

# REPORT TO THE ENVIRONMENTAL MANAGEMENT ADVISORY BOARD

## Removal of EM Projects from the GAO High Risk List:

### *Strategies for Improving the Effectiveness of Project and Contract Management in the Office of Environmental Management*

Submitted by the EMAB Acquisition and Project Management Subcommittee

September 15, 2010

#### **Background:**

On March 31, 2010, Dr. Inés Triay, Assistant Secretary for the Office of Environmental Management (EM), tasked the Environmental Management Advisory Board (EMAB) to provide her with observations and recommendations regarding EM's updated strategy for reducing project and contract risks, and removing EM projects from the Government Accountability Office's (GAO's) High Risk List. In response to this charge, members of the EMAB Acquisition and Project Management Subcommittee (Subcommittee) developed a Terms of Reference document outlining their specific tasks and the proposed actions needed to meet Dr. Triay's requirements. Dr. Triay approved the proposed Terms of Reference on June 4, 2010, as noted on the memorandum from Mr. Frank Marcinowski, Deputy Assistant Secretary for Technical and Regulatory Support, of May 25, 2010 (Appendix A).

#### **Findings and Observations:**

As indicated in the attached Terms of Reference, the Subcommittee was requested to undertake an assessment of how effectively EM is participating in actions being taken by various components of the Department of Energy (DOE) in executing the project management Corrective Action Plan for GAO and the Office of Management and Budget (OMB). This Corrective Action Plan has a goal of removing DOE-EM projects from the GAO's "High Risk" projects listing in the federal government. The Subcommittee was further requested to identify any additional strategies or tools that may be of value in achieving that goal, as well as to identify strategies or tools to prevent new EM Projects from being designated as "High Risk" in the future.

As a unit of the independent advisory board to the Assistant Secretary of EM, the Subcommittee reviewed available information from sources internal and external to DOE. In the interest of eliciting candor from all participants, the Subcommittee assured all interviewees that their comments were non-attributable. Meetings and conference calls were held with senior staff members at DOE Headquarters (HQ) and at the Savannah River Site to discuss policies and procedures, resources, constraints, contracts and project performance reviews in EM, and lessons learned in EM and the DOE Office of Science. The Subcommittee also met with GAO staff members who have conducted assessments of High Risk projects throughout the federal government, for lessons learned, and in particular on projects that have been removed from the

High Risk project list. In addition, conference calls were held with representatives of the U.S. Army Corps of Engineers (USACE) to discuss approaches and lessons learned in the \$16 billion Task Force Hope Hurricane Katrina flood protection recovery project, and with the Executive Liaison for the current Project Management Partnership (PMP) initiative that exists between USACE and EM. Further, the Subcommittee examined how stakeholder communications, expectations, and risks are identified and mitigated, as well as how projects evolve from concept through completion. Specific emphasis was placed on acquisition planning and project delivery activities during the fact finding sessions.

*Subcommittee Focus Areas:* During a meeting with Dr. Triay on June 23, four major focus areas were identified for purposes of gathering data and formulating recommendations. In addition to these four focus areas, additional areas were identified during a meeting with GAO on August 26, 2010, which, if implemented, will contribute to the removal of EM projects from the High Risk List and prevent future additions. Highlights of findings and observations on each focus area are presented below.

**A. Acquisition and Contract Management.** Since the beginning of DOE's cleanup activities, EM programs have been characterized by unknown conditions, an urgency to take action, and a bias to respond quickly to regulators and stakeholders to demonstrate compliance. To manage these challenges, EM relies heavily on acquisition and contract management processes and procedures, along with a mix of internal and external personnel resources to accomplish its mission. Today, EM continues to be challenged with how it manages its portfolio, how it staffs, resources, and plans its acquisition and project delivery strategy, and how it utilizes the established processes, tools, and procedures it has available. Key observations and findings from the Subcommittee's investigation of how EM manages its portfolio and acquisition and project management are summarized below.

1. **Procedures and Tools.** EM has the tools, processes, and procedures needed to effectively administer and manage its portfolio. However, EM lacks consistency in management discipline, clear lines of accountability, responsibilities and authorities, and the effective utilization of available resources from the beginning of an acquisition plan through project delivery. Observations in support of this conclusion are as follows:
  - a. A review of studies and reviews performed since 1998 reveals that considerable effort has been applied to improving project management, as well as acquisition and contract management. Studies by outside organizations such as the National Research Council and the National Academy of Public Administration, reviews by GAO, and internally generated efforts such as EM's Best-in-Class initiative and the PMP with USACE, have identified the tools needed to effectively execute project management. A list of references is included in Appendix B. Further, the Department's Root Cause Analysis and Corrective Action Plan for Contract and Project Management have initiated a number of improvement efforts.
  - b. Most of the fundamental requirements to establish a foundation for project management success are either in place or being worked on. For example, DOE Order 413.3B is under review to refine the previously published standard procedures

for large projects. The interest of the current Secretary of Energy directly in project management, which did not exist in the past, is very strong and is in fact, a driver of this Subcommittee's review.

- c. The Integrated Planning and Budgeting System (IPABS) provides current data for internal use as well as input to the Project Assessment Reporting System (PARS). It covers all projects and is being upgraded. A new dashboard, which gets its data from IPABS, provides progress and financial information on the entire EM portfolio of projects on a summary basis with drill down capability. It is available to all federal employees from the field to the highest levels of the Department.
2. The Office of Science Model. The DOE Office of Science (SC) undertakes large, complex projects, but none appear on the GAO High Risk List. The question as to why EM projects are on the GAO High Risk list and SC projects are not has been raised. EM has access to the same tools and procedures as SC, so why is there a difference?
- a. Pre-Project Planning. The need for comprehensive pre-project planning has been learned over and over again. SC has reach into the national laboratories and the flexible funding options of maintenance and operation (M&O) contracting to perform research and development (R&D) leading to mature technologies that can form the basis of design and a credible baseline for its projects. EM, on the other hand, is usually subject to intense political pressure by stakeholders to show some progress on resolving an issue. EM often begins projects to demonstrate a good faith effort without having R&D completed, or full characterizations of a site in hand to provide the knowledge to develop a credible estimate - this is contrary to EM's own published policies and procedures. Since a baseline is necessary to obtain funding for the work, the original baseline, no matter how inadequately supported by facts or technology maturity becomes the number against which future progress is measured.
  - b. Stakeholders. By comparison, EM has a much broader and more diverse array of stakeholders than SC. The EM stakeholders have diverse, sometimes conflicting requirements and expectations; there are many more who can say "no" than can say "yes." A "no" inevitably translates into delay and consequently, cost and schedule impacts. Early involvement of stakeholder organizations, like the Defense Nuclear Facility Safety Board (DNFSB), that are having a large impact late in the process, can avoid or minimize catastrophic effects to the overall project baseline (scope, schedule, and cost) downstream.
  - c. Resources. SC projects generally have the situation where scope (e.g. quantities of major detectors, for example) can be adjusted to fund unforeseen construction cost increases. EM generally does not have that ability with its projects. EM is now doing independent project reviews following the "Lehman" review approach pioneered in DOE by SC. EM generally funds major project reviews through direct project funds or other funding sources, while SC reviewer costs are funded by SC-HQ. In EM, personnel resources are constrained by FTE ceilings and program direction funding. To illustrate, at the request of EM, the USACE under the Best-in-Class initiative,

identified federal project management/support staffing requirements for the Savannah River Site's Salt Waste Treatment project. Despite this requirements-based analysis, EM still has only 85% of the project management personnel recommended on staff. Moreover today, there is no entity or means to validate staffing requirements on an ongoing basis, as is done in the Department of Defense for post-contract award administration and management.

- d. SC uses a single Federal Project Director (FPD) for a given project/site, whereas EM has used multiple FPDs (ex. Office of River Protection), which makes integration of common issues among projects more difficult.

### 3. Acquisition Planning.

- a. We found opinions that contract types are being directed to Integrated Project Teams (IPTs) from HQ, and that when changes in administration occur, policy changes result and contract types change from previously agreed approaches. There is a prevailing view that EM contracting is a "contract du jour" approach vs. a well thought through acquisition model. The identification of resources required for planning, executing managing, and administering the contract post award is not now a part of the acquisition strategy planning process.
- b. EM has been working on acquisition planning, but more improvement in the quality of submission packages and cooperation is required. For example, excessive quantities of cost data are reported to be required in Requests for Proposals. Experience has shown that it is extremely costly to produce such detailed cost data, which becomes unusable by the time of contract award because of changes that occur between the project planning and contract award dates during the acquisition process. As a result, upon award, the first task is to re-negotiated contracts before any scheduled work can begin.

### 4. U.S. Army Corps of Engineers

- a. USACE's experience on a \$16 billion program to restore flood control systems in the wake of Hurricane Katrina in the New Orleans area has borne out the value of managing stakeholder expectations from the beginning by not committing to a baseline before thorough pre-project planning has been completed. This project has direct relevancy and lessons learned for acquisition and project management inside EM. Initial anxiety over when and if work would be done has been replaced by confidence generated by the project being on schedule and on budget.
- b. With respect to the PMP to date, USACE has supported independent cost estimates and validations to EM as well as some staff augmentation. The USACE's current level of participation in EM today is more as a "body shop". Consequently, USACE's involvement with EM is not as effective as it could be if USACE were participating as a strategic partner in pre-project planning, acquisition strategy preparation, etc. USACE has encountered resistance in the field to becoming involved in projects.

5. *Technology Readiness.* Lack of technology readiness has been a concern in project management. Pressure to begin work early and the lack of funding for upfront R&D frequently contributes to baseline increases in cost and time. Technology readiness assessments are not consistently used as a formal part of the acquisition strategy planning process.
6. *Change Control.* Change control needs more discipline through use of change control boards. There has been too much technical direction to contractors without concurrent contract changes. Work is underway to educate project personnel that approved baseline change proposals cannot be executed by contractors until a contract change with funding or work deletion is issued. Numerous opinions were voiced that staffing limitations were a contributing factor to the lack of effective change order management.
7. *Pre-Award Contract Management.* The use of EM's Consolidated Business Center has improved the pre-award contract management process by providing highly skilled personnel with current experience. While this is a benefit, there remains a lack of ownership in the field. For example, field representatives participating in the acquisition strategy planning boards, are often new, inexperienced employees whose contributions are limited in the acquisition and source selection process. Further, these employees are not the individuals that will be held accountable with administering or project managing the contract in the field, so there is a handover disconnect. It is noted that EM does have an effort underway to offset this known disconnect by assigning acquisition team members to the field for several months during the new contract startup phase, but more is required.

***B. Technical Depth and Breadth.*** EM's current approach to identifying and integrating technology readiness into acquisition strategies is inadequate. Ambiguities exist as to who is responsible for technology solutions, i.e. HQ, the field, or the contractor. Too many EM projects are baselined before technology solutions are in hand. EM has lacked options to obtain independent technical advice and evaluations to mitigate technology risk. For example, SC and the National Nuclear Security Administration (NNSA) have M&O contractors to provide such advice and evaluation responses – EM has no M&O resources it can reach into directly.

1. EM has recently established a Technical Expert Group with representatives from national laboratories to provide high-caliber expertise for technology assessment. Plans to involve the representatives in acquisition planning for complex projects are being considered. This is a start, but does not bring the depth of capability which SC has access to. An approach for developing an EM laboratory group is under development.
2. The urgency to start and baseline projects and satisfy regulator and stakeholder bias for action, and to demonstrate compliance have led to project starts before technology solutions have been identified or thoroughly evaluated.
3. The strategic importance of technology readiness assessments during the acquisition and project planning phases of EM projects is not adequately recognized or addressed.

**C. Restructuring the EM Project Portfolio.** EM's project portfolio has historically varied in scope, complexity, contingency, and schedule. While EM has made measurable progress in redefining its projects into manageable projects of size and scope and that distinguish between capital and operating funding constraints, the issue of whether or not EM's project portfolio can be effectively managed directly relates to the effectiveness of the FPDs in being able to direct and resource the management of projects at their sites. Integration of multiple projects at a site under a single FPD will facilitate effective program management, better control, and cost effectiveness. Strengthening and clarifying the roles and responsibilities of the FPD is needed.

The concept of categorizing all work in EM into projects was expected to have the benefit of using project management discipline to plan, execute and measure accomplishments to improve effectiveness. In practice it was found that operations activities do not fit into a single model that could be reasonably planned, tracked, and managed as capital projects. This is due to a number of reasons including extremely long durations, site workforce inflexibilities, and budget instability. The effort to segregate operational activities from capital asset projects is prudent.

1. National Nuclear Security Administration. NNSA has an M&O contractor at each of its sites. It prefers to use the M&O as a prime contractor. It is working on clarifying roles and responsibilities to define the federal role as "eyes on – hands off," and hold organizations (e.g. field offices; M&O contractor) accountable for their area of responsibility. The M&O acts as the owner's representative. NNSA is concerned that federal management of the interfaces with multiple primes is difficult with the personnel resources available.
2. Size of Projects.
  - a. Since EM has shifted from the M&O contracting model/concept, federal coordination of prime contractors is essential, and requires adequately experienced, trained, and motivated personnel to be successful. Once that capability exists, it makes sense to develop projects that are sized to fit a reasonable funding profile and which improves execution and flexibility. There is some concern that the use of smaller projects will be adversely affected by site workforce inflexibility issues. There is also a diversity of opinion on selection of the appropriate contract vehicle.
  - b. The difficulty in acquiring adequate resources to manage multiple prime contractors on a single site is mentioned above. One option would be to take project management and its related support out from under Program Direction funding and establish a revolving fund replenished by a percentage charge to project funds on work completed as is done by USACE and NAVFACENCOM, for example. Another option would be to hire a project management/construction management contractor to serve as owner's representative to do that coordination.
3. Federal Project Directors. The historical tenure of FPDs is averaging approximately one year to 18 months. This is disturbing and contributes to a lack of continuity and effective program management. Career progression and reward for project management personnel must be adapted to provide project management continuity. Lessons learned must be documented, shared, and incorporated in acquisition planning.

**D. EM Culture and Management of Risks.** EM project management culture is characterized by constantly changing scope, schedule, and cost. This is a result of EM's inability to maintain and enforce from the top a disciplined project management and baseline control process. This lack of top-down reinforced discipline contributes to high personnel turnover and frustration.

1. Atmosphere of Constant Change: EM comes from an M&O culture in which much of the project definition and pre-project planning were done by the M&O contractor. A large contract can take up to 18 months or longer to award and site conditions and scope needs change over this period of time. Too much technical direction is issued outside the change control process. The nature of EM's programs is such that frequent changes in direction occur and an atmosphere of instability prevails.
2. Personnel Churn.
  - a. The EM culture is risk averse and examples of federal project directors lasting only a year to 18 months on a project causes most FPDs to keep their heads down and avoid making decisions, taking risks, etc. Anxiety prevails over frequent changes on agreed direction. A rigid change control process and a lack of empowerment is likely contributing to a high turnover rate.
  - b. A high turnover rate serves to delay institutionalizing improvements. A new federal staff member coming on board understandably requires some time to get up to speed on what is going on. He or she may make a start on implementing improvements, but before they take hold, the person moves on and a new member fills the job, goes through the learning curve, starts on improvements, moves on, and the cycle repeats itself. In the best case, the delay in achieving improvement is equal to the sum of the learning curve times. In the worst case, the course is changed and some or all of the progress made can be lost.
  - c. By comparison, SC seems to have much less personnel churn. For example, the Director of the Office of Project Assessment has served in that office for over 30 years. Personnel stability in key Project Management and FPD roles are essential for effective project management and control.
3. Risk Management. Risk management training has been available for some time. One common issue in the project review reports we looked at was a need for more rigor in risk management. A risk management plan is usually prepared in the pre-project planning phase, but it often sits on the shelf during project execution. A risk register must be updated continually with changes to originally identified risks and new risks and their impacts assessed to be effective.
4. Quality Assurance Standards. Historically and traditionally, EM applies nuclear quality assurance (QA) standards as requirements for many of its projects despite the fact that a significant number of EM projects do not present nuclear risk hazards and should be subject to application of a Graded Approach in satisfying 10 CFR 830. As a result,

projects are over-engineered resulting in increased cost, excessive oversight (e.g. DNFSB), and schedule impacts.

***E. Government Accountability Office.*** Representatives of GAO who review EM and NNSA projects were consulted. They acknowledged that EM has made progress in improving project and contract management, and have developed plans for further improvements. They also acknowledge that EM has the toughest set of circumstances to deal with. They are pleased that the Secretary, Deputy Secretary, Under Secretary, and Assistant Secretary have demonstrated significant interest in the topic of the High Risk projects. However, GAO indicates that direction and required changes from the top have not yet all filtered down to the field level.

1. ***Overarching Concerns.*** GAO sees two overarching concerns remaining as indicated in their report GAO-09-406T<sup>1</sup> of March 4, 2009.
  - a. ***Front End Planning.*** This crucial activity has long been a significant contributor to High Risk List status. The political and stakeholder pressures to start projects are recognized. However, some basic management issues need to be addressed. GAO's concerns over a lack of capability and policy for preparing independent government cost estimates is being addressed in DOE by establishing a government cost estimating capability. Technology readiness is another long-term concern. Work in this area is also underway as indicated above.
  - b. ***Failure to Oversee Contractors.*** GAO sees this concern as a lack of sufficient resources to perform the contractor oversight function. GAO believes that EM does not have the staff with the necessary expertise and experience to independently validate the contractors' proposals. This has resulted in setting baselines on the hope and contractor promise that technology will become available in time to meet the schedule. Failure of that technology to sufficiently mature in time to meet the schedule always leads to increases in cost and time. A positive approach DOE uses, akin to an owner's representative model, is in the safety area where technical safety experts oversee the contractor. The establishment of an owner's representative approach similar to the idea of a facility representative in the safety area may be a way to overcome this shortcoming.
2. ***Funding Constraints.*** There may be an opportunity to address the imbalance between Program Direction and Program Execution funding. Sufficiently resourcing Program Direction funding can go a long way toward improving project management. Today, as a result, Congress may be receptive to a request to modify EM's funding profile to fit the structure of the prioritized overall work plan EM has to deliver on. Furthermore, EM would do well to improve its credibility on the Hill by investing more in Congressional relations.
3. ***Staying Off the High Risk List.*** There is little evidence in EM project and acquisition planning that the requirements for effective project management to stay off the High Risk

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<sup>1</sup> GAO-09-0406T: "Contract and Project Management Concerns at the National Nuclear Security Administration and Office Of Environmental Management, March 4, 2009



List are fully incorporated or recognized. EM should include as lessons learned in future acquisition planning, the guidance outlined in GAO-01-159SP<sup>2</sup> as guidelines to plan for project success. As indicated in GAO report GAOG-09-406T and the Comptroller General letter of July 6, 2010, to Deputy Secretary Poneman, removal of EM projects from the High Risk List will come about when a majority of project completions occur within approved baseline projections.

### **General Observations:**

- EM initiates new programs and initiatives without internalizing and applying lessons learned.
- There is insufficient partnering occurring between EM and the stakeholders (e.g. DNFSB) up front during the acquisition strategy development and planning.
- Other federal agencies and commercial industry traditionally utilize an owner's representative model to ensure adequate support post-contract award in order to maintain control of cost, schedule, and scope. USACE fulfills this "owner's representation" role for numerous federal agencies.
- It is recognized that EM is challenged with supporting incumbent workforces. An ongoing challenge for EM and its contractors is right-sizing the sites and projects' workforces as cleanup progress is made.
- EM is very quick to say "yes" to stakeholders and begins projects early knowing full well that there are high risks and as a result, there is project scope creep, cost increases, etc.
- There are adequate skilled personnel elsewhere in the government and private industry that can help EM meet its project management resource needs without hiring permanent staff. This will provide flexibility during project executions (resource analysis curve). Even if the acquisition delivery is adequately staffed, the need for on-call resources for peak work load or specific problems will still exist. These peak support needs should be factored into project budgets.
- EM leadership has recognized that many EM projects have been baselined prematurely and is embracing more rigorous standards, e.g. not baselining projects until 90% design is complete. It should be noted however, that existing policies and procedures provide for this form of risk management but are not consistently applied or used.
- Despite the improvements on clarifying roles and responsibilities between HQ and field offices, there is still a need for improved clarity.
- It is acknowledged that EM does an adequate job of identifying risks up front but there is insufficient effort to adequately integrate new risks during project execution and recognize the impact these risks have on the baseline.

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<sup>2</sup> GAO-01-159SP, "Determining Performance Accountability – Challenges and High Risks", November 2000.

- Roles, responsibilities, and frequency for change order management/change control on contracted projects are needed and require discipline to manage.
- The roles and responsibilities between HQ acquisition project managers, field project directors, and other key managers responsible for acquisition through project delivery need clarification.
- DOE-EM does not have sufficient independent cost analysis capability to protect its interests adequately.
- While IPABs is recognized as the primary EM project management reporting tool, there are a growing number of independent systems being established, particularly in the field. Further review of the requirements to standardize IPABs as the single reporting tool for EM is warranted.
- The length of the acquisition cycle has generally resulted in starts of projects that were awarded on conditions that are 12-18 months out-of-date by the time of the award. Consequently, when projects start from the beginning, their scope, schedule, and funding requirements have changed.

### **Recommendations:**

To further aid the Assistant Secretary in her efforts to improve acquisition and project management in EM, and to minimize the risk of future EM projects from attaining “High Risk” project status in future GAO project assessments, the Acquisition and Project Management Subcommittee offers the following recommendations:

#### **Recommendation 2010–22: EM should undertake a review and realignment of its budgets to strike a balance between needed Program Direction and Capital Asset Project funding.**

In order to adequately resource project management, contract administration, and other project-related efforts (e.g. independent cost estimating capability), EM requires more flexibility with Program Direction funding to provide the oversight and rigor for project risk management and contract oversight. There are consistent acknowledgements internal and external to EM that its current financial authorizations and budget profiles will not accommodate the flexibility EM requires to fully administer and manage its project portfolio pre- and post-award. Best-in-Class Project Management organizations in government (e.g. USACE and NAVFACENCOM) and industry establish revolving funds or a percentage of total project costs to sufficiently assure project management requirements are fully resourced throughout the life of a project or projects.

**Recommendation 2010-23: EM should undertake an assessment of all active EM Projects to clearly identify those projects or portions of projects that are subject to the rigor of 10 CFR 830, and/or are subject to the Graded Approach in risk categorization for QA and safety standards. In addition, during the Acquisition Strategy Planning process for future**

**EM projects, the Risk Categorization for QA and Safety standards should be identified and baselined prior to finalizing a project’s acquisition plan.**

Historically and traditionally, EM applies nuclear QA standards as requirements for many of its projects despite the fact that a significant number of EM projects do not present nuclear risk hazards and should be subject to application of a Graded Approach in satisfying 10 CFR 830. As a result, projects are over-engineered resulting in increased cost, excessive oversight (e.g. DNFSB), and schedule impacts. This action will provide EM with the basis to apply only the necessary and required standards, which will result in cost savings, oversight balanced to the risks in place, and a greater confidence in project delivery on time, on cost and on schedule.

**Recommendation 2010-24: EM should consider adoption an “Owner’s Representative” project management support model to strengthen its Project Management and Contract Administration in the Field.**

It has been repeatedly identified that insufficient front-end planning and post-contract award project management and contract administration are significant contributors to EM projects being on the High Risk List and, in general, EM Projects being characterized as subject to constant changes in scope, schedule and cost. Insufficient numbers of skilled manpower and subject matter experts to manage risks and oversee EM contractors ranging from the FPDs to Cost Estimators to QA specialists are factors impacting project management. Projects throughout EM require a stable and engaged team continuously or at peak periods to properly manage project risks and EM’s interests. Further, EM needs to be the owner-operator of its facilities and projects, and not simply a contract manager. Use of an Owner’s Representative management approach will further the transition to an Owner-Operator approach.

**Recommendation 2010-25: EM should reexamine the roles, responsibilities, and authorities of EM Federal Project Directors (FPDs) to strengthen the FPD position’s effectiveness in project management and contractor oversight, and improve stability by reducing the turnover of FPDs on critical EM projects.**

A resourced and empowered FPD and FPD team with clearly defined authorities and responsibilities, plus full support and backing of EM management is needed to stabilize turnover and establish needed ownership and continuity in Project Management. At sites where multiple projects are being managed, there is also a need to identify a single FPD to integrate and coordinate multiple projects for shared lessons learned, effective utilization of resources and improved project coordination overall.

**Recommendation 2010-26: EM should examine its acquisition planning and development processes to ensure that prior to baselining a project’s funding, scope and schedule, early involvement and engagement of all regulators and stakeholders internal and external to EM has occurred to the extent necessary to assure that any identified issues or risks are identified, resolved, and reflected in the project’s plan.**

Best-in-Class Project Management programs in industry and government engage in strategic partnering early in a project’s development with all stakeholders that could positively or

negatively impact its baseline and approach. Gaps in the level and adequacy of technology readiness during acquisition planning has been identified, as well as known impacts from DNFSB oversight when their oversight occurs well after a project's design or construction is underway. Early engagement and holding firm on the need to reach agreements will reduce future risk and project scope "creep," cost increases, and schedule adjustments. In addition, formal adoption of lessons learned reviews in the early project planning is needed.

**APPENDIX A**  
**EMAB Acquisition and Project Management Subcommittee Terms of Reference**



**Department of Energy**  
Washington, DC 20585

May 25, 2010

**MEMORANDUM FOR INÉS R. TRIAY**  
ASSISTANT SECRETARY FOR  
ENVIRONMENTAL MANAGEMENT

**FROM:** FRANK MARCINOWSKI *Frank Marcinowski*  
DEPUTY ASSISTANT SECRETARY  
OFFICE OF TECHNICAL AND REGULATORY SUPPORT

**SUBJECT:** **ACTION:** Endorse the Environmental Management Advisory Board's Acquisition and Project Management Subcommittee Task

**ISSUE:** Endorsement of the Subcommittee's work scope and activities is needed in order to proceed.

**DISCUSSION:** On March 31, 2010, Assistant Secretary Inés R. Triay asked the Environmental Management Advisory Board (EMAB) to provide her with observations and recommendations regarding the Office of Environmental Management's (EM) updated strategy for reducing project and contract risks and removing EM projects from the Government Accountability Office's High Risk List. In response to this charge, members of the EMAB Acquisition and Project Management Subcommittee developed a Terms of Reference document (attached) outlining their specific task and the proposed actions needed to meet Dr. Triay's requirements. Dr. Triay's agreement to the Subcommittee's Terms of Reference and approval of their proposed activities is needed in order for work to begin.

**SENSITIVITIES:** None

**POLICY IMPACT:** None

**URGENCY:** The next EMAB public meeting will be held on September 15, 2010. Endorsement of the scope and activities discussed in the attached document is needed before the members can begin their work and prepare recommendations to present at the public meeting.

**RECOMMENDATION:** That Assistant Secretary Triay endorse the EMAB Acquisition and Project Management Subcommittee's Terms of Reference and the proposed actions.

APPROVED: *me* DISAPPROVED: \_\_\_\_\_ DATE: *6/4/10*

Attachment



Printed with soy ink on recycled paper

## Terms of Reference

### Environmental Management Advisory Board Acquisition and Project Management Subcommittee

#### Strategies for Improving the Effectiveness of Project and Contract Management in the Office of Environmental Management

##### Introduction and Background

Since the establishment of the Department of Energy's (DOE's) Environmental Management (EM) Program in the 1980's, EM has been faced with accomplishing environmental cleanup, waste management and associated construction projects with varying degrees of known and unknown conditions and performance requirements for successful accomplishment. In many projects and situations, technical solutions or technology for effective waste treatment, retrieval and safe disposal of hazardous and radioactive waste together with changing legal and regulatory requirements have presented significant risks in planning and executing the required activities with predictable costs and schedules. As a result, many EM projects have been characterized with cost and schedule overruns resulting in significant impacts on other EM projects, while also resulting in impacts on the credibility and effectiveness of EM to successfully manage and administer its projects.

Over the last two decades, numerous groups have expressed concerns about the effectiveness of project and contract management of EM's technically challenging and complex environmental cleanup and waste management projects to be accomplished on time and on budget. In 2009, the Government Accountability Office (GAO) testified before the House Subcommittee on Energy and Water Development, Committee on Appropriations<sup>1</sup> on continued contract and project management concerns with EM citing continued cost increases and schedule delays based on inconsistent application of project management tools and techniques. Multiple GAO reports as well as special studies commissioned by Congress since 1990 have cited issues that include but not limited to inadequate systems for measuring contractor performance, approval of construction activities before final designs were sufficiently complete, ineffective project controls and project reviews, and ineffective development and integration of the technologies used in these projects.

While significant progress has been made by EM in each of the above cited issue areas, since 1990<sup>2</sup>, multiple EM projects have been identified as among the Nation's "highest risk" projects in the Federal Government for cost and schedule overruns and technical performance risks. These views of EM Projects being "high risk" result in increased oversight, and challenges in the public trust and confidence in the EM Program to deliver on its promises. While EM is not alone in the DOE and the Federal Government overall with High Risk projects, numerous Federal Government offices and in the DOE, the Office of Science in particular, have reported to be keeping the majority of its technically challenging and complex projects within budget and on schedule. Specifically cited for the Office of Science (Science), were 42 projects undertaken between 2003 – 2007 wherein over two thirds were completed or were carried out within original cost and schedule targets.<sup>3</sup> A conclusion by the GAO is that Science's ability to generally achieve projects (similar to EM's technically challenging and complex projects) on cost and schedule is due in part to factors often considered fundamental to effective project management: leadership

<sup>1</sup> GAO, Department of Energy: *Contract and Project Management Concerns at the National Nuclear Security Administration and Office of Environmental Management*; GAO -09-460T; March 4, 2009.

<sup>2</sup> GAO, Report to Congress – *High Risk Series: An Update*, GAO-09-271, January 2009.

<sup>3</sup> GAO: Department of Energy: *Office of Science Has Kept Majority of Projects within Budget and on Schedule, but Funding and Other Challenges May Grow*, GAO-08-0641, May 30, 2008.

commitment to meeting cost and schedule targets; appropriate management and technical expertise; and disciplined, rigorous implementation of project management policies. The Office of Science's frequent independent reviews, in particular, were cited as a key reason for its project management performance.

**Scope:**

The Acquisition and Project Management Subcommittee (Subcommittee) of the Environmental Management Advisory Board (EMAB) is requested to undertake an assessment of how effectively EM is participating in actions being taken by various components of DOE in executing the project management Corrective Action Plan for GAO and OMB, which has a goal of removing DOE EM projects from the GAO's "High Risk" projects listing in the Federal Government. The Subcommittee is further requested to identify any additional strategies or tools which may be of value in achieving that goal.

As a unit of the independent advisory board to the Assistant Secretary of EM, the Subcommittee should review available information from sources internal and external to the DOE, considering past contract and project performance reviews in EM and lessons learned by the Office of Science as appropriate. The Subcommittee should also meet with appropriate GAO staff members who have led the assessments of High Risk federal government projects, for lessons learned in particular on projects that have been removed from the High Risk project list. In addition, the Subcommittee should examine how stakeholder communications, expectations, risks are identified and mitigated, as well as how projects evolve from concept through completion.

The Subcommittee is requested to provide its observations and recommendations to the EMAB for approval and forwarding to the Assistant Secretary for EM as input to EM's updated strategy for reducing project and contract risks, and for the removal of EM projects from the High Risk areas listing. Periodic progress briefs and discussions with the Assistant Secretary and designated EM leadership are requested on interim observations and findings. The Subcommittee should plan to have a report of its observations and recommendations at the Fall 2010 EMAB public meeting. Open access to all elements of EM will be provided as required as EMAB board members and Special Government Employees.

**Sponsor:**

Assistant Secretary for Environmental Management

## **Appendix B**

### **EMAB Acquisition and Project Management Subcommittee Reference Documents**

1. American Institute of Architects (AIA) National and AIA California Council, 2007, Integrated Project Delivery: A Guide.
2. Construction Users Roundtable, 2004, Collaboration, Integrated Information, and the Project Lifecycle in Building Design, Construction and Operation.
3. Construction Users Roundtable, 2006, Optimizing the Construction Process: and Implementation Strategy.
4. DOE, June 10, 2000, DOE Policy 413.1, *Program and Project Management Policy for the Planning, Programming, Budgeting, and Acquisition of Capital Assets*.
5. DOE, 2006, Acquisition Guide – Chapter 7: Integrating Project Planning Processes – An Overview, and Chapter 7.1: Acquisition Planning.
6. DOE, 2008, Root Cause Analysis (RCA): Contract and Project Management.
7. DOE, 2008, RCA: Contract and Project Management Corrective Action Plan.
8. DOE, 2008-2010, DOE Guides 413.3 Series, a collection of guides *regarding different aspects of Project Management*.
9. DOE, March 24, 2009, Memorandum for Field Chief Financial Officers: Increase to General Plant Projects Limit.
10. DOE, 2010, Contract and Project Management Corrective Action Plan.
11. DOE, 2010, DOE, Department of Interior, and United States Army Corps of Engineers Memorandum of Understanding.
12. DOE EM, March 14, 2008, Best-in-Class Project Management Initiative, Final Corporate Improvement Plan.
13. DOE EM, 2009, Recovery Act Program Integrated Project Team, Project Document No. RAPD-EM-09002.
14. DOE EM, 2009, Recovery Act Program Portfolio Management Framework, Project Document No. RAPD-EM-09004.
15. DOE EM, March 10, 2010, Waste Management Briefing: Hot Topics.
16. DOE EM, April 20, 2010, Procurement and Contract Management Workshops Report.



17. DOE EM, July 1, 2010, Memorandum for Distribution: Designation of Task Team for Government Accountability Office (GAO) High-Risk List and Task Team Charter.
18. Energy Facility Contractors Group Acquisition Management Working Group, May 14, 2009, Report: Suggestions for Improving Competitive Acquisitions at the DOE and NNSA.
19. GAO, November 2000, GAO Report: Determining Performance & Accountability Challenges & High Risks, GAO-01-159SP.
20. GAO, January 2009, GAO High-Risk Series: An Update, GAO-09-271.
21. GAO, July 6, 2010, Response Letter to Deputy Secretary Poneman from a May 19, 2010 letter regarding the criteria GAO employs to evaluate agencies' continuation or removal from the GAO High-Risk List and the scope of GAO's concern with respect to DOE activities.
22. National Academy of Public Administration, May 5, 2008, Review of Acquisition, Human Resources, and Financial Management.
23. National Research Council (NRC), 1998, Assessing the Need for Independent Project Reviews in the Department of Energy. Washington, D.C.: National Academies Press.
24. NRC, 1999, Improving Project Management in the Department of Energy. Washington, D.C.: National Academies Press.
25. NRC, 2000, Characteristics of Successful Megaprojects. Washington, D.C.: National Academies Press.
26. NRC, 2001, Progress in Improving Project Management at the Department of Energy, 2001 Assessment. Washington, D.C.: National Academies Press.
27. NRC, 2002, Proceedings of Government / Industry Forum: The Owner's Role in Project Management and Pre-Project Planning. Washington, D.C.: National Academies Press.
28. NRC, 2003, Progress in Improving Project Management at the Department of Energy, 2002 Assessment. Washington, D.C.: National Academies Press.
29. NRC, 2004, Progress in Improving Project Management at the Department of Energy, 2003 Assessment. Washington, D.C.: National Academies Press.
30. NRC, 2005, The Owner's Role in Project Risk Management. Washington, D.C.: National Academies Press.

31. NRC, 2005, *Measuring Performance and Benchmarking Project Management at the Department of Energy*. Washington, D.C.: National Academies Press.
32. Office of Management and Budget (OMB), 2006, *Capital Programming Guide V 2.0, Supplement to OMB Circular A-11, Part 7: Planning, Budgeting, and Acquisition of Capital Assets*.