PEER REVIEWS

WHITE PAPER

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White Paper
Peer Reviews

Purpose:
This paper provides guidance and best practices to assist federal staff and contractors in performing peer reviews of DOE projects. The success of these reviews is founded on increased partnering between DOE and their contractors in recognition of their "shared fate" for project excellence. This partnership draws upon the strengths of both organizations. It will drive improved project performance while addressing GAO "high risk concerns" by drawing on the successful best practices and subject matter expertise of agencies inside and outside the DOE enterprise. This paper examines the peer review process and adopts certain aspects of external and Office of Science peer reviews for broader application within the DOE.

Enhancing DOE Project Management

Since 1990, DOE has been included on the OMB high-risk list for inconsistent cost and schedule results on some of their projects. In August of 2005, then DOE Secretary Bodman called for a series of actions aimed at improving project management. This effort focused on adherence to DOE Order 413, improving project and earned value management training, incentivizing superior performance, strengthening accountability and encouraging early management involvement. A Plan of Action with Milestones (POAM) was published in March 2007 by the DOE with EFCOG assistance focusing on five action areas:

- Addressing effective EVMS implementation
- Developing key skill sets for effective project teams
- Formulating improved practices for estimating
- Improving communications and management involvement
- Constructing improved risk management processes

In April 2008, DOE published a root cause analysis on contract and project management that listed 10 areas of focus. This report again focused on insufficient trained resources; the lack of early management involvement; inconsistent adherence to requirements and accountability along with insufficient risk assessment, segmented funding; and incompatible organization structures. In November of 2009, DOE again pointed to the lack of skilled personnel as a continuing problem. Most recently, Deputy

Secretary Poneman published a set of principles to guide project management in the DOE. Included in the principles is that "Project Peer reviews should be conducted at least once a year for large or high visibility projects and more frequently for the most complex projects or those experiencing performance challenges" All of the activities cited above demonstrate a continuous effort on the part of DOE to improve project management in the areas of accountability, scoping, training, funding and managing risk. The root causes of the problems are now well known. Corrective actions are showing good progress. Application of peer reviews to these efforts is yet another positive step toward improved project management in the Department.

Objectives of Peer reviews

Peer review teams, made up of federal employees and contractors who have proven their skills on successful projects, can be instrumental in evaluating and improving the skills of other teams on other projects. Peer reviews have demonstrated their usefulness in improving performance in managing projects outside and within the DOE. Deputy Secretary Poneman issued a memo on March 4, 2010 that recognized the value of Peer reviews in the Office of Science and recommended their use more broadly. EM instituted performance of these reviews in the spring of 2009 and performs them twice a year on major projects and NNSA has been conducting peer reviews since 2007.

The objective of a peer review is to provide assurance to the Acquisition Executive that a particular project's established requirements (scope, cost and schedule) are achievable, improve project management and promote continuous improvement by providing feedback into the directives system. Peer reviews focus on achieving successful outcomes and helping the project team to succeed. Mechanisms within the DOE to evaluate processes and compliance with requirements are extensive and peer reviews will not be redundant to those efforts. Peer reviews will attempt to identify both effective and wasteful practices, but always focusing on enabling successful outcomes.

Use of Peer reviews in DOE

The Department has had some success in partnering with its contractors in conducting peer reviews. For example, reviews conducted by the Office of Science have been cited as contributing to a higher rate of successfully completed projects.

The Office of Science attributes their success in delivering projects to a focus on outcomes and establishing an atmosphere of trust with their contractor community. There is an expectation from the reviewee that the review will be of value and from the reviewer that it will be a learning experience. This mutual trust enables good recommendations from the review team and acceptance of needed improvements by the project. The reviews are centrally coordinated and have clear objectives that consider compliance with procedural requirements, but are primarily focused on the likelihood a project will meet cost, schedule and scope commitments. Review scope is clearly defined and formalized in a charge to the team prior to the review. The scope is chosen to focus the review on those areas known to need help. The review team is carefully chosen to ensure that the right skills are available for the areas needing review and that the SME are credible.

The DOE conducts different types of reviews at the different stages of a project as components of the critical decision process and outlined in DOE O 413. These reviews assess risks and other factors related to design, safety, cost estimates, value engineering, and project management. Independent project reviews (IPRs) are conducted by federal staff not directly affiliated with the project or program and resources from DOE contractors. External independent reviews (EIRs) are overseen by the Office of Engineering and Construction Management and conducted by contractors external to the department. Integrating subject matter experts from the contracting community into these reviews would be a worthwhile use of peer expertise. Conducting a peer review that duplicates the scope of these DOE Reviews would not be an effective use of contractor resources. In addition, such a review would place the participating contractors in a difficult position relative to the contractor executing the project.

A better use of corporate resources would be in conducting peer reviews focused on identified problem areas of the project. The Project Manager or the DOE Review Teams could identify these areas. Scopes for the reviews could be clearly defined, bounded and be attainable with the resources employed. Recognized experts to populate the review teams would be obtained by "reaching back" to the Contractor community. The peer review would be in an "assist" mode and would be welcomed by the project team.

Key Attributes for a Successful Peer Review

Successful peer reviews usually contain the following attributes:

1. Peer review teams have three objectives: first, to help improve the effectiveness of the projects Integrated Project Team (IPT) on individual projects; second, to improve the efficiency and effectiveness of DOE project management processes and metrics; and third, to evaluate cost, schedule, technical maturity, and risk management. Results and recommendations are intended to increase the probability of project success.
2. Unlike mandated project decision reviews (CDs), peer reviews are intended to provide prompt feedback to the project IPT and the Acquisition Executive of the status of the project and changes that, if implemented, may enhance the probability of success. Follow up reviews will include the evaluation of responses to previous peer review recommendations.
3. The review is a non-adversarial partnership between the DOE and contractor community to improve project management on DOE projects.
4. The review team is composed of recognized experts in the fields being reviewed. Choosing recognized experts ensures a quality review that will be credible and providing inputs and expertise not already existing within the project.
5. The reviews are well planned with clearly defined objectives and authorities. A clear charter is given to the team to assure that their scope of work, authorities and deliverables are clearly defined. Peer reviews do not duplicate objectives of any other review.

6. The review agenda matches the time and effort required to the scope desired.
7. Peer review teams review processes but are primarily outcome focused on the predictability of scope, cost and schedule.
8. There is a feedback mechanism to provide oversight to implementation of those recommendations. Timely feedback is key; those being reviewed should have results at the out brief and a formal report quickly afterward. A path forward must reach clear agreement at the end of the review.
9. Feeback is provided to Program leadership immediately after review.

Enhancing Peer reviews in DOE

To obtain maximum value from peer reviews, the challenge for the project management community is how best to use their experience and expertise to obtain maximum value from the process for the DOE. In determining this, aspects of external and Office of Science reviews that are applicable to DOE projects and that have potential to improve the current review process should be examined. Some of these are:

1. Development of a more cooperative DOE/M&O contractor team. DOE and contractors must continue to build a culture of cooperation and trust that enables learning and continuous improvement. Reviews other than those conducted prior to critical decisions as prescribed in DOE Order 413.3 are not inspections, but a continuous improvement dialogue where all sides brings the best they can to focus on the project success in a shared fate approach. The peer review process is not used for this purpose. A similar atmosphere would enhance DOE reviews. A first step in creating such an atmosphere might be to create an Ad hoc team of contractors and Federal staff (peers) along with needed expert consultants, to perform lessons learned on some of the completed projects (good and bad). This team would establish criteria for membership in peer teams including training and experience, set criteria for reviews and establish standardized metrics. It should look for ways to minimize cost and schedule risk while keeping the end product delivery clearly as the prime goal. This will establish trust and teaming to explore, categorize and evaluate the impacts of various weaknesses in the existing system. This would achieve several good things, by building relationships without tying the team's existence to the success or failure of any active project. It would also establish a partnership of trust between Feds and M&O's drawing on the strengths of both organizations to increase effectiveness and efficiency of project management and oversight. It would also help make the M&O's more comfortable with opening up to the team if they were not reviewing current sensitive business data.
2. Use of contractor Subject Matter Experts (SME) on peer review teams. M&O Contractors are a pool of highly trained, qualified and experienced PM talent that can greatly enhance the quality of DOE peer reviews. The DOE should make maximum use of this resource in structuring their review teams. In addition to providing expertise to enhance DOE review teams, involving contractor

personnel creates a learning environment by sharing expertise and real time lessons learned information across the entire enterprise. Peer reviews will foster a cooperative teaming environment and provide a learning opportunity for the reviewers.

3. Focus DOE reviews on assistance with minimal assessment. During the review, emphasis should be placed on improving the project management of the project and increasing the likelihood of project success, not solely collecting a list of deficiencies in process requirements for corrective action. Existing assessment processes have been expensive, detrimental to teaming, and ineffective in early detection of project problems or improving overall project performance. The goal should be to improve the management of the project today.

General Procedures and Best Practices

The general procedures and best practices cited below address essential elements of the peer review process. DOE has developed numerous detailed procedures for the conduct of reviews. Those in the Office of Science and in EM provide a good basis for the development of processes appropriate for the conduct of peer reviews discussed in this paper. These procedures are available through the department websites and can be an excellent basis for the development of more detailed procedures.

1. Planning the Review. The key to a successful peer review is detailed planning. Accurately defining a clear, unambiguous and achievable scope in a Charge to the team, selecting a team with the proper skills and credibility and formulating a detailed Review Plan are the elements essential to a successful review.

a. The Review Plan. The review plan is a key document guiding the review. The plan is formulated early in the process, updated periodically to reflect changes and finalized prior to the start of the review.

b. The Review Team. Selecting the right subject matter experts is a critical aspect of the planning process. Members of the review team should be selected based upon the experience and skill sets needed for the review. Team members must be competent, credible and cooperative. Each member of the review team must commit to remain with the review team until the review is completed. Team members should be selected early enough to allow ample time for making travel and lodging arrangements.

c. Agenda. The agenda is critical to an efficient review. It provides planned activities with dates, allotted time, location and responsible individual(s). The agenda should be carefully formulated to provide sufficient time for each activity. Care should be taken to ensure that there is sufficient time for executive sessions, in process reviews and report writing.

d. Logistics. Providing good logistics support to the review is critical to the credibility of the effort. A review which is under-resourced will quickly be recognized by those being reviewed as a low priority effort that not worth the time and effort that they must devote to preparing for it. The recommendations resulting from the review will not receive their full support. Therefore, having good meeting rooms, adequate IT capability, etc. must receive significant attention from those sponsoring the review.

e. **Communicating with the Review Team.** Keeping the review team informed during the planning period ensures the most efficient use of their preparation time. Detailed information regarding the aspects of the project covered by the scope should be provided to the review team no later than 1 month before the start of the review. Typical data provided includes scope documents, cost estimates, schedules and other project plans. Additional information can be included in periodic updates to the review plan. Teleconferences and phone conferences may also be useful in maintaining good communications.

2. Executing the Review

a. **Entrance Briefing.** A formal entrance briefing establishes a professional approach to the review. The Entrance Briefing establishes the ground rules for the review, introduces the review team and the project team and provides information on the scope, agenda, and logistics for the review. The briefing provides an opportunity to discuss the parameters of the review. It should be used to ensure that all aspects of the review are fully understood by all parties.
b. **Gathering Information.** Following the agenda, the team discusses and clarifies documents, interviews key individuals and visits project sites to gain a full understanding of the project. Detailed focus is placed on the specific charges in the scope. The review team must have free access to all documents and people associated with the project to successfully accomplish this phase of the review.
c. **Executive Sessions.** Prior to Entrance Briefing and at the end of each day, Executive Sessions are convened with review team and project leaders, to discuss findings, comments, concerns, and recommendations with the Peer Review team. This session should include Program personnel. The Executive Sessions ensure that there are no conflicting comments or recommendations and that the review committee supports the recommendations. The purpose of Executive Sessions are to ensure that the review team is focused on the review scope, that the project team understands what is happening during the review and to ensure that all necessary information is available to the review team. The review team initiates the Executive Session with a discussion of where the team feels it needs to focus its efforts. The project team provides assistance in developing the subject and in further defining observations. At the end of the Executive Session, the two teams determine any agenda changes, additional information or resources required by the team.
d. **Prebriefing to Management.** When the team has prepared a rough draft of the exit briefing, they schedule a meeting with the senior members of the project team and discuss their observations and recommendations. This prebriefing assures that management understands the outcomes of the review and is not surprised by the content of the formal exit briefing.
e. **Closeout Dry Run.** Prior to the Exit Briefing, there is a practice presentation by each subcommittee lead on the review findings, comments, and recommendations. The dry-run is conducted to ensure all issues are captured, to promote consistency, and to ensure that there is no confusion or misunderstanding with the presentation language.
f. **Exit Briefing.** A detailed exit briefing provides project management information

that can be used immediately to improve the project. The briefing should present a simple depiction of the observations and recommendations of the team. It should contain noteworthy practices as well. The project manager and the peer review team leader determine attendance at the exit briefing, but it should be as broad as possible.

3. After the Review

a. **Report.** The team prepares a formal report as soon after the Exit Briefing as possible. The report should be written in narrative form using clear prose. It should include observations and achievable recommendations with measurable results. The report should be completed within 2 – 3 weeks, if possible. Recommendations are provided to the project team for action during the closeout briefing.
b. **Close Out.** The report and review documentation developed and agreed upon by the project and review teams in the executive sessions is provided to the Acquisition Executive. The Project Team then implements improvements included in the report.
c. **Management** - Management ensures that appropriate recommendations are implemented by the project.
d. **Follow up** - Recommended Actions from prior reviews are reviewed at the next review.