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DOCKET NOS. UE-111048/UG-111049
2011 PSE GENERAL RATE CASE
WITNESS: ROBERT W. STOLARSKI

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **PUGET SOUND ENERGY, INC.,** **Respondent.**	**Docket No. UE-111048** **Docket No. UG-111049**

EIGHTH EXHIBIT (NONCONFIDENTIAL) TO THE PREFILED REBUTTAL TESTIMONY OF ROBERT W. STOLARSKI ON BEHALF OF PUGET SOUND ENERGY, INC.

JANUARY 17, 2012

Energy Efficiency Services

EM&V Framework

Attachment 2

Measurement & Verification

Policies, Guidelines, Protocols & Processes

2011

Version 1.0

January 1, 2012

PUGET SOUND ENERGY
The Energy To Do Great Things

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Definitions

The following definitions are consistent with current and proposed operating practices by PSE EES staff. Similarly, they are consistent with definitions in the EM&V Framework:

- **EM&V** -- A catch-all term for evaluation activities at the measure, program or portfolio level; can include impact, process, market and cost effectiveness analysis. EM&V is distinguishable from M&V or programmatic M&V as described below. Please refer to the EM&V Framework for a complete description of EM&V activities as part of EES.
- **Evaluation** -- The performance of studies and activities aimed at determining the effects of a program and/or portfolio; any of a wide range of assessment activities associated with understanding or documenting program performance, assessing program or program-related markets and market operations; any of a wide range of evaluation efforts including assessing program-induced changes in energy efficiency markets, levels of demand or energy savings, and program cost effectiveness.
- **Measurement & Verification (M&V)** – The process of determining and validating savings. Per the International Performance Measurement and Verification Protocols (IPMVP), M&V activities are one of four options. However, in this document, the technical definition for developing individual measure savings is just a part of what is being considered as M&V. Here, M&V includes data collection, monitoring, and analysis associated with the calculation of gross energy and demand savings from individual sites or projects. These activities are reviewed and documented to establish the due diligence in achieving accurate energy savings and not the actual savings analysis itself (which is what is outlined in the IPMVP). These set of activities can also be a part of EM&V.
- **Measurement** – Measurement is the activity of collecting energy consumption data over time for use in energy savings analysis. This may include primary research (e.g., billing analysis, metering) for the purpose of determining the energy use/savings of the installed measures.
- **Verification** – A component of overall M&V efforts aimed at verifying installations of energy efficient measures and associated documentation through review of documentation, surveys and/or onsite inspections. Verification activities are the compilation of the processes used to report the suitability of the savings documented for the measure. This may include invoice and/or calculation review as well as on-site inspection.
- **Quality Assurance (QA)** - The purpose of QA is to validate the integrity of the data via an overall management plan or process (such as checklists, audits, standards, and methodology development). QA is process oriented to prevent any errors and is built into the implementation process.
- **Quality Control (QC)** - QC is meant to assess the quality of the analytical data or the tools used for measurement to identify any errors. QC is a subset of QA. QC may include inspections, peer reviews, and tracking database reports that test the process (i.e., did the measure meet the requirements).

Introduction

The purpose of this document is to define EES Measurement and Verification (M&V) structure and to define M&V policies, guidelines, protocols and processes to be used by the Energy Efficiency Services (EES) division of Puget Sound Energy (PSE).

This document is created in response to the September 2010 settlement agreement, "Agreed Conditions for Approval of Puget Sound Energy, Inc.'s 2010-2011 Biennial Electric Conservation Targets under RCW 19.285, Docket No. UE-100177." PSE agreed to a number of conditions related to I-937 regarding functions within EES. The conditions agreement in section K6 (f) (ii) states:

> Measurement & Verification – PSE shall provide detailed descriptions of its measurement & verification (M&V) policies, protocols, guidelines, and processes to the CRAG for review and advice. Additionally, PSE shall provide to the CRAG an estimate of the costs associated with the detailed M&V plan and PSE will maintain activities at levels that are at least commensurate with regional peers.

This document provides detailed descriptions of PSE M&V policies, protocols, guidelines and processes.

Overview

Over the 30+ year history of Energy Efficiency Services functions at PSE, a cornerstone business practice has been developing and implementing tracking, reporting and quality assurance practices that enable program staff, management, regulators and other stakeholders to:

- Assess EES performance,
- Have confidence that PSE is a responsible custodian of rate-payer dollars, and
- Trust that PSE's efficiency gains are realized and accurately documented.

In recent years EES' savings targets have increased significantly, and its program portfolio has become larger and more complex. Concurrently, its planning, implementation, administrative and evaluation teams have adopted more sophisticated portfolio and program data tracking and reporting capabilities. EES management and staff have created, and are committed to maintaining, a culture of continuous improvement that addresses quality assurance, quality control and verification practices.

M&V Roles & Responsibilities

At a macro level, the following teams are responsible for overall quality assurance and continuous improvement in their associated functions.

EES Program Implementation teams (including third party program implementers):

- Estimate energy savings
- Document and verify installations

- Establish program policies and procedures
- Market programs and educate participants
- Advocate customer interests and manage contractor relations
- Document evaluation report response (ERR) plans to integrate evaluation results

EES Evaluation team (and independent external evaluators):

- Conduct impact and process evaluations (as outlined in the annual EM&V plan)
- Provide feedback to implementation teams in identifying gaps in QA/QC, customer and/or contractor satisfaction, and other evaluation findings
- Review the documentation prepared by the implementation team
- Retain external evaluators to conduct independent impact evaluations of PSE's savings claims
- Calculate program and portfolio cost-effectiveness

EES Verification Team

- Assists EES Program Implementation teams in on-site verification
- Ensure that customers and contractors have installed qualifying measures
- Communicate with customers and contractors regarding program specifications and provide customer service
- Document and report results of site visits
- Develop proper and consistent on-site verification practices

EES Budget & Administration

- Conduct thorough reviews of all projects with incentives greater than $100,000
- Conduct an accounting and eligibility review of programs when an issue has surfaced
- Audit program engineer's work
- Provide training to EES staff on various tools and accounting practices
- Quarterly review of tracking system to ensure reference to measure metrics is correct
- Audit third party program implementers

All these M&V functions support and inform the critical EES portfolio metrics.

EES M&V Policy

In its simplest form, EES M&V policy is as follows:

- Every measure and/or program has objective and documented analysis describing kWh and/or therm savings and can be verified following installation.
- EES program planning, implementation, verification and evaluation teams are engaged in on-going quality assurance, quality control, analysis and reporting of measure/program activities.
- All M&V functions are complementary to the overall EM&V Framework.
- Transparent M&V methods are subject to review to increase quality and reliability.
- M&V efforts focus on areas of highest risk or uncertainty.

EES M&V Guidelines

The primary purpose of M&V functions is to obtain and secure the most reliable program savings and measure metric estimates while delivering high quality, cost-effective programs.

The EES division has adopted the following guidelines regarding M&V. EES will:

- Develop consistent protocols and processes for determining and verifying the measure and program metrics which include savings, cost, cost effectiveness and reliability of all energy efficiency programs and measures
- Use metrics accepted as industry best practices or adopt our own that are compatible with key objectives of the EM&V Framework
- Utilize M&V results for continuous improvement of existing programs

EES M&V Protocols & Processes

The following are the *overarching* M&V protocols used across EES functions. They also include examples of existing QA/QC processes that currently support the protocols.

Design or Modification of Program Rules, Policies and Measure Descriptions

Clear, consistent and well maintained program rules and measure requirements have a significant impact on the quality of program results. Such program rules and requirements are made to maximize consistency, minimize evaluation risk, and allow easy access for participation. Clear documentation of these rules and requirements is critical to the understanding of these programs for both internal and external program participants. Documentation is updated regularly as the programs grow and evolve. These documents serve as references to the program rules and an update process must be put in place to keep these documents current and relevant.

Process examples:

- Design of program rules, policies and measure eligibility criteria
- Design application approval and payment processes
- Develop and modify (as appropriate) program policies and procedures

Data Management & Process Tracking (collection, tracking & reporting)

PSE has systems in place that allow EES to effectively manage its data and accurately report program results. These systems assist in data collection, tracking of project and program milestones, and reporting of program results consistently and accurately across all departments within EES. Effective data management also includes built-in QA/QC functions that prevent or catch data entry errors. This category also includes the comprehensive documentation of the tracking and reporting systems to build a consistent process of managing data.

Process examples:

- Design, document, and use tracking and reporting tools
- Database training
- Confirm project/measure eligibility
- Project document/QC review

Energy Savings Verification

Measures within programs have documented procedures in place to fully verify savings in a manner that considers cost effectiveness and minimizes evaluation risk. Verification procedures may vary depending on measure, participant, or program type. Documentation of savings verification practices clarifies expectations for the implementation staff, evaluators, CRAG/WUTC, and program participants.

Process examples:

- Review equipment specifications
- Updates/refinements to deemed savings calculations and measure parameters
- Calculate energy savings (may include metering and/or modeling)
- Guidelines to custom savings calculations
- Peer review of application materials and calculations
- Pre and post-installation inspection & verification

Assessment & Verification of 3rd Party Programs

PSE has systems in place that require all of their third party program implementers to submit their verification plans for PSE approval. A set of requirements should be

outlined for the third party as a minimum to meeting PSE standards. Such efforts ensure that proper M&V is included in any program processes. Finally, PSE institutes independent energy savings verification and standard reporting requirements of third party program projects as part of an overall QA/QC plan.

Process examples:

- Training of 3rd party implementers re: program policies, compliance, reporting
- Creation of 3rd party tracking and reporting tools,
- Review of applications, calculations, reports
- Pre and post-installation inspection & verification

Contractor/Customer Training & Relations Management

Building and managing relationships between program implementers, customers and contractors increases the quality of applications submitted by program participants. It is important that the market has a clear and thorough understanding of EES programs and can provide regular feedback on the challenges that participants face. PSE takes into consideration the concerns of participants when determining policies and procedures and provides appropriate training resources to program stakeholders. These resources may include clear and concise language in program collateral on program expectations and/or holding seminars/webinars on program requirements.

Process examples:

- Design of customer/contractor training sessions
- Customer/contractor trainings
- Communication of program changes/adjustments

Documentation, Reporting & Optimization

The training and re-training of internal staff is a necessary element of consistently and accurately implementing program policies and procedures. PSE has a documented process for its portfolio to ensure that new staff is on-boarded in a comprehensive manner. This process helps to ensure that all staff whether new to the team or not, are working off the same guidelines and processes. The process includes methods of changing program policies so that implementation teams do not become disjointed as programs evolve. Internal training documentation must be properly catalogued and accessible to handle change management for all staff levels.

Process examples:

- Monthly, quarterly, annual program reporting
- Program/process optimization sessions
- Communication of program changes/adjustments