

# *Solving Cleanup Challenges Through Risk Reduction*

**EFCOG**

**ISM Working Group – Strategic Planning Meeting**

## **Update of EM Quality Assurance Related Activities**

**Presented by Dae Chung/Sandra Waisley  
Office of Environmental Management  
Office of Safety Management and Operations Oversight**

**Greenville, SC  
January 17, 2008**



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## **Key Discussion Topics**

- **New Office of Standards and Quality Assurance (EM-64)**
- **EM Quality Assurance Improvement Initiative**
- **Phase I “assist visit” Summary Results**
- **Integration of the EM QA Initiative and ISM**
- **How can EFCOG Support EM**
- **Questions and Answers**



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## **Office of Standards and Quality Assurance (EM-64)**

- The mission of EM-64 is to:
  - Ensure that all EM projects have the technical, safety, and quality requirements and standards properly identified and adequately implemented.
  - Develop the evaluation criteria and attributes to support the decision making process for appropriate implementation of requirements and standards through the critical phases of a project.
  - Provide leadership and management of a corporate quality assurance (QA) evaluation program to oversee the field implementation of the specific QA and quality control processes applied to the major EM projects, including waste quality matters subject to the Civilian Radioactive Waste Management program.



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## The EM Quality Assurance Initiative

- **Purpose:**
  - Address the quality assurance program of EM projects to ensure:
    - EM's investments are protected,
    - Programs adequately address stated requirements, and
    - Programs correspond to risks and hazards of work being performed.
- **Major FY-2008 QA Milestones**
  - Basic QA principles processes, and practices in DOE Order 414.1C are incorporated in the EM Strategic Program Management Guide.
  - Confirm implementation of DOE Order 414.1C within EM.
  - Establish Corporate Board to facilitate institutionalization of a QA Management System across the EM complex.
  - Establish QA system evaluation process and annual declaration criteria.
  - Establish QA performance metrics.
  - Establish QA manager and major EM sites.
  - Establish a centralized training platform for initial QA and NQA-1 training.



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## Integration of the EM Quality Assurance Initiative and ISM

- EM's quality and safety management systems share a common approach.
- The quality management system:
  - Complements and is integrated with the safety management system.
  - Complements the tools for ensuring ISM is achieved.
  - Ensures compliance with approved standards to ensure safe work standards are met.
- EM-60 ISMS and QAP implementing procedures are currently integrated.
- EM-64 and EM-61 will consider integration of the ISMSD and QAP into one system description.

QA Criteria	Program	Training and Qualification	Quality Improvement	Documents and Records	Work Processes	Design	Procurement	Inspection/Acceptance Testing	Management Assessment	Independent Assessment
<b>SMS Principles and Functions</b>										
Line Management Responsibilities	X			X						X
Clear Roles & Responsibilities	X			X						X X
Competence Commensurate with Responsibilities		X		X						X X
Balanced Priorities	X			X						X X
Define the Work				X	X	X	X	X	X	X
Analyze Hazards				X	X	X	X	X	X	X
Develop & Implement Controls, Safety Standards, Requirements				X	X	X	X	X	X	X
Perform Work within Controls/Operations Authorization				X	X		X	X	X	X
Feedback & Improvement			X	X	X			X	X	X

Note: X indicates cross reference delineating (a) when the QA criteria and the principle/function have shared intent or (b) when the QA criterion is applied to the ISM principle or function.

Management Principles/Areas	QA 414.1C	Project Mgmt. 413.3A	ISM
• Clear Roles & Responsibilities	✓	✓	✓
• Clear Communications	✓	✓	✓
• Clear Requirements	✓	✓	✓
• Work Processes to Ensure Quality	✓	✓	✓
• Importance of Training	✓	✓	✓
• Importance of Design	✓	✓	✓
• Importance of Procurement	✓	✓	✓
• Corrective Action Management	✓	✓	✓
• Lessons Learned	✓	✓	✓
• Management Assessments	✓	✓	✓



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## **The EM Quality Assurance Initiative**

- **Phase I “assist visit” summary results:**

1. EM projects have not adequately implemented the necessary QA infrastructure and resources to meet mission needs,
2. There are diverse regulatory framework and programmatic needs influencing EM quality program requirements,
3. EM will consider implementation of an “EM-wide” quality assurance program specific requirement,
4. Quality issues have not been adequately addressed early in a project’s life cycle,
5. Lessons learned specific to QA are not being commonly shared across projects,
6. There is a need to establish a recognized single DOE Authority for interpretation and application of QA requirements, and
7. A cultural change is needed throughout EM to promote the proactive approach to the self-identification and resolution of quality related issues.



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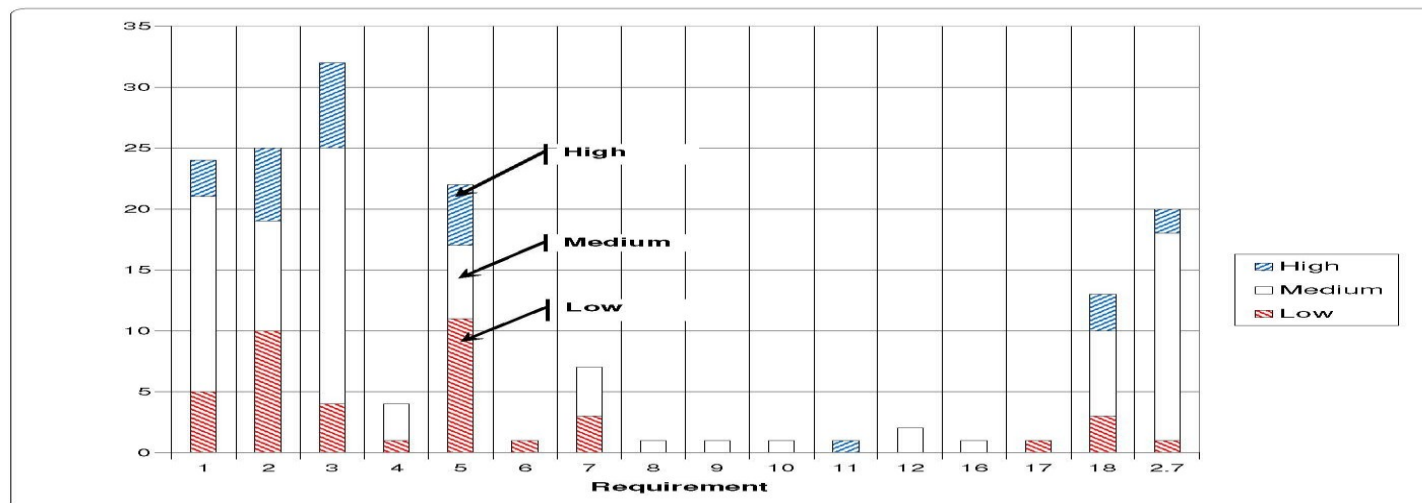
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## The EM Quality Assurance Initiative Phase I “assist visit” issue summary:

Requirement		Total
1	Organization	24
2	Quality Assurance Program	25
3	Design Control	32
4	Procurement Document Control	4
5	Instructions, Procedures, and Drawings	22
6	Document Control	1
7	Control of Purchased Items and Services	7
8	Identification and Control of Items	1
9	Control of Special Processes	1
10	Inspection	1
11	Test Control	1
12	Control of Measuring and Test Equipment	2
16	Corrective Action	1
17	Quality Assurance Records	1
18	Audits	13
2.7	Software	20
	<b>Grand Total</b>	<b>156</b>



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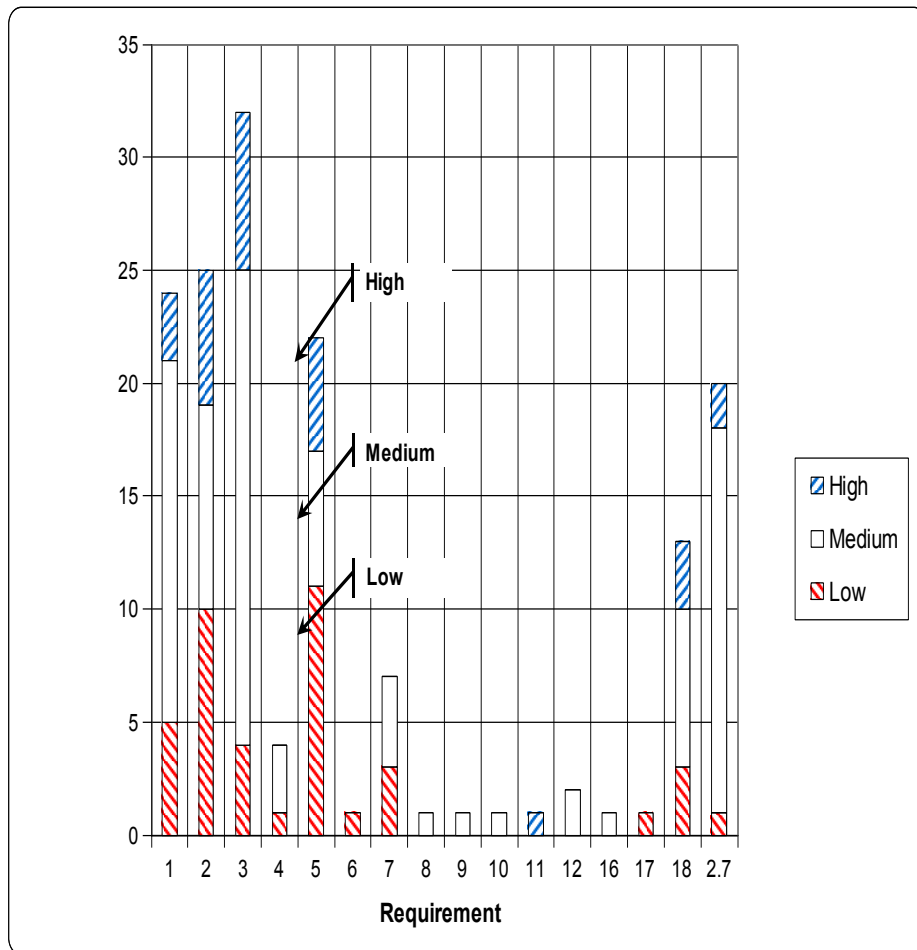
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## The EM Quality Assurance Initiative

### Phase I “assist visit” issue summary:



Requirement	Total
1	24
2	25
3	32
4	4
5	22
6	1
7	7
8	1
9	1
10	1
11	1
12	2
16	1
17	1
18	13
2.7	20

Grand Total 156



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## The EM Quality Assurance Initiative Phase I “assist visit” Contractor Project Summary:

REQUIREMENTS/CRITERIAS		CONTRACTOR RESULTS							
		Project 1	Project 2	Project 3	Project 3	Project 5	Project 6	Project 7	Project 8
1	Organization	RED	GREEN	GREEN	RED	YELLOW	RED	YELLOW	RED
2	Quality Assurance Program	YELLOW	GREEN	GREEN	RED	YELLOW	RED	YELLOW	RED
3	Design Control	YELLOW	GREEN	RED	N/A	RED	YELLOW	RED	RED
4	Procurement Document Control	GREEN	GREEN	YELLOW	RED	YELLOW	YELLOW	N/A	RED
5	Instructions, Procedures, and Drawings	RED	GREEN	N/A	RED	YELLOW	YELLOW	YELLOW	N/A
6	Document Control	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN	N/A	N/A
7	Control of Purchased Items and Services	GREEN	GREEN	YELLOW	RED	YELLOW	YELLOW	N/A	RED
8	Identification and Control of Items	GREEN	GREEN	N/A	N/A	N/A	N/A	N/A	N/A
9	Control of Special Processes	GREEN	GREEN	N/A	N/A	N/A	N/A	N/A	N/A
10	Inspection	GREEN	GREEN	GREEN	N/A	N/A	N/A	N/A	N/A
11	Test Control	GREEN	GREEN	RED	N/A	N/A	N/A	N/A	N/A
12	Control of Measuring and Test Equipment	GREEN	GREEN	N/A	N/A	N/A	N/A	N/A	N/A
13	Handling, Storage, and Shipping	GREEN	GREEN	N/A	N/A	N/A	N/A	N/A	N/A
14	Inspection, Test, and Operating Status	GREEN	GREEN	N/A	N/A	N/A	N/A	N/A	N/A
15	Control of Nonconforming Items	GREEN	GREEN	N/A	N/A	N/A	N/A	N/A	N/A
16	Corrective Action	GREEN	GREEN	GREEN	YELLOW	N/A	N/A	N/A	N/A
17	Quality Assurance Records	GREEN	GREEN	GREEN	RED	YELLOW	YELLOW	N/A	N/A
18	Audits	GREEN	GREEN	GREEN	RED	YELLOW	RED	GREEN	RED
19	Software	YELLOW	YELLOW	RED	YELLOW	YELLOW	YELLOW	YELLOW	YELLOW

BLUE – Exceeds Requirements of ASME NQA-1, 2004  
 GREEN – Meets Requirements of ASME NQA-1, 2004  
 YELLOW – At Risk to not meeting Requirements of ASME NQA-1, 2004  
 RED – Does not meet Requirements of ASME NQA-1, 2004  
 N/A – Not Applicable or these areas were not evaluated



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## **What EM needs from EFCOG:**

- **Closeout of Current Generic QA Action Items:**
  1. Consistency of approach to Quality and Procurement classification.
  2. The role of the Quality Engineer in Design.
  3. Use of QA Lessons Learned/Operating Experience Review Program.
  4. Relevance and application of NQA-1 Part 2.
  5. Boundaries of required coverage for 414.1c Software QA to non-safety class applications.
  6. Depth of understanding and consistency of application for Commercial Grade Dedication application.



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## **How Can EFCOG Support EM:**

- **Support to Implement the FY-08 QA milestones:**
  1. Basic QA principles processes, and practices in DOE Order 414.1C are incorporated in the EM Strategic Program Management Guide.
  2. Confirm implementation of DOE Order 414.1C within EM.
  3. Establish Corporate Board to facilitate institutionalization of a QA Management System across the EM complex.
  4. Establish QA system evaluation process and annual declaration criteria.
  5. Establish QA performance metrics.
  6. Establish QA manager and major EM sites.
  7. Establish a centralized training platform for initial QA and NQA-1 training.
  8. Establish a working group consisting of several field sites to draft an EM-wide quality assurance program specific requirement.
  9. Field sites will add acceptance inspectors as they transition into more construction activities.



## **How Can EFCOG Support EM:**

- **Other Support Needed to Implement FY-08 QA Work Scope Activities:**

1. Ensure adequate QA resources support site QA functions.
2. Ensure the QA manager and organization are sufficiently empowered.
3. Develop QA guidance: a) to establish consistency within EM QA programs relative to the implementation of DOE QA directives.



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## Questions



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Backup Slides



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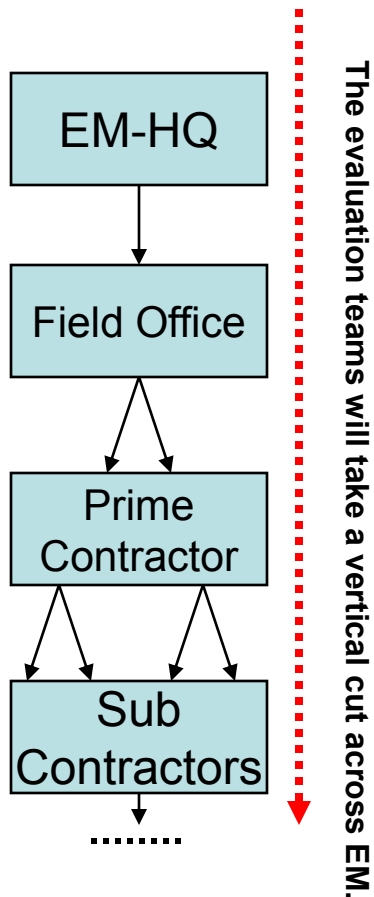
## **Background**

- Secretary Bodman in his April 26, 2006, memorandum “Improving Quality Assurance” stated the following:
  - Quality of work has negatively impacted the mission;
  - Rework, delays, and cost growth, impact limited resources;
  - The Department must implement quality requirements to ensure that risks and negative environmental impacts are minimized; and
  - The Department has not yet developed a sustainable quality culture to achieve excellence in the quality of our products and services.
- Secretary Bodman directed Departmental Elements to establish, for the major programmatic activities for which they are responsible, QA programs that:
  - Adequately address Departmental requirements (DOE policies, directives and requirements), and
  - Correspond with the risk and hazards associated with the work being performed.



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## The “assist visits” have included:



- The review of the following projects under Phase I: WTP, SBW, SWPF, DUF6, CSSC, K-Basins, Bulk-Vit., and U-233 Disposition Project (3019).
- Each “assist visit” has been:
  - Tailored to the specific project and utilized modified lines of inquiry and assessment approaches, and/or different team experts;
  - Based upon ASME NQA-1, 2004 to better understand the magnitude of the delta between the currently implemented QA program and that of this current standard; and
  - A “non-traditional” approach, to give the assist team the opportunity to incorporate into the final report their “professional opinion” relative to how well the QA program being reviewed was being implemented against project QA and NQA-1, 2004 requirements.



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## **Crosscutting results through the first four projects visited:**

- **Federal**

- Field offices typically do not have a specific QA organization or an individual designated as a QA manager.
- Project QA documentation has not been established or is inadequate.
- Field offices have not performed a QA program audit of the project that includes all the QA criteria invoked on the project.
- Insufficient QA personnel to perform effective oversight of projects.
- Lack of certification program for lead auditors, auditors, and technical specialists.
- IPTs rely heavily on the ability to matrix needed expertise from site personnel, often resulting in insufficient resources to adequately support FPDs.
- Most oversight activities are a result of events that have already occurred and are reactive rather than proactive in nature.



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## **Crosscutting results through the first four projects visited:**

- **Contractor**

- Contractor QA organizations do not have a direct line of access to responsible levels of management.
- Projects have not documented and executed adequate internal or external interface control plans for the execution of work between multiple organizations.
- Insufficient documentation for the purchase of commercial grade items and services.
- The quality level determination process is site specific and lacks consistency across the complex.
- QA professionals lack organization freedom from cost and schedule to independently perform their function.
- Software configuration management.



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## **Phase II action items derived from phase I “assist visits:”**

1. EM will establish an EM Integrated Quality Management Steering Group (or Council) to drive EM QA initiatives to results.
2. EM HQ will establish a QA team under EM-60, designate a QA manager, add three staff members for support, and focus management on empowering the QA manager and organization.
3. Additional QA resources will be added to site QA functions.
4. EM HQ will ensure that field management sufficiently empowers the QA manager and organization.
5. Field sites will add acceptance inspectors as they transition into more construction activities.
6. EM-60 will establish the rules of engagement for future phase II QA audits/assessments.
7. EM-60 will investigate the use of establishing a “go-to” contractor with the expertise to review site/project QA programs.



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## **Phase II action items derived from phase I “assist visits:” (Cont’d)**

8. EM-60 will develop a mechanism to systematically share QA-related lessons learned.
9. EM-60 will add MOAB to the phase I assist visit schedule.
10. EM-60 will develop QA guidance: a) to establish consistency within EM QA programs relative to the implementation of DOE QA directives, and b) on the use of NQA-1 requirements, particularly those in sections 2, 3, and 4.
11. EM-60 to establish a working group consisting of several field sites to draft an EM-wide quality assurance program specific requirement.
12. EM-60 to evaluate the adequacy of quality engineering within the line item construction and operational projects and will ensure that the function of quality engineering is invigorated in both the contractor and DOE organizations.
13. EM-60 will incorporate the evaluation of IPT capabilities into subsequent QA reviews to more specifically focus on technical, quality and safety staffing sufficiency.

