

FEDERAL UTILITY PARTNERSHIP WORKING GROUP SEMINAR

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A Template for a Performance Assurance Plan *(draft)*

Hosted by:



Performance Assurance Plan

Addendum to OMB Memo M-98-13

OMB Requirements for Annual Scoring:

- UESC must obligate budgetary resources to cover payments for the fiscal year in which the contract was awarded
- A UESC must include:
 - Performance assurance (or energy savings guarantee)
 - M&V of savings through commissioning or retrocommissioning
 - Competition or an alternatives analysis
- A good plan helps both parties agree on the methodology to justify savings for ECMs identified in the proposal

Performance Assurance Plan

- A good plan helps both parties agree on the methodology to validate savings for ECMs identified in the proposal
- Performance Assurance actions need to:
 - prove the actual performance meets design expectations
 - be reasonable and within the power of the utility to honor
 - Provide sufficient performance assurance at costs within the project savings budget

Performance Assurance Plan

*Appropriate performance assurance and rigor of M&V method necessary to cost effectively assure compliance with the Task Order must be at the **discretion of the Contracting Officer***

DOE FEMP's *Minimal* Performance Assurance Levels Recommendations

The recommendations are as follows:

1. Start-up performance verification (based on measured data)
2. Performance verification at the end of warranty period (based on measured data)
3. Operations and maintenance training (required in the more common instance where the agency continues to operate and maintain the installed equipment)
4. Provision of continuing training throughout the contract period as specified in the contract as determined by the needs of the facility
5. Periodic inspections and verification of appropriate O&M performance
6. Performance discrepancy resolution

Developed with input from members of FUPWG and M&V specialists!

Performance Assurance Responsibilities - Agency

The Agency is responsible for each of the following:

1. Integrate new requirements within existing maintenance work plan in order to preserve strategies, set points, and performance
2. Keep usage and maintenance records and share with utility (as needed)
3. Maintain and perform preventative maintenance on all installed equipment and systems
4. Record changes in facility or equipment use or any other matter that may impact the performance of the ECMs and as needed, update the Performance Assurance Plan. Notify the Utility!

Performance Assurance Responsibilities - Agency

The Agency is responsible for each of the following:

5. Provide for scheduling, shutdown, and visual inspections of affected locations during M&V activities
6. Provide Utility and its Subs access, escort, and qualified witness during performance assurance services
7. As appropriate, Agency to provide Utility and its subs access to ECM equipment and controls, for example
 1. access to the DDC controls system data to validate savings, or
 2. the DDC controls system data files
8. Implementation of recommended corrective actions identified by the performance assurance services report at agency's cost or as described in the Task Order (TO)

Performance Assurance Responsibilities - Utility

The Utility is responsible for providing Performance Assurance Services set forth in the Task Order (TO) for each ECM including:

1. Establish an accurate baseline of equipment, controls, and operating strategies for existing equipment and systems impacted by the project.
2. Prior to acceptance, inspect and analyze equipment, controls, operating strategies, and maintenance records for each ECM and prove performance as designed. Provide a written commissioning or start up report with results.
3. Periodically as described in the TO, inspect and analyze equipment, controls, operating strategies, and maintenance records for each ECM. Provide a written report including findings and well described corrective recommendations.
4. Provide O&M training, as described.
5. During equipment and system inspections review the Agency's maintenance records to validate proper O&M has been performed.

Performance Assurance Responsibilities - Utility

The Utility is responsible for providing Performance Assurance Services set forth in the Task Order (TO) for each ECM including:

6. Record any performance deficiencies and recommended corrections as well as optimization opportunities and include in report.
7. While savings levels are not guaranteed, the Utility will provide technically-sound savings and cost reduction estimates.
8. Utility is responsible for identifying corrective actions in accordance with the Performance Assurance Plan.

Performance Assurance Responsibilities - Utility

Within 60 days of each anniversary of the Performance Assurance Services, the Utility will provide the Agency with an annual report. The report will contain:

- project's performance and savings achieved to date;
- status of control strategies (in place and functioning);
- status of O&M (performed as detailed);
- describe performance discrepancies and opportunities to enhance equipment performance

The Utility will also:

- notify the Agency that the report is forthcoming
- set up a site meeting to discuss the report
- review the M&V report for operational findings for follow-up
- work with the agency's qualified witness

Performance Assurance Template

The Template Features 7 Commonly Installed ECMs:

1. Energy Management Control System (EMCS) Upgrade
2. Condensing Boiler Replacement
3. Lighting Retrofit
4. Water Efficiency Measures (Domestic)
5. HVAC Equipment and AHU Replacement
6. Chiller Replacement
7. Photovoltaic (PV) System Installation

Energy Management Control System (EMCS) Upgrade

1. Energy Management Control System (EMCS) Upgrades

Buildings included: _____

Proposed Performance Assurance Services:

What	When	How
Start-up performance verification	Prior to acceptance	<ul style="list-style-type: none"> Commission control system to determine whether it performs as designed. Validate controls strategies are programmed in control system. Set trends to track temperature set points, hours of HVAC operation, and other variables applicable to the equipment it controls. Review trend logs after two weeks of operation to verify control settings and proper operation of control strategies, or Calibrated simulations will be created for this facility utilizing detailed survey data and HVAC equipment short-term metering to determine baseline and potential post-installation energy usage. Controls operating parameters recorded during the system commissioning will be used for calibrated energy model to determine actual post-installation energy use and savings (model shall account for interactions from other ECMs to arrive at an adjusted baseline).
Performance Verification at the end of warranty period	Before warranty expires	<ul style="list-style-type: none"> Provide physical inspection to verify that the installed equipment and components have been properly maintained (per O&M manual). Conduct an annual review of controls trends, status and alarm reports to ensure controls set points, algorithms and sequences are as originally specified and performing as intended. Analyze system response during seasonal changes and adjust program as needed. Verify system continues to meet operating parameters.
O&M Training	Upon completion of installation	<ul style="list-style-type: none"> Provide original equipment manufacturer manuals and cutsheets. O&M personnel will be provided with classroom training with hands-on. demonstration, and include video recording Provide refresher training throughout contract period as appropriate.
On-going training	Agreed upon frequency	
Periodic Inspections and Verification	Agreed upon frequency	Apply "start-up /end of warranty" performance verification strategies, as appropriate.
Performance discrepancy resolution	Every time Performance Assurance Service is completed	If the activities described above indicate that equipment is not performing as designed, or being properly operated and maintained, a report will be provided to the Customer describing the recommended corrective actions. The Customer will be responsible for implementing corrective actions at its sole cost.

Performance Assurance Draft Contributors/Reviewers

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