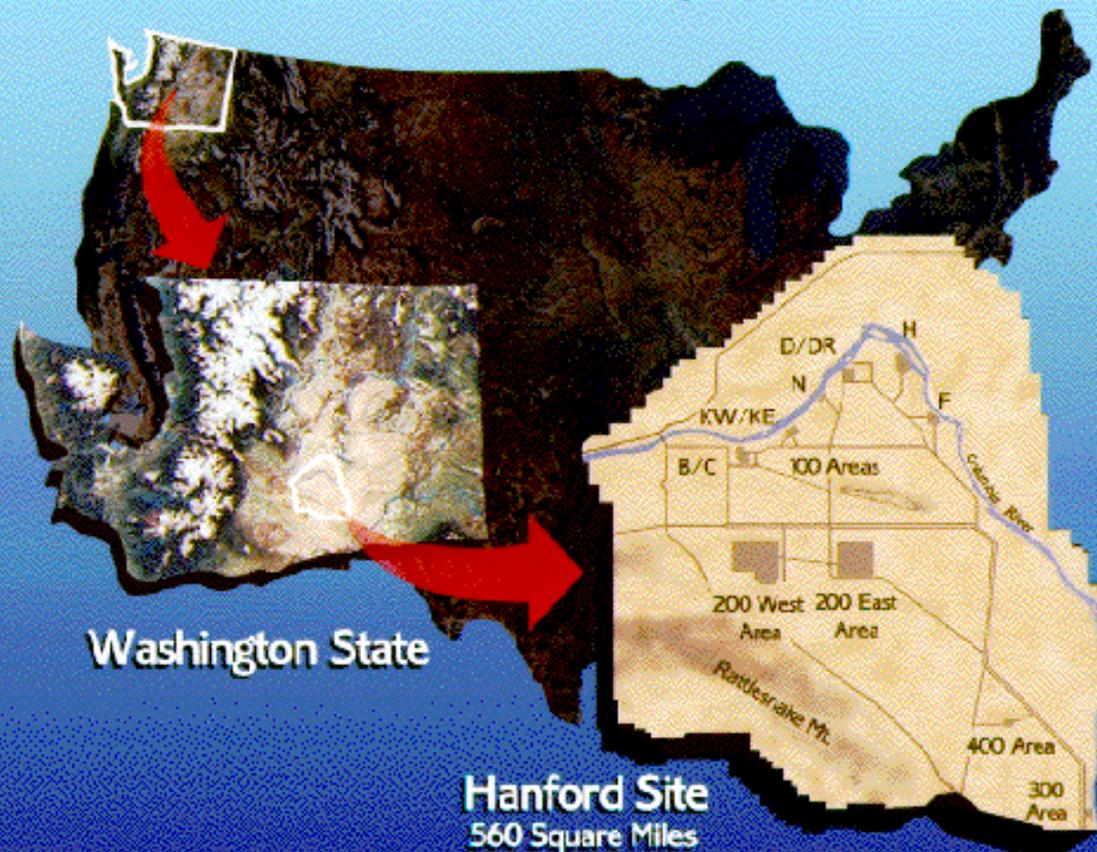


DOE Environmental Restoration and Robotics: The Hanford Site

Hanford Site Location Map





Sharon Bailey

Robotics Program Manager

Pacific Northwest National Laboratory

Office of Science & Technology (EM-50)

Robotics Crosscut Program Hanford Site

Representative

Battelle

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Projects Utilizing Robotics on the Hanford Site

Fluor Hanford:

- River Corridor Project
- Waste Management Project

CH2MHill (CHG):

- Tank Farms, Project W-314

Bechtel Hanford (BHI):

- Canyon Disposition Initiative



River Corridor Project: Hot Cell Environment Examples





Fluor Hanford River Corridor Project

Dispersible Removal System

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324 B-Cell Trench, Sump and Floor Clean-up

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Fluor Hanford
River Corridor
Project

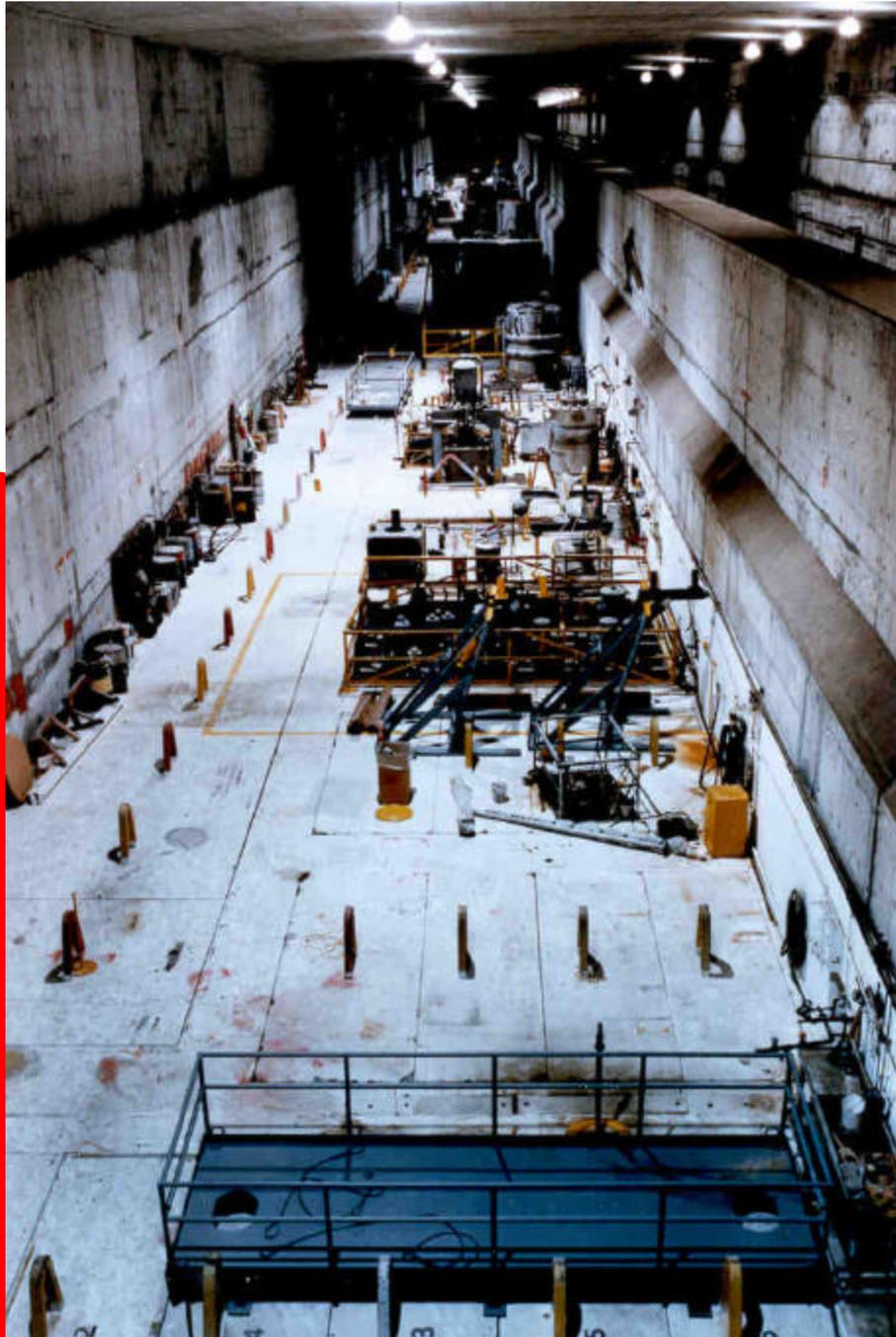
Robotic Work
Platform

SAMM
Manipulator
Totem Mast

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Large Hot Cell Deactivation

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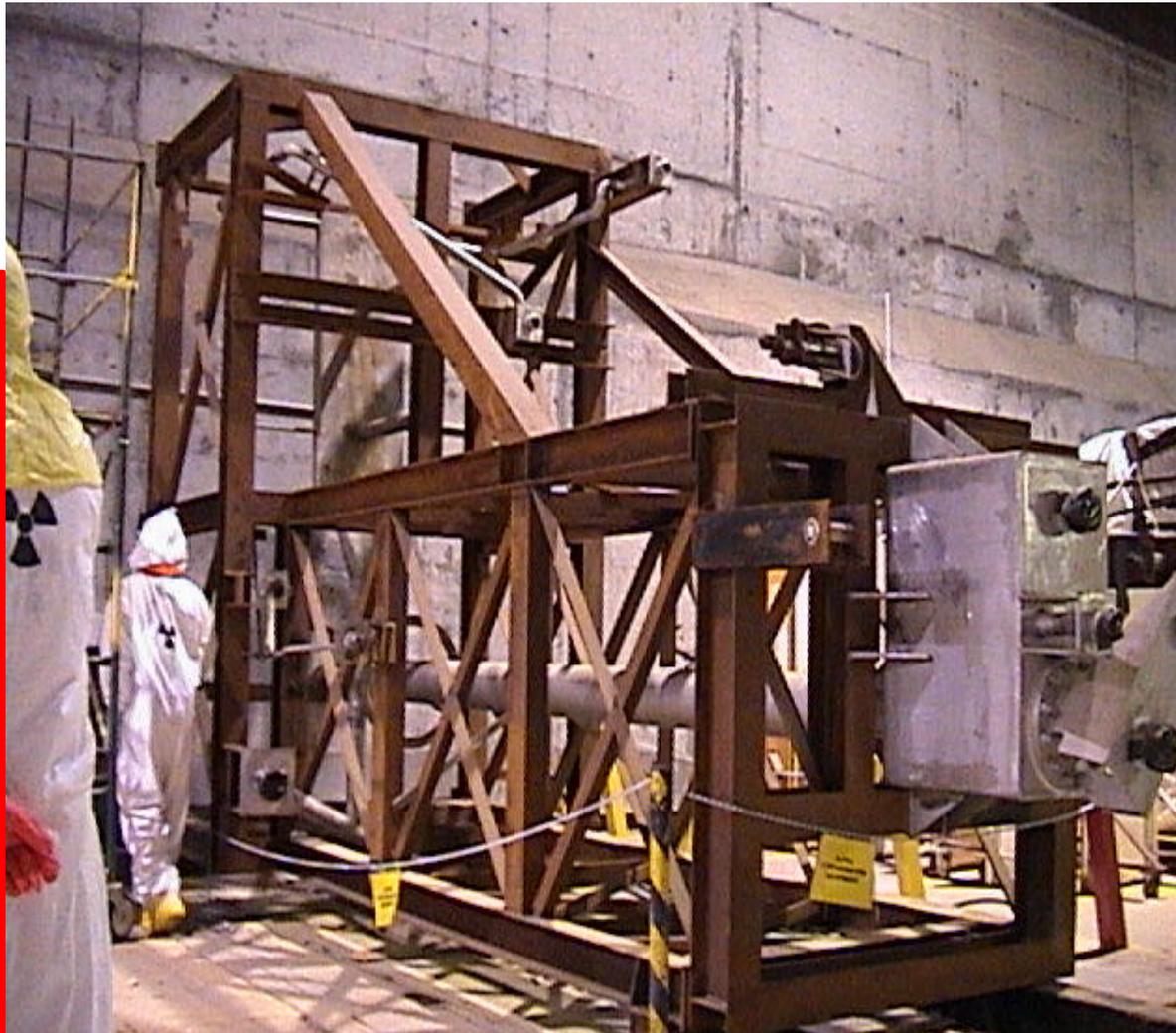


Waste Management
Project:

Canyon Deck
Environment

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Fluor
Hanford
Waste
Mngmnt
Project

Remote
Size
Reduction
Tools &
Platforms

Battelle

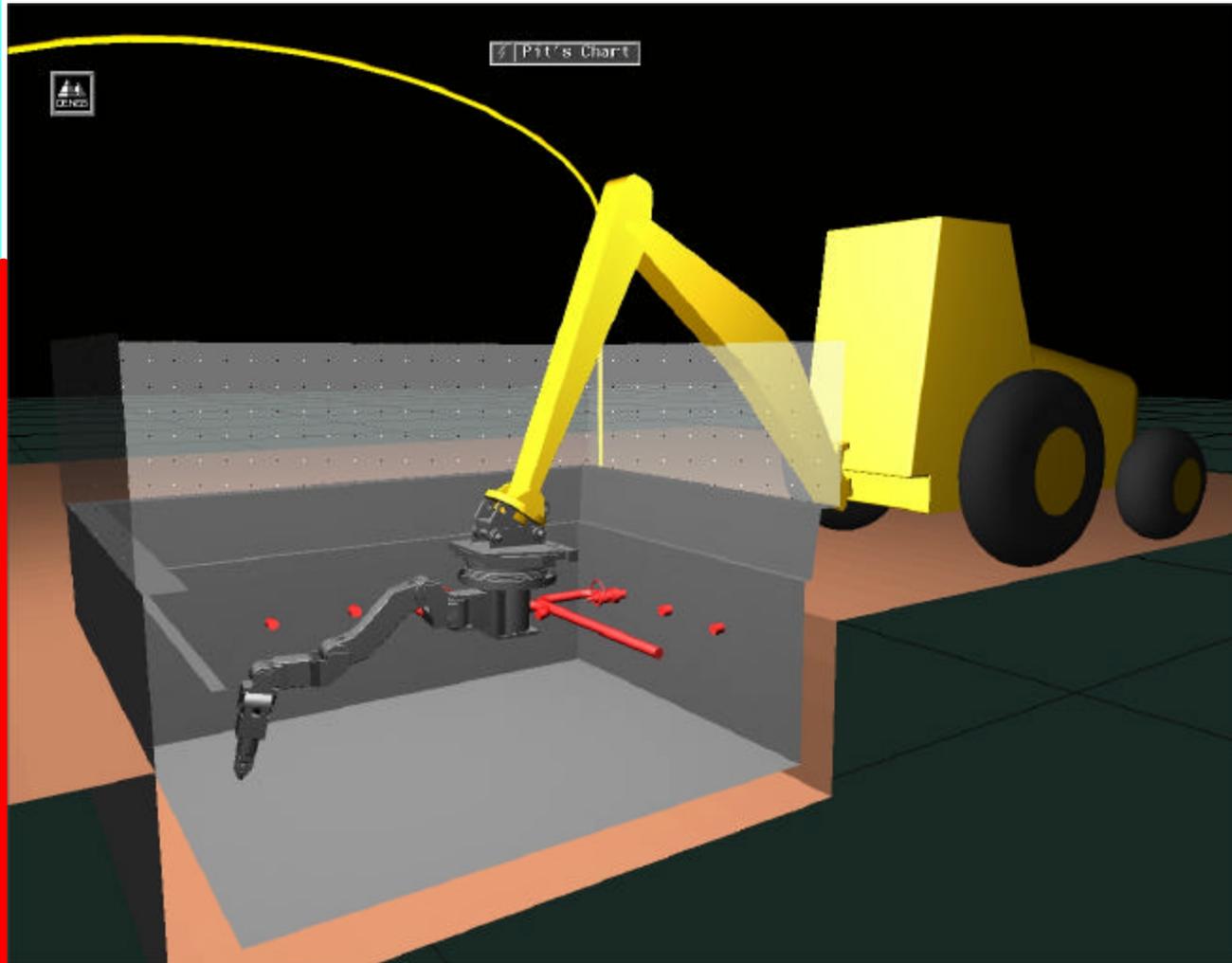
RH-TRU Long-Length Equipment

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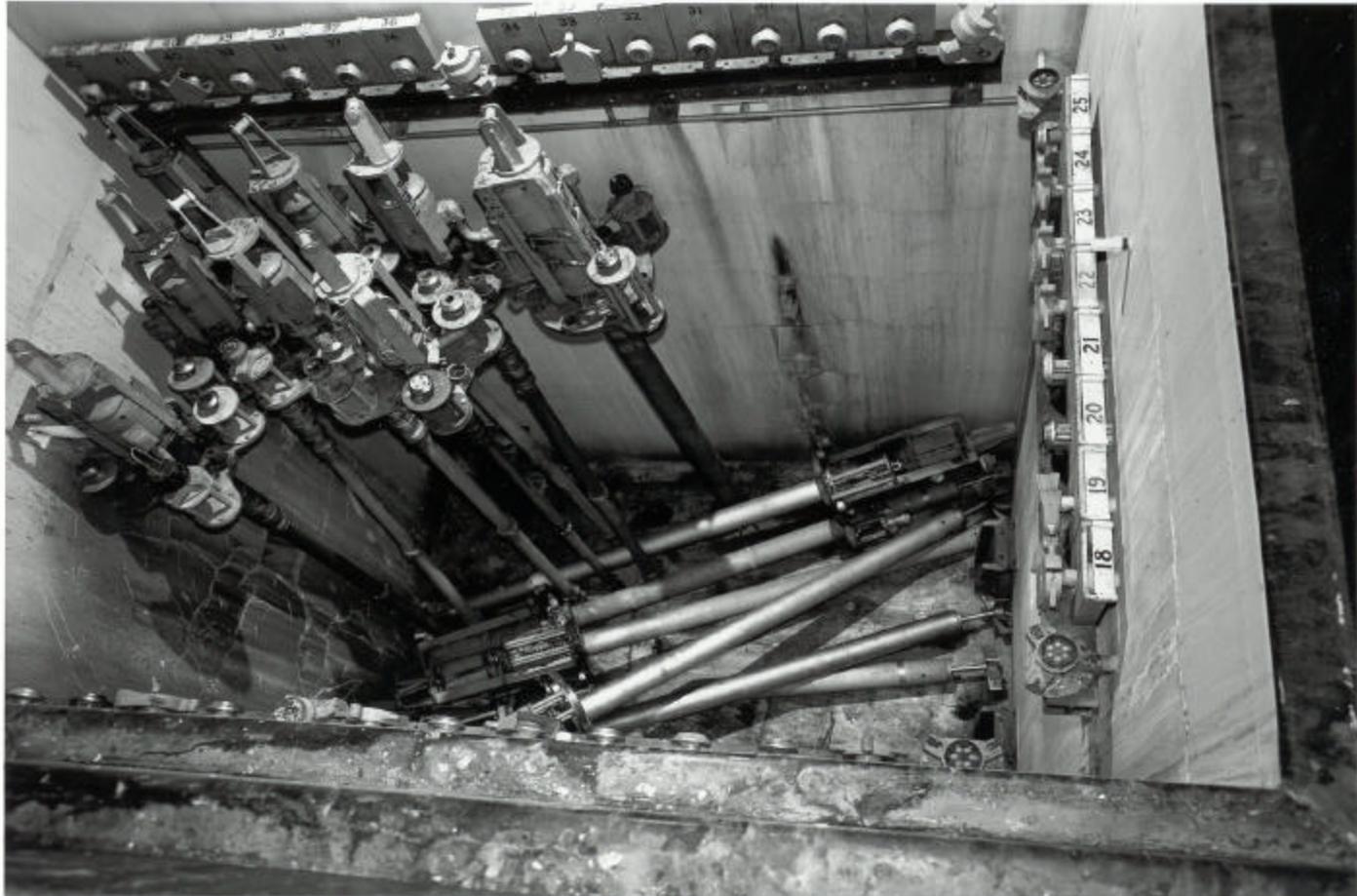
CHG Project W-314: Tank Farm Pit Environment Example



Pit Viper System



Canyon Disposition Initiative: U-Plant Process Cell Environment Example





Bechtel
Hanford

Canyon
Disposition
Initiative

Brokk
Remote
Concrete
Coring
System

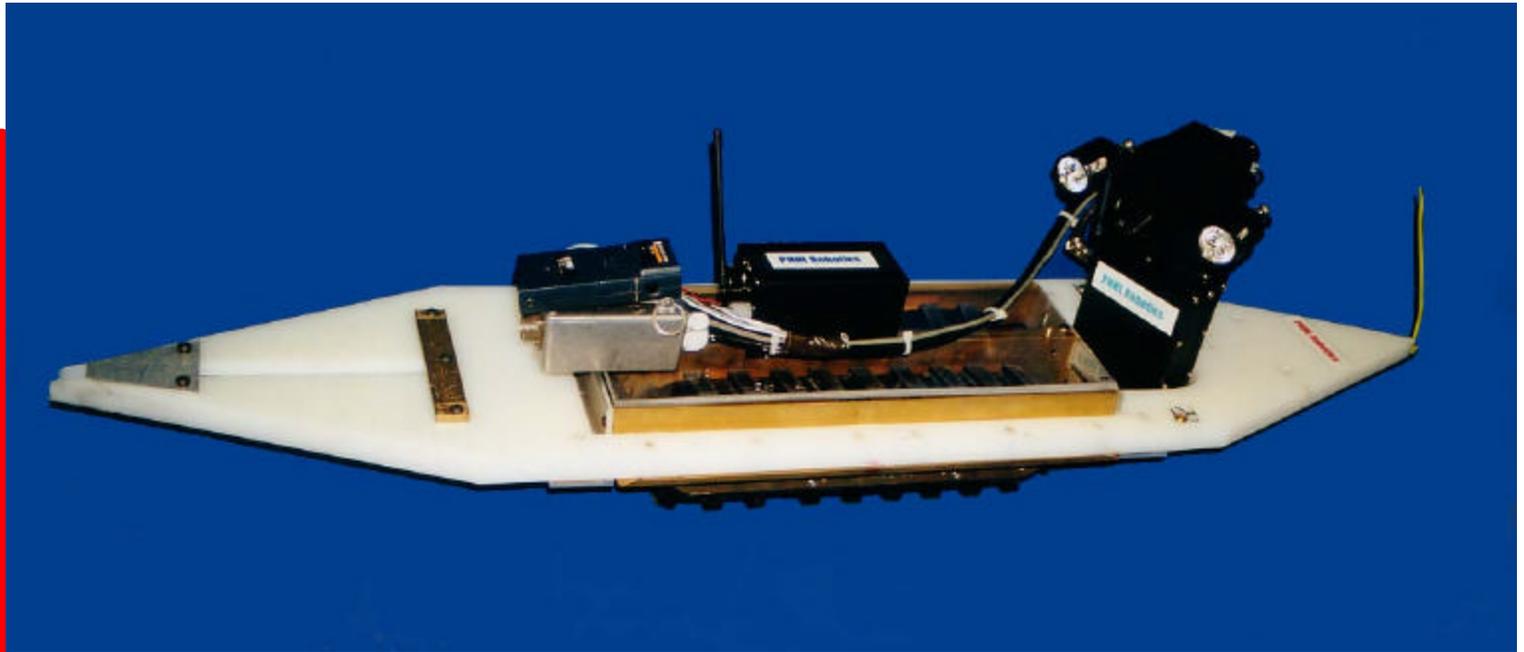
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Canyon Building Drain Line Environment



Bechtel Hanford Canyon Disposition Initiative



Drain Line Inspection Robot



Canyon Building Ventilation Tunnel Environment



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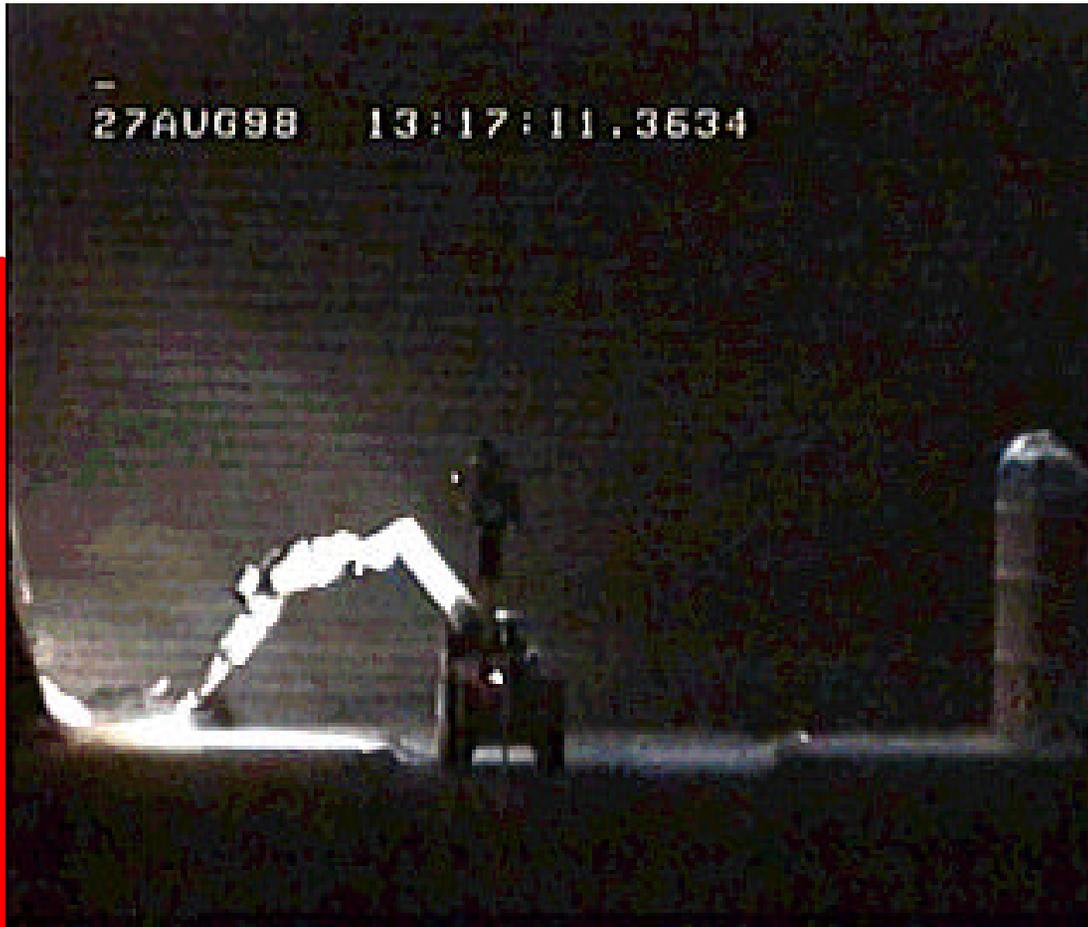
Bechtel
Hanford

Canyon
Disposition
Initiative

Ventilation
Tunnel
Inspection
Robot

Battelle

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Bechtel
Hanford

Canyon
Disposition
Initiative

Railroad
Tunnel
Inspection
Robot

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Challenges Facing Use of Robotics at Hanford

- Single year funding cycles
- UL certification on new equipment
- Strong desire on site to have commercial off-the-shelf systems -- to eliminate the development and prototyping phases. Because of the unique constraints at Hanford, this is frequently impossible.



Future of Robotics at Hanford

- Still a large need for:
 - Characterization platforms
 - Cleaning/decontamination platforms
 - Remote systems to remove the worker from the zone
- Dose limits and safety concerns pushing the use of remote systems
- Little opportunity for early stage R&D