



U.S. DEPARTMENT OF ENERGY

**Office of Environmental Management
Safety Culture Briefing
to
EFCOG Safety Analysis Workshop 2012**
Preparing for the Millennium

March 27, 2012

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Topics

- EM Approach to Safety
- Results
- Specific Safety Topics
 - Safety Culture
 - Defense Nuclear Facilities Safety Board (DNFSB) Identified Issues



Office of Safety Management Mission Statement

Our Mission

- Implement DOE/EM-wide Integrated Safety Management and Integrated Safeguards and Security Management oversight activities, the DNFSB recommendations and issues, standards assurance for major project planning and execution, operational safety and awareness programs, and quality assurance programs
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- Serve as the senior executive official and focal point for providing day-to-day safety operational oversight, feedback, interface and direction to the EM field/operations offices



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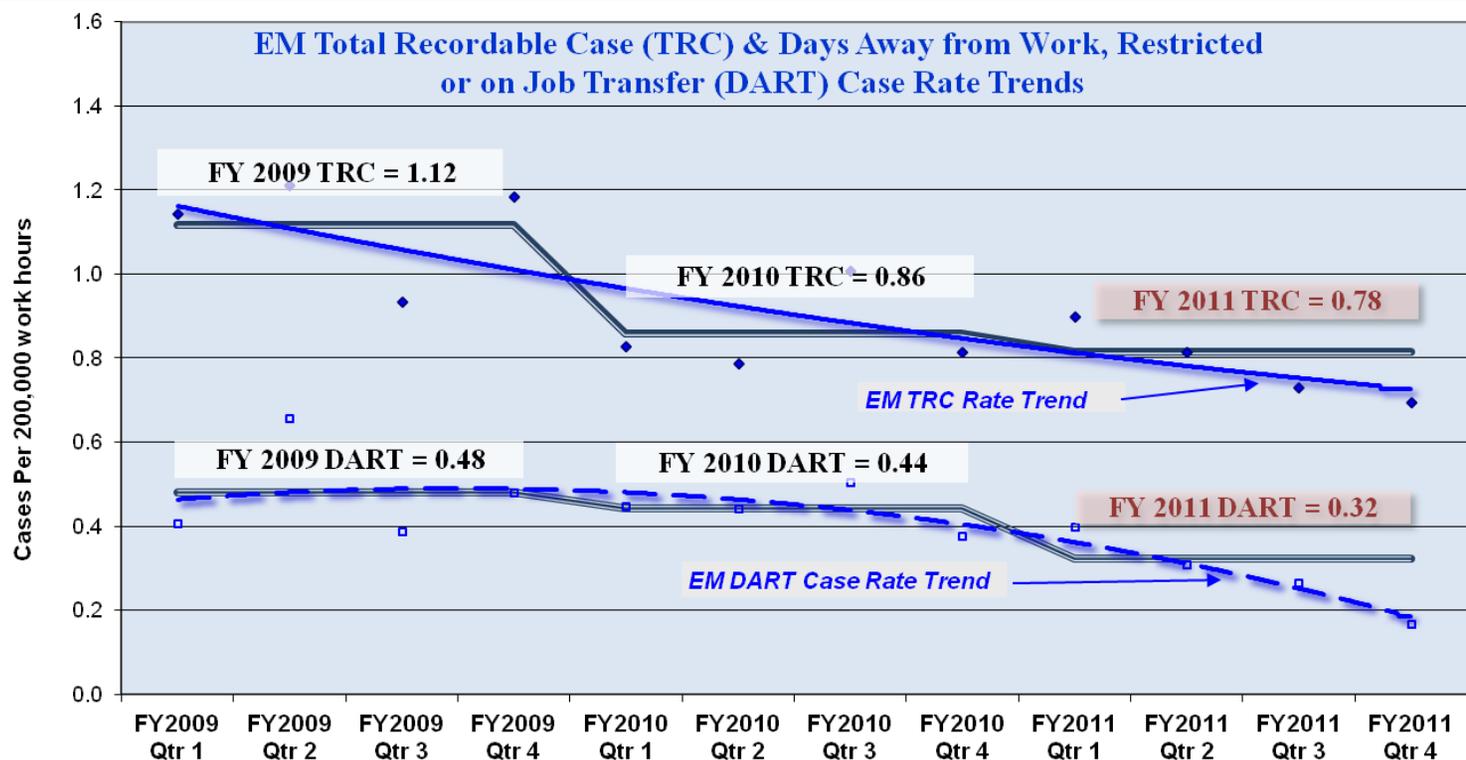
EM Approach to Safety

- Nuclear safety has been an integral part of our vital and urgent mission from its inception, and our goal is to continuously improve our safety performance.
- DOE P 420.1, Department of Energy Nuclear Safety Policy
- Strong Integrated Safety Management Systems
- Framework of directives and standards
- Robust Oversight Programs
- Healthy Safety Culture



EM-Wide Safety Performance

Occupational Injury (CAIRS Data) Analysis



This DOE data is collected in the Computerized Accident & Injury Reporting System (CAIRS). Data as of October 27, 2011



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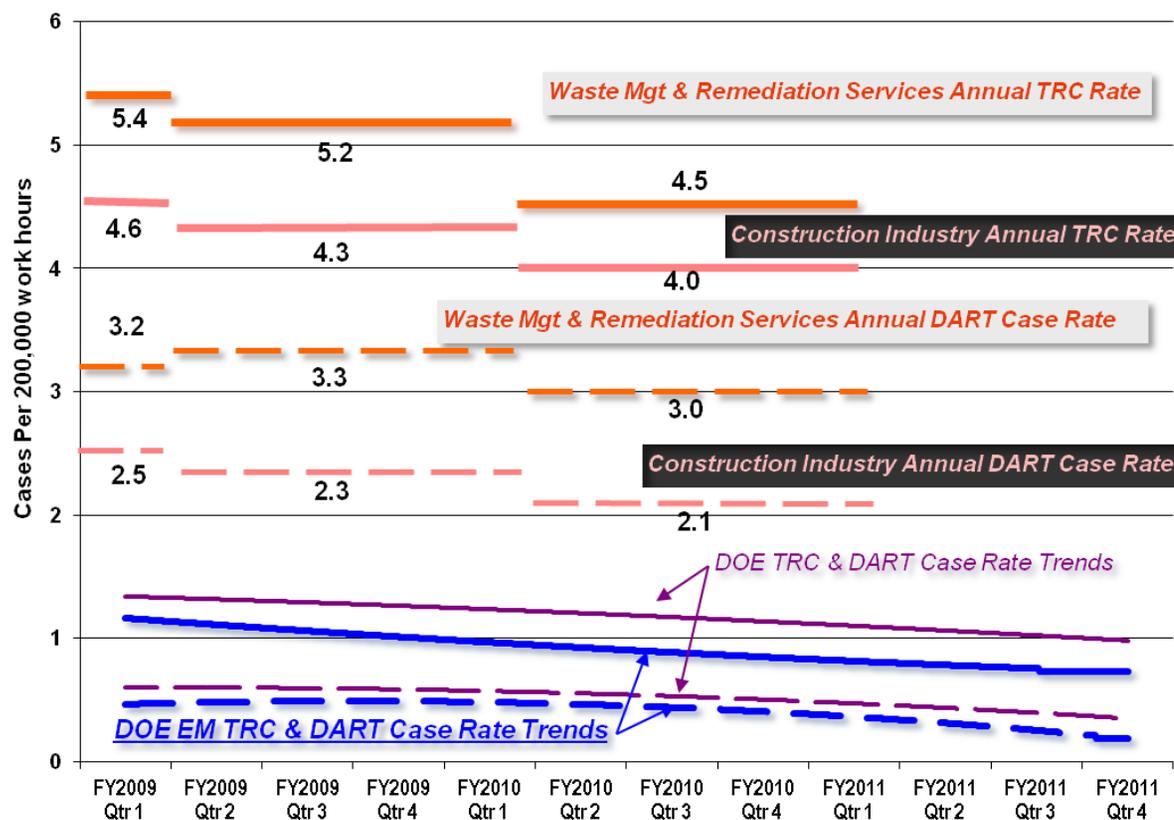
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EM-Wide Safety Performance

Occupational Injury (CAIRS Data) Analysis

DOE/EM/Construction & Waste Disposal Industries
TRC & DART Case Rate Comparisons



TRC: Total Recordable Case (TRC) rate per 200,000 work hours.

DART Case: Days Away from work, Restricted or on job Transfer (DART) case rate per 200,000 work hours.

*This DOE data is collected in the Computerized Accident & Injury Reporting System (CAIRS). Data as of October 27, 2011

** Industry rates taken from NAICS code 23 and 562 of the Bureau of Labor Statistics 2008-10 Industry Injury and Illness Data.

0.94
0.69
0.31
0.17

Latest Reported Quarterly Rates

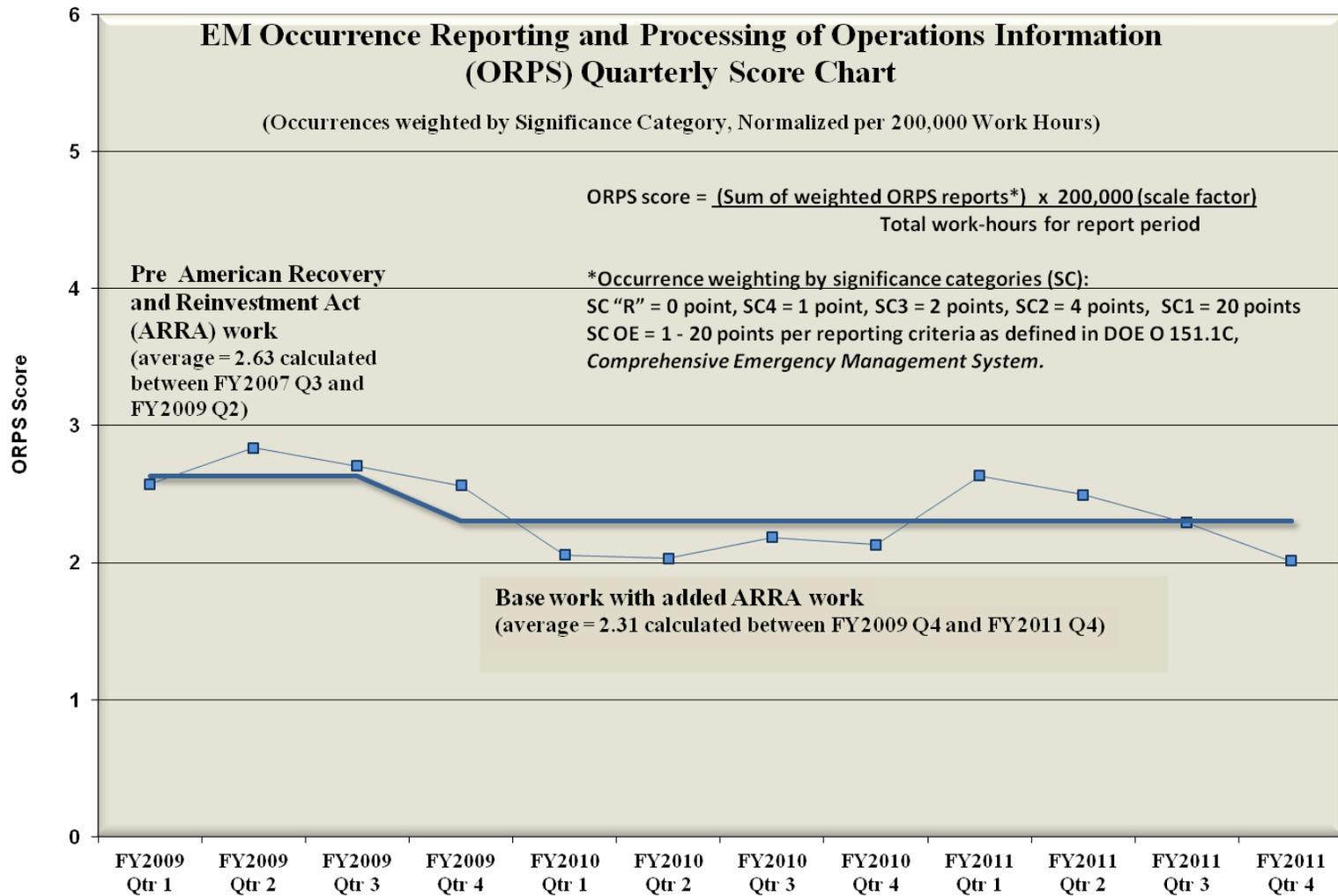


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Normalized Occurrence Reporting



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Safety Culture - Definition

An organization's values and behaviors, modeled by its leaders, and internalized by its members, which serve to make safe performance of work the overriding priority to protect workers, the public, and the environment.

DOE Integrated Safety Management Guide



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Safety Culture - Background

- Initial concern raised by a WTP contractor employee in a July 2010 letter to the DNFSB
- DNFSB issued Recommendation 2011-1, *Safety Culture at the Waste Treatment and Immobilization Plant*. DNFSB recommended the Secretary of Energy:
 - Assert federal control at the highest level and direct, track, and validate the specific corrective actions to be taken to establish a strong safety culture within the WTP project consistent with DOE P 420.1 in both the contractor and Federal workforces
 - Conduct an Extent of Condition Review to determine whether these safety culture weaknesses are limited to the WTP Project
 - Conduct a non-adversarial review of Dr. Tamosaitis' removal and his current treatment by both DOE and contractor management and how that is affecting the safety culture at WTP
- EM takes the issue seriously, and significant actions have been completed, are in progress, or are planned to strengthen EM safety culture



Senior Management Commitment to a Strong Safety Culture

Per S-1/S-2 Dec 5, 2011 Memo *Nuclear Safety at the Department of Energy*:

- DOE is committed to a strong and sustained safety culture, where all employees—from workers with shovels in the ground to their managers all the way up to the Secretary and everyone in between - are energetically pursuing the safe performance of work, encouraging a questioning work environment, and making sure that executing the mission safely is not just a policy statement but a value shared by all
- A strong safety culture is embedded in the Department's objective of management and operational excellence. In particular, DOE strives to provide an open culture that not only embraces, but also actively seeks out evidence of potential problems so that any problems can be corrected promptly
- No one who expresses a safety concern need fear retribution or penalty for stepping forward with a concern. It is against the law, regulation, and DOE policy for either Federal or contractor employees to suffer any such reprisal. There are multiple channels through which to express safety concerns, and it is the policy of the Department to review and respond appropriately to any and all concerns



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Safety Culture - Key Actions Completed

- S-1 accepted the DNFSB's recommendation and provided the DOE Implementation Plan on December 27, 2011
- S-1 and S-2 issued their expectations to the Heads of all Departmental Elements which reinforced issuance of clear and specific safety culture attributes in DOE G 450.4-1C *Integrated Safety Management System (ISMS) Guide* December 2011
- At the request of EM, HSS accelerated its follow-on safety culture review at WTP January 2012
- EM-1 accepted all the recommendations from the HSS safety culture review January 2012
- EM tasked sites with evaluating safety culture and establishing safety-conscious work environments as part of annual Integrated Safety Management and Quality Assurance declarations August 2011
- Implemented an ongoing safety culture oversight process at WTP January 2012



Safety Culture - Key Actions (cont.)

- Strengthened EM and CNS alternate reporting mechanisms (e.g., safety hotlines, e-mail) FY 2011
- Directed BNI to amend the Nuclear Safety and Quality Culture (NSQC) plan to include responses to the HSS follow-on review and the executive-level assessment February 2012
- Revised WTP Project Execution Plan (PEP) to more clearly delineate federal roles, organizational responsibilities, and interfaces at WTP and ORP so that WTP Project reporting relationship is consistent with other EM major acquisition projects
- Deputy Secretary held a WTP “town-hall” meeting and employee meetings July 2011
- ISMS Guide issued with Safety Culture definition, focus areas, and attributes September 2011
- Bechtel National, Incorporated (BNI) sponsored an executive-level assessment of the WTP nuclear safety culture November 2011



Safety Culture Actions Going Forward - WTP

- Develop action plan and complete the Office of River Protection (ORP) actions for safety culture improvements. Includes responses to HSS recommendations made to ORP and changes to employee performance plans that include specific measures for meeting safety culture expectations - April 2012
- Revise the BNI contract performance evaluation plan and performance measures for WTP project reviews to achieve balanced priorities and include safety culture elements - July 2012
- S-1 to reiterate his expectations as the keynote speaker at a WTP town hall meeting and in other meetings with WTP employees - June 2012
- Conduct a validation and effectiveness review of ORP and BNI actions, including the WTP safety culture management process, and other actions contained in BNI NSQC plan - May 2013
- Review the BNI WTP contract and implement appropriate mechanisms to achieve balanced priorities and include safety culture elements - July 2013



Technical Safety Issues at WTP*

- Mixing in Process Vessels
- Hydrogen in Piping and Ancillary Vessels
- Spray Leak Analysis
- Heat Transfer Analysis for Process Vessels in the Pretreatment Facility
- Ammonia Controls
- Erosion/Corrosion Wear Allowances

* **March 8, 2012**, DNFSB letter to Congress on the Status of Significant Unresolved Issues with the Department of Energy's Design and Construction Projects.



Safety Culture Actions Going Forward - EM Complex

- Develop training on safety culture attributes for DOE and contractor key senior leadership - July 2012
- Provide training on safety culture attributes and management behaviors for DOE and contractor key senior leadership and assign the appropriate line organization to sponsor and conduct training for other employees - December 2012
- Prepare guidance (e.g. Lines of Inquiry and techniques), based on safety culture attributes in the ISMS Guide and key lessons learned from the HSS independent assessment, that address Safety Conscious Work Environment (SCWE), for use in self-assessments - July 2012
- Contractors and federal organizations complete SCWE self-assessments and provide reports to the appropriate Headquarters program office - March 2013
- Conduct town hall style meetings across the DOE sites with defense nuclear facilities, where DOE senior managers will meet with employees to emphasize the importance of maintaining strong safety cultures and solicit employee input - March 2013



Safety Culture Actions Going Forward - EM Complex

- Complete a consolidated report from the results of the Defense Nuclear Facility-related SCWE self-assessments and the Independent HSS reviews - May 2013
- Based on the results in the consolidated report, recommend ongoing safety culture management processes for use at DOE defense nuclear facilities - June 2013
- Principal Secretarial Offices (PSOs) direct sites to develop processes and controls for sustainment of a robust safety culture - July 2013
- Sites submit proposed site-specific safety culture sustainment tools to PSOs for approval, including concurrence by DOE Chief of Nuclear Safety, NNSA Chief of Defense Nuclear Safety, or Office of Science Chief of Nuclear Safety - September 2013
- Complete review and PSO approval of site-specific safety culture sustainment tools - December 2013



Safety Culture Actions Going Forward - HSS' Independent Oversight' Role

- Complete independent HSS reviews of five selected major DOE projects - November 2012
 - Salt Waste Processing Facility at Savannah River
 - Uranium Processing Facility at Y-12
 - Chemistry and Metallurgy Research Building Replacement at Los Alamos
 - Waste Solidification Building at Savannah River
 - Sodium Bearing Waste Treatment Facility at Idaho

- HSS will develop and execute a plan for independent oversight of site self-assessments - April 2013



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