

The Hazard Review Board as an ISMS Key Process

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788



P.O. Box 1600
Richland, Washington 99352

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P. M. McEahern
CH2M HILL Plateau Remediation Company

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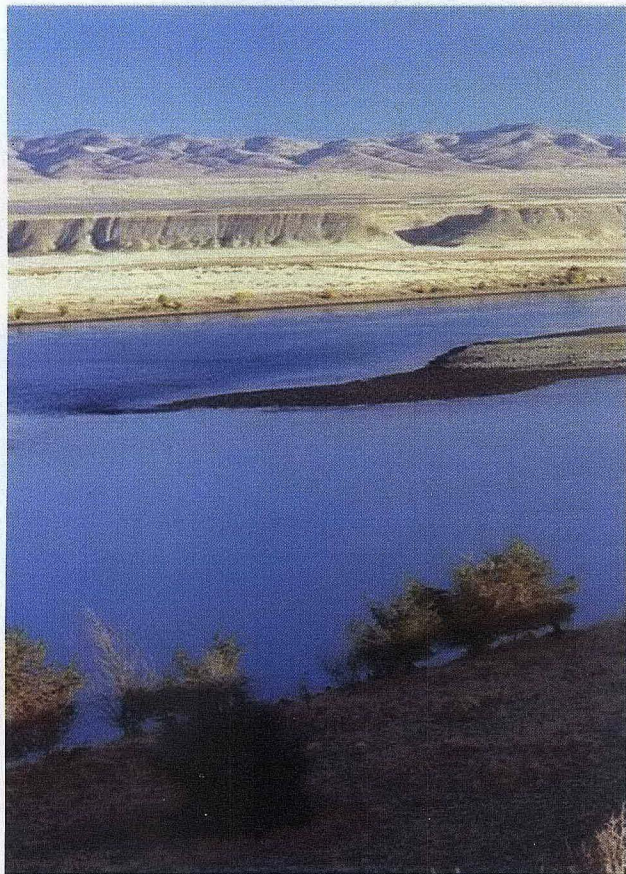
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CH2MHILL
Plateau Remediation Company



The Hazard Review Board as an ISMS Key Process

**Integrated Safety Management
Summit**

Knoxville TN

August 24-27, 2009

Presented By: Patrice McEahern



U.S. DEPARTMENT OF
ENERGY

One Team. One Culture.

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Personal BIO – Patrice McEahern

**Vice President, CH2M HILL Plateau Remediation Company
(CHPRC) Safety, Health, Security and Quality**

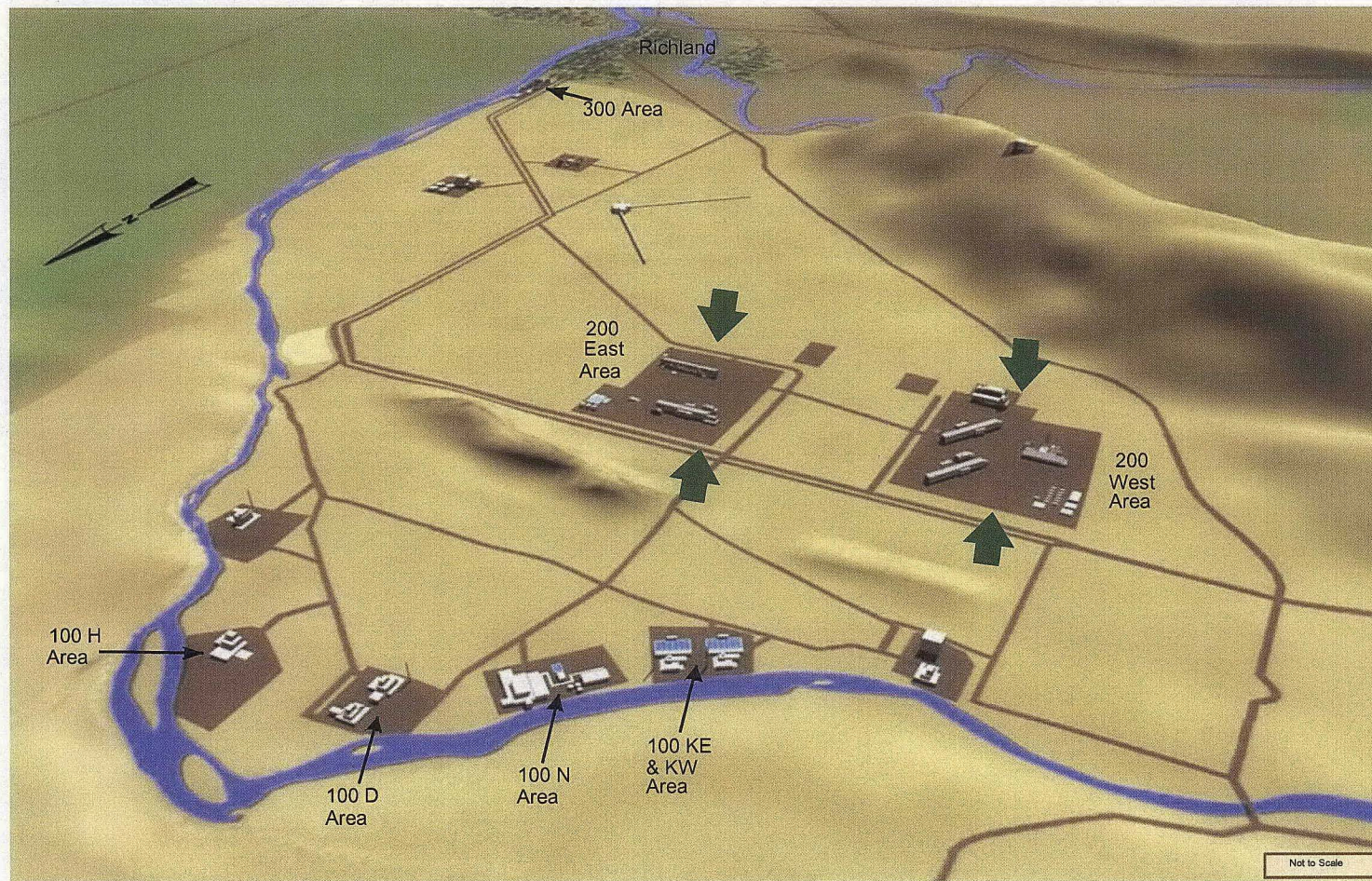
Current responsibilities include management of implementation of the ISMS/EMS for CHPRC. Ms. McEahern's has more than 25 years of nuclear experience that spans both US and Canadian commercial facilities, and several Department of Energy sites. Ms. McEahern's experience includes design, operations, construction, and D&D. She has supported the development of International Atomic Energy Agency standards and environmental restoration activities for the Department of Defense. She has a BS in Engineering Science.



Agenda

- **Introduction**
- **Background**
- **Concept**
- **Process Applications/Triggers**
- **Industrial Safety/Radiological Safety/Chemical Safety**
- **Results**
- **Conclusion**

Introduction - Hanford Site



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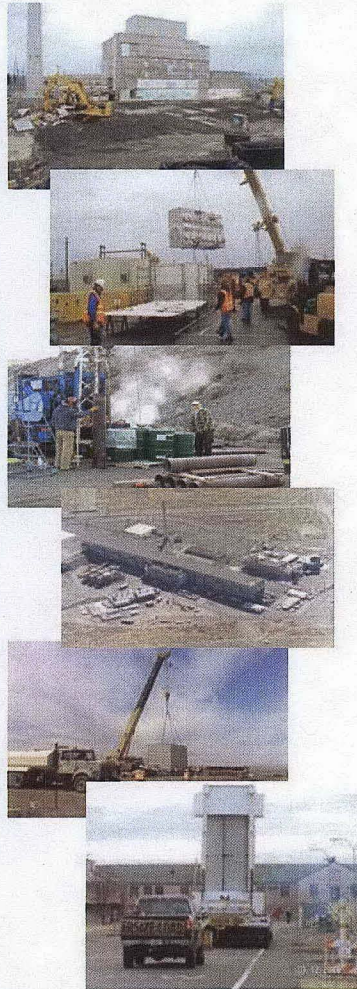


CH2MHILL
Plateau Remediation Company

Introduction - CHPRC Mission

Project Mission:
Decommissioning
and remediating
the Central
Plateau, 100K
Area, 400 Area
and site
groundwater

\$4.5 billion,
5-year contract
with 5-year
option

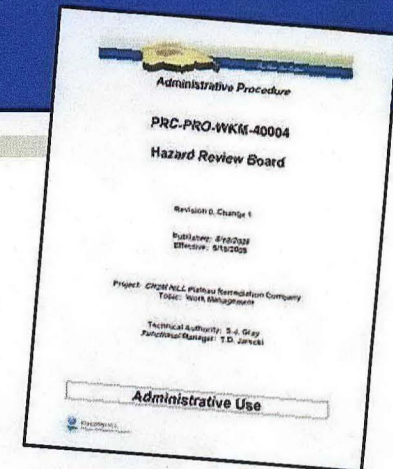


- **Primary Mission**
 - **Protect the Columbia River and safely and efficiently complete the Central Plateau remediation**
- **Overarching Mission Objectives**
 - **Maintain safety envelope, reduce surveillance and maintenance costs, and apply cost reductions to accelerate Plateau remediation**
 - **Maintain environmental compliance**
 - **Reduce risks and long-term liabilities**



Concept – Hazard Review Board

- Created to further review high-hazard or complex work
 - PRC-PRO-WKM-40004
 - Experience from other CH2M HILL projects
- An interactive tool to integrate safety, compliance, quality
 - Is the work truly well defined: what is the goal?
 - Are the hazards identified and adequately controlled?
 - Do we understand the rules and are roles clearly defined?
- Chaired by senior, experienced personnel
- Opportunity for first-line management and work crews to demonstrate readiness to a multi-discipline review board



Process – Composition of Board

- **Required attendees**
 - Project Hazard Review Board (HRB) Chairperson
 - Organizational Representatives
 - Occupational Safety and Industrial Hygiene
 - Facility Radiological Control (required for radiological work)
 - HAMTC/Building Trades Safety Representative or Steward (non-voting)
- **Attendees as per subject area**
 - Work Planning
 - Engineering
 - Environmental Coordinator/Manager (as necessary)
 - Operations
 - Quality
- **Additional Technical experts and other members identified by the HRB Chairperson**

Process – First Line Supervisor Presentation

- **Scope of work**
- **Radiological work permit void limits, safe condition levels, action levels, and dosimetry requirements/response to controls**
- **Hazards**
- **Contingency plans**
- **Proper response to Radiological Work Permit controls**
- **Oversight and supervision requirements for emergency response actions**
- **Radiological and safety controls and monitoring associated with the work and communicating to workers**
- **Lessons learned for similar activities**

Process Applications/Triggers

- First time or infrequent tasks
- Temporary modification/changes to a documented safety analysis (DSA) or a positive unreviewed safety question (USQ)
- Radiological dose beyond established limits
- Self-contained breathing apparatus (SCBA) due to immediate danger to life or health atmosphere
- Surface penetrations of walls, floors, or ceilings deeper than 2 inches
- Severe consequences resulting from single-control failures during non-routine tasks

Process Applications/Triggers (cont.)

- **Non-routine complex work**
- **Hoisting and rigging activities involving critical lifts**
- **Work on energized equipment/components beyond threshold values (electrical, fluid systems, steam or high temperature/pressure)**
- **System used differently from approved design/function**
- **Exposure to asbestos, lead, beryllium, and/or other chemicals at levels greater than 100% of the occupational exposure limit (OEL) or established action levels**

Process Applications/Triggers (cont.)

- Chemical hazards that are shock sensitive or chemicals not in original containers
- Fissile material exceeding minimum critical mass, or performing an activity that relies upon a single contingency
- Potential work that may enter the Limited Approach Boundary
- Personal protective equipment upgraded from a Chemical Protective Clothing Level B to A ensemble
- Other work defined by the Project Manager/Vice President

Results

- **Reviewed all work at contract transition**
 - Communicated management expectations
 - Identified latent organizational weaknesses
 - Required revision of most work packages
- **Engaged management in daily activities**
- **Promoted walk-downs and use of integrated project teams**

Conclusion – What we do with the HRB Process

- **Drives interaction and involvement**
 - Direct review of work scopes and documents by all staff
 - Facilitates improvement in procedures and controls
 - Drives lessons learned and experience into planning
 - Creates opportunity for communication at all levels
- **Creates ownership of safety, compliance, and continuous improvement**
 - I know what I am doing
 - I know why I am doing it
 - I am in charge
- **Provides a good tool for any process that presents alternate risk**
 - Subcontractor oversight