

**U.S. DEPARTMENT OF ENERGY  
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY (EERE)  
STANDARD OPERATING PROCEDURE (SOP)**

**Quality Assurance for General Program Evaluation Studies**

**(June 26, 2006)**

**1.0 PURPOSE**

**1.1 Purposes:** The purposes of this SOP are to:

- 1.1.1** Ensure that general program evaluation studies are performed well and have credibility with program managers, EERE Senior Management, Office of Management and Budget (OMB), Congress, and other stakeholders.
- 1.1.2** Provide a companion to the existing EERE SOP on “Peer Review Best Practices and Procedures” that addresses independence and quality assurance procedures for evaluations that provide information not obtainable using the peer review method (e.g., retrospective impact and cost-benefit assessments).<sup>1</sup>

**1.2 Applicability:** This SOP is applicable for general program evaluation studies (inclusive of outcome, impact and cost-benefit evaluations, market assessments, and non-peer review process evaluations) sponsored by EERE programs and offices. These studies include energy savings analysis by programs aimed at producing estimates of *retrospective, realized* benefits (i) used for program improvement purposes, (ii) reported publicly to stakeholders (e.g., on program websites), or (iii) used as a baseline input to the GPRA benefits assessment. General program evaluations conducted by a Committee of the National Academy of Sciences are not included in this SOP.

**1.3 Policy:** It is EERE’s policy to:

- 1.3.1** Ensure an objective and independent evaluation process is used in a program-sponsored study by having a third-party Evaluator with no conflict of interest conduct the study.
- 1.3.2** Promote high quality in the evaluation study design, data collection, analysis and reporting by having the Evaluator’s work reviewed by his/her peers.

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<sup>1</sup> Process evaluations conducted using peer review methods are not covered in this SOP. Peer reviews have a separate Guidance and SOP --Peer Review Guide (EERE, August 2004) and SOP for “Peer Review Best Practice and Procedures” (issued in November of 2004).

## 2.0 DEFINITIONS

- 2.1 **Program Evaluation:** OMB defines program evaluations as “*systematic and objective studies, conducted periodically or on an ad hoc basis, to assess how well a program is achieving its intended objectives.*”<sup>2</sup>
- 2.2 **General Program Evaluations:** These studies include outcome, impact and cost-benefit evaluations, needs/market assessments, and process implementation assessments. See Attachment A for detailed definitions of the five types of general program evaluations.
- 2.3 **Sponsor:** An EERE program or office that provides the funds for the study and a staff who has responsibility for managing the evaluator’s contract for the study. An independent evaluator conducts the study.
- 2.4 **Evaluator:** An expert in evaluation methods who has the primary responsibility for developing the Evaluation Plan, conducting the study, and reporting results. The evaluator may work alone or as the leader of a research group of professionals having distinct expertise.
- 2.5 **Independent (OMB definition):** According to OMB, to be independent, “*...non-biased parties with no conflict of interest would conduct the evaluation. Evaluations conducted by the program itself should generally not be considered ‘independent;’ however, if the agency or program has contracted out the evaluation to a third party this may qualify as being sufficiently independent. Evaluations conducted by an agency’s Inspector General or program-evaluation office might also be considered ‘independent’.*”<sup>3</sup>

## 3.0 RESPONSIBILITIES

A general program evaluation shall be conducted independently by a third party. However, multiple parties have roles in the process of planning, designing, conducting and using an evaluation. The involvement of multiple parties helps to neutralize the possibility of individual biases among participants and brings a balance to the overall process, while ensuring the program’s information needs are met.

### 3.1 **EERE Program or Office:**

- 3.1.1 Assign a staff point-of-contact for the evaluation who will handle the administrative management of the study.

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<sup>2</sup> Office of Management and Budget, “Preparation and Submission of Strategic Plans, Annual Performance Plans, and Annual Program Performance Reports,” OMB Circular No. A-11 (2002), Part 6, Section 200.2.

<sup>3</sup> OMB Budget Data Request No. 04-31, “Completing the Program Assessment Rating Tool (PART) for the FY2006 Review Process.”

- 3.1.2 Assemble a standing or ad hoc Review Panel of 3 to 6 independent third party evaluation peers and a Review Chairperson who are not part of the Evaluator's Team. Follow a selection process described in Section 5.0 of EERE's Peer Review Guide.<sup>4</sup>
  - 3.1.3 Provide the Review Panel with all appropriate information in a timely manner for review of the Draft Evaluation Plan and Draft Study Report to facilitate their ability to undertake the most thorough review possible.
  - 3.1.4 Task the Review Panel with ensuring that the overall study is well-designed, sufficiently rigorous, and free of professional bias, through an independent review. See Attachment B and the EERE Guide For Managing General Program Evaluation Studies (February 2006) for suggested review questions.
  - 3.1.5 Review the Draft Evaluation Plan and Draft and Final Study Report.
  - 3.1.6 Make the Final Study Report publicly available.
- 3.2 **EERE Office of Planning, Budget and Analysis (OPBA):** The Office of Planning, Budget and Analysis has an Evaluation Expert Team to assist programs. OPBA's evaluation staff is considered independent of the Program Offices. The team is available to advise program staff on the best practices in managing general program evaluation studies and help set up the expert review process for the evaluation study.
- 3.2.1 Undertake an internal review of the initial Draft Evaluation Plan.
  - 3.2.2 Review the Draft and Final Study Report and, prior to the program sending the Final Study Report to a printer, recommend to EERE Senior Management whether the Final Study Report should be approved for publication.
- 3.3 **Evaluator:** The evaluator contractor is expected to be an objective, independent third party with no conflict of interest. An evaluator who has a longstanding relationship with an EERE program (particularly where the relationship includes involvement in routine program implementation and analysis activities) may not qualify as being sufficiently independent to evaluate that program.
- 3.3.1 Sign a Conflict-of-Interest form (there will be no exceptions to this requirement) and Non-disclosure form.<sup>5</sup>

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<sup>4</sup> Peer Review Guide, EERE, August 2004

<sup>5</sup> Both forms are available in the Appendix F and G, respectively, of the EERE Peer Review Guide (August 2004).

- 3.3.2 Prepare a detailed Draft Evaluation Plan.
  - 3.3.3 Participate in a review of the Draft Evaluation Plan and Draft Study Report that will include written feedback from the Review Panel. In some cases the Evaluator will meet face-to-face with the Review Panel for a Q&A defense of the draft documents (see 4.1 below).
  - 3.3.4 Respond to reviewer comments and modify the Draft Evaluation Plan and Draft Study Report, as appropriate.
  - 3.3.5 Submit a Final Evaluation Plan and a Final Study Report that responds to reviewer comments to the client program or office.
- 3.4 **Review Chairperson:** The Review Chairperson is an objective, unbiased, and independent expert from outside the program being reviewed who leads the Review Panel. The Review Chairperson serves a unique and important role that can begin early in the review process once he/she is selected. Areas where the chairperson provides direction, oversight, and final decisions may include the following:
- 3.4.1 Selecting the members of the Review Panel,
  - 3.4.2 Establishing review criteria and questions,
  - 3.4.3 Ensuring independence of the panel members during the review and the independence of the review more generally,
  - 3.4.4 Facilitating the review process,
  - 3.4.5 Ensuring that the review is focused on substance, and
  - 3.4.6 Overseeing the production of the review summary report.
- 3.5 **Review Panel and its Composition:** Reviewers are objective, unbiased, and independent experts from outside the program being reviewed. An appropriate balance of technical expertise in program evaluation and subject area knowledge in the program and target market(s) being evaluated has to be established across the Review Panel.
- 3.5.1 Provide written comments on both the Draft Evaluation Plan and Draft Study Report.
  - 3.5.2 Take direction from the designated Chairperson.

#### 4.0 OPTIONAL PROCESSES FOR IMPLEMENTING EXTERNAL REVIEW

All programs sponsoring a general program evaluation must have an external panel of experts review both the Draft Evaluation Plan and the Draft Study Report and provide

written feedback. Programs have several different options for implementing other aspects of the external review process. The options vary based on the size of the program element budget, the amount of funding available for the evaluation, and other factors.<sup>6</sup> Attachment C provides an illustrative summary of the overall QA procedures and implementation options described in this SOP.

- 4.1 Option 1:** The following shall apply for a program element with a large budget or large evaluation budget, that is sponsoring a study broad in scope (e.g., outcome/impact, cost-benefit, or multi-type), and there is wide stakeholder interest in the study results:
  - 4.1.1** Establish a standing Review Panel comprised of 4-6 third party experts including a Review Chairperson.
  - 4.1.2** The standing Review Panel attends a one-day on-site meeting with the Evaluator to engage in a rigorous Q&A session.
  - 4.1.3** The Evaluator must utilize feedback from reviewers to modify the Evaluation Plan or Study Report and provide an update to the Review Chairperson on the responses to the Review Panel's comments.
- 4.2 Option 2:** Program elements with small to moderate program budget or a small to moderate evaluation budget and with evaluations narrow in scope shall implement the following review process:
  - 4.2.1** Establish a standing or an ad hoc Review Panel comprised of 3-4 third party experts including a Review Chairperson (if focus is on a narrow single output/impact study, e.g., a training impact assessment) or a panel comprised of 2-3 experts (if study has a narrow scope and process or market assessment focus).
  - 4.2.2** The Evaluator responds to reviewer comments and modifies the Evaluation Plan or Study Report, as appropriate. The Evaluator can (i) utilize the feedback directly with no further input or (ii) circulate the feedback among the reviewers and convene a teleconference to discuss the results (particularly if there are major differences among the reviewers).

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<sup>6</sup> Large-to-small *program budgets* are defined as follows:

- Small – if the individual program element has a budget less than, or equal to, \$1 million.
- Moderate – if the individual program element has a budget greater than \$1 million but less than \$10 million.
- Large – if the individual program element has a budget of \$10million or more.

Large-to-small *evaluation study budgets* are defined as follows:

- Small – if the total cost of the evaluation study is less than \$100,000.
- Moderate – if the total cost of the evaluation study is greater than, or equal to, \$100,000 but less than \$500,000.
- Large – if the total cost of the evaluation study is greater than, or equal to, \$500,000.

## **5.0 RECORDS**

- 5.1** Program Managers are to keep a hard copy record of the external review for a period of at least 2 years. The record should contain the names of all reviewers, all individual reviewer comments, and the program's response to the review comments.

## **6.0 REFERENCES**

- 6.1** EERE Guide for Managing General Program Evaluation Studies: Getting the Information You Need, February 2006

## **7.0 ATTACHMENTS**

- 7.1** **Attachment A**: Types of General Program Evaluations
- 7.2** **Attachment B**: Example of Review Criteria and Questions
- 7.3** **Attachment C**: Diagram Showing QA Procedures and Implementation Options

## Attachment A: Types of General Program Evaluations

There are five types of general program evaluations.

### **The five types of general program evaluations<sup>7</sup>**

#### ***Process or Implementation Evaluations . . .***

examine the efficiency and effectiveness of program implementation processes. The results of the evaluation help program managers decide how to improve program operations.

#### ***Outcome Evaluations (Retrospective Focus) . . .***

estimate the success of outputs in achieving objectives. Findings show how well the program is achieving its intended outcomes in a specific time frame. This helps program managers decide on whether to continue the program as is, and at what level of effort.

#### ***Impact Evaluations (Retrospective Focus) . . .***

take outcome evaluations one step further by estimating the proportion of the outcomes that are attributable to the program rather than to other influences. As with outcome evaluations, these findings help program managers decide whether to continue the program as is, and at what level of effort, but decisions based on impact evaluation findings can carry greater weight because they are based on outcomes that are likely not to have occurred without the program.

#### ***Cost-benefit Evaluations (Retrospective Focus) . . .***

compare program benefits and costs. Cost-benefit evaluation shows the relationship between the value of the outcomes of a program and the costs incurred to achieve those benefits. The findings help allow program managers judge whether to retain, revise, or eliminate program elements.

#### ***Needs or Market Assessment Evaluations . . .***

assess market baselines, customer needs, target markets, barriers to adoption of energy efficiency and renewable energy, and how best to address these issues by the program in question. Findings help managers decide who constitutes the program's key markets and clients and how to best serve the intended customers. When performed at the beginning of a program, needs and market assessment evaluations also establish baselines against which to compare future progress.<sup>8</sup>

<sup>7</sup> The first four types of evaluation are defined in a 1998 GAO report entitled "Performance Measurement and Evaluation: Definitions and Relationships." ([www.gao.gov/special.pubs/gg98026.pdf](http://www.gao.gov/special.pubs/gg98026.pdf)). This report was reissued in hardcopy during 2005. The fifth type of evaluation was identified by other organizations and added.

<sup>8</sup> Market potential analyses that involve estimating efficiency or renewable-energy potential, including projections into the future, are not included in this definition.

## **Attachment B: Example of Review Criteria and Questions**

The Draft Evaluation Plan and Draft Study Report are to be examined and reviewed on the basis of their technical quality. Inasmuch as credible evaluation findings reflect a soundness of design across the entire evaluation spectrum – from the design of the research through the data collection and analysis protocol to reporting – the external Review Panel is asked to provide written comments and numerical ratings for the reviewed documents. Some aspects of technical quality (expressed as guiding questions) are provided below.<sup>9</sup> Final review criteria and questions are to be prepared by the Review Chairperson and provided to the panel, using this appendix as a guide.

### ***Research Design***

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- The research questions are well formulated and relevant to the objectives of the evaluation.
- The indicators are credible as measures of the outputs and outcomes being evaluated.
- The research design has validity.
- For statistical methods, the degree of relationship between indicators, tests of significance, and confidence intervals (statistical precision) for sample estimates, were built into the analysis and applied wherever possible.
- The research demonstrates understanding of previous related studies.
- The data collection and analysis methods are credible.

### ***Data Collection***

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- The data and assumptions about the research design are sound.
- All planned data were collected, or if some values are missing, how they were treated was appropriate.
- If missing data values were inferred, the inference method was appropriate.
- If a survey was conducted, non-response is accounted for.
- The data collection methods were actually implemented as planned, or if revisions were required by circumstances, they were appropriate and the reasons for the revisions are documented.

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<sup>9</sup> Many of the standards on this list are taken from RAND Corporation, “Reviewer Guidelines.”



- Collected data are provided and their layout documented.

### ***Analysis***

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- Analysis design and methods are sound.
- The analysis methods were actually implemented as planned, or if revisions were required by circumstances, they were appropriate and the reasons for the revisions are documented.
- The documentation of the methodology is accurate, understandable, and reasonable.

### ***Reporting***

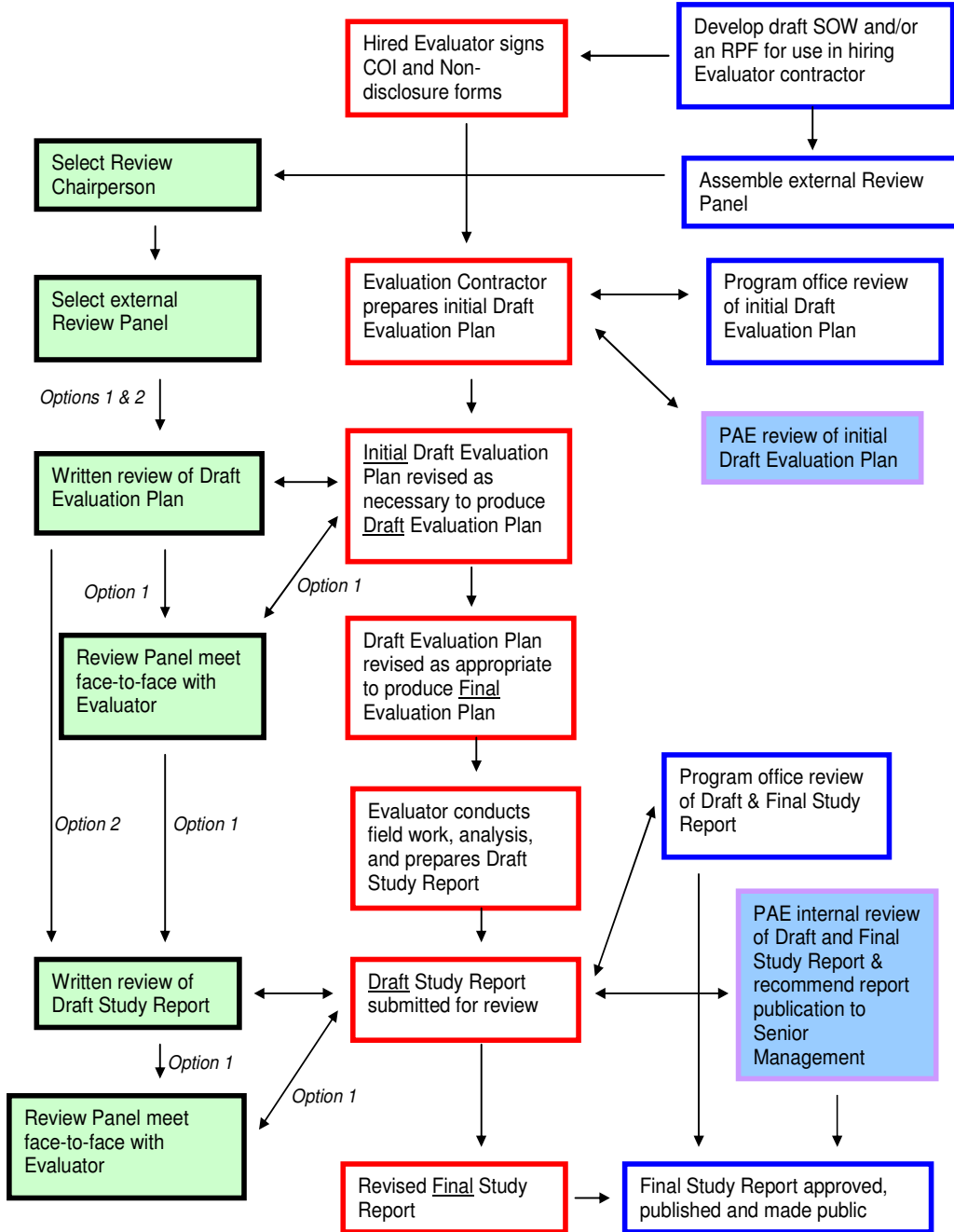
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- The report outline draft is appropriate and likely to present the study findings and recommendations well, and to provide documentation of methods used.
- The draft findings and recommendations in the Study Report follow logically from the research results and are explained thoroughly.
- The report presents answers to all of the questions asked, or explains why this was not possible.

**Attachment C: Diagram Showing QA Procedures and Implementation Options**

**Multiple Parties Have Roles in the Evaluation QA Process**

Program (blue), PAE (purple), Evaluator (red), External Review Panel (green)



- Option 1: Apply to a program with a large budget or large evaluation study budget and broad scope and wide stakeholder interest in the study results.
- Option 2: Apply to a program with small to moderate program budget or a small to moderate evaluation budget and a narrow scope.

**CONCURRENCE SIGNATURE PAGE**

**SOP Tracking #:** 06-1008-BA-PES

**Sponsor:** Name: Jeff Dowd

Title Economist

Signature: Jeffery Dowd Date: 6/26/06

**Concurring Manager:** Name: Douglas Goodman

Title: Director OPBA

Signature: Douglas Goodman Date: 6/27/06

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Name: Rita Wells (DAS-BA)

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Approval Date 6/27/06

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