

Action Memorandum for Decommissioning of the TRA-632 Hot Cells

December 2009

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for Decommissioning of the
TRA-632 Hot Cells**

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**Prepared for the
U.S. Department of Energy
DOE Idaho Operations Office**

Signature sheet for the Action Memorandum covering the TRA-632 Hot Cells decommissioning activities at the U.S. Department of Energy's Idaho National Laboratory. This action is conducted by the U.S. Department of Energy with the concurrence of the U.S. Environmental Protection Agency and the Idaho Department of Environmental Quality.



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Deputy Manager
U.S. Department of Energy Idaho Operations Office

12/16/2009
Date

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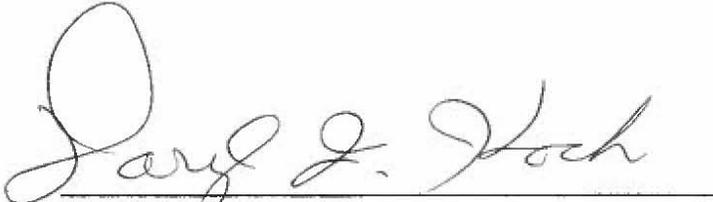


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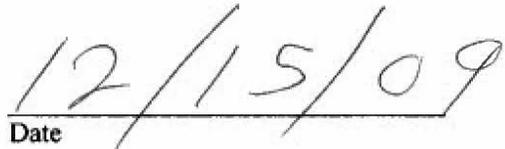
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ABSTRACT

This Action Memorandum documents the selected alternative for decommissioning of the TRA-632 Hot Cells at the Idaho National Laboratory Site under the Idaho Cleanup Project. Since the missions of the TRA-632 Hot Cells have been completed, an engineering evaluation/cost analysis that evaluated alternatives to accomplish the decommissioning of the TRA-632 Hot Cells was prepared and released for public comment.

The scope of this Action Memorandum encompasses the final end state of the hot cells. The selected removal action includes demolishing the TRA-632 building to the top of the slab and removing and disposing of hot cells at the Idaho CERCLA Disposal Facility.

EXECUTIVE SUMMARY

This Action Memorandum documents the selected alternative for the final end state of TRA-632 Hot Cells, which includes the building and the three hot cells contained in the building. Preparation of this Action Memorandum has been performed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 USC § 9601 et seq.), as amended by the “Superfund Amendments and Reauthorization Act of 1986 (SARA)” (Public Law 99-499), and in accordance with the “National Oil and Hazardous Substances Pollution Contingency Plan” (40 CFR 300). This action is consistent with the joint U.S. Department of Energy (DOE) and U.S. Environmental Protection Agency (EPA) *Policy on Decommissioning of Department of Energy Facilities Under the Comprehensive Environmental Response, Compensation, and Liability Act* (DOE and EPA 1995), which establishes the CERCLA non-time-critical removal action process as an approach for decommissioning. This approach satisfies environmental review requirements and provides for stakeholder involvement, while also providing a framework for selecting the decommissioning alternative. An Administrative Record has been established to record information used to support the selected alternative as well as provide documentation of decisions and the progress of the removal action.

Actual or threatened release of hazardous substances from the TRA-632 Hot Cells, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health or welfare or the environment. As the TRA-632 building and hot cells continue to age, the threat of substantial release of radiological and hazardous substances increases with time, and containing these materials and preventing them from being released to the environment becomes more difficult.

This Action Memorandum addresses the TRA-632 Hot Cells building and the three hot cells contained in the building. The TRA-632 building concrete floor slab containing the hot waste drains, piping under the floor slab, and associated soil contamination, if found, are not addressed in this Action Memorandum. The drains and piping are ancillary to the TRA-630 Catch Tank System and have been identified as part of the Hazardous Waste Management Act (HWMA)/Resource Conservation and Recovery Act (RCRA) Voluntary Consent Order Action Plan (VCO-5.8.d). Soil contamination, if found under the floor slab, will be addressed under a HWMA/RCRA Closure Plan and/or the CERCLA program.

This Action Memorandum documents the selected removal action alternative as the result of the Engineering Evaluation/Cost Analysis (EE/CA) for Decommissioning of the TRA-632 Hot Cells (DOE-ID 2009a). Three alternatives were evaluated in the EE/CA, and Alternative 3, “Removal of the TRA-632 Building and Hot Cells,” was the recommended and, ultimately, the selected alternative subsequent to Agency reviews. Alternative 3 fully removes the building down to the slab and removes the three hot cells contained in the building. All above-slab portions of the hot cells will either be removed whole or sectioned prior to hoisting onto heavy-haul trailers for transport to the disposal facility. Low-level radioactive wastes from the removal are disposed of at the Idaho CERCLA Disposal Facility. To reduce the spread of radioactive contamination during removal, the internal volume of the cells may be grouted. Under Alternative 3, no hazardous substances would remain above the slab at the hot cell location.

The recommended alternative meets the proposed removal action objectives regarding long-term risk and is cost-effective. Alternative 3 is also consistent with the remedial action objectives of the Operable Unit 2-13 Record of Decision (DOE-ID 1997), is compliant with applicable or relevant and appropriate requirements, and satisfies the DOE goal of reducing the “risk footprint” by consolidating wastes at the Idaho CERCLA Disposal Facility and reducing surveillance and maintenance costs on legacy buildings and structures.

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ACRONYMS

| | |
|--------|---|
| ARAR | applicable or relevant and appropriate requirement |
| ATR | Advanced Test Reactor |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CRMP | Cultural Resources Management Plan |
| D&D | decommissioning and demolition |
| DEQ | Idaho Department of Environmental Quality |
| DOE | U.S. Department of Energy |
| DOE-ID | U.S. Department of Energy Idaho Operations Office |
| EE/CA | engineering evaluation/cost analysis |
| EPA | U.S. Environmental Protection Agency |
| ETR | Engineering Test Reactor |
| HWMA | Hazardous Waste Management Act |
| ICDF | Idaho CERCLA Disposal Facility |
| ICP | Idaho Cleanup Project |
| INL | Idaho National Laboratory |
| MTR | Materials Test Reactor |
| NHPA | National Historic Preservation Act |
| NTCRA | non-time-critical removal action |
| OU | operable unit |
| PCB | polychlorinated biphenyl |
| RCRA | Resource Conservation and Recovery Act |
| ROD | record of decision |
| TRA | Test Reactor Area |
| VCO | Voluntary Consent Order |
| WAC | waste acceptance criteria |

Action Memorandum for Decommissioning of the TRA-632 Hot Cells

1. PURPOSE

The purpose of this Action Memorandum is to request and document approval of the proposed removal action described herein for the final end state of the Test Reactor Area (TRA) -632 building and the hot cells contained in the building.^a

2. SITE CONDITIONS AND BACKGROUND

This section provides a summary of current TRA-632 Hot Cells site conditions and historical background information. It identifies previous and ongoing closure and cleanup activities, including a description of the buildings and structures addressed in this Action Memorandum and additional information relevant to the scope of this document. It also provides a discussion of the radiological and nonradiological characterization of the hot cells.

2.1 Idaho National Laboratory Site and Idaho Cleanup Project

The Idaho National Laboratory (INL) Site, managed by the U.S. Department of Energy (DOE), is located 51 km (32 mi) west of Idaho Falls, Idaho. It occupies 2,305 km² (890 mi²) of the northeastern portion of the Eastern Snake River Plain. In 1949, the U.S. Atomic Energy Commission established the INL Site, which was called the National Reactor Testing Station at that time. Its purpose was to conduct nuclear energy research and related activities. It was redesignated the Idaho National Engineering Laboratory in 1974, the Idaho National Engineering and Environmental Laboratory in 1997, and the Idaho National Laboratory Site in 2005. To better focus the laboratory's missions, DOE established the Idaho Cleanup Project (ICP) in 2005 to bring the environmental management mission to completion and redesignated the Site portion of the INL as the INL Site to better reflect the laboratory's new research directions.

The DOE Idaho Operations Office (DOE-ID) controls all land within the INL Site. Public access is restricted to public highways, sponsored tours, special-use permits, and the Experimental Breeder Reactor I National Historic Landmark. In addition, DOE-ID is cognizant of the Shoshone-Bannock tribal members' need for access to areas on the INL Site for cultural and religious purposes.

The INL Site is located primarily in Butte County; however, it also occupies portions of Bingham, Bonneville, Clark, and Jefferson counties. The 2000 census indicated the following populations for cities in the region: Idaho Falls–50,730; Pocatello–51,466; Blackfoot–10,419; Arco–1,026; and Atomic City–25. Atomic City, the closest population, is approximately 13 miles from the Advanced Test Reactor (ATR) Complex.

Surface water flows on the INL Site consist mainly of three streams draining intermountain valleys to the north and northwest of the INL Site: (1) the Big Lost River, (2) the Little Lost River, and (3) Birch Creek. All of the channels terminate on the INL Site. Flows from Birch Creek and the Little Lost River seldom reach the INL Site because of irrigation withdrawals upstream. The Big Lost River and Birch Creek may flow onto the INL Site before the irrigation season or during high-water years, but the terminal

a. This facility was originally the Test Reactor Area (TRA). Its name was later changed to the Reactor Technology Complex and then the Advanced Test Reactor (ATR) Complex.

reaches are usually dry. In those few wetter years when the Big Lost River carries water to the end of its channel, the water sinks into the ground.

The physical characteristics, climate, flora and fauna, demography, and cultural resources of the INL Site and the ATR Complex area are further described in the Record of Decision (ROD) (DOE-ID 1997).

2.1.1 TRA-632 Hot Cells Location

The TRA-632 Hot Cells are located at the ATR Complex in the west-central portion of the INL Site (Figure 2-1). The hot cells are located in the TRA-632 building (Figures 2-2 and 2-3) in the south-central portion of the ATR Complex.



Figure 2-1. Location of the Advanced Test Reactor Complex on the Idaho National Laboratory Site.

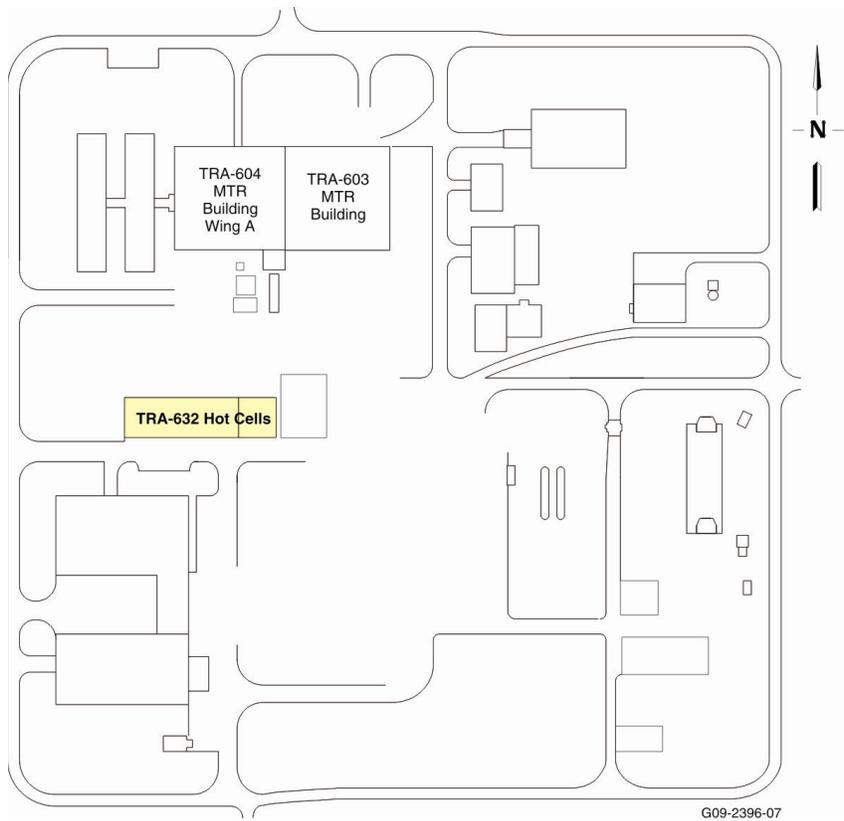


Figure 2-2. Location of TRA-632 Hot Cells building at the Advanced Test Reactor Complex.



Figure 2-3. TRA-632 building.

2.1.2 TRA-632 Hot Cells Description

The hot cells were designed and built to assemble/disassemble nuclear test reactor components and for the examination of materials exposed to neutron bombardment. Processes that were contained in the hot cells included gamma scanning, photography, and optical metallography. Machine equipment included lathes, power saws, grinders, and welders, which were available in the cells for preparation or processing of materials. Stainless steel tables and other fixtures are also in the cells. The hot cells were also used to produce radioisotopes, including cobalt-60 and iridium-192, for radiography and other medical procedures, such as cancer treatment. The TRA-632 building contains the three hot cells (Figure 2-4).

2.1.2.1 Hot Cell #1. Hot Cell #1 (Figure 2-5) is located on the east side of the TRA-632 building and was constructed in 1952 to support the operation of the Materials Test Reactor (MTR). Personnel access to Hot Cell #1 is from the south side of the cell. Five master-slave manipulators are located on the north wall of the cell above the three viewing windows. Two periscopes are used for magnified viewing of materials in the cell; one window is on the west end of the cell. Figure 2-5 is a photo of this cell.

Hot Cell #1 was designed for examining/processing high-dose-rate irradiated materials. To provide adequate shielding for this purpose, the walls were constructed of nominally 4-ft-thick high-density concrete, lined on the interior with 1/4-in. painted carbon steel plate. With the exception of the large westernmost viewing window, the cell windows are filled with zinc bromide. To improve clarity, the westernmost window was converted to a lead glass window filled with mineral oil. Table 2-1 presents the dimensions and estimated weight of the cell.

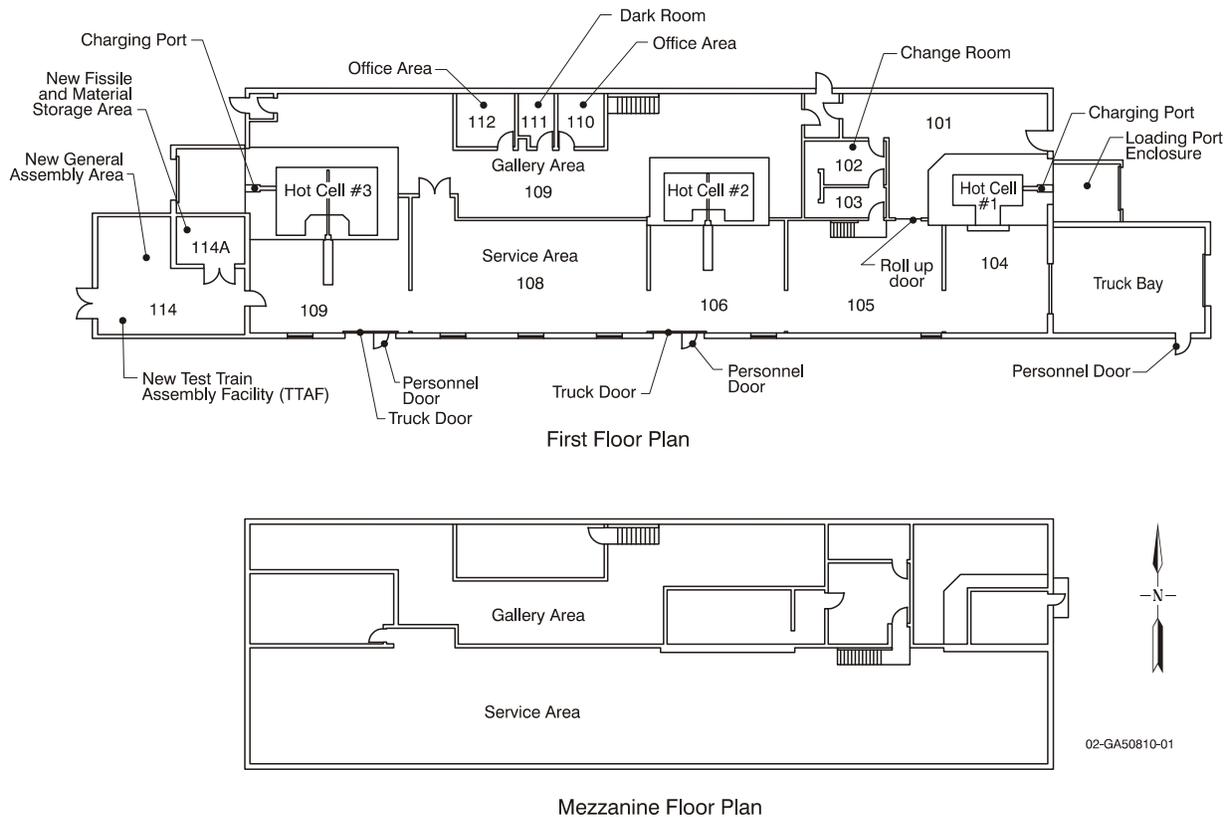


Figure 2-4. TRA-632 Hot Cell building floor plan.



Figure 2-5. Photo of Hot Cell #1.

Table 2-1. Physical description of Hot Cell #1.

| | Width | Depth | Height | Concrete Type |
|-----------------------------|------------------|-------------|-------------------------------------|---------------|
| Interior dimensions | 14 ft | 6 ft 6 in. | 12 ft 10 in. | |
| Walls and ceiling thickness | 4 ft | 4 ft | 2 ft 6 in. | High density |
| Outside dimensions | 22 ft | 14 ft 6 in. | 15 ft 4 in. | |
| | <u>UngROUTed</u> | | <u>If grouted prior to removing</u> | |
| Estimated weight | 280 tons | | 367 tons | |

2.1.2.2 Hot Cell #2. Hot Cell #2 (Figure 2-6), also known as the “light cell,” was completed in 1960 to increase the capacity of the facility and is located in the center of the TRA-632 building. Four viewing windows and master-slave manipulators are on the north wall and one viewing window is on the west wall. The east wall contains a metallography cave that allows visual examination of specimens under magnification to approximately 2,000X. The west wall contains a scanning microscope cave and provides for examining specimens at a resolution of approximately 1 micron.

Hot Cell #2 was used for handling/storing lower-dose-rate materials. The walls of this cell are formed from ordinary concrete 2 ft 9 in. thick. The floor and lower walls (to 6 ft above the floor) are lined with 1/4-in. carbon steel plate. This cell could be divided into two equal-sized subcells by means of a 6-in.-thick motor-driven steel door, which slides horizontally on a floor track. There are two pairs of 9-in.-thick steel swing doors on the south wall of the cave, which were used to access the cave. Table 2-2 presents the dimensions and estimated weight of the cell.

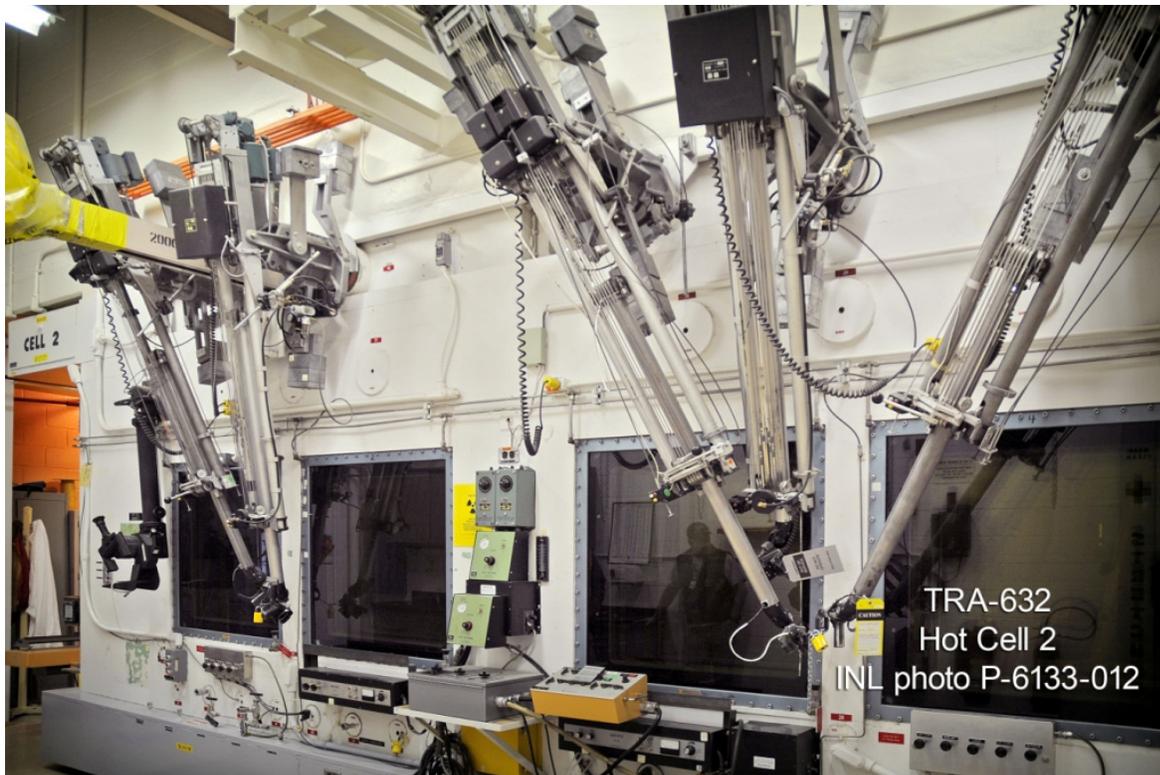


Figure 2-6. Photo of Hot Cell #2.

Table 2-2. Physical description of Hot Cell #2.

| | Width | Depth | Height | Concrete Type |
|-----------------------------|------------------|-------------|-------------------------------------|----------------|
| Interior dimensions | 18 ft 6 in. | 8 ft | 13 ft | |
| Walls and ceiling thickness | 2 ft 9 in. | 2 ft 9 in. | 2 ft | Normal density |
| Outside dimensions | 24 ft | 13 ft 6 in. | 15 ft | |
| | <u>UngROUTed</u> | | <u>If grouted prior to removing</u> | |
| Estimated weight | 238 tons | | 330 tons | |

2.1.2.3 Hot Cell #3. Like Hot Cell #2, Hot Cell #3 (Figure 2-7) was completed in 1960 to increase the capacity of the facility. Hot Cell #3 is located on the west end of TRA-632 building. Hot Cell #3 was also used for processing/storing high-dose-rate materials. The south and west walls were constructed of 5-ft-6-in.-thick ordinary concrete, and the remaining walls were constructed of 4-ft-thick high-density concrete. The floor and lower walls (to 6 ft above the floor) are lined with 1/4-in. carbon steel plate. Four viewing windows are on the north wall and one viewing window is on the east wall. This cell could also be divided into east and west subcells using a 6-in.-thick motor-driven steel door. Access to this cell is through two pairs of 18-in.-thick steel swing doors. Table 2-3 presents the dimensions and estimated weight of the cell.

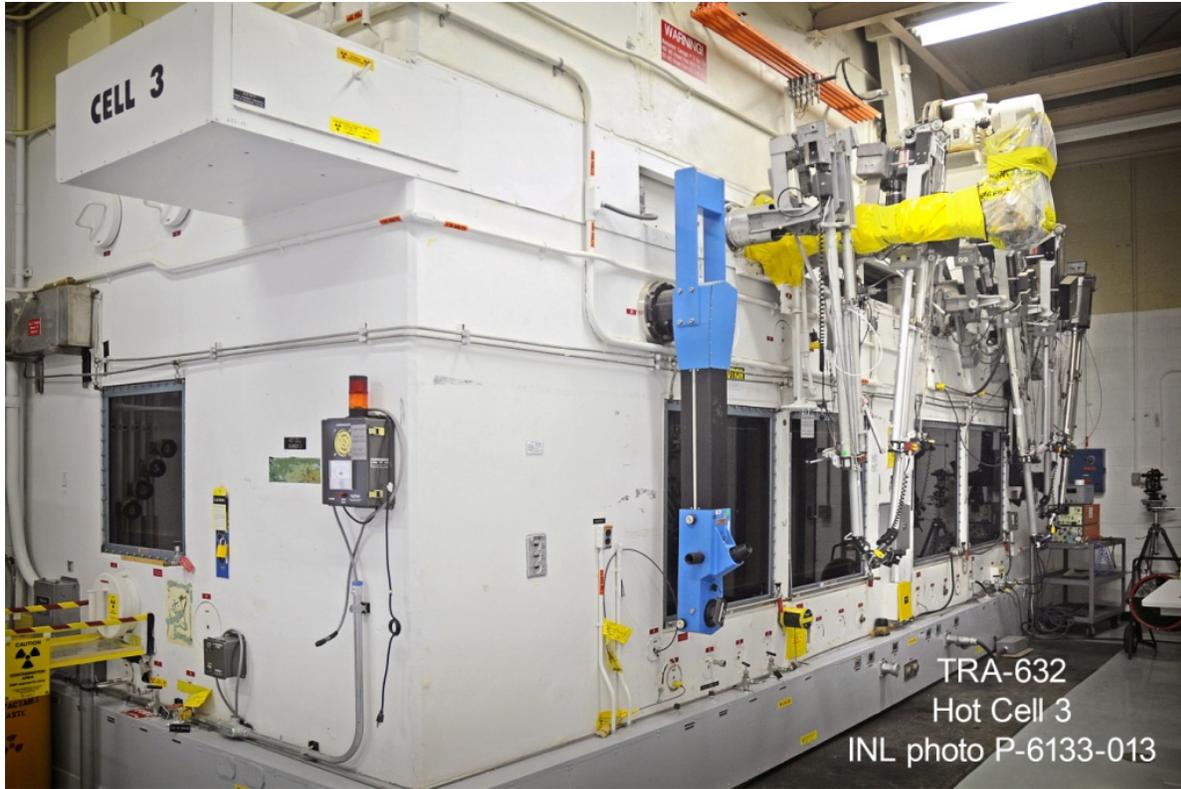


Figure 2-7. Photo of Hot Cell #3.

Table 2-3. Physical description of Hot Cell #3.

| | Width | Depth | Height | Concrete Type |
|-----------------------------|--|-------------------------------------|--------------|---------------------------------|
| Interior dimensions | 20 ft 6 in. | 10 ft | 12 ft 10 in. | |
| Walls and ceiling thickness | 5 ft 6 in. south and west 4 ft north and east | | 3 ft 6 in. | Normal density and high density |
| Outside dimensions | 30 ft | 19 ft 6 in. | 16 ft 4 in. | |
| | <u>UngROUTed</u> | <u>If grouted prior to removing</u> | | |
| Estimated weight | 519 tons | 716 tons | | |

2.2 Other Closure/Cleanup Activities at the ATR Complex

Closure/cleanup activities have taken place and will continue at the ATR Complex under numerous programs and regulatory authorities. The following sections briefly describe those activities.

2.2.1 Comprehensive Environmental Response, Compensation, and Liability Act Activities at the ATR Complex

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Final ROD for TRA (now ATR Complex) Operable Unit (OU) 2-13 (DOE-ID 1997) and *Explanation of Significant Differences to the Record of Decision for Test Reactor Area Operable Unit 2-13*

(DOE-ID 2000) selected a remedy for the cleanup of identified contaminated soil at the ATR Complex. Remedies also were selected for the warm waste pond, perched water system, chemical waste pond, and sewage leach pond. Remedial actions specified by the ROD (DOE-ID 1997) have been completed at Waste Area Group 2 and as required under CERCLA (42 USC § 9601 et seq.). Whenever contamination is left in place, institutional controls have been implemented for residual contaminants remaining at concentrations that would not allow for unrestricted use or access. Fifteen sites at the ATR Complex were found to require institutional controls to ensure adequate protection of human health and the environment. The Explanation of Significant Differences (DOE-ID 2000) discusses, in detail, implementation, maintenance, and monitoring of institutional controls at each ATR Complex site.

Groundwater monitoring under CERCLA has been ongoing at the ATR Complex in accordance with the requirements of the OU 2-12 and OU 2-13 RODs (DOE-ID 1992, 1997). On October 7, 1991, the U.S. Environmental Protection Agency (EPA) designated the Snake River Plain Aquifer a sole-source aquifer under the Safe Drinking Water Act (42 USC § 300f et seq.). Although the Snake River Plain Aquifer and perched water beneath the ATR Complex are listed as No Further Action sites, they are monitored extensively because changes in these sites could be indicative of the effectiveness of the remedies in place at the OU 2-13 sites or could indicate the occurrence of a new release.

2.2.2 Other Non-Time-Critical Removal Action Activities at ATR Complex

Decommissioning and demolition (D&D) of the Engineering Test Reactor (ETR) Complex buildings are complete in accordance with a CERCLA non-time-critical removal action (NTCRA) as documented in the *Action Memorandum for Decommissioning the Engineering Test Reactor Complex under the Idaho Cleanup Project* (DOE-ID 2007a). D&D of the MTR reactor building is ongoing and nearly complete. The end state for the MTR reactor building vessel is described in the *Action Memorandum for the Materials Test Reactor Facility End State and Vessel Disposal* (DOE-ID 2007b). The ETR Complex was immediately adjacent and to the south of the TRA-632 Hot Cells building and the MTR Complex is immediately to the north. Similar to the recommended alternative in this Action Memorandum, the selected alternative under the ETR and MTR Action Memoranda was for removal of abovegrade buildings and structures and disposal of the radioactive contaminated wastes and reactor vessels at the Idaho CERCLA Disposal Facility (ICDF).

Other facilities at the ATR Complex have completed D&D under the General Decommissioning Action Memorandum (DOE-ID 2006a). These facilities include the TRA-626 Maintenance Storage Building, TRA-657 MTR Plug Storage Building, TRA-635 Materials Receiving and Lab Area, and TRA-661 Radiochemistry Laboratories. Buildings and structures that will undergo D&D in the future in accordance with the General Decommissioning Action Memorandum (DOE-ID 2006a) include the TRA-712 Retention Basins and their associated structures.

2.2.3 Voluntary Consent Order Activities

Voluntary Consent Order (VCO) actions are being implemented to ensure compliance with Hazardous Waste Management Act (HWMA)/Resource Conservation and Recovery Act (RCRA) regulations. The VCO is a consent order between DOE-ID and the Idaho Department of Environmental Quality (DEQ) to address potential legacy HWMA/RCRA waste issues. VCO characterization actions have determined that the radioactive drain network located beneath Building TRA-632 contains HWMA/RCRA residual waste and is therefore subject to further VCO actions. The drains and piping are ancillary to the TRA-630 Catch Tank System, have been identified as part of the VCO Action Plan (VCO-5.8.d), and are outside the scope of this Action Memorandum. Soil contamination, if found under the slab, will be addressed under a HWMA/RCRA Closure Plan and/or the CERCLA program.

3. TRA-632 CONTAMINANT INVENTORIES

This section summarizes the radiological inventory described in the TRA-632 Hot Cells Engineering Evaluation/Cost Analysis (EE/CA) (DOE-ID 2009a).

Nonradiological constituents were determined, by qualitative means, to pose no unacceptable risk to a future residential receptor, groundwater, or an ecological receptor. The hot cells are constructed of concrete, stainless steel, and carbon steel, which contain such constituents as manganese, nickel, Chromium-III, and iron. These materials have been shown not to pose an unacceptable risk in assessments where larger quantities and higher soil concentrations of these materials were present than what is present above the slab at TRA-632. For example, the ETR Complex (DOE-ID 2006b) contained many times the mass of these materials compared to the TRA-632 Hot Cells but still did not pose an unacceptable risk to human or ecological receptors.

3.1 Radiological Contaminants

The radiological characterizations of TRA-632 have been completed and documented in facility documentation (TBL-181). The methodologies used in these documents to obtain the source term values were reviewed and found to be reasonable and/or conservative. Additionally, facility operations personnel were interviewed to verify that no operations in the facility have occurred since the inventories were calculated that would result in an increase in the facility source term beyond that already documented. Table 3-1 presents the total radiological inventory found in the facility documentation and is only reduced for materials known to have been removed from the facility and for radioactive decay.

Table 3-1. TRA-632 Hot Cells 2009 and 2095 total radiological source terms.

| Nuclide | Cell 1 (Ci) | Cell 2 (Ci) | Cell 3 (Ci) | Cell Ventilation (Ci) | 2009 Cell Source Term (Ci) | 2095 Cell Source Term (Ci) |
|---------|----------------|----------------|----------------|-----------------------------|----------------------------------|----------------------------------|
| Totals | 2.27E+02 | 5.05E-01 | 1.57E+03 | 1.96E+00 | 1.80E+03 | 1.53E+01 |
| Totals | 227 Ci | 0.5 Ci | 1,570 Ci | 2 Ci | 1,800 Ci | 15.3 Ci |

Cell #1 has had extensive decontamination performed. These decontamination activities involved CO₂ pellet-blasting followed by vacuuming of cell surfaces. Based on the nature of work activities performed in the cell (acidic processes that etched the contamination into the cell surfaces), the relatively low reduction in cell dose rate following decontamination, and the decontamination activities performed (vacuuming of surfaces), the cell source term is due to fixed contamination with an insignificant contribution by loose contamination.

Cell #2 is protected as a radiological contamination area. The majority of floor, equipment, and table surfaces have loose contamination at levels that are <2.25E-3 μCi/cm². Based on the measured dose rates in the cell, the cell contains fixed contamination at levels that exceed 5 μCi/cm². Thus, the source term in Cell #2 is due to fixed contamination with loose contamination making an insignificant contribution.

The radiological source term for Cell #3 in Table 3-1 is documented in facility radiological documentation as being due to waste items (activated materials, Cell #1 decon waste, etc.) remaining in the cell. Three waste items remaining in the cell (a stove pipe, inline filters, and a 1-gal paint can) are currently being managed as RCRA mixed waste. A final waste determination on the materials in the

satellite accumulation area has not been completed; so, to preserve conservatism in the risk assessment, the items in the satellite accumulation area are included in Table 3-1 as part of the Cell #3 radiological inventory.

The cell ventilation system source term is derived from radiological surveys performed on the Cell #1 high-efficiency particulate air bank during the removal of the filters. The results of these surveys indicated relatively low levels of loose contamination ($1.35\text{E-}04 \mu\text{Ci}/\text{cm}^2$). Based on the source term determined from the measured dose rates, the fixed contamination levels are as high as $19 \mu\text{Ci}/\text{cm}^2$. Thus, it can be concluded that the ventilation source term is due to fixed contamination with an insignificant contribution by loose contamination.

Radioactivity is measured in a unit of activity called a curie (Ci). Activity is the rate a radiological isotope will decay by emitting ionizing particles, such as alpha and beta particles, or energy, such as gamma rays. The estimated current radionuclide inventory for Hot Cell #1 is 227 Ci, Hot Cell #2 is 0.505 Ci, Hot Cell #3 is 1,570 Ci; and cell ventilation system is 2 Ci. Therefore, the total current source term for the hot cells is estimated to be 1,800 Ci. The current source term was then decayed until the year 2095 to provide the source term that used in the risk evaluations presented in Section 4.

4. THREAT TO PUBLIC HEALTH, WELFARE, AND/OR THE ENVIRONMENT

Conditions at this site meet the criteria for a NTCRA as stated in the National Contingency Plan (40 CFR 300.415) as follows:

Actual or potential exposure to hazardous substances or pollutants or contaminants by nearby populations or the food chain (40 CFR 300.415(b)(2)(i)). While access to the INL Site is restricted, there is the potential that, over time, the hot cells will decay and the radionuclides could be released into the environment. This would create the potential for exposure to concentrations of radionuclides via inhalation of windblown dust from the debris or direct ingestion of contaminated soils by nearby human populations and INL Site workers. The location of TRA-632 is approximately 3.5 miles from U.S. Highway 20.

Ecological receptors could be exposed to Site contaminants through direct or indirect contact with radionuclides and with materials contaminated by radionuclides and through ingestion of food (e.g., soil-dwelling insects, vegetation) that is contaminated with nonradiological contamination such as heavy metals. The ecologically based screening levels are established to evaluate whether an internal exposure increase could occur to plants and animals that would result in the lack of maintenance or recovery of healthy local populations of ecological receptors that are, or should be, at or near the Site. If no action is taken at TRA-632, concentrations of some metals, such as Chromium-III and lead, could exceed the maximum concentration screening value.

High levels of hazardous substances or pollutants in soils largely at or near the surface that may migrate (40 CFR 300.415(b)(2)(iv)). The total activity from radionuclides at this site is identified in Table 3-1. If no action is taken, the potential exists for this radiological contamination to be ingested or transported via the wind to receptors.

5. ENDANGERMENT DETERMINATION

Actual or threatened release of hazardous substances from TRA-632, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health or welfare or the environment. As the TRA-632 Hot Cells continue to age, the threat of substantial release of radiological and hazardous substances increases with time, and containing these materials and preventing them from being released to the environment becomes more difficult. The surveillance and maintenance activities required to confine the hazardous substances may increase the risk of potential exposure to personnel.

The potential exposure to workers and ecological receptors, the potential threat of future releases, and the substantial risks associated with the radiological and hazardous substances at the facilities addressed by this Action Memorandum justify use of CERCLA removal action authority in accordance with Section 300.415(b)(2)(i) and (iv) of 40 CFR 300, "National Oil and Hazardous Substances Pollution Contingency Plan." Actual and/or threatened releases of hazardous substances from these facilities have the potential to present a threat to public health and/or the environment.

5.1 Removal Action Objectives

The removal action objectives for this NTCRA are to perform final decommissioning of the TRA-632 Hot Cells consistent with, or more conservative than, the OU 2-13 (DOE-ID 1997) removal action objectives to achieve the following:

- Inhibit direct exposure to radionuclide contaminants of concern that would result in a total excess cancer risk greater than 1 in 10,000 (1E-04) to 1 in 1,000,000 (1E-06) for current and future workers and future residents
- Inhibit ingestion of radionuclide and nonradiological contaminants of concern by all affected exposure routes (including groundwater, soil, and homegrown produce ingestion) that would result in a total excess cancer risk greater than 1 in 10,000 (1E-04) to 1 in 1,000,000 (1E-06) or a hazard index of 1 or greater for current and future workers and future residents
- Prevent unacceptable internal exposure of biota that would result in the lack of maintenance or recovery of healthy local populations/communities of ecological receptors that are or should be present at or near the site.

In addition to the remediation objectives established through the Federal Facility Agreement and Consent Order (DOE-ID 1991) process, the selected alternative should incorporate the DOE goal of reducing the "risk footprint" to as practicable extent as possible in consideration of as-low-as-reasonably-achievable principles governing radiological exposure to decommissioning personnel, safe engineering standards, ICDF waste acceptance criteria (WAC), and desired CERCLA site end states.

5.2 Proposed Actions

Three alternatives were evaluated in the TRA-632 Hot Cell EE/CA (DOE-ID 2009a). The EE/CA is available through the Administrative Record for the removal action and can be found at the following internet address: <http://ar.inel.gov>.

5.2.1 Alternative 1—No Action

Alternative 1, the no action alternative, assumes no removal would be conducted at TRA-632 and there would be no further surveillance and maintenance at this facility.

Under the no action alternative, the building and hot cells are assumed to degrade over the next 85 years to the point where they crumble to the ground, and contamination becomes available for uptake by a hypothetical future resident and ecological receptors. All the rubble and contamination are assumed to be lying on top of the ground surface to a depth of 6 in.

5.2.2 Alternative 2—No Action: Continued Surveillance and Maintenance

Under Alternative 2, there would be no action at TRA-632 except surveillance and maintenance.

Maintenance includes maintaining the TRA-632 building that protects the hot cells from the weather and provides the support systems, such as power and ventilation. Surveillance includes periodic facility inspections to ensure building integrity and systems operability to prevent release of radiological or chemical constituents to the environment, causing an unacceptable risk to potential receptors.

5.2.3 Alternative 3—Removal of the TRA-632 Building and Hot Cells

Alternative 3 fully removes the building down to the slab and removes the three hot cells contained in the building. Subsequent to removal of the hazardous waste from Hot Cell #3, wastes from the removal are disposed of at the ICDF. All above-slab portions of the hot cells will either be removed whole or sectioned prior to hoisting onto heavy-haul trailers for transport to the disposal facility. To reduce the spread of radioactive contamination during removal, the internal volume of the cells may be grouted. Under Alternative 3, no hazardous substances would remain above the slab at the hot cell location.

5.2.4 Contribution to Remedial Performance

The recommended alternative meets the remedial action objectives regarding long-term risk, minimizes short-term worker risk and radiation exposure, reduces the footprint of waste sites at the INL Site, is cost-effective, and provides a safe and stable configuration that is environmentally sound. No future remedial actions are anticipated above the concrete slab where the hot cells are located.

Subsequent to removal of the hazardous waste from Hot Cell #3, the waste from the hot cells will meet the ICDF WAC and would be transported and disposed of as low-level radioactive waste at the ICDF.

5.2.5 Basis for Selection of Proposed Alternative

In accordance with the *Guidance on Conducting Non-Time Critical Removal Actions Under CERCLA* (EPA 1993), the EE/CA's three NTCRA alternatives were evaluated with respect to three criteria: (1) effectiveness, (2) implementability, and (3) cost.

The no action alternatives are hypothetical, conservative, baseline assumptions that offer no reduction in toxicity, mobility, or volume of contaminants in that the sum of all identified chemical and/or radiological contamination, if not properly contained or controlled, may be released to the environment, causing an unacceptable risk to potential receptors. These assumptions are for comparative purposes only and do not reflect the DOE mandate to monitor, maintain, and mitigate potential or actual hazardous or radiological constituent releases to the public or the environment from any facility or site. In addition, this

alternative does not meet the DOE goal of reducing the “risk footprint” by consolidating wastes in the ICDF and reducing surveillance and maintenance costs on legacy buildings and structures.

Alternative 3 fully removes the TRA-632 building and the three hot cells for disposal at the ICDF. Under Alternative 3, no hazardous substances would remain above the slab at the TRA-632 location; therefore, this alternative satisfies the removal action objectives and meets the DOE goals of reducing the “risk footprint” by consolidating wastes in the ICDF and reducing surveillance and maintenance costs on legacy buildings and structures.

5.3 Compliance with Environmental Regulations, Including Those That Are Applicable or Relevant and Appropriate Requirements

Section 121 of CERCLA (42 USC § 9621) requires the responsible CERCLA implementing agency to ensure that the substantive standards of HWMA/RCRA and other applicable laws will be incorporated into the federal agency’s design and operation of its long-term remedial actions and into its more immediate removal actions. DOE-ID is the implementing agency for this NTCRA. Both DEQ and EPA concur that a NTCRA is warranted to protect human health and the environment. Through the NTCRA process, the risks presented in this document will be mitigated in a timely manner.

Table 5-1 lists the proposed applicable or relevant and appropriate requirements (ARARs) that have been identified for this removal action. These ARARs are a compilation and expansion of the ARARs identified in the OU 2-13 ROD (DOE-ID 1997). The ARARs list is based on several key assumptions:

- The drains and piping are ancillary to the TRA-630 Catch Tank System, have been identified as part of the VCO Action Plan (VCO-5.8.d), and are outside the scope of this EE/CA. Soil contamination, if found under the slab, will be addressed under a HWMA/RCRA Closure Plan and/or the CERCLA program.
- Lead shielding will be removed from TRA-632 Hot Cells prior to initiation or during this removal action through other regulatory activities intended to place the facility in an environmentally safe condition. Some incidental lead, such as small amounts of lead encapsulated in debris, may be managed under the scope of the NTCRA as CERCLA waste and be disposed of in the ICDF, according to the WAC. Removed lead that cannot be recycled or reclaimed shall be declared a hazardous waste or mixed low-level waste, will be managed in accordance with the substantive requirements of the HWMA/RCRA, and will be disposed of at an off-Site disposal facility in accordance with the disposal facility WAC.
- Management of CERCLA waste generated during the removal action would be subject to meeting the ICDF WAC (DOE-ID 2009b).
- If decontamination liquids are generated, they will be disposed of at the ICDF evaporation ponds in accordance with the approved WAC. Small amounts of decontamination liquid may be solidified with absorbent and be disposed of in the disposal cells at ICDF.
- Debris generated during removal of the TRA-632 Hot Cells might have paint that contains polychlorinated biphenyls (PCBs). If encountered, such waste may trigger substantive requirements of the Toxic Substances Control Act (15 USC § 2601 et seq.). Lead-contaminated paint also may be present on demolition debris, which would be subject to the substantive requirements of RCRA

Table 5-1. Summary of applicable or relevant and appropriate requirements for the TRA-632 non-time-critical removal action.

| Requirement (Citation) | ARAR Type | Comments |
|---|-----------|---|
| Clean Air Act and Idaho Air Regulations | | |
| “Toxic Substances,” IDAPA 58.01.01.161 “Toxic Air Pollutants, Noncarcinogenic Increments,” IDAPA 58.01.01.585 “Toxic Air Pollutants, Carcinogenic Increments,” IDAPA 58.01.01.586 “Environmental Remediation Source,” IDAPA 58.01.01.210.16(a) | A | Applies to any toxic substances emitting during implementation of the removal action. |
| <10 mrem/yr, “Standard,” 40 CFR 61.92 | A | Applies to the waste handling activities. |
| “Emission Monitoring and Test Procedures,” 40 CFR 61.93 | A | Applies to the waste handling activities. |
| “Compliance and Reporting,” 40 CFR 61.94(a) | A | Applies to the waste handling activities. |
| “Standard for Demolition and Renovation,” 40 CFR 61.145 | A | Applies to any asbestos-containing materials removed during the decommissioning. |
| “Rules for Control of Fugitive Dust” and “General Rules,” IDAPA 58.01.01.650 and IDAPA 58.01.01.651 | A | Applies to the waste handling activities. |
| Idaho Solid Waste Facilities Act | | |
| “Applicable Requirements for Tier II Facilities,” IDAPA 58.01.06.012 | A | Applies to disposal of solid wastes. |
| RCRA and Idaho Hazardous Waste Management Act | | |
| <i>Generator Standards:</i> | | |
| “Standards Applicable to Generators of Hazardous Waste,” IDAPA 58.01.05.006, and the following, as cited in it: | | |
| “Hazardous Waste Determination,” 40 CFR 262.11 | A | Applies to waste that would be generated during the removal action. |
| <i>General Facility Standards:</i> | | |
| “Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities,” IDAPA 58.01.05.008, and the following, as cited in it: | | |
| “Temporary Units (TU),” 40 CFR 264.553 | A | Waste may be treated or temporarily stored in a temporary unit prior to disposal. |

Table 5-1. (continued).

| Requirement (Citation) | ARAR Type | Comments |
|--|-----------|---|
| “Staging Piles,” 40 CFR 264.554 | A | Waste may be temporarily staged prior to disposal. |
| “General Inspections Requirements,” 40 CFR 264.15 | A | Applies to a facility staging, storing, or treating hazardous waste prior to transfer to the ICDF or an off-Site facility. |
| “Preparedness and Prevention,” 40 CFR 264, Subpart C | A | Applies to a facility staging, storing, or treating hazardous waste prior to transfer to the ICDF or an off-Site facility. |
| “Contingency Plan and Emergency Procedures,” 40 CFR 264, Subpart D | A | Applies to a facility staging, storing, or treating hazardous waste prior to transfer to the ICDF or an off-Site facility. |
| “Disposal or Decontamination of Equipment, Structures, and Soils,” 40 CFR 264.114 | A | Applies to contaminated equipment used to remove, treat, or transport hazardous waste. |
| “Use and Management of Containers,” 40 CFR 264.171-178 | A | Applies to containers used during the removal and treatment of hazardous waste. |
| <i>Land Disposal Restrictions:</i> | | |
| “Land Disposal Restrictions,” IDAPA 58.01.05.011, and the following, as cited in it: | | |
| “Applicability of Treatment Standards,” 40 CFR 268.40(a)(b)(e) | A | Applies to hazardous waste and secondary waste, if treatment is necessary to meet the disposal facility’s WAC or if treatment is required before placement. |
| “Treatment Standards for Hazardous Debris,” 40 CFR 268.45 | A | Applies to hazardous debris, if treatment is necessary to meet the disposal facility’s WAC or if treatment is required before placement. |
| “Universal Treatment Standards,” 40 CFR 268.48(a) | A | Applies to nondebris hazardous waste and secondary waste, if treatment is necessary to meet the disposal facility’s WAC or if treatment is required before placement. |
| “Standards for Universal Waste Management,” IDAPA 58.01.05.016 | | |
| “Standards for Large Quantity Handlers of Universal Waste,” 40 CFR 273, Subpart C | A | Applies to management of universal wastes. |
| Idaho Groundwater Quality Rules | | |
| “Ground Water Quality Rule,” IDAPA 58.01.11 | A | The waste handling activities must prevent migration of contaminants from the TRA-632 Hot Cells that would cause the SRPA groundwater to exceed applicable State of Idaho groundwater quality standards in 2095 and beyond. |

Table 5-1. (continued).

| Requirement (Citation) | ARAR Type | Comments |
|---|---|---|
| TSCA | | |
| “Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions,” 40 CFR 761 | A | Applies to removal, decontamination, storage, and disposal of items (including equipment) with PCB contamination. |
| Migratory Bird Treaty Act of 1918 | | |
| “Protection of Migratory Game and Insectivorous Birds,” 16 USC 7 | A | Applies to disturbances of nesting migratory birds. |
| To-Be-Considered Requirements | | |
| “Radiation Protection of the Public and the Environment,” DOE O 5400.5 Chg 2, Chapter II(1)(a,b) | TBC | Applies to the TRA-632 building and hot cells before, during, and after the removal action. Substantive design and construction requirements would be met to keep public exposures as low as reasonably achievable. |
| “Radioactive Waste Management,” DOE O 435.1 Chg 1 | TBC | Applies to the TRA-632 building and hot cells before, during, and after the removal action. Substantive design and construction requirements would be met to protect workers. |
| <i>Region 10 Final Policy on the Use of Institutional Controls at Federal Facilities (EPA 2006)</i> | TBC | Applies to residual waste following completion of the removal action. |
| A applicable requirement ARAR applicable or relevant and appropriate requirement CFR Code of Federal Regulations DOE U.S. Department of Energy EPA U.S. Environmental Protection Agency | ICDF Idaho CERCLA Disposal Facility IDAPA Idaho Administrative Procedures Act PCB polychlorinated biphenyl RCRA Resource Conservation and Recovery Act SRPA Snake River Plain Aquifer | TBC to be considered TRA Test Reactor Area TSCA Toxic Substances Control Act USC United States Code WAC waste acceptance criteria |

hazardous waste regulations. Nonhazardous low-level waste would be disposed of at the ICDF. Waste that can be demonstrated to be nonhazardous and to contain no added radiological constituents is eligible for disposal as solid waste at an approved on-Site solid waste disposal facility. Any PCB-containing electrical equipment, such as PCB-containing light ballasts or capacitors, will be removed and disposed of off-Site at an approved disposal facility.

- Asbestos-containing material, which is both friable and nonfriable, may be encountered incidental to performance of the NTCRA. Friable or regulated asbestos-containing material is subject to specific asbestos regulations and would be acceptable for disposal at ICDF and/or, if not radiologically contaminated, at an approved on-Site solid waste disposal. Regulated asbestos will be removed and disposed of as required by 40 CFR 61.150, “Standard for Waste Disposal for Manufacturing, Fabricating, Demolition, Renovation, and Spraying Operations.”
- Mercury located in mercury fluorescent lamps is planned for removal prior to this removal action under other regulatory activities intended to place the facility in an environmentally safe condition, as are the mercury-containing electrical switches and lights. No mercury at concentrations of regulatory concern is expected to be present in the building substructure at the start of the removal action.

5.4 Cultural Resources

Section 106 of the “National Historic Preservation Act of 1966” (NHPA) (16 USC § 470 et seq.), as amended, requires agencies to consider the impact of undertakings on properties listed or eligible for listing in the National Register of Historic Places and to consult with the Idaho State Historic Preservation Officer and other interested parties when impacts are likely. It also requires federal agencies to invite the Advisory Council on Historic Preservation to participate in consultation when impacts may be adverse. The NHPA Section 106 process has been tailored to meet the unique needs of the INL Site. Section 110 of the NHPA directs federal agencies to establish programs to find, evaluate, and nominate eligible properties to the National Register of Historic Places, including previously unidentified historic properties that may be discovered during the implementation of a project (36 CFR 800). In addition, the “Archaeological Resources Protection Act of 1979” (16 USC § 470aa–470mm), as amended, provides for the protection and management of archaeological resources on federal lands. Procedures and strategies to tailor these requirements to the unique needs of the INL Site are described in the INL Cultural Resource Management Plan (CRMP) (DOE-ID 2007c). The INL CRMP is implemented through a Programmatic Agreement between DOE-ID, the Idaho State Historic Preservation Officer, and the Advisory Council on Historic Preservation (DOE-ID 2007c).

The TRA-632 Hot Cells are a historic property, eligible for nomination to the National Register of Historic Places. DOE-ID has made the decision to proceed with demolition of the facility. To mitigate the adverse impacts caused by such action, DOE-ID, through measures outlined in the INL CRMP and by a 2005 Memorandum of Agreement between DOE and the Idaho State Historic Preservation Officer (DOE-ID 2005) and the 2004 Programmatic Agreement (DOE-ID 2007c), has committed to the preservation of the TRA-632 building and hot cells history through the completion of large-format photographs of the facility.

5.5 Natural Resources

DOE was required to review as guidance the most current U.S. Fish and Wildlife Service list for threatened and endangered plant and animal species. DOE-ID determined that none of the alternatives would impact any threatened and endangered species and also determined that formal consultation with the U.S. Fish and Wildlife Service was not required for this action.

6. PROJECT SCHEDULE

Removal of the TRA-632 Building is planned to begin in fall 2010 with complete removal of the building and hot cells by the end of 2011.

7. PROJECT COST

Detailed cost estimates have been prepared for Alternatives 2 and 3. There would be no costs associated with Alternative 1, no action, since this is a “true” no action where the TRA-632 Hot Cells are simply left to degrade.

The estimates were prepared in accordance with *A Guide to Developing and Documenting Cost Estimates During the Feasibility Study* (EPA 2000). Costs are calculated for both D&D costs and future surveillance and maintenance expenses. In accordance with EPA guidance, the cost for the alternatives over time is calculated as present net worth costs, which are the costs in 2009 dollars.

The information in the cost estimate summary is based upon the best available information regarding the anticipated scope of the removal action alternatives. Changes in the cost elements are likely to occur as a result of new information and data collected during the performance of the removal action. Major changes will be documented in the form of a memorandum placed into the Administrative Record file. This is an order-of-magnitude engineering cost estimate that is expected to be within +50 to -30% of actual project cost. The present-worth cost estimate for the selected alternative is \$6,300,000.

8. EXPECTED CHANGE SHOULD ACTION BE DELAYED OR NOT BE TAKEN

The expected change to the TRA-632 building and hot cells, should action be delayed or not be taken, would be that the facilities would remain under administrative and institutional control. However, as the facilities continue to age, the threat of substantial release of radiological and hazardous substances increases with time, and containing these materials and preventing them from being released to the environment become more difficult. The surveillance and maintenance activities required to confine the hazardous substances may increase the risk of potential exposure to personnel. If the action were delayed, continued expenditures for surveillance and maintenance costs would accrue during the time interval elapsed until final decommissioning activities are performed.

9. STATUTORY AND REGULATORY AUTHORITY

The proposed removal action is being undertaken by DOE-ID, as the lead agency, pursuant to CERCLA, Section 104(a) (42 USC 9604), and Executive Order 12580, as recognized by Section 5.3 of the Federal Facility Agreement and Consent Order (DOE-ID 1991). In accordance with 40 CFR 300.415(j) and DOE guidance, on-Site removal actions conducted under CERCLA are required to meet ARARs to the extent practicable considering the exigencies of the situation. DOE-ID will comply with the ARARs and the “to-be-considered” guidance as set forth in Section 5.3.

10. OUTSTANDING POLICY ISSUES

There are no outstanding policy issues.

11. ENFORCEMENT

DOE-ID is conducting this removal action as the lead agency under the authority of 40 CFR 300.5, “Definitions,” and 40 CFR 300.415, “Removal Action.”

12. RECOMMENDATION

The recommended removal action alternative is Alternative 3, complete removal of the TRA-632 building and hot cells and disposal of the wastes at ICDF in accordance with the facility WAC. ICDF is a state-of-the-art, multiple-lined, monitored on-Site disposal facility that offers greater protection to human health and the environment than disposal in an unlined disposal cell. The wastes generated from this hot cells removal action meet the ICDF WAC.

ICDF is the only on-Site disposal facility that accepts CERCLA waste generated at the INL Site. It provides many advantages for disposal of this waste:

- The leachate from disposed waste at ICDF is managed using a double geotextile liner for collection.
- ICDF has a lowermost layer of compact clay to protect groundwater by capturing and holding contaminants to prevent migration if the geotextile liners should fail in the future.
- The ICDF WAC were established based on conservative groundwater modeling and compatibility analysis.
- ICDF is located out of the 100-year flood plain.
- Operational controls are in place to minimize void spaces and prohibit free liquids in the waste.
- Wastes are treated as necessary to stabilize prior to disposal.
- A groundwater monitoring system, which includes perched wells as well as aquifer wells, provides early detection of releases.
- A waste placement tracking system records the location of the waste in the disposal cell if future retrieval becomes necessary.
- An engineered cover to minimize infiltration of precipitation into the wastes will eventually be added.
- Access controls, monitoring, and maintenance will remain in place for as long as the contents of ICDF remain a threat to human health or the environment if uncontrolled.

The recommended alternative meets the proposed removal action objectives regarding long-term risk and is cost-effective. Alternative 3 is also consistent with the remedial action objectives of the OU 2-13 ROD (DOE-ID 1997), is compliant with ARARs, and satisfies the DOE goal of reducing the “risk footprint” by consolidating wastes at ICDF and reducing surveillance and maintenance costs on legacy buildings and structures.

13. PUBLIC PARTICIPATION

Appendix A describes the public participation process. Appendix B is comments received during the public comment period with their responses. Appendix C is the letter received from the INL Site Environmental Management Citizens Advisory Board documenting the recommendation of selecting Alternative 3.

14. REFERENCES

- 36 CFR 800, 2004, "Protection of Historic Properties," *Code of Federal Regulations*, Office of the Federal Register, August 2004.
- 40 CFR 61.92, 2009, "Standard," *Code of Federal Regulations*, Office of the Federal Register, October 2009.
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- 40 CFR 61.145, 2009, "Standard for Demolition and Renovation," *Code of Federal Regulations*, Office of the Federal Register, October 2009.
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- 40 CFR 262.11, 2009, "Hazardous Waste Determination," *Code of Federal Regulations*, Office of the Federal Register, June 2009.
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- 40 CFR 264.171, 2008, "Condition of Containers," *Code of Federal Regulations*, Office of the Federal Register, April 2008.
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- 40 CFR 264, Subpart D, 2008, “Contingency Plan and Emergency Procedures,” *Code of Federal Regulations*, Office of the Federal Register, April 2008.
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- 40 CFR 268.48, 2008, “Universal Treatment Standards,” *Code of Federal Regulations*, Office of the Federal Register, June 2008.
- 40 CFR 273, Subpart C, 2007, “Standards for Large Quantity Handlers of Universal Waste,” *Code of Federal Regulations*, Office of the Federal Register, July 2007.
- 40 CFR 300, 2009, “National Oil and Hazardous Substances Pollution Contingency Plan,” *Code of Federal Regulations*, Office of the Federal Register, December 2009.
- 40 CFR 300.5, 2009, “Definitions,” *Code of Federal Regulations*, Office of the Federal Register, December 2009.
- 40 CFR 300.415, 2009, “Removal Action,” *Code of Federal Regulations*, Office of the Federal Register, December 2009.
- 40 CFR 761, 2009, “Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions,” *Code of Federal Regulations*, Office of the Federal Register, June 2009.
- 15 USC § 2601 et seq., 1976, “The Toxic Substances Control Act (TSCA) of 1976,” *United States Code*, January 1, 1977.
- 16 USC 7, 2005, “Protection of Migratory Game and Insectivorous Birds,” *United States Code*, January 3, 2005.

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Appendix A

Public Comments Received During the Comment Period and Responses to Comments

Appendix A

Public Comments Received During the Comment Period and Responses to Comments

The public participation period for the Engineering Evaluation/Cost Analysis (EE/CA) for Decommissioning of the TRA-632 Hot Cells (DOE-ID 2009a) was from September 21, 2009, through October 20, 2009. A public notice was sent to nine different Idaho and Wyoming newspapers on September 21, 2009. The notice was posted in the U.S. Department of Energy (DOE) Administrative Record electronically, and hard copies of the document were sent to the DOE Public Reading rooms in Idaho Falls and Boise. A presentation was provided to the Idaho National Laboratory (INL) Citizens Advisory Board on September 10, 2009, which was also open to participation from the general public.

Written comments on the EE/CA have been received from:

Victor White

INL Citizens Advisory Board

Appendix B
Public Comment Resolution Matrix

Appendix B

Public Comment Resolution Matrix

| # | Comment | Resolution |
|---|---|---|
| 1 | <i>I believe that alternative # 3 is the best option, but would accept implementation of alternative # 2 if funding is insufficient for alternative #3.</i> | DOE agrees that Alternative 3 should be selected. In the long run, Alternative 2 would cost more than Alternative 3 because of the continued surveillance and maintenance costs. Thank you for the comment. |

Appendix C

Citizen's Advisory Board TRA-632 Hot Cells Engineering Evaluation/Cost Analysis Recommendation



09-CAB-011

INL Site Environmental Management

September 28, 2009

CITIZENS ADVISORY BOARD

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Vice Chair

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Dennis Faulk
U.S. EPA, Region 10
Rick Provencher
DDFO, DOE-ID
Susan Burke
State of Idaho
Daryl Koch
State of Idaho
Brent Rankin
Idaho Cleanup Project

Support Services

Portage, Inc.
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Phone 208.419.4102
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Richard Provencher
U.S. Department of Energy, Idaho Operations Office
1955 N. Fremont Ave., MS 1222
Idaho Falls, ID 83415-1220

Subject: Recommendation #144, Engineering Evaluation/Cost Analysis for Decommissioning of the TRA-632 Hot Cells

Mr. Provencher:

Please find attached the Board's recommendation regarding the Engineering Evaluation/Cost Analysis for Decommissioning of the TRA-632 Hot Cells supporting Alternative 3. This recommendation was approved by consensus.

Thank you for informing the CAB and allowing us to provide a recommendation regarding this subject.

Regards,

R.D. Maynard
Chairman

cc: Bob Pence, DOE-ID
Mark Shaw, DOE-ID

Alternative 3 Selection

At the September 10, 2009 meeting, the Citizens Advisory Board (CAB) received a presentation and engaged in lengthy discussion with various Department of Energy (DOE) personnel, the Environmental Protection Agency, and Idaho Cleanup Project personnel regarding the Test Reactor Area Hot Cell Engineering Evaluation/Cost Analysis (EE/CA).

Following discussion, the CAB voted unanimously to support Alternative 3 for the key reasons outlined here:

- Alternative 3 is the only one that completely removes the three hot cells and the building.
- No hazardous substances would remain above the concrete slab.
- This alternative reduces surveillance and maintenance costs.
- This alternative also allows for future remediation of the Voluntary Consent Order lines under the building.
- Follows the guidelines for reducing the footprint of Idaho National Laboratory.

As always, for future remediation, worker safety is a key concern for the CAB. Even though the EE/CA does not address the details on how the work will be performed, DOE addressed this issue of safety during the discussion. The CAB commends DOE on their safety performance and is comfortable that DOE will continue to place safety as their highest priority in the work plans.