

Aligning Leadership and Safety at ICP's Accelerated Retrieval Project

**Mark Fallon, President,
Nuclear Business Group**

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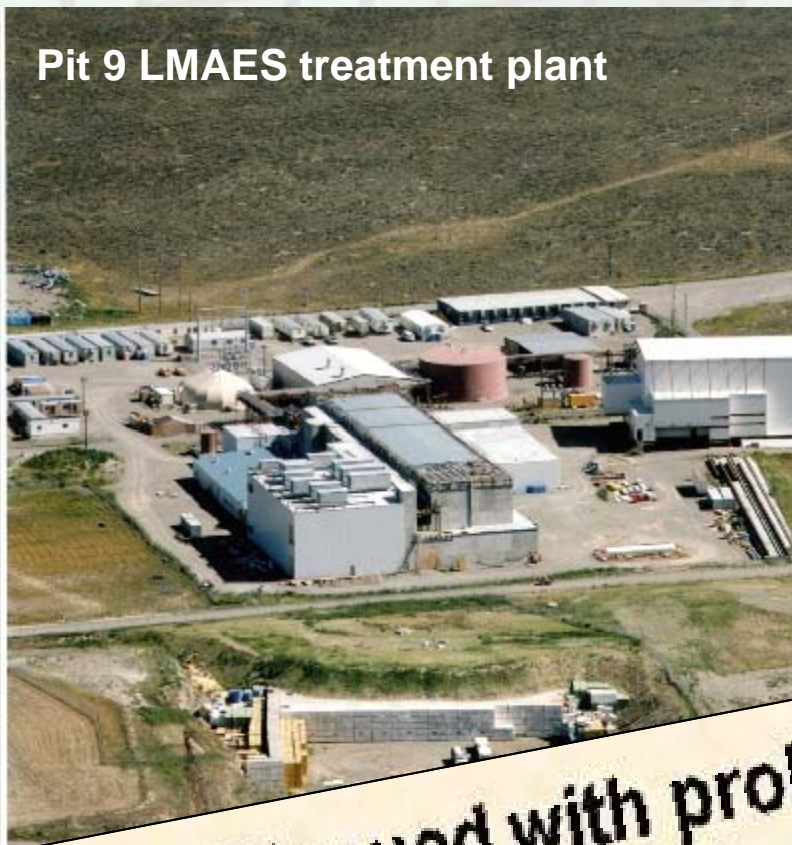
Initially, workers stacked barrels and boxes. In the mid 1960s, waste was dumped straight from trucks to reduce worker exposure. DOE returned to stacking of waste in the 1970s.

The Subsurface Disposal Area (SDA)

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Pit 9 LMAES treatment plant



**Plagued with problems:
Pit 9 cleanup project still stuck in red tape**

By Tim Jackson
Of The Journal

IDAHO FALLS — State and federal regulators Tuesday explained why they believe it's safe to allow Idaho National Engineering Laboratory workers to rebury radioactive plutonium and americium at the site's Pit 9.

The question of whether reburying an estimated 2-to-3 pounds of the long-lived radioactive waste will cause health-threatening contamination of the Snake River Plain Aquifer flared again Tuesday.

Members of a citizens' advisory board that oversees INEL's ongoing cleanups brought it up.

It's a long-standing concern of many INEL watchdogs. It continues as INEL workers prepare to clean up Pit 9.

The pit is the first of several on 97 acres at INEL where thousands of pounds of long-lived radioactive waste were dumped for decades prior to 1970.

An estimated 66 pounds of cancer-causing plutonium and americium are in the pit.

Lockheed Environmental Systems & Technologies Co. engineers are trying to make sure the cleanup technology they will use beginning next year will purge excavated soil of plutonium and americium completely.

But the state, U.S. Environmental Protection Agency and U.S. Department of Energy are

PIT 9 FACTS

The Pit 9 mess has already forced one potential contractor out of the race to take over the site. How long until the cleanup work begins? ...

By JENNIFER LANGSTON
Post Register

The site's newest contractor will inherit a legal battle and perhaps the most reviled acre of buried radioactive waste in the country.

Pit 9, originally designed as a demonstration cleanup project, has spawned two lawsuits that are grinding through the courts.

After spending three years on the project without removing a spoonful of dirt, the job's subcontractor was fired last June. That company is suing the Energy Department, trying to get back several hundred million dollars it invested.

Lockheed Martin Idaho is suing the subcontractor, which happened to be a sister company in the Lockheed Martin family, trying to recover the \$54 million it was paid to do the work at Pit 9.

Bechtel B & W Idaho, which was awarded the new management and operation

The alternative Pit 9 cleanup plan, developed with the state of Idaho and the federal Environmental Protection Agency, is just getting underway. Officials say that project will help them decide whether removing and treating the rest of the waste makes sense.

Site workers have already mapped hotspots of suspected contamination. This summer they plan to insert a series of probes and instruments into Pit 9 to get a better handle on what is actually buried there. Later they will extract soil samples from the pit.

The second stage will test different treatment technologies on a small scale. The third stage will involve cleaning up all of Pit 9, which is about the size of a football field.

Cost estimates for the first two phases are \$130 million. Site officials won't make guesses about the total cleanup costs or how long it will take, partly because they aren't sure and partly because of the two lawsuits.

Katie Hain, director of environmental remediation for DOE-Idaho, said she is more interested in seeing slow, steady progress than in running out with a backhoe to start moving earth.

The original plan was to start drilling at Pit 9 last fall. She said officials have spent the last several months upgrading safety procedures at the Radioactive Waste Management Complex, because there is a small risk that the machinery could spark a fire in the pit.

She also remembers a piece of advice her father gave her when she left for college, something she hopes to prove wrong:

"The class you fail is the class you're more likely to fail the second time," she said. "With Pit 9 we have to stay flexible ... to get better answers."

INEL and environment reporter Jennifer Langston can be reached at 542-6746, or via e-mail at jlangston@idahonews.com.



2004: Waste retrieved from Pit 9 included an assortment of protective clothing, equipment and other contaminated material.

Pit 9 Glovebox Excavator Method (GEM) Demonstration Project

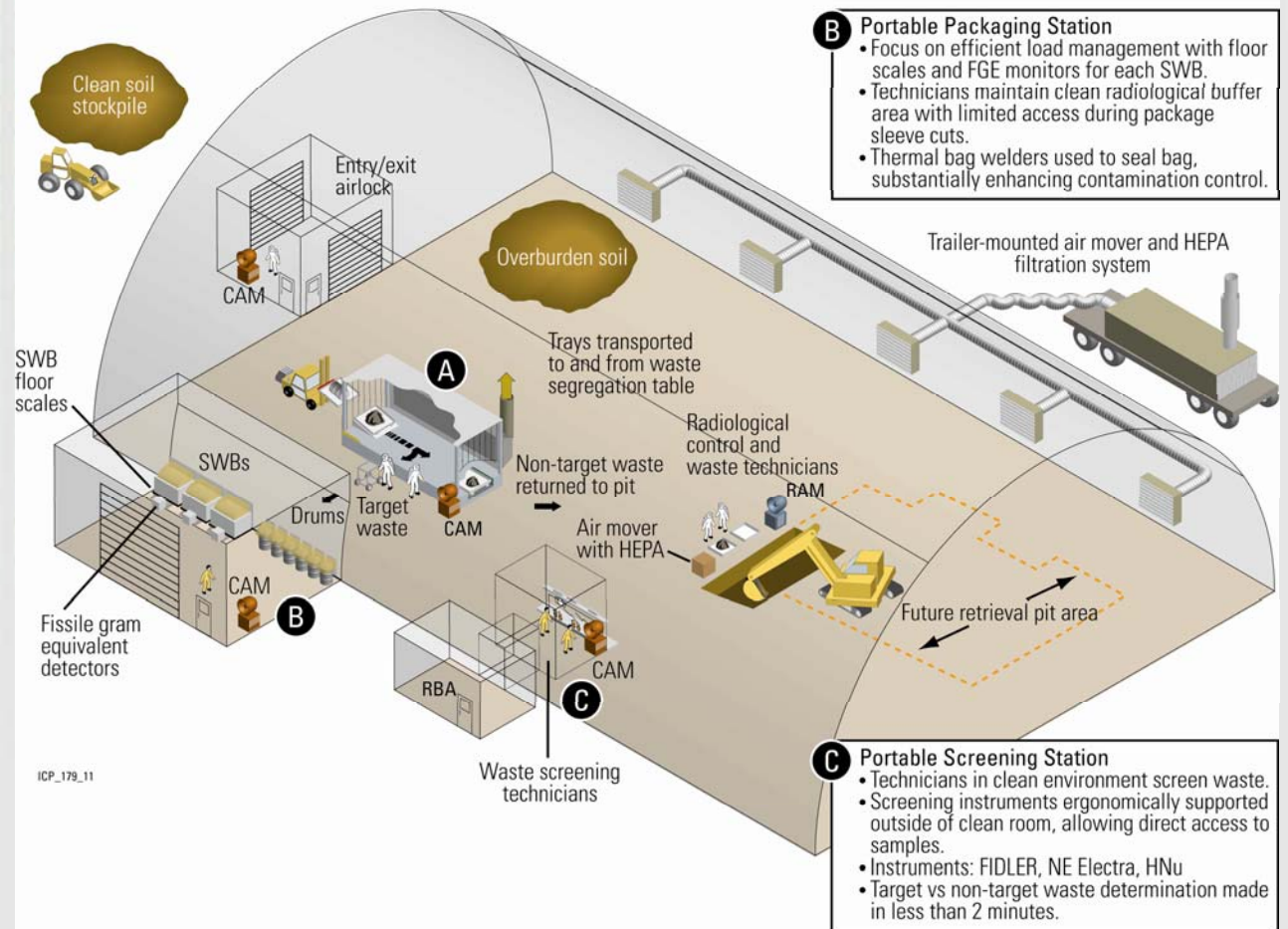


Pit 9, circa 2004

An integrated solution that combines

- ◆ Engineered controls
- ◆ Limited personnel entries
- ◆ Mobile/ reusable support Facilities/ equipment

"Pullable" Version of Retrieval Structure



Highlights of the CWI SDA Retrieval Approach

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- Experienced a few challenges early in ARP I
 - 2005 waste exhumation fire
 - Subsidence issues
- Operator responded as trained and extinguished the fire
- Recovery actions put into place
 - DOE and worker feedback incorporated into procedure revisions





Safety improvement set through clear expectations and accountability

Retrieval Specialists monitor excavation operations.

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Everyone is an innovator

ARP V, Pit 9, Feb 2011

Senior Management Commitment



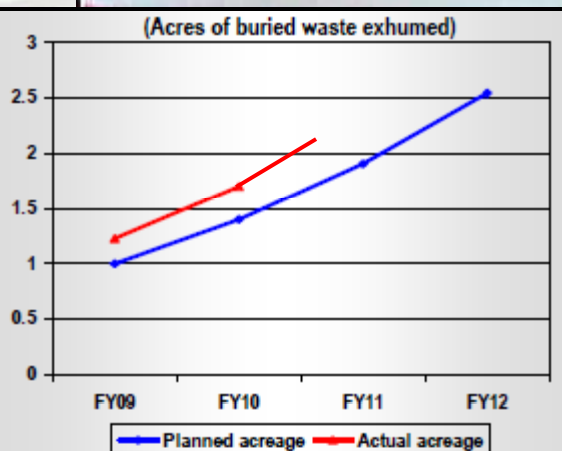
"It's a pleasure to resume retrieving waste from Pit 9 and fulfilling DOE's commitment to the people of Idaho to remove the targeted buried wastes there and continue to protect the Snake River Plain Aquifer," *Jim Cooper, acting Deputy Manager of DOE's Idaho Cleanup Project.*

Open communication

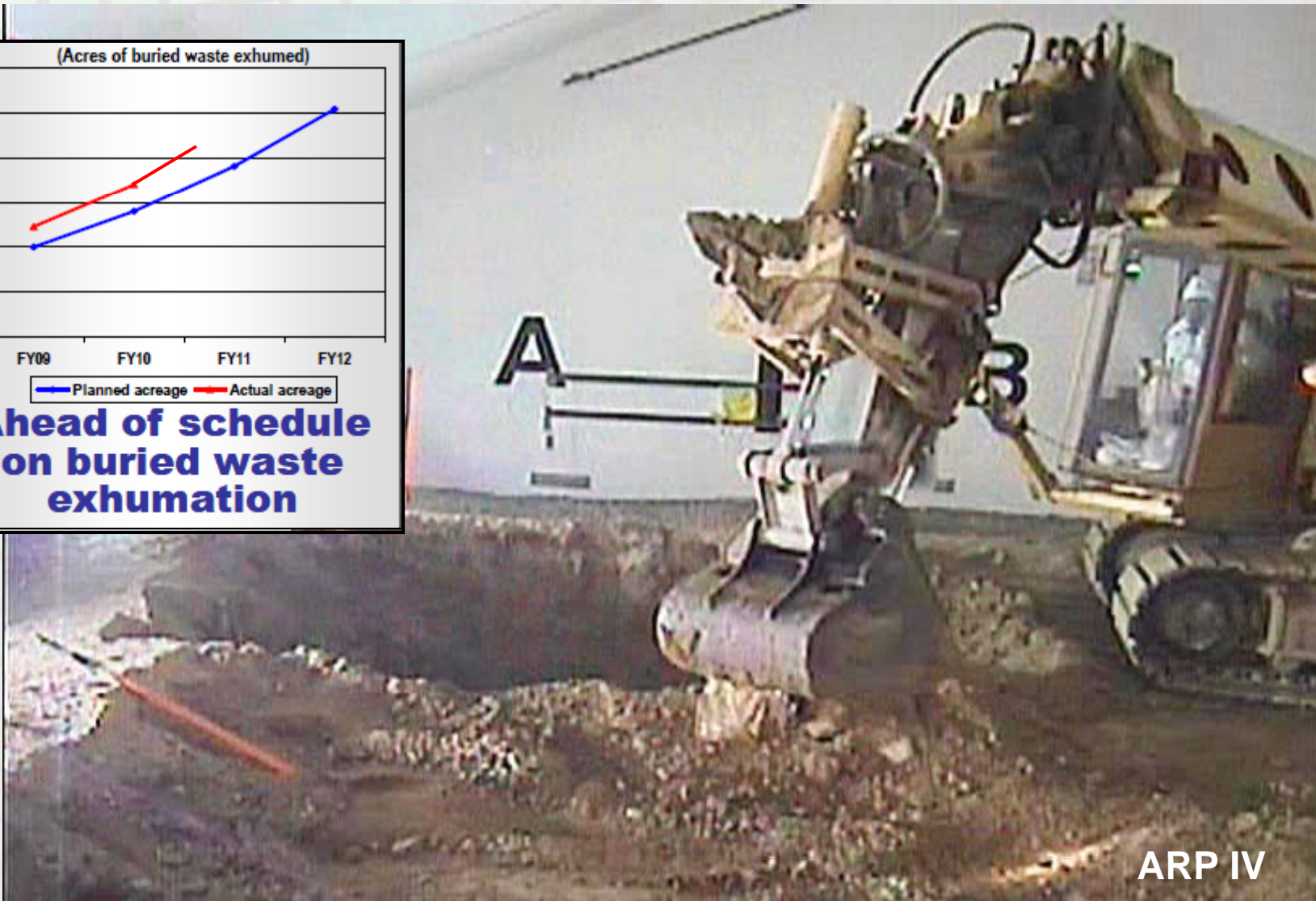


- ARP I completed April 2008
- ARP II completed July 2009
- ARP III waste exhumation completed 16 months ahead of schedule
- ARP III lessons learned includes enhanced safety systems, a larger service bay for equipment maintenance, and an experienced workforce to increase productivity





**Ahead of schedule
on buried waste
exhumation**



ARP IV

ARP-IV completed a year early without any recordable injuries



Worker involvement and a “safety culture” are a credit to the ARP successes. Daily safety pre-briefs are a part of the job.

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- Completed waste exhumation of 2.06 (of 2.55) acres
- Packaged ~21,610 drums of targeted waste
- TRC rate in 2005 was 1.25
- TRC rate today 0.00
- 21,900 entries in CY10
- Step back process encouraged
- Employee Safety Teams (ESTs)
- New Construction
 - ARP V started
 - ARP VI under construction
 - ARP VII small business subcontractor solicitation





Leaders Place the Social Contract above the Commercial Contract