

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Examine the  
Commission's Future Energy Efficiency Policies,  
Administration, and Programs.

Rulemaking 01-08-028  
(Filed August 23, 2001)

**ADMINISTRATIVE LAW JUDGE'S RULING ADOPTING PROTOCOLS  
FOR PROCESS AND REVIEW OF POST-2005 EVALUATION,  
MEASUREMENT AND VERIFICATION (EM&V) ACTIVITIES**

**1. Introduction and Summary**

The Commission has directed that EM&V protocols be developed under an expedited review process, so that they can be put in place as quickly as possible as we move to the new administrative and policy framework for energy efficiency in 2006 and beyond. The EM&V protocols are to include the following information:<sup>1</sup>

- a) A protocol table for classifying each proposed program, based on characteristics such as program size, market segment, whether it involves new construction or retrofit applications, the performance basis and other considerations, in order to establish the type of studies that will be conducted under the EM&V plan;
- b) A cross-walk table between the type of study or studies required for each program classification and the specific outputs that will be generated for the calculation of the performance basis – either

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<sup>1</sup> See the Commission's discussion of the required protocols and expedited review process in Decision (D.) 05-04-051, pp. 67-73. See also D.05-04-051 at p. 111 and *Administrative Law Judge's Ruling on EM&V Protocol Issues*, September 2, 2005, pp. 15-20.

- on a prospective basis for future programs or for true-up purposes for prior year programs;
- c) A protocol that describes the frequency for each type of study, by program classification. The combination of this protocol and b) above should provide a schedule for how frequently specific performance parameters (e.g., first-year energy savings, program participation, expected useful measure lives, net-to-gross ratios, etc.) will be updated;
  - d) Quality control protocols that provide directions on how to gather and analyze information for major study parameters, including acceptable data collection methods, acceptable confidence levels, approaches for dealing with uncertainty, among others;
  - e) A schematic and accompanying description that illustrates the “integrated EM&V cycle,” that is, how the required studies will inform the program planning and resource planning process. This document should indicate when studies will be completed, how they will be submitted/made available for public review and describe how the resulting updated information will feed into the next energy efficiency program planning cycle and/or resource planning cycles;
  - f) A schedule and process for updating the Database for Energy Efficiency Resources (DEER) on a regular basis, using the results of *ex post* measurement studies, as part of e) above; and
  - g) A dispute resolution process to address the results of EM&V studies with respect to goal assessment or performance incentive mechanisms.

To date, Energy Division and California Energy Commission staff assigned to this proceeding (Joint Staff) and/or Energy Division’s consultants (the TecMarket Works Team) have prepared draft protocols that cover many of the components listed above. For this purpose, Joint Staff has organized the protocols under two major categories: (1) Evaluator or “How To” Protocols and (2) Process and Review Protocols. (See Attachment 1.)

As discussed further below, Joint Staff and the TecMarket Works Team have developed an EM&V protocol framework whereby the information under a), b), and c) above will be developed through a risk analysis, priority assessment and study scoping process rather than laid out in tabular form in a protocol document. Joint Staff and its consultants are undertaking these steps through a public process that is outlined in the Process and Review Protocols adopted today. Once these steps are completed, Joint Staff will be able to proceed with writing and issuing the requests for proposals (RFPs) and managing the resulting EM&V contracts for the 2006-2008 program cycle.

By this ruling, I adopt the following:

- a) The Performance Basis Protocol, which identifies when Joint Staff and its consultants plan to verify various components (e.g., measure installations, program costs, unit energy savings) used to calculate the performance basis for each portfolio administrator for the 2006-2008 planning cycle. (Attachment 2.)
- b) The Public Process Protocol for the risk analysis, priority assessment and study scoping that Joint Staff will be undertaking in the coming weeks for impact evaluation studies. (Attachment 3).
- c) The Study Review Protocol, that describes the process Joint Staff will use to develop and review comments after a contractor has been selected to conduct a specific set of evaluations for impact and market effects studies. This protocol also identifies the Annual Earnings Assessment Proceeding as the forum for dispute resolution. (Attachment 4.)

The EM&V protocols still to be reviewed in a later workshop are indicated in italics in Attachment 1. We will move ahead with finalizing all of the EM&V protocols and resulting study plans as early in 2006 as possible.

## 2. Procedural Background

Joint Staff posted draft EM&V protocols to the website on October 4, 2005, and on the same day I solicited written comments from interested parties on those drafts by ruling.<sup>2</sup> As noted in that ruling, Joint Staff's draft protocols did not yet include certain protocols, such as the resource planning component of the integrated EM&V cycle, a process for updating the DEER, and evaluator "how to" protocols for emerging technologies, codes and standards and for measuring persistence and technical degradation.

Opening comments were filed on October 17, 2005 by Southern California Edison Company (SCE), The Utility Reform Network, Natural Resources Defense Council, Office of Ratepayer Advocates (ORA),<sup>3</sup> Pacific Gas and Electric Company (PG&E) and jointly by Southern California Gas Company and San Diego Gas & Electric Company. Reply comments were filed on October 24, 2005 by PG&E, SCE, ORA, and Women's Energy Matters.

In response to these comments, Joint Staff and its consultants revised the draft protocols and posted them on the website for public review on December 2, 2005. A two-day workshop to discuss these revisions was held on December 13 and 14, 2005 in San Francisco, with a call-in number for participation by parties who could not attend in person. Approximately 35 individuals and/or organizations attended the workshop, including the program administrators, implementers, EM&V experts, ratepayer advocate groups, among others.

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<sup>2</sup> See *Administrative Law Judge's Ruling Soliciting Comments on Draft Protocols for the Evaluation, Measurement and Verification of Energy Efficiency*, October 4, 2005.

<sup>3</sup> ORA has recently been renamed the Division of Ratepayer Advocates (DRA).

### **3. Parties' Comments**

In response to the first draft of the protocols, parties generally commented on the need for more specificity and user friendliness in the draft Evaluator Protocols prepared by the TecMarket Works Team. They also pointed out that none of the draft protocol documents specified which measures and/or impact parameters (e.g., gross energy, net-to-gross ratios, incremental measure costs) would require *ex post* true-up or would continue to be based on *ex ante* estimates when portfolio performance was evaluated for the 2006-2008 program cycle. In some parties' view, the Evaluator Protocols also did not provide sufficient information on how evaluation studies' results would be aggregated/integrated into final estimates of program and portfolio impacts, or when and how market effects studies would be used to evaluate performance. Several parties also provided specific recommendations to improve the content of these directions to evaluators, particularly with respect to the sampling and uncertainty protocols.

In addition, several parties pointed out that it was difficult to understand from the draft protocol documents how they would translate operationally into prioritized impact and measurement and verification work. Most parties also urged that the Process Protocols further describe the process and schedule for obtaining public input and technical expertise throughout the EM&V cycle and provide a schedule for when the EM&V studies were to be completed. The utilities also raised legal concerns over the discussion of confidentiality issues in the Evaluator Protocols, and urged that this issue be addressed through meetings with the relevant legal staff. Almost all the parties noted that a dispute resolution process was not included in the Joint Staff documents, and argued that such a process was a critical component of the EM&V cycle. Finally, some parties commented that more clarification was needed with respect to the

evaluation reporting protocol, in particular, with respect to the format and data transfer process between implementers, administrators, and evaluators.

#### **4. Discussion**

Many of the comments appear to arise from parties' expectations that the EM&V protocols for 2006 and beyond would resemble the framework and contain the level of specificity provided in the pre-1998 EM&V protocols. Indeed, in D.05-04-051, the Commission expressed similar expectations when it described what the protocol document should include. In particular, the pre-1998 protocols contained specific tabular cross-walks between the type of program (or defined program groupings), the type and frequency of studies required, the specific set of "how to" protocols that would apply to each type of study, and the dates when the EM&V reports would be presented for public review. It also specified at the outset which measures would and would not require load impact or persistence studies for the purpose of truing up the performance basis, and established a technical committee to consider waivers to specific protocols (e.g., minimum sample size) on a case-by-case basis. The pre-1998 protocol document also outlined a schedule for the filing of EM&V studies for energy efficiency and a forum for dispute resolution, namely, it created the Annual Earnings Assessment Proceeding, or "AEAP."

Because of the deterministic nature of these pre-1998 EM&V protocols, once the energy efficiency program plans were adopted in each program cycle, the EM&V study plans/budgets and resulting RFPs were basically defined by the protocols. For example, per the protocol tables, all lighting programs were subject to a first-year load impact study every other program year, and retention/persistence studies were required in the 4<sup>th</sup> and 9<sup>th</sup> years after installation. The protocol tables also laid out the evaluator "how to" protocols

for all load impact studies (including sample design and billing data protocols), with accompanying tables that specified the acceptable modeling approach, basis for establishing hours of operation, approaches for adjusting for weather or the effects of existing state or federal efficiency standards, and other study parameters. Therefore, once the utility program plans were adopted, the evaluation contract managers would use these tables to scope the work for their EM&V contractors and develop budgets without further debate over what studies would be undertaken for what measures, in what frequency, and what evaluation protocols should apply.

The protocol documents developed by Joint Staff and the TecMarket Works Team reflect a different approach to the protocols, based on their assessment of what makes the most sense for the size and nature of the post-2005 portfolio plans. During the pre-1998 era, most of the programs focused on providing financial incentives directly to participating customers. In contrast, the post-2005 portfolio plans contain a much wider variety of market strategies, including incentives to upstream market actors (e.g., retailers and wholesalers of energy efficient equipment), statewide marketing and outreach activities, among others. The proposed protocols recognize that the broader efforts that portfolio administrators will be undertaking in 2006 and beyond to capture energy efficiency potential do not lend themselves to the “one size fits all” deterministic EM&V protocols of the past. They also recognize that there may be ways to maximize the efficiency of evaluation efforts by aggregating programs at the technology level, where appropriate, rather than conducting individual studies for each program, as generally required under the pre-1998 protocols.

For the future, Joint Staff and the TecMarket Works Team have developed EM&V protocols that outline a process for setting evaluation priorities and

budgets, and present a decision-tree approach to determining the applicable “how to” evaluator protocols, once those priorities are established. More specifically, for impact studies, Joint Staff plans to review the administrator’s portfolios and programs in order to establish evaluation groupings, and then decide which programs (or program components) will receive verification-only analysis, direct impact evaluation or indirect impact evaluation.<sup>4</sup> Joint Staff will then conduct a risk analysis in order to assign minimum rigor level requirements (with associated evaluator “how to” protocols) along with evaluation budgets across the program evaluation groupings. The resulting evaluation plans and budget levels will then be used to develop the RFPs for evaluation activities during the 2006-2008 program cycle.

Given this EM&V protocol framework, I requested that Joint Staff further clarify the Process and Review Protocols in response to comments. Accordingly, Joint Staff augmented its draft protocol documents to include a process and schedule for obtaining public input on the various steps still needed to establish the EM&V study plans for 2006-2008. Joint Staff also added to the protocol documents a description of the process for the development and review of impact and market effects studies, including the study team approach and

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<sup>4</sup> “Verification-only” analysis refers to the verification of program participation (types and numbers of measures installed) and program costs. “Direct impact” evaluation refers to the estimation of the savings from installed measures. The term “indirect impact evaluation” refers to those program-specific evaluations designed to measure the specific program goals that create an impact that is expected to eventually lead to energy and/or demand savings, but where these savings cannot be directly estimated. Statewide marketing and outreach, for example, is the type of program that would need to be evaluated using indirect impact evaluation.

opportunity for public comment that was discussed in D.05-01-055.<sup>5</sup> In addition, Joint Staff clarified the EM&V cycle by developing a document that identified when various parameters used to calculate the performance basis (measure installations, program costs, unit energy savings, etc.) would be verified and published in reports over the three-year program cycle, including a discussion of how each performance parameter would be updated.

Joint Staff and the TecMarket Works Team also responded to parties' comments on the Evaluator Protocols by eliminating superfluous text and references, adding concise summaries of the required protocols at the end of each chapter, and by making other improvements. Additional suggestions for improvement were discussed during the workshop, and in the post-workshop comments.<sup>6</sup> Joint Staff and the TecMarket Works Team are in the process of considering those suggestions and incorporating additional revisions into this set of protocols in response. This set of revisions to the evaluator "how to" protocols is expected to be completed, and a ruling adopting revised sections will be issued, in February 2006. Also in February, Joint Staff and the TecMarket Works Team will distribute to parties the remaining evaluation protocols – Emerging Technology Evaluation Protocol, Codes and Standards Evaluation Protocol, and Effective Useful Life (persistence and technical degradation) Evaluation Protocol – and collect comments from parties. Joint Staff will hold a public

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<sup>5</sup> D.05-01-055, pp. 108-111.

<sup>6</sup> At the end of the discussion on Evaluator Protocols, workshop participants were provided the opportunity to present to Joint Staff and the TecMarket Works Team (by December 21, 2005) any further *specific* recommendations to modify/clarify the text in the "how to" protocol document. PG&E, SCE, and ORA provided post-workshop comments to Joint Staff.

workshop on these remaining evaluation protocols in February, and will then consider and incorporate revisions based on the feedback received via written comments and those received at the workshop. This final set of protocols is expected to be adopted via Administrative Law Judge's Ruling in March 2006.

I attended both days of the workshop and led the discussion on the dispute resolution process. At the end of the workshop, Joint Staff and I summarized the additional revisions/clarifications that would be made to the Process Protocols in response to the workshop discussion. Those changes have been made to the following documents, which are attached to this ruling:

- a) The Performance Basis Protocol, which identifies when Joint Staff and its consultants plan to verify various components (e.g., measure installations, program costs, unit energy savings) used to calculate the performance basis for each portfolio administrator for the 2006-2008 planning cycle. (Attachment 2.)
- b) The Public Process Protocol for the risk analysis, priority assessment and study scoping that Joint Staff will be undertaking in the coming weeks for impact evaluation studies. (Attachment 3.)
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During the workshops, we also summarized the protocols that still needed to be developed by Joint Staff and/or its consultants, and presented for discussion in a subsequent workshop. The protocols still to be reviewed in a later workshop are indicated in italics in Attachment 1. We will move ahead with finalizing all of the EM&V protocols as early in 2006 as possible.



