

# 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 – Follow up***

Submitted by the EMAB Acquisition and Project Management Subcommittee

November 17, 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 report on September 15, 2010 entitled *Strategies for Improving the Effectiveness of Project and Contract Management in the Office of Environmental Management*. The report was approved by the EMAB at the meeting on September 15, 2010 in Santa Fe, NM. On November 1, 2010, Dr. Triay forwarded a memorandum (Appendix A) to the EMAB chairman with her response to the recommendations contained in the September 15 report.

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

On November 2, 2010 a conference call was held with EM senior management to discuss the response memorandum and to answer questions. EM is to be complimented on the positive approach and comprehensive response to the September 15 report observations and recommendations. Comments on specific topics found in Appendix A follow.

1. Improved performance on major projects. Performance results on completed cleanup projects initiated in the past two years is impressive and indicative that project management tool availability and management discipline are paying off. That all major legacy projects are now on track to being completed within the current baseline is another positive trend.

2. Resources for improved oversight of contracts and projects. The hiring of additional personnel, augmentation by U.S. Army Corps of Engineers (USACE) personnel, and the development of the EM Technical Expert Group is crucial to obtaining improved project results. This effort should provide a means to address a fundamental concern expressed by the GAO that EM has been unable to properly oversee its contractors. Integrating personnel with required skills as a part of the project team, regardless of whether from contractors or USACE, should prove fruitful. However, it will require continuous positive effort at the field level to overcome cultural resistance to the addition of outside assistance. The Subcommittee notes that discussions have now been initiated with the USACE for selection of Deputy Federal Project Directors

(FPD), and this is to be commended. The success of this additional assistance will be determined through periodic evaluations of how effective these resources are used and integrated into the projects.

3. Validating the effectiveness and sustainability of corrective actions. A deliberate follow up effort to ensure that corrective actions and lessons learned are incorporated into active project management is a good way to improve project execution discipline.

4. Quality of contractor cost estimates. The development of the Cost Estimating Center of Excellence at the Consolidated Business Center should help in addressing another fundamental GAO concern – EM’s ability to develop independent government estimates.

5. Sustained leadership commitment to implement improved contract and project management. The “Journey to Excellence Road Map” and the incorporation of those principles into individual performance plans should provide a mechanism to work on the culture issues which are discussed in the September 15 report as adversely affecting project performance.

6. Improvements in project management practices. The practice of not committing to a baseline until thorough pre-project planning has been completed is difficult, particularly with the range of stakeholders, regulators, and other interests with which EM deals. As USACE has learned in its New Orleans recovery work, the final result is worth enduring the front end pressure. Initial anxiety from stakeholders over when and if work will be done is replaced by confidence generated by the project being on schedule and budget. Further, integration of multiple projects at a site under a single FPD as suggested in the September 15 report will facilitate effective program management, better control, and cost effectiveness.

7. Improvements in acquisition practices. The use of smaller, more focused contracts can require more hands-on effort by government contracting personnel. However, EMAB believes it is appropriate for the EM mission, and can result in significant life cycle cost savings in the long run, as the Savannah River Site experience mentioned in Appendix A is poised to demonstrate.

8. Improvements in contract management practices. Contract management is an area in which we understand GAO will be especially interested for its upcoming reviews. Partnering has been found to have a very positive effect on project execution by other federal agencies. The DOE-industry workshops should pay dividends in getting contracts off to a good start.

We find the progress described in addressing EMAB recommendations 2010-22 through 2010-26 to be responsive and aligned with their intent. Comments on individual recommendations follow.

9. **Recommendation 2010-22 – Review and realignment of budgets.** As discussed with EM senior management during the cited November 2, 2010 conference call, EM management believes that there exists sufficient budget flexibility today with program direction funds. As such, this flexibility is permitting EM to enter into a new agreement with USACE following the recommendations of this Subcommittee to provide senior Corps staff as Deputy FPDs for major EM projects. The addition of a USACE Deputy FPD and the planned use of seasoned USACE

construction experts for advice and participation in project reviews should pay dividends both in making the project management team more robust, and overcoming cultural resistance to accepting “outside help.” Engagement of the FPD and Deputy FPD from the beginning of acquisition planning and throughout the acquisition process will be important to the successful management and delivery of projects once contracts are awarded.

10. **Recommendation 2010-23** – Projects subject to 10 CFR 830, and/or subject to risk categorization for Quality Assurance and safety standards. Having requirements and guidance promulgated to the field and interaction with the Energy Facility Contractors Group (EFCOG) should achieve positive results. The stated commitment and expectations to a graded approach to quality assurance (QA) for both Nuclear Safety and Non-Nuclear operations commensurate with the levels of hazards and risks posed to the public, workers, and the environment is a positive step in meeting the intent of the Subcommittee’s recommendation. The Subcommittee does continue to believe that emphasis on identifying the risk categorization for QA and safety standards and baselining these prior to finalizing a project’s acquisition plan will remain an essential action for efficient and effective project execution.

11. **Recommendation 2010-24** – Adoption of an “Owner’s Representative” support model. Other government agencies and industry have found that an organization which contracts out a significant part of its work must have access to sufficient technical and management expertise to be a “smart owner.” This model can be accomplished through in-house personnel, other government personnel, or a contractor (separate from the performing contractor). Further development of the relationship with USACE could well provide that capability. The referenced ‘Framework for an “Owner’s Representative” Project Management Office’ that has now been developed for EM as cited in Attachment 3 of the November 1 memorandum in Appendix A, provides a structure and approach for accomplishing the responsibilities and activities required for project execution. Ultimate success will be dependent on staffing the representative functions with experienced and stable resources as cited.

12. **Recommendation 2010-25** – Roles, responsibilities, and authorities of EM Federal Project Directors. The use of a Deputy FPD appears to be a good start in improving project management stability, and in bringing in additional best practices in project management and execution for the benefit of EM. In addition, improving EM’s business model to shift greater authority and accountability to the field, wherein HQ’s role is re-defined to the “Advise-Assist-Assess” model, should also strengthen and stabilize the FPD positions to benefit EM.

13. **Recommendation 2010-26** – Early involvement and engagement of all stakeholders and regulators internal and external. Consistent application of the key strategy outlined in the EM “Journey to Excellence Road Map,” which requires early engagement of EM’s regulators and stakeholders to ensure EM project plans are consistent with stakeholder expectations, should facilitate the pre-project planning process and project execution in the long run.

### **Recommendations:**

The Board concludes that the response in Appendix A is comprehensive and aligned with the recommendations listed above from the September 15 report. No further recommendations are

offered at this time. However, the Subcommittee does conclude that the activities outlined in response to the Board's recommendations must be regularly and frequently assessed for progress and effectiveness in "institutionalizing" these practices and processes as part of the noted need for improved management discipline in EM.



Appendix A

Department of Energy

Washington, DC 20585

November 1, 2010

MEMORANDUM FOR JAMES AJELLO  
CHAIRMAN  
ENVIRONMENTAL MANAGEMENT ADVISORY BOARD

FROM: INÉS R. TRIAY   
ASSISTANT SECRETARY FOR  
ENVIRONMENTAL MANAGEMENT

SUBJECT: Office of Environmental Management Response to the Report  
Submitted by the Acquisition and Project Management Subcommittee  
of the Environmental Management Advisory Board

On September 15, 2010, the Office of Environmental Management (EM) received the “*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*” from the Environmental Management Advisory Board (EMAB). The report provided observations and recommendations regarding EM’s updated strategy for reducing project and contract risks, and removing EM projects from the Government Accountability Office (GAO) High Risk List. I would like to thank the EMAB Acquisition and Project Management Subcommittee, for diligently conducting the assessment and preparing the report to support EM’s efforts for reducing project and contract risks and removing EM projects from the GAO High Risk List.

The EMAB recommendations are complementary to our own improvement initiatives – and I am in agreement with your list. As you noted in your report EM has applied considerable effort to improving contract and project management over the past three years. It is important that EMAB also note the results we are seeing:

1. **EM is demonstrating improved performance on major projects** – EM achieved a 100% success rate (i.e., completed within 10 percent of the original cost baseline) for clean-up projects initiated within the past two years and completed in Fiscal Year (FY) 2010; and all major legacy projects, including the Waste Treatment Plant, are on track to be completed within their current baseline. Attachment 1 shows the earned value (EV) performance of the projects in the EM clean-up portfolio over the past nearly three years. Less than 5% of the projects had performance indices of less than 0.9, meaning less than 5% of the projects by dollar amount had costs or schedules exceeding the baseline by more than 10%.
2. **EM is strengthening the capacity (people and resources) for improved oversight of contracts and projects** – Currently 94% of EM Cleanup projects are managed by a Federal Project Director certified at the appropriate level of the Project Management Career Development Program. Based on independent studies of staffing needs EM has hired over 100 additional contract and project management professionals since



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FY 08 and established partnership with US Army Corps of Engineers (USACE) to provide more than 90 full-time equivalent (FTE) staff annually. We have also developed an agreement with the Seaborg Group at Los Alamos National Laboratory for an EM Technical Expert Group to provide direct access to high caliber technical expertise for design reviews and technical analysis. In August 2010, the USACE completed a detailed staffing analysis for four projects: Waste Treatment Plant Project (line item construction), U-233 Downblending and Disposition Project (capital asset), East Tennessee Technology Park Project (capital asset), and Salt Waste Processing Facility Project (line item construction) to identify staffing gaps. The analysis used inputs from several previous analysis: DOE's Office of Engineering and Construction Management Model, a typical USACE calculation for capital projects of 6% for "Supervision, Inspection and Overhead", as well as comparison to comparable projects. Attachment 2 shows the results of that analysis. Also, the "Annual Capital Spend" for the U-233 Project has been reduced to \$50 million per year versus the \$200 million anticipated at the time of the analysis. We believe our current staff augmented by the USACE staff as well as additional staffing from the DOE national laboratories, will be consistent with staffing estimates determined by using various modeling tools.

3. **EM is monitoring and independently validating the effectiveness and sustainability of corrective actions** – EM has established an Independent Quality Assurance Program to verify that corrective actions resulting from studies of EM project management remain as continuing elements of EM program execution, with a focus on ensuring that processes and procedures are effective and being followed. EM has increased the frequency of EM senior management-led contract and project management performance reviews with program/project staff and contractors from quarterly to monthly. The Office of Management and Budget (OMB) and GAO are invited to participate in these reviews.
4. **EM is improving policies and procedures to gauge the quality of contractor cost estimates and independently validating these estimates** – EM established a cost-estimating Center of Excellence at the EM Consolidated Business Center to improve the quality of independent government estimates for construction and cleanup projects. EM is utilizing FAR Part 15 contracts that require offerers to develop cost proposals.
5. **EM is providing sustained leadership commitment and is successfully implementing the corrective action plan for improving contract and project management** – We launched the "Journey to Excellence Road Map" in 2010. This strategic planning document defines our core values that will serve as the "rules of the road" and defines our vision, goals, strategies and performance measures. These goals and measures flow down into annual performance plans for managers and employees.
6. **EM is making improvements in project management practices** – EM has restructured projects into smaller, better defined capital asset projects and non-capital

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operations activities to reduce project risk and provide more focused management and oversight. EM's policy is to complete 70-90% design prior to baseline approval, further, the performance baselines for capital asset projects are established with a minimum 80% confidence level and the contingency is budgeted for in the baseline. We have embraced the Office of Science model for peer review of our major construction projects.

7. **EM is making improvements in acquisition practices** – EM has expanded the use of FAR Part 15 (non-M&O) contracts for capital asset projects and other non-capital work and awarded smaller, more-focused contracts (e.g., work previously performed by three prime contractors at EM's Hanford and Savannah River sites is now performed by 5 prime contractors). At the Savannah River Site (SRS) Tank Waste Program, where the site was managed under a single Management and Operating (M&O) contract for 50-plus years, EM focused its acquisition strategy on Liquid Waste remediation. We separated higher risk tank closure work from M&O type work to achieve lower overall costs. Competition resulted in a contract to close 20 tanks in eight years, versus the 12 tanks originally planned in the Federal Baseline. This Strategy at SRS is expected to result in acceleration of the life-cycle baseline by 6 years and reduce the life-cycle costs by over \$3B. To ensure a timely contract award we conduct a Procurement Strategy Panel to discuss procurement strategy with the Integrated Project Team and resolve issues early in the acquisition planning process. The strategy panel is comprised of senior level representation from EM, Office of Management, General Counsel, Office of Engineering and Construction Management, and the Office of Small and Disadvantaged Business Utilization. We are making Request for Proposals (RFP) consistent so that it easy for the Industry to utilize certain common information on multiple proposals, such as past performance, and experience. The RFP used for the Plateau Remediation contract awarded in May 2008 was used as the basis for the Portsmouth D&D contract awarded in September 2010, and that RFP was used as the basis for the ETTP solicitation which is planned for award by June 2011.
8. **EM is making improvements in contract management practices** – EM is establishing partnering relationships for all major contracts to create win-win scenarios, where both the Federal and contractor staff understand and respect the rules of engagement and build better business relationships. We are working with Industry to discuss ways to improve the pre and post contract award process. In a joint DOE-Industry workshop held in March 2010 the group of participants identified and prioritized improvement actions for implementation. We are making concerted efforts to ensure that our Federal staff and contractors across the EM complex understand and appreciate the need to maintain alignment of project and contract baselines. We have held a series of workshops with site Federal and contractor personnel to discuss procedures to be utilized to ensure contracts remain aligned with proposed project baseline revisions. Workshops have been held at SRS, Office of River Protection, Richland and Portsmouth, and additional workshops are planned to be held at the remaining sites in FY 2011.

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We are striving to get off the GAO High Risk list and appreciate EMAB's recognition of the complexity of our cleanup projects that have inherent nuclear safety issues and risks unlike any other construction project. Regardless, EM has made great strides in contract and project management. EMAB has noted the political challenges we face with our multiple stakeholders. We believe it is critical that we communicate our plans clearly with our stakeholders thus further supporting the basic tenets of good project management.

The following section addresses the progress we have made through our on-going improvement initiative in addressing EMAB's specific 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.**

EM has hired over 100 additional contract and project management professionals since FY 08 and established a partnership with the USACE to provide more than 90 FTE staff annually. Utilizing the USACE and industry experts, EM has conducted independent studies of staffing needs and developed a remediation plan, especially focused on capital asset projects. EM also awarded two new support contracts with the USACE to augment project management, project control, and quality assurance staff.

In addition, EM is entering into a new agreement with the USACE to provide senior Corps staff as Deputy Federal Project Directors for major construction efforts, and advise Headquarters project management leadership with seasoned Corps construction leaders. Finally, a portion EM's Construction Project Review teams will be led by senior USACE construction project experts.

### **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.**

EM has implemented a graded approach for complying with nuclear facility categorization, documented safety analysis, and QA requirements of 10CFR830. EM nuclear projects have followed the DOE-STD-1189, *Integration of Safety Into the Design Process*, which provides guidance on project integration and planning, including Nuclear Safety Basis strategy and graded QA standards prior to CD-1. EM was the lead office in the development and issuance of DOE-STD-1189 and had implemented an interim guidance to proactively incorporate safety into design early. In October 2008 EM issued the EM corporate Quality Assurance Program (QAP) (EM-QA-001) which incorporates the graded approach for implementation of Quality Assurance (QA) in all aspects of project life cycle (design, procurement, and construction, commissioning, and operation), including DOE oversight. The corporate QAP has been flowed down to the EM field organizations and each field element is responsible for implementing QA requirements using its own QA Improvement Project Plan (QIP). EM-HQ's Office of Standards and Quality Assurance provides ongoing oversight of the field implementation of QIP. In addition, EM has



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worked closely with the industry experts and the Energy Facility Contractors Group (EFCOG), through the EM QA Corporate Board, to address the graded approach. EM expectations have been, and will continue to be, that the graded approach is incorporated for both Nuclear Safety and QA commensurate with the level of hazards and risks posed to the public, workers, and the environment.

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

As mentioned above, EM has established a partnership with USACE to obtain support for construction management, design management, and engineering and technical expertise. EM is also working with USACE to expand the current arrangement to strengthen our ability, as an owner, to manage and oversee project planning and execution in the field. In addition, we have engaged high caliber technical experts from DOE’s national laboratories to assist us in addressing highly complex technical challenges. As shown in the Attachment 3, we are continuing to build a robust project and contract management organization at EM-HQ and in the field, utilizing strengths and unique experiences of both federal and external resources. The framework includes participation of experts from of all key project and contract management disciplines and is consistent with the “Owner’s Representative” model.

**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.**

EM’s Journey to Excellence includes initiatives to further strengthen and clarify the role of Federal Project Directors. We are implementing an improved EM Business Model that shifts greater authority and accountability to the field, and strengthens Headquarters policy, planning and best practice dissemination functions (e.g., adopting an “Advise-Assist-Assess” headquarters model). EM will examine the causes of FPD turnover to ensure continuity and consistency of Federal project oversight for critical projects and has already placed a deputy manager for each of our major construction projects to address the potential turnover of the current FPDs.

**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 stakeholders internal and external to EM has occurred to the extent necessary to assure that any identified issues or risks are resolved and reflected in the project’s plan.**

EM has made many improvements in front-end planning and we are ensuring our capital asset projects complete 70-90% design prior to establishing performance baseline. We are using Technology Readiness Levels and Project Definition Rating Index approaches to better understand the project design/definition stage and the corresponding quality of cost estimates. A key strategy included in EM’s Journey to Excellence is engaging our regulators and stakeholders to ensure our project plans are consistent with their stakeholder expectations.

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In conclusion, we would like to have a teleconference with the Acquisition and Project Management Subcommittee in the immediate future to discuss EM's actions and path forward to address the recommendations. We will contact Mr. David Swindle to set up the conference call. You and the EMAB members are also welcome to attend the teleconference. If you have any questions, do not hesitate to contact me at 202-586-7709.

cc:

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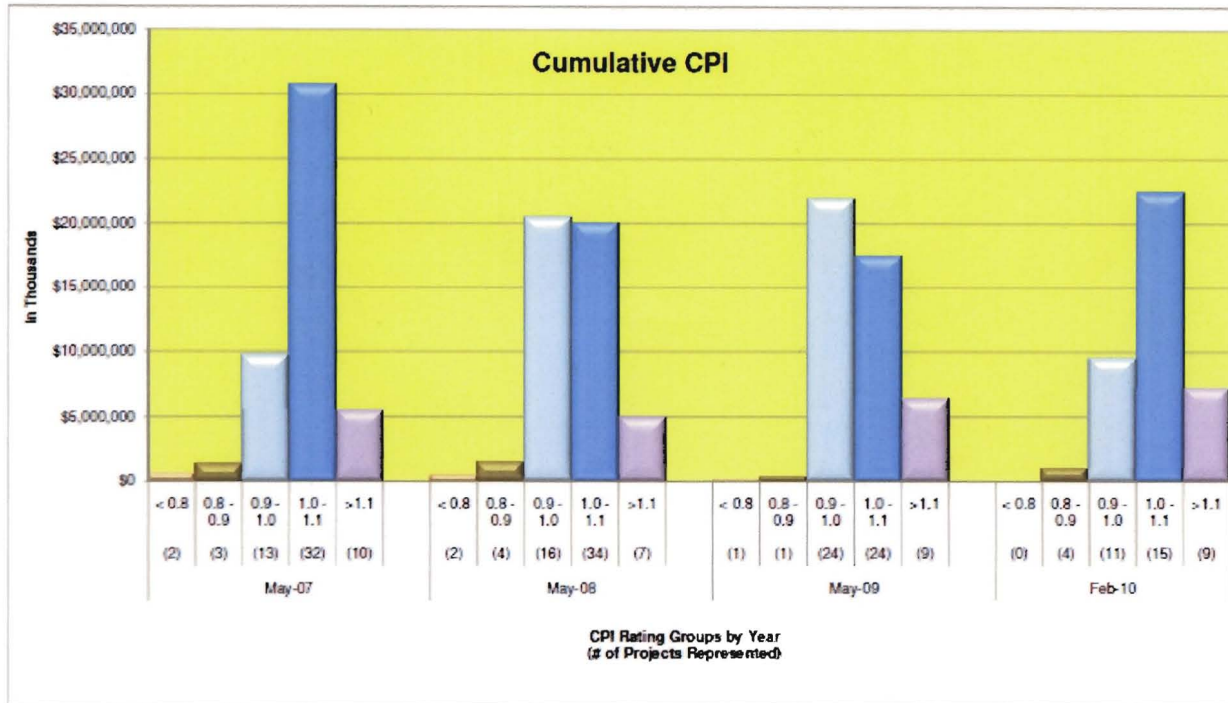
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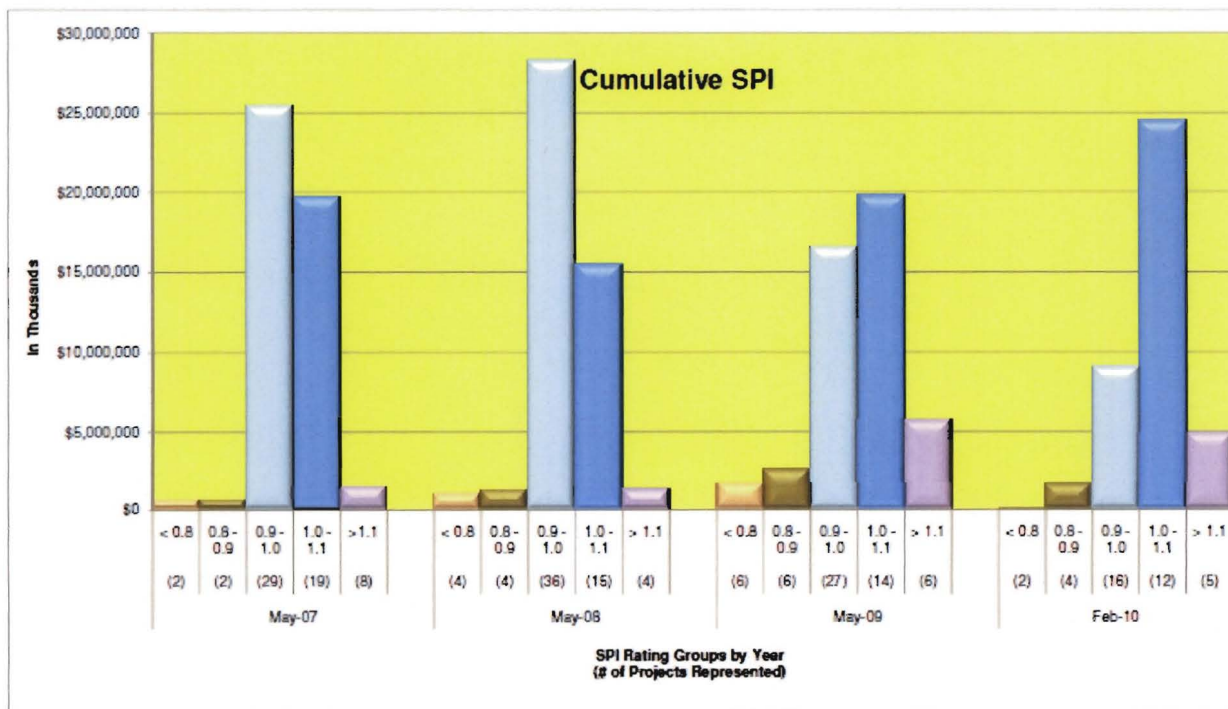
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## EM Project Portfolio Cost and Schedule Performance

Cumulative CPI Values, 2007 to 2010



Cumulative SPI Values, 2007 to 2010



U.S. Army Corps of Engineers' Staffing Analysis

Functional Area Gap Analysis

SITE	WTP	U233	ETTP	SWPF	WTP	U233	ETTP	SWPF
	Current				Estimated Requirement			
Total Capital Cost	\$12.63B	\$385M	\$1.7B	\$1.39B	\$12.63B	\$385M	\$1.7B	\$1.39B
Annual Capital Spend	\$690M	\$200M	\$175M	\$300M	\$690M	\$200M	\$175M	\$300M
Acquisition, Contract and Subcontract Mgmt	10	1.7	3.4	4.4	22	4.3	4.4	5.6
Project Planning, Control and Mgmt	33	6.5	5.4	11.4	33	7.6	10.4	12.3
Science, Engineering and Design Support	24	6.1	0.0	6.3	40	6.4	0.7	4.7
Construction Oversight and Management	8	0.0	0.0	8.0	19	1.0	4.0	8.2
Environment, Safety and Health	16	3.4	8.2	5.3	24	5.8	12.7	5.9
Quality Assurance	3	1.9	1.0	5.9	12	3.3	1.8	6.6
Finance and Administration	6	2.5	3.1	5.4	8	4.2	3.7	5.5
Safeguards and Security	1	0.6	0.9	1.2	7	1.6	3.3	2.3
Startup/Commissioning/Operations	0	0.0	0.9	0.1	3	0.6	2.3	4.0
Public Affairs and Stakeholder Relations	3	0.4	0.7	0.2	6	1.2	1.3	1.6
Total FTEs	104	23	24	48	174	36	45	57

First Priority
  Second Priority
  Third Priority
  Fourth Priority



For a full discussion of recommended priorities, please refer to the final reports 1

BUILDING STRONG®

## EM's Framework for an "Owner's Representative" Project Management Office

### Government Led Project Management Office

