

# INEEL REPORTER

A closer look at environmental management at the INEEL

September  
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Certification of the INEEL's program by the Environmental Protection Agency is expected this fall.

## Transuranic Waste Program Undergoes Inspection

*The Department of Energy-Carlsbad Area Office and the U.S. Environmental Protection Agency inspected the INEEL's Transuranic Waste Program.*

The Environmental Protection Agency was at the Idaho National Engineering and Environmental Laboratory on July 27, 1998 to inspect the Transuranic Waste Program. The inspection was required for approval of the INEEL's quality assurance programs and the waste characterization controls for transuranic waste. The Department of Energy-Carlsbad Area Office performed the inspection with oversight by the Environmental Protection Agency.

The inspection focused on the nondestructive examination and nondestructive assay systems at the Stored Waste Examination Pilot Plant and the visual inspection processes at Argonne National Laboratory-West.

Certification of the INEEL's program by the Environmental Protection Agency is expected this fall. Upon receipt of this certification – and the confirmation of status of the non-mixed waste – the INEEL could begin shipping when WIPP begins accepting waste. ▼

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► To schedule a briefing, call the INEEL Community Relations Plan Office at (208) 526-4700 or the INEEL toll-free number.

## Public Information Effort Underway

*Briefings around the state are keeping citizens informed about the Radioactive Waste Management Complex investigation and cleanup effort.*

Meetings are being held across the state of Idaho to keep citizens informed on one of the most complex investigation and cleanup effort at the INEEL. The DOE, EPA and the state will make the final decision on cleanup of the Radioactive Waste Management Complex in 2003.

The 96-acre Radioactive Waste Management Complex consists of the Subsurface Disposal Area and the Transuranic Storage Area. The Subsurface Disposal Area includes 20 pits (including Pit 9), 58 trenches, 20 soil vault rows, the Acid Pit, and Pad A. Several options are being evaluated to remediate the area including institutional control, containment, in situ and ex situ treatment options or combinations of these options. (See Public Information, Page 2)



If examination results confirm the absence of hazardous constituents in the waste, the INEEL will be ready to ship the waste out of Idaho.

## Looking for Non-Mixed Waste

*Examination of 50 drums for hazardous constituents has been completed at Argonne National Laboratory-West. Analytical results are expected in September*

To dispose of non-mixed transuranic waste prior to the receipt of a Part B permit at the WIPP, the INEEL must conclusively demonstrate that the waste to be shipped is not mixed. This is accomplished through several means defined by regulations. First is the gathering of as much information as possible on the waste stream and the processes involved in its generation. Staff at the INEEL and the Rocky Flats Plant have been working together to compile the historical information to verify the absence of hazardous constituents in the production of wastes from graphite molds used in the weapons plant.

In addition, 50 drums containing graphite molds are being inspected at Argonne National Laboratory-West for verification of non-mixed status. The drum contents are being visually inspected and sampled to confirm the absence of regulated constituents in the waste. Samples will be tested at on-site laboratories using the toxicity characteristic leach procedure and other techniques approved by the Environmental Protection Agency.

### Public Information (From Page 1)

The organic compounds – such as solvents – buried in the Subsurface Disposal Area present a more immediate threat to the aquifer than the radionuclides. An ongoing project is addressing this risk. Vapor vacuum extraction, a process that extracts hazardous vapors from underlying soils and basalt rock, is being used to remove volatile organic compounds from the area below the buried waste. Since the technology went online in 1996, more than 40,000 pounds of vapors have been removed and treated using a state-of-the-art thermal oxidation process. The project will continue for at least four more years.

A staged cleanup action is being implemented at Pit 9 in tandem with the rest of the Radioactive Waste Management Complex investigation and cleanup. The approach for Pit 9 allows information from each stage to feed the next. In addition, the stages are timed to support the comprehensive investigation of the Subsurface Disposal Area.

Onsite preparations to support removal of cores from Pit 9 will begin in September. The cores will provide materials for characterization and bench-scale treatability studies. Following this limited investigation, Stage II will consist of the excavation and retrieval of about 200 cubic yards of waste. If Stage II is successful, the agencies will proceed to Stage III, which involves full-scale remediation of Pit 9 wastes.

The Radioactive Waste Management Complex is located in the southwest portion of the INEEL. The complex was established in 1952 as a disposal site for solid, low-level radioactive waste generated by INEEL operations. From 1954 through 1970, transuranic waste was also buried at the complex. After 1970, shallow land disposal of transuranic waste was discontinued in favor of aboveground storage on asphalt pads at an adjacent area known as the Transuranic Storage Area.

## WIPP Draft Permit Could Impact the INEEL Transuranic Waste Program

*INEEL review of the draft permit identified several issues that could significantly impact the INEEL's ability to meet the Settlement Agreement.*

An INEEL review of the draft Part B permit for the Waste Isolation Pilot Plant issued by the New Mexico Environment Department identified several issues that could significantly impact the program.

The draft Resource Conservation and Recovery Act permit proposes technical requirements that are significantly different from those discussed, negotiated and documented over the past several years that provided the bases for the

The cost impact to the INEEL of accommodating these technical issues could be as much as \$6 million per year over the next five years.

programmatic approaches used by the INEEL and other sites. The INEEL submitted comments on the proposed draft permit which identified requirements which exceeded the authority granted New Mexico Environment Department and requirements which provide no added protection to the public or the environment.

Implementation of the technical requirements in the draft permit would disqualify nearly 75 percent of the accessible inventory of waste drums. This would leave less than 5,000 drums available to meet the Idaho court-ordered Settlement Agreement milestone of removing



15,000 drum equivalents of transuranic waste. Implementation of only a portion of the new requirements could disqualify a smaller portion of the inventory.

Due to delays in the issuance of the Part B permit for WIPP the time available to prepare, certify and ship transuranic waste from the INEEL is significantly compressed. The current review, revision and issuing processes for the WIPP permit will delay startup of that facility until the summer of 1999. Modification of the final WIPP Part B permit to allow INEEL to ship certified waste would begin at that point.

### Waste Isolation Pilot Plant Lawsuit Information

The state of New Mexico has filed a lawsuit against the Department of Energy in regard to the disposal of waste at the WIPP. DOE has requested a ruling from the judge 6 to 7 weeks from the time the New Mexico Environment Department issues a decision on the adequacy of the characterization of the Los Alamos National Laboratory transuranic waste stream as non-mixed.

A lawsuit has also been filed against the U.S. Environmental Protection Agency by the state of New Mexico. This latest suit contends that EPA wrongly certified the plant for opening. The lawsuit contends the proposed procedures for operation of the dump could result in the accidental release of radiation that would reduce property values, reduce tax revenues to the state and cause "fear and apprehension" among citizens and visitors.

DOE has said it does not need the state permit to transport radioactive waste in New Mexico.

## Design Changes Will Improve Treatment Processes

*The Advanced Mixed Waste Treatment Project is targeting April 1999 as the startup date for facility construction activities.*

Over the past eighteen months BNFL Inc. and its team of subcontractors have been working to meet the permit requirements necessary to break ground at the Radioactive Waste Management Complex. Along with permit requirements, the final treatment processes are being evaluated.

In January 1998, BNFL Inc. submitted the AMWTP Resource Conservation and Recovery Act Part B permit application to the state of Idaho and the Toxic Substance Control Act permit to the Environmental Protection Agency for review. In addition, a public involvement process is being directed by the Department of Energy to address stakeholder questions and concerns.



The AMWTP will treat and prepare 65,000 cubic meters of mixed transuranic and alpha low-level waste for shipment out of Idaho.

### Design improvement philosophy

All design improvements to-date enhance the safety, operability, and maintainability of the AMWTP facility, while reducing overall risk. BNFL Inc.'s underlying philosophy for selecting the AMWTP waste treatment technologies is based on the concept of "fit for purpose." That is, the technologies selected will not compromise performance, will provide the appropriate level of waste treatment, and are the best utilization of resources.

Throughout the course of the permitting cycle, the AMWTP Team has performed multiple value engineering and technology studies in order to: 1) optimize the treatment process, and 2) validate assumptions made regarding the chemical and physical properties of the INEEL waste streams slated for treatment at the AMWTP facility. BNFL Inc., with the primary goal of designing a low risk facility, capitalized on the wealth of information gained over the last eighteen months. Several design improvements to the technology baseline resulted from the studies, including:

1. The addition of a Supercompactor, a 2,000 ton hydraulic press, designed to compress 55-gallon drums into small 11-gallon pucks. This improvement was implemented in order to increase the use of lower risk physical treatment technologies as compared to thermal treatment technologies.

2. BNFL Inc. selected incineration as the primary thermal treatment technology for handling the organic and inorganic sludges and soils found in INEEL's stored mixed transuranic and alpha low-level waste.

3. With the decision to go forward with incineration and supercompaction technologies, vitrification's role as a primary thermal treatment process was no longer needed. In keeping with BNFL Inc.'s goal to build a low risk facility, the AMWTP team determined that microencapsulation with grout, an ambient temperature process, could be implemented as an alternative to vitrification. ▼



Microencapsulation with grout is the direct mixing of a cement-like material with the treated incinerator ash.

# Foreign Research Reactor Spent Nuclear Fuel Shipment Arrives Safely in Idaho

*The first shipment of foreign research reactor spent nuclear fuel safely arrived at the INEEL.*

A shipment of foreign research reactor spent nuclear fuel from reactors in the Republic of Korea (South Korea) arrived safely at the Idaho National Engineering and Environmental Laboratory the morning of July 23. This shipment to Idaho consisted of three shipping casks certified by the Nuclear Regulatory Commission. In total, the shipment contained 299 spent nuclear fuel elements.

Under the Foreign Research Reactor Program, the United States is accepting spent nuclear fuel from foreign research reactors to ensure that the highly enriched uranium they contain will not be used to make nuclear weapons. Participating countries agreed to forego development of nuclear weapons in return for assistance with peaceful application of nuclear energy. Under this program, the United States will accept up to 20 metric tons of spent nuclear fuel from foreign research reactors in 41 countries, through the year 2009.

The South Korean shipment arrived in the United States by ship at the Concord Naval Weapons Station in California. Tribal, state and local individuals teamed with the Department of Energy and other federal agencies to ensure safe rail transport of the spent nuclear fuel from Concord to southeastern Idaho. Preparations included training over 4,000 emergency personnel along the route and thorough inspections of the track, locomotives, railcars, and shipping containers.



The spent nuclear fuel being accepted contains uranium that was enriched in the United States and initially exported under President Eisenhower's "Atoms for Peace" program.



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The following documents have been added to the Administrative Record and Information Repositories:

- ◆ Remedial Action Completion for Operable Unit (OU) 4-12 Central Facility Area (CFA) Landfills, I, II, & III

- ◆ Waste Area Group 7 (WAG-7) Operable Unit (OU) 7-08 Final Phase II Remediation Strategy for Organic Contamination in the Vadose Zone (OCVZ)



## Briefly...

▶ **A Department of Energy investigation team completed its investigation into the cause of the July 28 accident at the Test Reactor Area.** An accidental release of fire retardant carbon dioxide in TRA Building 648 occurred as workers were preparing to do routine maintenance work. The accident involved 15 employees and resulted in the death of one employee. The results of the investigation are expected in September.

▶ **The Test Area North (Waste Area Group 1) Revised Proposed Plan is scheduled to be issued for public comment in November.** The plan was originally issued for public review and comment in February. Public comments as well as input from a focus group convened in June prompted a revision of the plan to clarify the information, including the rationale for selection of preferred alternatives.

▶ **The Idaho Nuclear Technology and Engineering Center (Waste Area Group 3) Proposed Plan is scheduled to be issued for public comment by this fall.** The plan presents an overview of the comprehensive remedial investigation. It also summarizes possible cleanup alternatives, presents the preferred alternatives, and explains the basis for the preference.

▶ **A new information repository will be added to the Albertson Library on the Boise State University campus in October.** The address is 1910 University Drive, Boise, ID 83725. This repository will house a collection of documents that provide detail and backup information about environmental cleanup at the INEEL.

▶ **The Department of Energy has issued the draft Environmental Impact Statement for the Advanced Mixed Waste Treatment Project.** The draft impact statement analyzes the proposed action and three alternatives. The proposed action (preferred alternative) is to proceed with the construction and operation of an advanced mixed waste treatment facility. A final EIS is scheduled for November 1998, followed by a Record of Decision in December 1998. For more information about the draft EIS, call the EIS hotline at 1-800-320-4549.

## Get Involved

Citizens are encouraged to get involved in decision-making at the INEEL by reviewing and commenting on documents, attending public meetings, and requesting briefings or tours. Information about these public involvement activities can be obtained through:

### *Target Mailing Lists*

Mailing lists are continually updated so interested citizens and groups can automatically receive general or specific INEEL information. You can be added to mailing lists by calling the INEEL toll-free number.

### *Toll-Free Phone Number*

To obtain specific documents or other information, request a speaker or briefing on a particular topic, inquire about public meetings or public comment periods, or schedule a tour of INEEL, call the INEEL toll-free number at 1 (800) 708-2680.

### *Videos/Instructional Materials*

Videos and brochures are available on a variety of subjects including the Snake River Plain Aquifer, waste management, and general INEEL history. To request these items, call the INEEL toll-free number.

### *Internet*

The INEEL Home Page is available at <http://www.inel.gov>. Specific INEEL environmental information is available at <http://www.inel.gov/environmental-frame.html>. The INEEL Administrative Record is available at <http://ar.inel.gov/home.html>.

### *Information Repositories*

DOE maintains three information repositories throughout Idaho. The Boise State University repository will be available in October. Information repositories are collections of documents that provide detail and backup information on INEEL cleanup projects.

INEEL Technical Library  
DOE Public Reading Room  
1776 Science Center Drive  
Idaho Falls, ID 83415

Albertson Library  
Boise State University  
1910 University Drive  
Boise, ID 83725

University of Idaho Library  
University of Idaho Campus  
434 2nd Street  
Moscow, ID 83843

### *INEEL Idaho Falls Office*

The INEEL Community Relations Office is located in Idaho Falls and can provide information and briefings on environmental management topics. Call the INEEL Community Relations Plan Coordinator, Erik Simpson, at (208) 526-4700, or call the INEEL toll-free number.

### *INEEL Boise Regional Office*

An INEEL Regional Office is located in Boise to provide information and other resources for those living in the western portion of the state. The office is located at 805 West Idaho Street, Suite 301, Boise, Idaho 83703, or call 208-334-9572.





## Calendar

### *September*

- ▶ September 11: Advanced Mixed Waste Treatment Project Environmental Impact Statement comments due
- ▶ September 14 and 15: INEEL Citizens Advisory Board meeting, Cavanaugh's, 475 River Parkway, Idaho Falls, Idaho
- ▶ September 29 (tentative): Waste Area Group 3 - Idaho Nuclear Technology and Engineering Center Proposed Plan issued for 30-day public comment

### *November*

- ▶ November: Waste Area Group 1 -Test Area North Revised Proposed Plan issued for public comment



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