

CIP Measurement and Verification Plan Reporting Form

v. 1.0, April 2008

Adapted from FEMP *M&V Plan and Savings Calculations Methods Outline*, v. 1.0, Nov. 2004

Utility:

Date:

Project Identifier:

(Provide a unique identifier for the project such that the M&V Results can be matched to the M&V Plan).

Contact Information

Name:

Email:

Phone:

1 Executive Summary

1.1 Project Description

- Provide a brief description of the project in order to provide context for the intended M&V activities, including:
 - CIP project type (e.g., Custom Efficiency, EDA, Recommissioning, etc.)
 - Facility type
 - Total site and project square footage (for non-industrial projects only)
 - Description of energy conservation measures (ECM)
 - Description of utility incentives offered to customer

1.2 M&V Plan Summary

- Summarize the M&V plan for each ECM in the table below.

Table 2. M&V Plan Summary

ECM	ECM Description	M&V Option*	Summary of M&V Plan

* CIP M&V Option No. 1, 2, or 3.

1.3 M&V Budget

- Estimate the total budget for M&V, specifying estimated equipment and labor costs.

1.4 Proposed Annual Savings Overview

- Provide the proposed annual savings for each ECM in the table below.

Table 1. Proposed Savings Overview

ECM	Annual electric energy savings (kWh)	Annual electric demand savings (kW)	Annual natural gas savings (MCF)	Total annual energy cost savings (\$)	Annual O&M savings (\$)	Other cost savings (\$)	Total annual cost savings (\$)
Totals							

2 ECM [Name / #] M&V Plan and Savings Calculations Methods

- Develop section for each ECM

2.1 Overview of ECM, M&V Plan, and Savings Calculation for ECM

2.1.1 Summarize the scope of work and how savings are generated.

2.1.2 Specify the M&V Option used (No. 1, 2, or 3).

- If using Option No. 3, please include:
 - The percentage of energy the project consumes compared to total facility metered energy
 - Descriptions of non-project related loads and why they can be assumed to be constant

2.1.3 Provide an overview of M&V Activities for ECM.

- Explain intent of M&V plan, including what is being verified.
- Describe any customer impact or cost considerations that factored into the choice of M&V Option and activities.

2.1.4 Provide an overview of savings calculations methods for ECM.

2.1.5 Provide a general description of analysis methods used for savings calculations.

2.2 Baseline Establishment

2.2.1 Is the baseline the existing equipment, standard equipment, or a combination of both (in cases of increased production output)? Explain.

2.2.2 Describe in general terms how the baseline energy use will be established.

2.2.3 If annual production output will increase from pre- to post-project, please provide the following information:

- Pre- and post-production shifts employed in the operation of the equipment
- Pre- and post-production rates
- Alternatives to achieving the increased production levels
- Baseline and efficient energy consumption of these alternatives.

2.2.4 Describe variables affecting baseline energy use.

- Include variables such as weather, operating hours, set point changes, production output, etc.

- Describe how each variable will be quantified, i.e., measurements, monitoring, assumptions, maintenance logs, manufacturer data, etc.

2.2.5 Provide details of baseline data collection, including:

- Parameters monitored/measured
- Details of equipment monitored, i.e., location, type, model, quantity, etc.
- Sampling plan, including details of usage groups and sample sizes
- Duration, frequency, interval, and seasonal or other requirements of measurements
- Dates and times of measurements
- Monitoring equipment used
- Installation requirements for monitoring equipment (test plug for temperature sensors, straight pipe for flow measurements, etc.)
- Certification of calibration / calibration procedures followed
- Expected accuracy of measurements/monitoring equipment
- Quality control procedures

2.2.6 Provide details of baseline data analysis performed, including:

- Analysis using results of measurements
- Weather normalized regressions
- Weather data used and source of data

2.3 Proposed Energy Savings Calculations and Methodology

2.3.1 Provide detailed description of analysis methodology used.

- Describe any data manipulation or analysis that was conducted prior to applying savings calculations.

2.3.2 Detail all assumptions and sources of data, including all stipulated values used in calculations.

2.3.3 Include equations and technical details of all calculations made. (Use appendix if necessary. Electronic format preferred.) Include description of data format (headings, units, etc.).

2.3.4 Details of any savings or baseline adjustments that may be required.

2.3.5 Detail proposed annual energy savings for this ECM

- Summarize information in Table 3.

2.4 Operations and Maintenance and Other Cost Savings (if applicable)

2.4.1 If O&M savings represent a significant part of the justification for the project, please describe how savings are generated and detail savings calculations.

2.4.2 If other cost savings represent a significant part of the justification for the project, please describe how savings are generated and detail savings calculations.

2.5 Proposed Annual Savings for ECM

Table 3. Proposed annual savings for ECM

	Annual electric energy savings (kWh)	Annual electric demand savings (kW)	Annual natural gas savings (MCF)	Total annual energy cost savings (\$)	Annual O&M savings (\$)	Other cost savings (\$)	Total annual cost savings (\$)
Baseline use							
Post-installation use							
Savings							

2.6 Post-project M&V Activities

2.6.1 Describe the intent of post-project verification activities, including what will be verified.

2.6.2 Describe variables affecting post-project energy use.

- Include variables such as weather, operating hours, set point changes, production output, etc.
- Describe how each variable will be quantified, i.e., measurements, monitoring, assumptions, manufacturer data, maintenance logs, etc.

2.6.3 Provide details of post-project data collection, including:

- Parameters monitored/measured
- Details of equipment monitored, i.e., location, type, model, quantity, etc.
- Sampling plan, including details of usage groups and sample sizes
- Duration, frequency, interval, and seasonal or other requirements of measurements
- Dates and times of measurements
- Monitoring equipment used
- Installation requirements for monitoring equipment (test plug for temperature sensors, straight pipe for flow measurements, etc.)
- Certification of calibration / calibration procedures followed
- Expected accuracy of measurements/monitoring equipment
- Quality control procedures