Leaving the Rearview Mirror Behind

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OBJECTIVES

- Program background
- Discuss the effectiveness of the concurrent evaluation process through the lens of a recently completed impact evaluation of NYSERDA’s IPE program
- Discuss lessons learned and the resulting modifications to the concurrent process
- Present perspectives of implementers and evaluators
Real-time project engineering review from an evaluator's perspective, before savings are finalized
- Baseline characterization
- Measurement and verification plan review

Applied to projects with >5,000,000 kWh/yr. of electricity and/or > 20,000 MMBtu/yr. of natural gas savings
**EA**

- Engineering analysis (EA) commences and pre-installation savings are reported by the Technical Reviewer (TR). Savings are tracked by NYSERDA but not reported to the Department of Public Service (DPS).

**PIR**

- The project is installed and a post-installation report (PIR) is generated by the TR. Savings are reported to the DPS.

**MV**

- (Only for the very largest projects)
  - The TR performs measurement and verification (M&V) to validate savings and generates an M&V report and final savings values. Updated savings values are reported to the DPS.
Why Concurrent Review?

- Increase the level of engineering rigor
- Mitigate variability in results and provide greater confidence
- Fewer surprises during retrospective evaluation
- Less disturbance to customers (fewer touch points)
Two levels of review

- Focused baseline and M&V plan review
  - Large projects where the baseline is readily identifiable, and pre and post conditions are measureable
- Comprehensive Pre- and Post-Installation Review
  - Large projects with complex baseline characterization, complex measurement and verification requirements, capacity expansions (theoretical baseline)
CONCURRENT REVIEW PROCESS

Comprehensive Pre- and Post-Installation Review

- Review of program documents
- Pre-installation site visit
- Preliminary findings email
- Post-installation site visit
- Review of program M&V results
- Post-M&V memo with final findings

Focused baseline and M&V plan review
36 projects receiving concurrent review\(^1\)
- 127,000 MWh/yr electrical savings
- 6.1 MW demand reduction
- 319,000 MMBtu/yr natural gas savings

\(^1\) as of Spring 2015
RECENT EVALUATION FINDINGS

- 3 concurrent projects (a census) were included in the recent retrospective program evaluation

- RRs
  - 0.95
  - 1.0
  - 1.08
WHAT DID THE CONCURRENT REVIEW FIND?

- Differences most often noted during concurrent review
  - Comments on M&V planning and implementation
    - 88% of projects
  - Comments on calculation assumptions and methods
    - 72% of projects
  - Comments on baseline characterization
    - 61% of projects
Differences noted - M&V planning and implementation

- Recommendations included
  - Collecting additional data to triangulate whole-facility analysis results
  - Providing better resolution on M&V sampling, metering duration, and data collection strategies
Most projects were large and complex capacity expansions requiring regression analysis against an independent variable.

Review of program M&V findings added to concurrent scope:
- Opportunity for evaluators to verify that recommendations were incorporated.
- Brought consistency to methodology by which capacity expansion projects were analyzed.
Differences noted - Baseline characterization

- Complex issue in industrial settings
- Capacity expansion provides additional complexity
  - Existing baseline equipment must be supplemented with theoretical baseline equipment to achieve the post-installation production volumes
  - Baseline characterization flow chart developed to bring consistency to program and evaluation perspectives
  - Industry/system specific research performed by evaluators to justify and document baseline
KEYS TO CONCURRENT PROCESS SUCCESS

- Supportive regulatory environment
- Collaborative review
- No commitment to accept evaluators concurrent review findings
- Open communication and timely feedback
- Early involvement
- Feedback loop to all parties
CHALLENGES AND PITFALLS

- Less formal feedback expedites the review
  - Formal feedback at each stage could not keep up with project pace
- Waiting too long to enroll a project to ensure it is a good fit (avoid sunk review costs)
  - This risks missing pre-installation metering opportunities
Additional cost

- There are additional upfront costs
- The authors calculate the additional upfront costs will lower the cost of the next retrospective evaluation and reduce the sample size though improved error ratios
Growing pains

- The process changes the nature of the interactions between program, evaluators and technical assistance providers

Retrospective evaluation still has a place

- Concurrent evaluation must assume some variables, such as actual production volume. Retrospective would measure such a variable.
Independent collaboration

- The process changes the nature of the interactions between program, evaluators and technical assistance providers.
- The players must be able to articulate differences of an opinion in an open, constructive manner.
SUMMARY

- Concurrent evaluation is a powerful tool to mitigate uncertainty associated with retrospective evaluation
- It must be timely
- It must be collaborative
The process as described is tailored for the review of a relatively small number of large industrial projects.

The concepts and principles are widely applicable, but the mechanisms will have to change to match program goals, structures, and funding.
THANK YOU!

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