**Investment Grade Audit and**

Insert user logo

**Project Proposal**

 **Attachment E**

# ATTACHMENT E. Sample Audit Workplan Approval Matrix

The table below summarizes the approach for the ESCO to develop the scope of work, guaranteed savings, and measurement and verification of the energy savings during the Investment Grade Audit (IGA). Changes and modifications to may occur throughout the IGA, however must be approved by all parties.

|  | **ECM Description** | **Scope of Work Development** | **Savings Analysis** | **M&V Approach** |
| --- | --- | --- | --- | --- |
| 1 | Lighting Retrofit | Room-by-Room audit with planned retrofits | Pre and post wattage and hours of operation in the Room-by-Room audit | Retrofit isolation. Pre- and post- wattage measurements of a statistically valid sample of retrofits |
| 2 | Building Automation System | DDC points list with sequences of operation  | BIN analysis utilizing local weather data and system design parameters. | Baseline operating conditions documented on xx/yy/2014 and approved by owner’s facilities staff. The BAS trending capabilities will be used on a short–term basis to verify BAS operating as per ESCO design. Semi-annual visits from ESCOs Cx engineers to verify system to continues to operate within design parameters.  |
| 3 | New Chiller Plant | General arrangement and single-line process drawings. Equipment submittal package. | BIN analysis utilizing local weather data and system design parameters. | Use existing BAS to trend baseline CHW plant operating parameters for 60 days during IGA to determine Kw/ton at varying loads. Use BAS to trend CHW plant operating parameters to calculate post-retrofit kw/ton. Use verified data in baseline and post-retrofit BIN analysis. |
| 4 | Convert from Constant Volume to Variable Air Volume | Identify locations of boxes to be converted on the existing building HVAC plans. Equipment submittal packages for each type/size of box to be installed. DDC schematic for a sample VAV box with sequence of oeprations. | eQuest model to be calibrated to current baseline within x %. | eQuest model for the impacted building |
| 5 | Window Replacement | Room-by-Room audit with planned retrofits | eQuest model to be calibrated to current baseline within x %. | eQuest model for the impacted building |
| 6 | Wall/roof replacement or insulation enhancement | Room-by-Room audit with planned retrofits | eQuest model to be calibrated to current baseline within x %. | eQuest model for the impacted building |
| 78. | Infiltration sealingNew Boilers,burners,or boliler controls | Blower door test or smoke test on each aperture. Visual inspection?Inspection of condition,evaluation of viability,combustion efficiency testing | eQuest model to be calibrated to current baseline within x %.Post retrofit combustion efficiency estimates  | eQuest model for the impacted buildingPost retrofit combustion efficiency tests and/or data collected from dedicated boiler controls |

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Customer

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Owner’s Consultant

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ESCO