

ICP

IDAHO CLEANUP PROJECT

Changing Landscape at Idaho Site

Presented by

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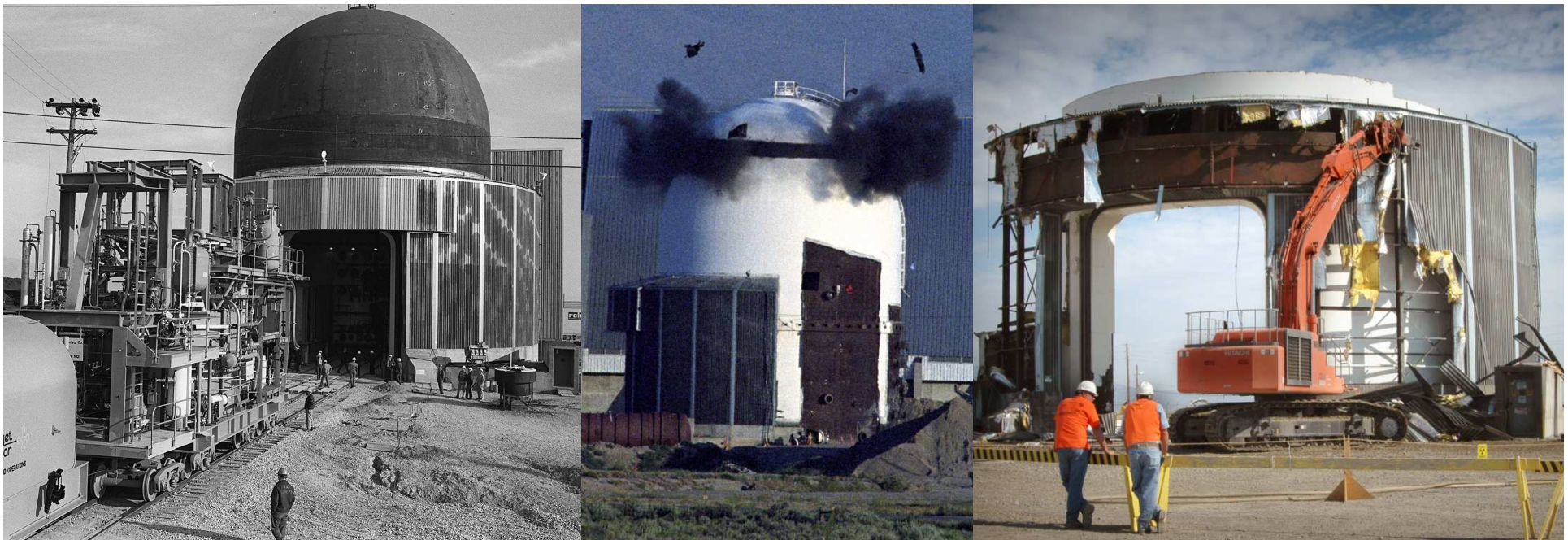
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Challenges



- ◆ High hazard and radiological environments
- ◆ Unique industrial safety hazards
- ◆ Regulatory - historically significant properties
- ◆ Re-route of existing infrastructures and systems
- ◆ Demolition near adjacent operating facilities
- ◆ Workforce mobilization and remobilization

Loss of Fluid Test Reactor



- ◆ **Demolish 221 facilities and structures**
 - 171 base scope
 - 50 additional made possible by Recovery Act funding and cost savings
- ◆ **Budget**
 - \$540 million base
 - \$132 million Recovery Act
- ◆ **Facility types**

1950s-era Reactors



- ◆ **Loss of Fluid Test**
- ◆ **Engineering Test Reactor**
- ◆ **Power Burst Facility**
- ◆ **Material Test Reactor**
- ◆ **Zero Power Physics Reactor**
- ◆ **Experimental Breeder Reactor II**

Engineering Test Reactor vessel en route to Idaho CERCLA Disposal Facility



Monolithic Hot Shops and Cells



- ◆ Test Area North Hot Shop, high bays, spent fuel storage basin
- ◆ Idaho Nuclear Technology and Engineering Center (INTEC) Fuel Reprocessing Complex
- ◆ Advanced Test Reactor hot cell



TAN Hot Shop demo

Buried Waste Retrieval Enclosures



- ◆ Accelerated Retrieval Projects I and VI
- ◆ Cradle to grave

ARP VI Pull



Other

- ◆ Hazardous tank systems
- ◆ Coal-fired generation facilities
- ◆ Analytical laboratories

Coal-fired generation plant demo

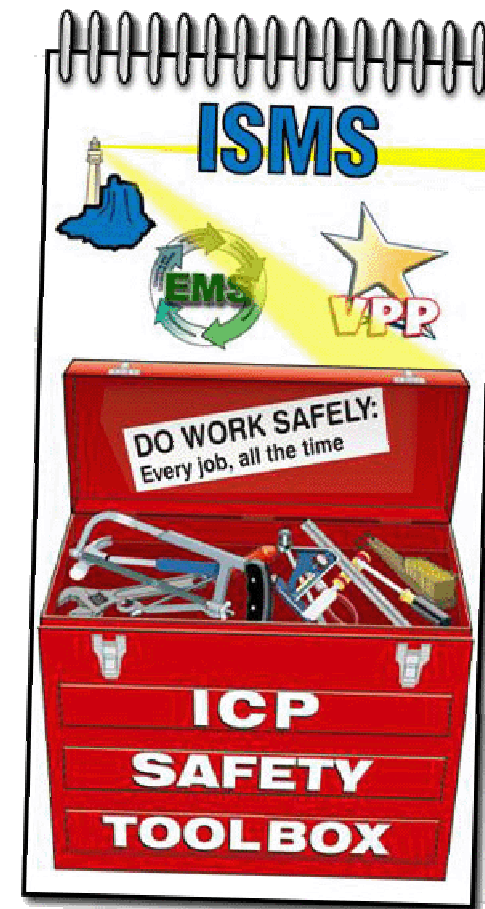


- ◆ **Total Recordable Case Rate**
 - 1.3 (seven year average)
 - One third of national construction industry average (3.9)
- ◆ **Radiological**
 - Zero reportable personnel intakes over life of the project
- ◆ **With focus on safety, production followed**

Decontamination and decommissioning activities on floor of the Experimental Breeder Reactor II



- ◆ **Training**
 - Streamlined human resources, regulatory, and project training (Block)
 - Emphasized safety culture
 - On the job training for specific job assignments
 - ◆ Extensive use of mockups
 - “Tool Box” training
- ◆ **Crew blending to ensure mentoring process**
- ◆ **Extensive management presence in field**



Regulatory Approach



◆ Teamwork and Partnerships

- Department of Energy
- Idaho Department of Environmental Quality and Environmental Protection Agency
- Other stakeholders (Tribal Nations, Citizens Advisory Board, public)



Citizens Advisory
Board tours
Materials and
Fuels Complex

Regulatory Approach



Table 5-1. Major aspects of the four engineering evaluation/cost analysis alternatives.

DOE/ID-11272
Revision 0

End State	Alternative 1	Alternative 2	Alternative 3	Alternative 4
	No Action	Grouting ETR vessel in place	Removal and disposal of ETR vessel at onsite disposal facility	Removal and disposal of ETR vessel at offsite disposal facility
Reactor building remains	✓			
Reactor building demolished to grade		✓	✓	✓
ETR vessel remains in place	✓	✓		
ETR vessel removed			✓	✓
ETR vessel disposed of at onsite disposal facility			✓	
ETR vessel disposed of offsite				✓

Idaho Cleanup Project

Regulatory Approach

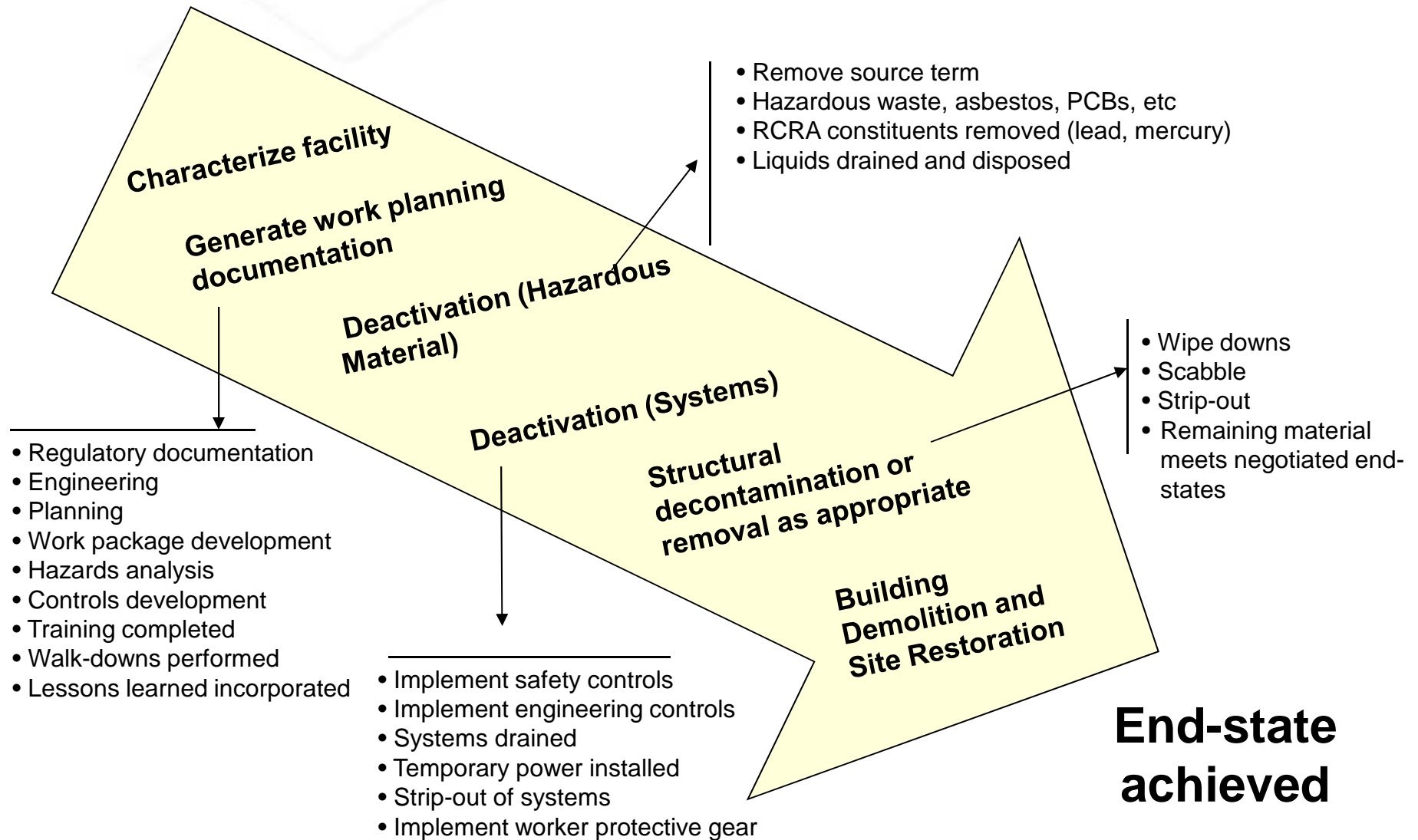


- **Final disposal pathway**
 - Expanded use of onsite disposal facility, Idaho CERCLA Disposal Facility
 - Industrial landfills
 - Major contributor to cost and schedule savings



Idaho CERCLA
Disposal Facility

Technical Approach



- ◆ Regulatory strategy
- ◆ Centralized project teams
- ◆ Extensive use of mockups
- ◆ Craft input to design of long-reach tools for removal of highly radioactive components
- ◆ Hot wax injection
- ◆ Use of explosives on contaminated facilities
- ◆ Passivated sodium treatment process

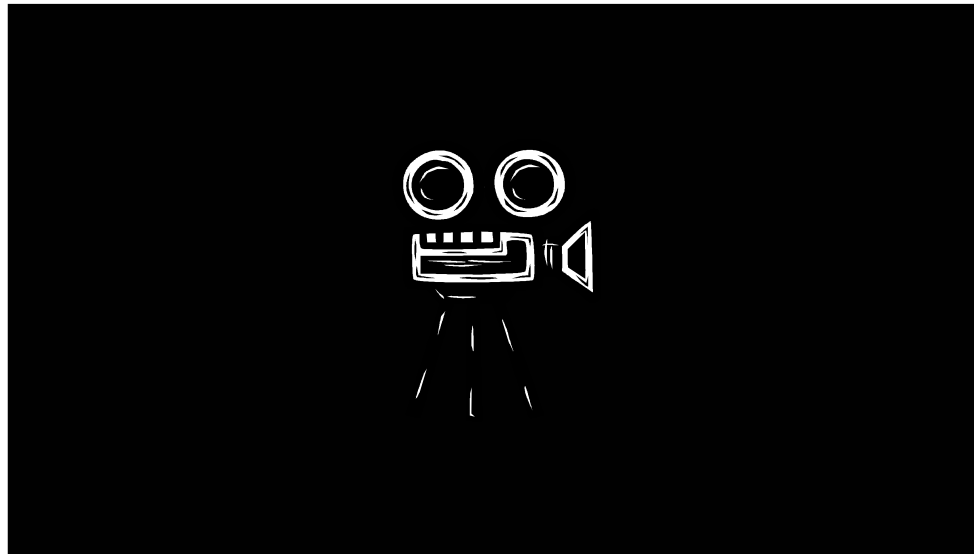
Preparations for
passivated sodium treatment



632 Hot Cell



Highlights



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Outcomes



- ◆ **Demolished 221 facilities and structures**
- ◆ **Reduced environmental footprint by more than two million square feet while protecting the Snake River Plain Aquifer, sole drinking water source to 300,000 residents**
- ◆ **Completed**
 - One year ahead of schedule
 - \$312 million under budget

One-million pound hot cell en route to Idaho CERCLA Disposal Facility

