/BEPD if you fail to:

- o file your No Change Affidavit within the required time period;
- o provide financial or other records requested pursuant to an audit within the required time period; or
- o notify the City of any changes affecting your firm's certification within 10 days of such change.

Further, if you or your firm is found to be involved in certification, bidding and/or contractual fraud or abuse, the City will pursue decertification and debarment. And in addition to any other penalty imposed by law, any person who knowingly obtains, or knowingly assists another in obtaining, a contract with the city by falsely representing that the individual or entity, or the individual or entity assisted, is a minority-owned business or a woman-owned business, is guilty of a misdemeanor, punishable by incarceration in the county jail for a period not to exceed six months or a fine of not less than \$5,000.00 and not more than \$10,000, or both.

Your firm is listed in the City's Directory of Minority Business Enterprises and Women Business Enterprises in the specialty area(s) of:

**ENERGY MANAGEMENT CONSULTING SERVICES; ENERGY
CONSERVATION CONSULTING; LIGHTING AND BUILDING
AUTOMATION CONTROLS**

Your firm's participation on City contracts will be credited only toward Women Business Enterprise (WBE) goals in your area(s) of specialty. While your participation on City contracts is not limited to your specialty, credit toward Women Business Enterprise (WBE) goal will be given only for work done in a specialty category.

Thank you for your continued participation in the City's Supplier Diversity Program.

Sincerely,



Michael Chambers
Senior Compliance Officer

Cook County Government
Letter of Intent

M/WBE Firm: All Tech Energy, Inc. (WBE) Certifying Agency: City of Chicago
Address: 1000 East State Parkway Suite C Certification Expiration Date: December 1, 2012
City/State: Schaumburg, IL Zip: 60173-6408 FBIN #: 36-3935029
Phone: 847-882-0500 Fax: 847-882-0800 Contact Person: Kathy Esposito
Email: Lmarcin@alltechenergy.com Contract #: 08-50-1068P

Participation: Direct Indirect

Will the M/WBE firm be subcontracting any of the performance of this contract to another firm?

No Yes - Please attach explanation. Proposed Subcontractor: _____

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/Contract:

Electrical

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/Services:

\$707,965

% of completion, progress bill

LOI is contingent on Cook County awarding JCI a contract for the full scope of work proposed.

(If more space is needed to fully describe M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/Supply and Fee/Cost were completed.

Kathy Esposito
Signature (M/WBE)

KATHY ESPOSITO
Print Name

All Tech Energy, Inc.
Firm Name

7-3-12
Date

Subscribed and sworn before me
this 3rd day of JULY, 2012

Notary Public Linda P. Hawrowski

SEAL

[Signature]
Signature (Prime Bidder/Proposer)

Richard W. Smith
Print Name

JOHNSON CONTROLS INC
Firm Name

6-29-12
Date

Subscribed and sworn before me
this 29th day of JUNE, 2012

Notary Public [Signature]

SEAL

OFFICIAL SEAL
LINDA P. MARCIUKOWSKI
Notary Public - State of Illinois
My Commission Expires Oct 12, 2014

OFFICIAL SEAL
S J WOYNOW
NOTARY PUBLIC - STATE OF ILLINOIS
MY COMMISSION EXPIRES 06/04/13

THE BOARD OF COMMISSIONERS
TONI PRECKWINKLE

PRESIDENT

EARLEAN COLLINS	1st Dist	PETER M. SILVESTRI	90 Dist
ROBERT STEEL	2nd Dist	BRIDGET GAHER	109 Dist
JERRY BUTLER	3rd Dist	KORN E. DALEY	11th Dist
WILLIAM M. BEAVERS	4th Dist	JOHN A. FORTNEY	12th Dist
DEBORAH SHIS	5th Dist	LARRY SUFFREDY	13th Dist
JOAN PATRICIA MURPHY	6th Dist	GREGG BUSLIN	14th Dist
JESUS G. GARCIA	7th Dist	TIMOTHY A. SCHWEIDER	15th Dist
EDWIN REYES	8th Dist	JEFFREY R. TOROLESKI	16th Dist
		ELIZABETH ANN DOODY BOSMAN	17th Dist



COOK COUNTY
OFFICE OF CONTRACT COMPLIANCE

LAVERNE HALL
DIRECTOR

118 North Clark Street, Room 1020
Chicago, Illinois 60602-1304
TEL (312) 603-5502
FAX (312) 603-4547

May 29, 2012

Mr. George Kinnison, President
Applied Controls & Contracting Services, Inc.
639-541 W. Taft Drive
South Holland, IL 60473

Dear Mr. Kinnison:

Congratulations. We are pleased to inform you that Applied Controls & Contracting Services, Inc. will maintain its certification as an MBE (6) by Cook County Government. This MBE Certification must be revalidated annually.

Please use the enclosed Certificate of Certification as validation of your Cook County MBE status and area of specialty.

As a condition of continued Certification during this three (3) year period, you must file a "No-Change Affidavit" within sixty (60) business days prior to the date of annual expiration. A processing fee of \$50.00, payable to Cook County Department of Revenue is required with the No-Change Affidavit. Failure to file this Affidavit shall result in the termination of your Certification. You must notify Cook County Government's Office of Contract Compliance within ten (10) days of any change in ownership or control or any other matters or facts affecting your firm's eligibility for Certification.

Your firm's participation on Cook County contracts will be credited toward MBE goals in your area(s) of specialty. While your participation on Cook County contracts is not limited to your area of specialty, credit toward MBE goals will only be recognized for work done in the specialty category.

Thank you for your continued interest in Cook County Government's Minority and Women Business Enterprise Programs.

Sincerely,

Laverne Hall
Director
LH/ek



Cook County Government

Office of Contract Compliance

certifies that the criteria for certification as a

Minority Business Enterprise

has been met by

Applied Controls & Contracting Services, Inc.

Facilities: Design and Installation of Temperature Control Systems, Installation of Low Voltage Electronic Equipment, Fire Alarm & Security Inspection, HVAC Maintenance, Duct Cleaning

Issued Date: May 29, 2012

No Change Affidavit Due: May 29, 2013

NIGP Code(s): 03126, 93937, 96246, 99042

Ethnicity Code: 6

County: Cook



LaVerne Hill

Contract Compliance Director

Cook County Government
Letter of Intent

M/WBB Firm: Applied Controls & Contracting Certifying Agency: Cook County
(MBE)
Address: 539-541 W. Taft Dr. Certification Expiration Date: 5/29/13
City/State: South Holland Zip: 60473 FEIN #: 36-3756670
Phone: 708-596-7400 Fax: 708-596-1020 Contact Person: George N. Kinnison
Email: gkinnison@aceshome.com Contract #: 08-50-1068P

Participation Direct Indirect

Will the M/WBB firm be subcontracting any of the performance of this contract to another firm?

No Yes - Please attach explanation. Proposed Subcontractor: _____

The undersigned M/WBB is prepared to provide the following Commodities/Services for the above named Project/Contract:

Electrical

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/Services: \$460,688

% of completion, progress bill
LOI is contingent on Cook County awarding JCI a contract for the full scope of work proposed.
(If more space is needed to fully describe M/WBB Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/Supply and Fee/Cost were completed.

George N. Kinnison
Signature (M/WBB)

Richard W. Smith
Signature (Prime Bidder/Proposer)

GEORGE N. KINNISON
Print Name

Richard W. Smith
Print Name

Applied Controls & Contracting Serv.
Firm Name

JOHNSON CONTROLS, INC.
Firm Name

7-2-2012
Date

6/29/12
Date

Subscribed and sworn before me
this 27th day of July, 2012.

Subscribed and sworn before me
this 27th day of JUNE, 2012.

Notary Public [Signature]
SBAL

Notary Public [Signature]
SBAL



RECEIVED JUN 14 2012



DEPARTMENT OF PROCUREMENT SERVICES
CITY OF CHICAGO

June 6, 2012

Ms. Cheryl Thomas
Ardmore Associates, LLC
33 N. Dearborn Street Ste. 1720
Chicago, IL 60602

Dear Ms. Thomas:

This letter is to inform you that the city of Chicago has extended your status as a Disadvantaged Business Enterprise (DBE), and as an Minority Business Enterprise (MBE) until **August 6, 2012**. We are providing this sixty-day extension to allow enough time to provide any additional documentation that your applications may be missing and for our office to complete our review of all of the submitted documents.

This extension does not guarantee eligibility in the program but will act as a courtesy extension until we receive all of the required documentation and complete a review of that documentation.

Please present this letter as evidence of your certification to be included with bid document submittals as needed.

If you have any questions, please feel free to call our office at 312-744-4900.

Sincerely,


Monica Jimenez
Deputy Procurement Officer

COOK COUNTY GOVERNMENT LETTER OF INTENT (SECTION 2)

MWBE Firm: Ardmore Associates (WBE) Certifying Agency: City of Chicago
Address: 33 N Dearborn St, STE 1720 Certification Expiration Date: 8/6/2012
City/State: Chicago, IL Zip: 60602 FEIN #: 55-0816437
Phone: 312-795-1400 Fax: _____ Contact Person: Cheryl Thomas
Email: cthomas@ardmoreassociates.com Contract #: 08-50-1068P

Participation: Direct Indirect

Will the MWBE firm be subcontracting any of the performance of this contract to another firm?

No Yes - Please attach explanation. Proposed Subcontractor: _____

The undersigned MWBE is prepared to provide the following Commodities/Services for the above named Project/ Contract:

Construction Management

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/ Services:

\$ 25,000

% of completion, progress billing

LOI is contingent on Cook County awarding JCI a contract for the full scope of work proposed.

(If more space is needed to fully describe MWBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service, Supply and Fee/Cost were completed.

Cheryl Thomas
Signature (MWBE)

C. MERRYL T THOMAS
Print Name

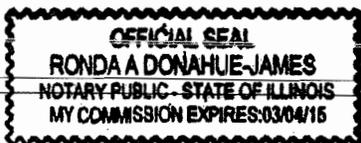
Ardmore Associates
Firm Name

07.02.2012
Date

Subscribed and sworn before me

this 2 day of July, 2012.

Notary Public: *Ronda A Donahue-James*
SEAL



Richard W. Smith
Signature (Prime Bidder/Proposer)

Richard W. Smith
Print Name

Johnson Controls, Inc.
Firm Name

06/29/12
Date

Subscribed and sworn before me

this 29 day of June, 2012.

Notary Public: *Michelle R. Trachsel*
SEAL





CITY OF CHICAGO
OFFICE OF COMPLIANCE

September 13, 2011

Susan Nelson
Autumn Construction Services, Inc.
1400 E. Touhy Avenue
Suite 477
Des Plaines, IL 60018

Annual Certificate Expires: August 1, 2012

Dear Susan Nelson:

Congratulations on your continued eligibility for certification as a **Women Business Enterprise (WBE)** by the City of Chicago. This certification is valid until **August 1, 2012**.

You have an affirmative duty to file for recertification 60 days prior to the date of expiration. Therefore, you must file for recertification by **6/1/2012**.

It is important to note that you also have an ongoing affirmative duty to notify the City of Chicago of any changes in ownership or control of your firm, or any other fact affecting your firm's eligibility for certification within 10 days of such change. These changes may include but are not limited to a change of address, change of business structure, change in ownership or ownership structure, change of business operations, and/or gross receipts that exceed the program threshold.

Please note – you shall be deemed to have had your certification lapse and will be ineligible to participate as a MBE/WBE/BEPD if you fail to:

- o file your No Change Affidavit within the required time period;
- o provide financial or other records requested pursuant to an audit within the required time period; or
- o notify the City of any changes affecting your firm's certification within 10 days of such change.

Further, if you or your firm is found to be involved in certification, bidding and/or contractual fraud or abuse, the City will pursue decertification and debarment. And in addition to any other penalty imposed by law, any person who knowingly obtains, or knowingly assists another in obtaining, a contract with the city by falsely representing that the individual or entity, or the individual or entity assisted, is a minority-owned business or a woman-owned business, is guilty of a misdemeanor, punishable by incarceration in the county jail for a period not to exceed six months or a fine of not less than \$5,000.00 and not more than \$10,000, or both.

Your firm is listed in the City's Directory of Minority Business Enterprises and Women Business Enterprises in the specialty area(s) of:

**Construction Management; Program Management; Schedule Services; Building
Systems Consulting; Phase III Construction Inspection
NAICS-238220: MECHANICAL CONTRACTORS
NAICS-541330: ENGINEERING DESIGN SERVICES
NAICS-541620: ENVIRONMENTAL CONSULTING SERVICES
NIGP-91268: MONITORING SERVICES, STRUCTURAL
NIGP-91831: CONSTRUCTION CONSULTING**

Your firm's participation on City contracts will be credited only toward Women Business Enterprise (WBE) goals in your area(s) of specialty. While your participation on City contracts is not limited to your specialty, credit toward Women Business Enterprise (WBE) goal will be given only for work done in a specialty category.

Thank you for your continued participation in the City's Supplier Diversity Program.

Sincerely,



Michael Chambers
Senior Compliance Officer

Cook County Government

Office of Contract Compliance

certifies that the criteria for certification as a

Women Business Enterprise

has been met by

Autumn Construction Services, Inc.

Construction: Construction Management & Consulting Services; Mechanical Systems Consulting;
Commissioning & Mechanical Construction

Issued Date: April 12, 2012

No-Change Affidavit Due: April 12, 2013

NIGP Code(s): 96178

Ethnicity Code: 7

County: Cook



LaVerne Hall
Contract Compliance Director

Cook County Government
Letter of Intent

M/WBE Firm: Autumn Construction Services (WBE) Certifying Agency: Cook County
Address: 1400 E. Touhy Ave. Certification Expiration Date: 8/1/2012
City/State: Des Plaines Zip: 60018 FBIN #: 36-4035882
Phone: 630-588-9585 Fax: 630-588-9586 Contact Person: Susan Nelson
Email: autumnccs@comcast.net Contract #: 08-50-1068P

Participation: Direct Indirect

Will the M/WBE firm be subcontracting any of the performance of this contract to another firm?

No Yes - Please attach explanation. Proposed Subcontractor: _____

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/Contract:

Construction Management, HVAC/Mechanical Work

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/Services: \$340,000

% of completion, progress bill.

LOI is contingent on Cook County awarding JCI a contract for the full scope of work proposed.

(If more space is needed to fully describe M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/ Supply and Fee/Cost were completed.

Susan Nelson
Signature (M/WBE)

Susan Nelson

Print Name

Autumn Construction Services, Inc.
Firm Name

7/3/12

Date

Subscribed and sworn before me

this 3rd day of July, 2012.

Notary Public

Richard W. Smith
Signature (Prime Bidder/Proposer)

Richard W. Smith

Print Name

JOHNSON CONTROLS, INC.
Firm Name

6-29-12
Date

Date

Subscribed and sworn before me

this 29th day of JUNE, 2012.

Notary Public



Revised 01/06/2011





CITY OF CHICAGO
OFFICE OF COMPLIANCE

February 25, 2011

William Bonaparte, Jr
Bonaparte Corporation
1455 S. Michigan Ave.
Chicago, IL 60605

Annual Certificate Expires: September 1, 2012

Dear William Bonaparte, Jr:

Congratulations on your continued eligibility for certification as a **Minority Business Enterprise (MBE)** by the City of Chicago. This certification is valid until **September 1, 2012**.

You have an affirmative duty to file for recertification 60 days prior to the date of expiration. Therefore, you must file for recertification by **7/8/2012**,

It is important to note that you also have an ongoing affirmative duty to notify the City of Chicago of any changes in ownership or control of your firm, or any other fact affecting your firm's eligibility for certification within 10 days of such change. These changes may include but are not limited to a change of address, change of business structure, change in ownership or ownership structure, change of business operations, and/or gross receipts that exceed the program threshold.

Please note -- you shall be deemed to have had your certification lapse and will be ineligible to participate as a MBE/WBE/BEPD if you fail to:

- o file your No Change Affidavit within the required time period;
- o provide financial or other records requested pursuant to an audit within the required time period; or
- o notify the City of any changes affecting your firm's certification within 10 days of such change.

Further, if you or your firm is found to be involved in certification, bidding and/or contractual fraud or abuse, the City will pursue decertification and debarment. And in addition to any other penalty imposed by law, any person who knowingly obtains, or knowingly assists another in obtaining, a contract with the city by falsely representing that the individual or entity, or the individual or entity assisted, is a minority-owned business or a woman-owned business, is guilty of a misdemeanor, punishable by incarceration in the county jail for a period not to exceed six months or a fine of not less than \$5,000.00 and not more than \$10,000, or both.

Your firm is listed in the City's Directory of Minority Business Enterprises and Women Business Enterprises in the specialty area(s) of:

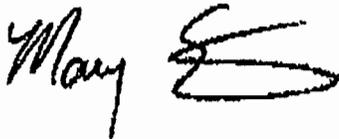
Received Time Mar. 11. 2:26PM

POWER AND COMMUNICATION LINE CONSTRUCTION

Your firm's participation on City contracts will be credited only toward Minority Business Enterprise (MBE) goals in your area(s) of specialty. While your participation on City contracts is not limited to your specialty, credit toward Minority Business Enterprise (MBE) goal will be given only for work done in a specialty category.

Thank you for your continued participation in the City's Supplier Diversity Program.

Sincerely,



Mary Elliott
Acting Managing Deputy

333 S. State St., Suite 540, Chicago, IL 60604 • (312) 747-7778

www.cityofchicago.org/compliance

Cook County Government
Letter of Intent

M/WBE Firm: Bonaparte Corporation (MBE) Certifying Agency: Cook County
Address: 1455 S. Michigan Ave. Certification Expiration Date: 9/1/2012
City/State: Chicago, IL Zip: 60605 FEIN #: 36-3745317
Phone: 312-431-9750 Fax: 312-431-9755 Contact Person: Jason Bonaparte
Email: jbonaparte@bonapartecorp.com Contract #: 08-50-1068P

Participation: Direct Indirect

Will the M/WBE firm be subcontracting any of the performance of this contract to another firm?

No Yes - Please attach explanation. Proposed Subcontractor: _____

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/Contract:

Electrical

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/Services: \$180,357

% of completion, progress bill.

LOI is contingent on Cook County awarding JCI a contract for the full scope of work proposed.

(If more space is needed to fully describe the M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/ Supply and Fee/Cost were completed.

A. Jason Bonaparte
Signature (M/WBE)

A. Jason Bonaparte
Print Name

Bonaparte Corporation
Firm Name

7/2/12
Date

Subscribed and sworn before me

this _____ day of _____, 20____

Notary Public _____

SEAL

Richard W. Smith
Signature (Prime Bidder/Proposer)

Richard W. Smith
Print Name

JOHNSON CONTROLS, INC.
Firm Name

6/29/12
Date

Subscribed and sworn before me

this 29TH day of JUNE, 2012.

Notary Public DJ Waywood

SEAL





DEPARTMENT OF PROCUREMENT SERVICES
CITY OF CHICAGO

APR 09 2012

Sim Dawson
Code Engineering Services
2021 Midwest Road
Oakbrook, IL 60523

Annual Certificate Expires: April 1, 2013

Dear Mr. Dawson:

We are pleased to inform you that Code Engineering Services has been recertified as a Minority Business Enterprise (MBE) by the City of Chicago. This certification is valid until April 1, 2017; however your firm must be re-validated annually.

As a condition of continued certification during this five year period, you must file an annual No-Change Affidavit. Your firm's No Change Affidavit is due by **April 1, 2013**. Please remember, you have an affirmative duty to file your No-Change Affidavit 60 days prior to the date of expiration. Therefore, you must file your No-Change Affidavit by **February 1, 2013**.

It is important to note that you also have an ongoing affirmative duty to notify the City of Chicago of any changes in ownership or control of your firm, or any other fact affecting your firm's eligibility for certification within **10 days** of such change. These changes may include but are not limited to a change of address, change of business structure, change in ownership or ownership structure, change of business operations, and/or gross receipts that exceed the program threshold.

Please note – you shall be deemed to have had your certification lapse and will be ineligible to participate as a MBE if you fail to:

- file your No Change Affidavit within the required time period;
- provide financial or other records requested pursuant to an audit within the required time period; or
- notify the City of any changes affecting your firm's certification within 10 days of such change.

APR 09 2012

Further, if you or your firm is found to be involved in certification, bidding and/or contractual fraud or abuse, the City will pursue decertification and debarment. And in addition to any other penalty imposed by law, any person who knowingly obtains, or knowingly assists another in obtaining, a contract with the city by falsely representing that the individual or entity, or the individual or entity assisted, is a minority-owned business or a woman-owned business, is guilty of a misdemeanor, punishable by incarceration in the county jail for a period not to exceed six months or a fine of not less than \$5,000.00 and not more than \$10,000, or both.

Your firm's name will be listed in the City's Directory of Minority and Women-Owned Business Enterprises in the specialty area(s) of:

NAICS 238210 – ELECTRICAL CONTRACTOR AND ELECTRICAL MAINTENANCE

Your firm's participation on City contracts will be credited only toward MBE goals in your area(s) of specialty. While your participation on City contracts is not limited to your specialty, credit toward goals will be given only for work done in the specialty category.

Thank you for your continued interest in doing business with the City of Chicago.

Sincerely,



Jamie L. Rhee
Chief Procurement Officer

Cook County Government
Letter of Intent

M/WBE Firm: Code Engineering Services (MBE) Certifying Agency: City of Chicago
Address: 2021 Midwest Road, Suite 200 Certification Expiration Date: 4/1/13
City/State: Oakbrook, IL zip: 60523 FEIN #: 38-3632876
Phone: 630-953-8586 Fax: 630-789-8933 Contact Person: Sim Dawson
Email: code.sim@comcast.net Contract #: 08-50-1068P

Participation: Direct Indirect

Will the M/WBE firm be subcontracting any of the performance of this contract to another firm?

No Yes - Please attach explanation. Proposed Subcontractor: _____

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/Contract:

Electrical

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/Services: \$249,823

% of completion, progress bill.

LOI is contingent on Cook County awarding JOI a contract for the full scope of work proposed.
(If more space is needed to fully describe the M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Services/ Supply and Fee/Cost were completed.

[Signature]
Signature (M/WBE)
Sim Dawson

Print Name

Code Engineering Services

Firm Name

7/3/12
Date

[Signature]
Signature (Prime Bidder/Proposer)
Richard W. Smith

Print Name

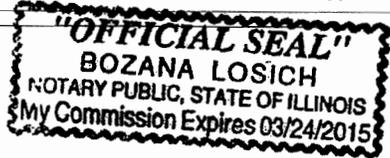
JOHNSON CONTROLS, INC.

Firm Name

6/29/12
Date

Subscribed and sworn before me
this 3rd day of JULY, 2012
Notary Public [Signature]
SEAL

Subscribed and sworn before me
this 29th day of JUNE, 2012
Notary Public [Signature]
SEAL



Revised 01/06/2011





DEPARTMENT OF PROCUREMENT SERVICES
CITY OF CHICAGO

MAR 28 2012

Catherine Tojaga
CT Mechanical LLC
199 S. Addison Rd, Suite 107A
Wood Dale, IL 60191

Annual Certificate Expires: February 1, 2013 - REVISED

Dear Catherine Tojaga:

We are pleased to inform you that CT Mechanical LLC has been certified as a Women Business Enterprise (WBE) by the City of Chicago. This WBE certification is valid until February 1, 2017; however your firm must be re-validated annually.

As a condition of continued certification during this five year period, you must file a No-Change Affidavit **within 60 days prior** to the date of expiration. Failure to file this Affidavit will result in the termination of your certification. You must also notify the City of Chicago of any changes in ownership or control of your firm or any other matters or facts affecting your firm's eligibility for certification.

It is important to note that you also have an ongoing affirmative duty to notify the City of Chicago of any changes in ownership or control of your firm, or any other fact affecting your firm's eligibility for certification within 10 days of such change. These changes may include but are not limited to a change of address, change of business structure, change in ownership or ownership structure, change of business operations, and/or gross receipts that exceed the program threshold.

Please note – you shall be deemed to have had your certification lapse and will be ineligible to participate as a MBE/WBE/BEPD if you fail to:

- ♦ file your No Change Affidavit within the required time period;
- ♦ provide financial or other records requested pursuant to an audit within the required time period; or
- ♦ notify the City of any changes affecting your firm's certification within 10 days of such change.

CT Mechanical LLC - REVISED

Further, if you or your firm is found to be involved in certification, bidding and/or contractual fraud or abuse, the City will pursue decertification and debarment. And in addition to any other penalty imposed by law, any person who knowingly obtains, or knowingly assists another in obtaining, a contract with the city by falsely representing that the individual or entity, or the individual or entity assisted, is a minority-owned business or a woman-owned business, is guilty of a misdemeanor, punishable by incarceration in the county jail for a period not to exceed six months or a fine of not less than \$5,000.00 and not more than \$10,000, or both.

Your firm's name will be listed in the City's Directory of Minority Business Enterprises and Women Business Enterprises in the specialty area(s) of:

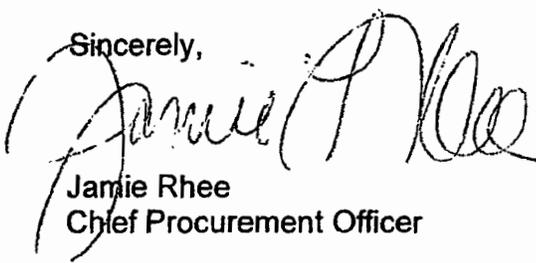
REVISED

- NAICS 238220 Plumbing and HVAC Contractors**
- NAICS 541330 Engineering services**

Your firm's participation on City contracts will be credited only toward Women Business Enterprise (WBE) goals in your area(s) of specialty. While your participation on City contracts is not limited to your specialty, credit toward goals will be given only for work done in the specialty category.

Thank you for your continued interest in the City's Minority Business Enterprise (MBE) Program.

Sincerely,



Jamie Rhee
Chief Procurement Officer

JR/mc

Cook County Government
Letter of Intent

M/WBE Firm: CT Mechanical, LLC (WBE) Certifying Agency: City of Chicago
Address: 199 S Addison Rd, Ste 107A Certification Expiration Date: 2/1/2013
City/State: Wood Dale, IL Zip: 60191 FEIN#: 26-1877103
Phone: 630-227-1700 Fax: 847-483-1370 Contact Person: Catherine Tojaga
Email: cto@ctmechanicalwbe.com Contract #: 08-50-1068P

Participation: Direct Indirect

Will the M/WBE firm be subcontracting any of the performance of this contract to another firm?

No Yes - Please attach explanation. Proposed Subcontractor: _____

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/Contract:

HVAC Construction, Subcontract Management

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/Services: \$315,000

% of completion, progress bill.

LOI is contingent on Cook County awarding JCI a contract for the full scope of work proposed.
(If more space is needed to fully describe M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/ Supply and Fee/Cost were completed.

[Signature]
Signature (M/WBE)

Catherine M Tojaga
Print Name

CT Mechanical, LLC
Firm Name

7-3-12
Date

[Signature]
Signature (Prime Bidder/Proposer)

Richard W. Smith
Print Name

JOHNSON CONTROLS, INC.
Firm Name

6-29-12
Date

Subscribed and sworn before me
this _____ day of _____, 20____.

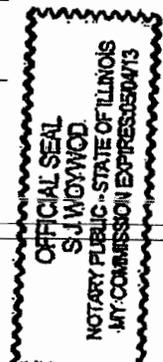
Notary Public _____

Subscribed and sworn before me
this 29th day of June, 2012.

Notary Public [Signature]

SEAL

SEAL



THE BOARD OF COMMISSIONERS

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COOK COUNTY
OFFICE OF CONTRACT COMPLIANCE

LAVERNE HALL
DIRECTOR

118 North Clark Street, Room 1020
Chicago, Illinois 60602-1304
TEL (312) 603-5502
FAX (312) 603-4547

January 18, 2012

Mr. Darrell Ortiz, President
Dekayo Corporation
15425 S. Cherrywood Ct.
Orland Park IL, 60462

Dear Mr. Ortiz:

Congratulations. We are pleased to inform you that Dekayo Corporation has been Certified as a MBE by Cook County Government. This MBE Certification must be revalidated annually.

Please use the enclosed Certificate of Certification as the validation of your Cook County MBE status and area of specialty.

As a condition of continued Certification, you must file a "No-Change Affidavit" within sixty (60) business days prior to the date of annual expiration. A processing fee of \$50.00, payable to Cook County Department of Revenue is required. Failure to file this Affidavit shall result in the termination of your Certification. You must notify Cook County Government's Office of Contract Compliance within ten (10) days of any change in ownership or control or any other matters or facts affecting your firm's eligibility for Certification.

Your firm's participation on Cook County contracts will be credited toward MBE goals in your area(s) of specialty. While your participation on Cook County contracts is not limited to your area of specialty, credit toward MBE goals will only be recognized for work done in the specialty category.

Thank you for your continued interest in Cook County Government's Minority and Women Business Enterprise Programs.

Sincerely,

LaVerne Hall
Director
LH/ss

Cook County Government

Office of Contract Compliance

certifies that the criteria for certification as a

Priority Business Enterprise

has been met by

Dekayo Corporation

Construction: Mechanical Construction Contractor; HVAC Equipment Service & Installation; Institutional & Commercial Building Construction; Project Management; MEP Consultant; Construction Management.

Issued Date: January 18, 2012

No Change Affidavit Due: January 18, 2013

NIGP Code(s): 91026, 03100, 91017, 91036, 91450, 95826, 95877

County: Cook

Ethnicity Code: 9



LaVerne Hall

Contract Compliance Director

Cook County Government
Letter of Intent

M/WBE Firm: Dekayo Corporation (MBE) Certifying Agency: Cook County
Address: 15425 S. Cherrywood Ct. Certification Expiration Date: 1/18/2013
City/State: Orland Park Zip: 60426-4006 FEIN #: 20-8831881
Phone: 708-595-8250 Fax: 708-349-4552 Contact Person: Darrell Ortiz
Email: dortiz@dekayocorp.com Contract #: 08-50-1068P

Participation: Direct Indirect

Will the M/WBE firm be subcontracting any of the performance of this contract to another firm?

No Yes - Please attach explanation. Proposed Subcontractor: _____

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/ Contract:

Construction Management, HVAC/Mechanical Work

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/ Services: \$345,000

% of completion, progress bill.

LOI is contingent on Cook County awarding JCI a contract for the full scope of work proposed.
(If more space is needed to fully describe M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/ Supply and Fee/Cost were completed.

[Signature]
Signature (M/WBE)

[Signature]
Signature (Prime Bidder/Proposer)

DARRELL ORTIZ
Print Name

Richard W. Smith
Print Name

Dekayo Corporation
Firm Name

JOHNSON CONTROLS, INC.
Firm Name

July 3-2012
Date

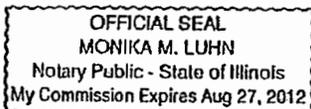
6-29-12
Date

Subscribed and sworn before me

this 3rd day of July, 2012
Notary Public Monika M. Luhn

Subscribed and sworn before me

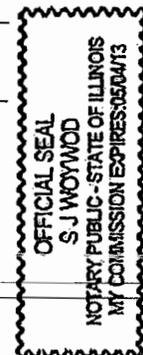
this 29th day of JUNE, 2012
Notary Public [Signature]



SEAL

Revised 01/06/2011

SEAL



THE BOARD OF COMMISSIONERS

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15th Dist
16th Dist
17th Dist



COOK COUNTY
OFFICE OF CONTRACT COMPLIANCE

LAVERNE HALL
DIRECTOR

118 North Clark Street, Room 1020
Chicago, Illinois 60602-1304
TEL (312) 603-5502
FAX (312) 603-4547

July 28, 2011

Mr. Melvin Armstrong, Vice-President
Diversified General Contractors
17935 Chappel Ave
Lansing IL, 60438

Annual Certification Expires:

July 28, 2012

Dear Mr. Armstrong:

Congratulations on your continued eligibility for Certification as a **MBE (6)** by Cook County Government. This **MBE (6)** Certification is valid until **July 28, 2014**; however your firm must be revalidated annually. Your firm's next annual validation is required by **July 28, 2012**.

As a condition of continued Certification during this three (3) year period, you must file a "**No Change Affidavit**" within **sixty (60) business days** prior to the date of annual expiration. Failure to file this Affidavit shall result in the termination of your Certification. You must notify Cook County Government's Office of Contract Compliance of any change in ownership or control or any other matters or facts affecting your firm's eligibility for Certification.

Cook County Government may commence action to remove your firm as a **MBE (6)** vendor if you fail to notify us of any changes of facts affecting your firm's Certification, or if your firm otherwise fails to cooperate with the County in any inquiry or investigation. Removal of your status may also be commenced if your firm is found to be involved in bidding or contractual irregularities.

Your firm's name will be listed in Cook County's Directory of Minority Business Enterprises and Women Business Enterprises in the area(s) of specialty:

CONSTRUCTION; CONSTRUCTION MANAGEMENT; HVAC SALES, SERVICE AND INSTALLATION; FIRE SPRINKLER DESIGN AND INSTALLATION.

Your firm's participation on Cook County contracts will be credited toward **MBE (6)** goals in your area(s) of specialty. While your participation on Cook County contracts is not limited to your specialty, credit toward **MBE (6)** goals will be given only for work done in the specialty category.

Thank you for your continued interest in Cook County Government's Minority and Women Business Enterprise Programs.

Sincerely,

Laverne Hall
Director

LH/ss

Cook County Government
Letter of Intent

M/WBE Firm: Diversified General Contractor Certifying Agency: Cook County
(MBE)
Address: 17935 Chappel Ave. Certification Expiration Date: 7/28/2012
City/State: Lansing, IL Zip: 60438 FEIN #: 30-0133745
Phone: 708-474-2905 Fax: 708-474-2909 Contact Person: Melvin Armstrong
Email: ma.dac@comcast.net Contract #: 08-50-1068P

Participation: Direct Indirect

Will the M/WBE firm be subcontracting any of the performance of this contract to another firm?

No Yes - Please attach explanation. Proposed Subcontractor: _____

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/Contract:

HVAC/Mechanical Work

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/Services: \$1,319,266

% of completion, progress bill.

LOI is contingent on Cook County awarding JCI a contract for the full scope of work proposed.

(If more space is needed to fully describe the M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/ Supply and Fee/Cost were completed.

Signature (M/WBE)

Melvin Armstrong
Print Name

Diversified General Contractors Inc.

Firm Name

7/3/12
Date

Subscribed and sworn before me

this 3rd day of July, 2012.

Signature (Prime Bidder/Proposer)

Richard W. Smith
Print Name

JOHNSON CONTROLS, INC.

Firm Name

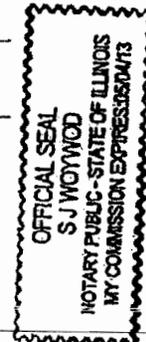
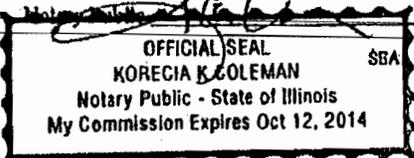
6-29-12
Date

Subscribed and sworn before me

this 29th day of JUNE, 2012.

Notary Public

SJ Waywod





CITY OF CHICAGO
OFFICE OF COMPLIANCE

December 22, 2011

Salvador Garcia, Jr.
Enviroplus, Inc.
8044 Lawndale Ave.
Skokie, IL 60076

Annual Certificate Expires: December 30, 2012

Dear Salvador Garcia, Jr.:

We are pleased to inform you that Enviroplus, Inc. has been re-certified as a Minority Business Enterprise (MBE) by the City of Chicago. This MBE certification is valid until **December 30, 2016**; however your firm must be re-validated annually.

As a condition of continued certification during this five year period, you must file a No-Change Affidavit **within 60 days prior** to the date of expiration. Failure to file this Affidavit will result in the termination of your certification. You must also notify the City of Chicago of any changes in ownership or control of your firm or any other matters or facts affecting your firm's eligibility for certification.

It is important to note that you also have an ongoing affirmative duty to notify the City of Chicago of any changes in ownership or control of your firm, or any other fact affecting your firm's eligibility for certification within 10 days of such change. These changes may include but are not limited to a change of address, change of business structure, change in ownership or ownership structure, change of business operations, and/or gross receipts that exceed the program threshold.

Please note – you shall be deemed to have had your certification lapse and will be ineligible to participate as a MBE/WBE/BEPD if you fail to:

- ♦ file your No Change Affidavit within the required time period;
- ♦ provide financial or other records requested pursuant to an audit within the required time period; or
- ♦ notify the City of any changes affecting your firm's certification within 10 days of such change.



CITY OF CHICAGO
OFFICE OF COMPLIANCE

Enviroplus, Inc.

Page 2

Further, if you or your firm is found to be involved in certification, bidding and/or contractual fraud or abuse, the City will pursue decertification and debarment. And in addition to any other penalty imposed by law, any person who knowingly obtains, or knowingly assists another in obtaining, a contract with the city by falsely representing that the individual or entity, or the individual or entity assisted, is a minority-owned business or a woman-owned business, is guilty of a misdemeanor, punishable by incarceration in the county jail for a period not to exceed six months or a fine of not less than \$5,000.00 and not more than \$10,000, or both.

Your firm's name will be listed in the City's Directory of Minority Business Enterprises and Women Business Enterprises in the specialty area(s) of:

NAICS CODE: 238990 – Special Trade Contractors

NAICS CODE: 541620 – Environmental Consulting Services

NAICS CODE: 562910 – Remediation Services; Environmental

Your firm's participation on City contracts will be credited only toward Minority Business Enterprise (MBE) goals in your area(s) of specialty. While your participation on City contracts is not limited to your specialty, credit toward goals will be given only for work done in the specialty category.

Thank you for your continued interest in the City's Minority Business Enterprise (MBE) Program.

Sincerely,

Michael Chambers
Senior Compliance Officer
CITY OF CHICAGO
City Hall

TA



547 W. Jackson Blvd. Chicago, Illinois 60661 Telephone: (312) 322-6900 TTY# 1-312-322-6774

April 13, 2012

Salvador Garcia Jr.
Enviropus, Inc.
8044 Lawndale Ave.
Skokie, IL 60076-3436

RECEIVED
APR 17 2012

Dear Mr. Garcia:

Metra has reviewed your annual *No Change Affidavit* and supporting documentation and is pleased to inform you that your firm continues to meet the Disadvantaged Business Enterprise (DBE) program certification eligibility standards set forth in 49 CFR Subpart D 26.61. Your next No Change Affidavit is due **February 1, 2013**. Notification will be sent to you sixty (60) days prior to this date.

This certification allows your firm to participate as a DBE in the Illinois Unified Certification Program (IL UCP). The participating agencies include the Illinois Department of Transportation, the City of Chicago, the Chicago Transit Authority, Metra and Pace.

If there is any change in circumstances during the course of your five-year certification period that affect your ability to meet size, disadvantaged status, ownership, or control requirements or any material change in the information provided in your initial application, you must provide written notification to this agency within thirty (30) days of the occurrence of the change. Failure to provide this information is a ground for denial of certification based on failure to cooperate pursuant to 49 CFR 26.109(c).

The Directory is used by prime contractors/consultants, as well as other agencies, to solicit participation of DBE firms. The Directory can be accessed on the Internet at www.metrarail.com. Under the Business Diversity (DBE) link. Your firm's name will appear in the IL UCP DBE Directory under the following:

NAICS Code(s): 562910

Specialty: Asbestos Abatement Lead and Mold Remediation

Your participation on contracts will only be credited toward DBE contract goals when your firm performs a Commercially Useful Function (CUF) in its approved area(s) of specialty.

Sincerely,

Janice R. Thomas, CPPB
Director
Office of DBE Administration

JRT:ms/bg

Cook County Government
Letter of Intent

M/WBE Firm: Enviroplus, Inc. (MBE) Certifying Agency: City of Chicago
Address: 8044 Lawndale Avenue Certification Expiration Date: _____
City/State: Skokie, IL Zip: 60076 FEIN #: 36-3635923
Phone: 847-475-0022 Fax: 847-475-0155 Contact Person: Salvador Garcia
Email: office@enviroplus-inc.com Contract #: 08-50-1068P

Participation: Direct Indirect

Will the M/WBE firm be subcontracting any of the performance of this contract to another firm?

No Yes - Please attach explanation. Proposed Subcontractor: _____

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/Contract:

Environmental Remediation

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/Services:

\$75,761

% of completion, progress bill.

LOI is contingent on Cook County awarding JCI a contract for the full scope of work proposed.

(If more space is needed to fully describe M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/ Supply and Fee/Cost were completed.

S. Garcia Jr.
Signature (M/WBE)

[Signature]
Signature (Prime Bidder/Proposer)

Salvador Garcia Jr.
Print Name

Richard W. Smith
Print Name

Enviroplus, Inc.
Firm Name

JOHNSON CONTROLS, INC.
Firm Name

07-03-12
Date

6-29-12
Date

Subscribed and sworn before me

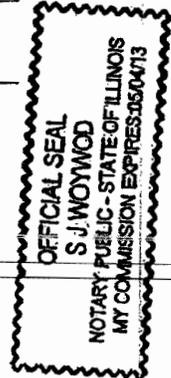
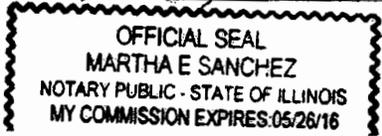
Subscribed and sworn before me

this 3rd day of July, 2012

this 29th day of JUNE, 2012

Notary Public Martha E. Sanchez

Notary Public S. J. Woywod



THE BOARD OF COMMISSIONERS

TONI PRECKWINKLE

PRESIDENT



COOK COUNTY
OFFICE OF CONTRACT COMPLIANCE

LAVERNE HALL
DIRECTOR

118 North Clark Street, Room 1020
Chicago, Illinois 60602-1304
TEL (312) 603-5502
FAX (312) 603-4547

ANILEAN COLLINS	1st Dist.	PETER N. SILVESTRI	8th Dist.
ODERT STEELE	2nd Dist.	BRIDGET GAINER	10th Dist.
MERRY RUTLER	3rd Dist.	JOHN P. DALEY	11th Dist.
WILLIAM M. BEAVERS	4th Dist.	JOHN A. FRITCHEY	12th Dist.
EBORAH SIMS	5th Dist.	LARRY SUFFREDIN	13th Dist.
DAJ PATRICIA MURPHY	6th Dist.	GREGG BOSLIN	14th Dist.
EGUS G. GARCIA	7th Dist.	TIMOTHY D. SCHNEIDER	15th Dist.
KWYN REYES	8th Dist.	JEFFREY R. TOROLSKI	16th Dist.
		ELIZABETH ANN DOODY GORANIN	17th Dist.

November 3, 2011

Ms. Colleen Kramer, President
Evergreen Supply Co.
9901 S. Torrence Avenue
Chicago, Illinois 60617

Annual Certification Expires: November 3, 2012

Dear Ms. Kramer:

We are pleased to inform you that **Evergreen Supply Co.** has been Re-certified as a **WBE** by Cook County Government. This **WBE** Certification is valid until **November 3, 2014**; however your firm must be revalidated annually. Your firm's next annual validation is required by **November 3, 2012**.

As a condition of continued Certification during this three (3) year period, you must file a **"No Change Affidavit"** within **sixty (60) days** prior to the date of annual expiration. Please include the non-refundable fee of **\$50.00**, payable to **Cook County Department of Revenue**. Failure to file this Affidavit shall result in the termination of your Certification. You must notify **Cook County Government's Office of Contract Compliance**, of any change in ownership or control of your firm or any other matters or facts affecting your firm's eligibility for Certification.

Cook County Government may commence action to remove your firm as a **WBE** vendor if you fail to notify us of any changes of facts affecting your firm's Certification, or if your firm otherwise fails to cooperate with the County in any inquiry or investigation. Removal of status may also be commenced if your firm is found to be involved in bidding or contractual irregularities.

Your firm's name will be listed in Cook County's Directory of Minority Business Enterprises and Women Business Enterprises in the area(s) of specialty:

Regular Dealer: Electrical Equipment and Supplies

Your firm's participation on Cook County contracts will be credited toward **WBE** goals in your area(s) of specialty. While your participation on Cook County contracts is not limited to your specialty, credit toward **WBE** goals will be given only for work done in the specialty category.

Thank you for your continued interest in Cook County Government's Minority and Women Business Enterprise Programs.

Sincerely,

Laverne Hall
Director
LH/gb

Cook County Government
Letter of Intent

M/WBE Firm: Evergreen Supply Company (WBE) Certifying Agency: Cook County
Address: 9901 S. Torrence Ave. Certification Expiration Date: 11/3/12
City/State: Chicago, IL Zip: 60617 EBIN #: 36-3444463
Phone: 773-375-4750 Fax: 773-734-9874 Contact Person: Patricia Gallagher
Email: wprice@evergreensupply.com Contract #: 08-50-1068P

Participation: Direct Indirect

Will the M/WBE firm be subcontracting any of the performance of this contract to another firm?

No Yes -- Please attach explanation. Proposed Subcontractor: _____

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/Contract:

Lighting & Electrical Supply

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/Services: \$705,800

% of completion
Not as contingent on Cook County awarding JCI a contract for the full scope of work proposed.
(If more space is needed to fully describe M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/ Supply and Fee/Cost were completed.

[Signature]
Signature (M/WBE)

COLLEEN KRAMER
Print Name

Evergreen Supply Company
Firm Name

07/03/2012
Date

[Signature]
Signature (Prime Bidder/Proposer)

Richard W. Smith
Print Name

JOHNSON CONTROLS, INC.
Firm Name

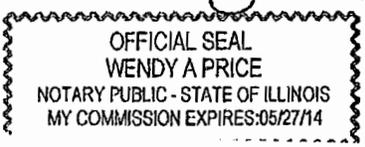
6/29/12
Date

Subscribed and sworn before me
this 3 day of July, 2012.

Notary Public [Signature]

Subscribed and sworn before me
this 29th day of JUNE, 2012.

Notary Public [Signature]





CITY OF CHICAGO
OFFICE OF COMPLIANCE

April 25, 2011

Phyllis McGlynn
J-Mac Associates, Ltd.
One North 050 Gary Avenue
Carol Stream, IL 60188

Annual Certificate Expires: May 1, 2012

Dear Phyllis McGlynn:

Congratulations on your continued eligibility for certification as a **Women Business Enterprise (WBE)** by the City of Chicago. This certification is valid until **May 1, 2013**.

As you know, your firm must also be re-validated annually. As such, your firm's next No Change Affidavit is due by **May 1, 2012**. Please remember, you have an affirmative duty to file your No-Change Affidavit **60 days prior to the date of expiration**.

It is important to note that you also have an ongoing affirmative duty to notify the City of Chicago of any changes in ownership or control of your firm, or any other fact affecting your firm's eligibility for certification within 10 days of such change. These changes may include but are not limited to a change of address, change of business structure, change in ownership or ownership structure, change of business operations, and/or gross receipts that exceed the program threshold.

Please note – you shall be deemed to have had your certification lapse and will be ineligible to participate as a MBE/WBE/BEPD if you fail to:

- o file your No Change Affidavit within the required time period;
- o provide financial or other records requested pursuant to an audit within the required time period; or
- o notify the City of any changes affecting your firm's certification within 10 days of such change.

Further, if you or your firm is found to be involved in certification, bidding and/or contractual fraud or abuse, the City will pursue decertification and debarment. And in addition to any other penalty imposed by law, any person who knowingly obtains, or knowingly assists another in obtaining, a contract with the city by falsely representing that the individual or entity, or the individual or entity assisted, is a minority-owned business or a woman-owned business, is guilty of a misdemeanor, punishable by incarceration in the county jail for a period not to exceed six months or a fine of not less than \$5,000.00 and not more than \$10,000, or both.

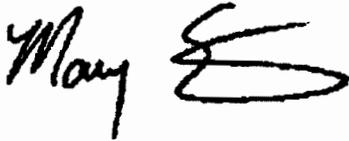
Your firm is listed in the City's Directory of Minority Business Enterprises and Women Business Enterprises in the specialty area(s) of:

**CONSTRUCTION MANAGEMENT, COMMERCIAL AND INSTITUTIONAL
BUILDING**

Your firm's participation on City contracts will be credited only toward Women Business Enterprise (WBE) goals in your area(s) of specialty. While your participation on City contracts is not limited to your specialty, credit toward Women Business Enterprise (WBE) goal will be given only for work done in a specialty category.

Thank you for your continued participation in the City's Supplier Diversity Program.

Sincerely,

A handwritten signature in black ink, appearing to read "Mary E", with a large, stylized flourish at the end.

Mary Elliott
Acting Managing Deputy

COOK COUNTY GOVERNMENT LETTER OF INTENT (SECTION 2)

MWBE Firm: J-MAC Associates (WBE) Certifying Agency: City of Chicago
Address: 1 N050 Gary Ave. Certification Expiration Date: 5/1/2013
City/State: Carol Stream, IL 60188 FEIN #: 36-3360683
Phone: 630-690-2500 Fax: 630-690-1271 Contact Person: Phyllis McGlynn
Email: phyllis@jmac-ltd.com Contract #: 08-50-1068P

Participation: Direct Indirect

Will the MWBE firm be subcontracting any of the performance of this contract to another firm?

No Yes - Please attach explanation. Proposed Subcontractor: _____

The undersigned MWBE is prepared to provide the following Commodities/Services for the above named Project/ Contract:

Construction Management

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/ Services:

\$19,800
1/2 completion, progress billing

LOI is contingent on Cook County awarding JCI a contract for the full scope of work proposed.

(If more space is needed to fully describe MWBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/ Supply and Fee/Cost were completed.

Phyllis McGlynn
Signature (MWBE)

PHYLLIS MCGLYNN
Print Name

J-MAC Associates
Firm Name

07/05/12
Date

Richard W. Smith
Signature (Prime Bidder/Proposer)

Richard W. Smith
Print Name

Johnson Controls, Inc.
Firm Name

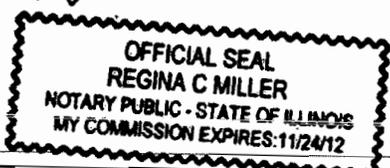
06/29/12
Date

Subscribed and sworn before me

this 5 day of JULY, 2012

Notary Public: Regina C. Miller

SEAL



Subscribed and sworn before me

this 29 day of June, 2012

Notary Public: Michelle R. Trachsel

SEAL



COOK COUNTY GOVERNMENT LETTER OF INTENT (SECTION 2)

(MBE)

M/WBE Firm: Level-1 Global Solutions Certifying Agency: Cook County
Address: 70 W Madison, Ste 1400 Certification Expiration Date:
City/State: Chicago, IL Zip 60602 FEIN #: 30-0007064
Phone: 312-644-9400 Fax: Contact Person: Thomas McElroy
Email: tdm@level-1.com Contract #: 08-50-1068P

Participation: [X] Direct [] Indirect

Will the M/WBE firm be subcontracting any of the performance of this contract to another firm?

[X] No [] Yes - Please attach explanation. Proposed Subcontractor:

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/ Contract:

IT Services

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/ Services:

\$50,000 % of completion, progress billing

LOI is contingent on Cook County awarding JCI a contract for the full scope of work proposed.

(If more space is needed to fully describe M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/Supply and Fee/Cost were completed.

Signature (M/WBE) [Signature]
Print Name: TD [Signature]
Firm Name: Level-1 Global Solutions
Date: 6/29/12

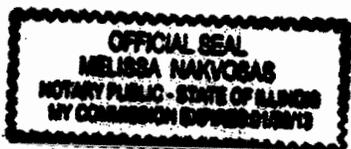
Signature (Prime Bidder/Proposer) [Signature]
Print Name: Richard W. Smith
Firm Name: Johnson Controls, Inc.
Date: 6/29/12

Subscribed and sworn before me
this 3rd day of July, 2012
Notary Public: [Signature]

Subscribed and sworn before me
this 29 day of June, 2012
Notary Public: [Signature]

SEAL

SEAL



THE BOARD OF COMMISSIONERS
TONI PRECKWINKLE
PRESIDENT



COOK COUNTY
OFFICE OF CONTRACT COMPLIANCE

LAVERNE HALL
DIRECTOR

118 North Clark Street, Room 1020
Chicago, Illinois 60602-1304
TEL (312) 603-5502
FAX (312) 603-4547

EARLEAN COLLINS	1st Dist.	PETER N. SILVESTRI	9th Dist.
ROBERT STEELE	2nd Dist.	BRIDGET GAINER	10th Dist.
JERRY BUTLER	3rd Dist.	JOHN P. DALEY	11th Dist.
WILLIAM M. BEAVERS	4th Dist.	JOHN A. FRITCHEY	12th Dist.
DEBORAH SIMS	5th Dist.	LARRY SUFFREDIN	13th Dist.
JOAN PATRICIA MURPHY	6th Dist.	GREGG GOSLIN	14th Dist.
JESUS G. GARCIA	7th Dist.	TIMOTHY O. SCHNEIDER	15th Dist.
EDWIN REYES	8th Dist.	JEFFREY R. TOBOLSKI	16th Dist.
		ELIZABETH ANN DOODY GORMAN	17th Dist.

February 21, 2012

Mr. Wayne Liu, President
Pace Systems, Inc.
2040 Corporate Lane
Naperville, IL 60563

Dear Mr. Liu:

Congratulations. We are pleased to inform you that **Pace Systems, Inc.** will maintain its certification as an **MBE (8)** by Cook County Government. This **MBE (8)** Certification must be revalidated annually.

Please use the enclosed Certificate of Certification as validation of your Cook County MBE status and area of specialty.

As a condition of continued Certification during this three (3) year period, you must file a "**No-Change Affidavit**" within **sixty (60) business days** prior to the date of annual expiration. A processing fee of \$50.00, payable to Cook County Department of Revenue is required with the No-Change Affidavit. Failure to file this Affidavit shall result in the termination of your Certification. You must notify Cook County Government's Office of Contract Compliance within ten (10) days of any change in ownership or control or any other matters or facts affecting your firm's eligibility for Certification.

Your firm's participation on Cook County contracts will be credited toward **MBE (8)** goals in your area(s) of specialty. While your participation on Cook County contracts is not limited to your area of specialty, credit toward **MBE (8)** goals will only be recognized for work done in the specialty category.

Thank you for your continued interest in Cook County Government's Minority and Women Business Enterprise Programs.

Sincerely,

LaVerne Hall
Director

LH/ehw

Cook County Government

Office of Contract Compliance

certifies that the criteria for certification as a

Priority Business Enterprise

has been met by

Pace Systems, Inc.

Technology: Regular Dealer of Computers, Computer Peripherals, Software and Service;
Infrastructure Installation and Support

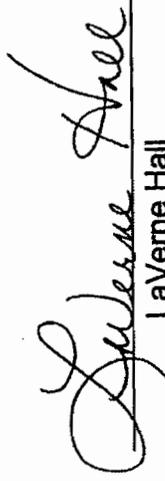
Issued Date: February 21, 2012

No Change Affidavit Due: February 21, 2013

NIGP Code(s): 91829, 28095 & 20678

Ethnicity Code: 8

County: Cook



LaVerne Hall
Contract Compliance Director

Cook County Government
Letter of Intent

M/WBE Firm: Pace Systems, Inc. (MBE)

Certifying Agency: Cook County

Address: 2040 Corporate Lane

Certification Expiration Date: 2/21/13

City/State: Naperville IL Zip: 60563-9691

FEIN #: 36-3240909

Phone: 630-395-2260 Fax: 630-395-2250

Contact Person: Wayne H. Liu JACK O'CONNOR

Email: linda@mcity.com

Contract #: 08-50-1068P TOLA LUBBARD

Participation: Direct Indirect

Will the M/WBE firm be subcontracting any of the performance of this contract to another firm?

No Yes - Please attach explanation. Proposed Subcontractor: _____

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/Contract:

Electrical

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/Services: \$238,697

% of completion, progress bill.

LOI is contingent on Cook County awarding JCI a contract for the full scope of work proposed.

(If more space is needed to fully describe M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/ Supply and Fee/Cost were completed.

Signature (M/WBE)

Tom Lubbard

Print Name

Pace Systems, Inc.

Firm Name

July 5th, 2012

Date

Subscribed and sworn before me

this 5th day of JULY, 2012.

Notary Public Cindy L. Daehne

Signature (Prime Bidder/Proposer)

Richard W. Smith

Print Name

JOHNSON CONTROLS, INC.

Firm Name

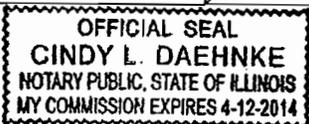
6/29/12

Date

Subscribed and sworn before me

this 29th day of JUNE, 2012.

Notary Public SJ Waywood



SEAL

Revised 01/06/2011

SEAL



THE BOARD OF COMMISSIONERS

TONI PRECKWINKLE

PRESIDENT



COOK COUNTY
OFFICE OF CONTRACT COMPLIANCE

LAVERNE HALL
DIRECTOR

118 North Clark Street, Room 1020
Chicago, Illinois 60602-1304
TEL (312) 603-5502
FAX (312) 603-4547

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ROBERT STEELE	2nd Dist.	BRIDGET GAINER	10th Dist.
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DEBORAH SIMS	5th Dist.	LARRY SLUFFREDIN	13th Dist.
JOAN PATRICIA MURPHY	6th Dist.	GREGG GOSLIN	14th Dist.
JESUS G. GARCIA	7th Dist.	TIMOTHY D. SCHNEIDER	15th Dist.
EDWIN REYES	8th Dist.	JEFFREY R. TOBOLSKI	16th Dist.
		ELIZABETH ANN DOODY GORMAN	17th Dist.

June 5, 2012

Mr. Edward del Castillo, President
PCS Power & Communications, Inc.
d/b/a Kel-Tech Electric Company
279 E. Helen Road
Palatine, IL 60067

Dear Mr. del Castillo:

Congratulations. We are pleased to inform you that PCS Power & Communications, Inc. d/b/a Kel-Tech Electric Company will maintain its certification as an MBE (9) by Cook County Government. This MBE Certification must be revalidated annually.

Please use the enclosed Certificate of Certification as validation of your Cook County MBE status and area of specialty.

As a condition of continued Certification during this three (3) year period, you must file a **"No-Change Affidavit"** within sixty (60) business days prior to the date of annual expiration. A processing fee of \$50.00, payable to Cook County Department of Revenue is required with the No-Change Affidavit. Failure to file this Affidavit shall result in the termination of your Certification. You must notify Cook County Government's Office of Contract Compliance within ten (10) days of any change in ownership or control or any other matters or facts affecting your firm's eligibility for Certification.

Your firm's participation on Cook County contracts will be credited toward MBE goals in your area(s) of specialty. While your participation on Cook County contracts is not limited to your area of specialty, credit toward MBE goals will only be recognized for work done in the specialty category.

Thank you for your continued interest in Cook County Government's Minority and Women Business Enterprise Programs.

Sincerely,

LaVerne Hall
Director
LH/ek



Cook County Government

Office of Contract Compliance

certifies that the criteria for certification as a

Minority Business Enterprise

has been met by

**PCS Power & Communications Inc.
d/b/a Kel-Tech Electric Company**

Communications: Wireless and Cable Communications Design, Installation and Coordination Services
Network, Voice and Fiber Optic Cable

Issued Date: June 5, 2012

No Change Affidavit Due: June 5, 2013

NIGP Code(s): 83829, 83833, 83896, 91895, 96218

Ethnicity Code: 9

County: Cook



LaVerne Hall
Contract Compliance Director

Cook County Government
Letter of Intent

(MBE)

M/WBE Firm: PCS Power & Communications Solutions, Inc. Certifying Agency: Cook County
Address: 279 E. Helen Road Certification Expiration Date: 6/5/2013
City/State: Palatine, IL Zip: 60067 FEIN #: 04-3763137
Phone: 847-358-8900 Fax: _____ Contact Person: Edward del Castillo
Email: delcastillo@pcsolutions.com Contract #: 08-50-1068P

Participation: Direct Indirect

Will the M/WBE firm be subcontracting any of the performance of this contract to another firm?

No Yes - Please attach explanation. Proposed Subcontractor: _____

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/Contract:

Electrical

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/Services: \$119,550

% of completion, progress bill.

LOI is contingent on Cook County awarding JCI a contract for the full scope of work proposed.
(If more space is needed to fully describe M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/Supply and Fee/Cost were completed.

Signature (M/WBE)
Ed del Castillo
Print Name

Signature (Prime Bidder/Proposer)
Richard W. Smith
Print Name

PCS Power & Communications Solutions
Firm Name Inc. JOHNSON CONTROLS, INC.
Firm Name
7-5-12
Date

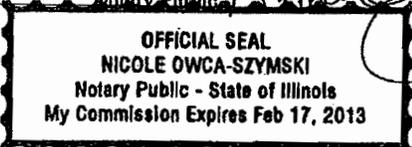
7-5-12
Date

Subscribed and sworn before me
this 5th day of July, 2012.

Subscribed and sworn before me
this 29th day of JUNE, 2012.

Notary Public Nicole Owca-SzymSKI

Notary Public S.J. Waywood



SEAL

Revised 01/06/2011

SEAL





CHICAGO MINORITY SUPPLIER DEVELOPMENT COUNCIL

THIS CERTIFIES THAT

PRIMERA ENGINEERS, LTD.

Has met the requirements for certification as a bona fide Minority Business Enterprise as defined by the National Minority Supplier Development Council, Inc. (NMSDC) and as adopted by the Chicago Minority Supplier Development Council.

****NAICS Codes: 541310, 541330**

****Description of their product/services as defined by the North American Industry Classification System (NAICS)**

Product/Service Description: Professional services, architectural, engineering and construction

9/30/2011

Issued Date

9/30/2012

Expiration Date

CH624

Certificate Number

Shelva L. Hill Morgan
President, ChicagoMSDC

Ely using your assigned (through NMSDC only) password, NMSDC Corporate Members may view the original certificate by logging in at: <http://www.nmsdc.org>



An affiliate of the National Minority Supplier Development Council, Inc. (NMSDC)

Cook County Government
Letter of Intent

M/WBE Firm: Primera Engineers, Limited (MBE) Certifying Agency: City of Chicago
Address: 100 S Wacker Drive Certification Expiration Date: 9-30-2012
City/State: Chicago, IL Zip: 60606 FEIN #: 36-3520747
Phone: 312-606-0910 Fax: 312-606-0415 Contact Person: Michael DeSantiago
Email: jfeeney@primerachicago.com Contract #: 08-50-1068P

Participation: Direct Indirect

Will the M/WBE firm be subcontracting any of the performance of this contract to another firm?

No Yes -- Please attach explanation. Proposed Subcontractor: _____

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/Contract:

Engineering & Design

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/Services: \$589,700

% of completion, progress bill.

LOI is contingent on Cook County awarding JCI a contract for the full scope of work proposed.

(If more space is needed to fully describe M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/ Supply and Fee/Cost were completed.

Signature (M/WBE)

James E Feeney

Print Name

Primera Engineers, Limited

Firm Name

7-3-2012

Date

Signature (Prime Bidder/Proposer)

Richard W. Smith

Print Name

JOHNSON CONTROLS, INC.

Firm Name

6-29-12

Date

Subscribed and sworn before me

this 3rd day of July, 2012.

Notary Public Maribel Medina

SEAL

Subscribed and sworn before me

this 29th day of JUNE, 2012.

Notary Public S J Waywood

SEAL



Revised 01/06/2011



Cook County Government

Office of Contract Compliance

certifies that the criteria for certification as a

Minority Business Enterprise

Consulting: Marketing, Public Relations, Telecommunication and Energy Management

Issued Date: January 17, 2012
No Change Affidavit Due: January 17, 2013
NIGP Code(s): 91826, 91841, 91876, 91877
Ethnicity Code: 6



PLD Resources LLC

[Signature]
Lavonne Hall
Contract Compliance Director

Cook County Government
Letter of Intent

M/WBE Firm: RLD Resources LLC (MBE) Certifying Agency: Cook County
 Address: 333 N. Michigan Ave., Ste 1810 Certification Expiration Date: _____
 City/State: Chicago, IL Zip: 60601-3967 FEIN#: 36-4328691
 Phone: 312-785-0798 Fax: 800-280-6415 Contact Person: Richard Dent
 Email: rdent@rldresources.com Contract #: 08-50-1068P

Participation: Direct Indirect

Will the M/WBE firm be subcontracting any of the performance of this contract to another firm?

No Yes - Please attach explanation. Proposed Subcontractor: _____

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/Contract:

Energy Consulting

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/Services: \$12,500

% of completion, progress bill.

LOI is contingent on Cook County awarding JCI a contract for the full scope of work proposed.

(If more space is needed to fully describe the M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/Supply and Fee/Cost were completed.

Signature (M/WBE)
Richard L. Dent

Print Name

RLD Resources, LLC.
Firm Name

July 3, 2012
Date

Subscribed and sworn before me

this 3rd day of July, 2012.

Notary Public Jennifer P. Turner

SEAL

Signature (Prime Bidder/Proposer)
Richard W. Smith

Print Name

JOHNSON CONTROLS, INC.
Firm Name

6/29/12
Date

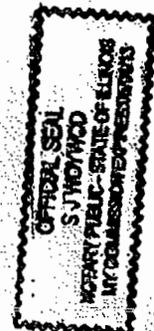
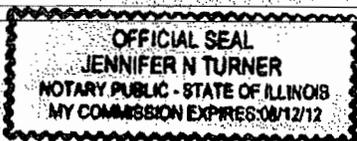
Subscribed and sworn before me

this 29th day of JUNE, 2012.

Notary Public Of Waywood

SEAL

Revised 01/06/2011



COOK COUNTY GOVERNMENT LETTER OF INTENT (SECTION 2)

MWBE Firm: Stevenson Crane
Address: 410 Stevenson Dr
City/State: Bolingbrook Zip: 60440 IL
Phone: 630-972-9199 Fax: _____
Email: donna@stevensoncrane.com

Certifying Agency: WBENC
Certification Expiration Date: 11/26/12
FEIN #: 36-3638757
Contact Person: Donna Stevenson
Contract #: 08-50-1068P

Participation: Direct Indirect

Will the MWBE firm be subcontracting any of the performance of this contract to another firm?

No Yes -- Please attach explanation. Proposed Subcontractor: _____

The undersigned MWBE is prepared to provide the following Commodities/Services for the above named Project/ Contract:

Crane Services

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/ Services:

\$27,500
% of completion, progress billing

LOI is contingent on Cook County awarding JCI a contract for the full scope of work proposed.

(If more space is needed to fully describe MWBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/ Supply and Fee/Cost were completed.

Donna Stevenson
Signature (MWBE)

Donna Stevenson
Print Name

Stevenson Crane Service, Inc.
Firm Name

7/3/2012
Date

Subscribed and sworn before me

this 3rd day of July, 2012

Notary Public Dawn Graziano

SEAL

Richard W. Smith
Signature (Prime Bidder/Proposer)

Richard W. Smith
Print Name

Johnson Controls, Inc.
Firm Name

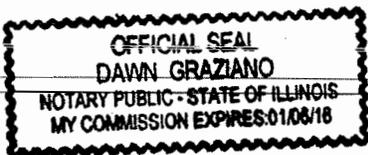
06/29/12
Date

Subscribed and sworn before me

this 29 day of June, 2012

Notary Public Michelle R. Trachsel

SEAL



WBENC Women's Business Enterprise
National Council

hereby grants

National Women's Business Enterprise Certification
to
Stevenson Crane Service, Inc.

who has successfully met WBENC's standards as a Women's Business Enterprise (WBE).
This certification affirms the business is woman-owned, operated and controlled, and is valid through the date herein.

WBENC National WBE Certification was processed and validated by Women's
Business Development Center - Chicago, a WBENC Regional Partner Organization.

Expiration Date: 11/26/2012

WBENC National Certificate Number: 2005111801

Hedy M. Rainer
Authorized by Hedy M. Rainer, Co-President, S. Carol Dugai, Co-President

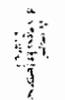
Women's Business Development Center - Chicago



NAICS Codes: 532412, 423830

UNSPSC Codes: 22000000, 22100000

Astro



Cook County Government

Office of Contract Compliance

certifies that the criteria for certification as a

Minority Business Enterprise



Construction: Electrical & Telecommunications Contractor; Railroad Signal & Third Rail Work;
Power & Communication Line; Substation Work & Related Structures

Issued Date: May 14, 2012

No Charge Affidavit Due: May 14, 2013

NIGP Code(s): 91082, 91438, 91579, 91891, 91895

Ethnicity Code: 9

County: Cook

Laverne Hall
LaVerne Hall

Contract Compliance Director

Cook County Government
Letter of Intent

M/WBE Firm: Suarez Electric Company (MBE) Certifying Agency: Cook County
Address: 4439 W. Montross Ave Certification Expiration Date: 5/14/13
City/State: Chicago, IL Zip: 60641-2024 IBIN #: 36-3678542
Phone: 773-202-9077 Fax: 773-202-8430 Contact Person: David M. Suarez
Email: dsuarez@suarezelectric.com Contract #/ 08-50-1068P

Participation: Direct Indirect

Will the M/WBE firm be subcontracting any of the performance of this contract to another firm?

No Yes -- Please attach explanation. Proposed Subcontractor: _____

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/Contract:

Electrical

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/Services: \$524,634

% of completion, progress bill

OR is contingent on Cook County awarding DCI a contract for the full scope of work proposed,
(If more space is needed to fully describe the M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

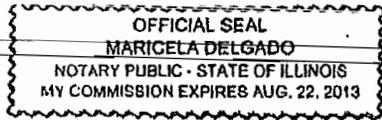
THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/ Supply and Fee/Cost were completed.

[Signature]
Signature (M/WBE)
DAVID M. SUAREZ
Print Name
Suarez Electrical Company
Firm Name
07/02/2012
Date

[Signature]
Signature (Prime Bidder/Proposer)
Richard W. Smith
Print Name
JOHNSON CONTROLS, INC.
Firm Name
6/29/12
Date

Subscribed and sworn before me
this 2nd day of July, 2012
Notary Public Maricela Delgado

Subscribed and sworn before me
this 29th day of JUNE, 2012
Notary Public Jf Waywood



SEAL

Revised 01/06/2011

SEAL



THE BOARD OF COMMISSIONERS

TONI PRECKWINKLE

PRESIDENT

EARLEAN COLLINS	1st Dist.	PETER N. SILVESTRI	9th Dist.
ROBERT STEELE	2nd Dist.	BRIDGET GAWNER	10th Dist.
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WILLIAM M. BEAVERS	4th Dist.	JOHN A. FRITCHEY	12th Dist.
DEBORAH SIMS	5th Dist.	LARRY SUFFREDIN	13th Dist.
JOAN PATRICIA MURPHY	6th Dist.	GREGG GOSLIN	14th Dist.
JESUS G. GARCIA	7th Dist.	TIMOTHY B. SCHNEIDER	15th Dist.
EDWIN REYES	8th Dist.	JEFFREY R. TODOLSKI	16th Dist.
		ELIZABETH ANN DOODY GOPMAN	17th Dist.



COOK COUNTY
OFFICE OF CONTRACT COMPLIANCE

LAVERNE HALL
DIRECTOR

118 North Clark Street, Room 1020
Chicago, Illinois 60602-1304
TEL (312) 603-5502
FAX (312) 603-4547

February 23, 2012

Mrs. Theresa A. Costello, President
TAC Construction Company
7701 West 99th Street
Hickory Hills, IL 60457

Dear Mrs. Costello:

Congratulations. We are pleased to inform you that TAC Construction Company will maintain its certification as a WBE by Cook County Government. This WBE Certification must be revalidated annually.

Please use the enclosed Certificate of Certification as validation of your Cook County WBE status and area of specialty.

As a condition of continued Certification during this three (3) year period, you must file a "No-Change Affidavit" within sixty (60) business days prior to the date of annual expiration. A processing fee of \$50.00, payable to Cook County Department of Revenue is required with the No-Change Affidavit. Failure to file this Affidavit shall result in the termination of your Certification. You must notify Cook County Government's Office of Contract Compliance within ten (10) days of any change in ownership or control or any other matters or facts affecting your firm's eligibility for Certification.

Your firm's participation on Cook County contracts will be credited toward WBE goals in your area(s) of specialty. While your participation on Cook County contracts is not limited to your area of specialty, credit toward WBE goals will only be recognized for work done in the specialty category.

Thank you for your continued interest in Cook County Government's Minority and Women Business Enterprise Programs.

Sincerely,

Laverne Hall
Director

LH/lar

Cook County Government

Office of Contract Compliance

certifies that the criteria for certification as a

Domestic Business Enterprise

has been met by

TAC Construction Company

Construction, Masonry, Concrete, Excavation, and Refractory

Issued Date: March 11, 2012

No Change Affidavit Due: March 11, 2013

NIGP Code(s): 91455, 91430, 91244, 94177

Ethnicity Code: 7

County: Cook



LaVerne Hall
Contract Compliance Director

Cook County Government
Letter of Intent

M/WBE Firm: TAC Construction Company
(WBE)

Certifying Agency: Cook County

Address: 7701 West 99th Street

Certification Expiration Date: 3/11/2013

City/State: Hickory Hill Zip: 60457-2329

FEIN #: 36-3902655

Phone: 708-599-7313 Fax: 708-599-7310

Contact Person: Theresa A. Costello

Email: [REDACTED]

Contract #: 08-50-1068P

tacwbe@sbcglobal.net

Participation: Direct Indirect

Will the M/WBE firm be subcontracting any of the performance of this contract to another firm?

No Yes - Please attach explanation. Proposed Subcontractor: _____

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/Contract:

General Construction

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/Services: \$296,000

% of completion, progress bill.

LOI is contingent on Cook County awarding JCI a contract for the full scope of work proposed.

(If more space is needed to fully describe M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/ Supply and Fee/Cost were completed.

Theresa A. Costello
Signature (M/WBE)

[Signature]
Signature (Prime Bidder/Proposer)

Theresa A. Costello
Print Name

Richard W. Smith
Print Name

TAC Construction Company
Firm Name

JOHNSON CONTROLS, INC.
Firm Name

July 2, 2012
Date

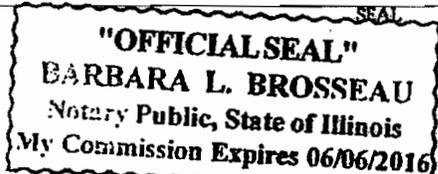
6-29-12
Date

Subscribed and sworn before me
this 2nd day of July, 2012.

Subscribed and sworn before me
this 29th day of JUNE, 2012.

Notary Public Barbara L. Brosseau

Notary Public [Signature]



Revised 01/06/2011



Cook County Government
Letter of Intent

M/WBE Firm: T.A.G Properties, Inc.
Address: 2241 South Wabash
City/State: Chicago, IL Zip: 60605
Phone: 312-791-9100 Fax: 312-791-9103
Email: aford@thisistag.com

Certifying Agency: City of Chicago
Certification Expiration Date: _____
FEIN#: 36-4473154
Contact Person: Angela Ford
Contract #: 08-50-1068P

Participation: Direct Indirect

Will the M/WBE firm be subcontracting any of the performance of this contract to another firm?

No Yes - Please attach explanation. Proposed Subcontractor: _____

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/Contract:

Sustainable Services

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/Services: \$262,710

% of completion, progress bill

Loi is contingent on Cook County awarding JCI a contract for the full scope of work proposed.

(If more space is needed to fully describe M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/Supply and Fee/Cost were completed.

Signature (M/WBE) _____
Angela Ford
Print Name

T.A.G Properties, Inc.
Firm Name
7/3/12
Date

Signature (Prime Bidder/Proposer) _____
Richard W. Smith
Print Name

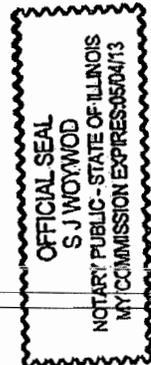
JOHNSON CONTROLS, INC.
Firm Name
6-29-12
Date

Subscribed and sworn before me
this 3 day of July, 2012
Notary Public R E Miller

Subscribed and sworn before me
this 29th day of JUNE, 2012
Notary Public S J Waywood



Revised 01/06/2011





DEPARTMENT OF PROCUREMENT SERVICES

MAR 14 2012

CITY OF CHICAGO

Anthony Armijo
Universal Insulation, Inc.
1385 101 Street
Suite D
Lemont, IL 60439-9674

Annual Certificate Expires: April 1, 2013

Dear Anthony Armijo:

Congratulations on your continued eligibility for certification as a **Minority Business Enterprise (MBE)** by the City of Chicago. This certification is valid until **April 1, 2013**.

You have an affirmative duty to file for recertification 60 days prior to the date of expiration. Therefore, you must file for recertification by **2/1/2013**.

It is important to note that you also have an ongoing affirmative duty to notify the City of Chicago of any changes in ownership or control of your firm, or any other fact affecting your firm's eligibility for certification within 10 days of such change. These changes may include but are not limited to a change of address, change of business structure, change in ownership or ownership structure, change of business operations, and/or gross receipts that exceed the program threshold.

Please note – you shall be deemed to have had your certification lapse and will be ineligible to participate as a MBE/WBE/BEPD if you fail to:

- o file your No Change Affidavit within the required time period;
- o provide financial or other records requested pursuant to an audit within the required time period; or
- o notify the City of any changes affecting your firm's certification within 10 days of such change.

Further, if you or your firm is found to be involved in certification, bidding and/or contractual fraud or abuse, the City will pursue decertification and debarment. And in addition to any other penalty imposed by law, any person who knowingly obtains, or knowingly assists another in obtaining, a contract with the city by falsely representing that the individual or entity, or the individual or entity assisted, is a minority-owned business or a woman-owned business, is guilty of

Universal Insulation, Inc.

MAR 14 2012

Page 2

a misdemeanor, punishable by incarceration in the county jail for a period not to exceed six months or a fine of not less than \$5,000.00 and not more than \$10,000, or both.

Your firm is listed in the City's Directory of Minority Business Enterprises and Women Business Enterprises in the specialty area(s) of:

HVAC MECHANICAL INSULATION CONTRACTOR

Your firm's participation on City contracts will be credited only toward Minority Business Enterprise (MBE) goals in your area(s) of specialty. While your participation on City contracts is not limited to your specialty, credit toward Minority Business Enterprise (MBE) goal will be given only for work done in a specialty category.

~~Thank you for your continued participation in the City's Supplier Diversity Program.~~

Sincerely,



Jamie L. Rhee
Chief Procurement Officer

FH

Cook County Government
Letter of Intent

M/WBE Firm: Universal Insulation, Inc. Certifying Agency: City of Chicago
Address: 1385 101 Street, Suite D Certification Expiration Date: 4/1/2013
City/State: Lemont, IL Zip: 60439-9674 FBIN #: 36-325112
Phone: 630-972-0906 Fax: 630-972-0908 Contact Person: Anthony Armijo
Email: aarmijo@universalco.net Contract #: 08-50-1068P

Participation: Direct Indirect

Will the M/WBE firm be subcontracting any of the performance of this contract to another firm?

No Yes - Please attach explanation. Proposed Subcontractor: _____

The undersigned M/WBE is prepared to provide the following Commodities/Services for the above named Project/Contract:

Pipe and Duct Insulation

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/Services: \$241,200

% of completion, progress bill

LPI is contingent on Cook County awarding JCI a contract for the full scope of work proposed.

(If more space is needed to fully describe M/WBE Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/ Supply and Fee/Cost were completed.

[Signature]
Signature (M/WBE)
ANTHONY ARMIJO
Print Name

[Signature]
Signature (Prime Bidder/Proposer)
Richard W. Smith
Print Name

Universal Insulation, Inc.
Firm Name

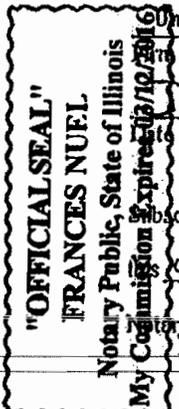
JOHNSON CONTROLS, INC.
Firm Name

July 2 2012
Date

6-29-12
Date

Subscribed and sworn before me
this 29th day of JULY, 20 12.
Notary Public Frances Noel

Subscribed and sworn before me
this 29th day of JUNE, 20 12.
Notary Public [Signature]





DEPARTMENT OF PROCUREMENT SERVICES
CITY OF CHICAGO

MAR 23 2012

Carlos E Vargas
Vargas Mechanical, Inc.
5875 North Lincoln Avenue, Suite 128
Chicago, IL 60659-4614

Annual Certificate Expires: April 1, 2013

Dear Carlos E Vargas:

Congratulations on your continued eligibility for certification as a **Minority Business Enterprise (MBE)** by the City of Chicago. This certification is valid until **April 1, 2013**.

You have an affirmative duty to file for recertification 60 days prior to the date of expiration. Therefore, you must file for recertification by **2/1/2013**.

It is important to note that you also have an ongoing affirmative duty to notify the City of Chicago of any changes in ownership or control of your firm, or any other fact affecting your firm's eligibility for certification within 10 days of such change. These changes may include but are not limited to a change of address, change of business structure, change in ownership or ownership structure, change of business operations, and/or gross receipts that exceed the program threshold.

Please note — you shall be deemed to have had your certification lapse and will be ineligible to participate as a MBE/WBE/BEPD if you fail to:

- o file your No Change Affidavit within the required time period;
- o provide financial or other records requested pursuant to an audit within the required time period; or
- o notify the City of any changes affecting your firm's certification within 10 days of such change.

Further, if you or your firm is found to be involved in certification, bidding and/or contractual fraud or abuse, the City will pursue decertification and debarment. And in addition to any other penalty imposed by law, any person who knowingly obtains, or knowingly assists another in obtaining, a contract with the city by

Vargas Mechanical, Inc.

Page 2

falsely representing that the individual or entity, or the individual or entity assisted, is a minority-owned business or a woman-owned business, is guilty of a misdemeanor, punishable by incarceration in the county jail for a period not to exceed six months or a fine of not less than \$5,000.00 and not more than \$10,000, or both.

Your firm is listed in the City's Directory of Minority Business Enterprises and Women Business Enterprises in the specialty area(s) of:

HEATING, VENTILATING AND AIR CONDITIONING (HVAC)

Your firm's participation on City contracts will be credited only toward Minority Business Enterprise (MBE) goals in your area(s) of specialty. While your participation on City contracts is not limited to your specialty, credit toward Minority Business Enterprise (MBE) goal will be given only for work done in a specialty category.

Thank you for your continued participation in the City's Supplier Diversity Program.

Sincerely,



Jamie L. Rhee
Chief Procurement Officer

FH

Vendor Information



Vendor Information

Business Name **Vargas Mechanical, Inc.**
 Owner **Carlos E Vargas**
 Address **5875 North Lincoln Avenue, Suite 128**
 > [Map This Address](#) **Chicago, IL 60659-4614**
 Phone **773-506-0336**
 Fax **773-506-0441**
 Email **vargasmechanical@sbcglobal.net**
 Website

Certification Information

Certifying Agency **City of Chicago**
 Certification Type **MBE - Minority Business Enterprise**
 Certification Date **3/13/2012**
 Renewal Date **4/1/2013**
 Expiration Date **4/1/2013**
 Certified Business Description **Heating, Ventilating and Air Conditioning (HVAC)**

Commodity Codes

Code	Description
NIGP 91450	Heating, Ventilating and Air Conditioning (HVAC)

Cook County Government
Letter of Intent

M/WBB Firm: Vargas Mechanical Inc. Certifying Agency: City of Chicago
Address: 5875 N. Lincoln Ave, Ste 128 Certification/Expiration Date: 4/1/13
City/State: Chicago, IL Zip: 60659-4614 FBIN#: 36-5045054
Phone: 773-506-0336 Fax: 773-506-0441 Contact Person: Carlos E. Vargas
Email: vargasmechanical@sbcglobal.net Contract #: 08-50-1068P

Participation: Direct Indirect

Will the M/WBB firm be subcontracting any of the performance of this contract to another firm?

No Yes - Please attach explanation. Proposed Subcontractor: _____

The undersigned M/WBB is prepared to provide the following Commodities/Services for the above named Project/Contract:

Construction Management, HVAC/Mechanical Work

Indicate the Dollar Amount, or Percentage, and the Terms of Payment for the above-described Commodities/Services: \$1,953,395

% of completion, progress bill

LOI is contingent on Cook County awarding DCI a contract for the full scope of work proposed.

(If more space is needed to fully describe M/WBB Firm's proposed scope of work and/or payment schedule, attach additional sheets)

THE UNDERSIGNED PARTIES AGREE that this Letter of Intent will become a binding Subcontract Agreement conditioned upon the Bidder/Proposer's receipt of a signed contract from the County of Cook. The Undersigned Parties do also certify that they did not affix their signatures to this document until all areas under Description of Service/ Supply and Fee/Cost were completed.

Signature (M/WBB)

Carlos E. Vargas

Print Name

Vargas Mechanical, Inc.

Firm Name

Date

July 3/12

Signature (Prime Bidder/Proposer)

Richard W. Smith

Print Name

JOHNSON CONTROLS, INC.

Firm Name

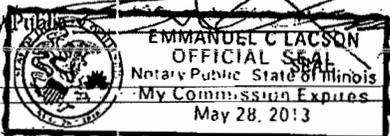
Date

6/29/12

Subscribed and sworn before me

this 3rd day of July, 2012

Notary Public



Subscribed and sworn before me

this 29th day of JUNE, 2012

Notary Public

S. J. Waywood
SEAL



PETITION FOR WAIVER OF MBE/WBE PARTICIPATION (SECTION 3)

A. BIDDER/PROPOSER HEREBY REQUESTS:

- FULL MBE WAIVER FULL WBE WAIVER
- REDUCTION (PARTIAL MBE and/or WBE PARTICIPATION)
- ___ % of Reduction for MBE Participation
- ___ % of Reduction for WBE Participation

B. REASON FOR FULL/REDUCTION WAIVER REQUEST

Bidder/Proposer shall check each item applicable to its reason for a waiver request. Additionally, supporting documentation shall be submitted with this request. If such supporting documentation cannot be submitted with bid/proposal/quotation, such documentation shall be submitted directly to the Office of Contract Compliance no later than three (3) days from the date of submission date.

- (1) Lack of sufficient qualified MBEs and/or WBEs capable of providing the goods or services required by the contract. (Please explain)
- (2) The specifications and necessary requirements for performing the contract make it impossible or economically infeasible to divide the contract to enable the contractor to utilize MBEs and/or WBEs in accordance with the applicable participation. (Please explain)
- (3) Price(s) quoted by potential MBEs and/or WBEs are above competitive levels and increase cost of doing business and would make acceptance of such MBE and/or WBE bid economically impracticable, taking into consideration the percentage of total contract price represented by such MBE and/or WBE bid. (Please explain)
- (4) There are other relevant factors making it impossible or economically infeasible to utilize MBE and/or WBE firms. (Please explain)

C. GOOD FAITH EFFORTS TO OBTAIN MBE/WBE PARTICIPATION

- (1) Made timely written solicitation to identified MBEs and WBEs for utilization of goods and/or services; and provided MBEs and WBEs with a timely opportunity to review and obtain relevant specifications, terms and conditions of the proposal to enable MBEs and WBEs to prepare an informed response to solicitation. (Please attach)
- (2) Followed up initial solicitation of MBEs and WBEs to determine if firms are interested in doing business. (Please attach)
- (3) Advertised in a timely manner in one or more daily newspapers and/or trade publication for MBEs and WBEs for supply of goods and services. (Please attach)
- (4) Used the services and assistance of the Office of Contract Compliance staff. (Please explain)
- (5) Engaged MBEs & WBEs for indirect participation. (Please explain)

D. OTHER RELEVANT INFORMATION

Attach any other documentation relative to Good Faith Efforts in complying with MBE/WBE participation.

CERTIFICATIONS (SECTION 4)

THE FOLLOWING CERTIFICATIONS ARE MADE PURSUANT TO STATE LAW AND THE CODE. THE UNDERSIGNED IS CAUTIONED TO CAREFULLY READ THESE CERTIFICATIONS PRIOR TO SIGNING THE SIGNATURE PAGE. SIGNING THE SIGNATURE PAGE SHALL CONSTITUTE A WARRANTY BY THE UNDERSIGNED THAT ALL THE STATEMENTS, CERTIFICATIONS AND INFORMATION SET FORTH WITHIN THESE CERTIFICATIONS ARE TRUE, COMPLETE AND CORRECT AS OF THE DATE THE SIGNATURE PAGE IS SIGNED. THE UNDERSIGNED IS NOTIFIED THAT IF THE COUNTY LEARNS THAT ANY OF THE FOLLOWING CERTIFICATIONS WERE FALSELY MADE, THAT ANY CONTRACT ENTERED INTO WITH THE UNDERSIGNED SHALL BE SUBJECT TO TERMINATION.

A. PERSONS AND ENTITIES SUBJECT TO DISQUALIFICATION

No person or business entity shall be awarded a contract or sub-contract, for a period of five (5) years from the date of conviction or entry of a plea or admission of guilt, civil or criminal, if that person or business entity:

- 1) Has been convicted of an act committed, within the State of Illinois, of bribery or attempting to bribe an officer or employee of a unit of state, federal or local government or school district in the State of Illinois in that officer's or employee's official capacity;
- 2) Has been convicted by federal, state or local government of an act of bid-rigging or attempting to rig bids as defined in the Sherman Anti-Trust Act and Clayton Act. Act. 15 U.S.C. Section 1 *et seq.*;
- 3) Has been convicted of bid-rigging or attempting to rig bids under the laws of federal, state or local government;
- 4) Has been convicted of an act committed, within the State, of price-fixing or attempting to fix prices as defined by the Sherman Anti-Trust Act and the Clayton Act. 15 U.S.C. Section 1, *et seq.*;
- 5) Has been convicted of price-fixing or attempting to fix prices under the laws the State;
- 6) Has been convicted of defrauding or attempting to defraud any unit of state or local government or school district within the State of Illinois;
- 7) Has made an admission of guilt of such conduct as set forth in subsections (1) through (6) above which admission is a matter of record, whether or not such person or business entity was subject to prosecution for the offense or offenses admitted to; or
- 8) Has entered a plea of *nolo contendere* to charge of bribery, price-fixing, bid-rigging, or fraud, as set forth in sub-paragraphs (1) through (6) above.

In the case of bribery or attempting to bribe, a business entity may not be awarded a contract if an official, agent or employee of such business entity committed the Prohibited Act on behalf of the business entity and pursuant to the direction or authorization of an officer, director or other responsible official of the business entity, and such Prohibited Act occurred within three years prior to the award of the contract. In addition, a business entity shall be disqualified if an owner, partner or shareholder controlling, directly or indirectly, 20 % or more of the business entity, or an officer of the business entity has performed any Prohibited Act within five years prior to the award of the Contract.

THE UNDERSIGNED HEREBY CERTIFIES THAT: The Undersigned has read the provisions of Section A, Persons and Entities Subject to Disqualification, that the Undersigned has not committed any Prohibited Act set forth in Section A, and that award of the Contract to the Undersigned would not violate the provisions of such Section or of the Code.

B. BID-RIGGING OR BID ROTATING

THE UNDERSIGNED HEREBY CERTIFIES THAT: *In accordance with 720 ILCS 5/33 E-11, neither the Undersigned nor any Affiliated Entity is barred from award of this Contract as a result of a conviction for the violation of State laws prohibiting bid-rigging or bid rotating.*

C. DRUG FREE WORKPLACE ACT

THE UNDERSIGNED HEREBY CERTIFIES THAT: The Undersigned will provide a drug free workplace, as required by Public Act 86-1459 (30 ILCS 580/2-11).

D. DELINQUENCY IN PAYMENT OF TAXES

THE UNDERSIGNED HEREBY CERTIFIES THAT: *The Undersigned is not an owner or a party responsible for the payment of any tax or fee administered by Cook County, by a local municipality, or by the Illinois Department of Revenue, which such tax or fee is delinquent, such as bar award of a contract or subcontract pursuant to the Code, Chapter 34, Section 34-129.*

E. HUMAN RIGHTS ORDINANCE

No person who is a party to a contract with Cook County ("County") shall engage in unlawful discrimination or sexual harassment against any individual in the terms or conditions of employment, credit, public accommodations, housing, or provision of County facilities, services or programs (Code Chapter 42, Section 42-30 *et seq*).

F. ILLINOIS HUMAN RIGHTS ACT

THE UNDERSIGNED HEREBY CERTIFIES THAT: *It is in compliance with the the Illinois Human Rights Act (775 ILCS 5/2-105), and agrees to abide by the requirements of the Act as part of its contractual obligations.*

G. MACBRIDE PRINCIPLES, CODE CHAPTER 34, SECTION 34-132

If the primary contractor currently conducts business operations in Northern Ireland, or will conduct business during the projected duration of a County contract, the primary contractor shall make all reasonable and good faith efforts to conduct any such business operations in Northern Ireland in accordance with the MacBride Principles for Northern Ireland as defined in Illinois Public Act 85-1390.

H. LIVING WAGE ORDINANCE PREFERENCE (COOK COUNTY CODE, CHAPTER 34, SECTION 34-127;

The Code requires that a living wage must be paid to individuals employed by a Contractor which has a County Contract and by all subcontractors of such Contractor under a County Contract, throughout the duration of such County Contract. The amount of such living wage is determined from time to time by, and is available from, the Chief Financial Officer of the County.

For purposes of this EDS Section 4, H, "Contract" means any written agreement whereby the County is committed to or does expend funds in connection with the agreement or subcontract thereof. The term "Contract" as used in this EDS, Section 4, I, specifically excludes contracts with the following:

- 1) Not-For Profit Organizations (defined as a corporation having tax exempt status under Section 501(C)(3) of the United State Internal Revenue Code and recognized under the Illinois State not-for -profit law);
- 2) Community Development Block Grants;
- 3) Cook County Works Department;
- 4) Sheriff's Work Alternative Program; and
- 5) Department of Correction inmates.

REQUIRED DISCLOSURES (SECTION 5)

1. DISCLOSURE OF LOBBYIST CONTACTS

List all persons or entities that have made lobbying contacts on your behalf with respect to this contract:

Name	Address
_____	_____
_____	_____
_____	_____

2. LOCAL BUSINESS PREFERENCE DISCLOSURE; CODE, CHAPTER 34, SECTION 34-151(p);

"Local Business" shall mean a person authorized to transact business in this State and having a bona fide establishment for transacting business located within Cook County at which it was actually transacting business on the date when any competitive solicitation for a public contract is first advertised or announced and further which employs the majority of its regular, full time work force within Cook County, including a foreign corporation duly authorized to transact business in this State and which has a bona fide establishment for transacting business located within Cook County at which it was actually transacting business on the date when any competitive solicitation for a public contract is first advertised or announced and further which employs the majority of its regular, full time work force within Cook County.

a) Is Bidder a "Local Business" as defined above?

Yes: X No: _____

b) If yes, list business addresses within Cook County:

850 West Jackson St, Suite 420, Chicago, IL 60607;
3007 Malmo Dr., Arlington Hts., IL 60005; 1500 Huntington Dr., Calumet City, IL 60409
4415 West Harrison, Hillside, IL 60162

c) Does Bidder employ the majority of its regular full-time workforce within Cook County?

Yes: X No: _____

3. THE CHILD SUPPORT ENFORCEMENT ORDINANCE (PREFERENCE (CODE, CHAPTER 34, SECTION 34-366)

Every Applicant for a County Privilege shall be in full compliance with any child support order before such Applicant is entitled to receive or renew a County Privilege. When delinquent child support exists, the County shall not issue or renew any County Privilege, and may revoke any County Privilege.

All Applicants are required to review the Cook County Affidavit of Child Support Obligations attached to this EDS (EDS-8) and complete the following, based upon the definitions and other information included in such Affidavit.

4. REAL ESTATE OWNERSHIP DISCLOSURES.

The Undersigned must indicate by checking the appropriate provision below and providing all required information that either:

- a) The following is a complete list of all real estate owned by the Undersigned in Cook County:

PERMANENT INDEX NUMBER(S): 08-23-202-044-0000

(ATTACH SHEET IF NECESSARY TO LIST ADDITIONAL INDEX NUMBERS)

OR:

- b) _____ The Undersigned owns no real estate in Cook County.

5. EXCEPTIONS TO CERTIFICATIONS OR DISCLOSURES.

If the Undersigned is unable to certify to any of the Certifications or any other statements contained in this EDS and not explained elsewhere in this EDS, the Undersigned must explain below:

If the letters, "NA", the word "None" or "No Response" appears above, or if the space is left blank, it will be conclusively presumed that the Undersigned certified to all Certifications and other statements contained in this EDS.

COOK COUNTY DISCLOSURE OF OWNERSHIP INTEREST STATEMENT

The Cook County Code of Ordinances (§2-610 *et seq.*) requires that any Applicant for any County Action must disclose information concerning ownership interests in the Applicant. This Disclosure of Ownership Interest Statement must be completed with all information current as of the date this Statement is signed. Furthermore, this Statement must be kept current, by filing an amended Statement, until such time as the County Board or County Agency shall take action on the application. The information contained in this Statement will be maintained in a database and made available for public viewing.

If you are asked to list names, but there are no applicable names to list, you must state NONE. An incomplete Statement will be returned and any action regarding this contract will be delayed. A failure to fully comply with the ordinance may result in the action taken by the County Board or County Agency being voided.

"Applicant" means any Entity or person making an application to the County for any County Action.

"County Action" means any action by a County Agency, a County Department, or the County Board regarding an ordinance or ordinance amendment, a County Board approval, or other County agency approval, with respect to contracts, leases, or sale or purchase of real estate.

"Entity" or "Legal Entity" means a sole proprietorship, corporation, partnership, association, business trust, estate, two or more persons having a joint or common interest, trustee of a land trust, other commercial or legal entity or any beneficiary or beneficiaries thereof.

This Disclosure of Ownership Interest Statement must be submitted by :

1. An Applicant for County Action and
2. An individual or Legal Entity that holds stock or a beneficial interest in the Applicant and is listed on the Applicant's Statement (a "Holder") must file a Statement and complete #1 only under **Ownership Interest Declaration**.

Please print or type responses clearly and legibly. Add additional pages if needed, being careful to identify each portion of the form to which each additional page refers.

This Statement is being made by the Applicant or Stock/Beneficial Interest Holder

This Statement is an: Original Statement or Amended Statement

Identifying Information:

Name JOHNSON CONTROLS, INC. D/B/A: _____ EIN NO.: 39-038-0010

Street Address: 3007 Malmo Drive

City: Arlington Heights State: Illinois Zip Code: 60005

Phone No.: 847-364-1500

Form of Legal Entity:

Sole Proprietor Partnership Corporation Trustee of Land Trust

Business Trust Estate Association Joint Venture

Other (describe) _____

Ownership Interest Declaration:

1. List the name(s), address, and percent ownership of each individual and each Entity having a legal or beneficial interest (including ownership) of more than five percent (5%) in the Applicant/Holder.

Name	Address	Percentage Interest in Applicant/Holder
BlackRock, Inc.	40 East 52nd Street, New York 10022	6.02%
Capital World Investors	333 South Hope Street, 55th Floor Los Angeles, CA 90071	6.0%

2. If the interest of any individual or any Entity listed in (1) above is held as an agent or agents, or a nominee or nominees, list the name and address of the principal on whose behalf the interest is held.

Name of Agent/Nominee	Name of Principal	Principal's Address

3. Is the Applicant constructively controlled by another person or Legal Entity? [] Yes [] No
 If yes, state the name, address and percentage of beneficial interest of such person or legal entity, and the relationship under which such control is being or may be exercised.

Name	Address	Percentage of Beneficial Interest	Relationship

Declaration (check the applicable box):

- I state under oath that the Applicant has withheld no disclosure as to ownership interest in the Applicant nor reserved any information, data or plan as to the intended use or purpose for which the Applicant seeks County Board or other County Agency action.
- I state under oath that the Holder has withheld no disclosure as to ownership interest nor reserved any information required to be disclosed.

David M. Peters
 Name of Authorized Applicant/Holder Representative (please print or type)

David M. Peters
 Signature

David.M.Peters@jci.com
 E-mail address

Regional VP & GM Solutions
 Title

July 17, 2012
 Date

303-418-0693
 Phone Number

Subscribed to and sworn before me
 this 17th day of July, 2012

Karen Moore
 Notary Public Signature

My commission expires:
KAREN MOORE
 NOTARY PUBLIC - STATE OF OHIO
 My commission expires Feb. 3, 2017

Notary Seal



COOK COUNTY BOARD OF ETHICS

69 W. WASHINGTON STREET, SUITE 3040

CHICAGO, ILLINOIS 60602

312/603-4304

312/603-9988 FAX 312/603-1011 TT/TDD

FAMILIAL RELATIONSHIP DISCLOSURE PROVISION:

Section 2-582 of the Cook County Ethics Ordinance requires any person or persons doing business with Cook County, upon execution of a contract with Cook County, to disclose to the Cook County Board of Ethics the existence of familial relationships they may have with all persons holding elective office in the State of Illinois, the County of Cook, or in any municipality within the County of Cook.

The disclosure required by this section shall be filed by January 1 of each calendar year or within thirty (30) days of the execution of any contract or lease. Any person filing a late disclosure statement after January 31 shall be assessed a late filing fee of \$100.00 per day that the disclosure is late. Any person found guilty of violating any provision of this section or knowingly filing a false, misleading, or incomplete disclosure to the Cook County Board of Ethics shall be prohibited, for a period of three (3) years, from engaging, directly or indirectly, in any business with Cook County. *Note:* Please see Chapter 2 Administration, Article VII Ethics, Section 2-582 of the Cook County Code to view the full provisions of this section.

If you have questions concerning this disclosure requirement, please call the Cook County Board of Ethics at (312) 603-4304.

Note: A current list of contractors doing business with Cook County is available via the Cook County Board of Ethics' website at:

http://www.cookcountygov.com/taxonomy/ethics/Listings/cc_ethics_VendorList_.pdf

DEFINITIONS:

"Calendar year" means January 1 to December 31 of each year.

"Doing business" for this Ordinance provision means any one or any combination of leases, contracts, or purchases to or with Cook County or any Cook County agency in excess of \$25,000 in any calendar year.

"Familial relationship" means a person who is related to an official or employee as spouse or any of the following, whether by blood, marriage or adoption:

- | | | |
|-----------|-------------------|----------------|
| ▪ Parent | ▪ Grandparent | ▪ Stepfather |
| ▪ Child | ▪ Grandchild | ▪ Stepmother |
| ▪ Brother | ▪ Father-in-law | ▪ Stepson |
| ▪ Sister | ▪ Mother-in-law | ▪ Stepdaughter |
| ▪ Aunt | ▪ Son-in-law | ▪ Stepbrother |
| ▪ Uncle | ▪ Daughter-in-law | ▪ Stepsister |
| ▪ Niece | ▪ Brother-in-law | ▪ Half-brother |
| ▪ Nephew | ▪ Sister-in-law | ▪ Half-sister |

"Person" means any individual, entity, corporation, partnership, firm, association, union, trust, estate, as well as any parent or subsidiary of any of the foregoing, and whether or not operated for profit.

SWORN FAMILIAL RELATIONSHIP DISCLOSURE FORM

Pursuant to Section 2-582 of the Cook County Ethics Ordinance, any person* doing business* with Cook County must disclose, to the Cook County Board of Ethics, the existence of familial relationships* to any person holding elective office in the State of Illinois, Cook County, or in any municipality within Cook County. Please print your responses.

Name of Owner/Employee: Vivienne Passley Title: HR Director

Business Entity Name: Johnson Controls Phone: 847-806-4499

Business Entity Address: 3007 Malmo Dr, ARLINGTON HTS., IL 60005

The following familial relationship exists between the owner or any employee of the business entity contracted to do business with Cook County and any person holding elective office in the State of Illinois, Cook County, or in any municipality within Cook County.

Owner/Employee Name:	Related to:	Relationship:
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____

If more space is needed, attach an additional sheet following the above format.

There is *no* familial relationship that exists between the owner or any employee of the business entity contracted to do business with Cook County and any person holding elective office in the State of Illinois, Cook County, or in any municipality within Cook County.

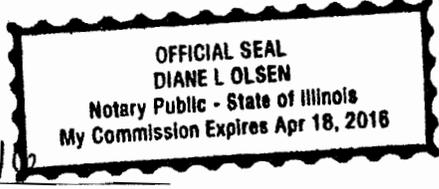
To the best of my knowledge and belief, the information provided above is true and complete.

[Signature] _____ Date 6-19-12

Subscribe and sworn before me this 19th Day of June, 2012

a Notary Public in and for DuPage County

Diane L Olsen
(Signature)



NOTARY PUBLIC
SEAL

My Commission expires 4/18/16

Completed forms must be filed within 30 days of the execution of any contract or lease with Cook County and should be mailed to:

Cook County Board of Ethics
69 West Washington Street,
Suite 3040
Chicago, Illinois 60602

SIGNATURE BY A SOLE PROPRIETOR
(SECTION 6)

The Undersigned hereby certifies and warrants: that all of the statements, certifications and representations set forth in this EDS are true, complete and correct; that the Undersigned is in full compliance and will continue to be in compliance throughout the term of the Contract or County Privilege issued to the Undersigned with all the policies and requirements set forth in this EDS; and that all facts and information provided by the Undersigned in this EDS are true, complete and correct. The Undersigned agrees to inform the Chief Procurement Officer in writing if any of such statements, certifications, representations, facts or information becomes or is found to be untrue, incomplete or incorrect during the term of the Contract or County Privilege.

BUSINESS NAME: _____

BUSINESS ADDRESS: _____

BUSINESS TELEPHONE: _____ FAX NUMBER: _____

FEIN/SSN: _____

COOK COUNTY BUSINESS REGISTRATION NUMBER: _____

SOLE PROPRIETOR'S SIGNATURE: _____

PRINT NAME: _____

DATE: _____

Subscribed to and sworn before me this

_____ day of _____, 20_____.

My commission expires:

X _____
Notary Public Signature

Notary Seal

SIGNATURE BY A SOLE PROPRIETOR
(SECTION 6)

The Undersigned hereby certifies and warrants: that all of the statements, certifications and representations set forth in this EDS are true, complete and correct; that the Undersigned is in full compliance and will continue to be in compliance throughout the term of the Contract or County Privilege issued to the Undersigned with all the policies and requirements set forth in this EDS; and that all facts and information provided by the Undersigned in this EDS are true, complete and correct. The Undersigned agrees to inform the Chief Procurement Officer in writing if any of such statements, certifications, representations, facts or information becomes or is found to be untrue, incomplete or incorrect during the term of the Contract or County Privilege.

BUSINESS NAME: _____

BUSINESS ADDRESS: _____

BUSINESS TELEPHONE: _____ FAX NUMBER: _____

FEIN/SSN: _____

COOK COUNTY BUSINESS REGISTRATION NUMBER: _____

SOLE PROPRIETOR'S SIGNATURE: _____

PRINT NAME: _____

DATE: _____

Subscribed to and sworn before me this

_____ day of _____, 20__.

My commission expires:

X _____
Notary Public Signature

Notary Seal

SIGNATURE BY A SOLE PROPRIETOR
(SECTION 6)

The Undersigned hereby certifies and warrants: that all of the statements, certifications and representations set forth in this EDS are true, complete and correct; that the Undersigned is in full compliance and will continue to be in compliance throughout the term of the Contract or County Privilege issued to the Undersigned with all the policies and requirements set forth in this EDS; and that all facts and information provided by the Undersigned in this EDS are true, complete and correct. The Undersigned agrees to inform the Chief Procurement Officer in writing if any of such statements, certifications, representations, facts or information becomes or is found to be untrue, incomplete or incorrect during the term of the Contract or County Privilege.

BUSINESS NAME: _____

BUSINESS ADDRESS: _____

BUSINESS TELEPHONE: _____ FAX NUMBER: _____

FEIN/SSN: _____

COOK COUNTY BUSINESS REGISTRATION NUMBER: _____

SOLE PROPRIETOR'S SIGNATURE: _____

PRINT NAME: _____

DATE: _____

Subscribed to and sworn before me this

_____ day of _____, 20__.

My commission expires:

X _____

Notary Public Signature

Notary Seal

SIGNATURE BY A PARTNERSHIP (AND/OR A JOINT VENTURE)
(SECTION 7)

The Undersigned hereby certifies and warrants: that all of the statements, certifications, and representations set forth in this EDS are true, complete and correct; that the Undersigned is in full compliance and will continue to be in compliance throughout the term of the Contract or County Privilege issued to the Undersigned with all the policies and requirements set forth in this EDS; and that all of the facts and information provided by the Undersigned in this EDS are true, complete and correct. The Undersigned agrees to inform the Chief Procurement Officer in writing if any of such statements, certifications, representations, facts or information becomes or is found to be untrue, incomplete or incorrect during the term of the Contract or County Privilege. .

BUSINESS NAME: _____

BUSINESS ADDRESS: _____

BUSINESS TELEPHONE: _____ FAX NUMBER: _____

CONTACT PERSON: _____ FEIN/SSN: _____

*COOK COUNTY BUSINESS REGISTRATION NUMBER: _____

SIGNATURE OF PARTNER AUTHORIZED TO EXECUTE CONTRACTS ON BEHALF OF PARTNERSHIP:

*BY: _____

Date: _____

Subscribed to and sworn before me this

_____ day of _____, 20__.

My commission expires:

X _____
Notary Public Signature

Notary Seal

* **Attach hereto a partnership resolution or other document authorizing the individual signing this Signature Page to so sign on behalf of the Partnership.**

SIGNATURE BY A PARTNERSHIP (AND/OR A JOINT VENTURE)
(SECTION 7)

The Undersigned hereby certifies and warrants: that all of the statements, certifications, and representations set forth in this EDS are true, complete and correct; that the Undersigned is in full compliance and will continue to be in compliance throughout the term of the Contract or County Privilege issued to the Undersigned with all the policies and requirements set forth in this EDS; and that all of the facts and information provided by the Undersigned in this EDS are true, complete and correct. The Undersigned agrees to inform the Chief Procurement Officer in writing if any of such statements, certifications, representations, facts or information becomes or is found to be untrue, incomplete or incorrect during the term of the Contract or County Privilege. .

BUSINESS NAME: _____

BUSINESS ADDRESS: _____

BUSINESS TELEPHONE: _____ FAX NUMBER: _____

CONTACT PERSON: _____ FEIN/SSN: _____

*COOK COUNTY BUSINESS REGISTRATION NUMBER: _____

SIGNATURE OF PARTNER AUTHORIZED TO EXECUTE CONTRACTS ON BEHALF OF PARTNERSHIP:

*BY: _____

Date: _____

Subscribed to and sworn before me this

_____ day of _____, 20____.

My commission expires:

X _____
Notary Public Signature

Notary Seal

* **Attach hereto a partnership resolution or other document authorizing the individual signing this Signature Page to so sign on behalf of the Partnership.**

SIGNATURE BY A PARTNERSHIP (AND/OR A JOINT VENTURE)
(SECTION 7)

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BUSINESS NAME: _____

BUSINESS ADDRESS: _____

BUSINESS TELEPHONE: _____ FAX NUMBER: _____

CONTACT PERSON: _____ FEIN/SSN: _____

*COOK COUNTY BUSINESS REGISTRATION NUMBER: _____

SIGNATURE OF PARTNER AUTHORIZED TO EXECUTE CONTRACTS ON BEHALF OF PARTNERSHIP:

*BY: _____

Date: _____

Subscribed to and sworn before me this

_____ day of _____, 20__.

My commission expires:

X _____
Notary Public Signature

Notary Seal

* **Attach hereto a partnership resolution or other document authorizing the individual signing this Signature Page to so sign on behalf of the Partnership.**

SIGNATURE BY A LIMITED LIABILITY CORPORATION
(SECTION 8)

The Undersigned hereby certifies and warrants: that all of the statements, certifications, and representations set forth in this EDS are true, complete and correct; that the Undersigned is in full compliance and will continue to be in compliance throughout the term of the Contract or County Privilege issued to the Undersigned with all the policies and requirements set forth in this EDS; and that all of the facts and information provided by the Undersigned in this EDS are true, complete and correct. The Undersigned agrees to inform the Procurement Director in writing if any of such statements, certifications, representations, facts or information becomes or is found to be untrue, incomplete or incorrect during the term of the Contract or County Privilege.

BUSINESS NAME: _____

BUSINESS ADDRESS: _____

BUSINESS TELEPHONE: _____ FAX NUMBER: _____

CONTACT PERSON: _____

FEIN: _____ * CORPORATE FILE NUMBER: _____

MANAGING MEMBER: _____ MANAGING MEMBER: _____

**SIGNATURE OF MANAGER: _____

ATTEST: _____

Subscribed and sworn to before me this

_____ day of _____, 20_____.

X _____
Notary Public Signature

Notary Seal

* If the LLC is not registered in the State of Illinois, a copy of a current Certificate of Good Standing from the state of incorporation must be submitted with this Signature Page.

** Attach either a certified copy of the by-laws, articles, resolution or other authorization demonstrating such persons to sign the Signature Page on behalf of the LLC.

SIGNATURE BY A LIMITED LIABILITY CORPORATION
(SECTION 8)

The Undersigned hereby certifies and warrants: that all of the statements, certifications, and representations set forth in this EDS are true, complete and correct; that the Undersigned is in full compliance and will continue to be in compliance throughout the term of the Contract or County Privilege issued to the Undersigned with all the policies and requirements set forth in this EDS; and that all of the facts and information provided by the Undersigned in this EDS are true, complete and correct. The Undersigned agrees to inform the Procurement Director in writing if any of such statements, certifications, representations, facts or information becomes or is found to be untrue, incomplete or incorrect during the term of the Contract or County Privilege.

BUSINESS NAME: _____

BUSINESS ADDRESS: _____

BUSINESS TELEPHONE: _____ FAX NUMBER: _____

CONTACT PERSON: _____

FEIN: _____ * CORPORATE FILE NUMBER: _____

MANAGING MEMBER: _____ MANAGING MEMBER: _____

**SIGNATURE OF MANAGER: _____

ATTEST: _____

Subscribed and sworn to before me this

_____ day of _____, 20_____

X _____
Notary Public Signature

Notary Seal

* If the LLC is not registered in the State of Illinois, a copy of a current Certificate of Good Standing from the state of incorporation must be submitted with this Signature Page.

** Attach either a certified copy of the by-laws, articles, resolution or other authorization demonstrating such persons to sign the Signature Page on behalf of the LLC.

SIGNATURE BY A LIMITED LIABILITY CORPORATION
(SECTION 8)

The Undersigned hereby certifies and warrants: that all of the statements, certifications, and representations set forth in this EDS are true, complete and correct; that the Undersigned is in full compliance and will continue to be in compliance throughout the term of the Contract or County Privilege issued to the Undersigned with all the policies and requirements set forth in this EDS; and that all of the facts and information provided by the Undersigned in this EDS are true, complete and correct. The Undersigned agrees to inform the Procurement Director in writing if any of such statements, certifications, representations, facts or information becomes or is found to be untrue, incomplete or incorrect during the term of the Contract or County Privilege.

BUSINESS NAME: _____

BUSINESS ADDRESS: _____

BUSINESS TELEPHONE: _____ FAX NUMBER: _____

CONTACT PERSON: _____

FEIN: _____ * CORPORATE FILE NUMBER: _____

MANAGING MEMBER: _____ MANAGING MEMBER: _____

**SIGNATURE OF MANAGER: _____

ATTEST: _____

Subscribed and sworn to before me this

_____ day of _____, 20_____.

X _____
Notary Public Signature

Notary Seal

* If the LLC is not registered in the State of Illinois, a copy of a current Certificate of Good Standing from the state of incorporation must be submitted with this Signature Page.

** Attach either a certified copy of the by-laws, articles, resolution or other authorization demonstrating such persons to sign the Signature Page on behalf of the LLC.

**SIGNATURE BY A CORPORATION
(SECTION 9)**

The Undersigned hereby certifies and warrants: that all of the statements, certifications, and representations set forth in this EDS are true, complete and correct; that the Undersigned is in full compliance and will continue to be in compliance throughout the term of the Contract or County Privilege issued to the Undersigned with all the policies and requirements set forth in this EDS; and that all of the facts and information provided by the Undersigned in this EDS are true, complete and correct. The Undersigned agrees to inform the Chief Procurement Officer in writing if any of such statements, certifications, representations, facts or information becomes or is found to be untrue, incomplete or incorrect during the term of the Contract or County Privilege.

BUSINESS NAME: JOHNSON CONTROLS, INC.

BUSINESS ADDRESS: 3007 Malmo Drive

Arlington Heights, IL 60005

BUSINESS TELEPHONE: 847-364-1500 FAX NUMBER: 847-364-1536

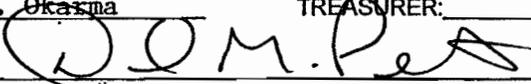
CONTACT PERSON: Dennis Bert

FEIN: 39-038-0010 *IL CORPORATE FILE NUMBER: 0037-918-2

LIST THE FOLLOWING CORPORATE OFFICERS:

PRESIDENT: Stephen A. Roell VICE PRESIDENT: R. Bruce McDonald

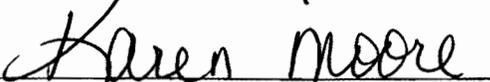
SECRETARY: Jerome D. Okasma TREASURER: Frank A. Voltolina

**SIGNATURE OF PRESIDENT: 

ATTEST: see attached Delegation of Authority (CORPORATE SECRETARY)

Subscribed and sworn to before me this

17th day of July, 2012.

x 
Notary Public Signature

My commission expires: **KAREN MOORE**
NOTARY PUBLIC - STATE OF OHIO
My commission expires Feb. 3, 2017

Notary Seal

* If the corporation is not registered in the State of Illinois, a copy of the Certificate of Good Standing from the state of Incorporation must be submitted with this Signature Page.

** In the event that this Signature Page is signed by any persons than the President and Secretary, attach either a certified copy of the corporate by-laws, resolution or other authorization by the corporation, authorizing such persons to sign the Signature Page on behalf of the corporation.



DELEGATION OF AUTHORITY

The undersigned, President of Johnson Controls, Inc., a Wisconsin corporation (the "Company"), pursuant to the authority vested in him by a certain resolution adopted by the Board of Directors of the Company on January 23, 1980 hereby authorizes

David M. Peters
Regional Vice President & General Manager

to perform, on behalf of the Company, the acts described below:

To execute and deliver any and all contracts for the performance of work, sale of goods, and furnishing of services, and any other instruments in connection therewith and in the ordinary course of business.

This authority does not extend to:

- a. the execution of surety, performance or bid bonds;
b. the collection, receipt and recovery of monies due or to become due to the Company and the issuance of receipts and releases for the payment thereof;
c. the signing of any notes, contracts, or any other agreement to borrow money in the name of the Company, or any form of guaranty for the payment or performance of obligations of any subsidiary, affiliate, or joint venture of the Company; and
d. the signing, on behalf of the company, of any deeds, abstracts, offers to purchase or any other instruments pertaining to the purchase or sale of real property.

This authority shall remain in full force and effect until November 17, 2012.

Signed at Milwaukee, Wisconsin, this 18th day of May, 2012.

ATTEST:

Secretary

(SEAL)

President



COOK COUNTY SIGNATURE PAGE
(SECTION 10)

ON BEHALF OF THE COUNTY OF COOK, A BODY POLITIC AND CORPORATE OF THE STATE OF ILLINOIS, THIS CONTRACT IS HEREBY EXECUTED BY:

Joni Overmire

PRESIDENT, COOK COUNTY BOARD OF COMMISSIONERS

Maria de Lourdes Cox

COOK COUNTY CHIEF PROCUREMENT OFFICER

DATED AT CHICAGO, ILLINOIS THIS 28th DAY OF July, 2012.

IN THE CASE OF A BID PROPOSAL, THE COUNTY HEREBY ACCEPTS:

THE FOREGOING BID/PROPOSAL AS IDENTIFIED IN THE CONTRACT DOCUMENTS FOR CONTRACT NUMBER

OR

ITEM(S), SECTION(S), PART(S): _____

TOTAL AMOUNT OF CONTRACT: \$ 30,403,720.00
(DOLLARS AND CENTS)

FUND CHARGEABLE: _____

APPROVED AS TO FORM:

Kevin J. McKee

ASSISTANT STATE'S ATTORNEY
(Required on contracts over \$1,000,000.00)

APPROVED BY BOARD OF
COOK COUNTY COMMISSIONERS

JUL 24 2012

COM _____

**EXHIBIT P.1
SUPPLEMENTAL COUNTY CONDITIONS**

I) PREVAILING WAGE RATE AND DAVIS BACON PROVISIONS

General Decision Number: IL120009 07/06/2012 IL9

Superseded General Decision Number: IL20100009

State: Illinois

Construction Types: Building, Heavy, Highway and Residential

County: Cook County in Illinois.

BUILDING, RESIDENTIAL, HEAVY, AND HIGHWAY PROJECTS (does not include landscape projects).

Modification Number Publication Date

0	01/06/2012
1	01/13/2012
2	02/03/2012
3	03/02/2012
4	04/06/2012
5	05/04/2012
6	06/01/2012
7	06/15/2012
8	07/06/2012

ASBE0017-001 06/01/2011

Rates Fringes

ASBESTOS WORKER/INSULATOR

**Includes the application
of all insulating
materials, protective
coverings, coatings, and**

finishes to all types of
mechanical systems.....\$ 43.80 23.40
Fire Stop Technician.....\$ 35.04 22.10

HAZARDOUS MATERIAL HANDLER

includes preparation,
wetting, stripping removal
scrapping, vacuuming,
bagging and disposal of
all insulation materials,
whether they contain
asbestos or not, from
mechanical systems.....\$ 32.85 22.20

BOIL001-001 01/01/2012

Rates Fringes

BOILERMAKER.....\$ 41.38 23.90

BRIL0021-001 06/01/2011

Rates Fringes

BRICKLAYER.....\$ 39.78 20.80

BRIL0021-004 06/01/2010

Rates Fringes

Marble Mason.....\$ 39.03 19.90

*** BRIL0021-006 06/01/2012**

Rates Fringes

TERRAZZO WORKER/SETTER.....\$ 39.37 20.51
TILE FINISHER.....\$ 33.60 15.22
TILE SETTER.....\$ 40.49 16.93

BRIL0021-009 06/01/2009

	Rates	Fringes
MARBLE FINISHER.....	\$ 29.10	19.90

 BRIL0021-012 06/01/2009

	Rates	Fringes
Pointer, cleaner and caulker.....	\$ 39.20	18.51

 CARP0555-001 06/01/2012

	Rates	Fringes
CARPENTER Carpenter, Lather, Millwright, Piledriver, and Soft Floor Layer.....	\$ 41.52	25.47

 CARP0555-002 10/01/2011

	Rates	Fringes
CARPENTER (Excluding structures with elevators and structures over 3 1/2 stories)...	\$ 31.37	24.12

 ELEC0009-003 05/29/2011

	Rates	Fringes
Line Construction Groundman.....	\$ 32.64	19.76
Lineman and Equipment Operator.....	\$ 41.85	25.36

 ELEC0134-001 06/07/2010

	Rates	Fringes
--	-------	---------

ELECTRICIAN.....\$ 40.40 26.75

ELEC0134-002 04/01/1998

Rates Fringes

ELECTRICIAN

CLASS "B".....\$ 20.71 2.975+a+b

CLASS B SCOPE OF WORK:

Install magnetic or electronic replacement ballasts either singly or in groups including necessary wiring within fixture; Install replacement lamp holders and/or sockets including necessary wiring within fixture including relocating sockets within fixture; Install replacement lighting circuit breakers where necessary; Install replacement lighting switches where necessary; Repair lighting fixtures other than ballast or socket replacements; Rewire chandeliers or incandescent fixtures only within fixtures themselves.

FOOTNOTES:

a-Paid Vacation- Employees who have been employed for one year but less than three years receive 1 week of paid vacation; employees who have been employed three years but less than ten years receive 2 weeks of paid vacation; Employees who have been employed ten years but less than twenty years receive 3 weeks of paid vacation; and employees who have worked twenty or more years receive 4 weeks of paid vacation.

b-Funeral Leave-In the instance of the death of a mother, other-in-law-; father, father-in-law, sister, brother, husband, wife, or a child of an employee shall receive up to three days of paid funeral leave.

ELEC0134-003 06/07/2004

Rates Fringes

ELECTRICIAN

ELECTRICAL TECHNICIAN.....\$ 30.89 12.59

The work shall consist of the installation, operation, inspection, maintenance, repair and service of radio, television, recording, voice sound vision production and reproduction, telephone and telephone interconnect, facsimile, data apparatus, coaxial, fibre optic and wireless equipment, appliances and systems used for the transmission and reception of signals of any nature, business, domestic, commercial, education, entertainment and residential purposes, including but not limited to communication and telephone, electronic and sound equipment, fibre optic and data communication systems, and the performance of any task directly related to such installation or service whether at new or existing sites, such tasks to include the placing of wire and cable and electrical power conduit or other raceway work within the equipment room and pulling wire and/or cable through conduit and the installation of any incidental conduit.

ELEV0002-003 01/01/2012

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 48.56	23.535+a+b

FOOTNOTES:

A. Eight paid holidays: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; Day after Thanksgiving; Veterans' Day and Christmas Day.

B. Employer contributes 8% of regular basic hourly rate as vacation pay credit for employees with more than 5 years of service; and 6% for 6 months to 5 years of service.

*** ENGI0150-006 06/01/2011**

Building and Residential Construction

	Rates	Fringes
OPERATOR: Power Equipment		
GROUP 1.....	\$ 45.10	27.10
GROUP 2.....	\$ 43.80	27.10
GROUP 3.....	\$ 41.25	27.10
GROUP 4.....	\$ 39.50	27.10

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Mechanic; Asphalt Plant*; Asphalt Spreader; Autograde*; Backhoes with Caisson attachment*; Batch Plant*; Benoto(Requires two Engineers); Boiler and Throttle Valve; Caisson Rigs*; Central Redi-Mix Plant*; Combination Backhoe Front Endloader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted)*; Concrete Conveyor; Concrete Conveyor, Truck Mounted; Concrete Paver over 27E cu. ft.*; Concrete Paver 27E cu ft and Under*; Concrete Placer*; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes*; Cranes, Hammerhead*; Cranes, (GCI and similar type Requires two operators only); Creter Crane; Crusher, Stone, etc; Derricks; Derricks, Traveling*; Formless Curb and Gutter Machine*; Grader, Elevating; Grouting Machines; Highlift Shovels or Front Endloader 2 1/4 yd. and over; Hoists, Elevators, Outside Type Rack and pinion and similar Machines; Hoists, One, Two, and Three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes*; Hydraulic Boom Trucks; Hydraulic Vac (and similar equipment); Locomotives; Motor Patrol*; Pile Drivers amd Skid Rig*; Post Hole Digger; Pre- Stress Machine; Pump Cretes Dual Ram(Requiring frequent Lubrication and Water); Pump Cretes; Squeeze Cretes-Screw Type Pumps Gypsum Bulker and Pump; Raised and Blind Hole Drill*; Roto Mill Grinder (36" and Over)*; Roto Mill Grinder (Less Than 36")*; Scoops-Tractor Drawn; Slip-Form Paver*; Straddle Buggies; Tournapull; Tractor with Boom, and Side Boom; and Trenching Machines*.

GROUP 2: Bobcat (over 3/4 cu yd); Boilers; Broom, Power Propelled; Bulldozers; Concrete Mixer (Two Bag and over); Conveyor, Portable; Forklift Trucks; Greaser Engineer; Highlift Shovels or Front End loaders under 2 1/4 cu yd; Aotomatic Hoists, Hoists, Inside Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Laser Screed; Rock Drill (Self-Propelled); Rock Drill (Truck Mounted)*; Rollers; Steam Generators; Tractors; Tractor Drawn Vibratory Roller (Receives an additional \$.50 per hour); Winch Trucks with "A" Frame.

GROUP 3: Air Compressor-Small 250 and Under (1 to 5 not to exceed a total of 300 ft); Air Compressor-Large over 250; Combination-Small Equipment Operator; Generator- Small 50 kw and under; Generator-Large over 50 kw; Heaters, Mechanical; Hoists, Inside Elevators (Remodeling or Renovatin work); Hydrualic Power Units (Pile Driving, Extracting, and Drilling); Low Boys; Pumps Over 3" (1 To 3 not to exceed a total of 300 ft); Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches; Bobcat (up to and including 3/4 cu yd)

GROUP 4 - Bobcats and/or other Skid Steer Loaders; Brick Forklifts; Oilers

***-Requires Oiler**

*** ENGI0150-025 06/01/2011**

Heavy and Highway Construction

	Rates	Fringes
OPERATOR: Power Equipment		
GROUP 1.....	\$ 43.30	27.10
GROUP 2.....	\$ 42.75	27.10
GROUP 3.....	\$ 40.70	27.10
GROUP 4.....	\$ 39.30	27.10
GROUP 5.....	\$ 38.10	27.10

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Asphalt Plant*; Asphalt Heater and Planer combination; Asphalt Heater Scarfire*, Asphalt Spreader; Autograder/ GOMACO or similar; ABG Paver*, Backhoes with Caisson attachment*, Ballast Regulator, Belt Loader*; Caisson Rigs*Car Dumper, Central Redi-Mix Plant*, Combination Backhoe; Front End Loader Machine (1 cu yd or over Backhoe bucket or with attachments); Concrete Breaker (truck mounted); Concrete Conveyor; Concrete Paver over 27E cu ft*; Concrete Placer*; Concrete Tube Float; Cranes, all attachments*; Cranes, Hammerhead, Linden, Peco and machines of a like nature*; Creter Crane; Crusher, stone; All Derricks; Derrick Boats; Derricks, traveling*; Dowell Machine with Air Compressor (\$1.00 above Class 1); Dredges*; Field Mechanic Welder; Formless Curb and Gutter Machine*; Gradall and machines of a like nature*; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver mounted*; Hoists, one, two, and three Drum; Hydraulic Backhoes*; Backhoes with Shear attachments*; Mucking Machine; Pile Drivers and Skid Rig*; Pre-Stress Machine; Pump Cretes Dual Ram (requires frequent lubrication and water)*; Rock Drill- Crawler or Skid Rig*; Rock Drill truck mounted*; Rock/ Track Tamper; Roto Mill Grinder, (36" and over)*; Slip-Form Paver*; Soil Test Drill Rig, truck mounted*; Straddle Buggies; Hydraulic Telescoping Form (tunnel); Tractor Drawn Belt Loader*; Tractor Drawn Belt Loader with attached Pusher (two engineers); Tractor with boom; Tractaire with attachment; Traffic Barrier Transfer Machine*; Trenching Machine; Truck Mounted Concrete Pump with boom*; Underground Boring and/or Mining Machines 5 ft in diameter and over tunnel, etc.*; Wheel Excavator* & Widener (Apsco); Raised or Blind Hoe Drill, Tunnel & Shaft*

GROUP 2: Batch Plant*; Bituminous Mixer; Boiler and Throttle Valve; Bulldozer; Car Loader Trailing Conveyors; Combination Backhoe Front End Loader Machine, (less than 1 cu yd Backhoe Bucket with attachments); Compressor and Throttle Valve; Compressor, common receiver (3); Concrete

Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S series to and including 27 cu ft; Concrete Spreader; Concrete Curing Machine; Burlap Machine; Belting Machine and Sealing Machine; Concrete Wheel Saw; Conveyor Muck Cars (Haglund or similar type); Drills (all); Finishing Machine-Concrete; Greaser Engineer; Highlift Shovels or Front End Loader; Hoist- Sewer Dragging Machine; Hydraulic Boom Trucks, all attachments; Hydro-Blaster (requires two operators); Laser Screed*; Locomotives, Dinky; Off-Road Hauling Units (including articulating); Pump Cretes; Squeeze Cretes-Screw Type pumps, Gypsum Bulker and Pump; Roller Asphalt; Rotary Snow Plows; Rototiller, Seaman, self-Propelled; Scoops-Tractor Drawn; Self-propelled Compactor; Spreader-Chip-Stone; Scraper; Scraper-Prime Mover in Tandem regardless of size (add \$1.00 to Group 2 hourly rate for each hour and for each machine attached thereto add \$1.00 to Group 2 hourly rate for each hour); Tank Car Heater; Tractors, Push, pulling Sheeps Foot, Disc, or Compactor, etc; Tug Boats

GROUP 3: Boilers; Brooms, all power propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer, two bag and over; Conveyor, Portable; Farm type Tractors used for mowing, seeding, etc; Fireman on Boilers; Forklift Trucks; Grouting Machines; Hoists, Automatic; Hoists, all Elevators; Hoists, Tugger single Drum; Jeep Diggers; Low Boys; Pipe Jacking Machines; Post-hole Digger; Power Saw, Concrete, Power Driven; Pug Mills; Rollers, other than asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with A-Frame; Work Boats; Tamper-Form motor driven

GROUP 4: Air compressor - Small 250 and under (1 to 5 not to exceed a total of 300 ft); Air Compressor - Large over 250; Combination - Small Equipment Operator; Directional Boring Machine; Generators - Small 50 kw and under; Generators - Large , over 50 kw; Heaters, Mechanical; Hydraulic power unit (Pile Driving, Extracting or Drilling); Light Plants (1 to 5); Pumps, over 3" (1 to 3, not to exceed a total of 300 ft); Pumps, Well Points; Tractaire; Welding Machines (2

through 5); Winches, 4 small electric drill winches;

GROUP 5: Bobcats (All); Brick Forklifts; Oilers; Directional Boring

*Requires Oiler

IRON0001-026 06/01/2011

	Rates	Fringes
IRONWORKER		
Sheeter.....	\$ 41.00	32.94
Structural and Reinforcing..	\$ 40.75	32.94

IRON0063-001 06/01/2011

	Rates	Fringes
IRONWORKER, ORNAMENTAL.....	\$ 40.20	28.78

IRON0063-002 06/01/2011

	Rates	Fringes
IRONWORKER		
Fence Erector.....	\$ 32.66	21.35

IRON0136-001 07/01/2011

	Rates	Fringes
IRONWORKER		
Machinery Movers; Riggers;		
Macinery Erectors.....	\$ 35.44	27.67
Master Riggers.....	\$ 37.94	27.67

LABO0002-006 06/01/2011

	Rates	Fringes
LABORER (BUILDING & RESIDENTIAL)		
GROUP 1.....	\$ 35.20	21.45
GROUP 2.....	\$ 35.20	21.45
GROUP 3.....	\$ 35.275	21.45
GROUP 4.....	\$ 35.30	21.45
GROUP 5.....	\$ 35.35	21.45
GROUP 6.....	\$ 35.40	21.45
GROUP 7.....	\$ 34.425	21.45
GROUP 8.....	\$ 34.425	21.45
GROUP 9.....	\$ 35.525	21.45
GROUP 10.....	\$ 35.65	21.45
GROUP 11.....	\$ 35.475	21.45
GROUP 12.....	\$ 36.20	21.45

LABORER CLASSIFICATIONS

GROUP 1: Building Laborers; Plasterer Tenders; Pumps for Dewatering; and other unclassified laborers.

GROUP 2: Fireproofing and Fire Shop laborers.

GROUP 3: Cement Gun.

GROUP 4: Chimney over 40 ft.; Scaffold Laborers.

GROUP 5: Cement Gun Nozzle Laborers (Gunite); Windlass and capstan person.

GROUP 6: Stone Derrickmen & Handlers.

GROUP 7: Jackhammermen; Power driven concrete saws; and other power tools.

GROUP 8: Firebrick & Boiler Laborers.

GROUP 9: Chimney on fire brick; Caisson diggers; & Well Point System men.

GROUP 10: Boiler Setter Plastic Laborers.

GROUP 11: Jackhammermen on fire brick work only.

GROUP 12: Dosimeter use (any device) monitoring nuclear exposure); Asbestos Abatement Laborer; Toxic and Hazardous Waste Removal Laborers.

LABO0002-007 06/01/2011

Rates Fringes

LABORER (HEAVY & HIGHWAY)

GROUP 1.....	\$ 35.20	21.45
GROUP 2.....	\$ 35.475	21.45
GROUP 3.....	\$ 35.35	21.45
GROUP 4.....	\$ 35.475	21.45
GROUP 5.....	\$ 36.20	21.45

LABORER CLASSIFICATIONS

GROUP 1: Common laborer; Tenders; Material expeditor (asphalt plant); Street paving, Grade separation, sidewalk, curb & gutter, strippers & All laborers not otherwise mentioned

GROUP 2: Ashpalt tampers & smoothers; Cement gun laborers

GROUP 3: Cement Gun Nozzle (laborers), Gunit

GROUP 4: Rakers, Lutemen; Machine-Screwmen; Kettlemen; Mixermen; Drun-men; Jackhammermen (asphalt); Paintmen; Mitre box spreaders; Laborers on birch, overman and similar spreader equipment; Laborers on APSCO; Laborers on air compressor; Paving Form Setter; Jackhammermen (concrete); Power drive concrete saws; other power tools.

GROUP 5: Asbestos Abatement Laborers; Toxic and Hazardous Waste Removal Laborers, Dosimeter (any device) monitoring nuclear exposure

LABO0002-008 06/01/2011

	Rates	Fringes
LABORER (Compressed Air)		
0 - 15 POUNDS.....	\$ 36.20	21.45
16 - 20 POUNDS.....	\$ 36.70	21.45
21 - 26 POUNDS.....	\$ 37.20	21.45
27 - 33 POUNDS.....	\$ 38.20	21.45
34 - AND OVER.....	\$ 39.20	21.45
LABORER (Tunnel and Sewer)		
GROUP 1.....	\$ 35.20	21.45
GROUP 2.....	\$ 35.325	21.45
GROUP 3.....	\$ 34.425	21.45
GROUP 4.....	\$ 25.20	21.45
GROUP 5.....	\$ 30.20	21.45

LABORER CLASSIFICATIONS (TUNNEL)

GROUP 1: Cage tenders; Dumpmen; Flagmen; Signalmen; Top laborers

GROUP 2: Air hoist operator; Key board operator; concrete laborer; Grout; Lock tenders (Free Air Side); Steel setters; Tuggers; Switchmen; Car pusher

GROUP 3: Concrete repairmen; Lock tenders (pressure side); Mortar men; Muckers; Grout machine operators; Track layers

GROUP 4: Air trac drill operator; Miner; Bricklayer tenders; Concrete blower operator; Drillers; Dynamiters; Erector operator; Form men; Jackhammermen; Powerpac; Mining machine operators; Mucking machine operator; Laser beam operator; Liner plate and ring setters; Shield drivers; Power knife operator; Welder- burners; Pipe jacking machine operator;

skimmers; Maintenance technician

GROUP 5: Asbestos abatement laborer; Toxic and hazardous waste removal laborer; Dosimeter (any device) monitoring nuclear exposure

LABORER CLASSIFICATIONS (SEWER)

GROUP 1: Signalmen; Top laborers and All other laborers

GROUP 2: Concrete laborers and Steel setters

GROUP 3: Cement carriers; Cement mixers; Concrete repairmen; Mortar men; Scaffold men; Second Bottom men

GROUP 4: Air trac drill operator; Bottom men; Bracers-bracing; Bricklayer tenders; Catch basin diggers; Drainlayers; dynamiters; Form men; Jackhammermen; Powerpac; Pipelayers; Rodders; Welder-burners; Well point systems men

GROUP 5: Asbestos abatement laborer, Toxic and hazardous waste removal laborer; Dosimeter (any device) monitoring nuclear exposure

LABO0225-001 06/01/2011

	Rates	Fringes
LABORER (DEMOLITION/WRECKING)		
GROUP 1.....	\$ 30.00	21.45
GROUP 2.....	\$ 35.20	21.45
GROUP 3.....	\$ 35.20	21.45

LABORER CLASSIFICATIONS

GROUP 1 - Complete Demolition

GROUP 2 - Interior Wrecking and Strip Out Work

GROUP 3 - Asbestos Work with Complete Demolition/Wrecking or

Strip Out Work

PAIN0014-001 06/01/2012

	Rates	Fringes
PAINTER (including taper).....	\$ 40.00	21.62

*** PAIN0027-001 06/01/2012**

	Rates	Fringes
GLAZIER.....	\$ 39.50	27.97

PLAS0005-002 07/01/2011

	Rates	Fringes
PLASTERER.....	\$ 39.25	21.84

*** PLAS0502-001 06/01/2012**

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 42.35	22.93

*** PLUM0130-001 06/01/2012**

	Rates	Fringes
PLUMBER.....	\$ 45.00	24.11

PLUM0597-002 06/01/2012

	Rates	Fringes
PIPEFITTER.....	\$ 45.05	25.09

ROOF0011-001 06/01/2012

	Rates	Fringes
ROOFER.....	\$ 38.35	16.96

 * SFIL0281-001 06/01/2012

	Rates	Fringes
SPRINKLER FITTER.....	\$ 47.80	19.00

 SHEE0073-001 06/01/2011

	Rates	Fringes
Sheet Metal Worker.....	\$ 40.56	27.23

 SHEE0073-002 06/01/2011

	Rates	Fringes
Sheet Metal Worker		
ALUMINUM GUTTER WORK.....	\$ 27.63	27.23

 TEAM0731-001 06/01/2011

COOK COUNTY - HEAVY AND HIGHWAY

	Rates	Fringes
TRUCK DRIVER		
2 or 3 Axles.....	\$ 33.85	16.85
4 Axles.....	\$ 34.10	16.85
5 Axles.....	\$ 34.30	16.85
6 Axles.....	\$ 34.50	16.85

FOOTNOTES:

A. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

B. 900 straight time hours or more in 1 calendar year for the same employer shall receive 1 week paid vacation; 3 years - 2 weeks paid vacation; 10 years - 3 weeks paid vacation; 20 years - 4 weeks paid vacation.

C. An additional \$.20 per axle shall be paid for all vehicles with more than six (6) axles.

TEAM0731-002 03/01/2012

Rates Fringes

Traffic Control Device Monitor

TRAFFIC SAFETY WORKER:

Primary duties include but are not limited to the delivery, maintenance and pick-up of traffic control devices, the set-up and installation of traffic signs, pavement markings, barricades, crash barrels and glare screens, traffic control surveillance, the repair and maintenance trucks, cars, arrow boards, message signs, barricade and sign fabrication equipment.....\$ 28.25 9.08

TEAM0786-001 06/01/2008

COOK COUNTY - BUILDING AND RESIDENTIAL

Rates Fringes

TRUCK DRIVER

2 & 3 Axles.....	\$ 31.33	.10+a
4 Axles.....	\$ 31.58	.10+a
5 Axles.....	\$ 31.78	.10+a
6 Axles.....	\$ 31.98	.10+a

FOOTNOTES:

a. \$463.00 per week.

An additional \$.20 per axle shall be paid for all vehicles with more than six (6) axles.

Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

900 straight time hours or more in 1 calendar year for the same employer shall receive 1 week paid vacation; 3 years - 2 weeks paid vacation; 10 years - 3 weeks paid vacation; 20 years - 4 weeks paid vacation.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters , PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable , i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rate.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination**
- * a survey underlying a wage determination**
- * a Wage and Hour Division letter setting forth a position on a wage determination matter**
- * a conformance (additional classification and rate) ruling**

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

**Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210**

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

**Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210**

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

**Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210**

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

OR

SPECIAL CONDITIONS

EXHIBIT B

**FEDERALLY REQUIRED CONTRACT PROVISIONS APPLICABLE TO PROJECTS
FINANCED**

**IN WHOLE OR IN PART WITH RECOVERY ZONE ECONOMIC DEVELOPMENT
BONDS**

FEDERALLY AIDED CONSTRUCTION CONTRACTS

These contract provisions ("Required Contract Provisions") shall apply to all work performed on the Contract by the Contractor's own organization and with the assistance of workers under the Contractor's immediate superintendence and to all work performed on the Contract by piecework, station work or by subcontract. If the Department of Labor revises the prevailing rate of hourly wages to be paid for the Work before completion of the Project, the revised rate will apply to this Contract from the effective date of the revision, but the revision will not entitle the Contractor to any increased compensation under the terms of this Contract. Current rates are found at

<http://www.wdol.gov/wdol/scafiles/davisbacon/IL9.dvb>.

I. FEDERALLY REQUIRED CONTRACT PROVISIONS.

a) **Payment of Predetermined Minimum Wage.** This provision is required for any Federally-aided construction contract exceeding \$2,000 and to all related subcontracts under such construction contract.

1) **Minimum wages.** (i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment, computed at rates not less than those contained in the wage determination of the Secretary of Labor (found at <http://www.wdol.gov/wdol/scafiles/davisbacon/IL9.dvb>), regardless of any contractual relationship which may be alleged to exist between the Contractor or its subcontractors and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act [40 U.S.C. 276a] on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in §I.(a)(4).

Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; *provided, however*, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the Contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(C) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii) (B) or (C) of this section, shall be paid to all workers performing work in the classification under this Contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the Contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; *provided*, that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) **Withholding.** The County shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this Contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the Contract. In the event of failure to pay any laborer or mechanic, including any apprentice,

trainee, or helper, employed or working on the site of the work all or part of the wages required by the Contract, the County may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) **Payrolls and basic records.** (i) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The Contractor shall submit weekly for each week in which any Contract work is performed a copy of all payrolls to the County, for transmission to the appropriate Federal agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (*e.g.* , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime Contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the County, for transmission to the appropriate Federal agency, the Contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime Contractor to require a subcontractor to provide addresses and social security numbers to the prime Contractor for its own records, without weekly submission to the sponsoring government agency (or the applicant, sponsor, or owner).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the Contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the Contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the Contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The Contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the appropriate Federal agency or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) **Apprentices and trainees** —(i) **Apprentices.** Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on

the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) **Trainees.** Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage

rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) **Equal employment opportunity.** The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) **Compliance with Copeland Act requirements.** The Contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this Contract.

(6) **Subcontracts.** The Contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the appropriate Federal agency may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) **Contract termination: debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the Contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) **Compliance with Davis-Bacon and Related Act requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this Contract.

(9) **Disputes concerning labor standards.** Disputes arising out of the labor standards provisions of this Contract shall not be subject to the general disputes clause of this Contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

(10) **Certification of eligibility.** (i) By entering into this Contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this Contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

The following provisions do not apply to contracts of \$100,000 or less, and do not apply to contracts not utilizing laborers or mechanics.

(b) Contract Work Hours and Safety Standards Act. The following clauses set forth in paragraphs (b)(1), (2), (3), and (4) of this section shall be set forth in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours

and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by §5.5(a) or 4.6 of part 4 of this title. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) **Overtime requirements.** No contractor or subcontractor contracting for any part of the Contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) **Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

(3) **Withholding for unpaid wages and liquidated damages.** The County shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such Contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) **Subcontracts.** The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

(c) In addition to the clauses contained in paragraph (b), in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR §5.1, the following clause shall be inserted: The contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the Contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates

of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the records to be maintained under this paragraph shall be made available by the Contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

Exhibit P
Supplemental County Conditions

SC-## ADDITIONAL CONTRACTOR RESPONSIBILITY - FOR STROGER HOSPITAL AND
OTHER HOSPITAL FACILITIES

A. CONTRACTOR PERSONNEL

1. All Contractor Personnel shall be employed full time by the Contractor who shall ensure that all services provided by Contractor Personnel conform to the terms of this Contract.

2. Contractor must perform criminal background checks, at Contractor's expense, of all employees of Contractor and any Subcontractors who will be present on hospital facilities. Employees of Contractor or its Subcontractors who have been convicted of a State Class "A" or Federal misdemeanor, felony or plea of nolo contendere shall not perform work on behalf of Contractor or its Subcontractors on hospital premises. Contractor shall provide the John H. Stroger, Jr. Hospital of Cook County with the following documentation regarding each proposed Contractor Personnel, prior to his/her assignment to work at the hospital:
 - a. Result of the criminal background check;
 - b. Documentation that the individual has undergone a current physical examination and has satisfied all health and immunization requirements of the Cook County Health and Hospital System (CCHHS) for Contractor's and its Subcontractors' personnel, including, but not necessarily be limited to, tests for tuberculosis, Rubeola (measles), mumps, Rubella (German Measles), Hepatitis B immunity, and Varicella;
 - c. Documentation of satisfactory current physical exam;
 - d. Current state-issued or city-issued license or registration appropriate to the assignment under this Contract where required;
 - e. Contractor certification that the individual has not been excluded or otherwise restricted from providing services reimbursable under Medicaid, Medicare or other federally funded program or insurance plan;
 - f. Contractor certification that the individual has successfully completed training on Health Insurance Portability and Accountability Act of 1996 (HIPAA) requirements; and
 - g. Any other training and documentation reasonably required by the Hospital.

3. Contractor shall contact the Department of Human Resources at each CCHHS facility in order to arrange for facility orientation

of Contractor Personnel to provide services at that CCHHS facility. Orientation shall include, but not be limited to, safety training, infection control procedures and Buildings and Grounds departmental procedures.

B. WORK ORDERS; COMPUTERIZED SERVICE DOCUMENTATION

1. The Stroger Hospital utilizes a computerized (Maximo) work order system. The Contractor shall utilize this system to record information regarding the services provided under this Contract, including the hours during which services were provided, the scope of specific services and the Contractor Personnel who performed the services.
2. Contractor shall request authorization to provide services by submitting a work ticket to the hospital's designated personnel, who shall issue and sign a work order, which shall constitute authorization to proceed with the work described. All work tickets requesting authorization to provide services and all work orders shall include the unique equipment identification number for the equipment receiving the services.
3. The Contractor shall document all repair needs and shall submit a work ticket requesting a work order for all repairs. Work Orders for repairs shall clearly indicate whether the repairs are billable Services or non-billable. All requests for work orders for Services shall document the reason the repairs are not within the scope of regular Services; i.e., the Equipment requires repairs which are due to damage caused by employee damage or caused by unusual environmental conditions or the Equipment requiring repair is not listed.
4. The contractor shall return documentation of all completed work orders to the Hospital. Monthly billing will not be paid unless the Preventive Maintenance work orders are current (i.e., the preventive maintenance services for which payment is sought have been performed).
5. The contractor will continue with the current Preventive Maintenance Program that is in place.

C. MATERIAL DATA SAFETY SHEET

1. As required under the Illinois "Toxic Substance Disclosure to Employees Act", Illinois Compiled Statutes, 1994, 820 ILCS 255/1, Contractor shall provide with each delivery of materials, a Material Safety Data Sheet (MSDS) for each material so delivered.
2. Contractor shall submit Material Safety Data Sheets to the Hospital's Safety Department for record.

D. CERTIFICATIONS

1. Contractor shall provide the annual or other periodic certifications of maintenance and repair for the inventory of equipment identified in this Contract required by the regulatory agencies for healthcare facilities. The Contractor shall prepare an analysis of the certification requirements within thirty (30) days of the notice of award of the contract. The contractor shall review all applicable regulatory requirements to prepare this analysis. The regulatory requirements reviewed shall include the most current approval and applicable standards of The Joint Commission, IDPH, IEPA, OSHA, NFPA, ASHRAE, CAP and the City of Chicago.

E. CONTINUITY OF CONTRACTOR'S PERSONNEL ASSIGNMENTS

1. Unless otherwise requested by the County, Contractor will use reasonable efforts to assign the same Contractor Personnel to provide services at the same County facility and units on a consistent and regular basis. If the County requests any particular individual to perform services, Contractor agrees to use reasonable efforts to comply with such request. Hospital shall have the right to require the removal or non-assignment of any Contractor Personnel who, in the Hospital's reasonable judgment, does not perform the services in a quality and efficient manner, or for other cause or causes. In this event, Contractor shall promptly replace the removed personnel.

F. CALLBACK SERVICES (if applicable)

1. Repairs which are necessary to the operation of the Hospital or to units of the Hospital shall be provided by the Contractor on an emergency basis, which shall be available 24 hours a day and 7 days a week.
2. Contractor shall be on site and providing emergency services within the maximum of one (1) hour after being notified of any passenger entrapment in any hospital elevator cars.
3. Contractor shall be on site and providing emergency services within two (2) hours after becoming aware of or after being notified of the need for repair services on any hospital elevator cars.
4. No charges for standby time or for travel time will be payable to the Contractor by the County.

(PLEASE PRINT LEGIBLY)

LAST NAME	FIRST NAME, M.I.	PHONE NUMBER	DATE

AFFILIATED INSTITUTION/CONTRACTING AGENCY	CONTACT NAME	PHONE NUMBER

**COOK COUNTY HEALTH & HOSPITALS SYSTEM
CERTIFICATE OF COMPLIANCE ANNUAL REVIEW FORM
Infection Control Policies**

All rotating physicians (including residents in affiliated programs, students, trainees, contracting agency employees and observers) who have contact with Cook County Health & Hospitals System (CCHHS) patients must adhere to the same infection control policies as apply to employees. These requirements follow CDC guidelines for infection control in health care personnel. Individuals continuing work at CCHHS must provide updated information on an annual basis.

ALL PERTINENT LABORATORY RESULTS MUST BE ATTACHED

TUBERCULOSIS: Tuberculin Skin Test (TST),

TST reading must be done from 48-72 hours after application. The TST must have been completed during the previous 60 days. If there is a positive TST, a baseline Chest Xray is required. If a Quantiferon test has been done, please submit the results for review.

***If you participate in an Annual Infection Control screening program at another institution, please see page 2.**

TST	Date Placed	Date Read/Result
CXR (if required)	Date:	Result (ATTACHED):
Quantiferon Test	Date:	Results Positive <input type="checkbox"/> Negative <input type="checkbox"/>

If history of positive TST, individual must be evaluated by their health care provider concerning signs and symptoms of illness possibly related to tuberculosis, including unexplained fever, cough, weight loss and night sweats. For individuals with a previous documented history of positive TST, a baseline Chest Xray is required. The Chest Xray must have been performed within the past 6 months. Previous results may be accepted at the discretion of Stroger EHS and Infection Control.

Fever	Yes No	Weight Loss	Yes No
Cough	Yes No	Night Sweats	Yes No

VIROLOGY SCREENING: Provide the necessary updated information for Measles, Mumps, Rubella, Varicella and Hepatitis B. Information is only required if not complete at time of initial review. Immunity to Measles and Rubella is required. Immunity to Mumps, Varicella, and Hepatitis B is urged. **SEROLOGY RESULTS - ATTACH THE NECESSARY UPDATED RESULTS**

MEASLES (RUBEOLA), MUMPS & RUBELLA

MEASLES (RUBEOLA)	IMMUNE	NOT IMMUNE	DATE:
MUMPS	IMMUNE	NOT IMMUNE	DATE:
RUBELLA	IMMUNE	NOT IMMUNE	DATE:

HEPATITIS B IMMUNITY

Hepatitis B Surface Antibody titers are required post immunization to prove immunity. If the Hepatitis B Surface Antibody titer is negative, Hepatitis B Surface Antigen is required.

Date:	HB Surface Antibody	Positive	Negative	(RESULTS ATTACHED)
Date:	HB Surface Antigen	Positive	Negative	(RESULTS ATTACHED)

VARICELLA

Date:	Varicella	IMMUNE	NOT IMMUNE	(RESULTS ATTACHED)
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Revised 03/25/10
Prepared by the Office of:
Purple Form Annual Review

John H. Stroger, Jr. Hospital of Cook County
Employee Health Service/Infection Control

("PURPLE FORM" LANGUAGE)

ANNUAL INFLUENZA VACCINATION

Annual Influenza Vaccination is mandatory.

- Annual Influenza Vaccine administered on-site for current flu season.
- Medical contraindication (documentation included).
- Annual Influenza Vaccination administered elsewhere (documentation included)

Name of Trainee/Contractee: _____ Telephone Number: _____

(Print)

Address: _____

Street

City/State

Zip Code _____

I understand the Infection Control requirements of the Cook County Health & Hospitals System. I have undergone the tests listed above and give my permission for the person named hereon to release these results to the Cook County Health & Hospitals System.

Signature of Trainee/Contractee

Date

CERTIFICATION OF RESULTS

I certify that the information herein is complete and correct to the best of my knowledge.

Signature of Health Provider, Title
(MD, RN, other)

Name of Institution or Agency**

Phone Number

Printed Name

Address

Date

****OFFICIAL STAMP OR SEAL OF INSTITUTION OR AGENCY IS REQUIRED
EXPLANATORY INFORMATION**

* If you participate in an Annual Infection Control Screening Program at another institution, please forward the results with this form. We will review the information forwarded and inform you if further information is necessary. If your annual TB screening is up to date and you plan to continue Infection Control screening at the outside institution, you do not need to have another TST from within the past 2 months unless there are additional indications.

TUBERCULOSIS

Two-step Tuberculin Skin Testing (TST) is required prior to work for CCHHS. Standard TST testing of 5 TU intradermal is given. Individuals with a two-step TST done in past, with continuous annual screening following the two-step TST, should provide documentation of this and continue annual screening.

- If positive (≥ 10 mm induration), a chest x-ray is obtained.
- If the initial TST is negative, a second 5 TU TST, performed at least one week after the first negative TST, is required. The TST results must be from within the past 12 months, with the recent TST from within the past 60 days.
- If either TST is positive, the individual must be assessed for the signs/symptoms of active tuberculosis and a chest Xray obtained.
- Individuals with a documented history of positive TST or active tuberculosis are not required to undergo TST testing. A baseline Chest Xray result from within the past 6 months must be forwarded with this Infection Control information.
- Tuberculosis screening must be updated annually for work at CCHHS.

RUBELLA (German Measles)

All individuals must have evidence of Rubella immunity documented by antibody titer prior to work at CCHHS.

RUBEOLA (Measles)

All individuals must have evidence of Measles immunity documented by antibody titer prior to work at CCHHS.

MUMPS

It is advised that all health care personnel have immunity to Mumps.

- In the event of an exposure, non-immune individuals would be precluded from work and requested to receive mumps vaccine.

HEPATITIS B

Hepatitis B Surface antibody status is required.

- It is strongly recommended that all individuals participating in this program complete the immunization series for Hepatitis B.
- Once completed, immunization status must be CONFIRMED by repeating the Hepatitis B antibody titer test.
- If a blood or body fluid exposure occurs at work, individuals not immune to Hepatitis B would be offered Hepatitis B immunization and possibly advised to receive Hepatitis B immune globulin.

VARICELLA

Varicella IgG Antibody testing is required.

- It is strongly recommended that non-immune individuals be vaccinated.
- In the event of a varicella exposure, non-immune individuals would be precluded from work, advised to receive varicella vaccine and possibly be advised to receive Varicella Zoster Immune Globulin.

TETANUS DOCUMENTATION NOT REQUIRED - Vaccination or booster within 10 years is recommended.

EX 13

GC-17 Changes and Modifications (continued)

BASIS FOR CHANGE ORDERS:

For any changes in the Work, other than for additional Work ordered on the basis of unit prices stated in this Contract or subsequently agreed to, the Design-Builder shall be paid by the County, in addition to actual cost, certain percentages of the various costs incurred by the Design-Builder for added Work, all as set forth in clauses below. The Design-Builder agrees that these percentages are sufficient to fully compensate it and its subcontractors for both all additional overhead costs and a profit on any such changes in the Work. The cost or credit to the County resulting from a change in the Work shall be determined in one or more of the following ways:

1. By unit prices stated in the Contract or subsequently agreed upon.
2. By a lump sum properly itemized and supported by a detailed breakdown of the following:
 - a. Labor. For all labor, foremen and field supervisor in direct charge of the specific operation, the Design-Builder shall receive the rate of wage agreed upon in writing before beginning work for each and every hour that said labor, foremen and field supervisor are actually engaged in Work.

The Design-Builder shall receive the actual costs paid to, or on behalf of, workmen by reason or subsistence and travel allowances, health and welfare benefits, pension fund benefits or other benefits, when such amounts are required by collective bargaining agreement or other employment contract generally applicable to the classes of labor employed on the Work.

The Design-Builder shall submit payrolls or certified copies thereof, pertinent to the Work for which is requested. The payroll records shall contain the name, address and social security number or each employee, his correct classification, rate of pay, daily and weekly number or hours worked, itemized deductions made and actual wages paid.

An additional amount not to exceed fifteen percent (15%) of the sum of the above items will be paid the Design-Builder for profit and overhead.

GC-17 Changes and Modifications (continued)

- b. Insurance and Tax: For property damage, liability and workmen's compensation insurance premiums, unemployment insurance contributions and social security taxes on the force account Work, the Design-Builder shall receive the actual cost, to which not more than 10 percent (10%) will be added. The Design-Builder shall furnish satisfactory evidence of the rate or rates paid for such insurance and tax.
 - c. Materials: The Design-Builder will receive the cost for all materials, including freight charges as shown by original receipted bills which are an integral part of the finished Work, to which shall be added not more than fifteen percent (15%) of the sum thereof.
The Design-Builder will be reimbursed for any materials used in the construction of the Work, such as sheeting, false work, form lumber, burlap or other materials for curing, etc., reimbursement shall be agreed upon in writing before such Work is begun and no percent shall be added. The salvage value of such materials shall be taken into consideration in the reimbursement agreed upon.
 - d. Equipment: Machinery and equipment which the Design-Builder has on the job for use on contract items shall be used as deemed necessary or desirable. The Design-Builder will be paid for all machinery and equipment (other than small tools) used on the Work in accordance with the latest revision of "SCHEDULE OF AVERAGE ANNUAL EQUIPMENT OWNERSHIP EXPENSE WITH OPERATING COST" as issued by the Department of Transportation of the State of Illinois, for the period that said machinery and equipment are in use on such Work, to which no percent shall be added. Where equipment and machinery are listed in this schedule, the rates will be determined by the Director after reviewing all available records of the Design-Builder or other information concerning the expense of operating that type of equipment.
 - e. Bond: The Design-Builder shall be paid for a reasonable actual increase in cost of his performance bond attributable to the change in the Work.
 - f. Subcontractors: For subcontractor Work, involving labor or labor and materials, for additional Work, the Design-Builder will be allowed no more than an additional five percent (5%) of the cost of the labor and materials to cover the Design-Builder's supervision, and related expense on such subcontract operations.
 - g. Subcontractor or sub-subcontractor: For additional Work involving labor or labor and materials, will be allowed no more than an additional fifteen percent (15%) of the cost of the labor and materials to cover overhead costs and profit.
 - h. For additional Work involving labor or labor and materials by a sub-subcontractor (2nd and 3rd tier subcontractors), the sub-subcontractor providing the labor and materials will be allowed an additional fifteen percent (15%) of the cost of the labor and materials to cover overhead costs and profit. Additional mark-ups by other subcontractors and/or the Design-Builder shall not exceed five percent (5%) to cover supervision and related expense on such sub-subcontractor operations.
 - i. Other Costs. No additional allowance will be made for other costs for which no specific allowance is herein provided.
3. When both additions and credits covering related Work or substitutions are involved in any one change, the allowance for overhead and profit shall be figured on the basis of the net increase, if any, with respect to that change.
 4. If a change involves only deductive Work, the credit to the County shall be the Design-Builder's direct costs only for the labor and materials deleted.

EXHIBIT Q

Major Changes from GEPC Phase 1 Investment Grade Audit Report

Item	Description of Change
Interest Rate	Increased from 2.5% to 3.5%
Financing Term	20-Year Term Selected for Contract
Administration Building	This building was eliminated from our Scope of Work
Fantus Clinic	This Building was eliminated from our scope of work
ECM HB-16a New Air Handling Units	This ECM was eliminated from our Scope of Work
ECM IFM-1a LED Lighting	This ECM was eliminated from our Scope of Work
ECM IFM-2a Geothermal	This ECM was eliminated from our Scope of Work
ECM IFM-2b Chiller Replacement	This ECM was added to our scope of work and includes two new electric chillers
Total Project Sell Price	The total project sell price changed from \$27,253,451 to \$26,497,854 based on removing the Geothermal System, IFM-2a and replacing it with Chiller Replacement, IFM-2b
M&V	Based on input from the County and their consultant the M&V plan has changes that are reflected in Exhibit H

Exhibit R
Standards of Service and Comfort

The following outlines the standards of service related to the operation of buildings during and after the installation.

Standard of Services

The following standards will be followed throughout the design and installation of this project.

1. Lighting Criteria to follow applicable local codes and IES Lighting Standards
2. All mechanical work associated with the Heating, Ventilation and Air Conditioning (HVAC) systems will conform to the requirements of the local codes and in accordance with American Society of Heating and Refrigeration Association (ASHRAE) 90.1 design standards.

Standards of Comfort

Refer to the IGA Appendixes for specific requirements for each ECM regarding hours and temperature.

Operating Schedules

The table below outlines the general occupancy of each building. Individual areas will vary.

The operating schedules for each building were confirmed with Cook County personnel.

	John H. Stroger Hospital &		Hektoen Building	
	Occupied	Un-Occupied	Occupied	Un-Occupied
Monday	24 hours	Na	7:00AM	6:00PM
Tuesday	24 hours	Na	7:00AM	6:00PM
Wednesday	24 hours	Na	7:00AM	6:00PM
Thursday	24 hours	Na	7:00AM	6:00PM
Friday	24 hours	Na	7:00AM	6:00PM
Saturday	24 hours	Na	Un-Occupied 24 Hours	
Sunday	24 hours	Na	Un-Occupied 24 Hours	
Holidays	24 hours	Na	Un-Occupied 24 Hours	

	Ruth M. Rothstein CORE Center		Institute of Forensic Medicine	
	Occupied	Un-Occupied	Occupied	Un-Occupied
Monday	7:00AM	6:00PM	7:00AM	6:00PM
Tuesday	7:00AM	6:00PM	7:00AM	6:00PM
Wednesday	7:00AM	6:00PM	7:00AM	6:00PM
Thursday	7:00AM	6:00PM	7:00AM	6:00PM
Friday	7:00AM	6:00PM	7:00AM	6:00PM
Saturday	Un-Occupied 24 Hours		Un-Occupied 24 Hours	
Sunday	Un-Occupied 24 Hours		Un-Occupied 24 Hours	
Holidays	Un-Occupied 24 Hours		Un-Occupied 24 Hours	

Comfort Conditions

The following information will be used in our design and implementation of the Energy Conservation Measures (ECM).

Space Heating & Cooling Periods

Space Heating Periods: November through May and Outside Air Temperature falls below 55 degrees F

Space Cooling Periods: April through October and Outside Air Temperature rises above 55 degrees F

Surgical Areas, Data Processing Rooms and Medical Equipment to Operate in Cooling Mode up to 8,760 hours per year

Temperature Setpoints

The temperatures below will not apply to specialty areas i.e. surgery room, data processing room, morgue, autopsy, etc. as identified by Cook County personnel. Temperatures in these spaces will remain unchanged.

Range of Occupied Room Temperature-Heating Period: 68 to 75 degrees F

Minimum Un-Occupied Room Temperature-Heating Period: 65 degrees F

Range of Occupied Room Temperature During Cooling Period: 70 to 75 degrees F

Maximum Un-Occupied Room Temperature During-Cooling Period: 80 degrees F

BOND NUMBER: 268001180

PERFORMANCE AND PAYMENT BOND TO THE COUNTY OF COOK

Know All Men By These Presents, That we, Johnson Controls, Inc.; 5757 North Green Bay Avenue; Milwaukee, WI 53209

as principal, Liberty Mutual Insurance Company

175 Berkeley Street; Boston, MA 02116

as surety, are

held and firmly bound unto The County of Cook in the penal sum of

Twenty Six Million Four Hundred Ninety Seven Thousand Eight Hundred Dollars (\$ 26,497,854.00),

lawful money of the United States of America, for the payment of which sum of

money well and truly to be made, we bind ourselves, our respective heirs,

executors, administrators, successors and assigns, firmly, by these presents.

Signed sealed, and delivered this _____ day of _____, 20____.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, That whereas, the

above bounden principal entered into a certain contract with The County of Cook,

Bearing date the _____ day of _____, 20____, for Performance Contract; Cook

County Government

It is hereby expressly understood and agreed, and made a condition hereof, that any judgement rendered in favor of any person not a party to said contract against The County of Cook in any suit arising out of said contract or its performance, when reasonable notice of the pendency of such suit shall have been given to said principal and to said surety, shall be conclusive against said principal and said surety as to both liability and amount. This bond is issued subject to the conditions of the attached rider.

In Witness Whereof, said parties hereto have caused this bond to be executed and delivered at Chicago, Illinois, all on the day and year first above written.

JOHNSON CONTROLS, INC.

PRINCIPAL/CONTRACTOR

SEAL

By: *Liz Blair*
~~PRESIDENT~~ Liz Blair; Attorney-In-Fact

SEE ATTACHED DELEGATION OF AUTHORITY
SECRETARY

LIBERTY MUTUAL INSURANCE COMPANY

SURETY

SEAL

By: *Cathy Hutson*
SURETY/ATTORNEY-IN-FACT Cathy Hutson
(ATTACH POWER OF ATTORNEY)

002283
AMB#

23043
NAIC#

Approved as to form:

By _____
ASSISTANT STATE'S ATTORNEY

MF-2



SURETY RIDER

To be attached to and form a part of

Bond No. _____

Cross Ref: 268001180

Type of Bond: Performance and Payment Bonds

Dated effective _____ (MONTH-DAY-YEAR)

executed by Johnson Controls, Inc. _____, as Principal.
(PRINCIPAL)

and by Liberty Mutual Insurance Company _____, as Surety,

in favor of _____ (OBLIGEE)

in consideration of the mutual agreements herein contained the Principal and the Surety hereby consent to changing

The following language to be inserted into the Performance and Payment Bond:

Notwithstanding any provision to the contrary contained in this bond or the underlying contract, this bond guarantees only the performance of the installation portion of the contract and shall not be construed to guarantee any efficiency or energy savings guarantees, any support or maintenance service agreement or any other guarantees or warranties with terms beyond one (1) year in duration from the completion of the installation portion of the contract.

Nothing herein contained shall vary, alter or extend any provision or condition of this bond except as herein expressly stated.

This rider is effective _____ (MONTH-DAY-YEAR)

Signed and Sealed _____ (MONTH-DAY-YEAR)

Johnson Controls, Inc. _____ (PRINCIPAL)

By: Liz Blair _____ (PRINCIPAL) Liz Blair, Attorney-In-Fact

Liberty Mutual Insurance Company _____ (SURETY)

By: Cathy Hutson _____ (ATTORNEY-IN-FACT) Cathy Hutson



SURETY'S STATEMENT
OF
QUALIFICATION FOR BONDING

This document must be accurately executed (by the Surety Company) and yielded as part of this Bid.

IF THIS DOCUMENT IS NOT ACCURATELY EXECUTED AND SUBMITTED WITH THE BID PACKAGE,
THIS CONSTITUTES CAUSE FOR DISQUALIFICATION OF THE VENDOR FROM BIDDING ON THIS
CONTRACT.

The undersigned confirms that Liberty Mutual Insurance Company
(SURETY COMPANY)

would execute a Performance/Payment Bond in favor of the County of Cook for the full amount of the

bid/contract 2PZJ-0004 to Johnson Controls, Inc.
(NUMBER) (BIDDER)

The penalty of this bond is to be \$ \$26,497,854.00
(TOTAL DOLLAR AMOUNT OF CONTRACT)

Cathy Hutson
(SURETY COMPANY'S AUTHORIZED SIGNATURE)

Cathy Hutson
(ATTORNEY-IN FACT)

002283 23043
AMB # NAIC #

SURETY
CORPORATE
SEAL



THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON RED BACKGROUND.

4959036

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

LIBERTY MUTUAL INSURANCE COMPANY
BOSTON, MASSACHUSETTS
POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS: That Liberty Mutual Insurance Company (the "Company"), a Massachusetts stock insurance company, pursuant to and by authority of the By-law and Authorization hereinafter set forth, does hereby name, constitute and appoint DANIEL J. KWIECINSKI, DANIEL J. SAPIRO, KATHLEEN A. CRARY, WENDY S. MILLER, KATHLEEN A. YOSS, KRISTIN N. SCHMIT, TRACY K. MATTHEWS, LISA M. SLAKES, CATHY HUTSON, LUCY A. HANTZSCH, ALL OF THE CITY OF MILWAUKEE, STATE OF WISCONSIN

each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations in the penal sum not exceeding TWO HUNDRED MILLION AND 00/100..... DOLLARS (\$ 200,000,000.00.....) each, and the execution of such undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents, shall be as binding upon the Company as if they had been duly signed by the president and attested by the secretary of the Company in their own proper persons.

That this power is made and executed pursuant to and by authority of the following By-law and Authorization:

ARTICLE XIII - Execution of Contracts: Section 5. Surety Bonds and Undertakings.

Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

By the following instrument the chairman or the president has authorized the officer or other official named therein to appoint attorneys-in-fact:

Pursuant to Article XIII, Section 5 of the By-Laws, David M. Carey, Assistant Secretary of Liberty Mutual Insurance Company, is hereby authorized to appoint such attorneys-in-fact as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

That the By-law and the Authorization set forth above are true copies thereof and are now in full force and effect.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Company and the corporate seal of Liberty Mutual Insurance Company has been affixed thereto in Plymouth Meeting, Pennsylvania this day of 28th day of October 2011

LIBERTY MUTUAL INSURANCE COMPANY

By *David M. Carey*
David M. Carey, Assistant Secretary

COMMONWEALTH OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 28th day of October, 2011, before me, a Notary Public, personally came David M. Carey, to me known, and acknowledged that he is an Assistant Secretary of Liberty Mutual Insurance Company; that he knows the seal of said corporation; and that he executed the above Power of Attorney and affixed the corporate seal of Liberty Mutual Insurance Company thereto with the authority and at the direction of said corporation.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at Plymouth Meeting, Pennsylvania, on the day and year first above written.

By *Teresa Pastella*
Teresa Pastella, Notary Public

CERTIFICATE

I, the undersigned, Assistant Secretary of Liberty Mutual Insurance Company, do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy, is in full force and effect on the date of this certificate; and I do further certify that the officer or official who executed the said power of attorney is an Assistant Secretary specially authorized by the chairman or the president to appoint attorneys-in-fact as provided in Article XIII, Section 5 of the By-laws of Liberty Mutual Insurance Company.

This certificate and the above power of attorney may be signed by facsimile or mechanically reproduced signatures under and by authority of the following vote of the board of directors of Liberty Mutual Insurance Company at a meeting duly called and held on the 12th day of March, 1980.

VOTED that the facsimile or mechanically reproduced signature of any assistant secretary of the company, wherever appearing upon a certified copy of any power of attorney issued by the company in connection with surety bonds, shall be valid and binding upon the company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seal of the said company, this 18th day of July 2012

Gregory W. Davenport
Gregory W. Davenport, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, bank deposit, currency rate, interest rate or residual value guarantees.

To confirm the validity of this Power of Attorney call 1-610-832-8240 between 9:00 am and 4:30 pm EST on any business day.