

# Fluor Hanford's Respiratory Protection Program: *Innovations at a Multi-Contractor Site*

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Fluor Hanford's *Respiratory Protection Program Administrator*

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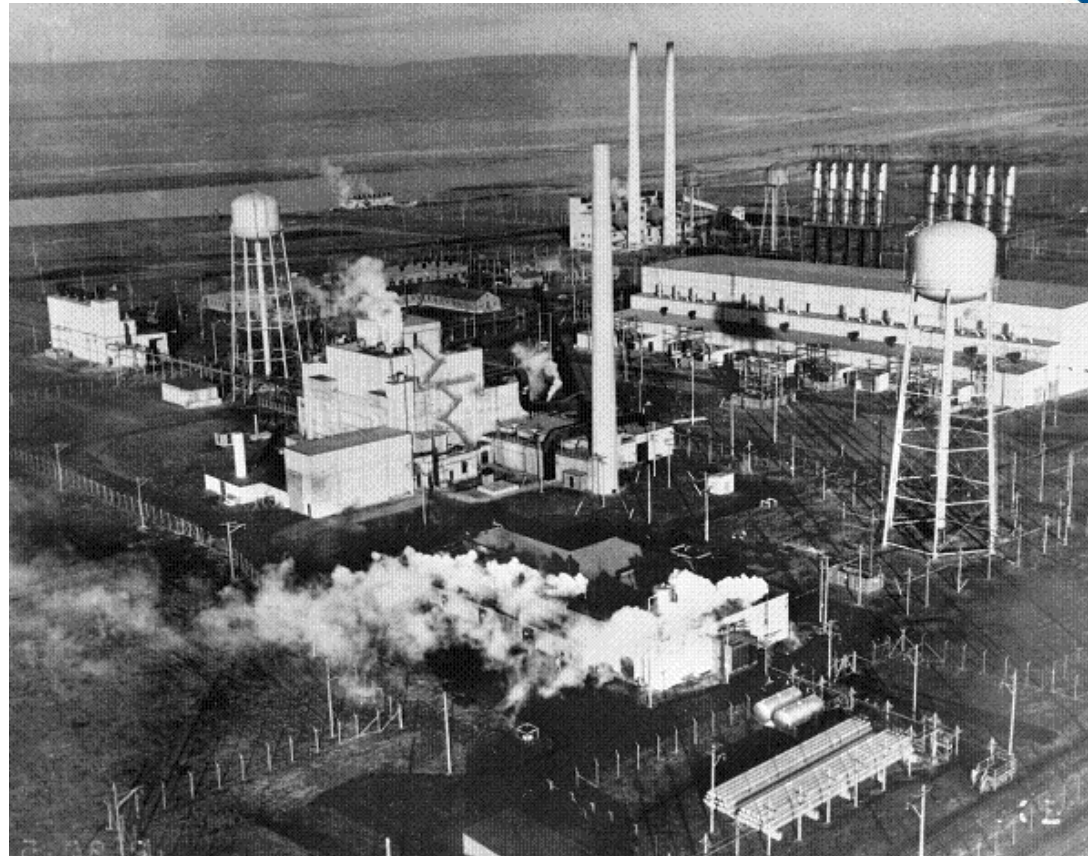
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# Hanford Description



- ◆ In the Columbia River Basin in South Central Washington State
- ◆ 586 square miles
- ◆ Nine reactors & supporting facilities
- ◆ Largest U.S. Cleanup project
- ◆ Tri-Party Clean-up Agreement (RCRA/CERCLA)

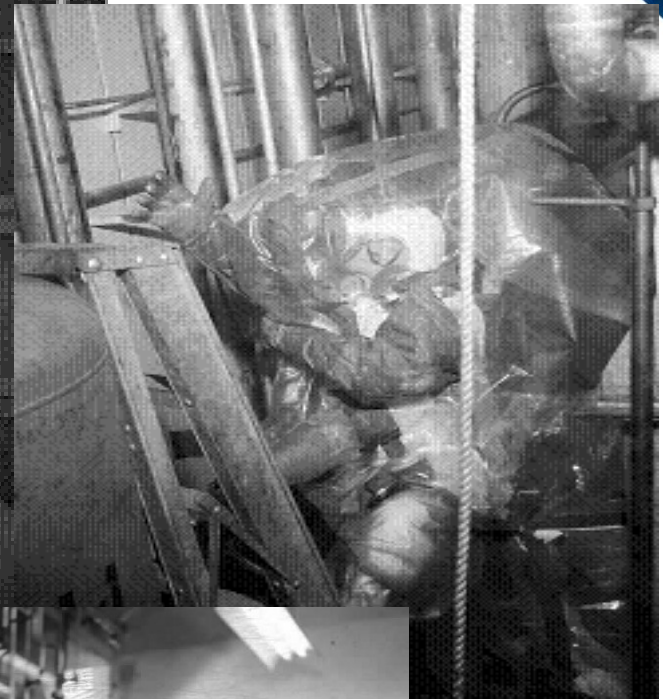
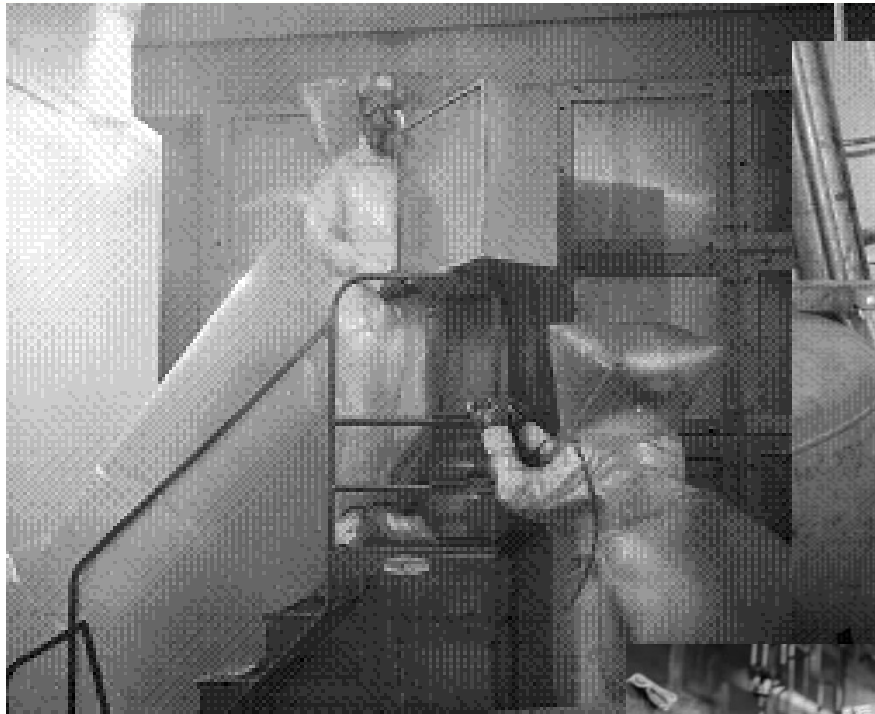
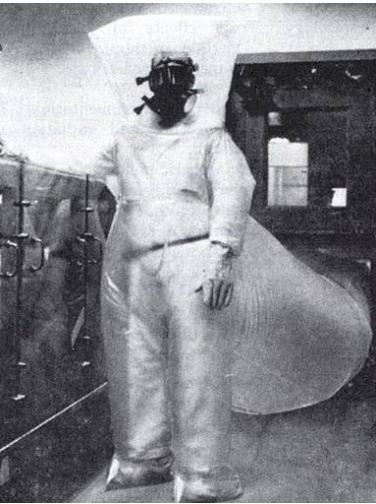


Hanford 'B-Reactor' Complex

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# DOE History at Hanford



Early plastic air suits used at Hanford *circa* 1950s

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# Hanford Clean-Up Challenges



- ◆ More than 50 million gallons of high-level radioactive liquid waste in 177 underground storage tanks
- ◆ 2,300 tons of spent nuclear fuel
- ◆ 12 tons of plutonium in various forms
- ◆ 25 million cubic feet of buried or stored solid waste
- ◆ 270 billion gallons of contaminated groundwater
- ◆ More than 1,700 waste sites
- ◆ About 500 contaminated facilities



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# Hanford Current Activities



## Missions

- ◆ Site Services
- ◆ Spent Nuclear Fuels
- ◆ Waste Management Project
- ◆ Nuclear Material Stabilization
- ◆ River Corridor Project
- ◆ Decommissioning and Demolition
- ◆ Analytical Labs
- ◆ Groundwater Remediation
- ◆ Safeguards & Security

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# Hanford Respiratory Equipment Users



- ◆ Operations & survey radiation protection
- ◆ Maintenance and repair: welding, painting, sandblasting
- ◆ Industrial: beryllium, asbestos, lead, silica, isocyanates, Cr+6
- ◆ D&D and construction sub-contractors' respiratory protection
- ◆ Hanford Fire Dept: Fire and Emergency Response
- ◆ Security Forces: CBRN respirators
- ◆ Voluntary use: dust storms, volcanic ash, nuisance dusts, bioaerosols

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# Typical Work Activities



241-Z Cell D6  
12-08-06  
Size Reducing Sump  
Discharge Header

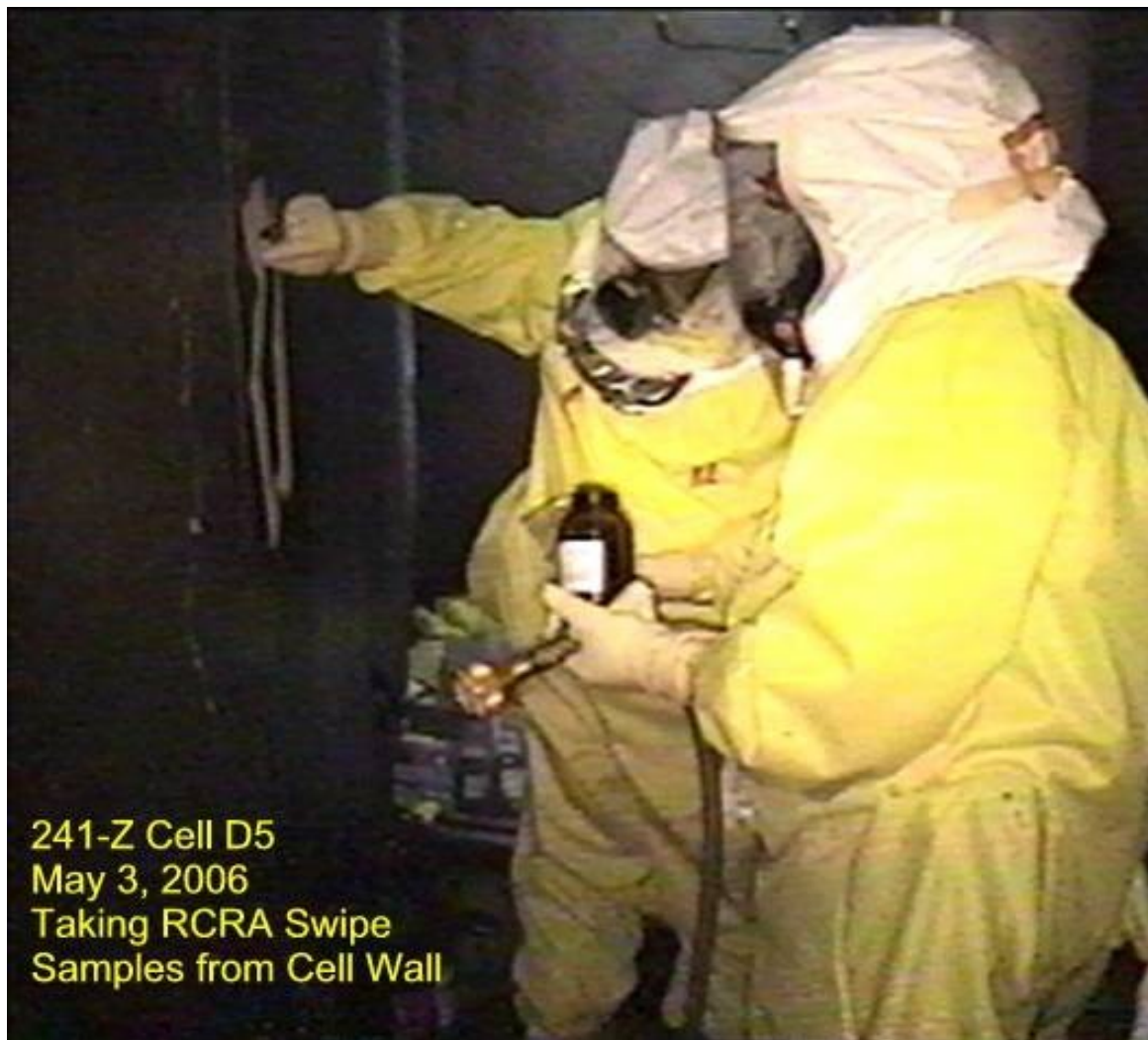


← 18" Flex Duct  
Ventilation for  
Contamination Control

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# Typical Work Activities

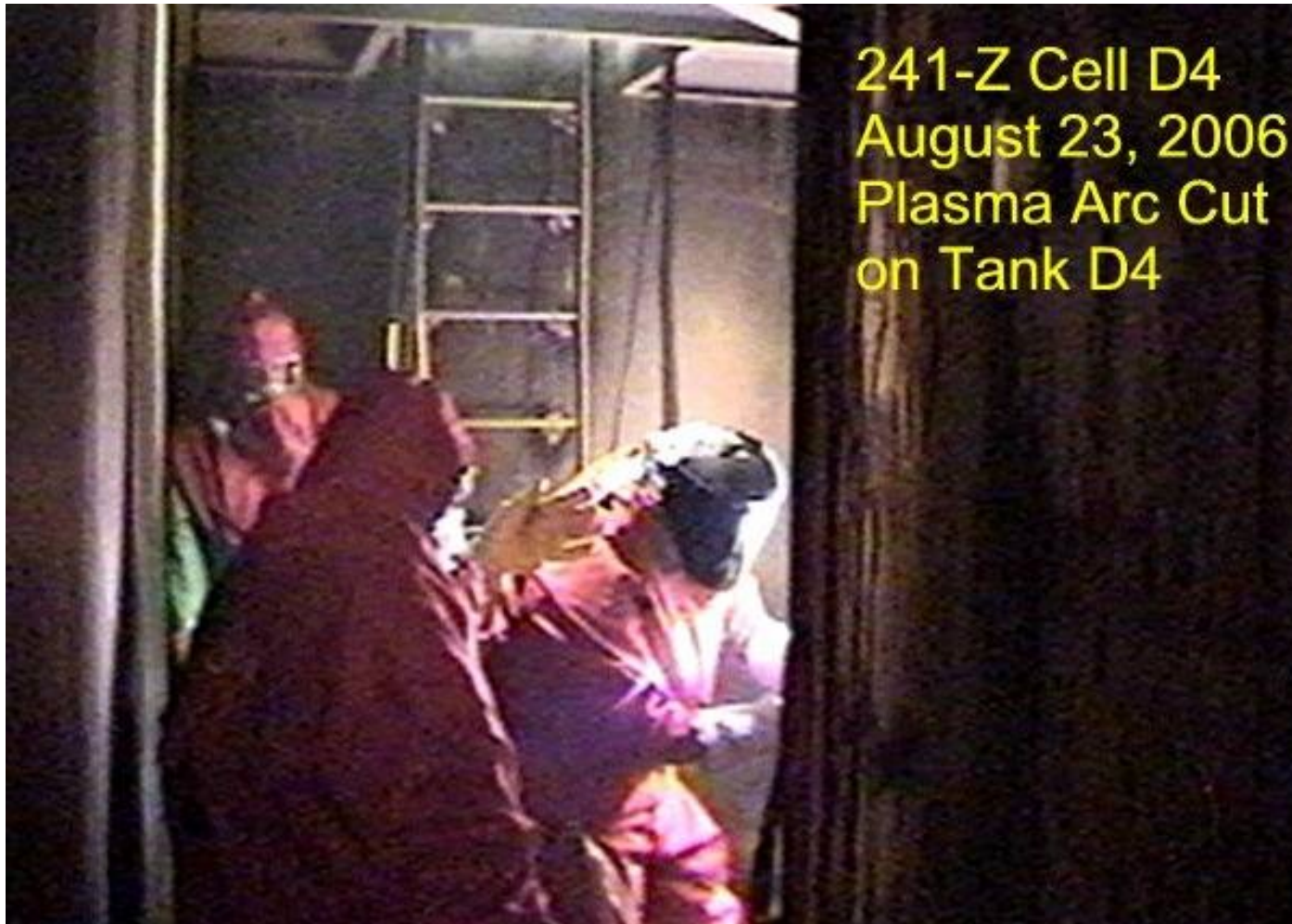


241-Z Cell D5  
May 3, 2006  
Taking RCRA Swipe  
Samples from Cell Wall

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# Typical Work Activities

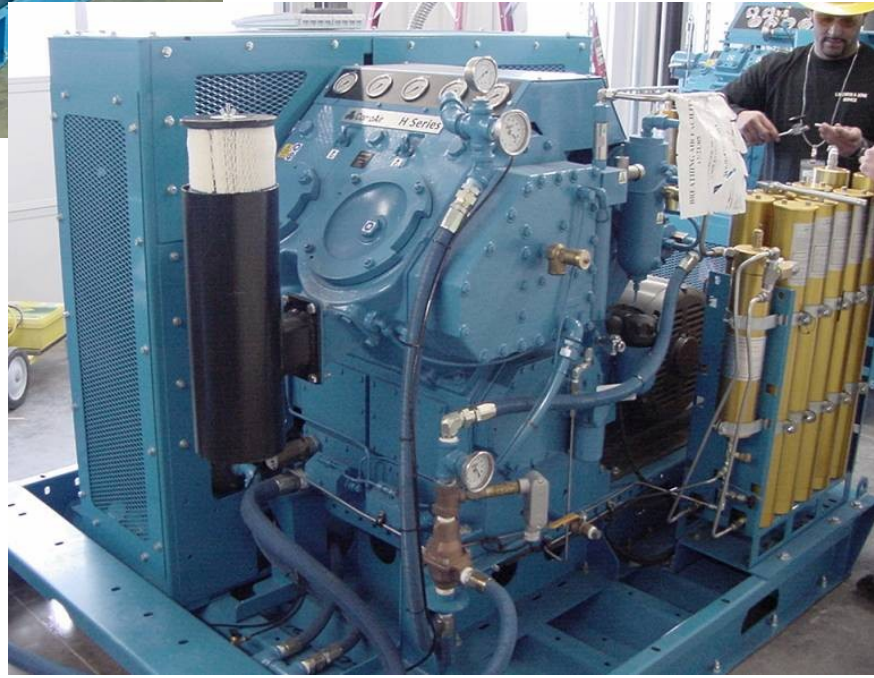


241-Z Cell D4  
August 23, 2006  
Plasma Arc Cut  
on Tank D4

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# SCBA filling station



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# FH Respiratory Program Scope



- ◆ 100's of SCBA, SAR, APR and PAPRs and 1000's of FFAPR masks. High turnover due to radiological contamination
- ◆ ~\$3M/year purchase of respiratory protection equipment and consumable items
- ◆ HAMMER trains 3,700 workers/year and conducts 6,600 fit tests/year
- ◆ Fit tests employees of 63 different organizations
- ◆ Authorized Scott/MSA Repair shop maintained by Hanford Fire Dept
- ◆ Hanford Fire Dept: Fire and Emergency Response
- ◆ Air supply compressors, SCBA filling, bottle carts and air testing



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# Expectations for the Respiratory Protection Program



- ◆ Protect workers - ALARA
- ◆ Increase worker confidence in respiratory protection
- ◆ Simplify and coordinate conflicting programs
- ◆ Meet all applicable compliance requirements
  - 10 CFR 851 Implementation
- ◆ Effectively manage large and diverse equipment inventory
  - Modernize equipment, methods and procedures



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# 2007 Improvement Plan



## ◆ Program Management

- Procedure Revision and Updates
- Establish flow down of requirements

## ◆ Communications

- Web log, meeting minutes, site visits
- Internal and external organizational communications

## ◆ Quality Control

- Approved equipment list, QL-3

## ◆ Procurement and Inventory

- Eliminated P-Card purchases
- Implemented first blanket contract \$1.5M (saves 15-25%)

## ◆ Training

- SME training on Program Implementation
- Including training organization in issue resolution and communication



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# Internal Program Communication



- ◆ Establish project level designated SMEs and training
- ◆ Monthly committee meetings
- ◆ Mask Issuance Training
- ◆ Bulletins and Lessons Learned
- ◆ Tracking log of incidents
- ◆ Internal Website
- ◆ Bar-code system for Inventory Control



***'World Class' experts presenting training course to respiratory protection staff***

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# External Program Communication

- ◆ Monthly Inter-contractor RPPA Meeting
  - Development of charter to authorize group decisions
  - Sharing and coordinating of regional practices
- ◆ DOE RPPA Group
  - Leverage complex-wide experiences and share best practices
- ◆ ALARA Center - Best exposure control practices

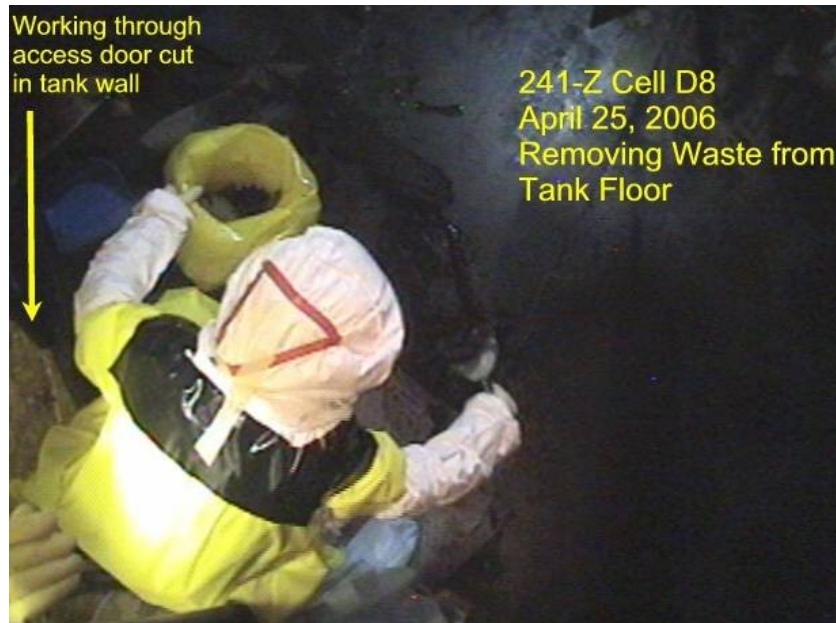


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# External Program Communications (Continued)

- ◆ EFCOG -- Best Practices in Energy Sector
- ◆ AIHA Respiratory Protection Committee
  - Involvement in developing standards and commenting on proposed regulations
  - Best Practices in commercial sector



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# Compliance Assurance



- ◆ Identify vulnerabilities and opportunities for improvement resulting from established practices.
- ◆ Identify and prioritize corrective action issues.
- ◆ Change scope of program from multiple independent projects to a 'coordinated program'.
- ◆ Develop of comprehensive requirements 'flow-down'.



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# Summary



- ◆ Rapid improvements resulted from focused management plan objectives
- ◆ Cost savings can help offset improvement costs
- ◆ Improved internal and external coordination results in better practices
- ◆ The foundation for an appropriate compliance based program needs to be established

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