



CERTIFIED M & V PROFESSIONAL

DRAFT VERSION 1.0

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CERTIFICATION FOR M&V PROFESSIONALS (CONCEPT)

The current draft version of this document is intended for internal discussion purposes only.

M&V ENERGY EFFICIENCY REFERENCE GUIDE

Certification for M&V Professionals

Background

A certification for M&V consultants is being explored by EM&V for integration into OPA Commercial/Institutional and Industrial CDM Programs with the primary focus on “project-based” M&V activities, rather than program-level evaluations.

Having a pool of certified M&V Consultants in Ontario would simplify the process of hiring M&V consultants for third-party program delivery agents who are often required, as part of the services they are supplying for the OPA, to provide project-based M&V.

Having certified M&V professionals involved in the submission of each large project and potentially samples of smaller projects, in concept, would provide a standard level of quality and reliability to the savings claims submitted to the OPA by third-party program delivery agents and would potentially reduce the “downstream” evaluation costs associated with evaluating the program, as a collection of projects, impacts.

The Association of Energy Engineers has established such a certification for M&V professionals called the Certified Measurement & Verification Professional (CMVP). This certification appears to be suitable for the purposes described above and EM&V proposes to consult with internal stakeholders regarding the potential for integrating this certification into the program design.

A description of the CMVP is provided in the following.

Certified Measurement & Verification Professional (CMVP)

The Association of Energy Engineers (AEE), in cooperation with the Efficiency Valuation Organization (EVO) www.evo-world.org, has established the Certified Measurement and Verification Professional (CPMVP) program with the dual purpose of recognizing the most qualified professionals in this growing area of the energy industry, and raising the overall professional standards within the measurement and verification field.

Since 1981, AEE has certified over 7,000 professionals within the energy industry. AEE's certifications are recognized by governmental agencies, including the U.S. Department of Energy and the U.S. Agency for International Development, as well as by utilities, end users, and energy service companies. The CMVP distinguishes individuals as having demonstrated high levels of experience, competence, and specialized knowledge within the field of M&V.

Eligibility

Each applicant for the CMVP certification has the option to attend AEE's three-day "Fundamentals of Measurement & Verification" training program OR to sit for the exam only. Each candidate must pass the four-hour written exam as well as meet one of the following criteria:

1. A four-year degree from an accredited university or college in science, engineering, architecture, business, law, finance, or related field, or be a registered professional engineer (P.E.), or registered architect (R.A.). In addition, the applicant must have at least three years experience in energy or building or facility management, or measurement and verification.
2. A two-year technical degree, or four-year non-technical degree in a field not specified above with five years experience in energy or building or facility management, measurement verification.
3. Ten years or more verified experience in energy or building or facility management, or measurement and verification.
4. The current status of Certified Energy Manager (CEM).

Examination and Training Requirement

The four-hour CMVP exam is given in conjunction with the Fundamentals of Measurement & Verification three day training program or as an examination only. The examination questions are based on concepts and experiences basic to measurement and verification. The exam is open book, and the questions are a mixture of multiple choice and true or false.

Fees

Fees for the CMVP certification process are as follows:

- Certification application and examination: \$400
- Seminar registration fee: \$1050 for AEE members / \$1150 for non-members
- These fees must be paid at the time the CMVP application and seminar registration are submitted.

Maintaining Certification

Continuing education is essential to maintaining high standards of professional competency. A CMVP must accumulate eight (8) professional credits every three years to maintain certification.

Activities Applicable as Credits for CMVP Renewal:

- Continued employment in measurement and verification-related activities
4 credits for 3 years
- Membership in a professional engineering society 1 credit per year
- Continuing education:
 - measurement and verification-related seminars and college courses

- (includes in-house or online seminars)
- 2 credits per:
 - CEU earned (e.g., 1.6 CEU=3.2 credits)
 - College credit hour earned
 - 10 non-credit contact hours
- Professional awards or papers presented and published re: measurement and verification - 2 credits each
- Offices held in a professional engineering society - 1 credit per year

A fee of \$300 is required for each three-year renewal of your CMVP certification. If you do not renew your certification by your renewal date, you will be required to retake the exam to be reinstated.

Who should be certified?

Facility managers, building owners, building managers, energy engineers, energy analysts, corporate energy managers, utility engineers, project managers, retrofit contractors.

Seminar Highlights

- Current M&V Protocols (IPMVP)
- Developing an M&V plan
- M&V for industry vs. building
- Choosing normalization variables
- Sources of data
- Budget
- Selecting the baseline period and data
- Measurement systems design, commissioning & maintenance
- Analysis methods
- Uncertainty created by sampling, equipment, modeling, unknowns
- Current Issues in M&V
- Cost/uncertainty tradeoffs
- Data needed for emission trading
- Verification of: the M&V Plan, baseline, savings, adjustments, key elements of success including theory and examples of IPMVP
- Retrofit isolation (IPMVP Options A & B): Instrumentation issues
- Whole facility (IPMVP Option C): Utility billing issues
- Calibrated simulation (IPMVP Option D): Simulation issues
- How to select options

M&V Energy Efficiency Reference Guide

The OPA has committed to co-funding (with a collection of utilities and other Conservation stakeholders across Canada) the development of an M&V Energy Efficiency Reference Guide as part of CEATI project. It is anticipated that the M&V Energy Efficiency Reference Guide could be used in conjunction with the use of project-

based M&V conducted by a CMVP, or as a stand-alone reference, to prime stakeholders (e.g. participants, program delivery agents, and program managers) on the functions and requirements for M&V of Conservation program activity.

Contents of M&V Energy Efficiency Guide

1. What is M&V? Why M&V and its relationship to managing energy budgets and planning savings.
2. Principles of M&V
3. The Savings Formula, and the Role of Adjustments
4. Four Basic Methods of Computing Energy/Demand Savings
5. Recording the Baseline
6. Instruments
7. Adjusting the Baseline
8. Deriving the Dollar Value of Energy/Demand Savings
9. Example Applications of Basic Methods (at least 7)
10. Managing M&V Cost
11. Definitions
12. Other Readings
13. Index

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