

ISMS Applied to EM's ARRA Work

Meeting the Safety Challenge

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Author Bio

- Mr. Baione has over 30 years experience in the nuclear industry, working at Naval Reactors Headquarters for ten years and providing technical consulting support to the Department of Energy (DOE) and the Nuclear Regulatory Commission for 20 years. He joined DOE EM in May 2008 and is now assigned to EM-21, Safety Management.

Overview of EM's ARRA Work



- \$6 Billion in ARRA funds over two years, about 12,000 new or retained jobs
 - Directed towards existing scope that can most readily be accelerated
 - Soil and groundwater remediation
 - Radioactive solid waste disposition
 - Facility decontamination & decommissioning
- Start projects quickly
 - “Shovel-ready” projects selected for funding:
 - Fully-defined cost, scope and schedule
 - Established regulatory framework
 - Proven technology
 - Proven performance
 - Existing contract vehicles



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EM's ARRA Safety Challenge



- Additional workload means:
 - Increased new hire rates;
 - Increased pace of work and an implied schedule pressure;
 - Staffing pressures for critical positions such as shift managers, trainers, SMEs, etc.;
 - Increased onsite traffic (vehicular safety); and
 - More heavy equipment and material handling.
- Unfamiliarity with DOE work expectations for working on-site results in the need for:
 - Increased training and qualification;
 - Oversight of Contractors by Field Offices and HQ; and
 - Flow-down of safety requirements into sub-contracts and implementing processes.



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Process Elements



- EM-1 Memo of 2/25/09 on *Safety of Work Created Under the ARRA* required all EM sites to:
 - Establish Expectations
 - Integrated Safety Management Systems (ISMS) must be integral and robust from the outset.
 - Poor safety performance neither acceptable nor tolerated.
 - Require Contractor Self-Assessment to provide a high level of readiness assurance prior to conducting ARRA work.
 - Separately report safety performance metrics for ARRA work.
 - Field Office Managers to ensure line management oversight.
- EM Created the Project Safety Oversight and the Recovery Act Readiness Evaluation (RARE) Process
 - Provided structured evaluation of EM contractor readiness across sites.
 - Evaluations performed by Contractor, Field Office and HQ personnel.



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RARE Checklist Topical Areas



- Environmental Safety and Health
 - Fire protection
 - Occupational Safety
 - Industrial Hygiene
 - Environmental Compliance and Protection
 - Radiological Control
- Safety Basis Implementation
- Management
- Training
- Operations/Conduct of Operations
- Work Control
- Quality Assurance
- Construction
- Contracts
- NMC&A/Security
 - Security
 - Material Balance Area Program
 - Measurement Program
 - Tamper Indicating Device Program
- Waste Management/Packaging & Transport
- Emergency Management

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Implementation



- EM's RARE process was applied to sites with ARRA funding:
 - Headquarters personnel participated in over half of the RARE checklist evaluations, providing further assurance of consistency in the evaluations.
 - Site-wide programs and processes were found to exist or would exist to provide a template for performing ARRA work safely.
 - Lessons learned from the RARE process were shared among the EM sites.
- The ability to track ARRA work separately from other EM work was incorporated into safety metric reporting processes.
- Field Office Managers affirmed their staffing levels were adequate to provide appropriate contractor oversight.



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RARE Process Lessons Learned



- RARE Process mostly evaluated programmatic work preparations
 - Monitoring of actual work needs to be emphasized
- EM-20 Issued a memorandum to Field Office Managers emphasizing the need for Contractor and Federal oversight of actual work activities.
- Planned EM-22 Site Visits redirected their focus to more closely evaluate the adequacy of contractor oversight of work.





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ARRA Safety Performance Metrics

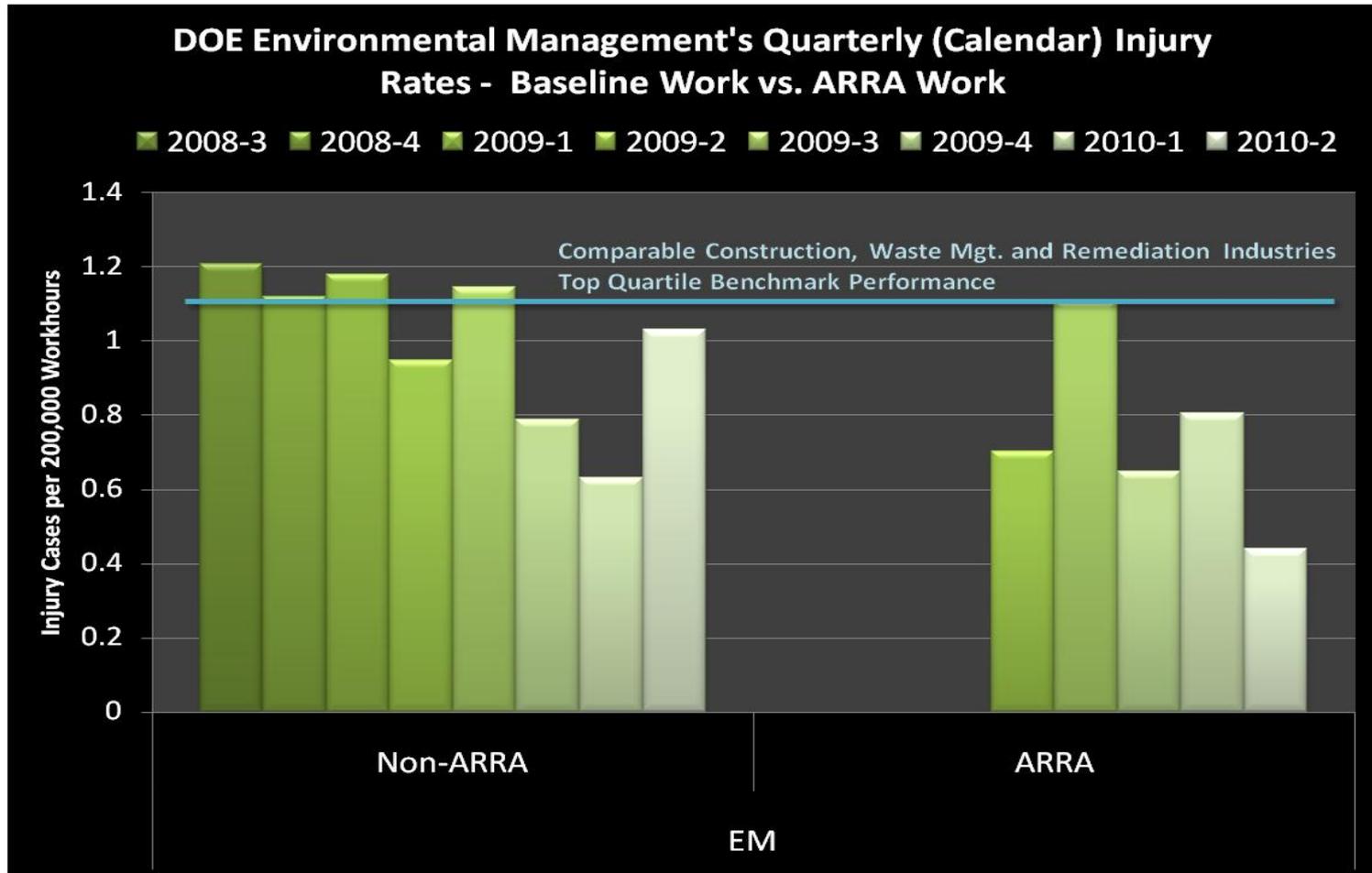
As shown on the following four slides:

- EM's TRC and DART case rates have not shown an increase despite the addition of EM's ARRA workload.
 - EM's TRC and DART case rates remain below levels of comparable commercial industry rates.
 - EM demonstrated overall improvement in occupational injury rates after the start of ARRA work.
- The monthly number of EM's occurrences has increased by 22% over the pre-ARRA baseline average, despite the large increase in EM work (baseline plus ARRA)
 - The ORPS severity score of EM occurrences subsequent to the start of ARRA work has shown improvement.



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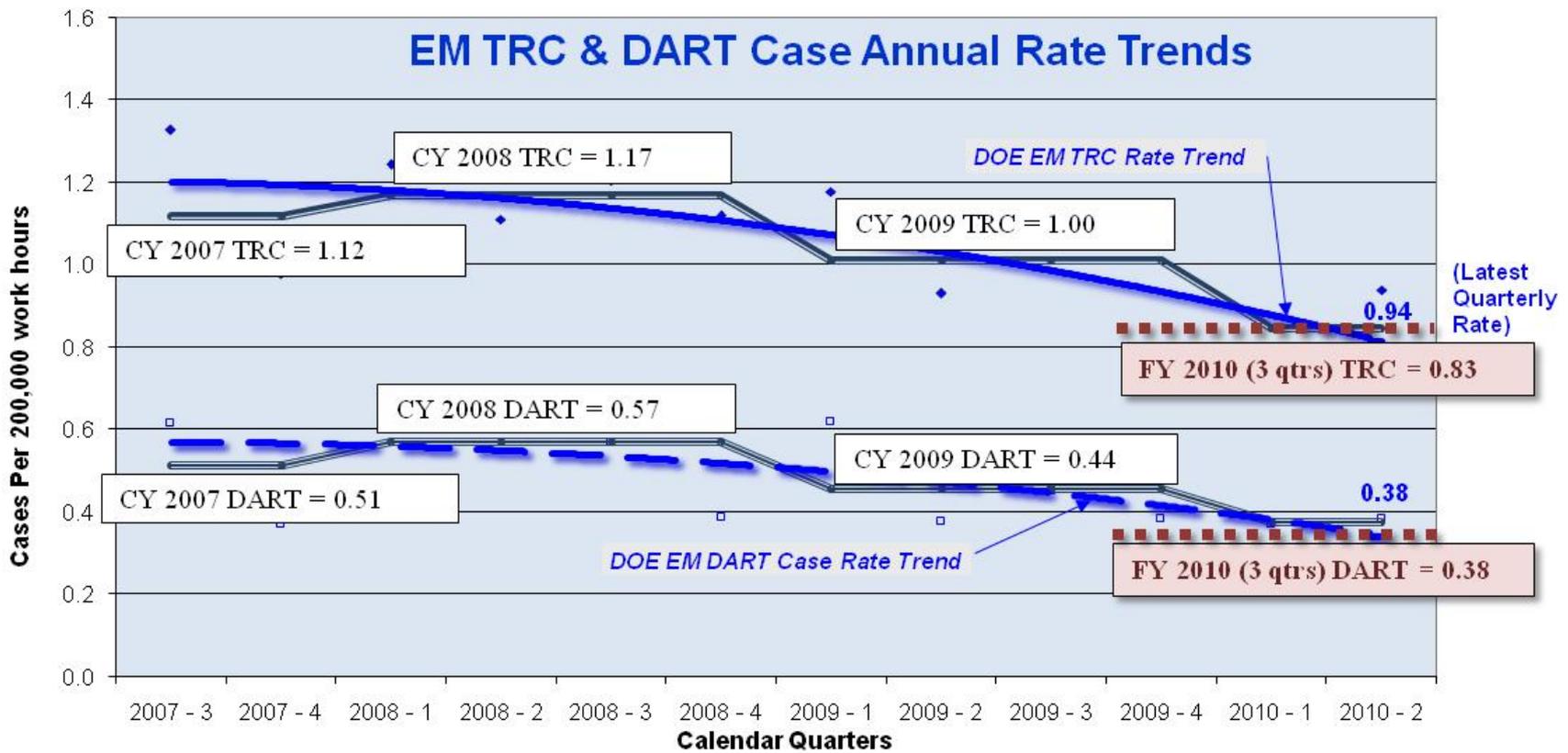
TRC Rates



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Meeting the Challenge Occupational Injury Rates



DART Case: Lost Work Days Cases - Days Away from work, Restricted or on job Transfer (DART) case rate per 200,000 work hours.
TRC: Occupational Injury Safety - Total Recordable Case (TRC) rate per 200,000 work hours.

*This DOE data is collected in the Computerized Accident & Injury Reporting System (CAIRS). Data as of August 11, 2010

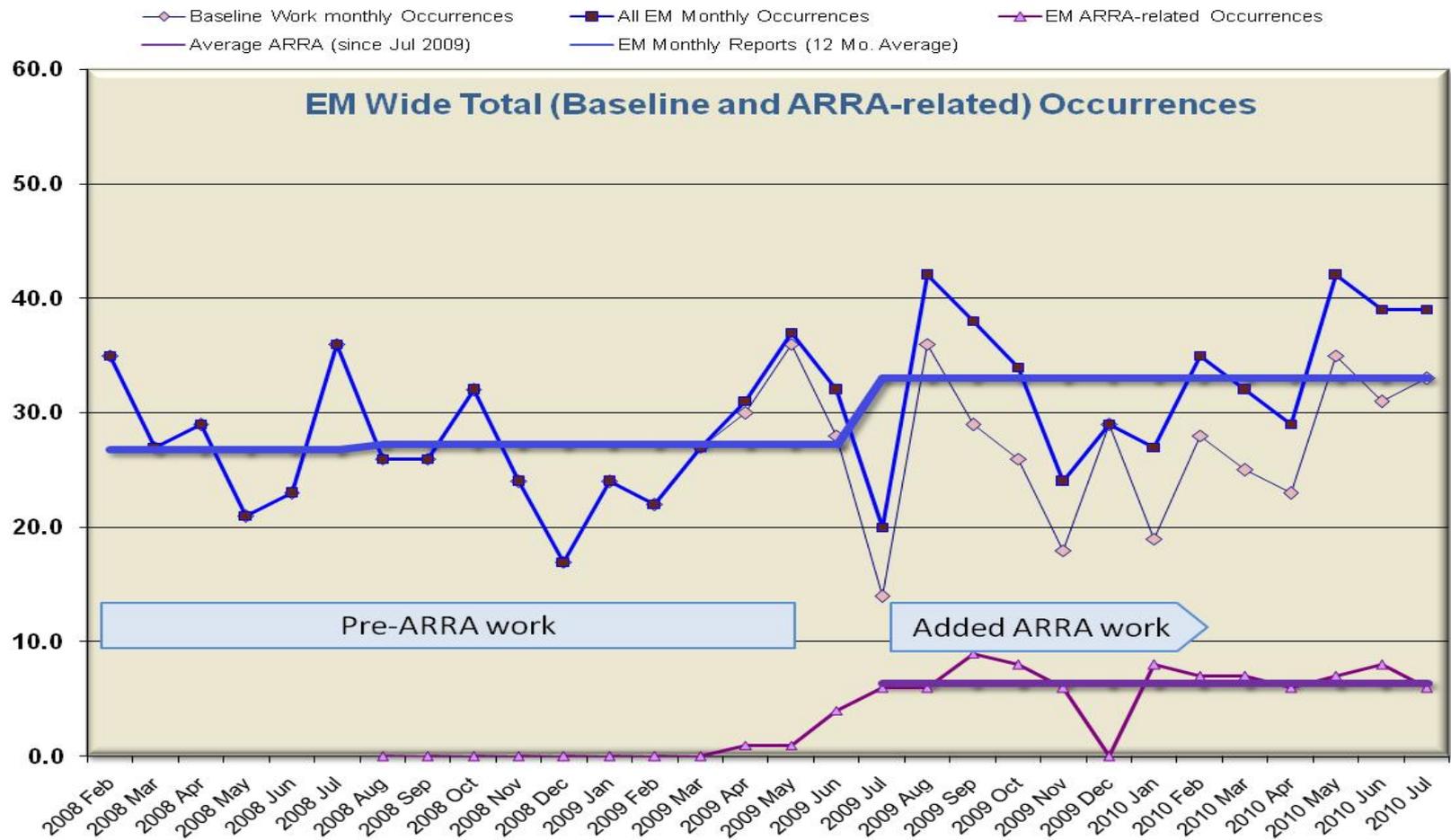


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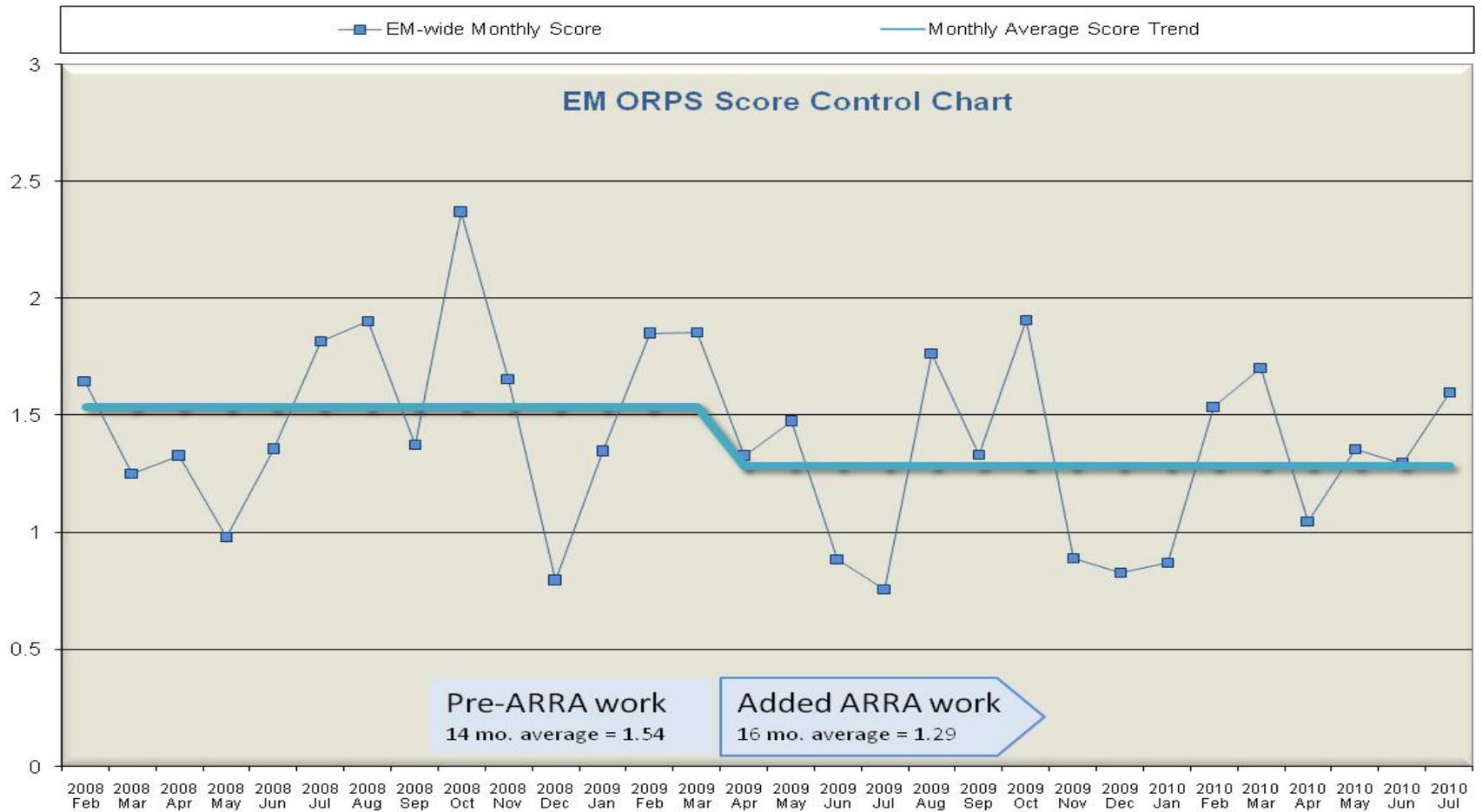
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ORPS Reports



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ORPS Severity-weighted Normalized Scores



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Summary



- EM's ARRA work introduced additional risk and management challenges.
- Proactive, self-assessment direction from EM Headquarters was the key to preparing for these challenges.
 - Performed structured readiness self-assessments prior to the start of work.
 - Robust field oversight of actual work and Headquarters oversight and cross-cutting performance analyses helped prevent issues and ensured feedback to prevent recurrence when issues or trends arose.
- EM safety performance metrics show that implementation of ISMS readiness evaluations, work planning and performance practices for ARRA work have been key to assuring all EM work is conducted safely.