

FEDERAL UTILITY PARTNERSHIP WORKING GROUP SEMINAR

May 7 - 8, 2014

Virginia Beach, VA

UESC Performance Assurance (M&V)

Hosted by:



Outline

- Federal Requirements
 - Commissioning Components
 - Audit Components



- Performance Assurance
 - Recommended Actions
 - ECM Checklist

EISA Section 432 - Commissioning Components

Identify and assess recommissioning measures (or, if the facility has never been commissioned, retrocommissioning measures) as part of the necessary evaluation.

DOE recommends a two-step approach:

Initial Assessment

- **Prioritize and conduct an initial walk-through of buildings to determine if it is a good candidate for a more detailed assessment.**
- **If walk-through finds building does not require more detailed commissioning, then commissioning requirement is fulfilled.**

Detailed Re/Retrocommissioning Evaluation

- **A more detailed evaluation should be conducted in those buildings identified as economically viable candidates for further commissioning efforts in the initial assessment.**
- **More capital-intensive retrofit opportunities incidental to the commissioning assessment may be identified and should be passed forward to the detailed audit portion of the comprehensive energy and water evaluation.**

EISA Section 432 - Audit Components

- The audit report component of the facility energy and water evaluations needs to contain sufficient detail and actionable information about energy conservation measures (ECMs) so that sound project decisions can be made based on the audit results
- DOE audit standard is rigorous, but flexible enough to ensure viable energy-saving projects are identified, and allow engineers to conclude that viable projects do not exist

PA Level Audit

- Documented findings of a walk-through survey including evaluation of energy cost savings and energy unit saving potential, building conditions, energy consuming equipment and hours of use or occupancy
- Should contain technical and price assessments:
 - Project Overview
 - Technical Assessment

http://www1.eere.energy.gov/femp/pdfs/eisa_s432_guidelines.pdf

Life Cycle Cost-Effective

Definition from 42 USC 8253, EISA Section 432

‘With respect to a measure, means a measure the estimated savings of which exceed the estimated costs over the lifespan of the measure... ‘

Savings Exceed Costs Over the Life of the ECM

Performance Assurance Plans

1. Include Performance Assurance Requirements in each contract
 1. Strategy for measuring and presenting baseline assumptions and operating hours, design consumption; as-installed consumption and operating hours for each ECM
 2. Demonstrate performance at installation, upon seasonal changes, at completion of one year of service, and prior to the end of the warranty period
 3. Develop O&M procedures that meet manufacturer's suggested O&M, agency protocol and efficiency targets
 4. Establish responsible party (agency or utility) for all activities included in the performance assurance plan

2. Compare performance measurements to manufacturer's specs and design intent
 - Measure the performance criteria and verify performance of each ECM when installation is complete. (i.e. - kWh per fixture, kW per ton)
 - Measure the performance criteria and verify the performance at the end of the warranty period.

Performance Assurance Plans

3. Assure effective O&M

- Complete ECM-specific O&M
- Perform continuous commissioning for complex and energy-significant ECMs
- Inspect ECM O&M effectiveness periodically
- Review and adjust the O&M plan

4. Provide performance-focused O&M training that meet manufacturer's recommendations

- Provide ECM-specific in-person training and include video training

5. Review and resolve performance discrepancies

Performance Assurance Plans

Note from Our Utility Partners

M&V requirement is:

- Intended to provide documentation regarding cost-effectiveness of technologies deployed;
- Not intended to create a continuous program or reporting, monitoring, and maintaining energy consuming systems that are part of this project to ensure savings.

Performance Assurance Plans

ECM Performance Checklist

- 1) *Document intention for the measure (design intent or basis of design)*
- 2) *Confirm correct number, type, and location of measures*
- 3) *Confirm correct interconnection with building systems and controls*
- 4) *Confirm operational sequence (startup, shutdown) or multiple modes of operation*
- 5) *Document tests to confirm improvement in efficiency*
- 6) *Confirm complete training of staff*
- 7) *Confirm on-site user's manual*

<http://www.energy.gov/eere/femp/downloads/utility-energy-services-contracts-guide-0>

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