



## **Update on EM Corporate Quality Assurance (QA) Program Activities**

**Environmental Management Advisory Board (EMAB)  
Augusta, GA  
September 30, 2009**

Robert Murray, Acting Director  
Office of Standards and Quality Assurance (EM-64)

[Robert.Murray@em.doe.gov](mailto:Robert.Murray@em.doe.gov)



# Outline of Briefing

- Three main themes:
  1. Overview of EM corporate QA objective, strategy, initiatives, and progress to date (Slides 3-7)
  2. Update on ongoing Corporate Board activities and commitments, e.g., graded approach, QA/procurement (Slides 8-10)
  3. EM-64 Lessons/Observations and FY 2010 Priorities/Path Forward (Slides 11-12)





# Overarching Corporate Objective

- Objective: Institutionalize QA --
  - Establish an organizational culture that embraces quality in day-to-day execution of EM Mission
  - Ensure early and effective integration of QA in project lifecycle— Procurement, Design, Engineering, Construction, Operation, and Post-operational D&D and Environmental Restoration



**EM** *Environmental Management*

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)



# Strategy to Institutionalize QA

- Leverage the relevant lessons learned from industry, other elements of DOE, and EM's decade long successes/setbacks on integrating safety to "jump start" QA
- Key ingredients of the strategy that are believed to be critical to successfully institutionalize QA within EM complex work culture:
  - Streamlined and clear QA expectations and requirements
  - Stability and predictability in corporate decision making
  - Ready access to and availability of QA resources and know-how
  - Stringent performance accountability and transparency
  - Timely operational awareness, meaningful QA performance metrics, and effective closure of corrective action commitments
  - Robust performance-based audits/reviews
  - Development and dissemination of root cause analysis and lessons learned





# Ongoing EM Approaches to Implement QA Strategy

- **Industry Partnership** to enhance the availability of and access to qualified QA expertise, e.g., EM/EFCOG QA Corporate Board, Suppliers events
- **Outreach & Awareness** in terms of QA training, orientation, and informative booklets e.g., EM QA Training Academy aimed at the Nuclear supplier community, Federal and contractor QA personnel; complex-wide resource survey to right size project-specific QA needs
- **Policies and Procedures** to clearly define EM's QA corporate requirements and expectations, e.g., QA Policy, Corporate Quality Assurance Program (QAP)
- **Integrated/Transparent Decision-Making Framework** to ensure transparency, accountability, and technical rigor in critical decision (CD) review and approval, e.g., EM Standard Review Plan (SRP) Review Modules, Risk-informed QA Exemption/Variance Request process, Performance-Based QA Audit/Oversight SOPP
- **Improved Operational Awareness** to ensure timely and effective identification of QA issues and closure of corrective actions, e.g., FPD/IPT Assessment Expectations, Vendor reviews, Performance-based QA audits, *EM-QA HUB* to track status of commitments associated with corrective action plans





# Corporate QA Progress to date

- The EM senior leadership message of corporate priority and focus on QA is well understood and recognized by EM Federal (HQ/Field) and contractor senior management
- Issued EM QAP-- Every EM site has submitted and/or is in the process of submitting a proposed Quality Assurance Program Plan (QAP) and a Quality Assurance Implementation Plan (QIP) for EM-HQ review and approval
  - Phase 1: EM HQ programmatic/desktop review/approval of submitted QAP/QIP
  - Phase 2: EM HQ Verification and Validation (V&V) of QIP Implementation
- Enhanced consistency, substance, and maturity of institutional procedures have significantly evolved—
  - Performance based EM-HQ Protocol for Review of Site-Specific QA/QIP
  - Performance based QA Audit and Oversight Standard Operating Procedure
  - Standard Review Plan (SRP) QA Review Module—applicable to Critical Decision (CD) milestone reviews
  - Risk-informed Approach to QA Exemption/Variance Requests
- The EM-64 QA staffing has increased to enable an active and robust EM-wide QA assist visits and audit program





## Corporate QA Progress to date (Cont'd)

- Launched Centralized QA Training Academy- Piloted courses for Federal employees and the nuclear supplier community in Carlsbad, NM and Augusta, GA
- Led numerous targeted performance-based QA reviews and audits (includes closer coupling with recently initiated Construction Review Projects)
  - 21 audits of construction and operational projects
  - Issue driven audit of vendors
  - Radioactive Waste, High-Level Waste and Spent Nuclear Fuel audits at major sites
- Developed and deployed (Pilot phase) a web-based QA audit operational awareness and corrective actions commitment tracking system
- Completed an EM-wide survey of available QA resources
  - Interesting insights on variations in site-specific QA resources (both Federal and contractor workforce) from 2% to 7%--Aggregate of EM complex ratio of QA personnel to its total workforce is 2.4%
  - No definitive data to support mandating a uniform corporate target
  - Pursuing several options to expand on and enhance EM's indigenous QA capabilities—e.g., outreach to qualified QA practitioners that can function well in a “nuclear” environment, increased QA training and orientation to existing workforce, hands-on QA mentoring and technical assistance



# Status of Graded Approach



- Regulation: 10 CFR 830.7 – “Where appropriate, a contractor must use a graded approach to implement the requirements of this part, document the basis of the graded approach used, and submit that documentation to DOE.”
- EM/EFCOG developed position paper on method to apply graded approach on procurement activities based upon 10 CFR 830.3 definition **commensurate with:**
  - ***The relative importance to safety, safeguards, and security;***
  - ***The magnitude of any hazard involved;***
  - ***The life cycle stage of a facility;***
  - ***The programmatic mission of a facility;***
  - ***The particular characteristics of a facility;***
  - ***The relative importance of radiological and non-radiological hazards”***
- EM/EFCOG Deliverables:
  - Procurement QA process flow diagram (approved by Board with clarifications)
  - Graded approach procedure for procurements (approved by Board; Site to submit to its contractors requesting cost impact analysis for implementation, due by Sept 2009)
  - EM/EFCOG developed standardized risk assessment process (approved as a tool for the Sites)
- Proposed Implementation (If Board Approves)
  - Short-Term – EM-60 DAS issues memo to site managers and recommends use at sites and review/comment
  - Long-Term – issue with revised EM Corporate QAP as guidance/best practices.





## EM-QA Corporate Board FY-2010 Focus Areas

- **Conduct of Operations (new):** includes previously identified high priority issues of procedural compliance/execution and production pressures
- **Design Quality Assurance (new)**
- **Commercial Grade Dedication Implementation (refocus)**
- **Adequate Nuclear Suppliers (refocus):** includes question of DOE certification of supply chain (evaluate UK NDA process)
- **Flow Down of Requirements (refocus):** includes consistent application of regulations/requirements, and consistent interpretations



**EM** *Environmental Management*

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)



## EM-64 QA Lessons and Observations

- Ensure QA requirements flow down/documentated in the procurement process including subcontracts—Ensure prime contractors have access to and maintain real-time operational awareness of the vendors and subcontractors' activities and QA programs
- Ensure implementing procedures are developed before work is performed
- Evaluate adequacy of project QA program—Federal Project Directors (FPDs) and Integrated Project Teams (IPTs) play a critical role
- Ensure adequate number of qualified personnel for QA program implementation
- Identify key QA leaders in DOE and contractor organizations—promote dialogue, networking, and sharing of operating experience
- Ensure adequate document control and records mgmt systems
- Emphasize root cause analysis (extent of condition) to ensure that proposed corrective actions address the underlying QA performance drivers
- Ensure QA is integrated and factored in the early stages of formulating acquisition strategy and subsequent procurement processes/procedures





## EM-64 Path Forward— FY-10 Priorities

- Interface with site designated QA points of contact on effective implementation of approved site-specific QIPs
- Support (participate, observe, and/or provide QA technical expertise) and ensure close coupling with multi-disciplinary EM corporate reviews (e.g., CPRs)
- Provide independent technical input to HQ/Field regarding technical soundness and integration of QA in major project planning assumptions, project activities, and planned milestones in support of critical decision review and approval
- Continue with an aggressive QA outreach and awareness effort—training, workshops, mentoring, tools, etc.
- Reinforce accountability and transparency by continuing to highlight corrective action commitments and status—More root cause analysis to support formulation of proposed corrective actions
- Maintain a robust and targeted QA audits/review program—Selective and focused
- Capture, incorporate, and disseminate resulting lessons learned

**Note: Continued operating experience and lessons learned gained from site-specific audits/reviews and technical assistance should yield valuable insights to better gauge adequacy of program grading**



**EM Environmental Management**

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)