# B. FACILITY DESCRIPTION

This section provides a general description of the U.S. DOE INEEL, as required by the Idaho Administrative Procedures Act (IDAPA), 58.01.05.012 [Title 40, Code of Federal Regulations (CFR) Part 270.14(b)]. This permit application addresses hazardous waste and mixed waste management activities at the INEEL. For the purposes of this permit application, mixed waste consists of radioactive waste as defined under the Atomic Energy Act and hazardous waste is defined under IDAPA 58.01.05.005 (40 CFR 261).

The INEEL is a large site (2,305 $km^2$ [890 $mi^2$]) with several major facilities and contractors responsible for programs administered by various DOE operations offices. This permit application is submitted as a single application for the entire INEEL, as agreed to by the IDEQ and the U.S. EPA, Region 10. The HWMA/RCRA Work Plan for the INEEL identifies the specific waste management units to be permitted, the waste management units that have received a permit from IDEQ, and those waste management units in the Part A HMWA/RCRA permit application that are to be closed under interim status. This document is available on the Internet through the INEEL home page, www.inel.gov. Henceforth, unless otherwise noted, “permitting” shall be in reference to HWMA/RCRA permitting and “closure” shall be in reference to closure under HWMA/RCRA interim or permitted status. Solid waste management units are addressed under the Radioactive Sodium Storage Facility/Radioactive Scrap and Waste Facility Partial Permit, Module V.

Section B is organized as follows. Subsection B-1 provides a general description of the INEEL and identifies the location of the waste management units included in this permit application. The text in Subsection B-1 is supplemented by maps and organized according to the major facility areas at the INEEL.

Subsection B-2 contains topographic maps and wind rose data for the INEEL, along with supporting discussion. Subsection B-3 contains location information addressing seismic and floodplain standards. Subsection B-4 contains information on traffic volume and controls at the INEEL, including both on-Site and off-Site traffic.

## B-1 General Description [IDAPA 58.01.05.012; 40 CFR 270.14(b)(1)]

The INEEL is located near the northwest margin of the Eastern Snake River Plain (ESRP), a prominent low-elevation arcuate feature of southeastern Idaho. Geographically, this region of the ESRP extends over five counties. The INEEL lies predominately in Butte County, although it extends into Bingham, Bonneville, Jefferson, and Clark counties. All waste management units are located in Butte county with the exception of ANL-W units, which are located in Bingham county.

The ESRP is relatively flat with an average elevation of 1,500 m (4,920 ft) above the mean sea level. Within the INEEL site, elevations generally range from 1,450 to 1,585 m (4,760 to 5,200 ft). A broad topographic ridge extends to the northeast along the central axis of the ESRP. This ridge effectively separates the drainage of the mountain ranges north and west of the INEEL site from the Snake River.

The ESRP is a northeast-trending zone of late Tertiary and Quaternary volcanism that transects the northwest-trending, normal-faulted mountain ranges of the surrounding Basin and Range Province. The mountain ranges bordering the ESRP, (e.g., Lost River, Lemhi, and Beaverhead) consist of Paleozoic- and Mesozoic-age rocks folded, intruded, and uplifted along normal faults during basin and range tectonism. The mountain ranges and their associated basin and range faults terminate along both sides of the low-lying basalt- and sediment-filled ESRP.

Volcanic rocks within the ESRP consist of late Tertiary rhyolitic rocks covered by the latest Tertiary to Holocene basaltic lava flows. At least 1 km (3,281 ft) of basaltic lava flows and intercalated sediments has accumulated in the ESRP following the rhyolitic volcanism related to passage of the Yellowstone mantle plume. About 2 km (6,562 ft) of subsidence in the past 4 million years have allowed basalts and sediments to accumulate within the ESRP. Basalt lava flows have been emplaced during the past 4 million years. Most basalt eruptions were effusive, similar to the style of basalt volcanism occurring at Kileaua, Hawaii, today. Throughout the ESRP, the basaltic vents typically formed linear arrays of fissure flows, small shields and pyroclastic cones, pit craters, and open fissures that collectively define northwest-trending volcanic rift zones. The most well known and recently active (2,000 years) is the Great Rift where eight eruptive episodes occurred at Craters of the Moon during the past 15,000 years. Basalt lava-flows at the INEEL range in age from 5,200 years to greater than 730,000 years old.

INEEL site surficial deposits are quite variable and include eolian (loess and sand dunes), alluvial (gravel, sand, and silt), and lacustrine (clay, silt, and sand) deposits. The surface soils vary widely in thickness and water-holding capacity. Sedimentary interbeds within the subsurface basalt stratigraphy exhibit the same characteristics as the surficial sediments.

The INEEL operates 26 seismic stations and 26 strong-motion accelerographs to monitor earthquake activity occurring in the region. The seismic stations are located on the INEEL site, on the adjacent ESRP, and throughout the surrounding mountainous region (Exhibit B-1). Accelerographs are located in moderate and high-hazard facilities and at ground surface within facility areas. The INEEL monitors and records earthquake activity within a 161-km (100-mi) radius of the INEEL, to develop a historical database of times, dates, locations, and magnitudes of earthquakes. This information is used in ground motion analyses to estimate levels of ground shaking (ground motion) from future earthquakes. The seismic monitoring activity provides a way to validate current ground motion models and levels in the event of a large earthquake in the future. The INEEL Seismic Network also serves as an early warning detection system for future volcanism.

INEEL earthquake data have been combined with earthquake data from nearby seismic networks to produce a historical earthquake record. The historical earthquake record (1884 to 1998) shows that the ESRP is seismically quiet (aseismic) relative to the surrounding active Basin and Range Province. The INEEL has operated a seismic network since 1971, and only 23 events, all of magnitude 1.5 or less, have been detected within the ESRP. In contrast, thousands of earthquakes have occurred in the Basin and Range Province surrounding the ESRP. Two large historic events, the 1983 Borah Peak earthquake (magnitude 7.3) and the 1959 Hebgen Lake earthquake (magnitude 7.5), were felt at the INEEL but caused no damage because of their great distance from the Site (Exhibit B-2).

During the past 10 years, the INEEL has spent a considerable amount of effort estimating the levels of ground shaking that can be expected at INEEL facilities from all earthquake sources in the region. The effort included investigating the faults closest to the INEEL (Exhibit B-2). The Lost River and Lemhi faults were studied in detail to estimate their maximum earthquake magnitudes, distances to INEEL facilities, ages of earthquakes, and recurrence intervals. The results of these investigations indicate that the closest fault segments are capable of generating magnitude 7 or greater earthquakes and that the most recent earthquakes occurred more than 15,000 years ago on these fault segments.

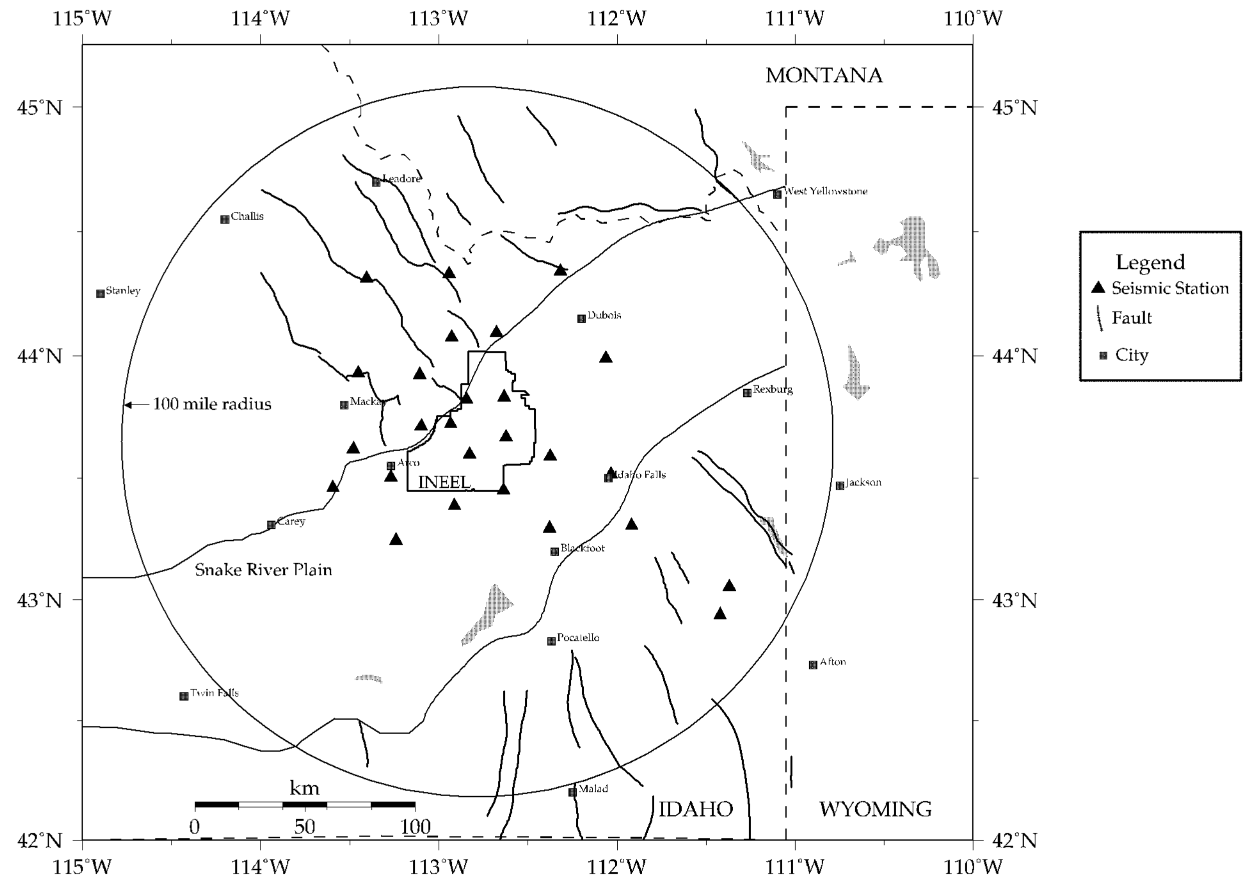


**Exhibit B-1**. Location of INEEL seismic stations.

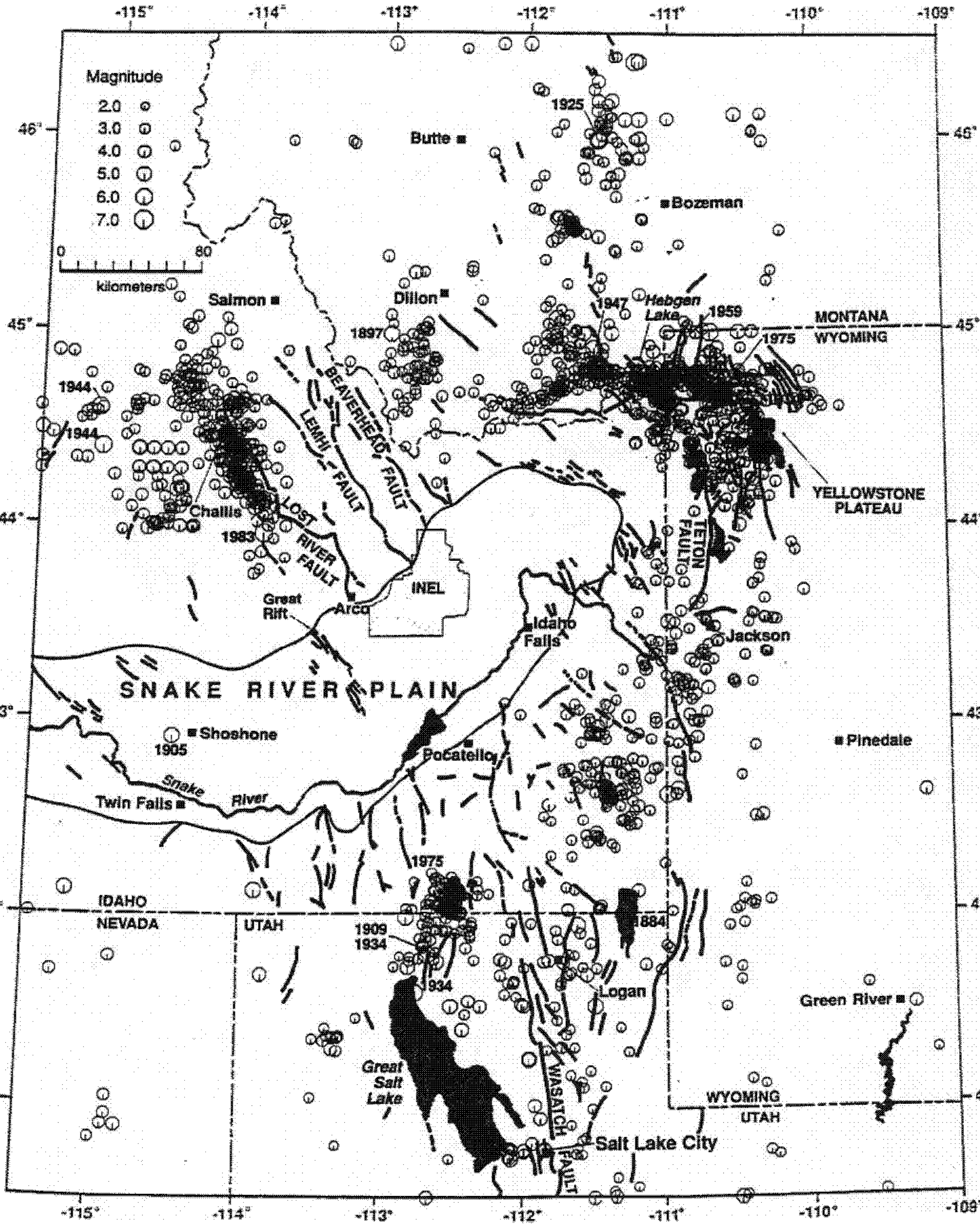


**Exhibit B-2**. Historic earthquake events located on the INEEL.

Since the late 1960s, investigators recognized that ESRP subsurface conditions seem to dampen seismic waves. As part of the recent subsurface characterization, modeling and earthquake monitoring studies were conducted to understand how seismic waves are affected by the ESRP. The alternating sequence of basalt and sediment interbeds that composes the ESRP subsurface dissipates (attenuates) seismic energy to a greater extent than uniform rock. Seismic waves pass through layers of alternating competent (hard) basalt and loosely consolidated (soft) sediments scattering and dampening seismic energy and result in earthquake ground motions that are 15 to 25% less intense than would be exhibited in uniform rock. To account for modeling uncertainties, empirical attenuation relationships for extensional tectonic regimes have also been incorporated into the INEEL seismic hazards analysis.

A probabilistic ground motion study was completed for all INEEL facilities in 1996. The method incorporated the range of possible seismologic and tectonic interpretations, including earthquake source characteristics (e.g., type of faulting, earthquake magnitude, and fault geometry), attenuation models (the manner in which seismic waves dissipate as they travel through the earth), and subsurface geologic conditions (the manner in which seismic waves are affected by the near-surface sediment and basalt layers). Sensitivity analyses were performed to determine the important contributors to the seismic hazard and to the uncertainties in the hazard. The estimates are in the form of the levels of ground shaking that will not be exceeded in specified time periods (such as 500; 1,000; 2,000; and 10,000 years).

These results were used to develop design basis earthquake parameters, which were documented in *Development of Probabilistic Design Earthquake Parameters for Moderate and High Hazard Facilities at INEEL* (Payne et al. 2000). The expected levels of earthquake ground motions (determined by the recent INEEL seismic hazards assessment) provide seismic design criteria for new facilities and indicate that past criteria are conservative. The revised seismic criteria are being used in assessments of existing facilities to ensure safety to the public, workers, and environment. INEEL seismic design criteria have been developed consistent with the requirements of DOE standards, American Society of Civil Engineering standards, Nuclear Regulatory Commission (NRC) requirements, and nuclear quality assurance requirements.

Assessment of volcanic hazards has accompanied the seismic hazards research. The ESRP is a volcanic province, and continuing eruption of basalt lava flows in association with the volcanic rift zones in recent geologic time contributes to the geologic hazards for INEEL facilities (Exhibit B-3). Volcanism investigations (determination of ages of lava flows, mapping of volcano distribution and volcanic rift zone structures, and analysis of borehole data) have contributed greatly to improved understanding

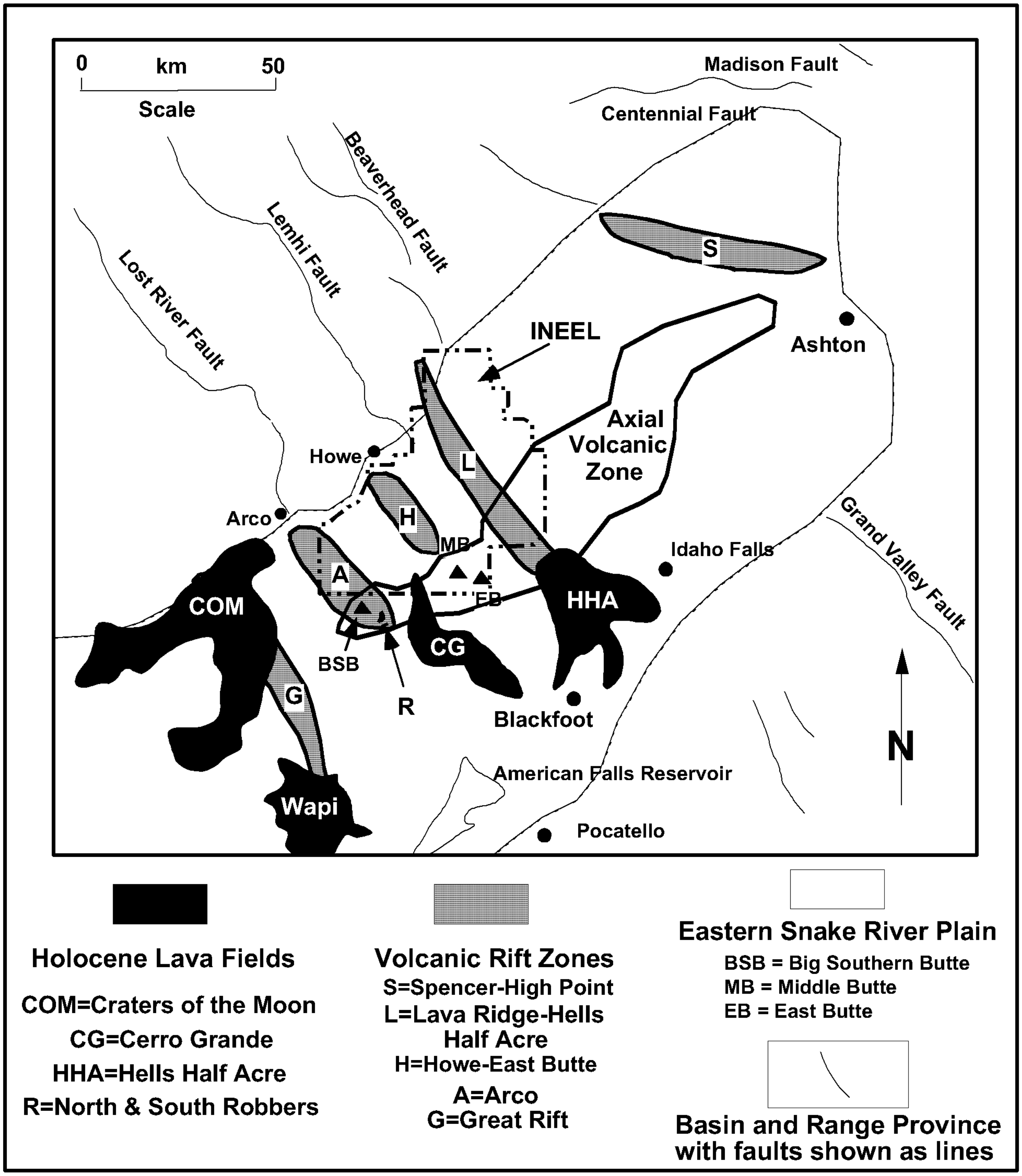


**Exhibit B-3.** Generalized geology of the Eastern Snake River Plain showing locations of volcanic rift zones, young lava fields, and basin and range faults.

of the volcanic processes affecting the ESRP and the interaction of those processes with earthquake activity in the surrounding Basin and Range Province. This understanding has enabled completion of a rigorous probabilistic volcanic hazards assessment to support an NRC license that was recently granted for a new spent nuclear fuel (SNF) storage facility at the Idaho Nuclear Technology and Engineering Center (INTEC). Methodologies have been developed to assess the site-specific volcanic hazard for each facility.

An expansion and upgrade of the INEEL seismic network in 1991 and 1992 included siting of several seismic monitoring instruments for enhanced capability to provide early warning in the event of potential future volcanic activity. The characteristic low-magnitude earthquake swarms that accompany upward movement of magma through the crust of the earth provide the means to monitor renewed volcanic activity.

Surface water at the INEEL consists of streams draining through intermountain valleys to the west and north, localized snowmelt, and rain. Streams entering the INEEL include the Big Lost River, Little Lost River, and Birch Creek. Flow from the Little Lost River and Birch Creek is generally diverted for irrigation purposes, before it reaches the INEEL. However, water from the Big Lost River and Birch Creek enters the INEEL during years without drought. During drought periods, flow does not reach the INEEL. These three drainage systems either terminate in one of four playas in the north-central part of the INEEL or terminate prior to reaching the playas. The INEEL is not crossed by any perennial streams. All surface outflows are a result of localized slope run-off.

Recharge waters from the Big Lost River to the Snake River Plain Aquifer have been significant during wet years. Except for evaporation losses, all water flowing in the Big Lost River through the ESRP is recharged to the ground.

The Snake River Plain Aquifer is a continuous body of groundwater that underlies nearly all of the ESRP. The section of the aquifer underlying the ESRP is approximately 320 km (198 mi) long and 48 to 97 km (30 to 60 mi) wide. This section of thin basalt flows interbedded with layers of sediments comprises an area of approximately 24,900 $km^2$ (15,440 $mi^2$). Most of the permeable zones in the aquifer occur along the upper and lower edges of the basaltic flows, which have large irregular fractures, cavities, and voids. This structure leads to a great degree of heterogeneity and anisotropy in the hydraulic properties of the aquifer. The thickness of the aquifer has not been established, but several holes at the INEEL indicate that the thickness of the most permeable part is between 100 and 400 m (328 to 1,312 ft). The depth to the aquifer under the INEEL varies from 60 m (197 ft) in the northeast corner to 275 m (902 ft) in the southwest corner.

Groundwater flows southwestward from the north and northeastern recharge areas. Tracer studies at the INEEL indicate groundwater velocities of 1.5 to 6.1 m (4.9 to 20 ft) per day. The aquifer contains 1,230 to 2,460 $km^3$ (300 to 600 $mi^3$) of water, of which 616 $km^3$ (150 $mi^3$) is recoverable. About 8 $km^3$ (2 $mi^3$) of groundwater is discharged annually through springs in the Hagerman, Idaho, area, and through irrigation-well withdrawals in the region west of Twin Falls, Idaho. The discharges from the springs make a significant contribution to the flow of the Snake River downstream from Hagerman. Besides providing water for INEEL operations, the aquifer supplies other industries. Water from springs emerging in the Twin Falls–Hagerman area is used commercially in the aquaculture industry. The spring water flow of 47 $m^3$/sec (1,659 $ft^3$/sec) constitutes 76% of the water used for the commercial production of fish in Idaho. Most of these fish farms discharge water directly into the Snake River.

The INEEL is owned by the United States Government and is operated by DOE. Management and operation of the INEEL is the responsibility of DOE-designated private contractors working under the direction of DOE Idaho Operations Office (DOE-ID); DOE Chicago Operations Office (DOE-CH); and the Idaho branch of the Pittsburgh Naval Reactors Office. Exhibit B-4 is a map of the INEEL that identifies the locations of the major facility areas.

The INEEL was established in 1949, by the Atomic Energy Commission, as an area where various types of nuclear reactors, support plants, and associated equipment could be built, tested, and operated with maximum safety. To date, 52 reactors have been built at the INEEL, including reactors for aircraft propulsion, naval propulsion, fast-breeder reactor development, light-water safety tests, organic moderator and coolant development, materials testing, development of portable power reactors for use in space, and miscellaneous research. One of these reactors is still operable, the Advanced Test Reactor (ATR). A decontamination and decommissioning program is underway to ensure the safe closure of retired facilities and equipment.

INEEL's original emphasis on nuclear physics has been broadened to encompass the entire spectrum of the basic sciences. Paralleling and contributing to this growth in scientific and technical capabilities is the increased emphasis on and dedication of resources to solving the problems of environmental restoration and waste management. In addition to the INEEL being named the DOE complex lead environmental laboratory, it has also been designated, along with

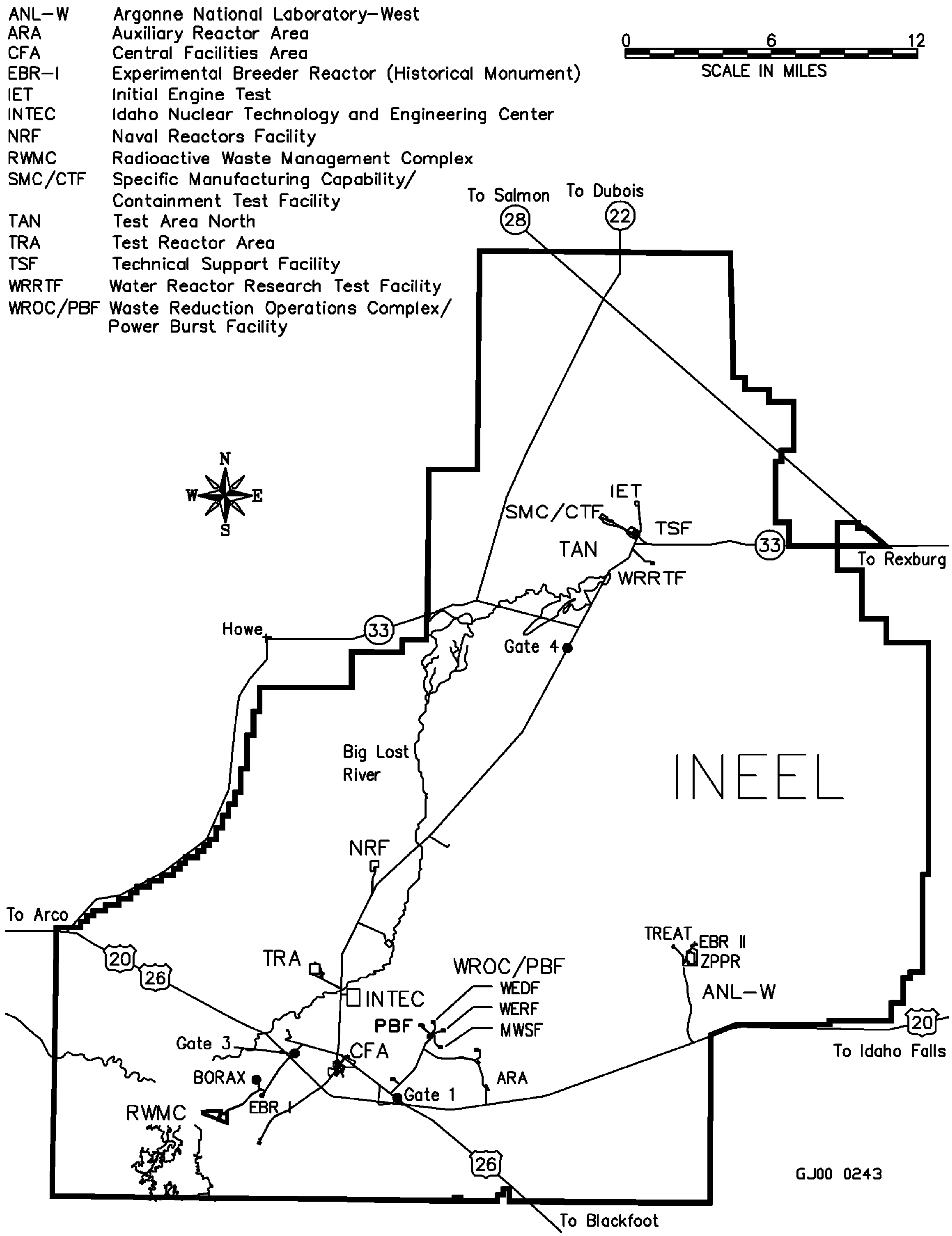


**Exhibit B-4**. Map of the INEEL showing major facility areas.

Argonne National Laboratory (ANL), as a lead laboratory for nuclear reactor technology research. The INEEL's contribution to the DOE complex is the integration of engineering, applied science, and operations to solve problems related to the environment, energy production and use, U.S. economic competitiveness, and national security.

The primary facility areas located at the INEEL are: ANL-W, Central Facilities Area (CFA), INTEC (formerly Idaho Chemical Processing Plant [ICPP]), Naval Reactors Facility (NRF), Waste Reduction Operations Complex (WROC)/Power Burst Facility (PBF), Radioactive Waste Management Complex (RWMC), Test Area North (TAN), and Test Reactor Area (TRA).

The United States Geological Survey (USGS) maintains an office at the INEEL and conducts independent environmental monitoring. INEEL operations produce various types of radioactive effluents. The processes by which the radioactive wastes are produced and controlled at all of the INEEL facilities are generally similar. The major radioactive contaminants include short-lived nuclides (such as tritium, chromium-51, strontium-90, and cobalt-60) and long-lived nuclides (such as iodine-129, technetium-99, and carbon-14).

INEEL facilities routinely generate a variety of nonradioactive industrial and sanitary waste streams. These waste streams are primarily aqueous and may contain minor quantities of chemicals. Wastes include laboratory wastes, cooling water, effluent from boilers used in space and process steam heating, water treatment waste, and sanitary waste and sewage. Nonhazardous liquid wastes are generally routed to unlined impoundments. In the past, disposal wells have been used at the INEEL for such wastewater. Some of these wells have now been closed (filled with concrete and capped) or converted to monitoring wells. Several surface water run-off wells are also still in operation throughout the INEEL. Sanitary wastes and sewage are treated and then discharged to impoundments, evaporation lagoons, or shallow subsurface drainage fields. The ponds and wells described above are not addressed in this permit application, as they are not currently receiving hazardous waste. These disposal areas are addressed under the Federal Facility Agreement and Consent Order (FFA/CO) involving DOE-ID, the State of Idaho, and EPA Region 10 (1991).

Hazardous wastes, mixed wastes, polychlorinated biphenyls (PCB), and PCB-contaminated materials are also generated at the INEEL. The hazardous wastes typically come from support operations and laboratory activities conducted at the INEEL and include ignitable liquids, acids, bases, solvents, oxidizers, toxics, and reactives. Additional types of waste include laboratory wastes, photographic wastes, spill residues, excess solutions, cleanup solutions, and paint-stripping residues. The hazardous wastes may be accumulated on-Site in satellite accumulation areas (SAAs) and in "less than 90-day" storage areas (a.k.a 90-day storage areas) in accordance with IDAPA 58.01.05.006 (40 CFR 262); stored and treated on-Site under a generator treatment plan or in a permitted unit; or transported off-Site to a permitted treatment, storage, and disposal facility (TSDF). PCB liquids, PCB-contaminated transformers, and other PCB-contaminated materials are sent off-Site for disposal, but may be stored on-Site pending shipment.

Mixed wastes that are generated include, but are not limited to, contaminated metals, solvents, incinerator ash, wastewater, laboratory wastes, and chemical-contaminated rags and other materials used in decontamination. These wastes are generated through a variety of processes and activities such as laboratory operations, equipment cleanup, paint stripping, decontamination operations, and other operations where contact with radioactive materials may occur. Some of these wastes are treated on-Site; others are stored, pending development of treatment or disposal capabilities on-Site or off-Site. Effluents at INTEC from waste evaporation and other operations are discharged to the ICPP Tank Farm Facility (TFF). In the future, INEEL will accept mixed waste generated at other DOE facilities for treatment and certification for shipment to the Waste Isolation Pilot Plant (WIPP), in New Mexico; these wastes will be stored at the RWMC.

| MAIL THE COMPLETED FORM TO: The appropriate EPA Regional or State Office. | United States Environmental Protection Agency<br>**RCRA SUBTITLE C SITE IDENTIFICATION FORM** |
|---|---|
| **1. Reason for Submittal (See instructions on page 25)**<br>CHECK CORRECT BOX(ES) | **Reason for Submittal:**<br>❑ To provide initial notification (to obtain an EPA ID Number for hazardous waste, universal waste, or used oil activities).<br>❑ To provide subsequent notification (to update site identification information).<br>❑ As a component of a First RCRA Hazardous Waste Part A Permit Application.<br>☒ As a component of a Revised RCRA Hazardous Waste Part A Permit Application (Amendment # Volume 18 HWMA/RCRA Permit for the INTEC on the INEEL, Modified Date: November 18, 2003).<br>❑ As a component of the Hazardous Waste Report. |
| **2. Site EPA ID Number (See instructions on page 26)** | **EPA ID Number:** ID4890008952 |
| **3. Site Name (See instructions on page 26)** | **Name:** IDAHO NATIONAL ENGINEERING AND ENVIRONMENTAL LABORATORY |
| **4. Site Location Information (See instructions on page 26)** | **Street Address:**<br>**City, Town, or Village:** Scoville — **State:** ID<br>**County Name:** BUTTE, CLARK, JEFFERSON, BONNEVILLE, BINGHAM — **Zip Code:** 83415 |
| **5. Site Land Type (See instructions on page 26)** | **Site Land Type:** ❑ Private ❑ County ❑ District ☒ Federal ❑ Indian ❑ Municipal ❑ State ❑ Other |
| **6. North American Industry Classification System (NAICS) Code(s) for the Site (See instructions on page 26)** | A. 92411 — B. 54171<br>C. 336992 — D. Not Applicable |
| **7. Site Mailing Address (See instructions on page 27)** | **Street or P. O. Box:** 1955 Freemont Drive<br>**State:** ID<br>**Country:** USA — **Zip Code:** 83401 |
| **8. Site Contact Person (See instructions on pages 27)** | **First Name:** DONALD — **MI:** N — **Last Name:** RASCH<br>**Phone Number:** 208-526-1511 — **Phone Number Extension:** Not Applicable |
| **9. Legal Owner and Operator of the Site (See instructions on pages 27 and 28)** | **A. Name of Site's Legal Owner:** US Department of Energy Idaho Operations Office — **Date Became Owner (mm/dd/yyyy):** 01/01/1952<br>**Owner Type:** ❑ Private ❑ County ❑ District ☒ Federal ❑ Indian ❑ Municipal ❑ State ❑ Other<br>**B. Name of Site's Operator:** BECHTEL BWXT IDAHO LLC — **Date Became Operator (mm/dd/yyyy):** 10/01/99<br>**Operator Type:** ☒ Private ❑ County ❑ District ❑ Federal ❑ Indian ❑ Municipal ❑ State ❑ Other |

EPA ID No. I D 4 8 9 0 0 0 8 9 5 2

**10. Type of Regulated Waste Activity (Mark 'X' in the appropriate boxes. See instructions on pages 28 to 32)**

**A. Hazardous Waste Activities**

**1. Generator of Hazardous Waste**
(choose only one of the following three categories)

☒ a. LQG: Greater than 1,000 kg/mo (2,200 lbs./mo.) of non-acute hazardous waste; or

☐ b. SQG: 100 to 1,000 kg/mo (220 - 2,200 lbs./mo.) of non-acute hazardous waste; or

☐ c. CESQG: Less than 100 kg/mo (220 lbs./mo.) of non-acute hazardous waste

**In addition, indicate other generator activities (check all that apply)**

☐ d. United States Importer of Hazardous Waste

☒ e. Mixed Waste (hazardous and radioactive) Generator

**For Items 2 through 6, check all that apply:**

☒ **2. Transporter of Hazardous Waste**

☒ **3. Treater, Storer, or Disposer of Hazardous Waste (at your site)** Note: A hazardous waste permit is required for this activity.

☒ **4. Recycler of Hazardous Waste (at your site)** Note: A hazardous waste permit is required for this activity.

**5. Exempt Boiler and/or Industrial Furnace**

☐ a. Small Quantity On-site Burner Exemption

☐ b. Smelting, Melting, and Refining Furnace Exemption

☐ **6. Underground Injection Control**

**B. Universal Waste Activities**

**1. Large Quantity Handler of Universal Waste (accumulate 5,000 kg or more) [refer to your State regulations to determine what is regulated]. Indicate types of universal waste generated and/or accumulated at your site. (check all boxes that apply):**

| | Generated | Accumulated |
|---|---|---|
| a. Batteries | ☒ | ☐ |
| b. Pesticides | ☒ | ☒ |
| c. Thermostats | ☒ | ☒ |
| d. Lamps | ☒ | ☒ |
| e. Other (specify)__________ | ☐ | ☐ |
| f. Other (specify)__________ | ☐ | ☐ |
| g. Other (specify)__________ | ☐ | ☐ |

☐ **2. Destination Facility for Universal Waste**
Note: A hazardous waste permit may be required for this activity.

**C. Used Oil Activities**

**1. Used Oil Transporter - Indicate Type(s) of Activity(ies)**

☐ a. Transporter

☐ b. Transfer Facility

**2. Used Oil Processor and/or Re-refiner - Indicate Type(s) of Activity(ies)**

☐ a. Processor

☐ b. Re-refiner

☐ **3. Off-Specification Used Oil Burner**

**4. Used Oil Fuel Marketer** - Indicate Type(s) of Activity(ies)

☐ a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner

☐ b. Marketer Who First Claims the Used Oil Meets the Specifications

**11. Description of Hazardous Wastes (See instructions on page 33)**

**A. Waste Codes for Federally Regulated Hazardous Wastes.** Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g., D001, D003, F007, U112). Use an additional page if more spaces are needed.

See Item 10 on the Hazardous Waste Permit Information Form (OMB #: 2050-0034)

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EPA ID No. I D 4 8 9 0 0 0 8 9 5 2

**B. Waste Codes for State-Regulated (i.e., non-Federal) Hazardous Wastes.** Please list the waste codes of the State-regulated hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed for waste codes.

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**12. Comments (See instructions on page 33)**

**13. Certification.** I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. **(See instructions on page 33)**

| Signature of owner, operator, or an authorized representative | Name and Official Title (type or print) | Date Signed (mm/dd/yyyy) |
|---|---|---|
| [signature] for S. Stiger | **Susan G. Stiger, Vice President, Idaho Completion Project, Bechtel BWXT Idaho, LLC.** | 12/10/2003 |
| | | |
| [signature] | **Elizabeth D. Sellers, Manager Department of Energy Idaho Operations Office** | 1/12/04 |
| | | |
| | | |
| | | |

United States Environmental Protection Agency

# HAZARDOUS WASTE PERMIT INFORMATION FORM

| | | | |
|---|---|---|---|
| 1. Facility Permit Contact (See instructions on page 35) | First Name: DONALD | MI: N | Last Name: RASCH |
| | Phone Number: (208) 526-1511 | | Phone Number Extension: Not Applicable |
| 2. Facility Permit Contact Mailing Address (See instructions on page 35) | Street or P.O. Box: 1955 NORTH FREEMONT DRIVE | | |
| | City, Town, or Village: IDAHO FALLS | | |
| | State: ID | | |
| | Country: USA | | Zip Code: 83401 |
| 3. Legal Owner Mailing Address and Telephone Number (See instructions on page 36) | Street or P.O. Box: 1955 NORTH FREEMONT DRIVE | | |
| | City, Town, or Village: IDAHO FALLS | | |
| | State: ID | | |
| | Country: USA | Zip Code: 83401 | Phone Number: (208) 526-5665 |
| 4. Operator Mailing Address and Telephone Number (See instructions on page 36) | Street or P.O. Box: P.O. BOX 1625 | | |
| | City, Town, or Village: IDAHO FALLS | | |
| | State: ID | | |
| | Country: USA | Zip Code: 83415 | Phone Number: (208) 526-1014 |
| 5. Facility Existence Date (See instructions on page 36) | Facility Existence Date (mm/dd/yyyy): 06/01/1949 | | |

**6. Other Environmental Permits (See instructions on page 36)**

| A. Permit Type (*Enter code*) | B. Permit Number | | | | | | | | | | | | C. Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R | I | D | 4 | 8 | 9 | 0 | 0 | 0 | 8 | 9 | 5 | 2 | Final HWMA Storage Permit for the RWMC on the INEEL |
| R | I | D | 4 | 8 | 9 | 0 | 0 | 0 | 8 | 9 | 5 | 2 | Final HWMA/RCRA Storage Permit for the WERF/WROC on the INEEL |
| R | I | D | 4 | 8 | 9 | 0 | 0 | 0 | 8 | 9 | 5 | 2 | Final HWMA Storage & Treatment Permit for the INTEC on the INEEL |
| R | I | D | 4 | 8 | 9 | 0 | 0 | 0 | 8 | 9 | 5 | 2 | HWMA/RCRA Part B Permit Application for the INEEL |
| R | I | D | 4 | 8 | 9 | 0 | 0 | 0 | 8 | 9 | 5 | 2 | HWMA/RCRA Part B Post Closure Permit for the INEEL - Waste Calcining Facility |
| R | I | D | 4 | 8 | 9 | 0 | 0 | 0 | 8 | 9 | 5 | 2 | HWMA/RCRA Part A Permit Application for the INEEL - Bechtel BWXT Idaho, LLC. |
| P, E, N, F, U | | | | | | | | | | | | | See Item 6 Supplement - pages 1a through 1e |

**7. Nature of Business (Provide a brief description; see instructions on page 37)**

The Idaho National Engineering and Environmental Laboratory was established in 1949, as a center where nuclear power reactors and support facilities could be built, tested, and operated. The INEEL site covers approximately 890 square miles and is 25 miles west of Idaho Falls, ID. For many years the INEEL was the site of the largest nuclear power research & development effort in the world. During the 1970's the INEEL's mission broadened to include such areas as biotechnology, energy and materials research, and conservation and renewable energy. At the end of the Cold War, waste treatment and cleanup of previously contaminated sites became a priority. Today the INEEL is a science-based, applied engineering national laboratory dedicated to completing its waste cleanup mission and meeting the nations environmental, energy, nuclear science and technology, and national security needs. Additionally, in 2002, it was announced that the INEEL will serve as the nation's leading nuclear technology center.

# Additional Information
# Supplement to Item 6
# 'Other Environmental Permits'

## AIR PERMITS

**(Permit Type P)**

### Idaho National Engineering and Environmental Laboratory (INEEL)

- **Title V Operating Permit Application** (Permit Pending)

### Central Facilities Area (CFA)

**Permit to Construct (PTC)** (Permit Number PTC-023-00001)

- Boiler for Space Heating at CFA 609 HQ/SRT Building
- CFA boilers permitted under the INTEC Site-wide NOx permit:
  - CFA-650-007, CFA-662-011, CFA-662-027, CFA-668-002, CFA-671-007, CFA-671-008, CFA-688-043, CFA-688-044

### Idaho Nuclear Technology and Engineering Center (INTEC)

**PTC** (Permit Number PTC-023-00001)

- Idaho Nuclear Technology and Engineering Center, Nitrogen Oxide Sources
- Idaho Chemical Processing Plant Pilot Plants, CPP-637
- Fuel Storage Area-Rack Reconfiguration Project, CPP-737
- CPP-1619 Liquid Waste Storage Facility
- New Waste Calcining Facility/Decontamination Area, CPP-659
- CPP-606 Distillate Oil-Fired Boilers and INTEC Distillate Oil-fired Portable Boilers
- CPP TMI Fuel Storage (Storage is regulated under the NRC - not the state)

### Test Area North (TAN)

**PTC** (Permit Number PTC-023-00001)

- SMC Consolidated Activities
- TAN-603 Boilers #4 and #5

# Additional Information
# Supplement to Item 6
# 'Other Environmental Permits'

## AIR PERMITS (continued)

### Test Reactor Area (TRA)

**PTC** (Permit Number PTC-023-00001)

- TRA-715 Evaporation Pond

**PTC** (Application submitted to DEQ January 2001)

- TRA-674-M-6 Generator (permit has not been issued yet)

### Waste Reduction Operations Complex/Power Burst Facility (WROC/PBF)

- WROC/PBF boiler permitted under the INTEC Site-wide NOx permit
  - PER-620-023

### National Emission Standards for Hazardous Air Pollutants (NESHAPS) 40 CFR 61 Subpart H

**(Permit Type E)**

- SMC Project
- CFA Lab Complex #3, CFA-625
- Liquid Effluent Treatment and Disposal (LET&D), CPP-1618
- Bin Set #7
- NWCF Filter Leach Facility, CPP-659
- Decontamination Support Facility, TAN
- Hazardous Chemical and Radioactive Waste Staging Facility, CPP-1619
- Waste Storage Area (RWMC)
- WERF Waste Compaction
- WERF Waste Stabilization
- SPERT II Waste Stabilization WEDF at PBF
- TRA Warm Waste Evaporation Pond
- TRA Tritium Laboratory
- TRA-661 Laboratory Addition
- IRC Radiotracer Use
- TAN TMI 2 Independent Spent Fuel Storage Installation

# Additional Information
# Supplement to Item 6
# 'Other Environmental Permits'

## WATER PERMITS

### Clean Water Act Notifications/Permits/Plans

**(Permit Type N, E)**

Idaho Falls Industrial Waste Acceptance (IWA) Permit covers thirteen facilities in Idaho Falls; twelve of these facilities are operated by the U.S. Department of Energy designated contractor and one is operated by the U.S. Department of Energy, Idaho Operations Office. These facilities have Industrial Pretreatment Disclosure Forms (IPDFs) submitted and are permitted by the City of Idaho Falls. The IWA Permits are as follows:

- INEEL Research Complex: IF-601, IF-602, IF-603, IF-611, IF-627, IF-638, IF-655, IF-657, IF-658
- IF-604A, IF-604B Technical Support Annex and Technical Support Building
- IF-605 Electric Vehicle Building
- IF-606 Department of Energy, Idaho Operations Office-South
- IF-608 INEEL Supercomputing Center
- IF-613 North Boulevard Annex
- IF-614 May Street North
- IF-615 May Street South
- IF-616 Willow Creek Building and IF-617 Willow Creek Mechanical Building
- IF-631 Bus Dispatch Building
- IF-639 North Holmes Laboratory
- IF-651 North Yellowstone Laboratory
- IF-654 Engineering Research Office Building

• NPDES General Permit for Storm Water Discharges from Construction Activities
  - DOE-ID Permit No. - IDR10A339
  - Bechtel BWXT Idaho, LLC Permit No. - IDR10A432

# Additional Information
# Supplement to Item 6
# 'Other Environmental Permits'

## **Clean Water Act Notifications/Permits/Plans** (continued)

- Spill Prevention Control and Countermeasures (SPCC) Plans (INTEC and RWMC facilities only - not required at any other INEEL facilities)
- Oil Pollution Prevention Act, "No Substantial Harm Certifications"

## EPA 404 - Dredge or Fill Permits under Section 303 of the CWA

(Permit Type F)

- Spreading Area B, RWMC (Permit Number - 930301750)

## State of Idaho Underground Injection Well Permits [Idaho Department of Water Resources (IDWR)]

**(Permit Type U)**

- SPERT Disposal I, Well 34-W-3-1
- SPERT Disposal II, Well 34-W-3-2
- SPERT Disposal III, Well 34-W-3-3
- CFA Disposal, Well 34-W-3-4
- TAN Disposal I, Well 34-W-3-5
- TAN Disposal II, Well 34-W-3-6
- TAN Disposal III, Well 34-W-3-7
- IRC Closed-Loop Heat Pump Return, Well 25-W-62

## State of Idaho Monitoring Well Permits (IDWR)

**(Permit Type U)**

INEEL monitoring well permit applications are sent annually to the IDWR for wells (greater than eighteen feet deep) to be constructed in the current calendar year. Permits are authorized by agreement between the DOE-ID and the IDWR.

## State of Idaho Wastewater Land Application Permits (WLAP)

**(Permit Type E)**

- Central Facilities Area - Sewage Treatment Plant – Permit Number LA-000141-01
- Idaho Nuclear Technology and Engineering Center New Percolation Ponds – Permit Number LA-000130-03

# Additional Information
# Supplement to Item 6
# 'Other Environmental Permits'

## State of Idaho WLAP Permits (continued)

- Idaho Nuclear Technology and Engineering Center - Sewage Treatment Plant – Permit Number LA-000115-02
- Test Area North Technical Support Facility Sewage Treatment Facility – Permit Number LA-000153-01
- TRA Cold Waste – Application was submitted to the DEQ on January 7, 1997. Written authorization to operate while the permit application is being processed was received from the DEQ on January 19, 2001.

## Ground Water Rights

**(Permit Type E)**

INEEL operates under a Federal Reserved Water Right for groundwater use.

**8. Process Codes and Design Capacities (See instructions on page 37)**

**A. PROCESS CODE - Enter the code from the list of process codes below that best describes each process to be used at the facility. Thirteen lines are provided for entering codes. If more lines are needed, attach a separate sheet of paper with the additional information. For "other" processes (i.e., D99, S99, T04 and X99), describe the process (including its design capacity) in the space provided in Item 9.**

**B. PROCESS DESIGN CAPACITY-** ***For each code entered in column A, enter the capacity of the process.***

**1. AMOUNT -** ***Enter the amount. In a case where design capacity is not applicable (such as in a closure/post-closure or enforcement action) enter the total amount of waste for that process.***

**2. UNIT OF MEASURE -** ***For each amount entered in column B(1), enter the code in column B(2) from the list of unit of measure codes below that describes the unit of measure used. Select only from the units of measure in this list.***

**C. PROCESS TOTAL NUMBER OF UNITS -** ***Enter the total number of units for each corresponding process code.***

| PROCESS CODE | PROCESS | APPROPIRATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY |
|---|---|---|
| | Disposal: | |
| D79 | Underground Injection Well Disposal | Gallons; Liters; Gallons Per Day; or Liters Per Day |
| D80 | Landfill | Acre-feet; Hectare-meter; Acres; Cubic Meters; Hectares; Cubic Yards |
| D81 | Land Treatment | Acres or Hectares |
| D82 | Ocean Disposal | Gallons Per Day or Liters Per Day |
| D83 | Surface Impoundment Disposal | Gallons; Liters; Cubic Meters; or Cubic Yards |
| D99 | Other Disposal | Any Unit of Measure Listed Below |
| | Storage: | |
| S01 | Container | Gallons; Liters; Cubic Meters; or Cubic Yards |
| S02 | Tank Storage | Gallons; Liters; Cubic Meters; or Cubic Yards |
| S03 | Waste Pile | Cubic Yards or Cubic Meters |
| S04 | Surface Impoundment Storage | Gallons; Liters; Cubic Meters; or Cubic Yards |
| S05 | Drip Pad | Gallons; Liters; Acres; Cubic Meters; Hectares; or Cubic Yards |
| S06 | Containment Building Storage | Cubic Yards or Cubic Meters |
| S99 | Other Storage | Any Unit of Measure Listed Below |
| | Treatment: | |
| T01 | Tank Treatment | Gallons Per Day; Liters Per Day; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; or Metric Tons Per Hour |
| T02 | Surface Impoundment Treatment | Gallons Per Day; Liters Per Day; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Pounds Per Hour; Short Tons per Day; Kilograms Per Hour; Metric Tons Per Day; or Metric Tons Per Hour |
| T03 | Incinerator | Short Tons Per Hour; Metric Tons Per Hour; Gallons Per Hour; Liters Per Hour; Btu Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Gallons Per Day; Liters Per Day; Metric Tons Per Hour; or Million Btu Per Hour |
| T04 | Other Treatment | Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; Gallons Per Day; Liters Per Hour; or Million Btu Per Hour |
| T80 | Boiler | Gallons; Liters; Gallons Per Hour; Liters Per Hour; Btu Per Hour; or Million Btu Per Hour |

| PROCESS CODE | PROCESS | APPROPIRATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY |
|---|---|---|
| T81 | Cement Kiln | Gallons Per Day; Liters Per Day; Pounds |
| T82 | Lime Kiln | Per Hour; Short Tons Per Hour; Kilograms |
| T-83 | Aggregate Kiln | Per Hour; Metric tons Per Day; Metric |
| T-84 | Coke Over | Tons Per Hour; Short Tons Per Day; Btu Per |
| T-85 | Phosphate Kiln | Hour; Liters Per Hour; Kilograms Per |
| T-86 | Blast Furnace | Hour; or Million Btu Per Hour |
| T-87 | Smelting, Melting, or Refining Furnace | Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms |
| T-88 | Titanium Oxide Chloride Oxidation Reactor | Per Hour; Metric Tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per |
| T-89 | Methane Reforming Furnace | Hour; Gallons Per Hour; Liters Per Hour; or Million Btu Per Hour |
| T-90 | Pulping Liquor Recovery Furnace | |
| T-91 | Combustion Device Used In The Recovery Of Sulfur Values From Spent Sulfuric Acid | |
| T-92 | Halogen Acid Furnaces | |
| T-93 | Other Industrial Furnaces Listed In 40 CFR §260.10 | |
| T-94 | Containment Building - Treatment | Cubic Yards; Cubic Meters; Short Tons Per Hour; Gallons Per Hour; Liters Per Hour; Btu Per Hour; Pounds Per Hour; Short Tons Per Day; Kilograms Per Hour; Metric Tons Per Day; Gallons Per Day; Liters Per Day; Metric Tons Per Hour; or Million Btu Per Hour |
| | Miscellaneous (Subpart X): | |
| X01 | Open Burning/Open Detonation | Any Unit of Measure Listed Below |
| X02 | Mechanical Processing | Short Tons Per Hour; Metric Tons Per Hour;Short Tons Per Day; Metric Tons Per Day; Pounds Per Hour; Kilograms Per Hour; Gallons Per Hour; Liters Per Hour, or Gallons Per Day |
| X03 | Thermal Unit | Gallons Per Day; Liters Per Day; Pounds Per Hour; Short Tons Per Hour; Kilograms Per Hour; Metric tons Per Day; Metric Tons Per Hour; Short Tons Per Day; Btu Per Hour; or Million Btu Per Hour |
| X04 | Geologic Repository | Cubic Yards; Cubic Meters; Acre-feet; Hectare-meter; Gallons; or Liters |
| X99 | Other Subpart X | Any Unit of Measure Listed Below |

| Unit of Measure | Unit of Measure Code | Unit of Measure | Unit of Measure Code | Unit of Measure | Unit of Measure Code |
|---|---|---|---|---|---|
| Gallons | G | Short Tons Per Hour | D | Cubic Yards | Y |
| Gallons Per Hour | E | Metric tons Per Hour | W | Cubic Meters | C |
| Gallons Per Day | U | Short Tons Per Day | N | Acres | B |
| Liters | L | Metric Tons Per Day | S | Acre-feet | A |
| Liters Per Hour | H | Pounds Per Hour | J | Hectares | Q |
| Liters Per Day | V | Kilograms Per Hour | R | Hectare-meter | F |
| | | Million Btu Per Hour | X | Btu Per Hour | I |

**8. Process Codes and Design Capacities (continued)**

*EXAMPLE FOR COMPLETING Item 8 (shoun in line number X-1 below): A facility has a storage tank, which can hold 533.788 gallons.*

| Line Number | | A. Process Code (From list above) | | | B. PROCESS DESIGN CAPACITY (1) Amount (Specify) | (2) Unit of Measure (Enter code) | C. Process Total Number of Units | For Official Use Only |
|---|---|---|---|---|---|---|---|---|
| X | 1 | S | 0 | 2 | 5 3 3 . 7 8 8 | G | 0 0 1 | |
| | 1 | S | 0 | 1 | 2, 8 1 2, 4 9 4 . 0 | G | 023 | |
| | 2 | S | 0 | 2 | 4, 5 2 0 . 0 | G | 004 | |
| | 3 | S | 0 | 3 | 1 4 7 . 0 | C | 008 | |
| | 4 | T | 0 | 1 | 1 7, 0 0 6 . 0 | U | 006 | |
| | 5 | | | | . | | | |
| | 6 | | | | . | | | |
| | 7 | | | | . | | | |
| | 8 | | | | . | | | |
| | 9 | | | | . | | | |
| 1 | 0 | | | | . | | | |
| 1 | 1 | | | | . | | | |
| 1 | 2 | | | | . | | | |
| 1 | 3 | | | | . | | | |

**NOTE: If you need to list more than 13 process codes, attach an additional sheet(s) with the information in the same format as above. Number the lines sequentially, taking into account any lines that will be used for "other" processes (i.e., D99, S99, T04 and X99) in Item 9.**

**9. Other Processes (See instructions on page 37 and follow instructions from Item 8 for D99, S99, T04 and X99 process codes)**

| Line Number (Enter #s in sequence with Item 8) | | A. Process Code Code (From List Above) | | | B. PROCESS DESIGN CAPACITY (1) Amount (Specify) | (2) Unit of Measure (Enter code) | C. Process Total Number of Units | D. Description of Process |
|---|---|---|---|---|---|---|---|---|
| X | 1 | T | 0 | 4 | . | | | In-situ Vitrification |
| | 1 | T | 0 | 4 | 7, 6 0 0 . 0 | U | 003 | Container Treatment |
| | 2 | X | 0 | 2 | 3 0 . 0 | N | 001 | Scarification/Spalling |
| | 3 | X | 9 | 9 | 3 4, 6 4 0 . 0 | U | 004 | Chemical/Physical Extraction |
| | | | | | | | | |

## ITEM 8. PROCESS CODES AND DESIGN CAPACITIES SUPPLEMENT

| LINE NUMBER | PROCESS TYPE UNIT NAME | | PROCESS DESIGN CAPACITY |
|---|---|---|---|
| 1 | **S01 CONTAINER STORAGE** | | |
| | • Room 205 - Hot Sump Tank Removal & Access Cell | | ~54,200 gallons |
| | • Room 206 - Adsorber Cell | | ~12,400 gallons |
| | • Room 207 - Off-Gas Cell | | ~11,600 gallons |
| | • Room 214 - Calciner Cell | | ~9,800 gallons |
| | • Room 215 - Blend & Hold Cell | | ~8,200 gallons |
| | • Room 216 - Filter Cell/Valve Cubicle | | ~10,300 gallons |
| | • Room 218 - Manipulator (PaR) Parking Area | | ~3,200 gallons |
| | • Room 306 - Equipment Decontamination Storage Rm. | | ~4,800 gallons |
| | • Room 308 - Remote Decon Cell | | ~5,800 gallons |
| | • Room 309 - Filter Handling Cell | | ~4,800 gallons |
| | • Room 323 - Crane Maintenance & Transfer Area | | ~3,400 gallons |
| | • Room 326 - Transfer Area | | ~1,300 gallons |
| | • Room 415 - Low Level Decontamination Room | | ~23,500 gallons |
| | • Room 416 - Shielded Storage Room | | ~5,300 gallons |
| | • Room 417 - Vehicle Entry Way | | ~78,200 gallons |
| | • Room 418 - Equipment Decontamination Room | | ~166,700 gallons |
| | • Room 419 - Transfer Room | | ~26,400 gallons |
| | • Room 421 - Decon Room | | ~10,039 gallons |
| | • Room 422 - Decon Room | | ~10,039 gallons |
| | • CPP-1659 - Contaminated Equipment Maintenance Area | | ~87,200 gallons |
| | • CPP-666 - FDP Cell | | ~37,300 gallons |
| | • CPP-1617 - RMWSF | | 2,224,156 gallons |
| | • CPP-1619 - HCRWSF | | 13,860 gallons |
| | | **Line 1 Total:** | **~2,812,494 gallons** |
| 2 | **S02 TANK STORAGE in CPP-659 includes:** | | |
| | • VES-NCD-123 Holdup Tank (located in room 219) | | ~3,800 gallons |
| | • VES-NCD-129 Collection Tank (located in room 213) | | ~530 gallons |
| | • VES-NCD-141 (located in room 309) | | ~120 gallons |
| | • VES-NCD-142 (located in room 309) | | ~70 gallons |
| | | **Line 2 Total:** | **~4,520 gallons** |
| 3 | **S03 WASTE PILES in CPP-659 includes:** | | |
| | • Room 216 - Filter Cell/Valve Cubicle | | ~39 cubic meters |
| | • Room 218 - Manipulator Parking & Maintenance Area | | ~12 cubic meters |
| | • Room 306 - Equipment Decontamination Storage Area | | ~18 cubic meters |
| | • Room 308 - Decon Cell | | ~22 cubic meters |
| | • Room 309 - Filter Handling Cell | | ~18 cubic meters |
| | • Room 323 - Crane Maintenance & Transfer Area | | ~13 cubic meters |
| | • Room 326 - Transfer Area | | ~5 cubic meters |
| | • Room 416 - Shielded Storage Area | | ~20 cubic meters |
| | | **Line 3 Total:** | **~147 cubic meters** |

# ITEM 8. PROCESS CODES AND DESIGN CAPACITIES SUPPLEMENT

| LINE NUMBER | PROCESS TYPE UNIT NAME | | PROCESS DESIGN CAPACITY |
|---|---|---|---|
| 4 | **T01 TANK TREATMENT in CPP-659 includes:**<br><br>• HEPA Filter Leaching System (HFLS)<br>- VES-NCD-141 (Room 309)<br>- VES-NCD-142 (Room 309)<br>• SH-NCD-933 (Room 415)<br>• SH-NCD-934 (Room 415)<br>• SH-NCD-921 (Room 415)<br>• VES-NCD-123 (Room 219) @ ~ 3,800 gallons<br>• VES-NCD-129 (Room 203) @ ~ 530 gallons | | <br><br>~90 gallons/day*<br><br><br>~5,688 gallons/day<br>~672 gallons/day<br>~1,896 gallons/day<br>~7,600 gallons/day<br>~1,060 gallons/day |
| | | **Line 4 Total:** | **~17,006 gallons/day** |

* A total of ~90 gallons of HEPA Filter media may be treated (T01) per day in the HFLS.

## ITEM 9. ADDITIONAL TREATMENT PROCESSES SUPPLEMENT

| LINE NUMBER | PROCESS TYPE UNIT NAME | | PROCESS DESIGN CAPACITY |
|---|---|---|---|
| 1 | **T04 CONTAINER TREATMENT in CPP-659 includes:**<br>• VES-NCD-138 @ ~538 gallons<br>• TK-NC-136 @ ~ 127 gallons<br>• TK-NC-137 @ ~ 270 gallons | | ~4,300 gallons/day<br>~1,100 gallons/day<br>~2,200 gallons/day |
| | | **Line 1 Total:** | **~7,600 gallons/day** |
| 2 | **X02 SCARIFICATION/SPALLING in CPP-659 includes:**<br>• Steam Spray Booth (Room 418) | | ~30 short ton/day |
| | | **Line 2 Total:** | **~30 short ton/day** |
| 3 | **X99 CHEMICAL/PHYSICAL EXTRACTION includes:**<br>• Steam Spray Booth (Room 418)<br>• Decon Cubicle (Room 421)<br>• Decon Cubicle (Room 422)<br>• Decon Cell (Room 308) | | ~8,660 gallons/day<br>~8,660 gallons/day<br>~8,660 gallons/day<br>~8,660 gallons/day |
| | | **Line 3 Total:** | **~34,640 gallons/day** |

**10. Description of Hazardous Wastes (See instructions on page 37)**

**A. EPA HAZARDOUS WASTE NUMBER -** ***Enter the four-digit number from 40 CFR, Part 261 Subpart D of each listed hazardous waste you will handle. For hazardous wastes which are not listed in 40 CFR, Part 261 Subpart D, enter the four-digit number(s) from 40 CFR Part 261, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.***

**B. ESTIMATED ANNUAL QUANTITY -** ***For each listed waste entered in column A, estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A, estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.***

**C. UNIT OF MEASURE -** ***For each quantity entered in column B, enter the unit of measure code. Units of measure which must be used and the appropriate codes are:***

| *ENGLISH UNIT OF MEASURE* | *CODE* | *METRIC UNIT OF MEASURE* | *CODE* |
|---|---|---|---|
| *POUNDS* | *P* | *KILOGRAMS* | *K* |
| *TONS* | *T* | *METRIC TONS* | *M* |

***If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure, taking into account the appropriate density or specific gravity of the waste.***

**D. PROCESSES**

**1. PROCESS CODES:**

***For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Items 8A and 9A on page 3 to indicate the waste will be stored, treated, and/or disposed at the facility.***

***For non-listed hazardous waste: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Items 8A and 9A on page 3 to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.***

***NOTE: THREE SPACES ARE PROVIDED FOR ENTERING PROCESS CODES. IF MORE ARE NEEDED:***

***1. Enter the first two as described above.***
***2. Enter "000" in the extreme right box of Item 10.D(1).***
***3. Use additional sheet, enter line number from previous sheet, and enter additional code(s) in Item 10.E.***

**2. PROCESS DESCRIPTION:** ***If a code is not listed for a process that will be used, describe the process in Item 10.D(2) or in Item 10.E(2).***

***NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER - Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:***

***1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.***

***2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.***

***3. Repeat step 2 for each EPA Hazardous Waste Number that can be used to describe the hazardous waste.***

***EXAMPLE FOR COMPLETING Item 10 (shown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operations. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.***

| Line Number | | A. EPA Hazardous Waste No. (Enter Code) | | | | B. Estimated Annual Quantity of Waste | C. Unit of Measure (Enter code) | D. PROCESSES (1) PROCESS CODES (Enter code) | | | | | | | | | D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1)) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X | 1 | K | 0 | 5 | 4 | 900 | P | T | 0 | 3 | D | 8 | 0 | | | | |
| X | 2 | D | 0 | 0 | 2 | 400 | P | T | 0 | 3 | D | 8 | 0 | | | | |
| X | 3 | D | 0 | 0 | 1 | 100 | P | T | 0 | 3 | D | 8 | 0 | | | | |
| X | 4 | D | 0 | 0 | 2 | | | | | | | | | | | | Included With Above |

## ITEM 10. Description of Hazardous Wastes
## Table of Contents

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| *Line Number* | *A. EPA Waste No. (Enter code)* | *B. Estimated Annual Quantity of Waste* | *C. Unit of Measure (Enter code)* | *D. PROCESSES (1) PROCESS CODES (Enter code)* | | | *D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))* |
|---|---|---|---|---|---|---|---|
| 1 | D002 | 542 | T | S01 | S03 | | CPP-659/-1659 NWCF STORAGE |
| 2 | D004 | | | | | | Included with above |
| 3 | D005 | | | | | | Included with above |
| 4 | D006 | | | | | | Included with above |
| 5 | D007 | | | | | | Included with above |
| 6 | D008 | | | | | | Included with above |
| 7 | D009 | | | | | | Included with above |
| 8 | D010 | | | | | | Included with above |
| 9 | D011 | | | | | | Included with above |
| 10 | D018 | | | | | | Included with above |
| 11 | D019 | | | | | | Included with above |
| 12 | D021 | | | | | | Included with above |
| 13 | D022 | | | | | | Included with above |
| 14 | D026 | | | | | | Included with above |
| 15 | D028 | | | | | | Included with above |
| 16 | D032 | | | | | | Included with above |
| 17 | D034 | | | | | | Included with above |
| 18 | D035 | | | | | | Included with above |
| 19 | D036 | | | | | | Included with above |
| 20 | D038 | | | | | | Included with above |
| 21 | D039 | | | | | | Included with above |
| 22 | D040 | | | | | | Included with above |
| 23 | F001 | | | | | | Included with above |
| 24 | F002 | | | | | | Included with above |
| 25 | F003 | | | | | | Included with above |
| 26 | F005 | | | | | | Included with above |
| 27 | U134 | | | | | | Included with above |
| 28 | | | | | | | |
| 29 | | | | | | | |
| 30 | | | | | | | |
| 31 | | | | | | | |
| 32 | | | | | | | |
| 33 | | | | | | | |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| *Line Number* | *A. EPA Waste No. (Enter code)* | *B. Estimated Annual Quantity of Waste* | *C. Unit of Measure (Enter code)* | *D. PROCESSES (1) PROCESS CODES (Enter code)* | *D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))* |
|---|---|---|---|---|---|
| 1 | D002 | 21,900 | T | T01 | CPP-659 NWCF DEBRIS TREATMENT |
| 2 | D004 | 11,680 | T | T04 | Included with above |
| 3 | D005 | 5,400 | T | X02 | Included with above |
| 4 | D006 | 13,200 | T | X99 | Included with above |
| 5 | D007 | | | | Included with above |
| 6 | D008 | | | | Included with above |
| 7 | D009 | | | | Included with above |
| 8 | D010 | | | | Included with above |
| 9 | D011 | | | | Included with above |
| 10 | D018 | | | | Included with above |
| 11 | D019 | | | | Included with above |
| 12 | D021 | | | | Included with above |
| 13 | D022 | | | | Included with above |
| 14 | D026 | | | | Included with above |
| 15 | D028 | | | | Included with above |
| 16 | D032 | | | | Included with above |
| 17 | D034 | | | | Included with above |
| 18 | D035 | | | | Included with above |
| 19 | D036 | | | | Included with above |
| 20 | D038 | | | | Included with above |
| 21 | D039 | | | | Included with above |
| 22 | D040 | | | | Included with above |
| 23 | F001 | | | | Included with above |
| 24 | F002 | | | | Included with above |
| 25 | F003 | | | | Included with above |
| 26 | F005 | | | | Included with above |
| 27 | U134 | | | | Included with above |
| 28 | | | | | |
| 29 | | | | | |
| 30 | | | | | |
| 31 | | | | | |
| 32 | | | | | |
| 33 | | | | | |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| *Line Number* | *A. EPA Waste No. (Enter code)* | *B. Estimated Annual Quantity of Waste* | *C. Unit of Measure (Enter code)* | *D. PROCESSES (1) PROCESS CODES (Enter code)* | *D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))* |
|---|---|---|---|---|---|
| 1 | D002 | 22 | T | T01 S02 | CPP-659 NWCF HEPA FILTER LEACHING SYSTEM |
| 2 | D004 | | | | Included with above |
| 3 | D005 | | | | Included with above |
| 4 | D006 | | | | Included with above |
| 5 | D007 | | | | Included with above |
| 6 | D008 | | | | Included with above |
| 7 | D009 | | | | Included with above |
| 8 | D010 | | | | Included with above |
| 9 | D011 | | | | Included with above |
| 10 | D018 | | | | Included with above |
| 11 | D019 | | | | Included with above |
| 12 | D021 | | | | Included with above |
| 13 | D022 | | | | Included with above |
| 14 | D026 | | | | Included with above |
| 15 | D028 | | | | Included with above |
| 16 | D032 | | | | Included with above |
| 17 | D034 | | | | Included with above |
| 18 | D035 | | | | Included with above |
| 19 | D036 | | | | Included with above |
| 20 | D038 | | | | Included with above |
| 21 | D039 | | | | Included with above |
| 22 | D040 | | | | Included with above |
| 23 | F001 | | | | Included with above |
| 24 | F002 | | | | Included with above |
| 25 | F003 | | | | Included with above |
| 26 | F005 | | | | Included with above |
| 27 | U134 | | | | Included with above |
| 28 | | | | | |
| 29 | | | | | |
| 30 | | | | | |
| 31 | | | | | |
| 32 | | | | | |
| 33 | | | | | |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| *Line Number* | *A. EPA Waste No. (Enter code)* | *B. Estimated Annual Quantity of Waste* | *C. Unit of Measure (Enter code)* | *D. PROCESSES (1) PROCESS CODES (Enter code)* | *D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))* |
|---|---|---|---|---|---|
| 1 | D002 | 4,000 | T | S02 T01 | CPP-659 NWCF STORAGE & TREATMENT TANKS |
| 2 | D004 | | | | Included with above |
| 3 | D005 | | | | Included with above |
| 4 | D006 | | | | Included with above |
| 5 | D007 | | | | Included with above |
| 6 | D008 | | | | Included with above |
| 7 | D009 | | | | Included with above |
| 8 | D010 | | | | Included with above |
| 9 | D011 | | | | Included with above |
| 10 | D018 | | | | Included with above |
| 11 | D019 | | | | Included with above |
| 12 | D021 | | | | Included with above |
| 13 | D022 | | | | Included with above |
| 14 | D026 | | | | Included with above |
| 15 | D028 | | | | Included with above |
| 16 | D032 | | | | Included with above |
| 17 | D034 | | | | Included with above |
| 18 | D035 | | | | Included with above |
| 19 | D036 | | | | Included with above |
| 20 | D038 | | | | Included with above |
| 21 | D039 | | | | Included with above |
| 22 | D040 | | | | Included with above |
| 23 | F001 | | | | Included with above |
| 24 | F002 | | | | Included with above |
| 25 | F003 | | | | Included with above |
| 26 | F005 | | | | Included with above |
| 27 | U134 | | | | Included with above |
| 28 | | | | | |
| 29 | | | | | |
| 30 | | | | | |
| 31 | | | | | |
| 32 | | | | | |
| 33 | | | | | |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| *Line Number* | *A. EPA Waste No. (Enter code)* | *B. Estimated Annual Quantity of Waste* | *C. Unit of Measure (Enter code)* | *D. PROCESSES (1) PROCESS CODES (Enter code)* | *D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))* |
|---|---|---|---|---|---|
| 1 | D002 | 38 | T | S01 | CPP-666 FAST DEBRIS STORAGE |
| 2 | D004 | | | | Included with above |
| 3 | D005 | | | | Included with above |
| 4 | D006 | | | | Included with above |
| 5 | D007 | | | | Included with above |
| 6 | D008 | | | | Included with above |
| 7 | D009 | | | | Included with above |
| 8 | D010 | | | | Included with above |
| 9 | D011 | | | | Included with above |
| 10 | D018 | | | | Included with above |
| 11 | D019 | | | | Included with above |
| 12 | D021 | | | | Included with above |
| 13 | D022 | | | | Included with above |
| 14 | D026 | | | | Included with above |
| 15 | D028 | | | | Included with above |
| 16 | D032 | | | | Included with above |
| 17 | D034 | | | | Included with above |
| 18 | D035 | | | | Included with above |
| 19 | D036 | | | | Included with above |
| 20 | D038 | | | | Included with above |
| 21 | D039 | | | | Included with above |
| 22 | D040 | | | | Included with above |
| 23 | F001 | | | | Included with above |
| 24 | F002 | | | | Included with above |
| 25 | F003 | | | | Included with above |
| 26 | F005 | | | | Included with above |
| 27 | U134 | | | | Included with above |
| 28 | | | | | |
| 29 | | | | | |
| 30 | | | | | |
| 31 | | | | | |
| 32 | | | | | |
| 33 | | | | | |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| *Line Number* | | *A. EPA Waste No. (Enter code)* | | | | *B. Estimated Annual Quantity of Waste* | *C. Unit of Measure (Enter code)* | *D. PROCESSES* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | *(1) PROCESS CODES (Enter code)* | | | | | | | | | *(2) PROCESS DESCRIPTION (If a code is not entered in D(1))* |
| | 1 | D | 0 | 0 | 1 | 12,000 | T | S | 0 | 1 | | | | | | | CPP-1617 Radioactive Mixed Waste Staging Facility (RMWSF) |
| | 2 | D | 0 | 0 | 2 | | | | | | | | | | | | Included with above |
| | 3 | D | 0 | 0 | 3 | | | | | | | | | | | | Included with above |
| | 4 | D | 0 | 0 | 4 | | | | | | | | | | | | Included with above |
| | 5 | D | 0 | 0 | 5 | | | | | | | | | | | | Included with above |
| | 6 | D | 0 | 0 | 6 | | | | | | | | | | | | Included with above |
| | 7 | D | 0 | 0 | 7 | | | | | | | | | | | | Included with above |
| | 8 | D | 0 | 0 | 8 | | | | | | | | | | | | Included with above |
| | 9 | D | 0 | 0 | 9 | | | | | | | | | | | | Included with above |
| 1 | 0 | D | 0 | 1 | 0 | | | | | | | | | | | | Included with above |
| 1 | 1 | D | 0 | 1 | 1 | | | | | | | | | | | | Included with above |
| 1 | 2 | D | 0 | 1 | 2 | | | | | | | | | | | | Included with above |
| 1 | 3 | D | 0 | 1 | 3 | | | | | | | | | | | | Included with above |
| 1 | 4 | D | 0 | 1 | 4 | | | | | | | | | | | | Included with above |
| 1 | 5 | D | 0 | 1 | 5 | | | | | | | | | | | | Included with above |
| 1 | 6 | D | 0 | 1 | 6 | | | | | | | | | | | | Included with above |
| 1 | 7 | D | 0 | 1 | 7 | | | | | | | | | | | | Included with above |
| 1 | 8 | D | 0 | 1 | 8 | | | | | | | | | | | | Included with above |
| 1 | 9 | D | 0 | 1 | 9 | | | | | | | | | | | | Included with above |
| 2 | 0 | D | 0 | 2 | 0 | | | | | | | | | | | | Included with above |
| 2 | 1 | D | 0 | 2 | 1 | | | | | | | | | | | | Included with above |
| 2 | 2 | D | 0 | 2 | 2 | | | | | | | | | | | | Included with above |
| 2 | 3 | D | 0 | 2 | 3 | | | | | | | | | | | | Included with above |
| 2 | 4 | D | 0 | 2 | 4 | | | | | | | | | | | | Included with above |
| 2 | 5 | D | 0 | 2 | 5 | | | | | | | | | | | | Included with above |
| 2 | 6 | D | 0 | 2 | 6 | | | | | | | | | | | | Included with above |
| 2 | 7 | D | 0 | 2 | 7 | | | | | | | | | | | | Included with above |
| 2 | 8 | D | 0 | 2 | 8 | | | | | | | | | | | | Included with above |
| 2 | 9 | D | 0 | 2 | 9 | | | | | | | | | | | | Included with above |
| 3 | 0 | D | 0 | 3 | 0 | | | | | | | | | | | | Included with above |
| 3 | 1 | D | 0 | 3 | 1 | | | | | | | | | | | | Included with above |
| 3 | 2 | D | 0 | 3 | 2 | | | | | | | | | | | | Included with above |
| 3 | 3 | D | 0 | 3 | 3 | | | | | | | | | | | | Included with above |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| *Line Number* | *A. EPA Waste No. (Enter code)* | *B. Estimated Annual Quantity of Waste* | *C. Unit of Measure (Enter code)* | *D. PROCESSES (1) PROCESS CODES (Enter code)* | *D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))* |
|---|---|---|---|---|---|
| 1 | D034 | | | | Included with CPP-1617 RMWSF, Pg. 5 (IF-1) of 6, line 1 |
| 2 | D035 | | | | Included with above |
| 3 | D036 | | | | Included with above |
| 4 | D037 | | | | Included with above |
| 5 | D038 | | | | Included with above |
| 6 | D039 | | | | Included with above |
| 7 | D040 | | | | Included with above |
| 8 | D041 | | | | Included with above |
| 9 | D042 | | | | Included with above |
| 10 | D043 | | | | Included with above |
| 11 | F001 | | | | Included with above |
| 12 | F002 | | | | Included with above |
| 13 | F003 | | | | Included with above |
| 14 | F004 | | | | Included with above |
| 15 | F005 | | | | Included with above |
| 16 | F006 | | | | Included with above |
| 17 | F007 | | | | Included with above |
| 18 | F008 | | | | Included with above |
| 19 | F009 | | | | Included with above |
| 20 | F010 | | | | Included with above |
| 21 | F011 | | | | Included with above |
| 22 | F012 | | | | Included with above |
| 23 | F019 | | | | Included with above |
| 24 | F020 | | | | Included with above |
| 25 | F021 | | | | Included with above |
| 26 | F022 | | | | Included with above |
| 27 | F023 | | | | Included with above |
| 28 | F024 | | | | Included with above |
| 29 | F026 | | | | Included with above |
| 30 | F027 | | | | Included with above |
| 31 | F028 | | | | Included with above |
| 32 | F039 | | | | Included with above |
| 33 | K001 | | | | Included with above |

10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)

| *Line Number* | | *A. EPA Waste No. (Enter code)* | | | | *B. Estimated Annual Quantity of Waste* | *C. Unit of Measure (Enter code)* | *D. PROCESSES (1) PROCESS CODES (Enter code)* | *D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))* |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | K | 0 | 1 | 5 | | | | Included with CPP-1617 RMWSF, Pg. 5 (IF-1) of 6, line 1 |
| | 2 | K | 0 | 6 | 9 | | | | Included with above |
| | 3 | K | 1 | 0 | 0 | | | | Included with above |
| | 4 | P | 0 | 0 | 1 | | | | Included with above |
| | 5 | P | 0 | 0 | 2 | | | | Included with above |
| | 6 | P | 0 | 0 | 3 | | | | Included with above |
| | 7 | P | 0 | 0 | 4 | | | | Included with above |
| | 8 | P | 0 | 0 | 5 | | | | Included with above |
| | 9 | P | 0 | 0 | 6 | | | | Included with above |
| 1 | 0 | P | 0 | 0 | 7 | | | | Included with above |
| 1 | 1 | P | 0 | 0 | 8 | | | | Included with above |
| 1 | 2 | P | 0 | 0 | 9 | | | | Included with above |
| 1 | 3 | P | 0 | 1 | 0 | | | | Included with above |
| 1 | 4 | P | 0 | 1 | 1 | | | | Included with above |
| 1 | 5 | P | 0 | 1 | 2 | | | | Included with above |
| 1 | 6 | P | 0 | 1 | 3 | | | | Included with above |
| 1 | 7 | P | 0 | 1 | 4 | | | | Included with above |
| 1 | 8 | P | 0 | 1 | 5 | | | | Included with above |
| 1 | 9 | P | 0 | 1 | 6 | | | | Included with above |
| 2 | 0 | P | 0 | 1 | 7 | | | | Included with above |
| 2 | 1 | P | 0 | 1 | 8 | | | | Included with above |
| 2 | 2 | P | 0 | 2 | 0 | | | | Included with above |
| 2 | 3 | P | 0 | 2 | 1 | | | | Included with above |
| 2 | 4 | P | 0 | 2 | 2 | | | | Included with above |
| 2 | 5 | P | 0 | 2 | 3 | | | | Included with above |
| 2 | 6 | P | 0 | 2 | 4 | | | | Included with above |
| 2 | 7 | P | 0 | 2 | 6 | | | | Included with above |
| 2 | 8 | P | 0 | 2 | 7 | | | | Included with above |
| 2 | 9 | P | 0 | 2 | 8 | | | | Included with above |
| 3 | 0 | P | 0 | 2 | 9 | | | | Included with above |
| 3 | 1 | P | 0 | 3 | 0 | | | | Included with above |
| 3 | 2 | P | 0 | 3 | 1 | | | | Included with above |
| 3 | 3 | P | 0 | 3 | 3 | | | | Included with above |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| *Line Number* | *A. EPA Waste No. (Enter code)* | *B. Estimated Annual Quantity of Waste* | *C. Unit of Measure (Enter code)* | *D. PROCESSES (1) PROCESS CODES (Enter code)* | *D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))* |
|---|---|---|---|---|---|
| 1 | P034 | | | | Included with CPP-1617 RMWSF, Pg. 5 (IF-1) of 6, line 1 |
| 2 | P036 | | | | Included with above |
| 3 | P037 | | | | Included with above |
| 4 | P038 | | | | Included with above |
| 5 | P039 | | | | Included with above |
| 6 | P040 | | | | Included with above |
| 7 | P041 | | | | Included with above |
| 8 | P042 | | | | Included with above |
| 9 | P043 | | | | Included with above |
| 10 | P044 | | | | Included with above |
| 11 | P045 | | | | Included with above |
| 12 | P046 | | | | Included with above |
| 13 | P047 | | | | Included with above |
| 14 | P048 | | | | Included with above |
| 15 | P049 | | | | Included with above |
| 16 | P050 | | | | Included with above |
| 17 | P051 | | | | Included with above |
| 18 | P054 | | | | Included with above |
| 19 | P056 | | | | Included with above |
| 20 | P057 | | | | Included with above |
| 21 | P058 | | | | Included with above |
| 22 | P059 | | | | Included with above |
| 23 | P060 | | | | Included with above |
| 24 | P062 | | | | Included with above |
| 25 | P063 | | | | Included with above |
| 26 | P064 | | | | Included with above |
| 27 | P065 | | | | Included with above |
| 28 | P066 | | | | Included with above |
| 29 | P067 | | | | Included with above |
| 30 | P068 | | | | Included with above |
| 31 | P069 | | | | Included with above |
| 32 | P070 | | | | Included with above |
| 33 | P071 | | | | Included with above |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| Line Number | A. EPA Waste No. (Enter code) | B. Estimated Annual Quantity of Waste | C. Unit of Measure (Enter code) | D. PROCESSES (1) PROCESS CODES (Enter code) | D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1)) |
|---|---|---|---|---|---|
| 1 | P072 | | | | Included with CPP-1617 RMWSF, Pg. 5 (IF-1) of 6, line 1 |
| 2 | P073 | | | | Included with above |
| 3 | P074 | | | | Included with above |
| 4 | P075 | | | | Included with above |
| 5 | P076 | | | | Included with above |
| 6 | P077 | | | | Included with above |
| 7 | P078 | | | | Included with above |
| 8 | P081 | | | | Included with above |
| 9 | P082 | | | | Included with above |
| 10 | P084 | | | | Included with above |
| 11 | P085 | | | | Included with above |
| 12 | P087 | | | | Included with above |
| 13 | P088 | | | | Included with above |
| 14 | P089 | | | | Included with above |
| 15 | P092 | | | | Included with above |
| 16 | P093 | | | | Included with above |
| 17 | P094 | | | | Included with above |
| 18 | P095 | | | | Included with above |
| 19 | P096 | | | | Included with above |
| 20 | P097 | | | | Included with above |
| 21 | P098 | | | | Included with above |
| 22 | P099 | | | | Included with above |
| 23 | P101 | | | | Included with above |
| 24 | P102 | | | | Included with above |
| 25 | P103 | | | | Included with above |
| 26 | P104 | | | | Included with above |
| 27 | P105 | | | | Included with above |
| 28 | P106 | | | | Included with above |
| 29 | P108 | | | | Included with above |
| 30 | P109 | | | | Included with above |
| 31 | P110 | | | | Included with above |
| 32 | P111 | | | | Included with above |
| 33 | P112 | | | | Included with above |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| Line Number | | A. EPA Waste No. (Enter code) | | | | B. Estimated Annual Quantity of Waste | C. Unit of Measure (Enter code) | D. PROCESSES (1) PROCESS CODES (Enter code) | D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1)) |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | P | 1 | 1 | 3 | | | | Included with CPP-1617 RMWSF, Pg. 5 (IF-1) of 6, line 1 |
| | 2 | P | 1 | 1 | 4 | | | | Included with above |
| | 3 | P | 1 | 1 | 5 | | | | Included with above |
| | 4 | P | 1 | 1 | 6 | | | | Included with above |
| | 5 | P | 1 | 1 | 8 | | | | Included with above |
| | 6 | P | 1 | 1 | 9 | | | | Included with above |
| | 7 | P | 1 | 2 | 0 | | | | Included with above |
| | 8 | P | 1 | 2 | 1 | | | | Included with above |
| | 9 | P | 1 | 2 | 2 | | | | Included with above |
| 1 | 0 | P | 1 | 2 | 3 | | | | Included with above |
| 1 | 1 | U | 0 | 0 | 1 | | | | Included with above |
| 1 | 2 | U | 0 | 0 | 2 | | | | Included with above |
| 1 | 3 | U | 0 | 0 | 3 | | | | Included with above |
| 1 | 4 | U | 0 | 0 | 4 | | | | Included with above |
| 1 | 5 | U | 0 | 0 | 5 | | | | Included with above |
| 1 | 6 | U | 0 | 0 | 6 | | | | Included with above |
| 1 | 7 | U | 0 | 0 | 7 | | | | Included with above |
| 1 | 8 | U | 0 | 0 | 8 | | | | Included with above |
| 1 | 9 | U | 0 | 0 | 9 | | | | Included with above |
| 2 | 0 | U | 0 | 1 | 0 | | | | Included with above |
| 2 | 1 | U | 0 | 1 | 1 | | | | Included with above |
| 2 | 2 | U | 0 | 1 | 2 | | | | Included with above |
| 2 | 3 | U | 0 | 1 | 4 | | | | Included with above |
| 2 | 4 | U | 0 | 1 | 5 | | | | Included with above |
| 2 | 5 | U | 0 | 1 | 6 | | | | Included with above |
| 2 | 6 | U | 0 | 1 | 7 | | | | Included with above |
| 2 | 7 | U | 0 | 1 | 8 | | | | Included with above |
| 2 | 8 | U | 0 | 1 | 9 | | | | Included with above |
| 2 | 9 | U | 0 | 2 | 0 | | | | Included with above |
| 3 | 0 | U | 0 | 2 | 1 | | | | Included with above |
| 3 | 1 | U | 0 | 2 | 2 | | | | Included with above |
| 3 | 2 | U | 0 | 2 | 3 | | | | Included with above |
| 3 | 3 | U | 0 | 2 | 4 | | | | Included with above |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| Line Number | | A. EPA Waste No. (Enter code) | | | | B. Estimated Annual Quantity of Waste | C. Unit of Measure (Enter code) | D. PROCESSES (1) PROCESS CODES (Enter code) | D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1)) |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | U | 0 | 2 | 5 | | | | Included with CPP-1617 RMWSF, Pg. 5 (IF-1) of 6, line 1 |
| | 2 | U | 0 | 2 | 6 | | | | Included with above |
| | 3 | U | 0 | 2 | 7 | | | | Included with above |
| | 4 | U | 0 | 2 | 8 | | | | Included with above |
| | 5 | U | 0 | 2 | 9 | | | | Included with above |
| | 6 | U | 0 | 3 | 0 | | | | Included with above |
| | 7 | U | 0 | 3 | 1 | | | | Included with above |
| | 8 | U | 0 | 3 | 2 | | | | Included with above |
| | 9 | U | 0 | 3 | 3 | | | | Included with above |
| 1 | 0 | U | 0 | 3 | 4 | | | | Included with above |
| 1 | 1 | U | 0 | 3 | 5 | | | | Included with above |
| 1 | 2 | U | 0 | 3 | 6 | | | | Included with above |
| 1 | 3 | U | 0 | 3 | 7 | | | | Included with above |
| 1 | 4 | U | 0 | 3 | 8 | | | | Included with above |
| 1 | 5 | U | 0 | 3 | 9 | | | | Included with above |
| 1 | 6 | U | 0 | 4 | 1 | | | | Included with above |
| 1 | 7 | U | 0 | 4 | 2 | | | | Included with above |
| 1 | 8 | U | 0 | 4 | 3 | | | | Included with above |
| 1 | 9 | U | 0 | 4 | 4 | | | | Included with above |
| 2 | 0 | U | 0 | 4 | 5 | | | | Included with above |
| 2 | 1 | U | 0 | 4 | 6 | | | | Included with above |
| 2 | 2 | U | 0 | 4 | 7 | | | | Included with above |
| 2 | 3 | U | 0 | 4 | 8 | | | | Included with above |
| 2 | 4 | U | 0 | 4 | 9 | | | | Included with above |
| 2 | 5 | U | 0 | 5 | 0 | | | | Included with above |
| 2 | 6 | U | 0 | 5 | 1 | | | | Included with above |
| 2 | 7 | U | 0 | 5 | 2 | | | | Included with above |
| 2 | 8 | U | 0 | 5 | 3 | | | | Included with above |
| 2 | 9 | U | 0 | 5 | 5 | | | | Included with above |
| 3 | 0 | U | 0 | 5 | 6 | | | | Included with above |
| 3 | 1 | U | 0 | 5 | 7 | | | | Included with above |
| 3 | 2 | U | 0 | 5 | 8 | | | | Included with above |
| 3 | 3 | U | 0 | 5 | 9 | | | | Included with above |

| 10. Description of Hazardous Wastes (Continued; use additional sheets as necessary) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| *Line Number* | | *A. EPA Waste No. (Enter code)* | | | | *B. Estimated Annual Quantity of Waste* | *C. Unit of Measure (Enter code)* | *D. PROCESSES* | |
| | | | | | | | | *(1) PROCESS CODES (Enter code)* | *(2) PROCESS DESCRIPTION (If a code is not entered in D(1))* |
| | 1 | U | 0 | 6 | 0 | | | | Included with CPP-1617 RMWSF, Pg. 5 (IF-1) of 6, line 1 |
| | 2 | U | 0 | 6 | 1 | | | | Included with above |
| | 3 | U | 0 | 6 | 2 | | | | Included with above |
| | 4 | U | 0 | 6 | 3 | | | | Included with above |
| | 5 | U | 0 | 6 | 4 | | | | Included with above |
| | 6 | U | 0 | 6 | 6 | | | | Included with above |
| | 7 | U | 0 | 6 | 7 | | | | Included with above |
| | 8 | U | 0 | 6 | 8 | | | | Included with above |
| | 9 | U | 0 | 6 | 9 | | | | Included with above |
| 1 | 0 | U | 0 | 7 | 0 | | | | Included with above |
| 1 | 1 | U | 0 | 7 | 1 | | | | Included with above |
| 1 | 2 | U | 0 | 7 | 2 | | | | Included with above |
| 1 | 3 | U | 0 | 7 | 3 | | | | Included with above |
| 1 | 4 | U | 0 | 7 | 4 | | | | Included with above |
| 1 | 5 | U | 0 | 7 | 5 | | | | Included with above |
| 1 | 6 | U | 0 | 7 | 6 | | | | Included with above |
| 1 | 7 | U | 0 | 7 | 7 | | | | Included with above |
| 1 | 8 | U | 0 | 7 | 8 | | | | Included with above |
| 1 | 9 | U | 0 | 7 | 9 | | | | Included with above |
| 2 | 0 | U | 0 | 8 | 0 | | | | Included with above |
| 2 | 1 | U | 0 | 8 | 1 | | | | Included with above |
| 2 | 2 | U | 0 | 8 | 2 | | | | Included with above |
| 2 | 3 | U | 0 | 8 | 3 | | | | Included with above |
| 2 | 4 | U | 0 | 8 | 4 | | | | Included with above |
| 2 | 5 | U | 0 | 8 | 5 | | | | Included with above |
| 2 | 6 | U | 0 | 8 | 6 | | | | Included with above |
| 2 | 7 | U | 0 | 8 | 7 | | | | Included with above |
| 2 | 8 | U | 0 | 8 | 8 | | | | Included with above |
| 2 | 9 | U | 0 | 8 | 9 | | | | Included with above |
| 3 | 0 | U | 0 | 9 | 0 | | | | Included with above |
| 3 | 1 | U | 0 | 9 | 1 | | | | Included with above |
| 3 | 2 | U | 0 | 9 | 2 | | | | Included with above |
| 3 | 3 | U | 0 | 9 | 3 | | | | Included with above |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| Line Number | A. EPA Waste No. (Enter code) | B. Estimated Annual Quantity of Waste | C. Unit of Measure (Enter code) | D. PROCESSES (1) PROCESS CODES (Enter code) | D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1)) |
|---|---|---|---|---|---|
| 1 | U094 | | | | Included with CPP-1617 RMWSF, Pg. 5 (IF-1) of 6, line 1 |
| 2 | U095 | | | | Included with above |
| 3 | U096 | | | | Included with above |
| 4 | U097 | | | | Included with above |
| 5 | U098 | | | | Included with above |
| 6 | U099 | | | | Included with above |
| 7 | U101 | | | | Included with above |
| 8 | U102 | | | | Included with above |
| 9 | U103 | | | | Included with above |
| 10 | U105 | | | | Included with above |
| 11 | U106 | | | | Included with above |
| 12 | U107 | | | | Included with above |
| 13 | U108 | | | | Included with above |
| 14 | U109 | | | | Included with above |
| 15 | U110 | | | | Included with above |
| 16 | U111 | | | | Included with above |
| 17 | U112 | | | | Included with above |
| 18 | U113 | | | | Included with above |
| 19 | U114 | | | | Included with above |
| 20 | U115 | | | | Included with above |
| 21 | U116 | | | | Included with above |
| 22 | U117 | | | | Included with above |
| 23 | U118 | | | | Included with above |
| 24 | U119 | | | | Included with above |
| 25 | U120 | | | | Included with above |
| 26 | U121 | | | | Included with above |
| 27 | U122 | | | | Included with above |
| 28 | U123 | | | | Included with above |
| 29 | U124 | | | | Included with above |
| 30 | U125 | | | | Included with above |
| 31 | U126 | | | | Included with above |
| 32 | U127 | | | | Included with above |
| 33 | U128 | | | | Included with above |

| 10. Description of Hazardous Wastes (Continued; use additional sheets as necessary) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Line Number | | A. EPA Waste No. (Enter code) | | | | B. Estimated Annual Quantity of Waste | C. Unit of Measure (Enter code) | D. PROCESSES (1) PROCESS CODES (Enter code) | (2) PROCESS DESCRIPTION (If a code is not entered in D(1)) |
| | 1 | U | 1 | 2 | 9 | | | | Included with CPP-1617 RMWSF, Pg. 5 (IF-1) of 6, line 1 |
| | 2 | U | 1 | 3 | 0 | | | | Included with above |
| | 3 | U | 1 | 3 | 1 | | | | Included with above |
| | 4 | U | 1 | 3 | 2 | | | | Included with above |
| | 5 | U | 1 | 3 | 3 | | | | Included with above |
| | 6 | U | 1 | 3 | 4 | | | | Included with above |
| | 7 | U | 1 | 3 | 5 | | | | Included with above |
| | 8 | U | 1 | 3 | 6 | | | | Included with above |
| | 9 | U | 1 | 3 | 7 | | | | Included with above |
| 1 | 0 | U | 1 | 3 | 8 | | | | Included with above |
| 1 | 1 | U | 1 | 4 | 0 | | | | Included with above |
| 1 | 2 | U | 1 | 4 | 1 | | | | Included with above |
| 1 | 3 | U | 1 | 4 | 2 | | | | Included with above |
| 1 | 4 | U | 1 | 4 | 3 | | | | Included with above |
| 1 | 5 | U | 1 | 4 | 4 | | | | Included with above |
| 1 | 6 | U | 1 | 4 | 5 | | | | Included with above |
| 1 | 7 | U | 1 | 4 | 6 | | | | Included with above |
| 1 | 8 | U | 1 | 4 | 7 | | | | Included with above |
| 1 | 9 | U | 1 | 4 | 8 | | | | Included with above |
| 2 | 0 | U | 1 | 4 | 9 | | | | Included with above |
| 2 | 1 | U | 1 | 5 | 0 | | | | Included with above |
| 2 | 2 | U | 1 | 5 | 1 | | | | Included with above |
| 2 | 3 | U | 1 | 5 | 2 | | | | Included with above |
| 2 | 4 | U | 1 | 5 | 3 | | | | Included with above |
| 2 | 5 | U | 1 | 5 | 4 | | | | Included with above |
| 2 | 6 | U | 1 | 5 | 5 | | | | Included with above |
| 2 | 7 | U | 1 | 5 | 6 | | | | Included with above |
| 2 | 8 | U | 1 | 5 | 7 | | | | Included with above |
| 2 | 9 | U | 1 | 5 | 8 | | | | Included with above |
| 3 | 0 | U | 1 | 5 | 9 | | | | Included with above |
| 3 | 1 | U | 1 | 6 | 0 | | | | Included with above |
| 3 | 2 | U | 1 | 6 | 1 | | | | Included with above |
| 3 | 3 | U | 1 | 6 | 2 | | | | Included with above |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| *Line Number* | | *A. EPA Waste No. (Enter code)* | | | | *B. Estimated Annual Quantity of Waste* | *C. Unit of Measure (Enter code)* | *D. PROCESSES (1) PROCESS CODES (Enter code)* | *D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))* |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | U | 1 | 6 | 3 | | | | Included with CPP-1617 RMWSF, Pg. 5 (IF-1) of 6, line 1 |
| | 2 | U | 1 | 6 | 4 | | | | Included with above |
| | 3 | U | 1 | 6 | 5 | | | | Included with above |
| | 4 | U | 1 | 6 | 6 | | | | Included with above |
| | 5 | U | 1 | 6 | 7 | | | | Included with above |
| | 6 | U | 1 | 6 | 8 | | | | Included with above |
| | 7 | U | 1 | 6 | 9 | | | | Included with above |
| | 8 | U | 1 | 7 | 0 | | | | Included with above |
| | 9 | U | 1 | 7 | 1 | | | | Included with above |
| 1 | 0 | U | 1 | 7 | 2 | | | | Included with above |
| 1 | 1 | U | 1 | 7 | 3 | | | | Included with above |
| 1 | 2 | U | 1 | 7 | 4 | | | | Included with above |
| 1 | 3 | U | 1 | 7 | 6 | | | | Included with above |
| 1 | 4 | U | 1 | 7 | 7 | | | | Included with above |
| 1 | 5 | U | 1 | 7 | 8 | | | | Included with above |
| 1 | 6 | U | 1 | 7 | 9 | | | | Included with above |
| 1 | 7 | U | 1 | 8 | 0 | | | | Included with above |
| 1 | 8 | U | 1 | 8 | 1 | | | | Included with above |
| 1 | 9 | U | 1 | 8 | 2 | | | | Included with above |
| 2 | 0 | U | 1 | 8 | 3 | | | | Included with above |
| 2 | 1 | U | 1 | 8 | 4 | | | | Included with above |
| 2 | 2 | U | 1 | 8 | 5 | | | | Included with above |
| 2 | 3 | U | 1 | 8 | 6 | | | | Included with above |
| 2 | 4 | U | 1 | 8 | 7 | | | | Included with above |
| 2 | 5 | U | 1 | 8 | 8 | | | | Included with above |
| 2 | 6 | U | 1 | 8 | 9 | | | | Included with above |
| 2 | 7 | U | 1 | 9 | 0 | | | | Included with above |
| 2 | 8 | U | 1 | 9 | 1 | | | | Included with above |
| 2 | 9 | U | 1 | 9 | 2 | | | | Included with above |
| 3 | 0 | U | 1 | 9 | 3 | | | | Included with above |
| 3 | 1 | U | 1 | 9 | 4 | | | | Included with above |
| 3 | 2 | U | 1 | 9 | 6 | | | | Included with above |
| 3 | 3 | U | 1 | 9 | 7 | | | | Included with above |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| Line Number | | A. EPA Waste No. (Enter code) | | | | B. Estimated Annual Quantity of Waste | C. Unit of Measure (Enter code) | D. PROCESSES (1) PROCESS CODES (Enter code) | D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1)) |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | U | 2 | 0 | 0 | | | | Included with CPP-1617 RMWSF, Pg. 5 (IF-1) of 6, line 1 |
| | 2 | U | 2 | 0 | 1 | | | | Included with above |
| | 3 | U | 2 | 0 | 2 | | | | Included with above |
| | 4 | U | 2 | 0 | 3 | | | | Included with above |
| | 5 | U | 2 | 0 | 4 | | | | Included with above |
| | 6 | U | 2 | 0 | 5 | | | | Included with above |
| | 7 | U | 2 | 0 | 6 | | | | Included with above |
| | 8 | U | 2 | 0 | 7 | | | | Included with above |
| | 9 | U | 2 | 0 | 8 | | | | Included with above |
| 1 | 0 | U | 2 | 0 | 9 | | | | Included with above |
| 1 | 1 | U | 2 | 1 | 0 | | | | Included with above |
| 1 | 2 | U | 2 | 1 | 1 | | | | Included with above |
| 1 | 3 | U | 2 | 1 | 3 | | | | Included with above |
| 1 | 4 | U | 2 | 1 | 4 | | | | Included with above |
| 1 | 5 | U | 2 | 1 | 5 | | | | Included with above |
| 1 | 6 | U | 2 | 1 | 6 | | | | Included with above |
| 1 | 7 | U | 2 | 1 | 7 | | | | Included with above |
| 1 | 8 | U | 2 | 1 | 8 | | | | Included with above |
| 1 | 9 | U | 2 | 1 | 9 | | | | Included with above |
| 2 | 0 | U | 2 | 2 | 0 | | | | Included with above |
| 2 | 1 | U | 2 | 2 | 1 | | | | Included with above |
| 2 | 2 | U | 2 | 2 | 2 | | | | Included with above |
| 2 | 3 | U | 2 | 2 | 3 | | | | Included with above |
| 2 | 4 | U | 2 | 2 | 5 | | | | Included with above |
| 2 | 5 | U | 2 | 2 | 6 | | | | Included with above |
| 2 | 6 | U | 2 | 2 | 7 | | | | Included with above |
| 2 | 7 | U | 2 | 2 | 8 | | | | Included with above |
| 2 | 8 | U | 2 | 3 | 4 | | | | Included with above |
| 2 | 9 | U | 2 | 3 | 5 | | | | Included with above |
| 3 | 0 | U | 2 | 3 | 6 | | | | Included with above |
| 3 | 1 | U | 2 | 3 | 7 | | | | Included with above |
| 3 | 2 | U | 2 | 3 | 8 | | | | Included with above |
| 3 | 3 | U | 2 | 3 | 9 | | | | Included with above |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| *Line Number* | | *A. EPA Waste No. (Enter code)* | | | | *B. Estimated Annual Quantity of Waste* | *C. Unit of Measure (Enter code)* | *D. PROCESSES (1) PROCESS CODES (Enter code)* | *D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))* |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | U | 2 | 4 | 0 | | | | Included with CPP-1617 RMWSF, Pg. 5 (IF-1) of 6, line 1 |
| | 2 | U | 2 | 4 | 3 | | | | Included with above |
| | 3 | U | 2 | 4 | 4 | | | | Included with above |
| | 4 | U | 2 | 4 | 6 | | | | Included with above |
| | 5 | U | 2 | 4 | 7 | | | | Included with above |
| | 6 | U | 2 | 4 | 8 | | | | Included with above |
| | 7 | U | 2 | 4 | 9 | | | | Included with above |
| | 8 | U | 3 | 2 | 8 | | | | Included with above |
| | 9 | U | 3 | 5 | 3 | | | | Included with above |
| 1 | 0 | U | 3 | 5 | 9 | | | | Included with above |
| 1 | 1 | | | | | | | | |
| 1 | 2 | | | | | | | | |
| 1 | 3 | | | | | | | | |
| 1 | 4 | | | | | | | | |
| 1 | 5 | | | | | | | | |
| 1 | 6 | | | | | | | | |
| 1 | 7 | | | | | | | | |
| 1 | 8 | | | | | | | | |
| 1 | 9 | | | | | | | | |
| 2 | 0 | | | | | | | | |
| 2 | 1 | | | | | | | | |
| 2 | 2 | | | | | | | | |
| 2 | 3 | | | | | | | | |
| 2 | 4 | | | | | | | | |
| 2 | 5 | | | | | | | | |
| 2 | 6 | | | | | | | | |
| 2 | 7 | | | | | | | | |
| 2 | 8 | | | | | | | | |
| 2 | 9 | | | | | | | | |
| 3 | 0 | | | | | | | | |
| 3 | 1 | | | | | | | | |
| 3 | 2 | | | | | | | | |
| 3 | 3 | | | | | | | | |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| *Line Number* | | *A. EPA Waste No. (Enter code)* | | | | *B. Estimated Annual Quantity of Waste* | *C. Unit of Measure (Enter code)* | *D. PROCESSES (1) PROCESS CODES (Enter code)* | | | | | | | | | *D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | D | 0 | 0 | 1 | 355 | T | S | 0 | 1 | | | | | | | CPP-1619 Hazardous Chemical & Radioactive Waste Storage Facility (HCRWSF) |
| | 2 | D | 0 | 0 | 2 | | | | | | | | | | | | Included with above |
| | 3 | D | 0 | 0 | 3 | | | | | | | | | | | | Included with above |
| | 4 | D | 0 | 0 | 4 | | | | | | | | | | | | Included with above |
| | 5 | D | 0 | 0 | 5 | | | | | | | | | | | | Included with above |
| | 6 | D | 0 | 0 | 6 | | | | | | | | | | | | Included with above |
| | 7 | D | 0 | 0 | 7 | | | | | | | | | | | | Included with above |
| | 8 | D | 0 | 0 | 8 | | | | | | | | | | | | Included with above |
| | 9 | D | 0 | 0 | 9 | | | | | | | | | | | | Included with above |
| 1 | 0 | D | 0 | 1 | 0 | | | | | | | | | | | | Included with above |
| 1 | 1 | D | 0 | 1 | 1 | | | | | | | | | | | | Included with above |
| 1 | 2 | D | 0 | 1 | 2 | | | | | | | | | | | | Included with above |
| 1 | 3 | D | 0 | 1 | 3 | | | | | | | | | | | | Included with above |
| 1 | 4 | D | 0 | 1 | 4 | | | | | | | | | | | | Included with above |
| 1 | 5 | D | 0 | 1 | 5 | | | | | | | | | | | | Included with above |
| 1 | 6 | D | 0 | 1 | 6 | | | | | | | | | | | | Included with above |
| 1 | 7 | D | 0 | 1 | 7 | | | | | | | | | | | | Included with above |
| 1 | 8 | D | 0 | 1 | 8 | | | | | | | | | | | | Included with above |
| 1 | 9 | D | 0 | 1 | 9 | | | | | | | | | | | | Included with above |
| 2 | 0 | D | 0 | 2 | 0 | | | | | | | | | | | | Included with above |
| 2 | 1 | D | 0 | 2 | 1 | | | | | | | | | | | | Included with above |
| 2 | 2 | D | 0 | 2 | 2 | | | | | | | | | | | | Included with above |
| 2 | 3 | D | 0 | 2 | 3 | | | | | | | | | | | | Included with above |
| 2 | 4 | D | 0 | 2 | 4 | | | | | | | | | | | | Included with above |
| 2 | 5 | D | 0 | 2 | 5 | | | | | | | | | | | | Included with above |
| 2 | 6 | D | 0 | 2 | 6 | | | | | | | | | | | | Included with above |
| 2 | 7 | D | 0 | 2 | 7 | | | | | | | | | | | | Included with above |
| 2 | 8 | D | 0 | 2 | 8 | | | | | | | | | | | | Included with above |
| 2 | 9 | D | 0 | 2 | 9 | | | | | | | | | | | | Included with above |
| 3 | 0 | D | 0 | 3 | 0 | | | | | | | | | | | | Included with above |
| 3 | 1 | D | 0 | 3 | 1 | | | | | | | | | | | | Included with above |
| 3 | 2 | D | 0 | 3 | 2 | | | | | | | | | | | | Included with above |
| 3 | 3 | D | 0 | 3 | 3 | | | | | | | | | | | | Included with above |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| Line Number | | A. EPA Waste No. (Enter code) | | | | B. Estimated Annual Quantity of Waste | C. Unit of Measure (Enter code) | D. PROCESSES (1) PROCESS CODES (Enter code) | (2) PROCESS DESCRIPTION (If a code is not entered in D(1)) |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | D | 0 | 3 | 4 | | | | Included with CPP-1619 HCRWSF, Pg. 5 (IG-1) of 6, line 1 |
| | 2 | D | 0 | 3 | 5 | | | | Included with above |
| | 3 | D | 0 | 3 | 6 | | | | Included with above |
| | 4 | D | 0 | 3 | 7 | | | | Included with above |
| | 5 | D | 0 | 3 | 8 | | | | Included with above |
| | 6 | D | 0 | 3 | 9 | | | | Included with above |
| | 7 | D | 0 | 4 | 0 | | | | Included with above |
| | 8 | D | 0 | 4 | 1 | | | | Included with above |
| | 9 | D | 0 | 4 | 2 | | | | Included with above |
| 1 | 0 | D | 0 | 4 | 3 | | | | Included with above |
| 1 | 1 | F | 0 | 0 | 1 | | | | Included with above |
| 1 | 2 | F | 0 | 0 | 2 | | | | Included with above |
| 1 | 3 | F | 0 | 0 | 3 | | | | Included with above |
| 1 | 4 | F | 0 | 0 | 4 | | | | Included with above |
| 1 | 5 | F | 0 | 0 | 5 | | | | Included with above |
| 1 | 6 | F | 0 | 0 | 6 | | | | Included with above |
| 1 | 7 | F | 0 | 0 | 7 | | | | Included with above |
| 1 | 8 | F | 0 | 0 | 8 | | | | Included with above |
| 1 | 9 | F | 0 | 0 | 9 | | | | Included with above |
| 2 | 0 | F | 0 | 1 | 0 | | | | Included with above |
| 2 | 1 | F | 0 | 1 | 1 | | | | Included with above |
| 2 | 2 | F | 0 | 1 | 2 | | | | Included with above |
| 2 | 3 | F | 0 | 1 | 9 | | | | Included with above |
| 2 | 4 | F | 0 | 2 | 0 | | | | Included with above |
| 2 | 5 | F | 0 | 2 | 1 | | | | Included with above |
| 2 | 6 | F | 0 | 2 | 2 | | | | Included with above |
| 2 | 7 | F | 0 | 2 | 3 | | | | Included with above |
| 2 | 8 | F | 0 | 2 | 4 | | | | Included with above |
| 2 | 9 | F | 0 | 2 | 6 | | | | Included with above |
| 3 | 0 | F | 0 | 2 | 7 | | | | Included with above |
| 3 | 1 | F | 0 | 2 | 8 | | | | Included with above |
| 3 | 2 | F | 0 | 3 | 9 | | | | Included with above |
| 3 | 3 | K | 0 | 0 | 1 | | | | Included with above |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| *Line Number* | *A. EPA Waste No. (Enter code)* | *B. Estimated Annual Quantity of Waste* | *C. Unit of Measure (Enter code)* | *D. PROCESSES (1) PROCESS CODES (Enter code)* | *D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))* |
|---|---|---|---|---|---|
| 1 | K015 | | | | **Included with CPP-1619 HCRWSF, Pg. 5 (IG-1) of 6, line 1** |
| 2 | K069 | | | | **Included with above** |
| 3 | K100 | | | | **Included with above** |
| 4 | P001 | | | | **Included with above** |
| 5 | P002 | | | | **Included with above** |
| 6 | P003 | | | | **Included with above** |
| 7 | P004 | | | | **Included with above** |
| 8 | P005 | | | | **Included with above** |
| 9 | P006 | | | | **Included with above** |
| 10 | P007 | | | | **Included with above** |
| 11 | P008 | | | | **Included with above** |
| 12 | P009 | | | | **Included with above** |
| 13 | P010 | | | | **Included with above** |
| 14 | P011 | | | | **Included with above** |
| 15 | P012 | | | | **Included with above** |
| 16 | P013 | | | | **Included with above** |
| 17 | P014 | | | | **Included with above** |
| 18 | P015 | | | | **Included with above** |
| 19 | P016 | | | | **Included with above** |
| 20 | P017 | | | | **Included with above** |
| 21 | P018 | | | | **Included with above** |
| 22 | P020 | | | | **Included with above** |
| 23 | P021 | | | | **Included with above** |
| 24 | P022 | | | | **Included with above** |
| 25 | P023 | | | | **Included with above** |
| 26 | P024 | | | | **Included with above** |
| 27 | P026 | | | | **Included with above** |
| 28 | P027 | | | | **Included with above** |
| 29 | P028 | | | | **Included with above** |
| 30 | P029 | | | | **Included with above** |
| 31 | P030 | | | | **Included with above** |
| 32 | P031 | | | | **Included with above** |
| 33 | P033 | | | | **Included with above** |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| Line Number | | A. EPA Waste No. (Enter code) | | | | B. Estimated Annual Quantity of Waste | C. Unit of Measure (Enter code) | D. PROCESSES (1) PROCESS CODES (Enter code) | D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1)) |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | P | 0 | 3 | 4 | | | | Included with CPP-1619 HCRWSF, Pg. 5 (IG-1) of 6, line 1 |
| | 2 | P | 0 | 3 | 6 | | | | Included with above |
| | 3 | P | 0 | 3 | 7 | | | | Included with above |
| | 4 | P | 0 | 3 | 8 | | | | Included with above |
| | 5 | P | 0 | 3 | 9 | | | | Included with above |
| | 6 | P | 0 | 4 | 0 | | | | Included with above |
| | 7 | P | 0 | 4 | 1 | | | | Included with above |
| | 8 | P | 0 | 4 | 2 | | | | Included with above |
| | 9 | P | 0 | 4 | 3 | | | | Included with above |
| 1 | 0 | P | 0 | 4 | 4 | | | | Included with above |
| 1 | 1 | P | 0 | 4 | 5 | | | | Included with above |
| 1 | 2 | P | 0 | 4 | 6 | | | | Included with above |
| 1 | 3 | P | 0 | 4 | 7 | | | | Included with above |
| 1 | 4 | P | 0 | 4 | 8 | | | | Included with above |
| 1 | 5 | P | 0 | 4 | 9 | | | | Included with above |
| 1 | 6 | P | 0 | 5 | 0 | | | | Included with above |
| 1 | 7 | P | 0 | 5 | 1 | | | | Included with above |
| 1 | 8 | P | 0 | 5 | 4 | | | | Included with above |
| 1 | 9 | P | 0 | 5 | 6 | | | | Included with above |
| 2 | 0 | P | 0 | 5 | 7 | | | | Included with above |
| 2 | 1 | P | 0 | 5 | 8 | | | | Included with above |
| 2 | 2 | P | 0 | 5 | 9 | | | | Included with above |
| 2 | 3 | P | 0 | 6 | 0 | | | | Included with above |
| 2 | 4 | P | 0 | 6 | 2 | | | | Included with above |
| 2 | 5 | P | 0 | 6 | 3 | | | | Included with above |
| 2 | 6 | P | 0 | 6 | 4 | | | | Included with above |
| 2 | 7 | P | 0 | 6 | 5 | | | | Included with above |
| 2 | 8 | P | 0 | 6 | 6 | | | | Included with above |
| 2 | 9 | P | 0 | 6 | 7 | | | | Included with above |
| 3 | 0 | P | 0 | 6 | 8 | | | | Included with above |
| 3 | 1 | P | 0 | 6 | 9 | | | | Included with above |
| 3 | 2 | P | 0 | 7 | 0 | | | | Included with above |
| 3 | 3 | P | 0 | 7 | 1 | | | | Included with above |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| *Line Number* | | *A. EPA Waste No. (Enter code)* | | | | *B. Estimated Annual Quantity of Waste* | *C. Unit of Measure (Enter code)* | *D. PROCESSES (1) PROCESS CODES (Enter code)* | *D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))* |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | P | 0 | 7 | 2 | | | | Included with CPP-1619 HCRWSF, Pg. 5 (IG-1) of 6, line 1 |
| | 2 | P | 0 | 7 | 3 | | | | Included with above |
| | 3 | P | 0 | 7 | 4 | | | | Included with above |
| | 4 | P | 0 | 7 | 5 | | | | Included with above |
| | 5 | P | 0 | 7 | 6 | | | | Included with above |
| | 6 | P | 0 | 7 | 7 | | | | Included with above |
| | 7 | P | 0 | 7 | 8 | | | | Included with above |
| | 8 | P | 0 | 8 | 1 | | | | Included with above |
| | 9 | P | 0 | 8 | 2 | | | | Included with above |
| 1 | 0 | P | 0 | 8 | 4 | | | | Included with above |
| 1 | 1 | P | 0 | 8 | 5 | | | | Included with above |
| 1 | 2 | P | 0 | 8 | 7 | | | | Included with above |
| 1 | 3 | P | 0 | 8 | 8 | | | | Included with above |
| 1 | 4 | P | 0 | 8 | 9 | | | | Included with above |
| 1 | 5 | P | 0 | 9 | 2 | | | | Included with above |
| 1 | 6 | P | 0 | 9 | 3 | | | | Included with above |
| 1 | 7 | P | 0 | 9 | 4 | | | | Included with above |
| 1 | 8 | P | 0 | 9 | 5 | | | | Included with above |
| 1 | 9 | P | 0 | 9 | 6 | | | | Included with above |
| 2 | 0 | P | 0 | 9 | 7 | | | | Included with above |
| 2 | 1 | P | 0 | 9 | 8 | | | | Included with above |
| 2 | 2 | P | 0 | 9 | 9 | | | | Included with above |
| 2 | 3 | P | 1 | 0 | 1 | | | | Included with above |
| 2 | 4 | P | 1 | 0 | 2 | | | | Included with above |
| 2 | 5 | P | 1 | 0 | 3 | | | | Included with above |
| 2 | 6 | P | 1 | 0 | 4 | | | | Included with above |
| 2 | 7 | P | 1 | 0 | 5 | | | | Included with above |
| 2 | 8 | P | 1 | 0 | 6 | | | | Included with above |
| 2 | 9 | P | 1 | 0 | 8 | | | | Included with above |
| 3 | 0 | P | 1 | 0 | 9 | | | | Included with above |
| 3 | 1 | P | 1 | 1 | 0 | | | | Included with above |
| 3 | 2 | P | 1 | 1 | 1 | | | | Included with above |
| 3 | 3 | P | 1 | 1 | 2 | | | | Included with above |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| *Line Number* | *A. EPA Waste No. (Enter code)* | *B. Estimated Annual Quantity of Waste* | *C. Unit of Measure (Enter code)* | *D. PROCESSES (1) PROCESS CODES (Enter code)* | *D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))* |
|---|---|---|---|---|---|
| 1 | P113 | | | | Included with CPP-1619 HCRWSF, Pg. 5 (IG-1) of 6, line 1 |
| 2 | P114 | | | | Included with above |
| 3 | P115 | | | | Included with above |
| 4 | P116 | | | | Included with above |
| 5 | P118 | | | | Included with above |
| 6 | P119 | | | | Included with above |
| 7 | P120 | | | | Included with above |
| 8 | P121 | | | | Included with above |
| 9 | P122 | | | | Included with above |
| 10 | P123 | | | | Included with above |
| 11 | U001 | | | | Included with above |
| 12 | U002 | | | | Included with above |
| 13 | U003 | | | | Included with above |
| 14 | U004 | | | | Included with above |
| 15 | U005 | | | | Included with above |
| 16 | U006 | | | | Included with above |
| 17 | U007 | | | | Included with above |
| 18 | U008 | | | | Included with above |
| 19 | U009 | | | | Included with above |
| 20 | U010 | | | | Included with above |
| 21 | U011 | | | | Included with above |
| 22 | U012 | | | | Included with above |
| 23 | U014 | | | | Included with above |
| 24 | U015 | | | | Included with above |
| 25 | U016 | | | | Included with above |
| 26 | U017 | | | | Included with above |
| 27 | U018 | | | | Included with above |
| 28 | U019 | | | | Included with above |
| 29 | U020 | | | | Included with above |
| 30 | U021 | | | | Included with above |
| 31 | U022 | | | | Included with above |
| 32 | U023 | | | | Included with above |
| 33 | U024 | | | | Included with above |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| Line Number | | A. EPA Waste No. (Enter code) | | | | B. Estimated Annual Quantity of Waste | C. Unit of Measure (Enter code) | D. PROCESSES (1) PROCESS CODES (Enter code) | D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1)) |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | U | 0 | 2 | 5 | | | | Included with CPP-1619 HCRWSF, Pg. 5 (IG-1) of 6, line 1 |
| | 2 | U | 0 | 2 | 6 | | | | Included with above |
| | 3 | U | 0 | 2 | 7 | | | | Included with above |
| | 4 | U | 0 | 2 | 8 | | | | Included with above |
| | 5 | U | 0 | 2 | 9 | | | | Included with above |
| | 6 | U | 0 | 3 | 0 | | | | Included with above |
| | 7 | U | 0 | 3 | 1 | | | | Included with above |
| | 8 | U | 0 | 3 | 2 | | | | Included with above |
| | 9 | U | 0 | 3 | 3 | | | | Included with above |
| 1 | 0 | U | 0 | 3 | 4 | | | | Included with above |
| 1 | 1 | U | 0 | 3 | 5 | | | | Included with above |
| 1 | 2 | U | 0 | 3 | 6 | | | | Included with above |
| 1 | 3 | U | 0 | 3 | 7 | | | | Included with above |
| 1 | 4 | U | 0 | 3 | 8 | | | | Included with above |
| 1 | 5 | U | 0 | 3 | 9 | | | | Included with above |
| 1 | 6 | U | 0 | 4 | 1 | | | | Included with above |
| 1 | 7 | U | 0 | 4 | 2 | | | | Included with above |
| 1 | 8 | U | 0 | 4 | 3 | | | | Included with above |
| 1 | 9 | U | 0 | 4 | 4 | | | | Included with above |
| 2 | 0 | U | 0 | 4 | 5 | | | | Included with above |
| 2 | 1 | U | 0 | 4 | 6 | | | | Included with above |
| 2 | 2 | U | 0 | 4 | 7 | | | | Included with above |
| 2 | 3 | U | 0 | 4 | 8 | | | | Included with above |
| 2 | 4 | U | 0 | 4 | 9 | | | | Included with above |
| 2 | 5 | U | 0 | 5 | 0 | | | | Included with above |
| 2 | 6 | U | 0 | 5 | 1 | | | | Included with above |
| 2 | 7 | U | 0 | 5 | 2 | | | | Included with above |
| 2 | 8 | U | 0 | 5 | 3 | | | | Included with above |
| 2 | 9 | U | 0 | 5 | 5 | | | | Included with above |
| 3 | 0 | U | 0 | 5 | 6 | | | | Included with above |
| 3 | 1 | U | 0 | 5 | 7 | | | | Included with above |
| 3 | 2 | U | 0 | 5 | 8 | | | | Included with above |
| 3 | 3 | U | 0 | 5 | 9 | | | | Included with above |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| Line Number | A. EPA Waste No. (Enter code) | B. Estimated Annual Quantity of Waste | C. Unit of Measure (Enter code) | D. PROCESSES (1) PROCESS CODES (Enter code) | D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1)) |
|---|---|---|---|---|---|
| 1 | U060 | | | | Included with CPP-1619 HCRWSF, Pg. 5 (IG-1) of 6, line 1 |
| 2 | U061 | | | | Included with above |
| 3 | U062 | | | | Included with above |
| 4 | U063 | | | | Included with above |
| 5 | U064 | | | | Included with above |
| 6 | U066 | | | | Included with above |
| 7 | U067 | | | | Included with above |
| 8 | U068 | | | | Included with above |
| 9 | U069 | | | | Included with above |
| 10 | U070 | | | | Included with above |
| 11 | U071 | | | | Included with above |
| 12 | U072 | | | | Included with above |
| 13 | U073 | | | | Included with above |
| 14 | U074 | | | | Included with above |
| 15 | U075 | | | | Included with above |
| 16 | U076 | | | | Included with above |
| 17 | U077 | | | | Included with above |
| 18 | U078 | | | | Included with above |
| 19 | U079 | | | | Included with above |
| 20 | U080 | | | | Included with above |
| 21 | U081 | | | | Included with above |
| 22 | U082 | | | | Included with above |
| 23 | U083 | | | | Included with above |
| 24 | U084 | | | | Included with above |
| 25 | U085 | | | | Included with above |
| 26 | U086 | | | | Included with above |
| 27 | U087 | | | | Included with above |
| 28 | U088 | | | | Included with above |
| 29 | U089 | | | | Included with above |
| 30 | U090 | | | | Included with above |
| 31 | U091 | | | | Included with above |
| 32 | U092 | | | | Included with above |
| 33 | U093 | | | | Included with above |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| Line Number | | A. EPA Waste No. (Enter code) | | | | B. Estimated Annual Quantity of Waste | C. Unit of Measure (Enter code) | D. PROCESSES (1) PROCESS CODES (Enter code) | D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1)) |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | U | 0 | 9 | 4 | | | | **Included with CPP-1619 HCRWSF, Pg. 5 (IG-1) of 6, line 1** |
| | 2 | U | 0 | 9 | 5 | | | | **Included with above** |
| | 3 | U | 0 | 9 | 6 | | | | **Included with above** |
| | 4 | U | 0 | 9 | 7 | | | | **Included with above** |
| | 5 | U | 0 | 9 | 8 | | | | **Included with above** |
| | 6 | U | 0 | 9 | 9 | | | | **Included with above** |
| | 7 | U | 1 | 0 | 1 | | | | **Included with above** |
| | 8 | U | 1 | 0 | 2 | | | | **Included with above** |
| | 9 | U | 1 | 0 | 3 | | | | **Included with above** |
| 1 | 0 | U | 1 | 0 | 5 | | | | **Included with above** |
| 1 | 1 | U | 1 | 0 | 6 | | | | **Included with above** |
| 1 | 2 | U | 1 | 0 | 7 | | | | **Included with above** |
| 1 | 3 | U | 1 | 0 | 8 | | | | **Included with above** |
| 1 | 4 | U | 1 | 0 | 9 | | | | **Included with above** |
| 1 | 5 | U | 1 | 1 | 0 | | | | **Included with above** |
| 1 | 6 | U | 1 | 1 | 1 | | | | **Included with above** |
| 1 | 7 | U | 1 | 1 | 2 | | | | **Included with above** |
| 1 | 8 | U | 1 | 1 | 3 | | | | **Included with above** |
| 1 | 9 | U | 1 | 1 | 4 | | | | **Included with above** |
| 2 | 0 | U | 1 | 1 | 5 | | | | **Included with above** |
| 2 | 1 | U | 1 | 1 | 6 | | | | **Included with above** |
| 2 | 2 | U | 1 | 1 | 7 | | | | **Included with above** |
| 2 | 3 | U | 1 | 1 | 8 | | | | **Included with above** |
| 2 | 4 | U | 1 | 1 | 9 | | | | **Included with above** |
| 2 | 5 | U | 1 | 2 | 0 | | | | **Included with above** |
| 2 | 6 | U | 1 | 2 | 1 | | | | **Included with above** |
| 2 | 7 | U | 1 | 2 | 2 | | | | **Included with above** |
| 2 | 8 | U | 1 | 2 | 3 | | | | **Included with above** |
| 2 | 9 | U | 1 | 2 | 4 | | | | **Included with above** |
| 3 | 0 | U | 1 | 2 | 5 | | | | **Included with above** |
| 3 | 1 | U | 1 | 2 | 6 | | | | **Included with above** |
| 3 | 2 | U | 1 | 2 | 7 | | | | **Included with above** |
| 3 | 3 | U | 1 | 2 | 8 | | | | **Included with above** |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| Line Number | | A. EPA Waste No. (Enter code) | | | | B. Estimated Annual Quantity of Waste | C. Unit of Measure (Enter code) | D. PROCESSES (1) PROCESS CODES (Enter code) | D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1)) |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | U | 1 | 2 | 9 | | | | Included with CPP-1619 HCRWSF, Pg. 5 (IG-1) of 6, line 1 |
| | 2 | U | 1 | 3 | 0 | | | | Included with above |
| | 3 | U | 1 | 3 | 1 | | | | Included with above |
| | 4 | U | 1 | 3 | 2 | | | | Included with above |
| | 5 | U | 1 | 3 | 3 | | | | Included with above |
| | 6 | U | 1 | 3 | 4 | | | | Included with above |
| | 7 | U | 1 | 3 | 5 | | | | Included with above |
| | 8 | U | 1 | 3 | 6 | | | | Included with above |
| | 9 | U | 1 | 3 | 7 | | | | Included with above |
| 1 | 0 | U | 1 | 3 | 8 | | | | Included with above |
| 1 | 1 | U | 1 | 4 | 0 | | | | Included with above |
| 1 | 2 | U | 1 | 4 | 1 | | | | Included with above |
| 1 | 3 | U | 1 | 4 | 2 | | | | Included with above |
| 1 | 4 | U | 1 | 4 | 3 | | | | Included with above |
| 1 | 5 | U | 1 | 4 | 4 | | | | Included with above |
| 1 | 6 | U | 1 | 4 | 5 | | | | Included with above |
| 1 | 7 | U | 1 | 4 | 6 | | | | Included with above |
| 1 | 8 | U | 1 | 4 | 7 | | | | Included with above |
| 1 | 9 | U | 1 | 4 | 8 | | | | Included with above |
| 2 | 0 | U | 1 | 4 | 9 | | | | Included with above |
| 2 | 1 | U | 1 | 5 | 0 | | | | Included with above |
| 2 | 2 | U | 1 | 5 | 1 | | | | Included with above |
| 2 | 3 | U | 1 | 5 | 2 | | | | Included with above |
| 2 | 4 | U | 1 | 5 | 3 | | | | Included with above |
| 2 | 5 | U | 1 | 5 | 4 | | | | Included with above |
| 2 | 6 | U | 1 | 5 | 5 | | | | Included with above |
| 2 | 7 | U | 1 | 5 | 6 | | | | Included with above |
| 2 | 8 | U | 1 | 5 | 7 | | | | Included with above |
| 2 | 9 | U | 1 | 5 | 8 | | | | Included with above |
| 3 | 0 | U | 1 | 5 | 9 | | | | Included with above |
| 3 | 1 | U | 1 | 6 | 0 | | | | Included with above |
| 3 | 2 | U | 1 | 6 | 1 | | | | Included with above |
| 3 | 3 | U | 1 | 6 | 2 | | | | Included with above |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| *Line Number* | | *A. EPA Waste No. (Enter code)* | | | | *B. Estimated Annual Quantity of Waste* | *C. Unit of Measure (Enter code)* | *D. PROCESSES (1) PROCESS CODES (Enter code)* | *(2) PROCESS DESCRIPTION (If a code is not entered in D(1))* |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | U | 1 | 6 | 3 | | | | **Included with CPP-1619 HCRWSF, Pg. 5 (IG-1) of 6, line 1** |
| | 2 | U | 1 | 6 | 4 | | | | **Included with above** |
| | 3 | U | 1 | 6 | 5 | | | | **Included with above** |
| | 4 | U | 1 | 6 | 6 | | | | **Included with above** |
| | 5 | U | 1 | 6 | 7 | | | | **Included with above** |
| | 6 | U | 1 | 6 | 8 | | | | **Included with above** |
| | 7 | U | 1 | 6 | 9 | | | | **Included with above** |
| | 8 | U | 1 | 7 | 0 | | | | **Included with above** |
| | 9 | U | 1 | 7 | 1 | | | | **Included with above** |
| 1 | 0 | U | 1 | 7 | 2 | | | | **Included with above** |
| 1 | 1 | U | 1 | 7 | 3 | | | | **Included with above** |
| 1 | 2 | U | 1 | 7 | 4 | | | | **Included with above** |
| 1 | 3 | U | 1 | 7 | 6 | | | | **Included with above** |
| 1 | 4 | U | 1 | 7 | 7 | | | | **Included with above** |
| 1 | 5 | U | 1 | 7 | 8 | | | | **Included with above** |
| 1 | 6 | U | 1 | 7 | 9 | | | | **Included with above** |
| 1 | 7 | U | 1 | 8 | 0 | | | | **Included with above** |
| 1 | 8 | U | 1 | 8 | 1 | | | | **Included with above** |
| 1 | 9 | U | 1 | 8 | 2 | | | | **Included with above** |
| 2 | 0 | U | 1 | 8 | 3 | | | | **Included with above** |
| 2 | 1 | U | 1 | 8 | 4 | | | | **Included with above** |
| 2 | 2 | U | 1 | 8 | 5 | | | | **Included with above** |
| 2 | 3 | U | 1 | 8 | 6 | | | | **Included with above** |
| 2 | 4 | U | 1 | 8 | 7 | | | | **Included with above** |
| 2 | 5 | U | 1 | 8 | 8 | | | | **Included with above** |
| 2 | 6 | U | 1 | 8 | 9 | | | | **Included with above** |
| 2 | 7 | U | 1 | 9 | 0 | | | | **Included with above** |
| 2 | 8 | U | 1 | 9 | 1 | | | | **Included with above** |
| 2 | 9 | U | 1 | 9 | 2 | | | | **Included with above** |
| 3 | 0 | U | 1 | 9 | 3 | | | | **Included with above** |
| 3 | 1 | U | 1 | 9 | 4 | | | | **Included with above** |
| 3 | 2 | U | 1 | 9 | 6 | | | | **Included with above** |
| 3 | 3 | U | 1 | 9 | 7 | | | | **Included with above** |

| 10. Description of Hazardous Wastes (Continued; use additional sheets as necessary) | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Line Number* | | *A. EPA Waste No. (Enter code)* | | | | *B. Estimated Annual Quantity of Waste* | *C. Unit of Measure (Enter code)* | *D. PROCESSES* | | | | | | | | | | |
| | | | | | | | | *(1) PROCESS CODES (Enter code)* | | | | | | | | | | *(2) PROCESS DESCRIPTION (If a code is not entered in D(1))* |
| | 1 | U | 2 | 0 | 0 | | | | | | | | | | | | | Included with CPP-1619 HCRWSF, Pg. 5 (IG-1) of 6, line 1 |
| | 2 | U | 2 | 0 | 1 | | | | | | | | | | | | | Included with above |
| | 3 | U | 2 | 0 | 2 | | | | | | | | | | | | | Included with above |
| | 4 | U | 2 | 0 | 3 | | | | | | | | | | | | | Included with above |
| | 5 | U | 2 | 0 | 4 | | | | | | | | | | | | | Included with above |
| | 6 | U | 2 | 0 | 5 | | | | | | | | | | | | | Included with above |
| | 7 | U | 2 | 0 | 6 | | | | | | | | | | | | | Included with above |
| | 8 | U | 2 | 0 | 7 | | | | | | | | | | | | | Included with above |
| | 9 | U | 2 | 0 | 8 | | | | | | | | | | | | | Included with above |
| 1 | 0 | U | 2 | 0 | 9 | | | | | | | | | | | | | Included with above |
| 1 | 1 | U | 2 | 1 | 0 | | | | | | | | | | | | | Included with above |
| 1 | 2 | U | 2 | 1 | 1 | | | | | | | | | | | | | Included with above |
| 1 | 3 | U | 2 | 1 | 3 | | | | | | | | | | | | | Included with above |
| 1 | 4 | U | 2 | 1 | 4 | | | | | | | | | | | | | Included with above |
| 1 | 5 | U | 2 | 1 | 5 | | | | | | | | | | | | | Included with above |
| 1 | 6 | U | 2 | 1 | 6 | | | | | | | | | | | | | Included with above |
| 1 | 7 | U | 2 | 1 | 7 | | | | | | | | | | | | | Included with above |
| 1 | 8 | U | 2 | 1 | 8 | | | | | | | | | | | | | Included with above |
| 1 | 9 | U | 2 | 1 | 9 | | | | | | | | | | | | | Included with above |
| 2 | 0 | U | 2 | 2 | 0 | | | | | | | | | | | | | Included with above |
| 2 | 1 | U | 2 | 2 | 1 | | | | | | | | | | | | | Included with above |
| 2 | 2 | U | 2 | 2 | 2 | | | | | | | | | | | | | Included with above |
| 2 | 3 | U | 2 | 2 | 3 | | | | | | | | | | | | | Included with above |
| 2 | 4 | U | 2 | 2 | 5 | | | | | | | | | | | | | Included with above |
| 2 | 5 | U | 2 | 2 | 6 | | | | | | | | | | | | | Included with above |
| 2 | 6 | U | 2 | 2 | 7 | | | | | | | | | | | | | Included with above |
| 2 | 7 | U | 2 | 2 | 8 | | | | | | | | | | | | | Included with above |
| 2 | 8 | U | 2 | 3 | 4 | | | | | | | | | | | | | Included with above |
| 2 | 9 | U | 2 | 3 | 5 | | | | | | | | | | | | | Included with above |
| 3 | 0 | U | 2 | 3 | 6 | | | | | | | | | | | | | Included with above |
| 3 | 1 | U | 2 | 3 | 7 | | | | | | | | | | | | | Included with above |
| 3 | 2 | U | 2 | 3 | 8 | | | | | | | | | | | | | Included with above |
| 3 | 3 | U | 2 | 3 | 9 | | | | | | | | | | | | | Included with above |

**10. Description of Hazardous Wastes (Continued; use additional sheets as necessary)**

| *Line Number* | *A. EPA Waste No. (Enter code)* | *B. Estimated Annual Quantity of Waste* | *C. Unit of Measure (Enter code)* | *D. PROCESSES (1) PROCESS CODES (Enter code)* | *D. PROCESSES (2) PROCESS DESCRIPTION (If a code is not entered in D(1))* |
|---|---|---|---|---|---|
| 1 | U240 | | | | Included with CPP-1619 HCRWSF, Pg. 5 (IG-1) of 6, line 1 |
| 2 | U243 | | | | Included with above |
| 3 | U244 | | | | Included with above |
| 4 | U246 | | | | Included with above |
| 5 | U247 | | | | Included with above |
| 6 | U248 | | | | Included with above |
| 7 | U249 | | | | Included with above |
| 8 | U328 | | | | Included with above |
| 9 | U353 | | | | Included with above |
| 10 | U359 | | | | Included with above |
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**11. Map (See instructions on page 38)**

*Attach to this application a topographic map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in this map area. See instructions for precise requirements.*

**NOTE: For the INTEC Topographic Map, please see Attachment 1, Section B - Facility Description, of the Volume 18 - INTEC HWMA/RCRA Storage and Treatment Permit**

**12. Facility Drawing (See instructions on page 39)**

*All existing facilities must include a scale drawing of the facility (see instructions for more detail).*

**NOTE: For the INTEC Facility Drawings, please see Attachment 1, Section B - Facility Drawings, of the Volume 18 - INTEC HWMA/RCRA Storage and Treatment Permit**

**13. Photographs (See instructions on page 39)**

*All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).*

**NOTE: For the INTEC Facility Photographs, please see Attachment 1, Section B - Facility Photos, of the Volume 18 - INTEC HWMA/RCRA Storage and Treatment Permit**

**14. Comments (See instructions on page 39)**

For a description of hazardous waste debris categories treated, stored, or disposed of at the facility, as required by IDAPA 58.01.05.012 [40 CFR 270.13(n)], please see attached information titled: "ITEM 14. ADDITIONAL INFORMATION HAZARDOUS WASTE DEBRIS CATEGORIES".

# ITEM 14. ADDITIONAL INFORMATION
# HAZARDOUS WASTE DEBRIS CATEGORIES

IDAPA 58.01.05.012 [40 CFR 270.13 (n)] requires a description of the debris categories treated, stored, or disposed of at a facility to be submitted in the Part A Permit Application. Debris defined by 40 CFR 268.2 means a solid material exceeding a 60mm particle size that is intended for disposal and that is: 1) a manufactured object; 2) plant or animal matter; 3) natural geologic material. Debris treated or stored at INTEC facilities includes waste in all three general categories. The following is a list of examples in each debris category which may be stored at these INTEC facilities.

## Category I - Manufactured Objects

- Glass
- Concrete
- Masonry and refractory bricks
- Paper
- Plastic
- Rubber
- Cloth
- Pavement
- Metal Debris
  - Pipes
  - Valves
  - Scrap Metal
- Other Heterogeneous Debris
  - Non-intact containers
  - Tanks
  - Appliances
  - Industrial Equipment

## Category II - Plant and Animal Matter

- Biological Debris
  - Plant matter
- Wood Debris
  - Wood
  - Plant stumps

## Category III - Natural Geologic Material

- Rock
- Cobbles
- Boulders
- Asbestos

**REGULATORY CERTIFICATION [IDAPA 58.01.05.012; 40 CFR 270.11(d) and 270.30(k)]**

**CLASS 2 PERMIT MODIFICATION REQUEST INCLUDING A REQUEST FOR TEMPORARY AUTHORIZATION TO THE FINAL HAZARDOUS WASTE MANAGEMENT ACT STORAGE AND TREATMENT PERMIT FOR THE IDAHO NUCLEAR TECHNOLOGY AND ENGINEERING CENTER**

**JULY 2003**

The undersigned certify as required per 40 CFR 270.11(d) and 270.30(k) as follows:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Operator Signature

6/9/03

Arthur Clark, Vice President Nuclear Programs & Site Operations — Date
Bechtel BWXT Idaho, LLC.

**REGULATORY CERTIFICATION [IDAPA 58.01.05.012; 40 CFR 270.11(d) and 270.30(k)]**

**CLASS 2 PERMIT MODIFICATION REQUEST INCLUDING A REQUEST FOR TEMPORARY AUTHORIZATION TO THE FINAL HAZARDOUS WASTE MANAGEMENT ACT STORAGE AND TREATMENT PERMIT FOR THE IDAHO NUCLEAR TECHNOLOGY AND ENGINEERING CENTER**

**JULY 2003**

**EPA I.D. Number ID4890008952**

The undersigned certify as required per 40 CFR 270.11(d) and 270.30(k) as follows:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner Signature

for M. Christine Ott 7/28/2003

Elizabeth D. Sellers, Manager Date

Department of Energy Idaho Operations Office

RCRA PART B PERMIT APPLICATION

FOR THE

IDAHO NATIONAL

ENGINEERING AND ENVIRONMENTAL LABORATORY

Volume 18 – Idaho Nuclear Technology and Engineering Center

# Attachment 1

Debris Treatment Processes
Holdup and Collection Tanks
CPP-659/-1659 Storage
CPP-666 FDP Cell Container Storage Area

## Section B

## Facility Description

Modified Date: November 18, 2003

# CONTENTS



# EXHIBITS

# B. FACILITY DESCRIPTION

## B-1. General Description [IDAPA 58.01.05.008; 40 CFR 270.14(b)(1)]

This Resource Conservation and Recovery Act (RCRA) Part B permit addresses storage and treatment activities conducted at four waste management units located at the Idaho Nuclear Technology and Engineering Center (INTEC) at the Idaho National Engineering and Environmental Laboratory (INEEL). Three of these units are located within the New Waste Calcining Facility (NWCF): (1) debris treatment processes, (2) holdup and collection tanks, and (3) CPP-659/-1659 storage. The fourth unit, container storage in the CPP-666 Fluorinel Dissolution Process (FDP) cell, is located within the Fluorinel Dissolution Process and Fuel Storage (FAST) Facility.

The INTEC is located in the south-central portion of the INEEL in Butte County. The location of this complex on the INEEL Site is shown in Exhibit B-1. The locations of Building Numbers CPP-659 and CPP-666 are shown in Exhibit B-2. Building CPP-1659 is attached to the west wall of CPP-659. The physical conditions around these buildings are typical for the INEEL Site, approximately 5,000-ft above mean sea level, as shown in Exhibit B-3, topographical map. The area is relatively flat and receives little rainfall. However, poor drainage patterns can produce localized flooding during periods of rapid snowmelt and/or heavy rainfall. Due to the lack of rainfall and the poor quality of the surficial soils, the site has little agricultural value. Wind patterns are generally in a northeast/southwest axis, with some seasonal variability.

Exhibit B-4 is a diagram showing the principal culverts, ditches, and storm systems at the INTEC. Exhibit B-5 is a diagram showing the sanitary waste system at the INTEC. There are no recreation areas present on or adjacent to the INTEC.

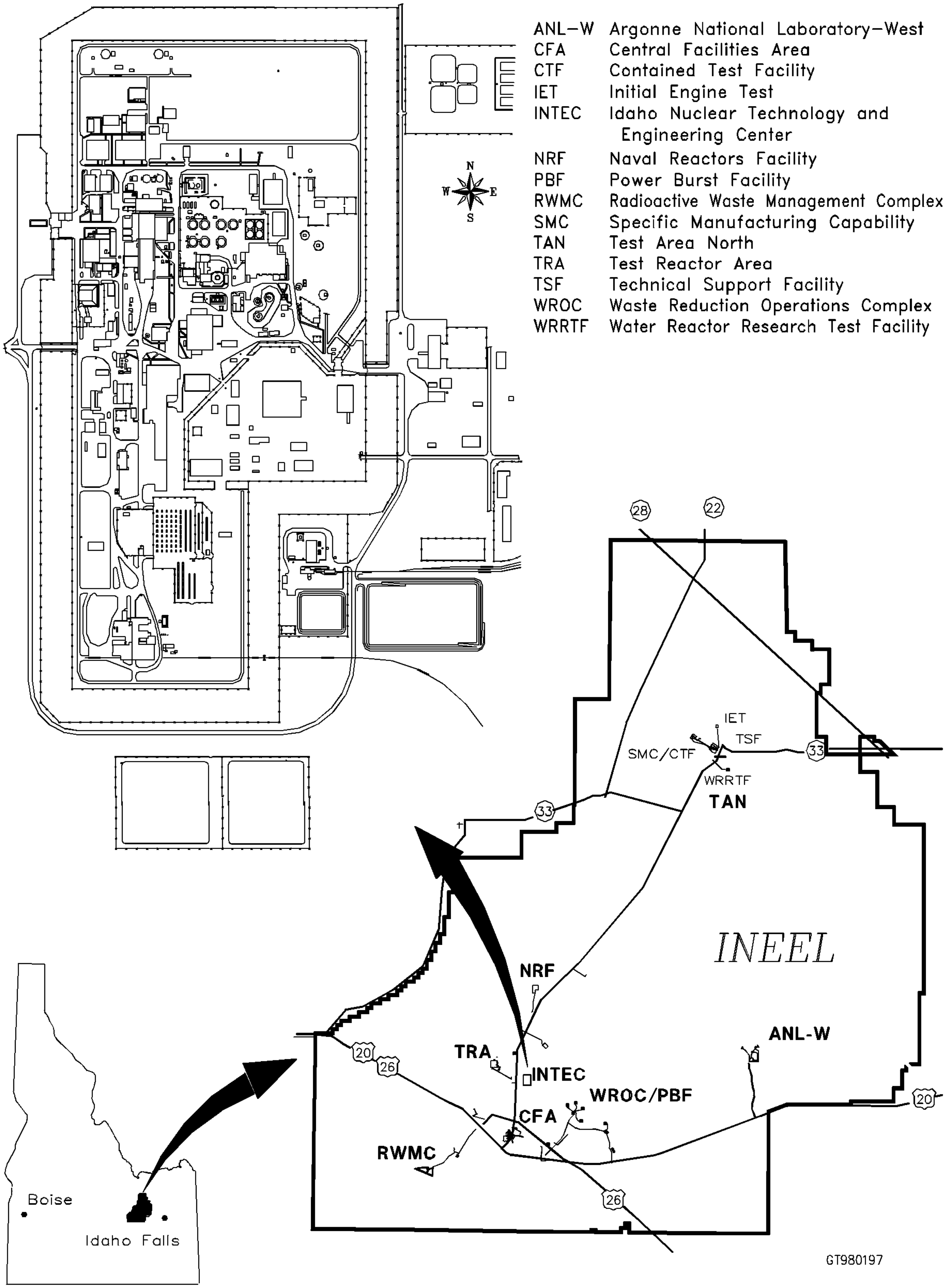



**Exhibit B-1. Location of the INTEC at the INEEL.**

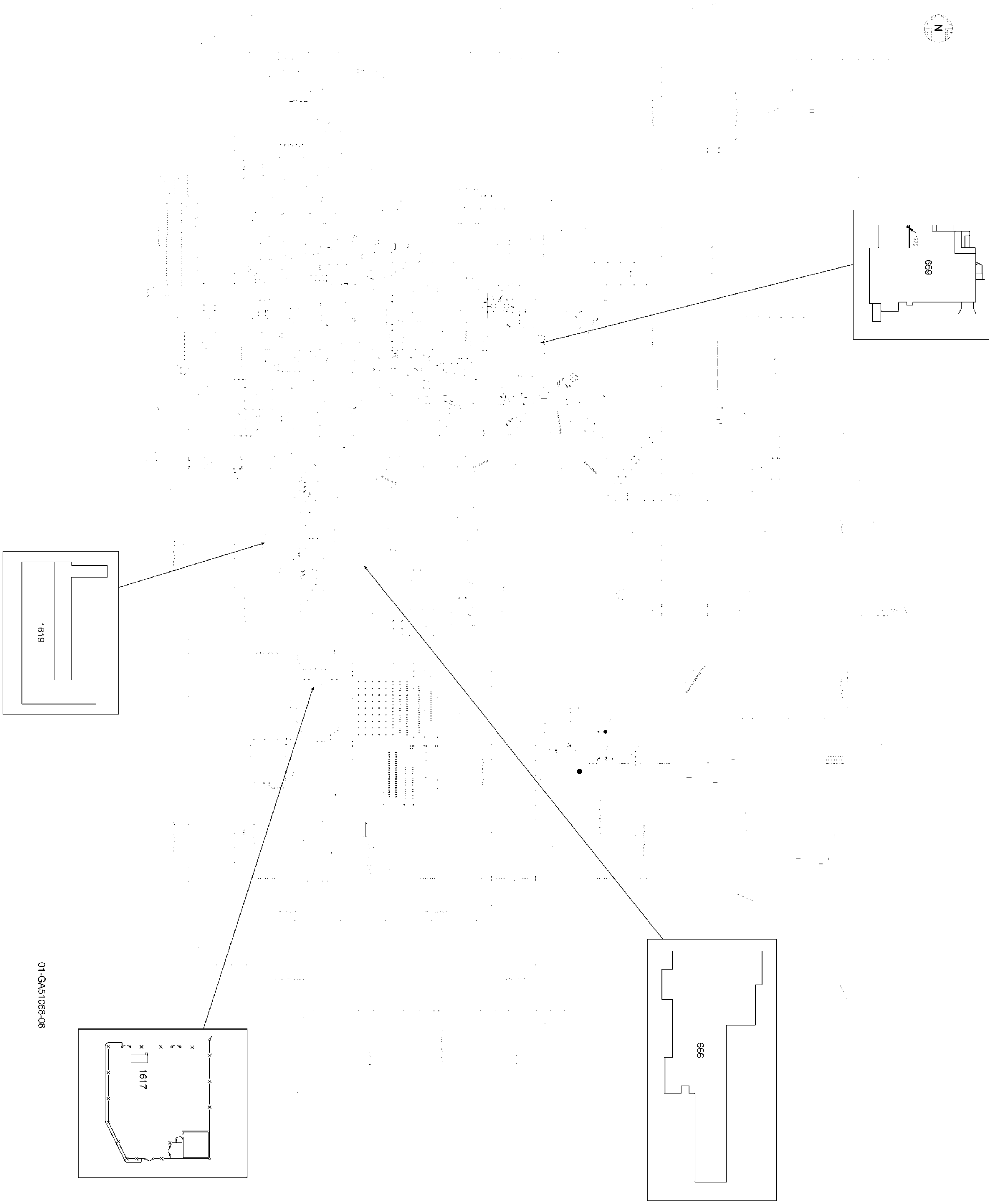
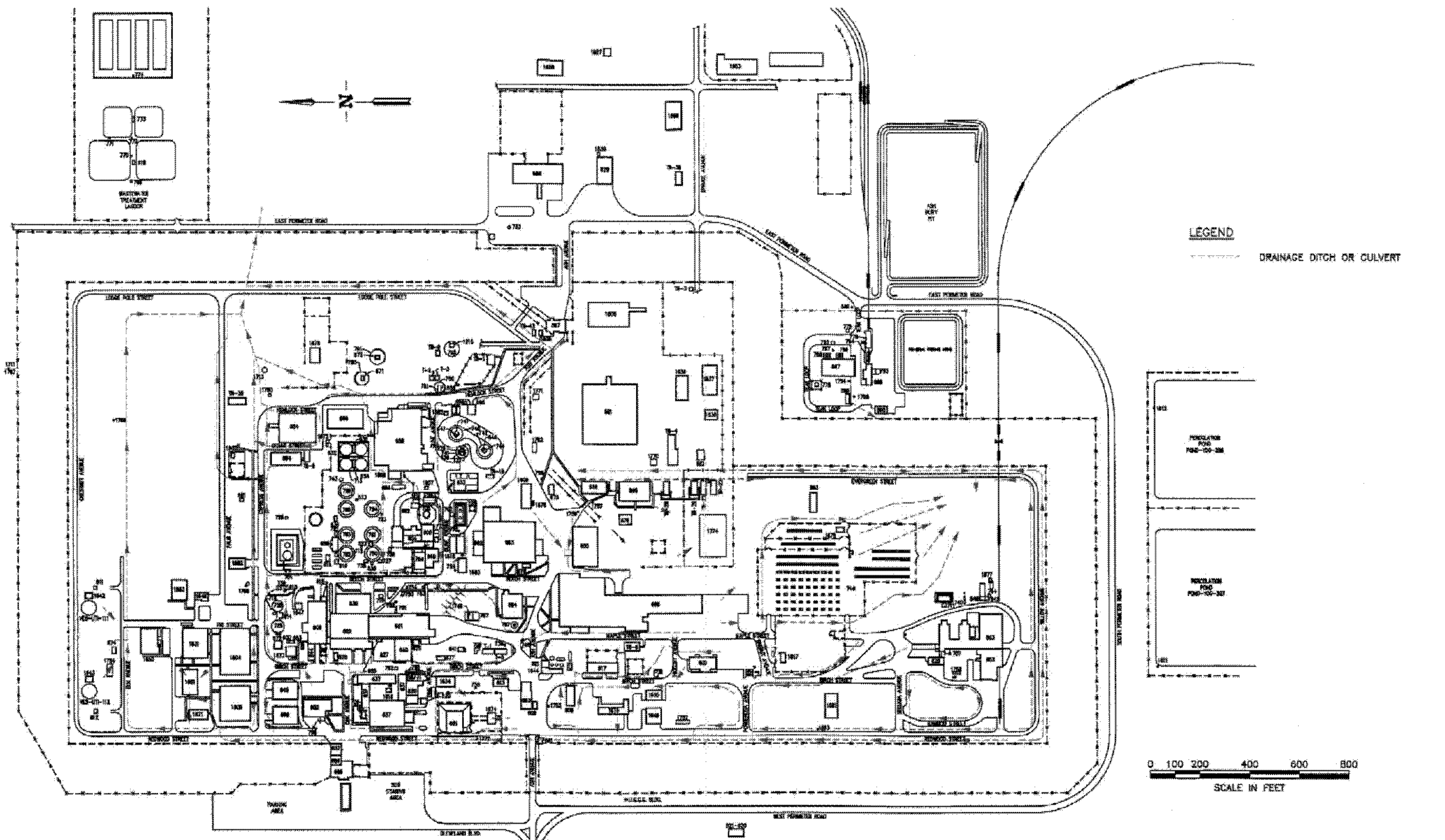



**Exhibit B-2. Locations of Building Numbers CPP-659 and CPP-666 at the INTEC.**

**Exhibit B-3. Topographic map of the INTEC.**

**PLEASE NOTE: THIS INFORMATION IS NOT AVAILABLE ELECTRONICALLY**

Exhibit B-4.  Plant drainage system at the INTEC.



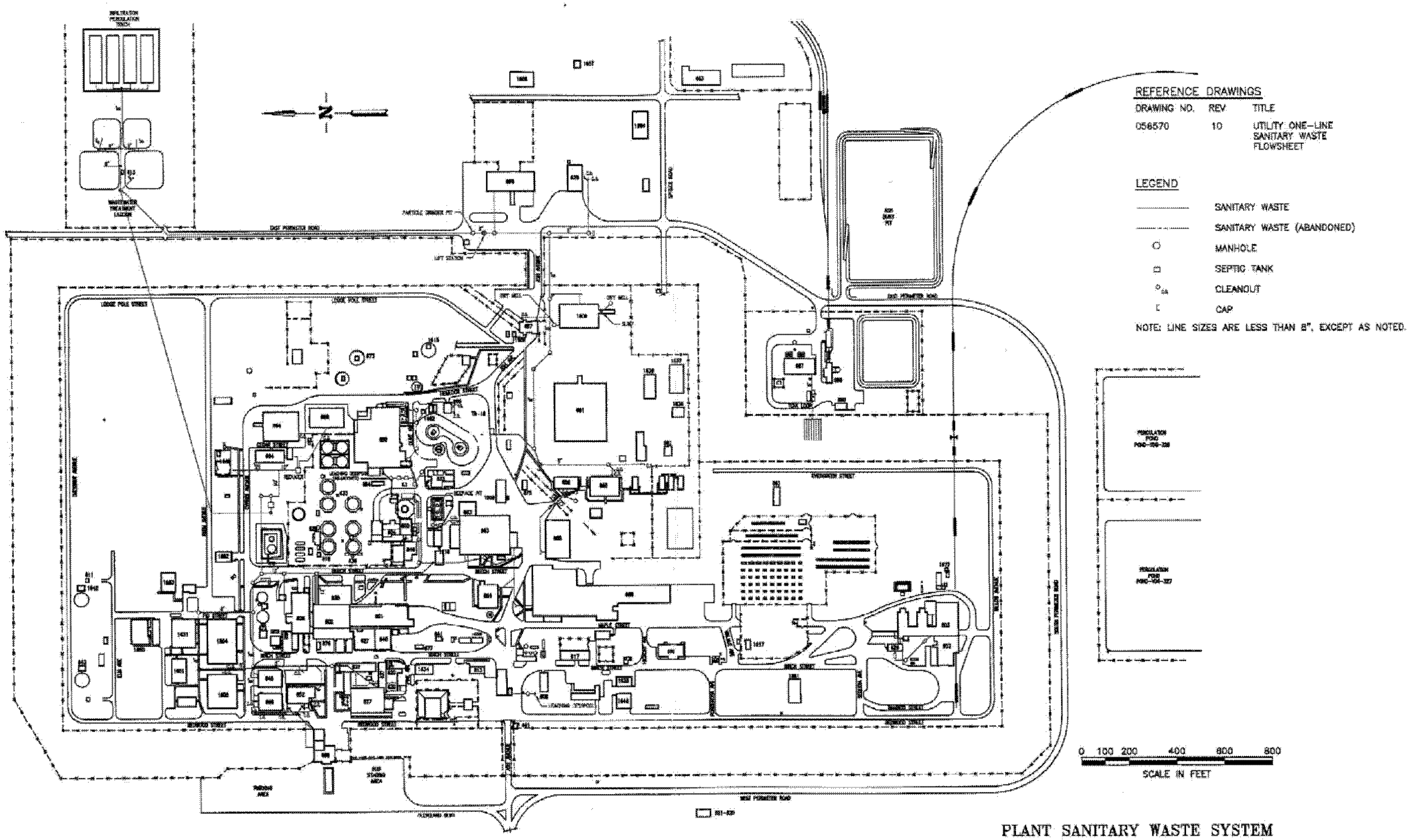

PLANT DRAINAGE SYSTEM

TECHNICAL SITE INFORMATION

IDAHO NUCLEAR TECHNOLOGY & ENGINEERING CENTER

TSI10016
10-97

**Exhibit B-5. Plant sanitary waste system at the INTEC.**




PLANT SANITARY WASTE SYSTEM

TECHNICAL SITE INFORMATION

IDAHO NUCLEAR TECHNOLOGY & ENGINEERING CENTER

TSI10013
10-97

# CPP-659/-1659 Storage and Treatment

Building CPP-659 consists of three levels. The first is at ground level. The second and third levels are both belowgrade, with the third level being the lowest. Exhibit B-6 is an isometric of the building, showing all three levels. CPP-1659 is a single-story structure constructed on grade at the west wall of CPP-659.

The RCRA treatment and storage activities at CPP-659/-1659 occur primarily within the west portion of the building. Treatment of high-efficiency particulate air (HEPA) filters will occur in the HEPA Filter Leaching System (HFLS) located in the filter handling cell, room 309, on the second level of CPP-659. Besides the HFLS, the following will be used to treat debris in CPP-659/-1659: sinks with hoods and an ultrasonic cleaner (low-level decon room, room 415), portable soak tanks (used in decon cell, decon cubicles, and/or steam spray booth), decon cubicles (rooms 421 and 422), and steam spray booth (truck loading bay area of the equipment decon room, room 418).

Liquid treatment residuals from debris treatment are collected in the decon area holdup tank (VES-NCD-123) or the decon area collection tank (VES-NCD-129). VES-NCD-123 is located in the holdup tank cell, room 219. VES-NCD-129 is located in the collection tank cell, room 203. These tanks will be used primarily for storage, pending transfer to any of several waste processing destinations (which are not addressed in this permit application). In addition, these tanks will be used occasionally for pH adjustment to meet the waste acceptance criteria of processing destinations.

Storage of wastes in containers and piles will occur in 18 rooms within CPP-659 and within building CPP-1659. Design features of these rooms include thick concrete walls and floors (as thick as 3 or 4 ft), steel reinforcement, stainless-steel-lined floors, stainless-steel wainscots, epoxy coatings, and trenches and drains.

Also conducted within CPP-659 are the calcination of RCRA-regulated waste in the calcining area on the east side of the building and evaporation of liquid waste. Any references made to these operations in this application are for informational purposes, and are not subject to this application.

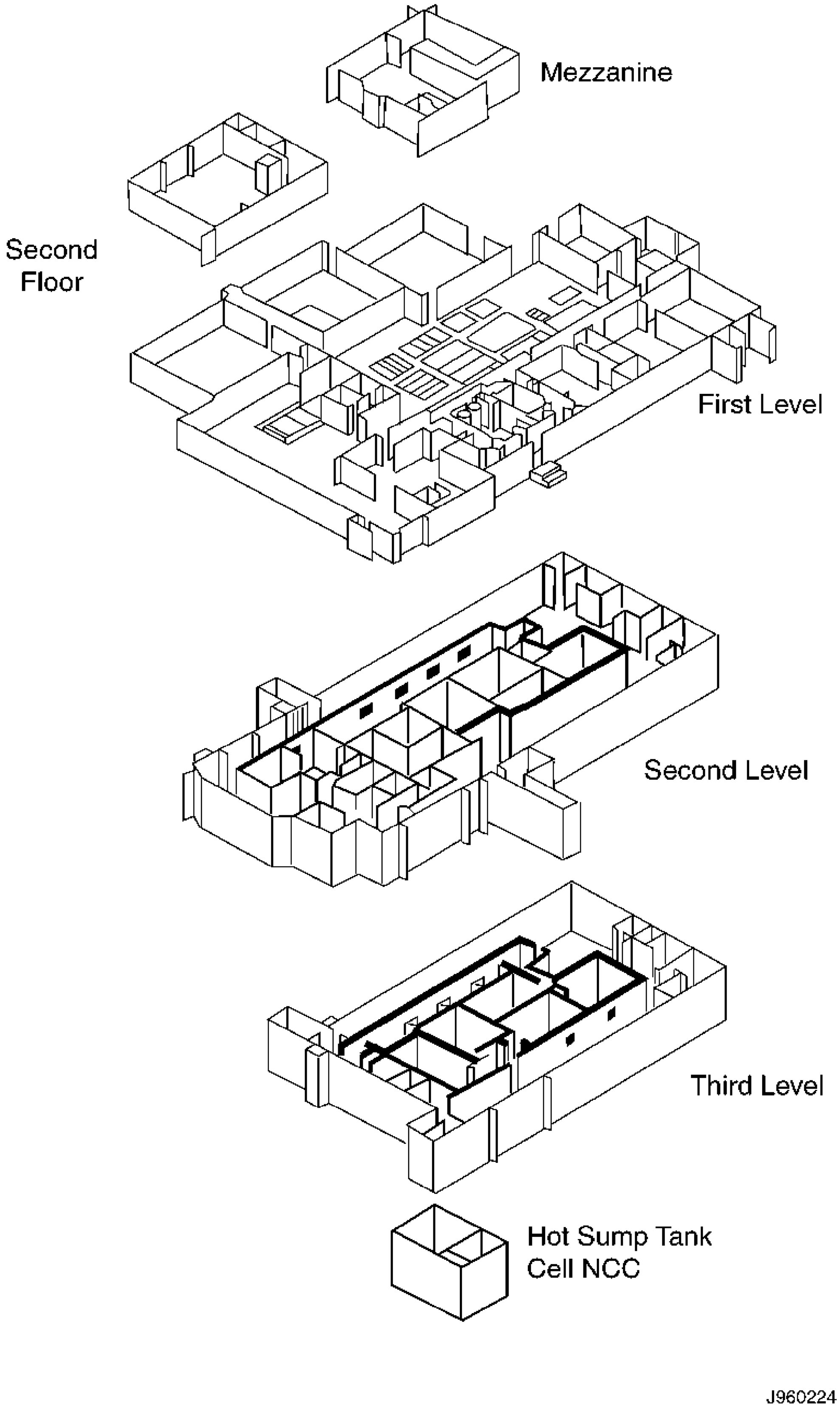



**Exhibit B-6. Isometric of the New Waste Calcining Facility (CPP-659).**

The following section presents design information for the overall building (CPP-659 and CPP-1659) structure.

**Building CPP-659/-1659 Design Data**

Building CPP-659 is approximately 250 ft long and 145 ft wide, and extends 57 ft belowgrade and 43 ft abovegrade. Building CPP-1659 is annexed to the west wall of CPP-659. CPP-1659 consists of a single floor at ground level and is approximately 56 ft 7 in. long and 34 ft wide.

**Floors**. The structural slab of CPP-659 is 3 ft of steel-reinforced concrete poured on top of 8 to 10 ft of concrete fill. The concrete fill occupies the space between the structural slab and the top of the bedrock. The construction joints in the structural slab have been constructed with waterstops consisting of a continuous carbon-steel strip, 4 in. by 1/8 in. The structural slab of CPP-1659 consists of a 6-in. concrete slab poured over a 2-in. concrete mud mat.

The process area floors of CPP-659 consist of a stainless-steel-lined concrete slab poured on top of the CPP-659 structural slab. The floor slab is 9 to 12 in. thick. The liner is 10-gauge, Series 300 stainless steel. The stainless-steel liner plate was fabricated and installed in accordance with Specification SP-453504-20-2, "Stainless-Steel Liner Plate," which references American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, American Society of Testing and Materials (ASTM), and American Welding Society (AWS) codes and standards. These specifications assure the structural integrity of the base and that the base is free of cracks and gaps. Liner seam welds were tested for leak tightness by the vacuum box method performed in accordance with Article 1 of Section V of the ASME Code and SP-453404-20-2, Appendix A, "Vacuum Box Examination of Liner Seam Welds." Leak-tested welds meet the acceptance criteria of Section III, Division 2, CC-5546 of the ASME Code.

To determine the effectiveness of the liner material, Type 300 stainless steel was exposed to three different types of process solutions, including 110 C, 3.4 M scrub solution, and three different types of decontamination solutions. Type 300 stainless steel had a maximum corrosion rate of 6.74 millimeters (mm) per month when exposed to boiling scrub solution. Process solution would normally be 40 C to 65 C. When exposed to a boiling (110 C) 8% oxalic acid solution, Series 300 stainless steel had a corrosion rate of 2.9 mm per month.

The stainless-steel liner is 10 gauge, which is nominally 127.1 to 141.9 mm thick. Given the maximum observed corrosion rate of 6.74 mm per month and the nominal 127.1 mm thickness of the liner, a liner service life of 19 months under continuous exposure to boiling process solutions is evident. However, the process areas are inspected daily for leakage and accumulated liquids when waste is present. The storage areas and the treatment areas all drain to tanks. Drainage ensures that the liner is not in contact with corrosive solutions for longer than 24 hours. Accordingly, actual corrosion rates are small fractions of the test corrosion rates.

Floors in two container storage areas are not lined with stainless steel: Rooms 205 and 419. The floors in these rooms are covered with three coats of Amercoat 66 or equivalent, which meets American National Standards Institute (ANSI) Standard N512-1974 for floor coverings and is compatible with the wastes to be stored.

**Structural Parameters**. In building CPP-659, belowgrade walls and floors and abovegrade floors, where storage and treatment will occur, are constructed of steel-reinforced concrete. The abovegrade building structure has been designed and constructed to meet applicable seismic and tornado design criteria. The abovegrade structure is constructed of a combination of a structural steel post and beam frame and steel-reinforced concrete. The abovegrade wall material is either steel-reinforced concrete, or exterior steel sheathing over 6 in. of insulation, with steel sheathing on the interior of the wall. Shielding walls limit radiation exposure to personnel and the environment. Building CPP-1659 is constructed of a structural steel post and beam frame with steel-reinforced concrete walls. Steel sheathing covers the exterior walls of CPP-1659.

Concrete construction in the floors and walls is in accordance with Specification SP-453504-10-2, "High Density Concrete Construction" (included as Appendix B-1), which references American Concrete Institute (ACI) and ASTM codes and standards. Structural steel was fabricated and erected in accordance with Specification SP-453504-20-1, "Structural Steel" (included as Appendix B-2), which references American Institute of Steel Construction (AISC), ASTM, and other codes and standards.

Exterior concrete surfaces belowgrade were coated with a bituminous damp-proofing hot-application method, using asphalt or coal tar pitch. A cold-application method using fibrous asphalt was used in confined spaces, where the use of hot bitumen would be hazardous to personnel. Surfaces receiving coal tar pitch damp-proofing were given a priming coat of creosote; surfaces receiving asphalt or fibrous asphalt damp-proofing were given a priming coat of asphalt primer. The hot-application method required that the surfaces be given two mop coats of hot coal tar pitch or two mop coats of hot asphalt. The cold-application method required that the surfaces receive two coats of fibrous asphalt, with the first coat applied by brush to provide full bond with the primed surface. The material requirements are as follows:

- Asphalt: ASTM D449-73, Type A
- Asphalt primer: ASTM D41-73
- Coal Tar Pitch: ASTM D450-71, Type B
- Creosote: ASTM D43-73
- Fibrous Asphalt: Fed. Spec. SS-A-694D.

All construction joints in external walls and in floor slabs have waterstops. Waterstop material is a continuous carbon-steel strip, 4 in. by 1/8 in., with butt-welded ends and corners. Construction joints were made according to the concrete construction specification (see Appendix B-1).

Joint sealant was used for the following:

- Joints and recesses, where frames and subsills of windows, doors, louvers, and vents adjoin masonry, concrete, or metal frames, and exterior and interior surfaces of exterior wall penetrations

- Masonry joints, where shelf angles occur

- Expansion and control joints

- Interior face of expansion joints in exterior concrete or masonry walls, where no metal expansion joint covers are required

- Openings, where items pass through exterior walls

- Metal reglets when lead caulking rope is not used, where flashing is inserted into masonry joints, or where flashing is penetrated by coping dowels

- Metal-to-metal joints, where sealing or "caulking" is shown or specified

- Joints occurring between ends of gravel stops, fascias and/or copings and adjacent walls

- Bottom of exterior doorway frames

- Decks and walkways.

The joint sealant used was either a two-component, elastomeric-type compound conforming to Federal Specifications TT-S-00227, Type II, or a one-component, elastomeric-type compound conforming to TT-S-00230, Type II, or TT-S-001543.

**Structural Roof Parameters**. The roof areas of buildings CPP-659 and -1659 have been designed and constructed to provide adequate protection from precipitation. Roofing material on the building varies. Typically, the roof consists of a solid deck (either concrete or sheet metal) overlain by two layers of solid insulating material. Covering the insulating material is a layer of gravel to provide protection against the elements.

## Heating, Ventilation, and Air Conditioning (HVAC) System

The hazardous and/or mixed waste storage and debris storage and treatment areas at CPP-659/-1659 are serviced by an HVAC system that has been in place since CPP-659 was constructed. See Appendix D-2 for details.

## FDP Cell Container Storage

The FDP cell is housed within building CPP-666 (FAST) at the INTEC. Exhibit B-2 shows the location of FAST at the INTEC. FAST is multiple-level, steel-reinforced concrete structure. The building is 571 ft long at its longest dimension, and 196 ft wide at its widest dimension. Construction of the FAST building was completed in 1982. The FDP cell was originally designed for the dissolution of spent nuclear fuel. The FDP went on line for the dissolution process in 1986, and completed its final processing campaign in August 1988.

The FAST facility comprises two separate operating areas: the Fuel Storage Area and the FDP area. Only the FDP area, and specifically the FDP cell, will be used for RCRA storage. The wastes stored are spent HEPA filters and other mixed waste debris with no free liquids, all containerized. Due to the size and complexity of the overall FAST building, only design information specific to the FDP cell container storage area is addressed in this section. Exhibit B-7 presents a cutaway view of FAST, and shows the relationship of the FDP to the rest of the building processes.

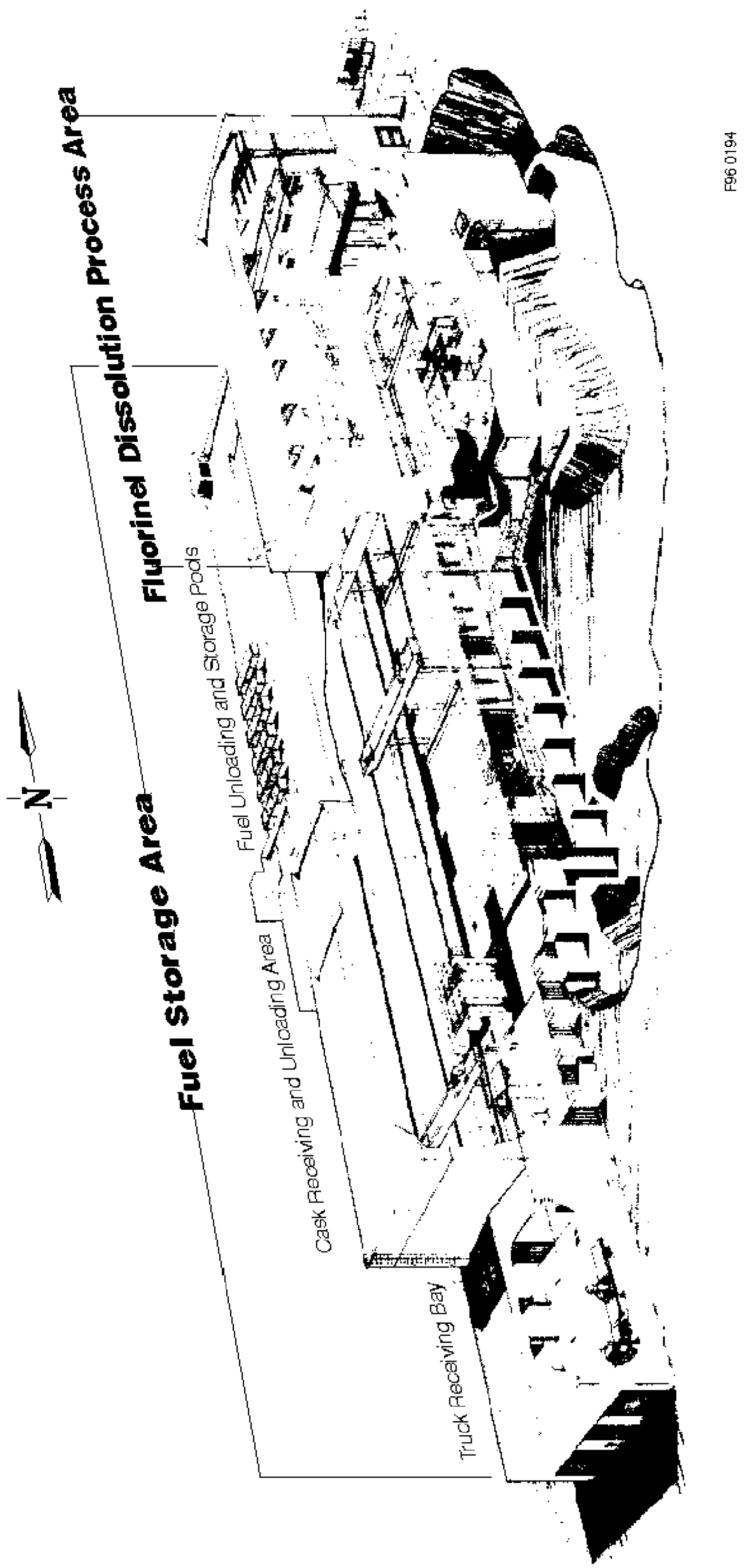



**Exhibit B-7. Cutaway view of the FAST building.**

# FDP Cell Design Data

The FDP cell is constructed of steel-reinforced concrete. The cell is located entirely within the FAST building. The only portion of the building with exposure to the outside environment is the roof. The FDP cell has one level on grade (0'- 0") and two levels belowgrade (-13'- 0" and -27'- 0"). The FDP cell is approximately 100 ft long by 20 ft wide and approximately 55 ft high. The following drawings related to the FDP cell are in the drawings package in this permit application:

- 141703 FAST Floor Plan
- 141706 FAST Partial Plan
- 143388 FAST Structural Dissolution Cell
- 143408 FAST Structural Dissolution Cell
- 143409 FAST Structural Dissolution Cell
- 143434 FAST Structural Dissolution Cell
- 143493 FAST Structural Dissolution Cell.

Located within the FDP cell are three dissolver vessels, three complexer vessels, and one product transfer vessel. The vessels were used in the fuel dissolution process. The three dissolver vessels and the product transfer vessel penetrate both the -13'- 0" and the 0'- 0" floor levels, and the three complexer vessels penetrate only the -13'- 0" level. These vessels are no longer in service, have been emptied of any process residues, and have been verified to not contain hazardous constituents.

**Foundations and Floors**. The floor at the FDP cell's -27'- 0" level is a steel-reinforced concrete pad built upon fill material. The concrete floor is a minimum of 5 ft. thick. The concrete floor is covered with a Series 300 stainless-steel liner plate, which will prevent waste from contacting the concrete surface. The stainless-steel plate meets the specifications of ASTM-A240. The floor at this level is sloped from south to north. The south end of the floor is at -27'- 0" belowgrade. The floor slopes to -27'- 6" at the north end of the cell. A sump is located in the northwest corner of the cell to collect any free liquids that may enter the unit. The sump is 5 in. in diameter, and has a depth of 18 in.

The floors at both the 0'- 0" level and at the -13'- 0" level, where wastes will be stored, are constructed of Series 300 stainless-steel grating. There are no solid floors in the cell, except for the lowest floor, at the -27'- 0" level. The grating main bars are 2 by 3/16 in., spaced 15/16 in. on center, with cross bars spaced 2 in. on center. The designed load-bearing capacity of the storage area floors is 500 lb/ft$^2$.

At the 0'- 0" level, the stainless-steel grating covers 57 linear ft of the cell area, for a total covered area of 1,140 ft$^2$. With the exception of the area taken up by the three dissolution vessels, the entire grated area may be used to store waste. There are two grated areas along the west wall at the -13'- 0" level for waste storage. The remainder of the -13'- 0" level is open.

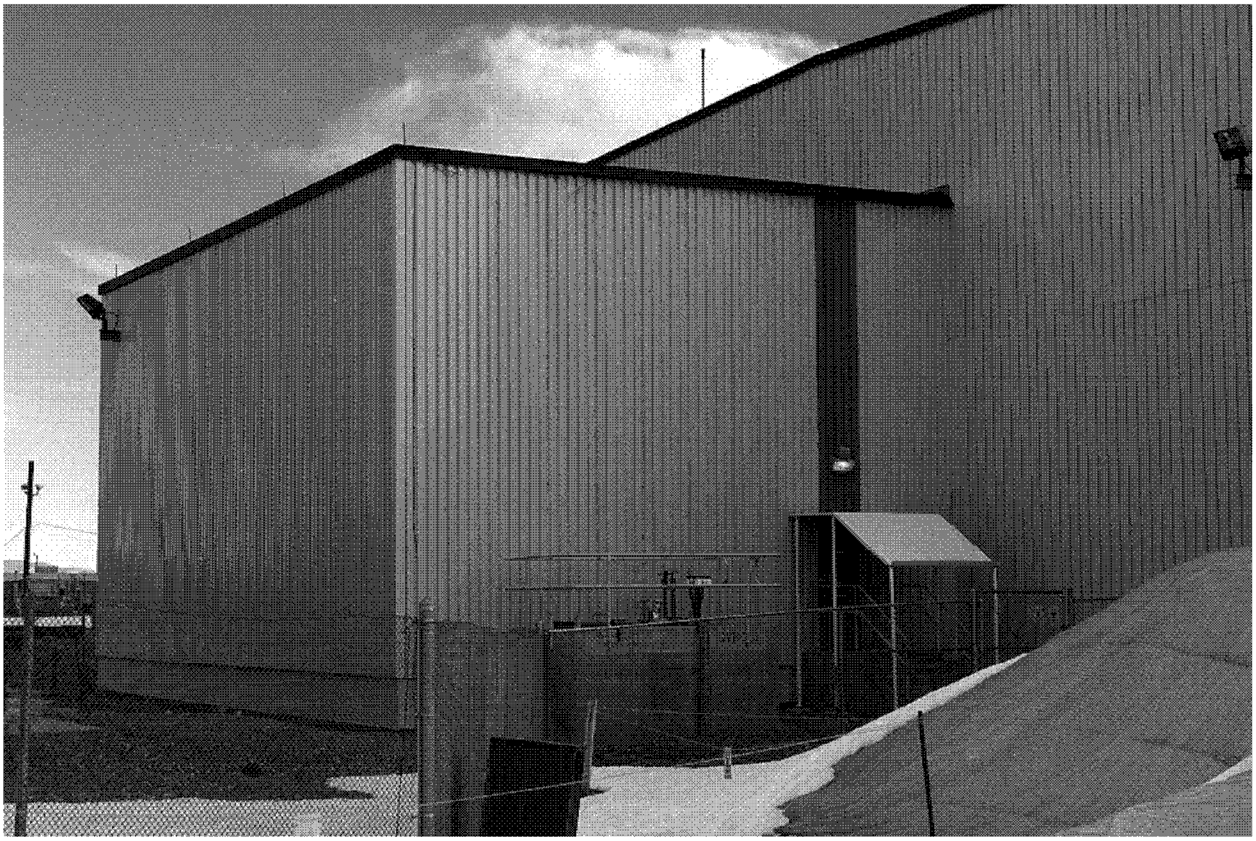
**Structural Parameters**. The walls of the FDP cell are constructed of precast steel-reinforced concrete. Each wall is 5 ft thick. The design standard for the concrete is for a compressive strength of 5,000 psi. The interior and exterior walls of the cell are lined with Series 300 stainless-steel panels.

## Cell Access

Because of high radiation levels, personnel are not allowed into the FDP cell. The FDP cell is accessed through various manways, and remotely, from a series of hatches located at the southern end of the cell. The hatch plugs are constructed of concrete and are lined with lead and stainless steel. Each of the operating levels at which waste will be stored is equipped with viewing windows. Five viewing windows are located along the east corridor and two along the west corridor, at the 0'- 0" level. Six viewing windows are located along the west corridor, at the -13'- 0" level.

## Heating, Ventilation, and Air Conditioning

The FDP cell is equipped with its own HEPA filtration system, which consists of an in-cell dissolver off-gas system, an out-of-cell dissolver off-gas system, and a cell-off-gas system.



CPP-659 Exterior
Looking North

PN-96-98-1-5

Vehicle Entry
CPP-659 Room 417
Looking East

PN-96-98-1-0

Decontamination Sinks Enclosure
CPP-659
Looking South East

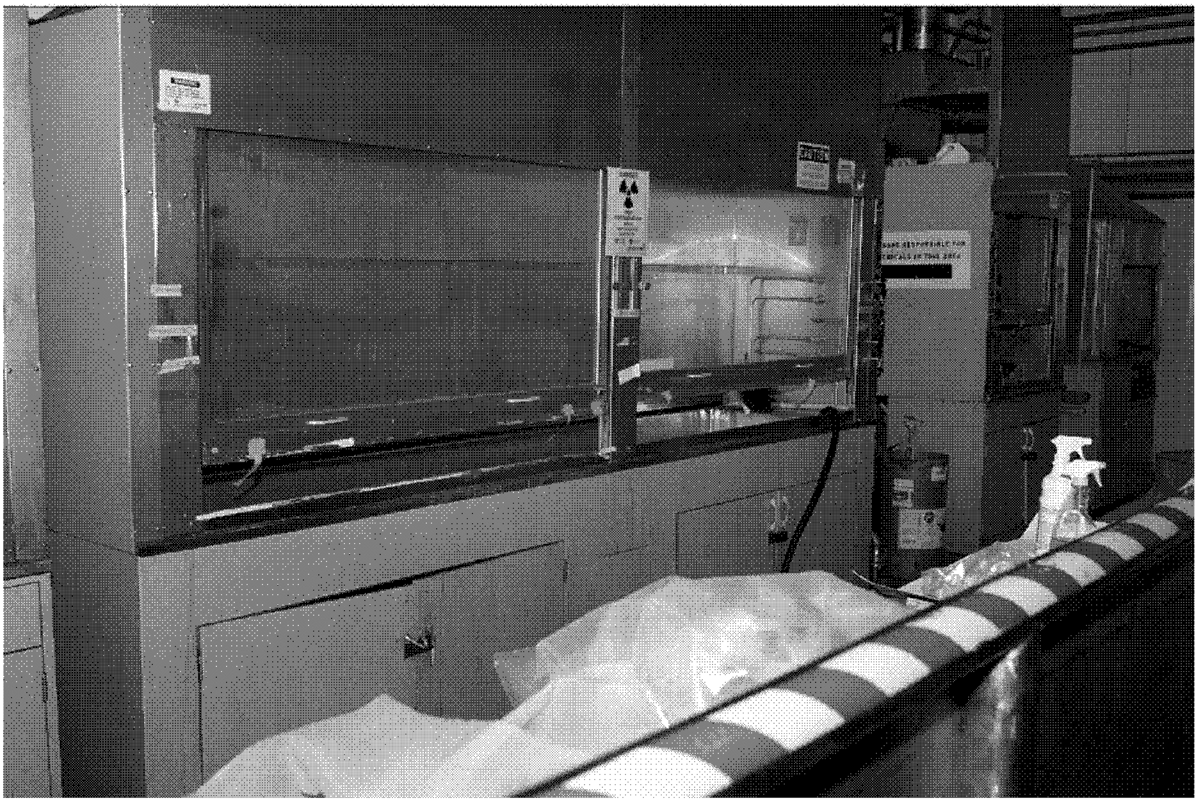
PN 99-0082-1-15

Decontamination Sinks Enclosure
CPP-659 Room 415
Looking East

PN-0082-1-17

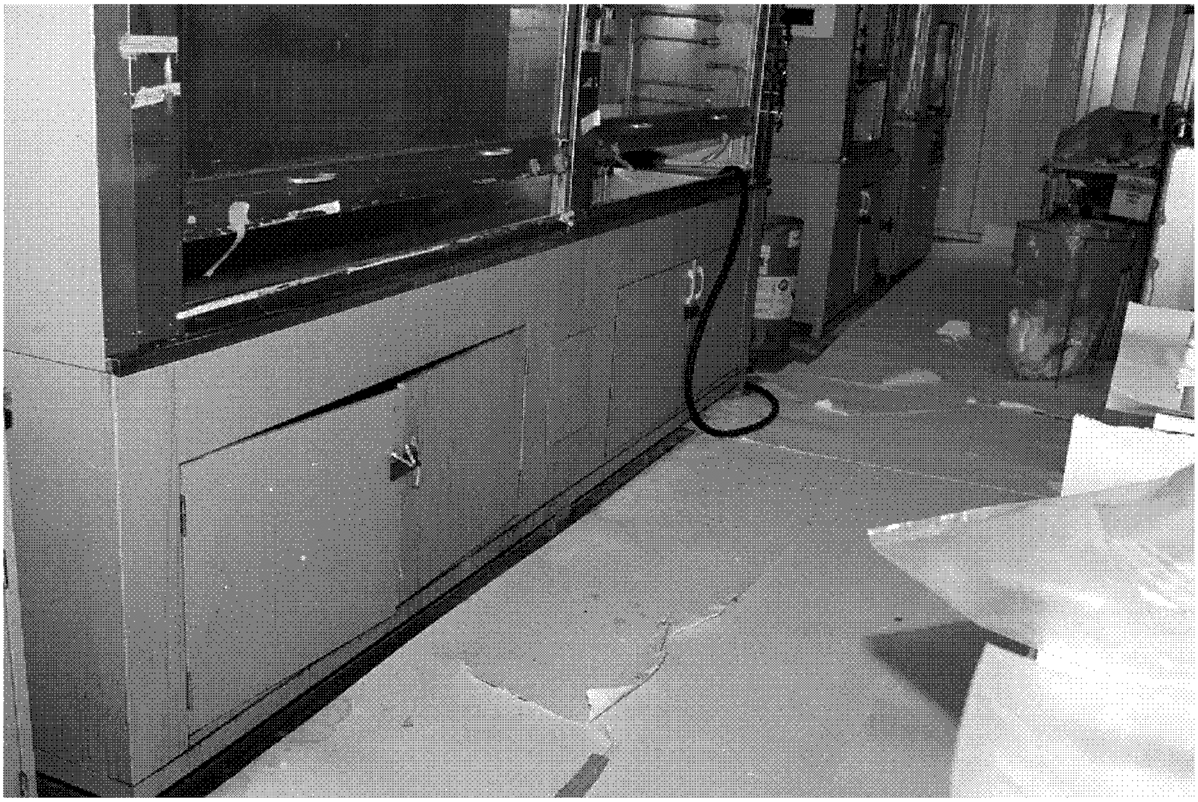

Entrance into Decontamination Sinks Enclosure
CPP-659 Room 415
Looking East

PN-99-0082-1-24



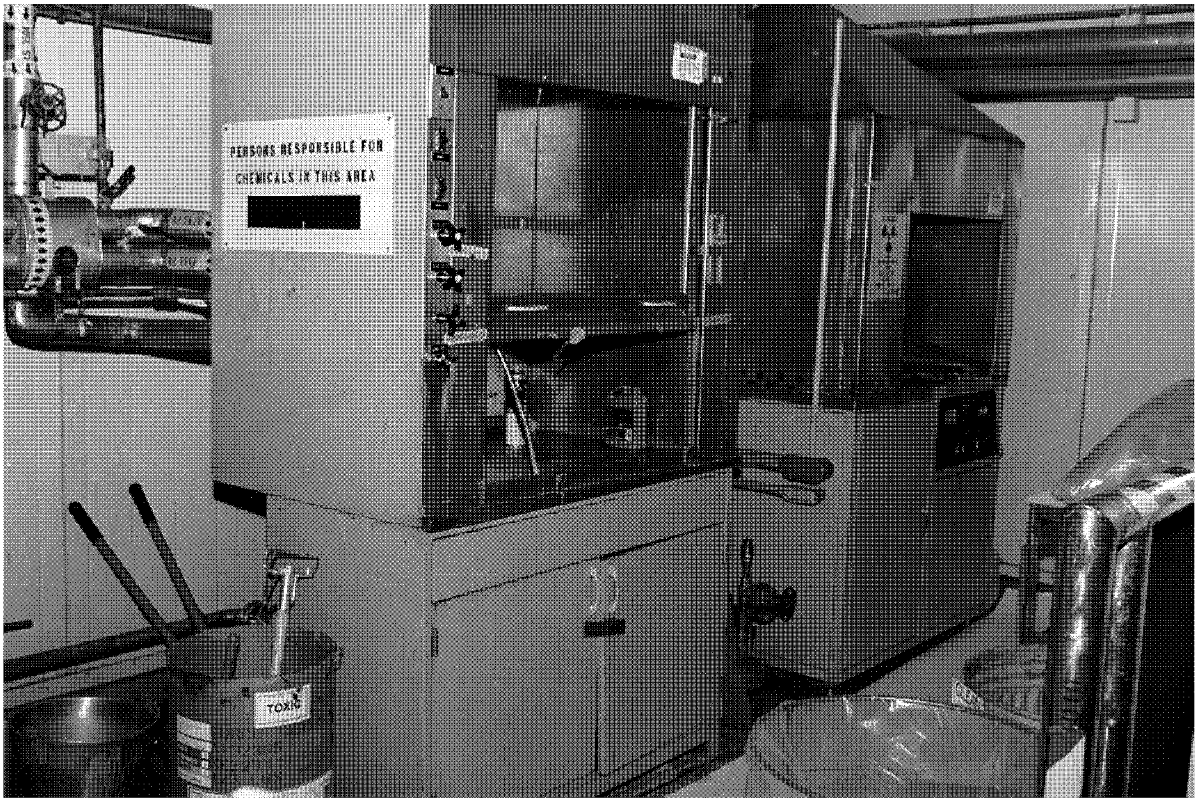
Decontamination Sinks
CPP-659 Room 415
Looking South East

PN-96-243-1-30



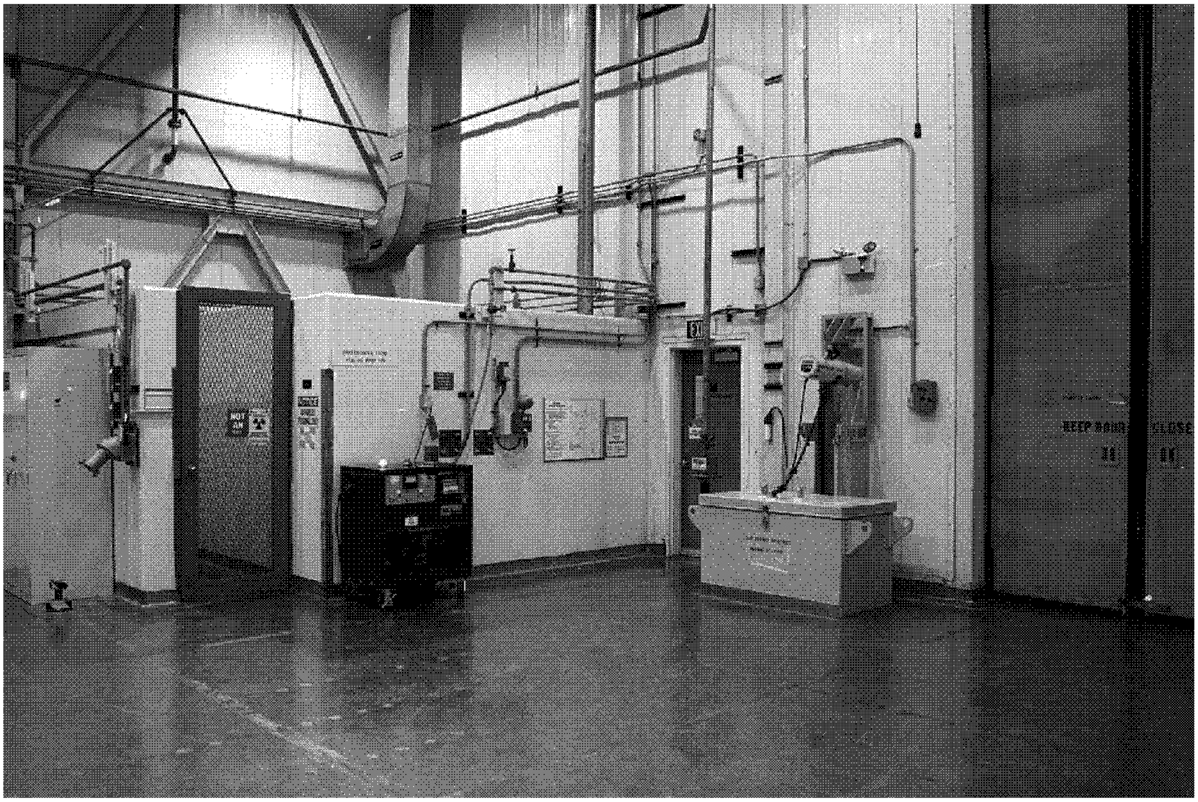
Interior Decontamination Sinks Enclosure
CPP-659 Room 415
Looking South

PN-96-243-1-35



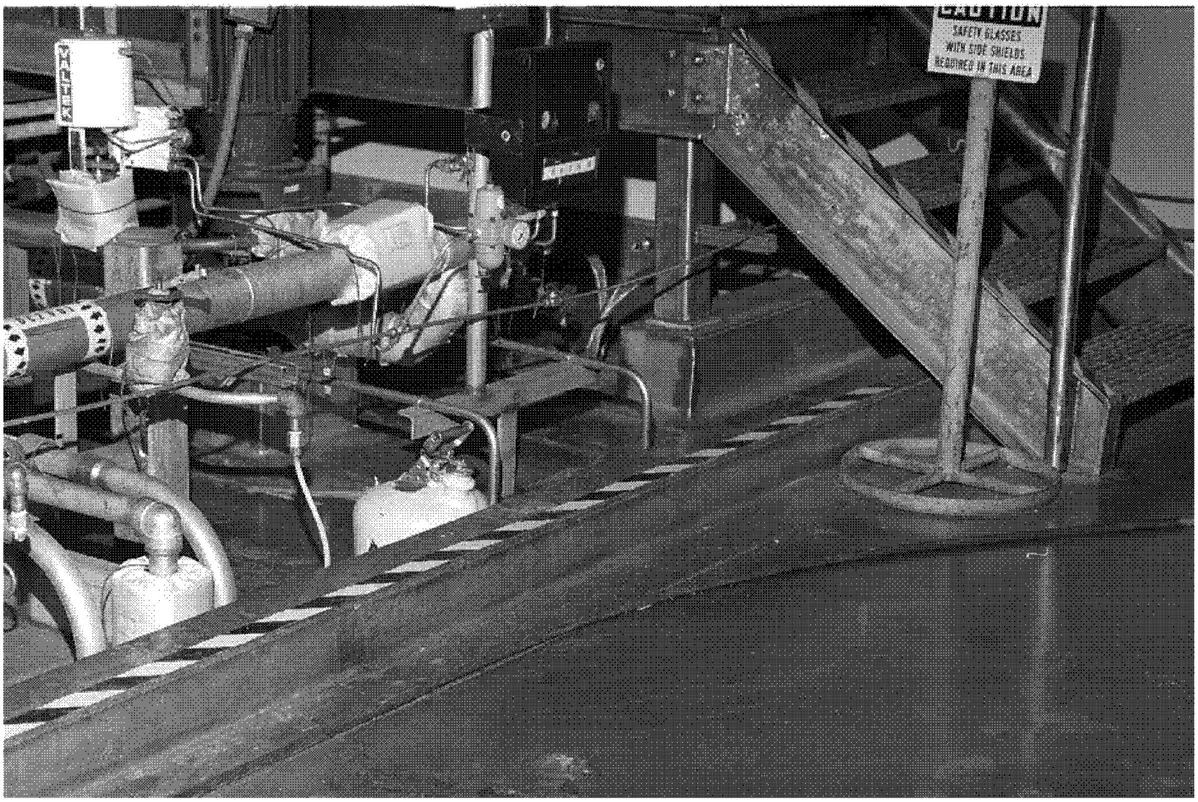

Ultrasonic Cleaner Sink
Looking South
CPP-659 Room 415

PN-96-243-1-31



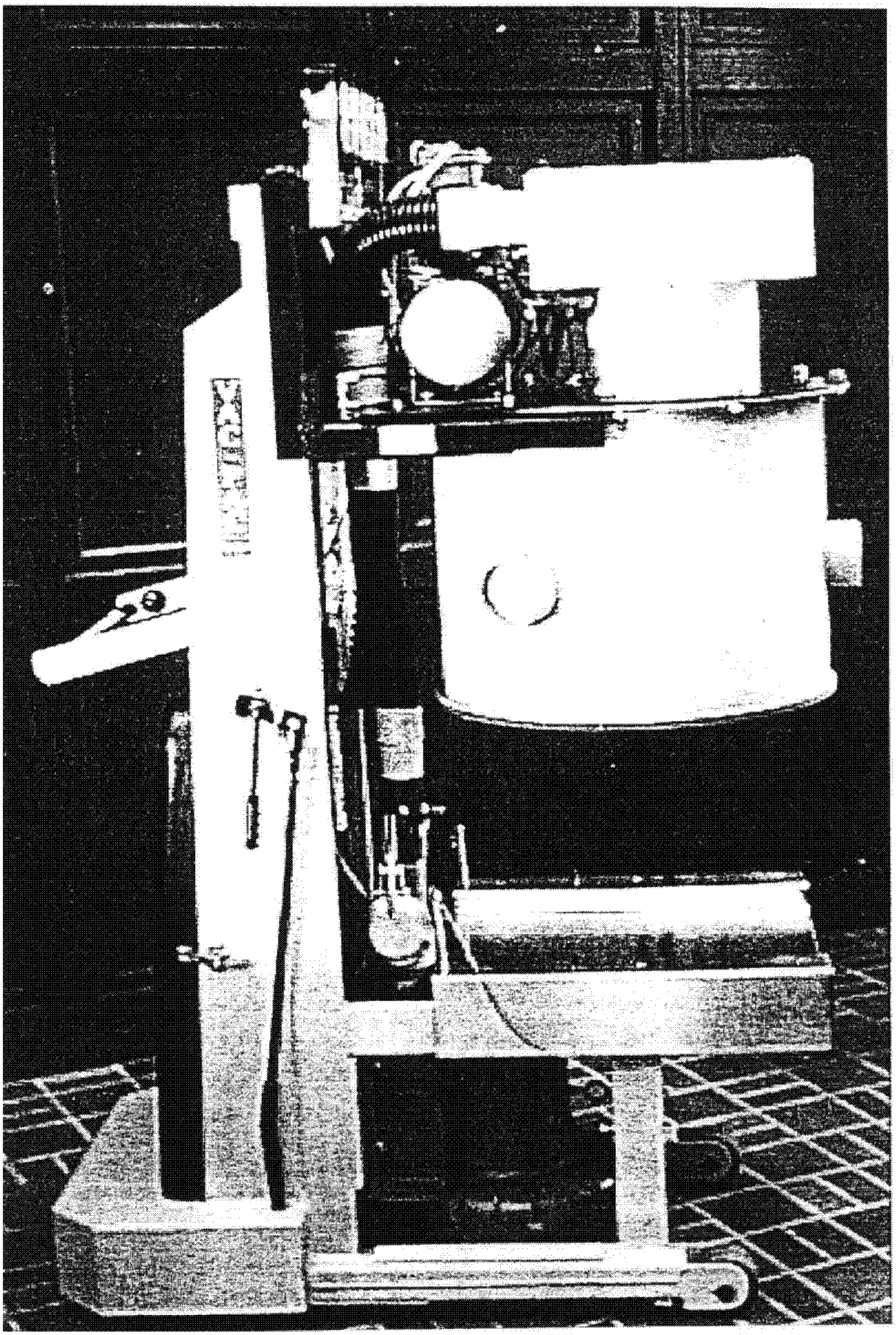
Low-Level Decontamination Shielded Storage
Looking South
CPP-659 Room 415

PN-96-96-2-28



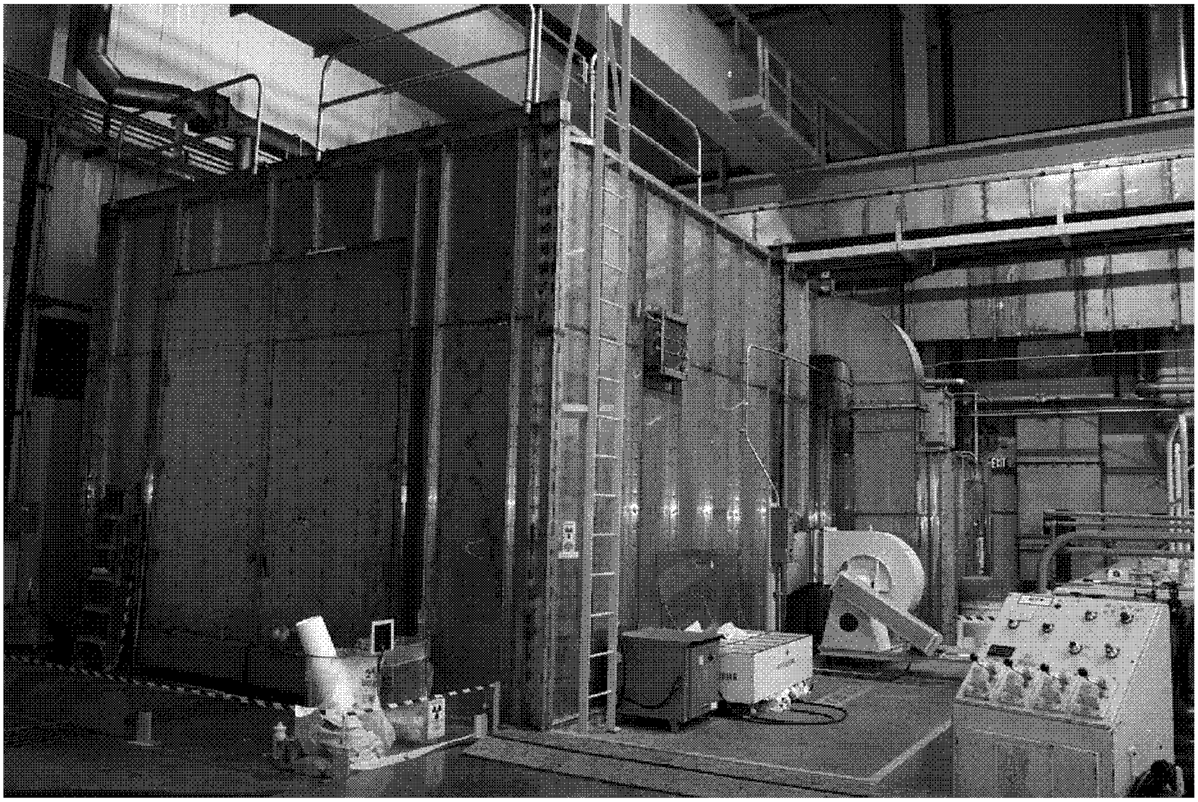

Curb Around Chemical Make-up Tanks
CPP-659 Room 415
Looking North East

PN-99-0082-1-25



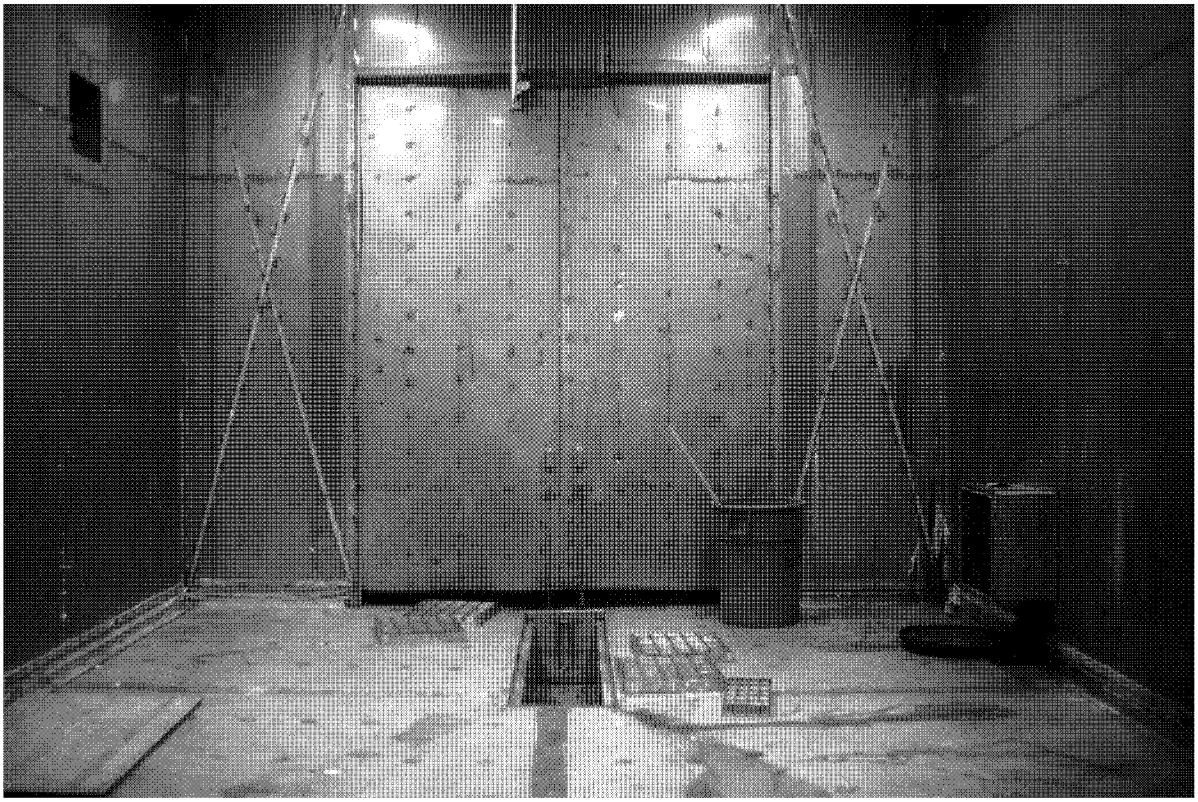
VAC PAC System (w/o Head and Hose)

(Photocopy)



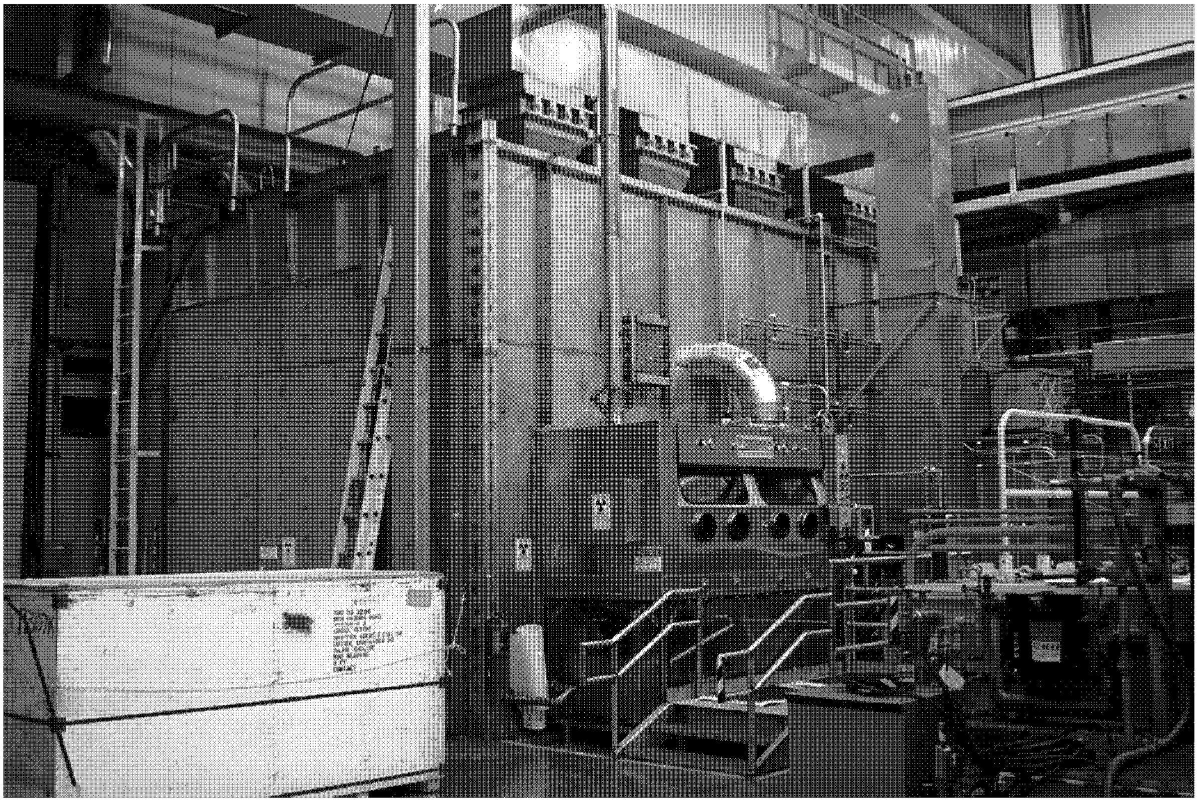
Exterior Steam Spray Booth (w/o Glove Box)
CPP-659 Room 418
Looking North East

PN-96-0098-2-17



Interior Steam Spray Booth (w/o false floor)
CPP-659 Room 418
Looking South

PN-96-243-1-12

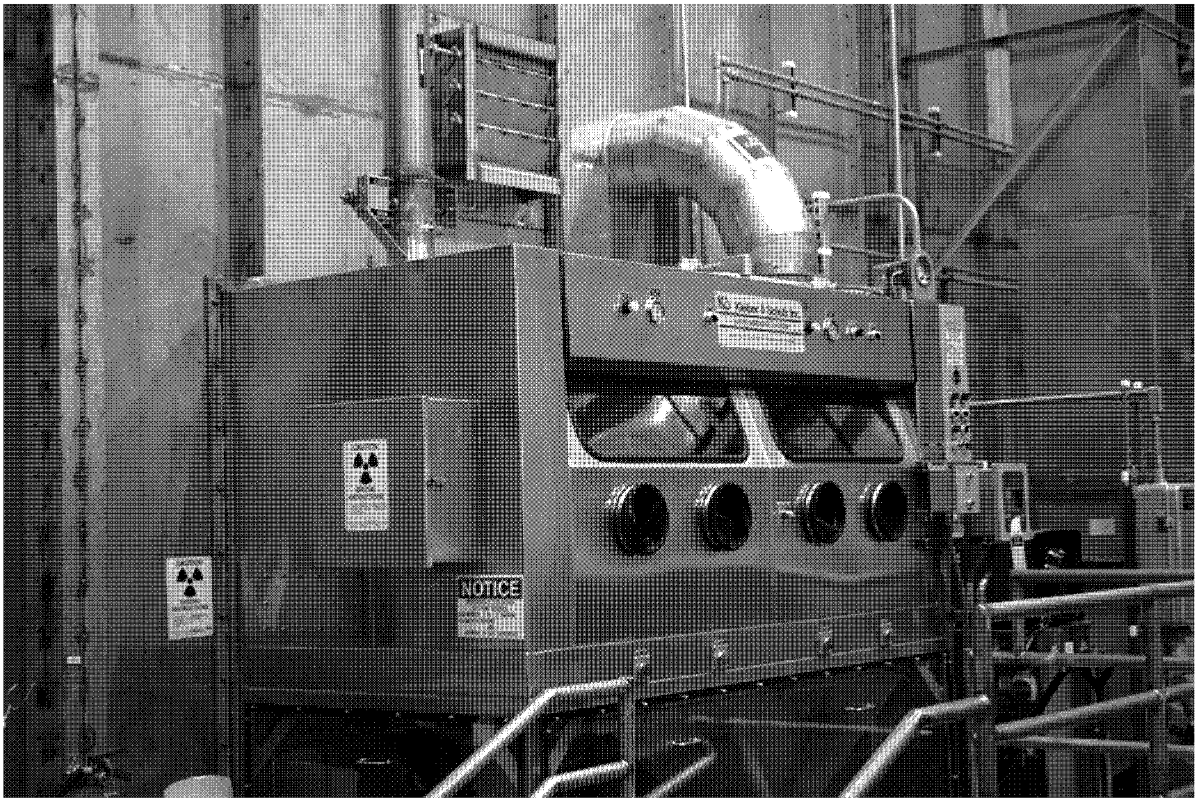


Exterior Steam Spray Booth (w/o Glove Box)
CPP-659 Room 418
Looking North East

PN-99-0082-1-3

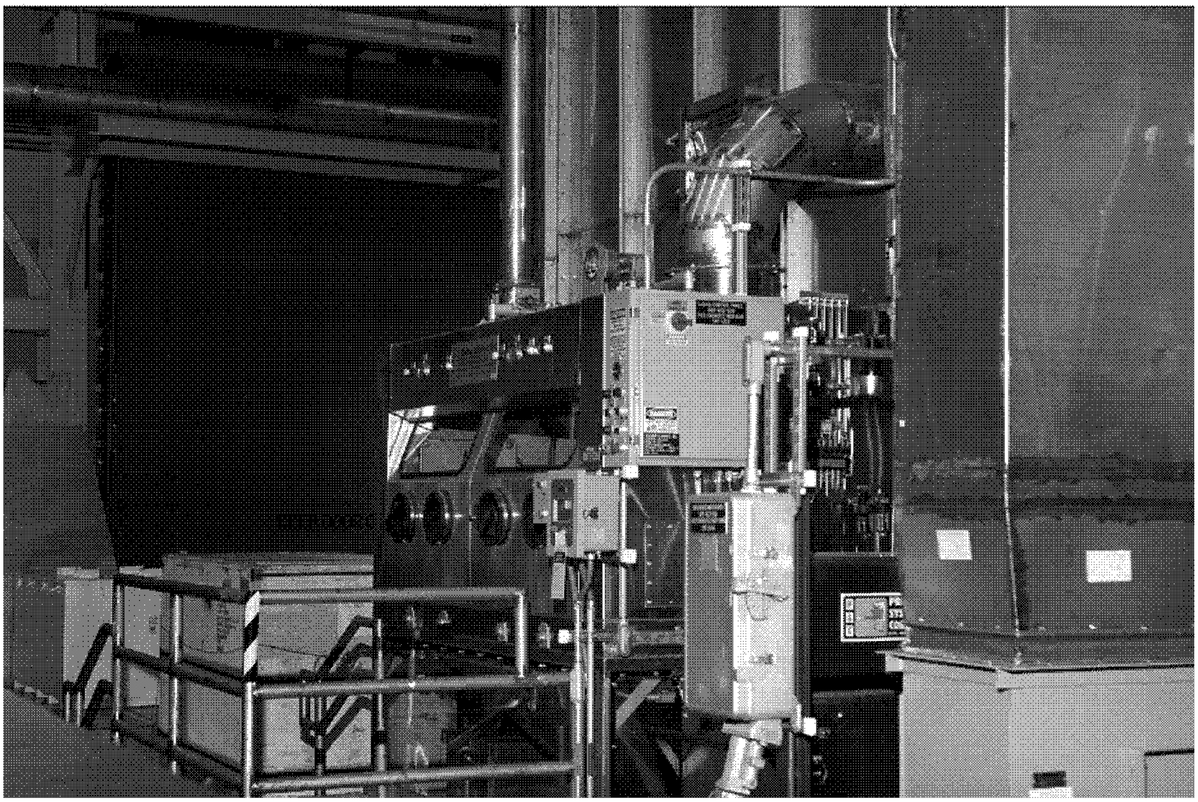
Interior Steam Spray Booth (w/False floor)
CPP-659 Room 418
Looking South

PN-99-0082-1-10



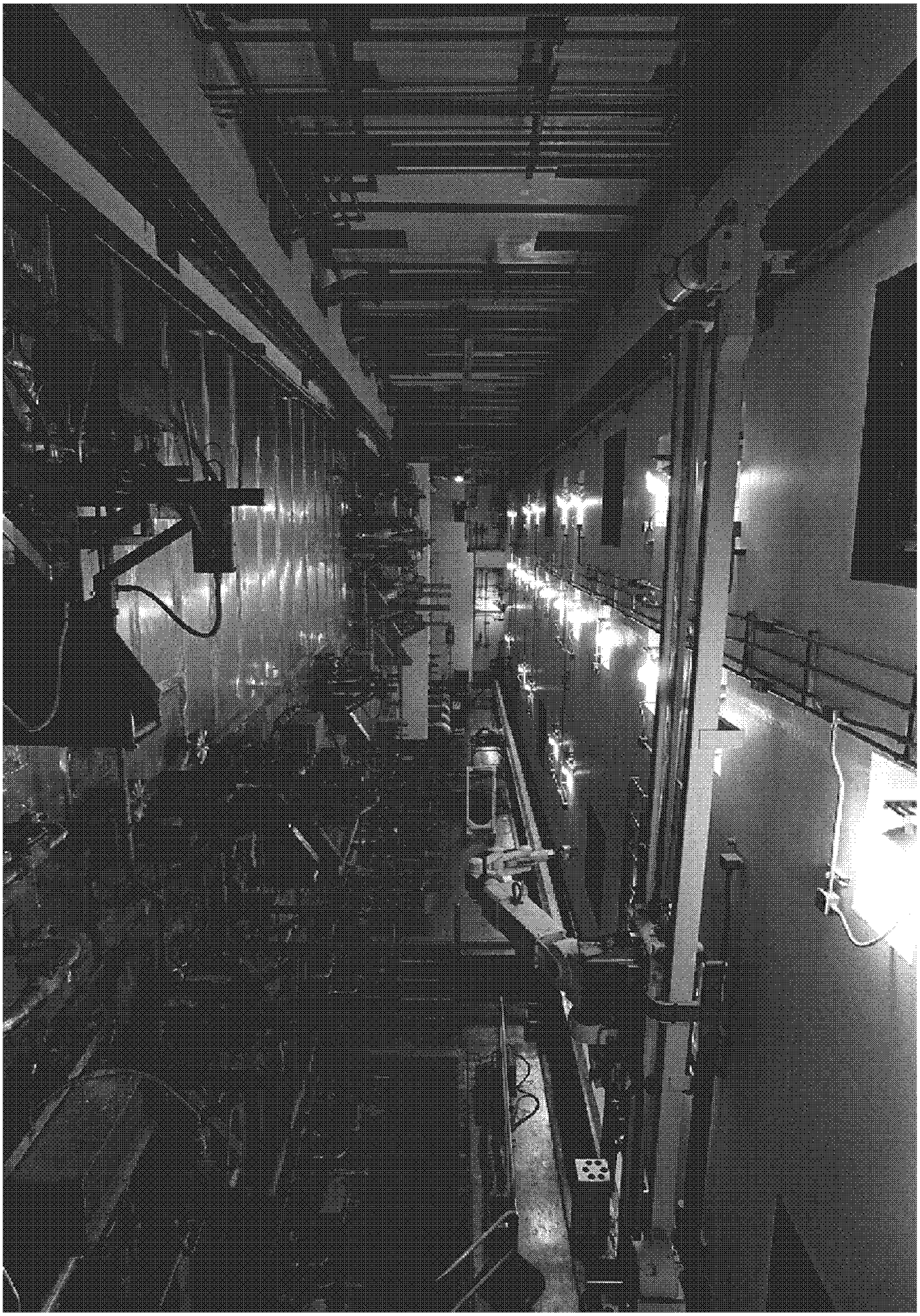

Glove Box
CPP-659 Room 418
Looking North West

PN-99-0082-1-7

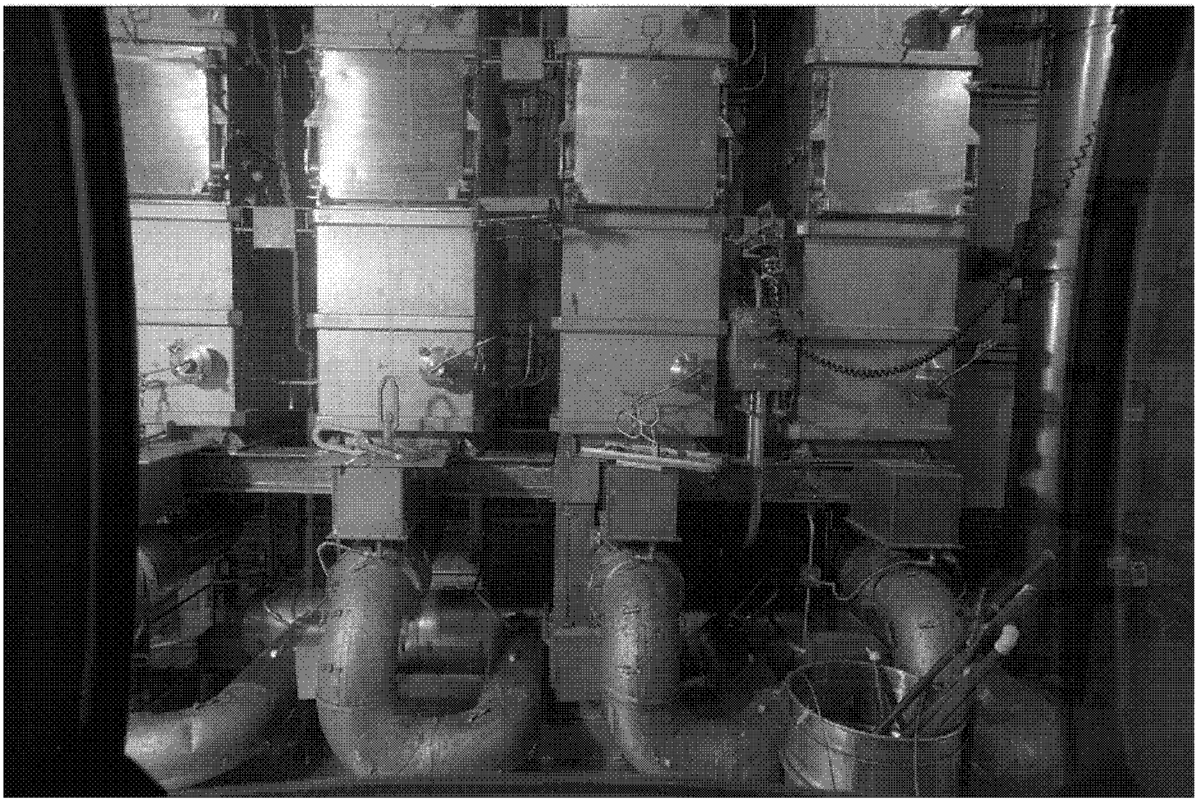


Glove Box
CPP-659 Room 418
Looking South West

PN-99-0082-1-8

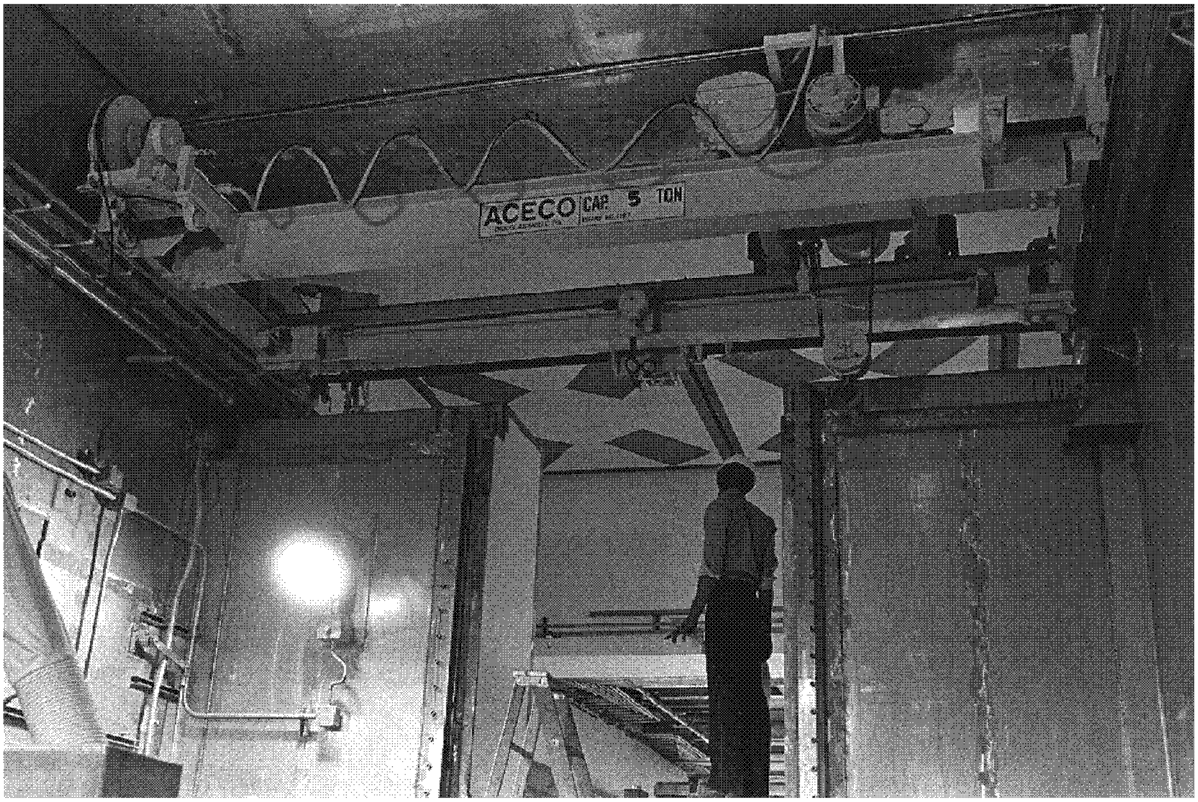


Valve Cubicle
CPP-659
Looking West
PN-81-4767



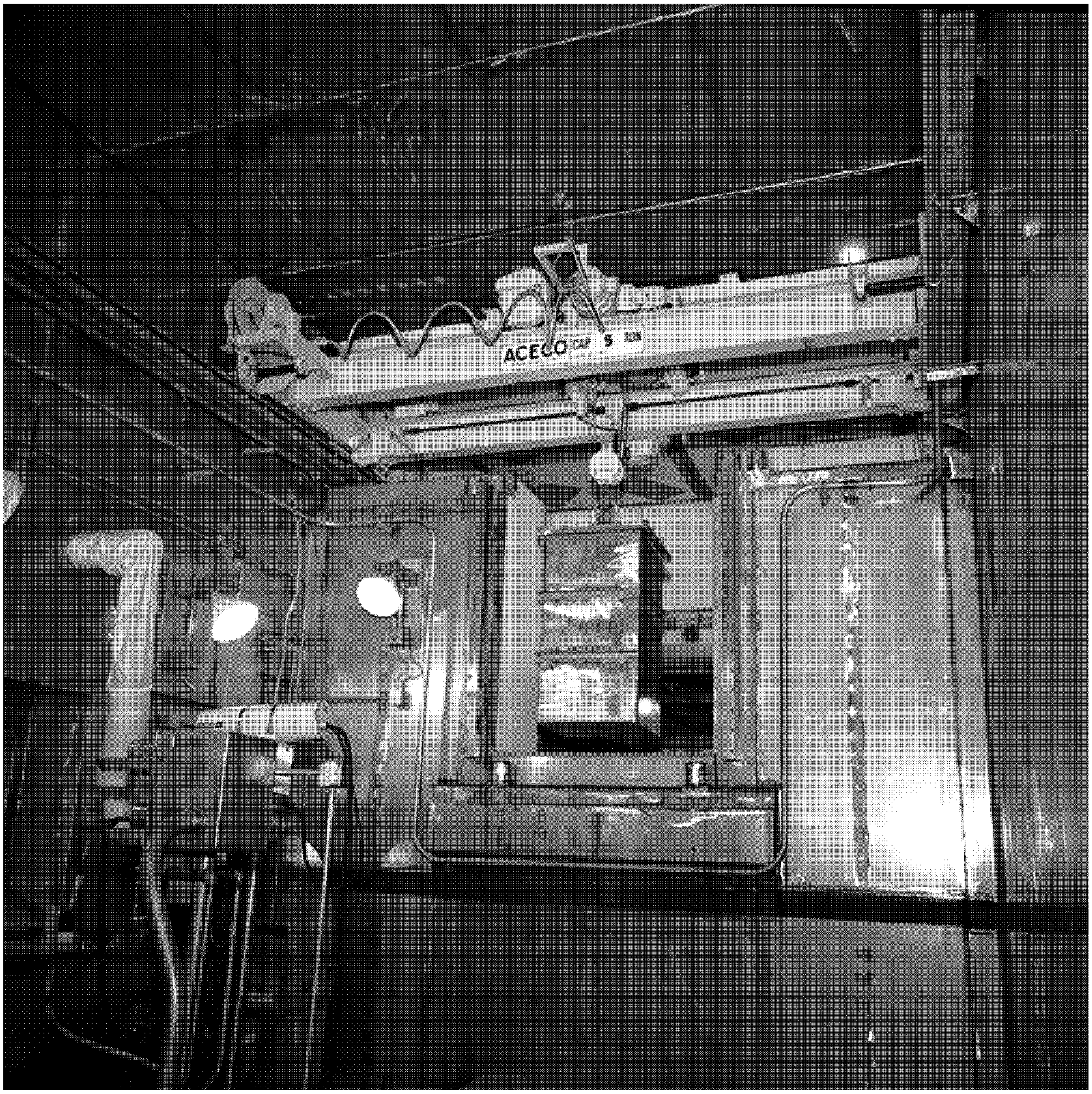
Filter Cell
CPP-659
Looking South

PN-96-98-1-19



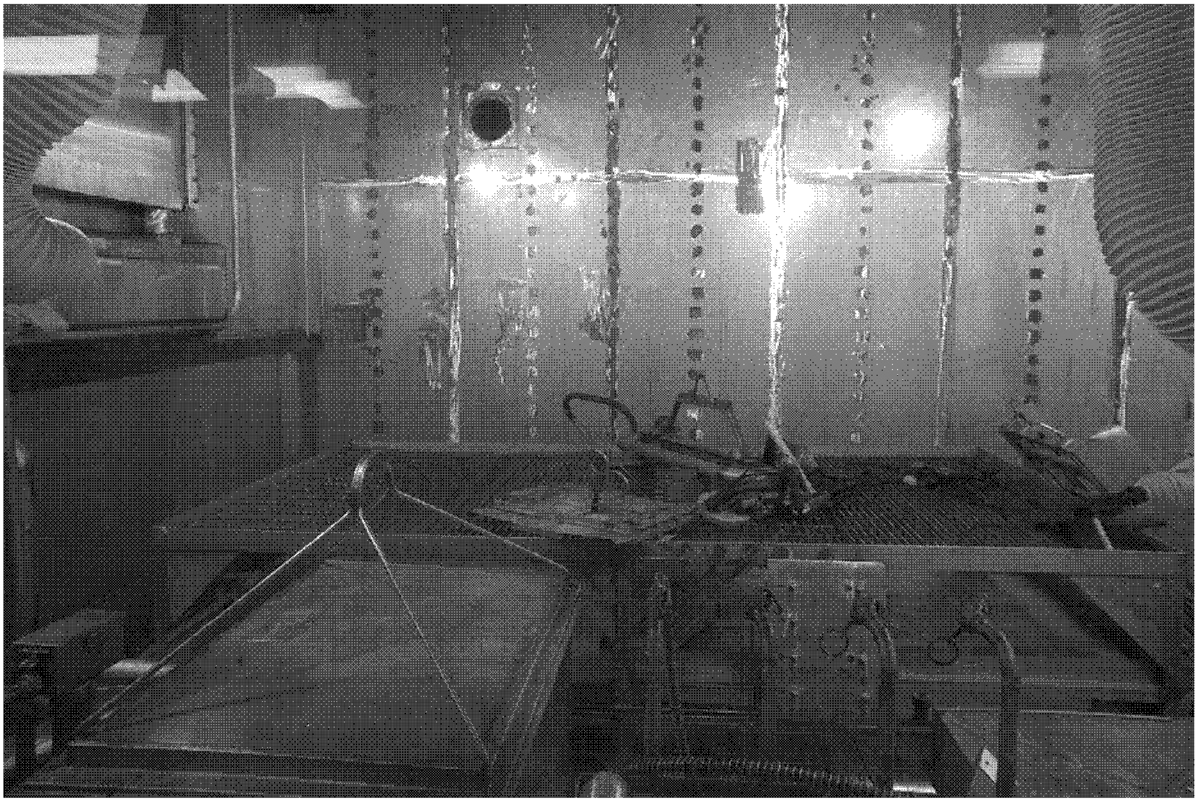

CPP-659 Room 308 Overhead Crane and Room 323 Hatch Covers
Looking East

PN-81-4278




Looking at a transfer into CPP-659 Room 309
from the Crane Maintenance Area Room 328

PN-82-5127



CPP-659 HEPA Filter Leaching System
Room 309
Looking South

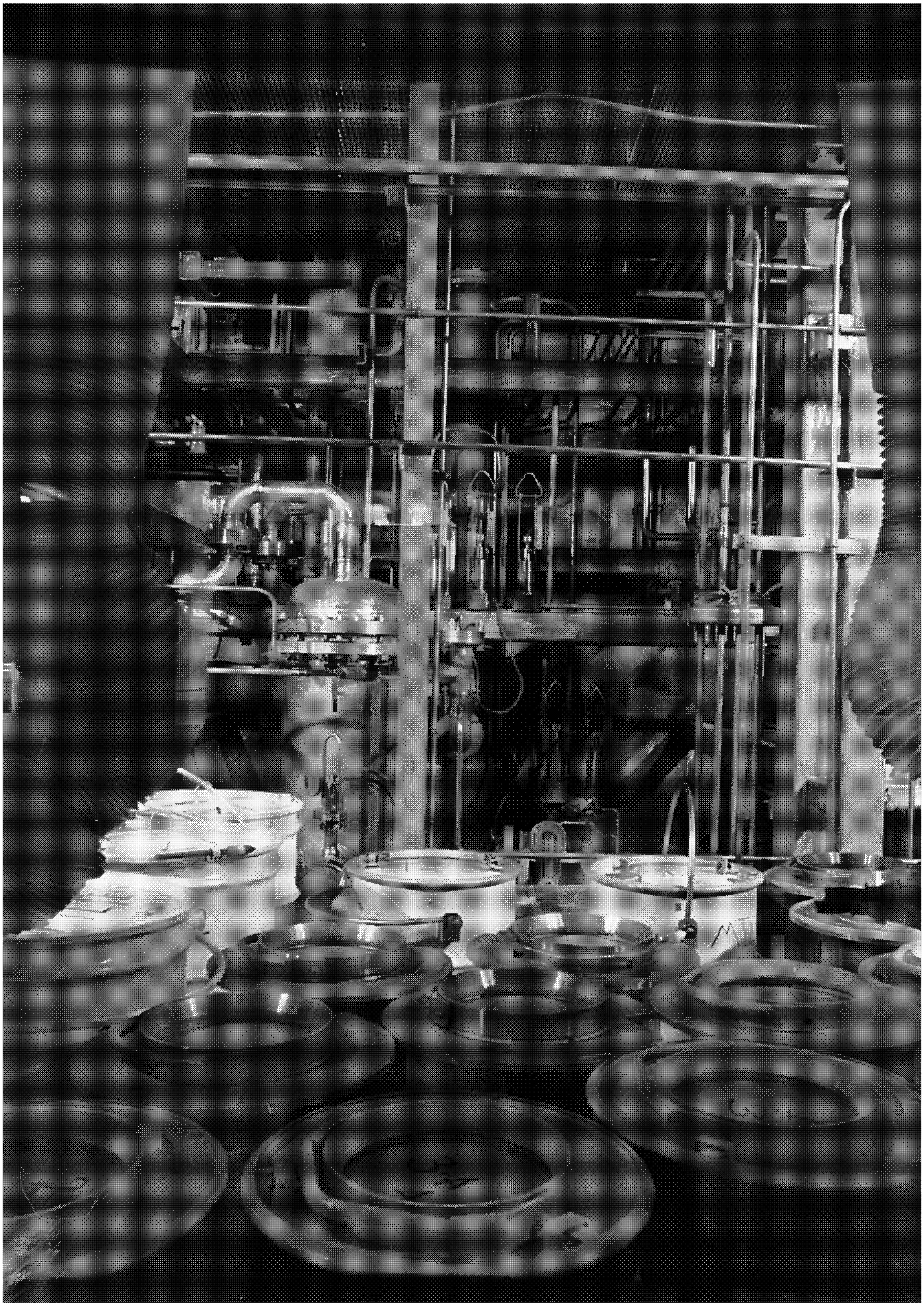
PN-96-85-1-12

CPP-659 Room 308
Decontamination Cell
Looking West

82-5131

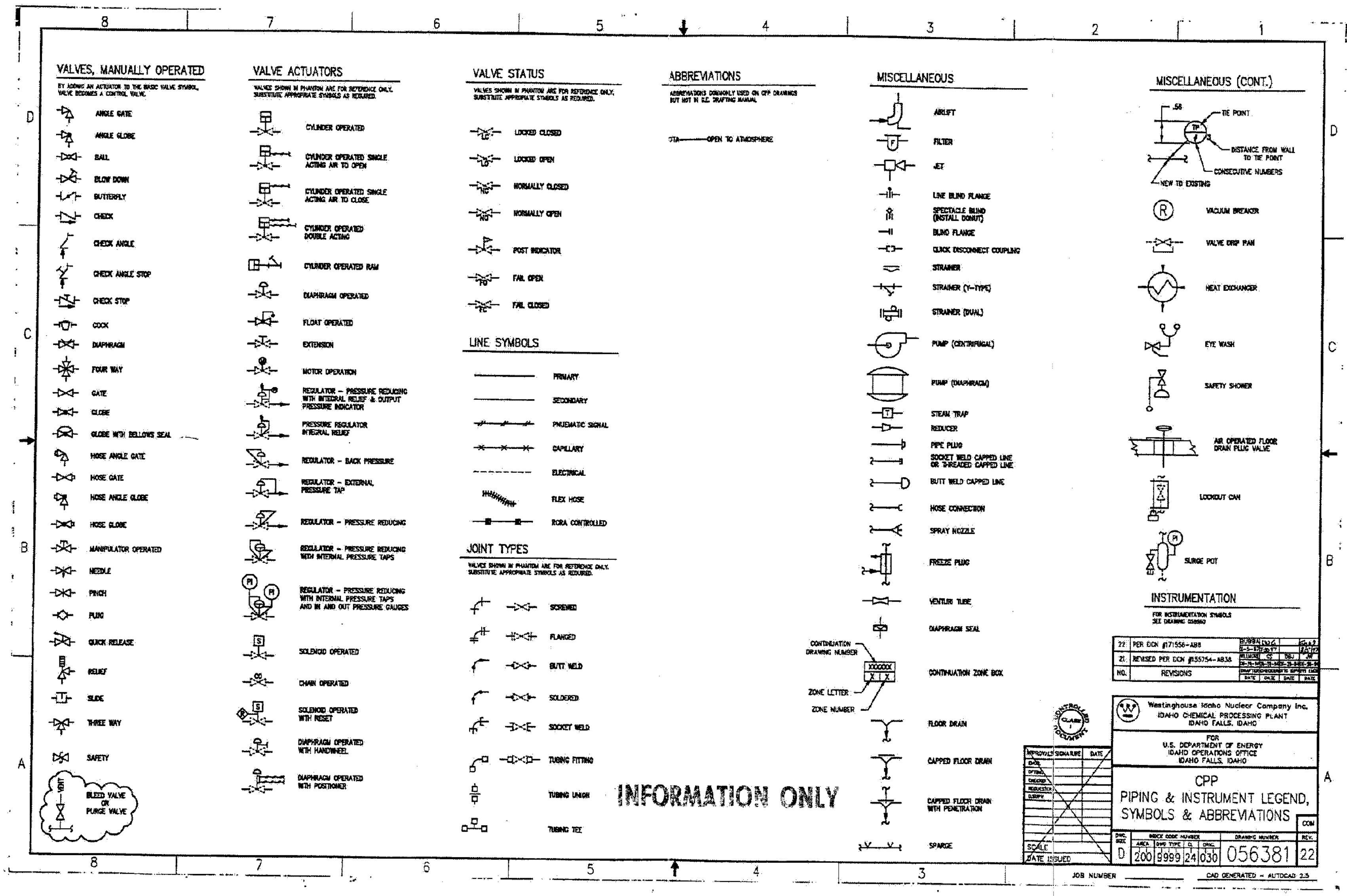
CPP-666 FAST Building Exterior
Looking South East

PN-96-98-1-7

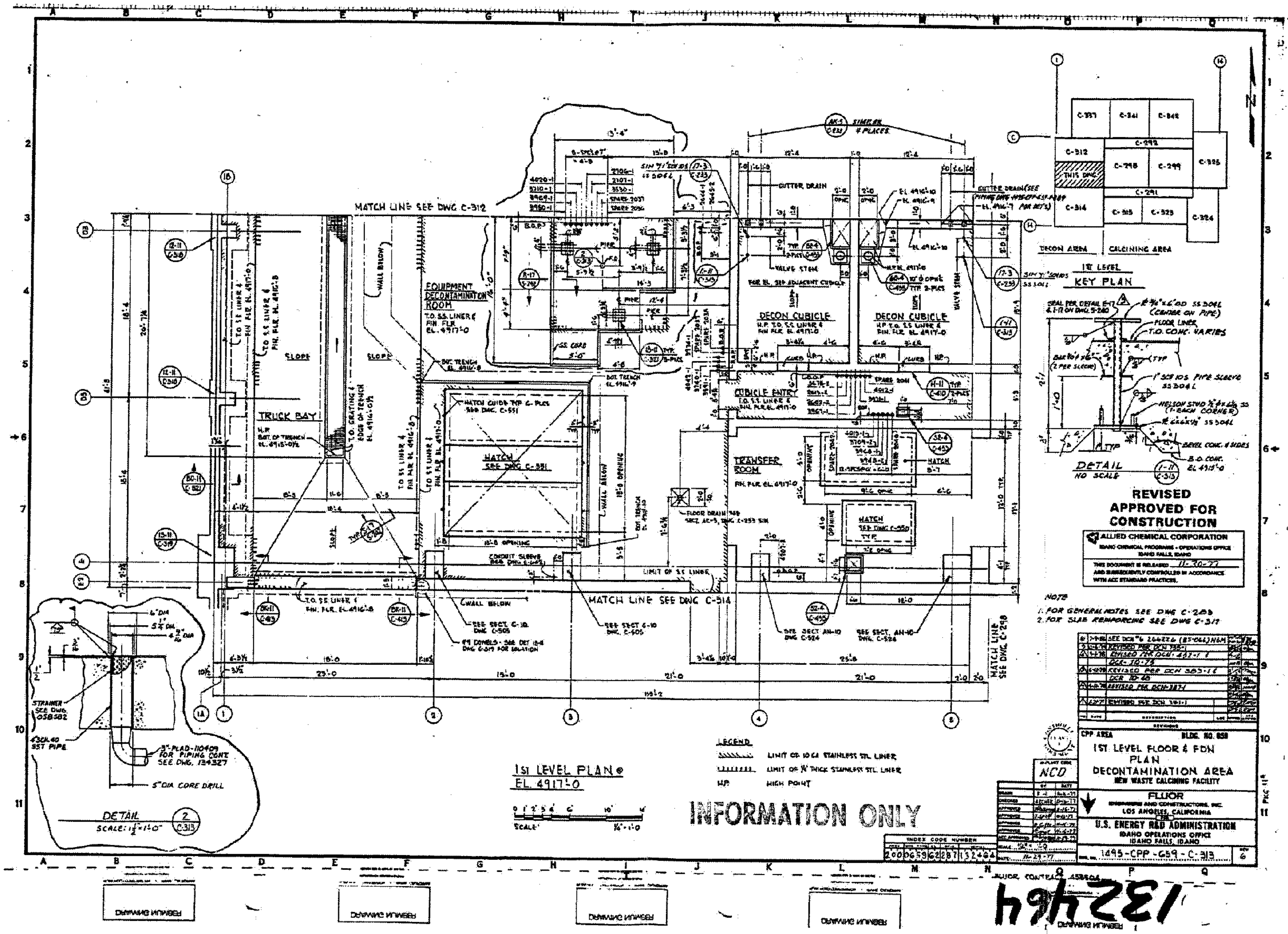


CPP-666 FDP Cell Container Storage
Looking North

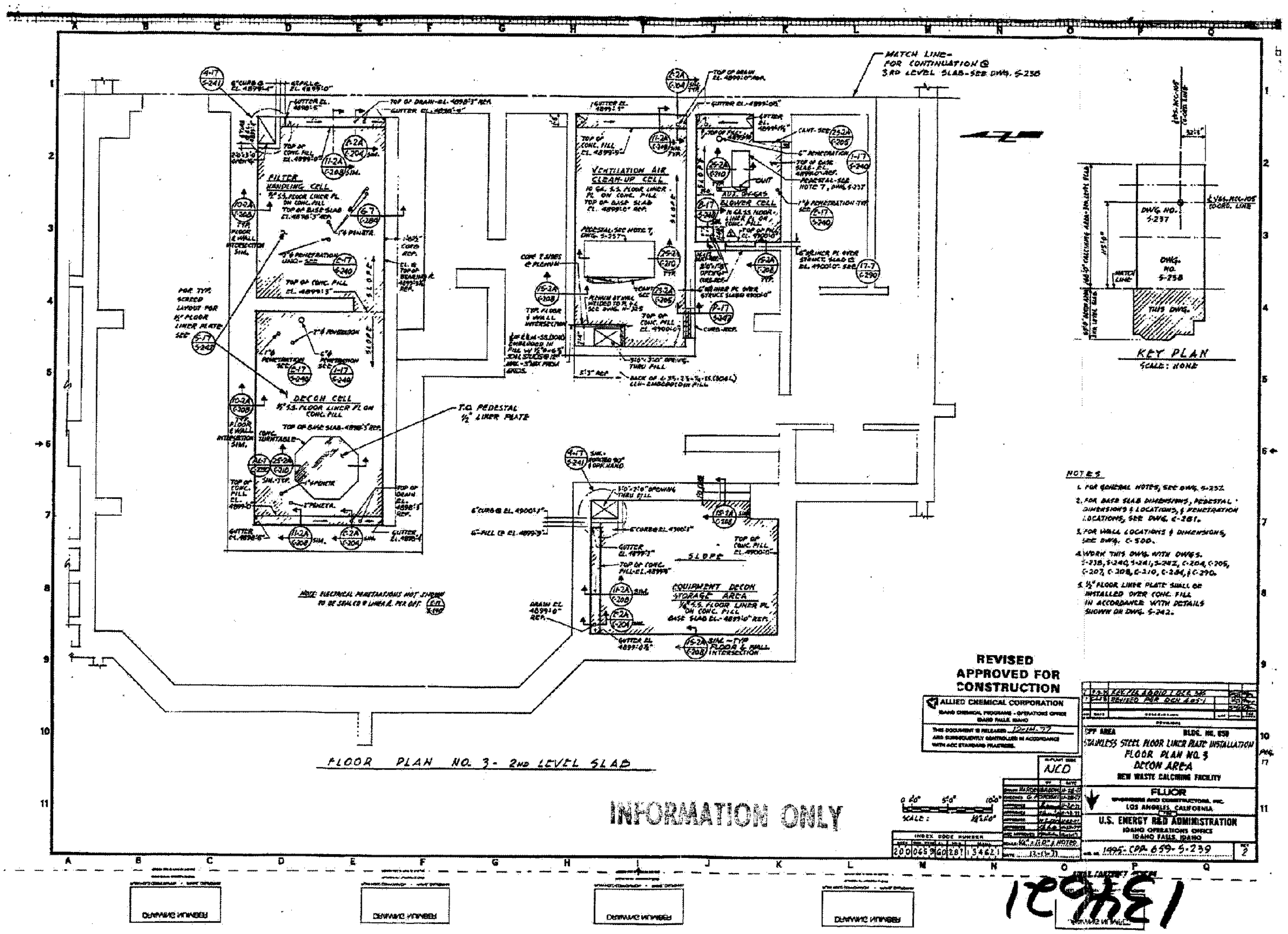
PN-96-84-1-9

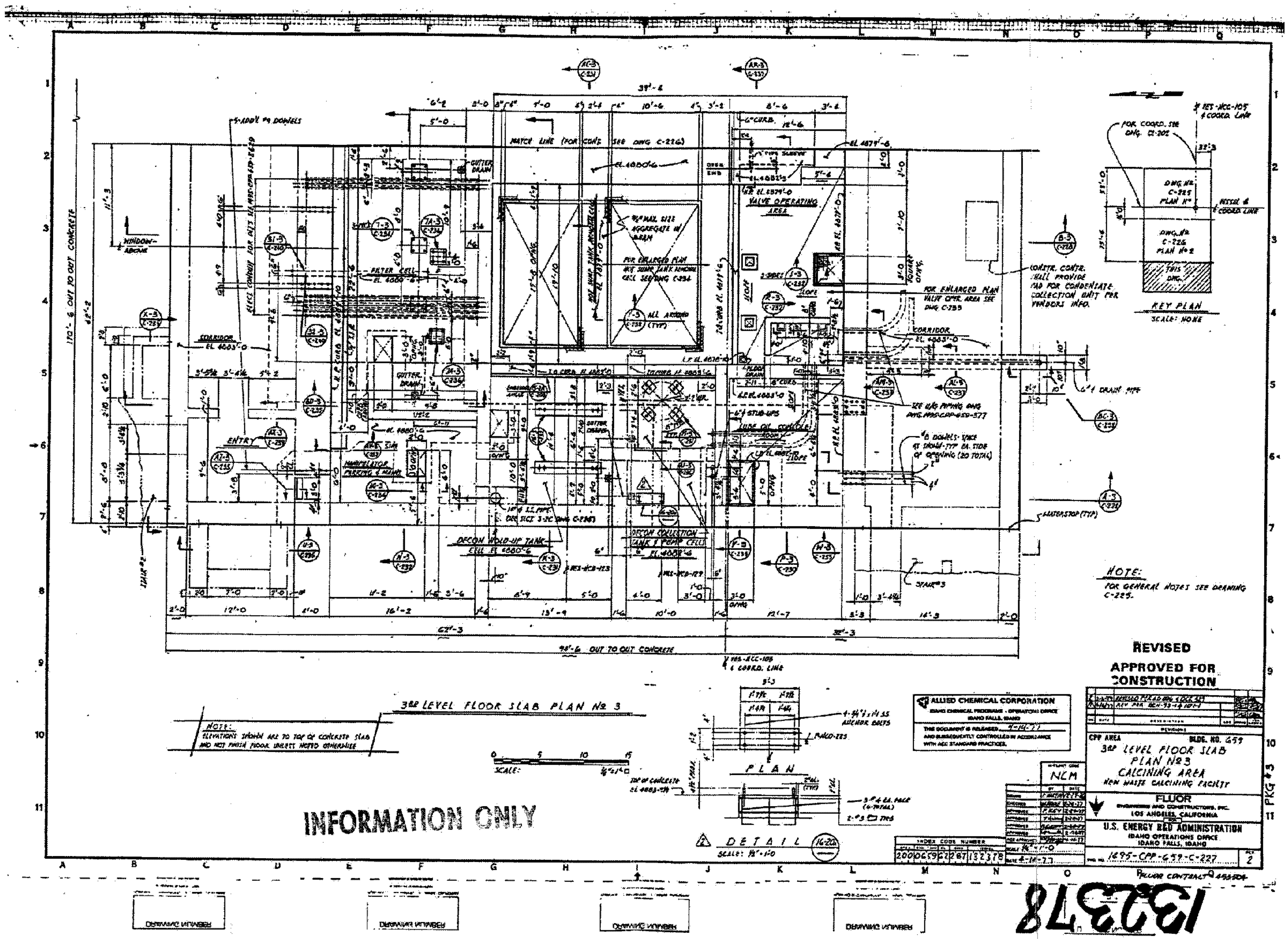


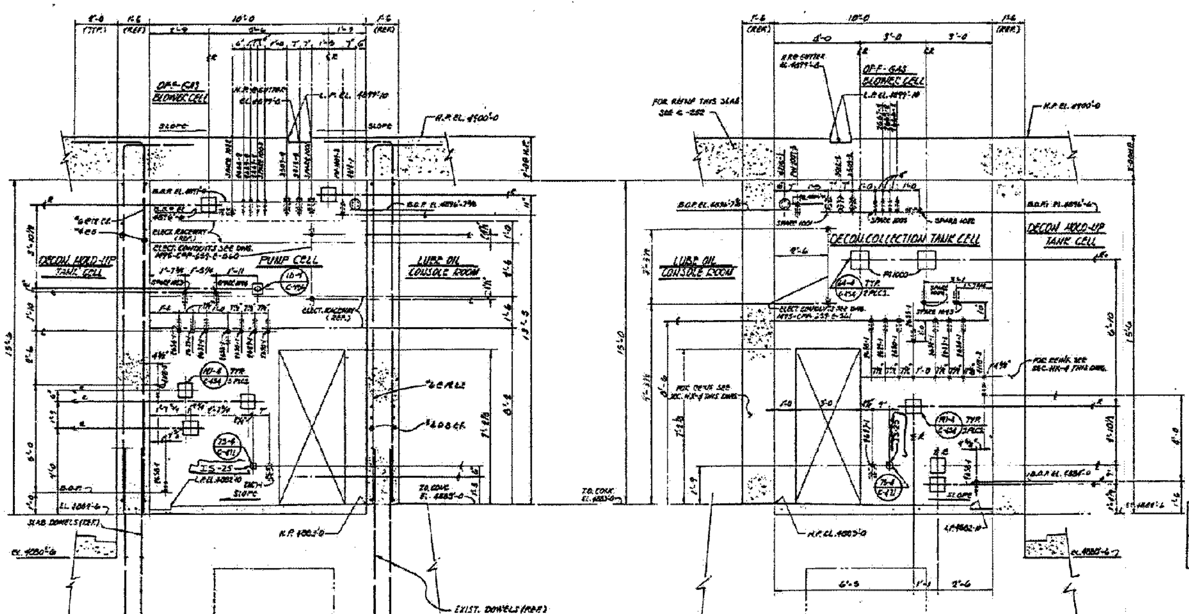
VALVES, MANUALLY OPERATED
BY ADDING AN ACTUATOR TO THE BASIC VALVE SYMBOL, VALVE BECOMES A CONTROL VALVE.
ANGLE GATE
ANGLE GLOBE
BALL
BLOW DOWN
BUTTERFLY
CHECK
CHECK ANGLE
CHECK ANGLE STOP
CHECK STOP
COCK
DIAPHRAGM
FOUR WAY
GATE
GLOBE
GLOBE WITH BELLOWS SEAL
HOSE ANGLE GATE
HOSE GATE
HOSE ANGLE GLOBE
HOSE GLOBE
MANIPULATOR OPERATED
NEEDLE
PINCH
PLUG
QUICK RELEASE
RELIEF
SLIDE
THREE WAY
SAFETY
BLEED VALVE OR PURGE VALVE
VENT
VALVE ACTUATORS
VALVES SHOWN IN PHANTOM ARE FOR REFERENCE ONLY. SUBSTITUTE APPROPRIATE SYMBOLS AS REQUIRED.
CYLINDER OPERATED
CYLINDER OPERATED SINGLE ACTING AIR TO OPEN
CYLINDER OPERATED SINGLE ACTING AIR TO CLOSE
CYLINDER OPERATED DOUBLE ACTING
CYLINDER OPERATED RAM
DIAPHRAGM OPERATED
FLOAT OPERATED
EXTENSION
MOTOR OPERATION
REGULATOR – PRESSURE REDUCING WITH INTERNAL RELIEF & OUTPUT PRESSURE INDICATOR
PRESSURE REGULATOR INTERNAL RELIEF
REGULATOR – BACK PRESSURE
REGULATOR – EXTERNAL PRESSURE TAP
REGULATOR – PRESSURE REDUCING
REGULATOR – PRESSURE REDUCING WITH INTERNAL PRESSURE TAPS
REGULATOR – PRESSURE REDUCING WITH INTERNAL PRESSURE TAPS AND IN AND OUT PRESSURE GAUGES
SOLENOID OPERATED
CHAIN OPERATED
SOLENOID OPERATED WITH RESET
DIAPHRAGM OPERATED WITH HANDWHEEL
DIAPHRAGM OPERATED WITH POSITIONER
VALVE STATUS
VALVES SHOWN IN PHANTOM ARE FOR REFERENCE ONLY. SUBSTITUTE APPROPRIATE SYMBOLS AS REQUIRED.
LOCKED CLOSED
LOCKED OPEN
NORMALLY CLOSED
NORMALLY OPEN
POST INDICATOR
FAIL OPEN
FAIL CLOSED
LINE SYMBOLS
PRIMARY
SECONDARY
PNEUMATIC SIGNAL
CAPILLARY
ELECTRICAL
FLEX HOSE
RCRA CONTROLLED
JOINT TYPES
VALVES SHOWN IN PHANTOM ARE FOR REFERENCE ONLY. SUBSTITUTE APPROPRIATE SYMBOLS AS REQUIRED.
SCREWED
FLANGED
BUTT WELD
SOLDERED
SOCKET WELD
TUBING FITTING
TUBING UNION
TUBING TEE
ABBREVIATIONS
ABBREVIATIONS COMMONLY USED ON CPP DRAWINGS BUT NOT IN I.E. DRAFTING MANUAL
OTA — OPEN TO ATMOSPHERE
MISCELLANEOUS
AIRLIFT
FILTER
JET
LINE BLIND FLANGE
SPECTACLE BLIND (INSTALL DONUT)
BLIND FLANGE
QUICK DISCONNECT COUPLING
STRAINER
STRAINER (Y–TYPE)
STRAINER (DUAL)
PUMP (CENTRIFUGAL)
PUMP (DIAPHRAGM)
STEAM TRAP
REDUCER
PIPE PLUG
SOCKET WELD CAPPED LINE OR THREADED CAPPED LINE
BUTT WELD CAPPED LINE
HOSE CONNECTION
SPRAY NOZZLE
FREEZE PLUG
VENTURI TUBE
DIAPHRAGM SEAL
CONTINUATION DRAWING NUMBER
ZONE LETTER
ZONE NUMBER
CONTINUATION ZONE BOX
FLOOR DRAIN
CAPPED FLOOR DRAIN
CAPPED FLOOR DRAIN WITH PENETRATION
SPARGE
MISCELLANEOUS (CONT.)
TIE POINT
DISTANCE FROM WALL TO TIE POINT
CONSECUTIVE NUMBERS
NEW TO EXISTING
VACUUM BREAKER
VALVE DRIP PAN
HEAT EXCHANGER
EYE WASH
SAFETY SHOWER
AIR OPERATED FLOOR DRAIN PLUG VALVE
LOCKOUT CAN
SURGE POT
INSTRUMENTATION
FOR INSTRUMENTATION SYMBOLS SEE DRAWING 056560
INFORMATION ONLY
22 PER DCN #171556-A88
21 REVISED PER DCN #155754-A838
NO. REVISIONS
CONTROLLED DOCUMENT CLASS I
Westinghouse Idaho Nuclear Company Inc. IDAHO CHEMICAL PROCESSING PLANT IDAHO FALLS, IDAHO
FOR U.S. DEPARTMENT OF ENERGY IDAHO OPERATIONS OFFICE IDAHO FALLS, IDAHO
CPP
PIPING & INSTRUMENT LEGEND, SYMBOLS & ABBREVIATIONS
D 200 9999 24 030 056381 22
SCALE
DATE ISSUED
JOB NUMBER
CAD GENERATED – AUTOCAD 2.5



1ST LEVEL PLAN
EL. 4917'-0
INFORMATION ONLY
TRUCK BAY
EQUIPMENT DECONTAMINATION ROOM
DECON CUBICLE
CUBICLE ENTRY
TRANSFER ROOM
MATCH LINE SEE DWG C-312
MATCH LINE SEE DWG C-314
MATCH LINE SEE DWG C-298
1ST LEVEL KEY PLAN
DECON AREA
CALCINING AREA
DETAIL NO SCALE
DETAIL SCALE: 1 1/2"=1'-0"
LEGEND
LIMIT OF 10 GA STAINLESS STL LINER
LIMIT OF 1/4" THICK STAINLESS STL LINER
H.P. HIGH POINT
NOTE
1. FOR GENERAL NOTES SEE DWG C-283
2. FOR SLAB REINFORCING SEE DWG C-317
REVISED
APPROVED FOR CONSTRUCTION
ALLIED CHEMICAL CORPORATION
IDAHO FALLS, IDAHO
11-30-77
CPP AREA
BLDG. NO. 659
1ST LEVEL FLOOR & FDN PLAN
DECONTAMINATION AREA
NEW WASTE CALCINING FACILITY
FLUOR
ENGINEERS AND CONSTRUCTORS, INC.
LOS ANGELES, CALIFORNIA
U.S. ENERGY R&D ADMINISTRATION
IDAHO OPERATIONS OFFICE
IDAHO FALLS, IDAHO
1495-CPP-659-C-313
NCD
132464


MATCH LINE- FOR CONTINUATION @ 3RD LEVEL SLAB-SEE DWG. S-236
FILTER HANDLING CELL
DECON CELL
VENTILATION AIR CLEAN-UP CELL
AUX. OFF-GAS BLOWER CELL
EQUIPMENT DECON STORAGE AREA
T.O. PEDESTAL 1/2" LINER PLATE
KEY PLAN
SCALE: NONE
FLOOR PLAN NO. 3 - 2ND LEVEL SLAB
NOTES
1. FOR GENERAL NOTES, SEE DWG. S-237.
2. FOR BASE SLAB DIMENSIONS, PEDESTAL DIMENSIONS & LOCATIONS, & PENETRATION LOCATIONS, SEE DWG. C-281.
3. FOR WALL LOCATIONS & DIMENSIONS, SEE DWG. C-500.
4. WORK THIS DWG. WITH DWGS. S-238, S-240, S-241, S-242, C-204, C-205, C-207, C-208, C-210, C-284, & C-290.
5. 1/2" FLOOR LINER PLATE SHALL BE INSTALLED OVER CONC. FILL IN ACCORDANCE WITH DETAILS SHOWN ON DWG. S-242.
REVISED
APPROVED FOR CONSTRUCTION
ALLIED CHEMICAL CORPORATION
IDAHO CHEMICAL PROGRAMS - OPERATIONS OFFICE
IDAHO FALLS, IDAHO
THIS DOCUMENT IS RELEASED 12-14-77 AND SUBSEQUENTLY CONTROLLED IN ACCORDANCE WITH ACC STANDARD PRACTICES.
NCD
REVISED PER DCN 605-1
CPP AREA
BLDG. NO. 659
STAINLESS STEEL FLOOR LINER PLATE INSTALLATION
FLOOR PLAN NO. 3
DECON AREA
NEW WASTE CALCINING FACILITY
FLUOR
LOS ANGELES, CALIFORNIA
U.S. ENERGY R&D ADMINISTRATION
IDAHO OPERATIONS OFFICE
IDAHO FALLS, IDAHO
SCALE: 1/4"=1'-0"
INDEX CODE NUMBER
200 0659 60 281 134621
1495-CPP-659-S-239
INFORMATION ONLY
134621


3RD LEVEL FLOOR SLAB PLAN NO 3
NOTE: ELEVATIONS SHOWN ARE TO TOP OF CONCRETE SLAB AND NOT FINISH FLOOR UNLESS NOTED OTHERWISE
NOTE: FOR GENERAL NOTES SEE DRAWING C-225.
KEY PLAN
SCALE: NONE
DETAIL
PLAN
REVISED
APPROVED FOR CONSTRUCTION
ALLIED CHEMICAL CORPORATION
CPP AREA
BLDG. NO. 659
3RD LEVEL FLOOR SLAB PLAN NO 3 CALCINING AREA
NEW WASTE CALCINING FACILITY
FLUOR
LOS ANGELES, CALIFORNIA
U.S. ENERGY R&D ADMINISTRATION
IDAHO OPERATIONS OFFICE
IDAHO FALLS, IDAHO
1495-CPP-659-C-227
INFORMATION ONLY
132378
PKG #3




SECTION HX-6 C-243
LOOKING EAST
FOR OPPOSITE SIDE SEE SECT. XY-6 THIS DWG.

SECTION XY-6 C-243
LOOKING WEST
FOR OPPOSITE SIDE SEE SECT. HX-6 THIS DWG.

SCALE: 3/8" = 1'-0"

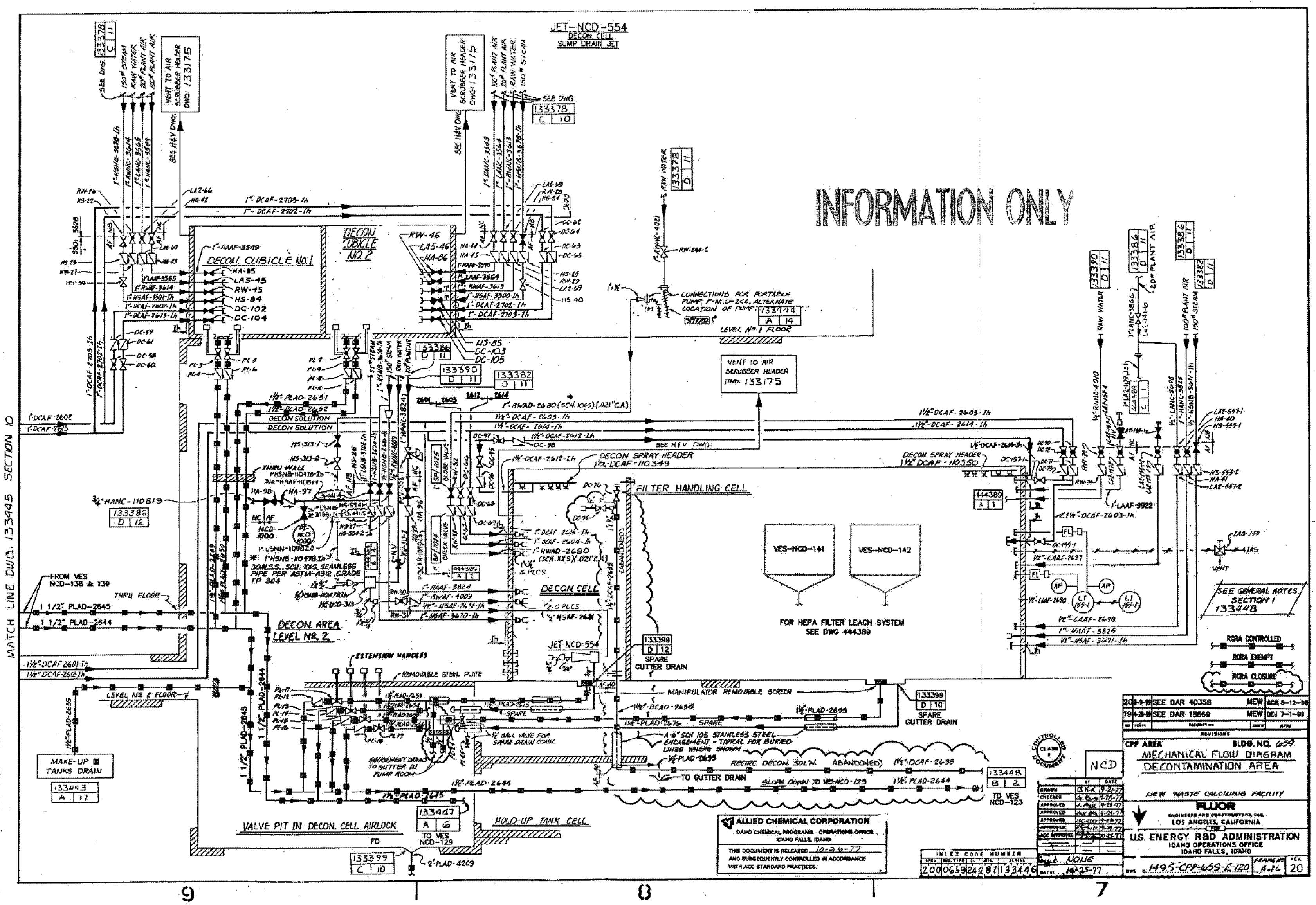
APPROVED FOR CONSTRUCTION
ALLIED CHEMICAL CORPORATION
IDAHO CHEMICAL PROGRAMS - OPERATIONS OFFICE
IDAHO FALLS, IDAHO
THIS DOCUMENT IS RELEASED 10-5-77
AND SUBSEQUENTLY CONTROLLED IN ACCORDANCE WITH ACC STANDARD PRACTICES.

NOTE:
FOR GENERAL NOTES SEE DWG. C-241

INFORMATION ONLY

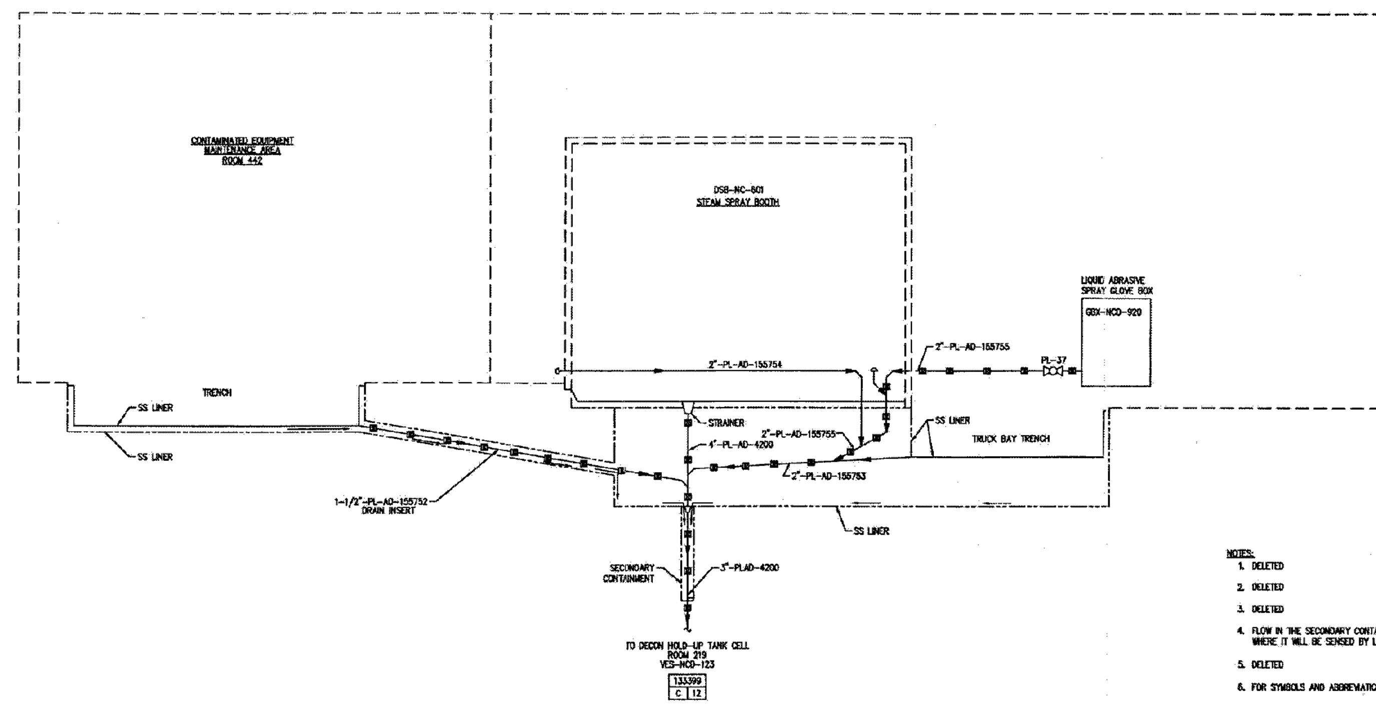
CPP AREA BLDG. NO. 659
DECON. COLL. TANK & PUMP CELLS
WALL SECTIONS
CALCINING AREA
NEW WASTE CALCINING FACILITY
NCC
FLUOR ENGINEERS AND CONSTRUCTORS, INC.
LOS ANGELES, CALIFORNIA
U.S. ENERGY R&D ADMINISTRATION
IDAHO OPERATIONS OFFICE
IDAHO FALLS, IDAHO
SCALE 3/8" = 1'-0"
DWG. NO. 1495-CPP-659-C-394 REV. 1
FLUOR CONTRACT #453504
INDEX CODE NUMBER 200 0659 62 287 132545

132545



INFORMATION ONLY
JET-NCD-554
DECON CELL
SUMP DRAIN JET
DECON. CUBICLE NO. 1
DECON CUBICLE NO. 2
VENT TO AIR SCRUBBER HEADER DWG. 133175
FILTER HANDLING CELL
VES-NCD-141
VES-NCD-142
FOR HEPA FILTER LEACH SYSTEM SEE DWG 444389
DECON CELL
DECON AREA LEVEL No. 2
VALVE PIT IN DECON. CELL AIRLOCK
HOLD-UP TANK CELL
MAKE-UP TANKS DRAIN
MATCH LINE DWG. 133445 SECTION 10
SEE GENERAL NOTES SECTION 1 133448
RCRA CONTROLLED
RCRA EXEMPT
RCRA CLOSURE
MANIPULATOR REMOVABLE SCREEN
SPARE GUTTER DRAIN
TO GUTTER DRAIN
SLOPE DOWN TO VES-NCD-123
TO VES NCD-123
TO VES NCD-129
FROM VES NCD-138 & 139
CONNECTIONS FOR PORTABLE PUMP, P-NCD-244, ALTERNATE LOCATION OF PUMP
A-6" SCH 10S STAINLESS STEEL ENCASEMENT - TYPICAL FOR BURIED LINES WHERE SHOWN
ALLIED CHEMICAL CORPORATION
IDAHO CHEMICAL PROGRAMS - OPERATIONS OFFICE IDAHO FALLS, IDAHO
THIS DOCUMENT IS RELEASED 10-26-77 AND SUBSEQUENTLY CONTROLLED IN ACCORDANCE WITH ACC STANDARD PRACTICES.
SEE DAR 40358
SEE DAR 18869
CPP AREA
BLDG. NO. 659
MECHANICAL FLOW DIAGRAM
DECONTAMINATION AREA
NEW WASTE CALCINING FACILITY
FLUOR
LOS ANGELES, CALIFORNIA
U.S. ENERGY R&D ADMINISTRATION
IDAHO OPERATIONS OFFICE
IDAHO FALLS, IDAHO
1495-CPP-659-E-120
20
NCD
200065924287133446

| REV. | REVISION DESCRIPTION | | APPROVED DATE | RE&C | WINCO |
|---|---|---|---|---|---|
| 7 | SEE DAR 40409 | MEW | | | |
| 8 | SEE DAR 40838 | MEW | | | |




NOTES:

1. DELETED
2. DELETED
3. DELETED
4. FLOW IN THE SECONDARY CONTAINMENT WILL DRAIN TO ROOM 219 WHERE IT WILL BE SENSED BY L219C.
5. DELETED
6. FOR SYMBOLS AND ABBREVIATIONS REFER TO DRAWING 384685

INFORMATION ONLY

RCRA CONTROLLED

RCRA EXEMPT

DESIGN INTERFACE: ARCHITECTURAL, STRUCTURAL, ENVIRONMENTAL, ELECTRICAL, INSTRUMENTATION, MECHANICAL, PROCESS, PIPING, STRESS ANALYSIS

DRAWING STATUS: DESIGN PHASE AFC, DATE APPROVED 10-14-94

QUALITY LEVEL III

APPROVALS: ORIGINATOR, CHECKER, RESPONSIBLE LDE, TASK MANAGER, QA ENGINEER, CHIEF ENGINEER, RE&C PROJECT MGR., WINCO PROJECT MGR.

ISSUED FOR CONSTRUCTION

Raytheon Engineers & Constructors

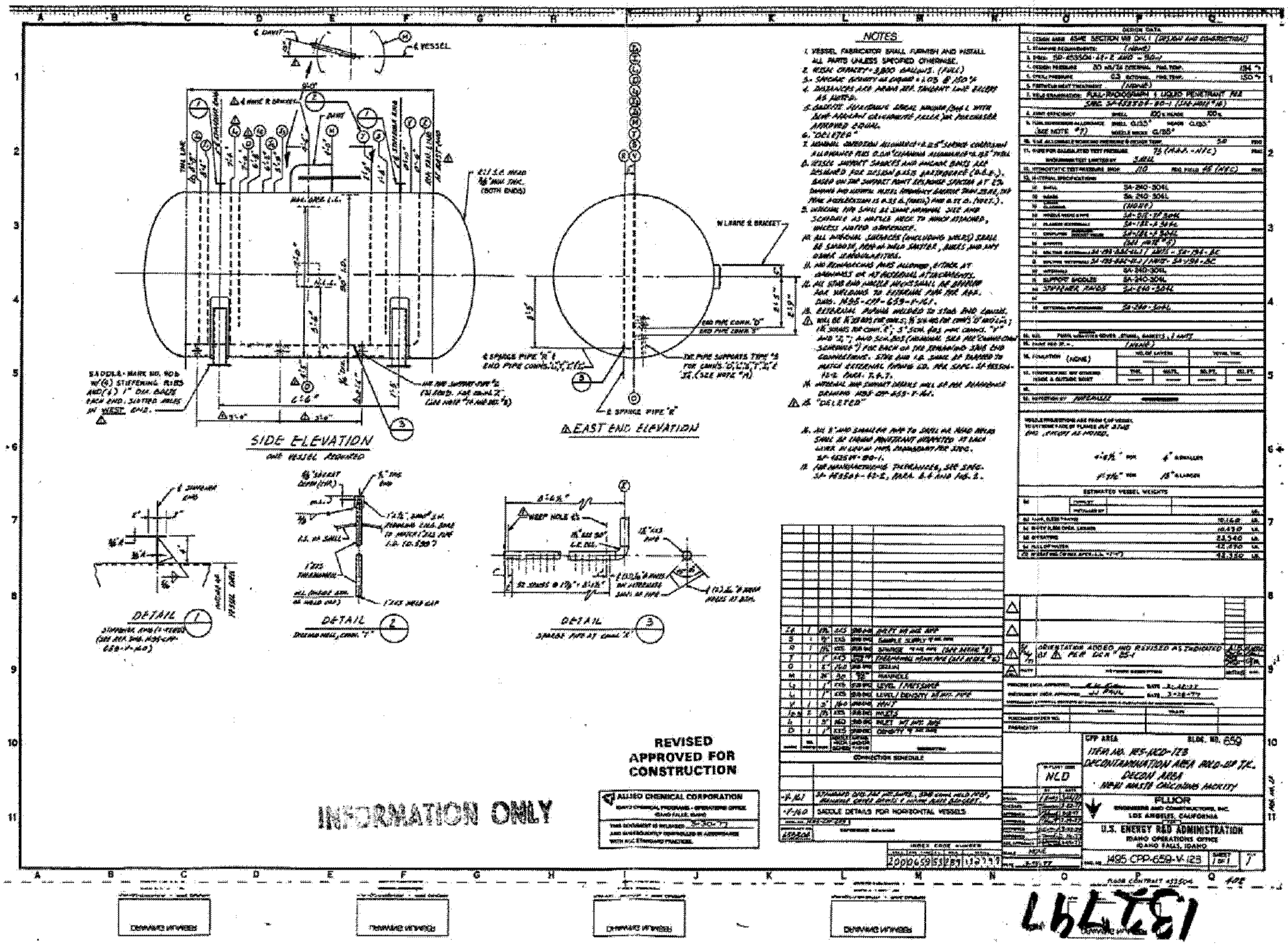
FOR US DEPARTMENT OF ENERGY IDAHO OPERATIONS OFFICE IDAHO FALLS, IDAHO

ICPP BLDG. 659

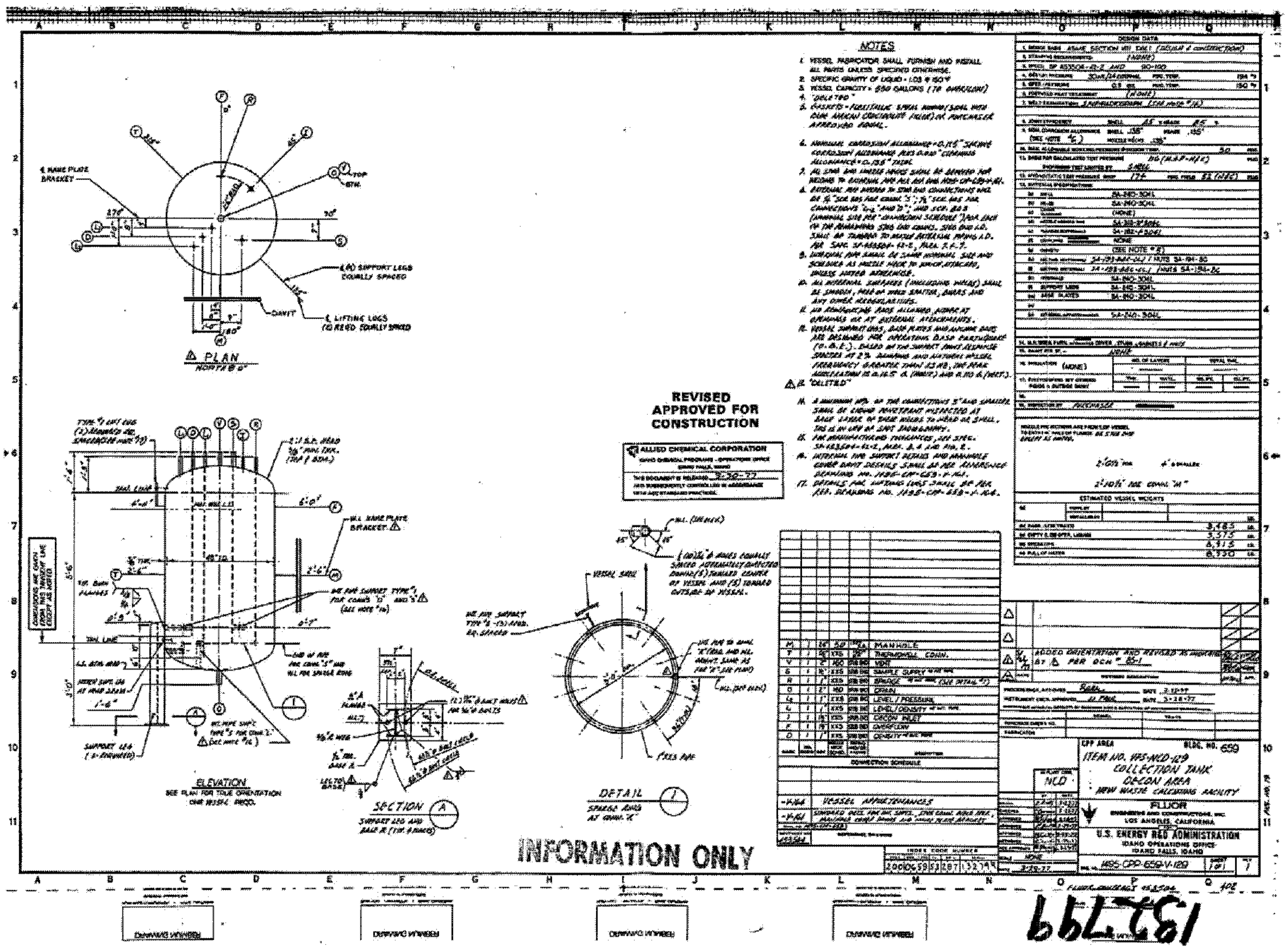
DSB-NC-601 & GBX-NCD-920 PROCESS TRENCH AND DRAIN FLOW DIAGRAM

SIZE D | 200 | 0659 | 24 | 612 | DRAWING NO. 384870 | REV. 8

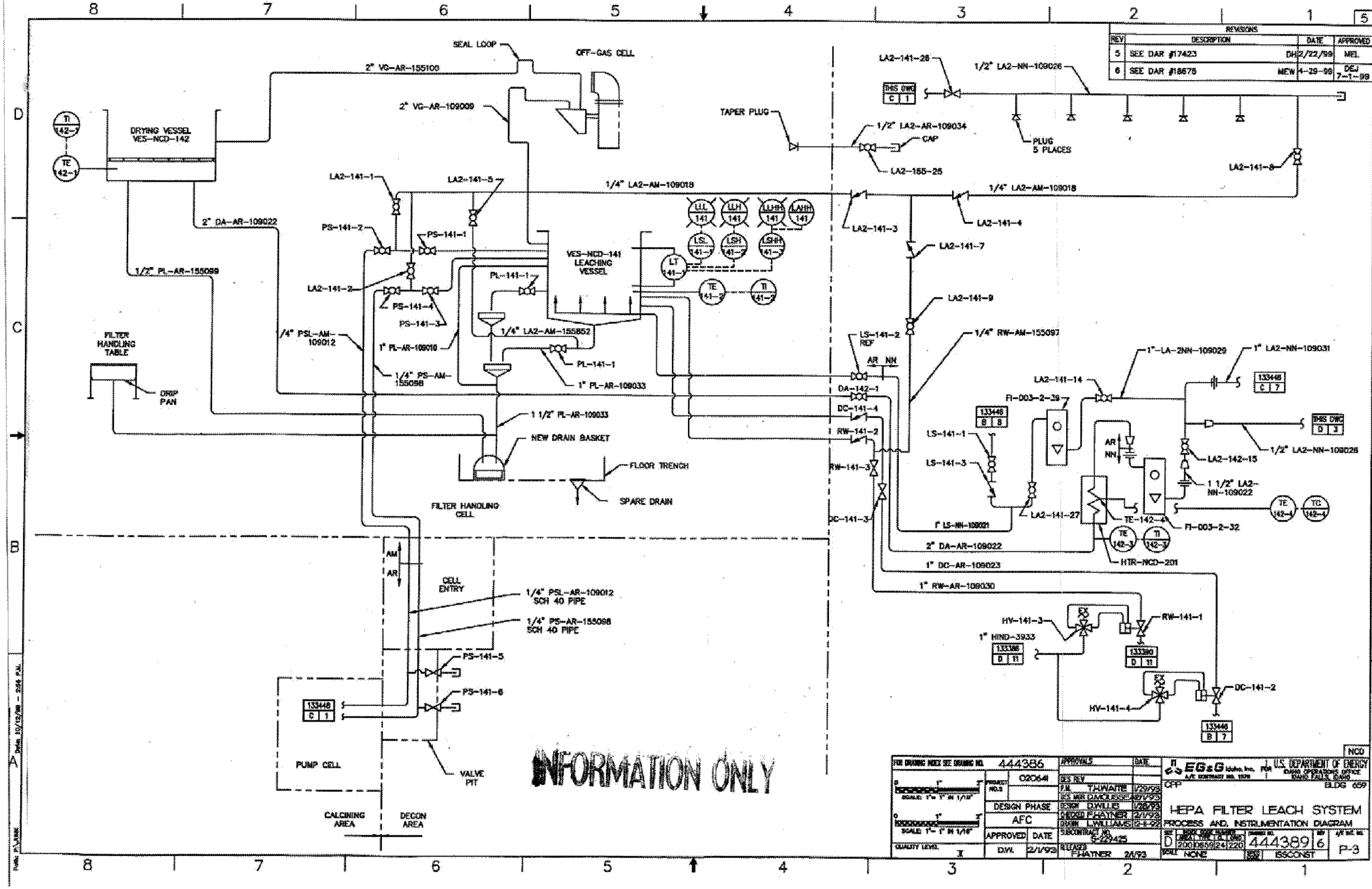
SCALE NONE | SHEET NO. P-01



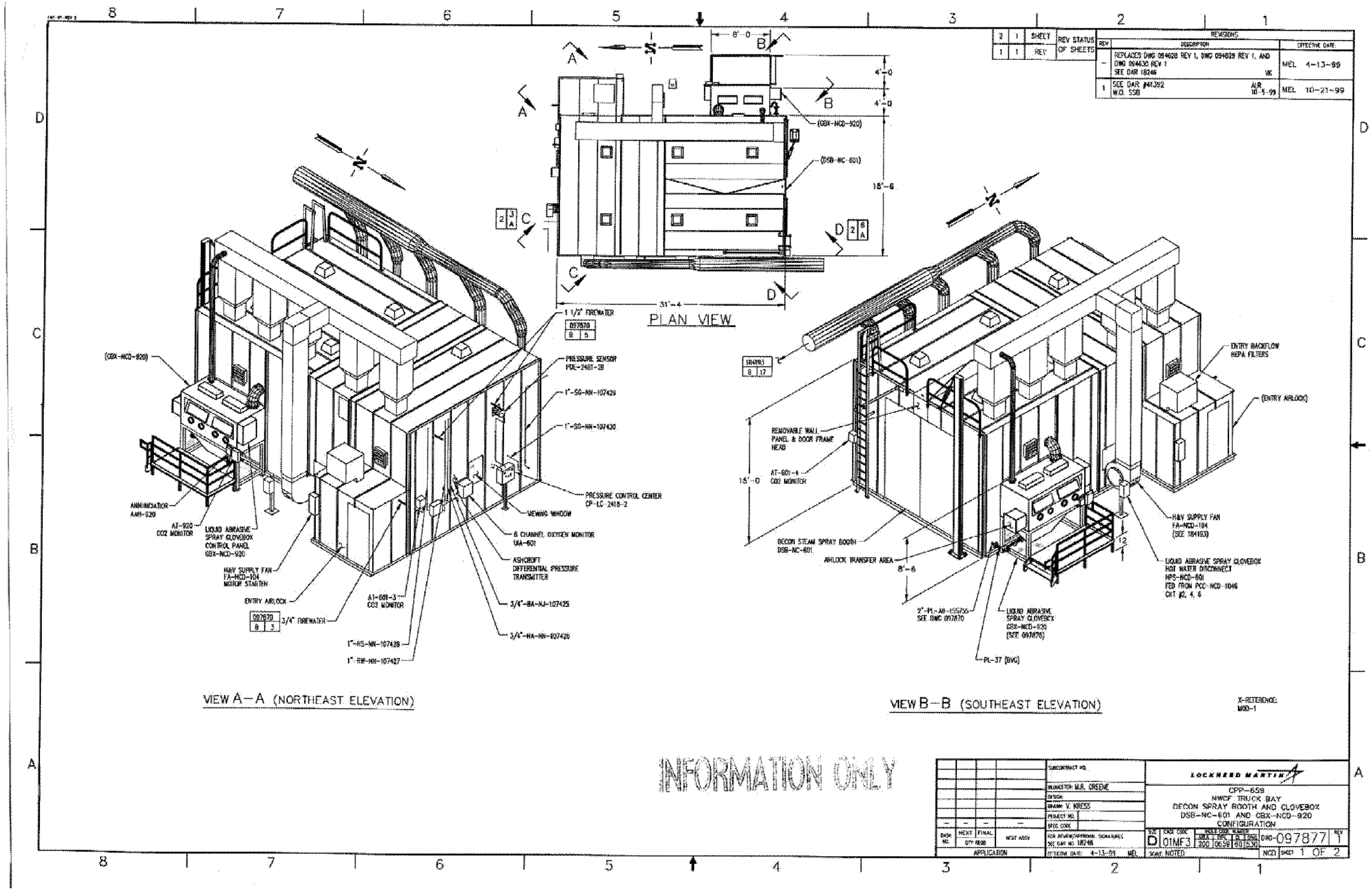
NOTES
SIDE ELEVATION
EAST END ELEVATION
DETAIL 1
DETAIL 2
DETAIL 3
REVISED
APPROVED FOR
CONSTRUCTION
INFORMATION ONLY
ALLIED CHEMICAL CORPORATION
CONNECTION SCHEDULE
ESTIMATED VESSEL WEIGHTS
DESIGN DATA
CPP AREA
BLDG. NO. 659
DECON AREA
FLUOR
ENGINEERS AND CONSTRUCTORS, INC.
LOS ANGELES, CALIFORNIA
U.S. ENERGY R&D ADMINISTRATION
IDAHO OPERATIONS OFFICE
IDAHO FALLS, IDAHO
1495 CPP-659-V-123
132797



NOTES
DESIGN DATA
PLAN
ELEVATION
SECTION A
DETAIL 1
REVISED APPROVED FOR CONSTRUCTION
ALLIED CHEMICAL CORPORATION
CONNECTION SCHEDULE
MANHOLE
THERMOWELL CONN.
VENT
SAMPLE SUPPLY
SPARGE
DRAIN
LEVEL / PRESSURE
LEVEL / DENSITY
DECON INLET
OVERFLOW
ESTIMATED VESSEL WEIGHTS
VESSEL APPURTENANCES
COLLECTION TANK
DECON AREA
NEW WASTE CALCINING FACILITY
FLUOR
LOS ANGELES, CALIFORNIA
U.S. ENERGY R&D ADMINISTRATION
IDAHO OPERATIONS OFFICE
IDAHO FALLS, IDAHO
CPP AREA
BLDG. NO. 659
INFORMATION ONLY
132799

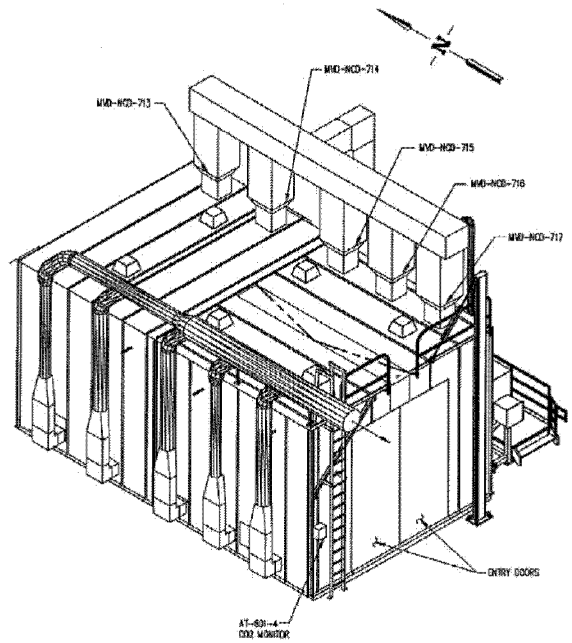


REVISIONS
REV | DESCRIPTION | DATE | APPROVED
5 | SEE DAR #17423 | DH 2/22/99 | MEL
6 | SEE DAR #18675 | MEW 4-29-99 | DEJ 7-1-99
DRYING VESSEL VES-NCD-142
SEAL LOOP
OFF-GAS CELL
2" VG-AR-155100
2" VG-AR-109009
2" DA-AR-109022
1/2" PL-AR-155099
1/4" LA2-AM-109018
1/2" LA2-NN-109026
1/2" LA2-AR-109034
CAP
TAPER PLUG
PLUG 5 PLACES
LA2-141-26
LA2-155-26
LA2-141-8
LA2-141-1
LA2-141-2
LA2-141-3
LA2-141-4
LA2-141-5
LA2-141-7
LA2-141-9
PS-141-1
PS-141-2
PS-141-3
PS-141-4
PS-141-5
PS-141-6
VES-NCD-141 LEACHING VESSEL
PL-141-1
1/4" LA2-AM-155852
1" PL-AR-109010
1" PL-AR-109033
1 1/2" PL-AR-109033
1/4" PSL-AM-109012
1/4" PS-AM-155098
FILTER HANDLING TABLE
DRIP PAN
NEW DRAIN BASKET
FLOOR TRENCH
SPARE DRAIN
FILTER HANDLING CELL
CELL ENTRY
1/4" PSL-AR-109012 SCH 40 PIPE
1/4" PS-AR-155098 SCH 40 PIPE
PUMP CELL
VALVE PIT
CALCINING AREA
DECON AREA
INFORMATION ONLY
LS-141-2 REF
DA-142-1
DC-141-4
RW-141-2
RW-141-3
DC-141-3
1/4" RW-AM-155097
LA2-141-14
1"-LA-2NN-109029
1" LA2-NN-109031
FI-003-2-39
FI-003-2-32
LS-141-1
LS-141-3
LA2-141-27
LA2-142-15
1 1/2" LA2-NN-109022
TE-142-4
HTR-NCD-201
1" LS-NN-109021
2" DA-AR-109022
1" DC-AR-109023
1" RW-AR-109030
HV-141-3
HV-141-4
RW-141-1
DC-141-2
1" HIND-3933
THIS DWG
FOR DRAWING INDEX SEE DRAWING NO. 444386
PROJECT NO. 02064I
DESIGN PHASE AFC
APPROVED DATE D.W. 2/1/93
APPROVALS DATE
DES REV
P.M. T.HWAITE 1/29/93
D.WILLIS 1/26/93
F.HAYNER 2/1/93
L.WILLIAMS 12-8-92
SUBCONTRACT NO. S-229425
RELEASED F.HAYNER 2/1/93
EG&G Idaho, Inc.
U.S. DEPARTMENT OF ENERGY IDAHO OPERATIONS OFFICE IDAHO FALLS, IDAHO
CPP
BLDG 659
HEPA FILTER LEACH SYSTEM
PROCESS AND INSTRUMENTATION DIAGRAM
D 200 0659 24 220
444389
6
P-3
SCALE NONE
ISSCONST
NCD

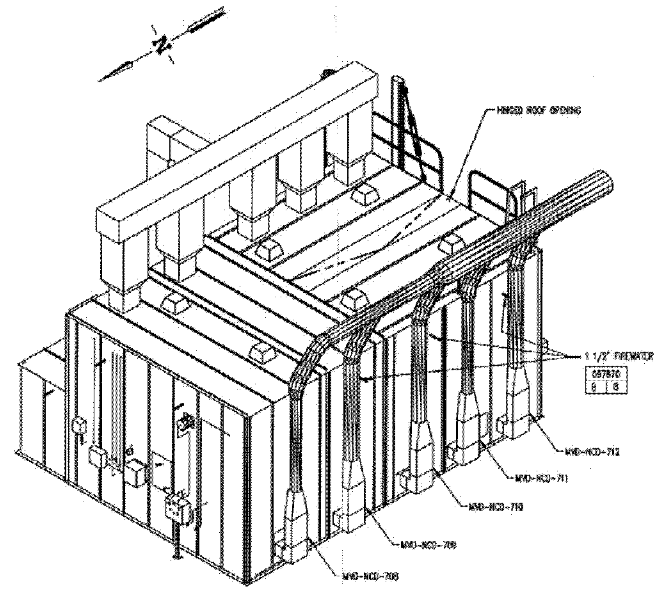


REVISIONS
REV | DESCRIPTION | EFFECTIVE DATE
- | REPLACES DWG 094628 REV 1, DWG 094629 REV 1, AND DWG 094630 REV 1 SEE DAR 18246 VK | MEL 4-13-99
1 | SEE DAR #41392 W.O. 558 AJR 10-5-99 | MEL 10-21-99
REV STATUS OF SHEETS
PLAN VIEW
31'-4
18'-6
8'-0
4'-0
(GBX-NCD-920)
(DSB-NC-601)
VIEW A-A (NORTHEAST ELEVATION)
(GBX-NCD-920)
1 1/2" FIREWATER
PRESSURE SENSOR PDE-2481-2B
1"-SG-NN-107429
1"-SG-NN-107430
PRESSURE CONTROL CENTER CP-LC-2418-2
VIEWING WINDOW
6 CHANNEL OXYGEN MONITOR UA-601
ASHCROFT DIFFERENTIAL PRESSURE TRANSMITTER
3/4"-BA-NJ-107425
3/4"-HA-NN-107426
ANNUNCIATOR AAH-920
AI-920 CO2 MONITOR
LIQUID ABRASIVE SPRAY GLOVEBOX CONTROL PANEL GBX-NCD-920
H&V SUPPLY FAN FA-NCD-104 MOTOR STARTER
ENTRY AIRLOCK
3/4" FIREWATER
AI-601-3 CO2 MONITOR
1"-HS-NN-107428
1"-RW-NN-107427
VIEW B-B (SOUTHEAST ELEVATION)
ENTRY BACKFLOW HEPA FILTERS
(ENTRY AIRLOCK)
REMOVABLE WALL PANEL & DOOR FRAME HEAD
AT-601-4 CO2 MONITOR
15'-0
DECON STEAM SPRAY BOOTH DSB-NC-601
AIRLOCK TRANSFER AREA
8'-6
2"-PL-AB-155755 SEE DWG 097870
LIQUID ABRASIVE SPRAY GLOVEBOX GBX-NCD-920 (SEE 097876)
PL-37 (BVG)
H&V SUPPLY FAN FA-NCD-104 (SEE 184193)
LIQUID ABRASIVE SPRAY GLOVEBOX HOT WATER DISCONNECT NPS-NCD-601 FED FROM PCC-NCD-1046 CKT #2, 4, 6
X-REFERENCE: MOD-1
INFORMATION ONLY
SUBCONTRACT NO.
REQUESTER M.R. GREENE
DRAWN V. KRESS
FOR REVIEW/APPROVAL SIGNATURES SEE DAR NO. 18246
EFFECTIVE DATE: 4-13-99 MEL
APPLICATION
LOCKHEED MARTIN
CPP-659
NWCF TRUCK BAY
DECON SPRAY BOOTH AND GLOVEBOX
DSB-NC-601 AND GBX-NCD-920
CONFIGURATION
D 01MF3
DWG 097877 REV 1
SCALE NOTED
NCD SHEET 1 OF 2

| | | | | |
|---|---|---|---|---|
| 1 | SEE DAR #41392 W.O. SSB | WKJ 10-13-99 | MEL 10-21-99 | |




VIEW D–D (SOUTHWEST ELEVATION)

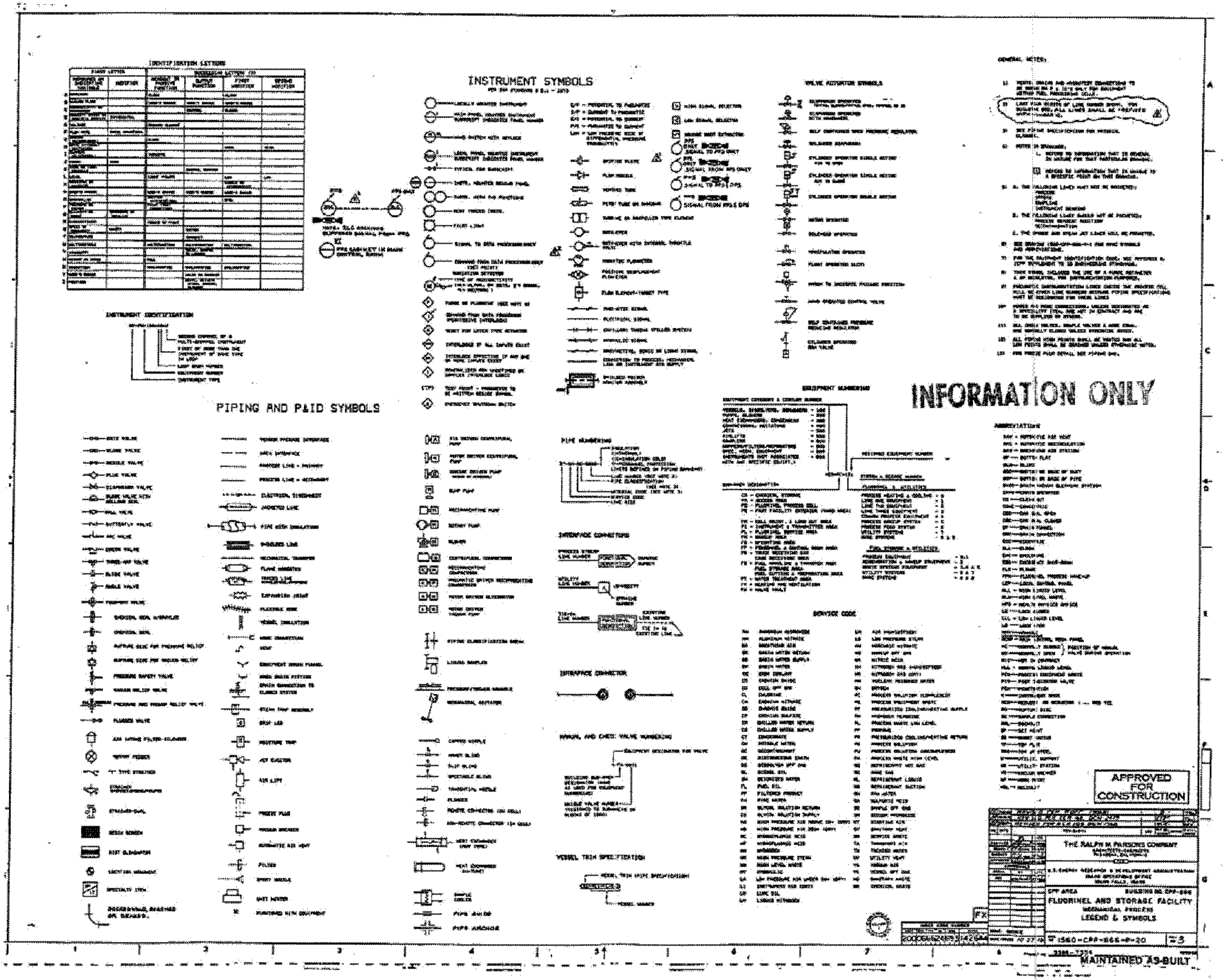


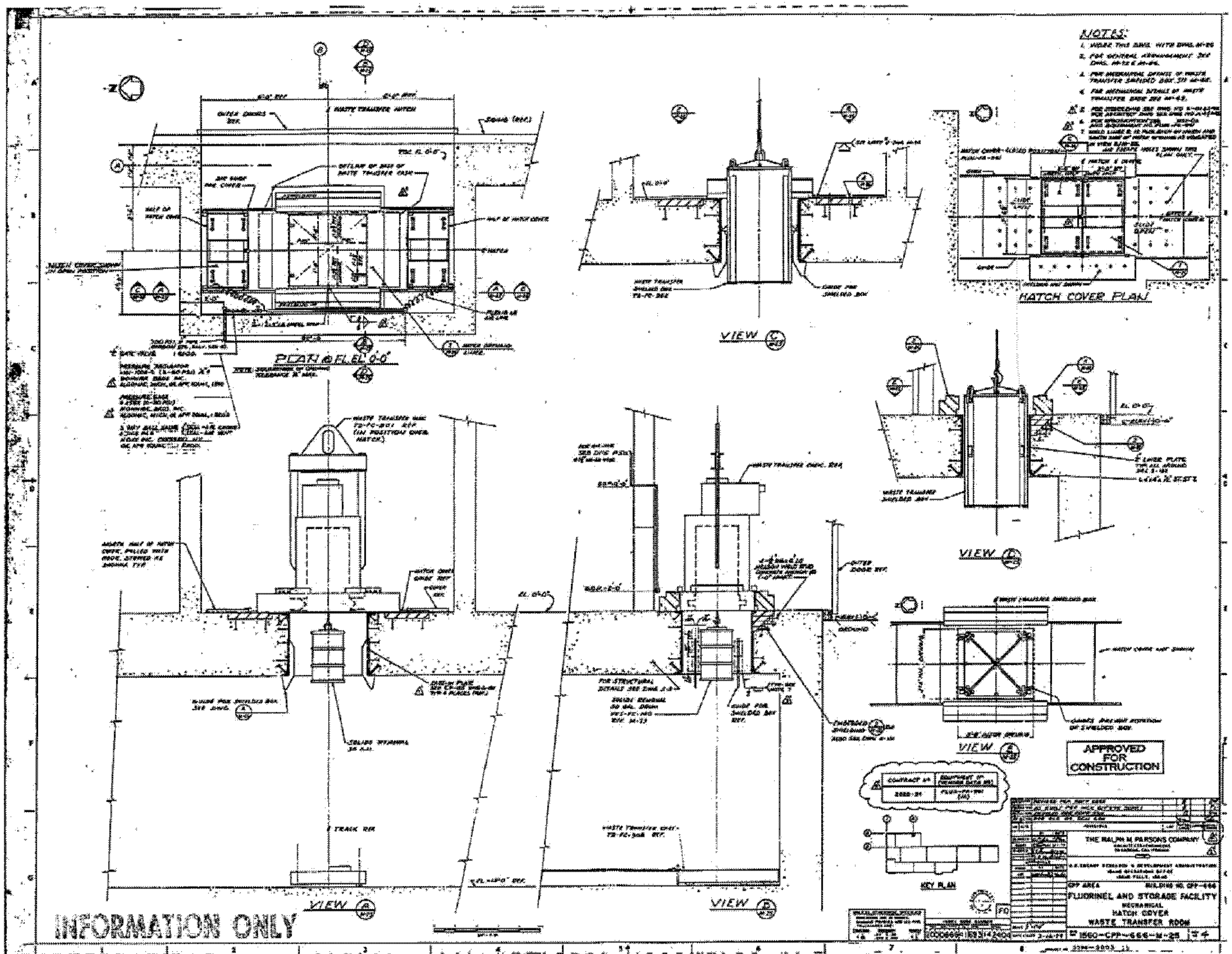

VIEW C–C (NORTHWEST ELEVATION)

INFORMATION ONLY

X-REFERENCE:
WOD-1

D 01MF3 200 0658 60 530 DWG 097877 REV 1
SCALE NOTED SHEET 2


IDENTIFICATION LETTERS
INSTRUMENT SYMBOLS
VALVE ACTUATOR SYMBOLS
GENERAL NOTES:
INSTRUMENT IDENTIFICATION
PIPING AND P&ID SYMBOLS
EQUIPMENT NUMBERING
INFORMATION ONLY
ABBREVIATIONS
PIPE NUMBERING
INTERFACE CONNECTORS
INTERFACE CONNECTOR
SERVICE CODE
MANUAL AND CHECK VALVE NUMBERING
VESSEL TRIM SPECIFICATION
APPROVED FOR CONSTRUCTION
THE RALPH M. PARSONS COMPANY
CPP AREA
FLUORINEL AND STORAGE FACILITY
LEGEND & SYMBOLS
FX
MAINTAINED AS-BUILT



NOTES:
PLAN @ EL. 0'-0"
VIEW C
HATCH COVER PLAN
VIEW E
VIEW A
VIEW B
VIEW D
KEY PLAN
APPROVED FOR CONSTRUCTION
THE RALPH M. PARSONS COMPANY
CPP AREA
FLUORINEL AND STORAGE FACILITY
MECHANICAL
HATCH COVER
WASTE TRANSFER ROOM
1560-CPP-666-M-25
INFORMATION ONLY

RCRA PART B PERMIT

FOR THE

IDAHO NATIONAL

ENGINEERING AND ENVIRONMENTAL LABORATORY

Volume 18 – Idaho Nuclear Technology and Engineering Center

# ATTACHMENT 1

Debris Treatment Processes
Holdup and Collection Tanks
CPP-659/-1659 Storage
CPP-666 FDP Cell Container Storage Area

Section D

Process Description

Modified Date: November 18, 2003

# CONTENTS



# EXHIBITS

# TABLES



# APPENDICES

# D. PROCESS INFORMATION

This section provides process information for the four Idaho Nuclear Technology and Engineering Center (INTEC) waste management units addressed in this permit application: debris treatment processes, holdup and collection tanks, storage in Building Number CPP-659/-1659, and container storage in the CPP-666 Fluorinel Dissolution Process (FDP) Cell.

## Debris Treatment Processes

The following will be used to treat mixed waste debris in CPP-659/-1659: high-efficiency particulate air (HEPA) Filter Leaching System (HFLS), sinks (with hoods), portable soak tanks, ultrasonic cleaner, decon cubicles, decon cell, and steam spray booth (including liquid abrasive spray glove box). The HFLS, sinks, and ultrasonic cleaner are to be permitted as tank treatment systems (process code T01). The soak tanks are to be permitted as other treatment units (process code T04). The steam spray booth, the decon cubicles, and decon cell are to be permitted as miscellaneous units (process codes X02 and X99 for booth, and X99 for cubicles and decon cell).

Treatment of HEPA filters in the HFLS involves the leaching of hazardous waste contaminants from the filters using a nitric acid solution, followed by rinsing with water and drying. The HFLS is located in the filter handling cell (Room 309).

The sinks, located in the low-level decon room (Room 415), will be used for hands-on washing of debris items such as small piping sections or small valves. The soak tanks will be used for the soaking of small to intermediate size items, such as valves or blower components, in treatment solutions for extended periods of time. The ultrasonic cleaner, located in Room 415, will be used to treat small to intermediate size items by ultrasonic cavitation in water or chemical solutions. The decon cubicles, Rooms 421 and 422, will be used for hands-on treatment of debris items, waste storage, and may also be used for treatment of debris within portable soak tanks. The steam spray booth will be a confinement area for treatment of mixed waste debris by chemical extraction (e.g., scrubbing with water-based chemicals) or physical extraction [e.g., steam, high pressure hot water, carbon dioxide ($CO_2$) blasting]. A liquid abrasive spray glove box on the exterior of the steam spray booth is used for treatment by liquid abrasive spray blasting, high pressure hot water washing, or $CO_2$ blasting. A portable soak tank may occasionally be moved into the booth for debris treatment. Also, treatment such as spalling/scarification by means of an integrated vacuum/scabbling system may be conducted in the booth. The steam spray booth and glove box are located in the truck bay loading/unloading area of the equipment decon room, Room 418. These rooms serve not only the New Waste Calcining Facility (NWCF) but also other INTEC areas and other INEEL facilities. These rooms have also been, and will in the future be used, for decontamination of radioactive, nonhazardous items.

## Holdup and Collection Tanks

Liquid treatment solution from the tank treatment systems addressed in this permit are collected in the decon area holdup tank (VES-NCD-123) or the decon area collection tank (VES-NCD-129). These tanks will be used primarily for storage, pending transfer to any of several waste processing destinations (which are not addressed in this permit application). In addition, these tanks will be used occasionally for pH adjustment to meet the waste acceptance criteria of processing destinations. These tanks are to be permitted for tank storage (S02) and tank treatment (T01).

## Storage in CPP-659/-1659

Waste will be stored within designated rooms of CPP-659/-1659, in waste piles and in containers. This unit carries the process codes of S01 (container storage) and S03 (waste pile). Wastes to be stored include hazardous and/or mixed waste and debris, such as spent HEPA filters from INTEC and other INEEL processes, various other types of debris, and solid residuals generated during debris treatment.

Storage of waste may occur in CPP-1659 or the following rooms of CPP-659: 205, 206, 207, 214, 215, 216, 218, 306, 308, 309, 323, 326, 415, 416, 417, 418, 419, 421, and 422. Radiation/contamination levels will determine in part the room in which a given waste will be stored.

## Container Storage in CPP-666 FDP Cell

The FDP cell container storage area is designated for storage of spent HEPA filters from the FDP air handling system and other INTEC processes, and storage of other mixed waste debris. The applicable process category for this unit is S01 (container storage). The FDP cell is located in the Fluorinel Dissolution Process and Fuel Storage (FAST) facility.

## NWCF Operations

Four basic processes are conducted at the NWCF, CPP-659: (1) calcination of mixed waste in the Calciner Area, (2) decontamination of radioactive INEEL and NWCF process equipment in the Decontamination Area, (3) treatment of mixed waste debris in the Decontamination Area, and (4) evaporation of liquid waste. Calcination and evaporation of liquid waste are not addressed in this permit application. Likewise, decontamination of radioactive, nonhazardous items is not addressed in this permit application. The following background information is provided to acquaint the reader with the building areas within which storage and treatment of mixed waste will occur.

## Decontamination Area

The Decon Area was incorporated into the design of the NWCF, in part to minimize the radiation exposures personnel receive from hands-on decontamination. The decon facility has three major areas: the low-level decon room, the equipment decon area, and the remote shielded cells. Since startup of the decon facility in 1982, factors such as radiation levels, potential spread of contamination, and equipment size have determined where a given item was decontaminated. These factors will also be instrumental in determining where a given debris item will be treated.

The low-level decon room will be used for treatment of small to intermediate size debris items that have low levels of radiation. The low-level decon room also contains a makeup area, including two tanks for mixing water, nitric acid, or various dry chemicals, which will be used for makeup of most debris treatment solutions. The equipment decon room will be used for treatment of larger debris items that cannot be handled in the low-level decon room, and has facilities for items with higher potential for airborne contamination. The remote shielded cells (filter handling cell, decon cell, and equipment decon storage area) will be used for storing hazardous and/or mixed waste and storing and/or treating debris items with high levels of contamination and radiation. Other treatment areas include the decon cubicles and the steam spray booth. In addition to treatment of mixed waste debris, the Decon Area will continue to be used for the decontamination of radioactive, nonhazardous items.

The Decon Area includes one level abovegrade and one level belowgrade on the west end of the NWCF. The collection and holdup tanks for radioactively contaminated and hazardous process liquid waste solutions generated during decontamination and treatment activities are located belowgrade on the third level in the Calciner Area. Exhibits D-1, D-2, and D-3 are simplified floor plans of CPP-659, and show the locations of treatment areas and equipment.

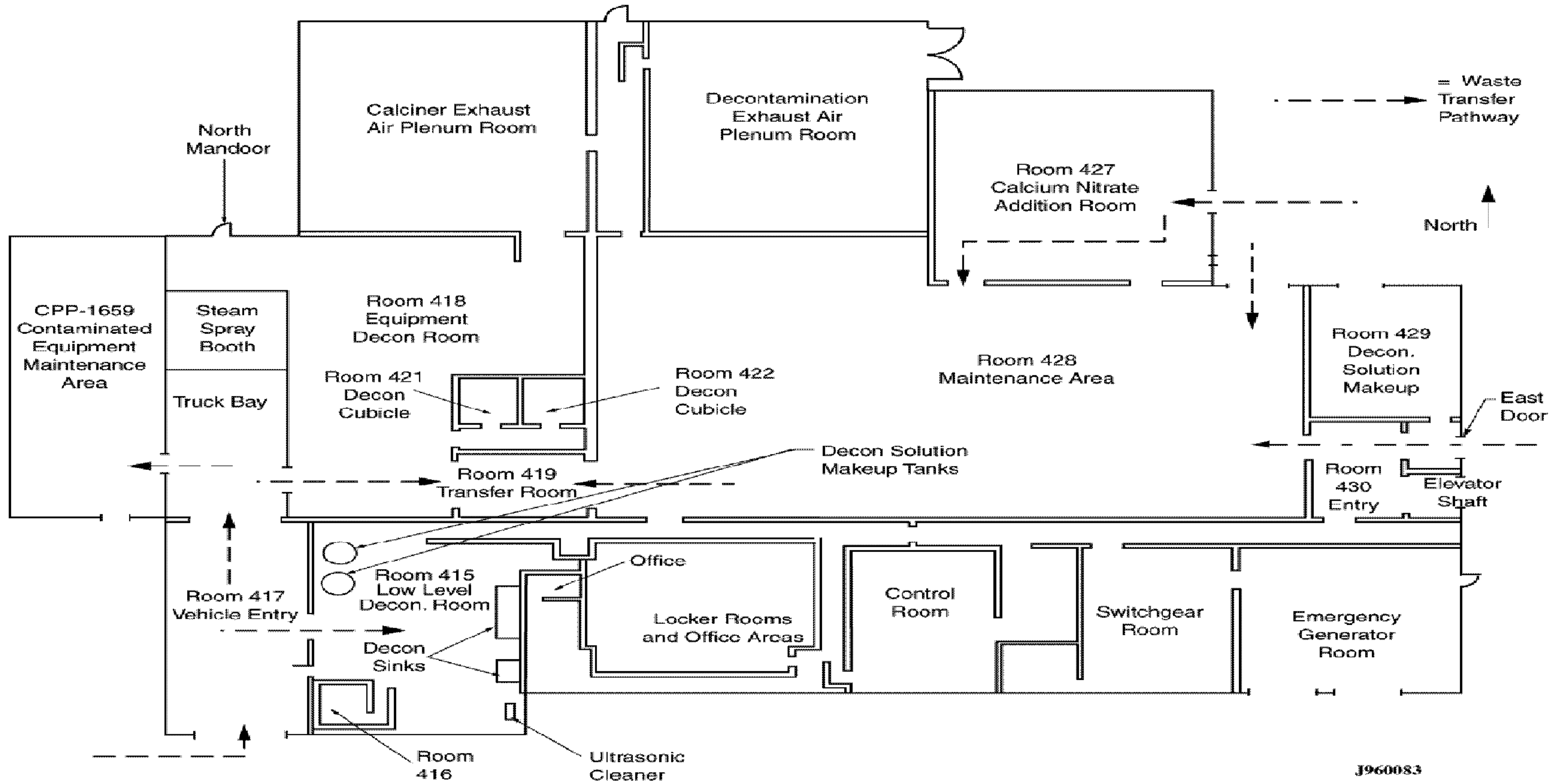



**Exhibit D-1. Simplified floor plan for first level of CPP-659.**

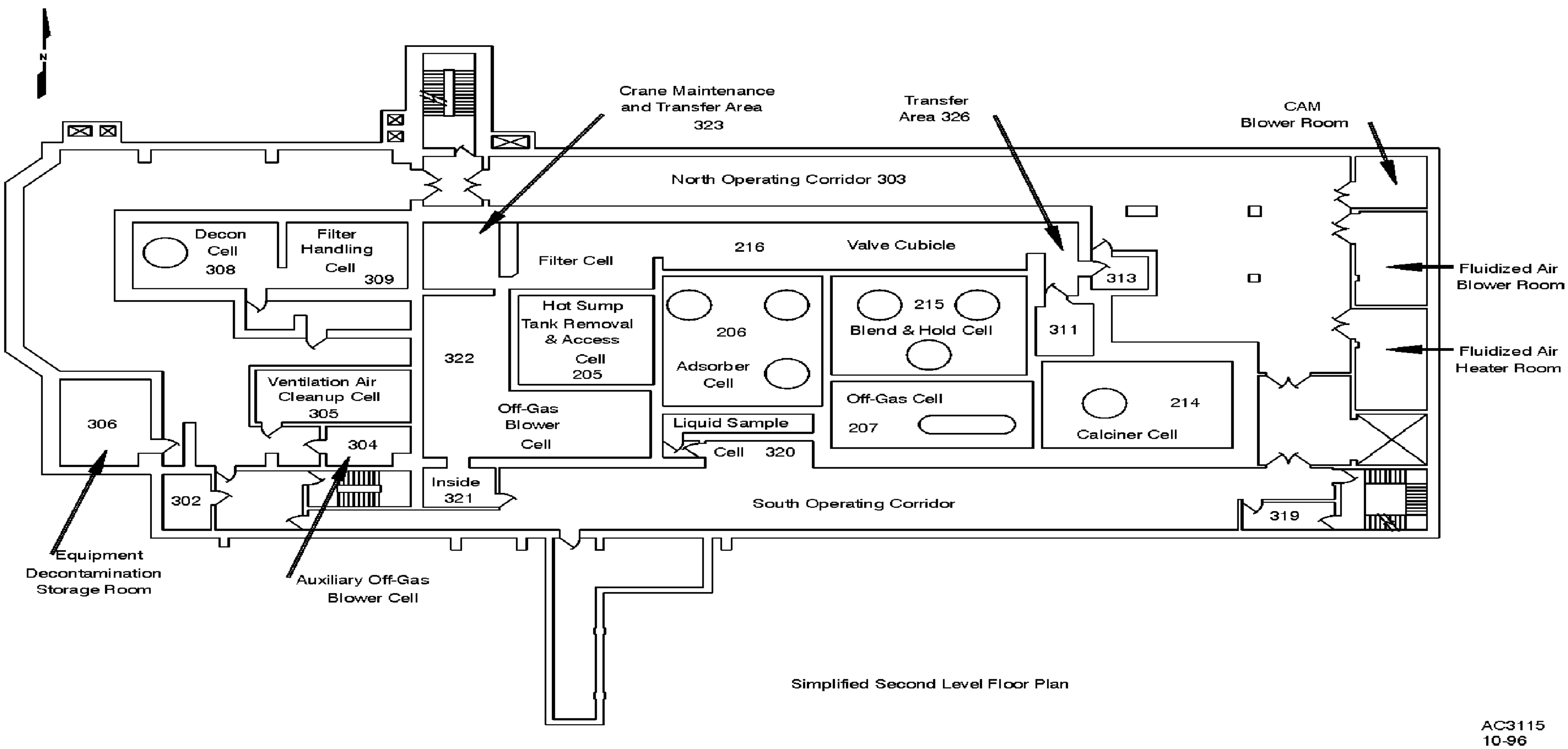



**Exhibit D-2. Simplified floor plan for second level of CPP-659.**

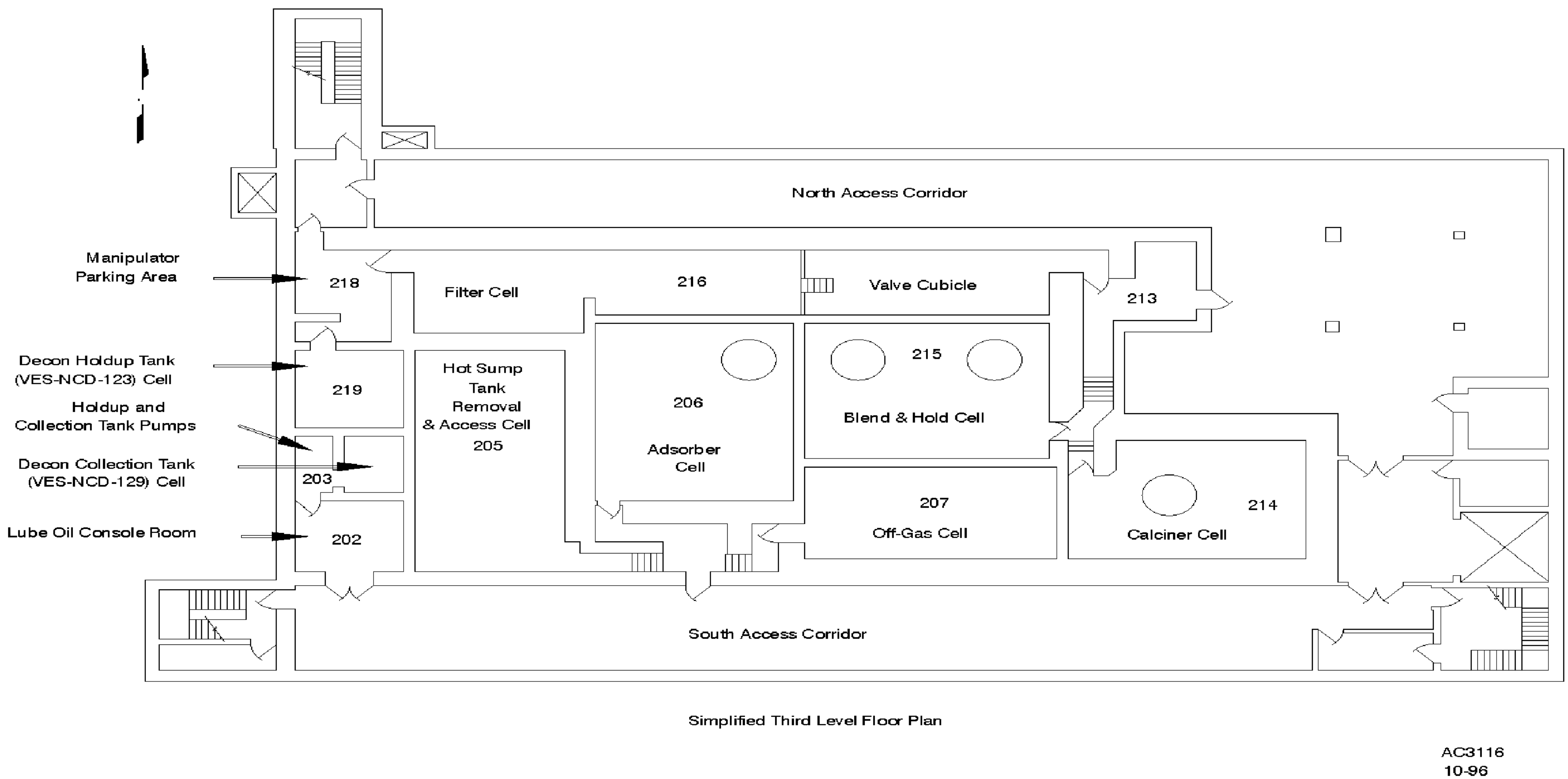



**Exhibit D-3. Simplified floor plan for third level of CPP-659.**

## FDP Operations

FDP operations to recover uranium from irradiated spent nuclear fuel began in 1986. Due to a 1992 mission change, irradiated nuclear fuel is no longer processed in the FDP.

### D-1. Containers

General building descriptions of CPP-659/-1659 and CPP-666 are located in Section B of this permit. Supporting drawings are in the drawings package in the permit application. The container storage areas of CPP-659 are located on three different levels within the building. See Exhibit B-4 for an isometric of CPP-659. CPP-1659 is annexed to the northwest corner of CPP-659, and consists of a single floor at ground level. Containers of hazardous and/or mixed waste and of debris, such as HEPA filters, may be stored in any room listed in Table D-1. This table gives a detailed room-by-room summary, including room name, dimensions, type of floor liner, and waste transfer pathway into these rooms.

The FDP cell container storage area is located at two elevations within the FDP cell: the -13'- 0" level and the 0'- 0" level. Spent FDP HEPA filters are currently stored in containers at the -13'- 0" level, awaiting treatment at the HFLS. See the photograph package for a picture of the containers stored at the -13'- 0" level. There are currently no containers of waste stored at the 0'- 0" level. In the future, spent HEPA filters and other mixed waste debris may be stored at both levels.

## Treatment

The soak tanks will be used to treat small to intermediate size items, such as valves, by chemical extraction [as defined in Title 40 Code of Federal Regulations (CFR) Part 268.45]. Three soak tanks, all of which are portable, may be used in Rooms 308, 421, 422, and the steam spray booth.

**Table D-1. CPP-659/-1659 areas for storage in containers.**

| Room # | Room Name | Room Dimensions | Floor Liner | Waste Transfer Pathway into Room/Cell |
|---|---|---|---|---|
| 205 | Hot Sump Tank Removal and Access Cell | 19.8 x 39.3 ft | Concrete with epoxy coating | Hatch entry from Room 428 via overhead crane down into 200 level, or hand carried into cell |
| 206 | Adsorber Cell | 26.5 x 31.5 ft | Stainless steel Series 300 | Hatch entry from Room 428 via overhead crane down into 200 level, or hand carried into cell |
| 207 | Off-Gas Cell | 32.3 x 24 ft | Stainless steel Series 300 | Hatch entry from Room 428 via overhead crane down into 200 level, or hand carried into cell |
| 214 | Calciner Cell | 31.5 x 21 ft | Stainless steel Series 300 | Hatch entry from Room 428 via overhead crane down into 200 level, or hand carried into cell |
| 215 | Blend & Hold Cell | 33.3 x 16.3 ft | Stainless steel Series 300 | Hatch entry from Room 428 via overhead crane down into 200 level, or hand carried into cell |
| 216 | Filter Cell/Valve Cubicle | 30.5 x 22.5 ft | Stainless steel Series 300 | Hatch entry from Room 428 via overhead crane or via in cell overhead crane from room 323, or hand carried into cell |
| 218 | PaR Parking Area | 12.8 x 16.8 ft | Stainless steel Series 300 | Overhead crane and/or in cell crane from Room 216, or hand carried into room |
| 306 | Equipment Decon Storage Room | 15 x 21 ft | Stainless steel Series 300 | Hatch entry from Room 418 via overhead crane or personnel door into the room, or hand carried via Room 306 entry |
| 308 | Remote Decon Cell | 24 x 16 ft | Stainless steel Series 300 | Hatch entry from Room 418 via overhead crane down into 300 level, or hand carried via Room 307 entry |
| 309 | Filter Handling Cell | 20 x 16 ft | Stainless steel Series 300 | Hatch entry via overhead crane from Room 418 and from Room 216 via in-cell crane, or hand carried via Room 307 entry |
| 323 | Crane Maintenance and Transfer Area | 12.8 x 16.8 ft | Stainless steel Series 300 | From Room 216 via in-cell crane or hatch entry from Room 428, or via in-cell crane from Room 309 |
| 326 | Transfer Area | 8.5 x 9.5 ft | Stainless steel Series 300 | From Room 216 via in-cell crane, or via in-cell crane from Room 309 |
| 415 | Low-Level Decontamination Room | 40.8 x 38.5 ft | Stainless steel Series 300 | From Room 417 through a sliding door or personnel door located on the west side of Room 415 |

**Table D-1. CPP-659/-1659 areas for storage in containers (continued).**

| Room # | Room Name | Room Dimensions | Floor Liner | Waste Transfer Pathway into Room/Cell |
|---|---|---|---|---|
| 416 | Shielded Storage Room | 10 x 12 ft | Stainless steel Series 300 | From Room 417 via overhead crane or carried by personnel through the labyrinth-type entry |
| 417 | Vehicle Entry Way | 26.4 x 61.9 ft | Stainless steel Series 300 | From outside through a roll-up door on the south end, or from outside through personnel door at the west end of Room 417 |
| 418 | Equipment Decontamination Room | 54.3 x 73.3 ft | Stainless steel Series 300 | From Room 417 through a roll-up door on the north end of Room 417, or through the north man door on north wall in Room 418 |
| 419 | Transfer Room | 25.8 x 17.1 ft | Concrete with epoxy coating | From Room 418 through a roll-up door on the west end of Room 419, or from Room 428 via a roll-up door on the east end of Room 419 |
| 421 | Decontamination Room | 12.3 x 13.75 ft | Stainless steel Series 300 | From Room 418 through personnel door into entry way 420 through personnel door into Room 421 |
| 422 | Decontamination Room | 12.3 x 13.75 ft | Stainless steel Series 300 | From Room 418 through personnel door into entry way 420 through personnel door into Room 422 |
| CPP-1659 | Contaminated Equipment Maintenance Area | 50.8 x 35.8 ft | Stainless steel Series 300 | From Room 418 through a roll-up door on the west end of Room 418, or through a man door on south side of CPP-1659 |

## D-1a. Containers with Free Liquids

Mixed waste with free liquids will not be stored in either the NWCF container storage areas or the FDP container storage areas.

Mixed waste debris will be treated with treatment solutions within three portable soak tanks (container treatment). Treatment solutions from the tanks will be drained to the holdup tank (VES-NCD-123) or the collection tank (VES-NCD-129).

**D-1a(1) Description of Containers [IDAPA 58.01.05.008; 40 CFR 264.171 and 264.172]**

Soak tanks, all of which are portable, may be used in Rooms 308, 421, 422 and the steam spray booth. Materials of the three soak tanks are of Series 300 stainless steel. All three soak tanks were placed in service in 1982.

Soak tank VES-NCD-138 stands 7 ft high, has an internal diameter of 4 ft, and measures 5 ft from tangent to tangent. Its capacity is about 538 gal.

Soak tank TK-NC-136 is 60 x 35 x 14 in. deep. Its capacity is about 127 gal.

Soak tank TK-NC-137 is 48 x 36 x 36 in. deep. Its capacity is about 270 gal.

For all three soak tanks, the capacities will not be reached during debris treatment, since the debris will displace some of the available volume.

**D-1a(2) Container Management Practices [IDAPA 58.01.05.008; 40 CFR 264.173]**

The tops of the three soak tanks may be open during debris treatment. The tanks will be visually monitored periodically by operators/technicians during treatment to ensure that overflows or leaks do not occur.

Any of the three portable soak tanks may be used for debris treatment in the decon cell, the two decon cubicles, or the steam spray booth. When being moved to a different location, the tanks will not contain mixed waste debris or liquids. If necessary to move a tank into or out of any of these processing areas, then cranes, hoists, and associated lifting accessories will be used to move the tank through removable hatches in the area's ceiling.

Mixed waste debris items to be treated will be transferred within appropriate packaging to the applicable soak tank. The debris will be placed into the soak tanks manually or by means of cranes, hoists, or other equipment. Debris placed in soak tanks will be soaked for a minimum of 15 minutes at a time. Based on radiological surveys and clean debris surface requirements, additional soaking time may be required.

After treating mixed waste debris, each tank will be completely emptied. The tank is then rinsed with water, followed by a chemical rinse as necessary to help clean the tank, then followed by another water rinse, and then completely drained again. The rinses help maintain the integrity of the tank and the hoses used to drain the tank. This cleaning cycle is completed prior to the tank being moved to another location for use. The hoses are constructed of chemical-resistant materials that are compatible with the wastes being treated, for example, high-density polybutylene rubber, and are inspected prior to each use to determine wear and/or leakage.

To drain a soak tank after debris treatment in a decon cubicle, the decon cell, or the steam spray booth, the liquid waste will be allowed to flow out the bottom of the tank and (according to floor sloping) into the trench/drain, or a flex line may be utilized. From the drains in these processing areas, the liquid waste is routed to Tank VES-NCD-123 or -129 [see Section D-1a(3)(b)].

Whenever a soak tank or other treatment container is used in the decon cell and any waste piles are present, a flex line connected directly between the tank/container drain and the cell drain will be used to avoid contact between treatment solutions and the waste piles.

**D-1a(3) Secondary Containment System Design and Operation [IDAPA 58.01.05.012 and 58.01.05.008; 40 CFR 270.15(a)(1), 264.175(a), and 264.175(d)]**

For details on the secondary containment system of the decon cell, see Drawing 134621; of the decon cubicles, see Drawing 132464; of the steam spray booth, see Drawing 384861.

**D-1a(3)(a) Requirement for the Base or Liner to Contain Liquids [IDAPA 58.01.05.008; 40 CFR 264.175(b)(1)]**

The decon cell has approximately 380 $ft^2$ (24 x 16 ft) of floor space. The walls are of 3 ft thick, high-density concrete. The cell is entirely lined with 300 Series stainless steel, including the bottoms of the roof hatches. The floor is constructed of ½-in. stainless steel, which can be part of the secondary containment system for container treatment. The walls and hatch bottoms are constructed of 1/16-in. stainless steel.

Each of the two decon cubicles has about 192 $ft^2$ (12 x 16 ft) of floor space. The floors are lined with 300 Series stainless steel, which can be part of the secondary containment system for tank treatment. The walls are concrete with epoxy coating. Each cubicle has a 6-in. high stainless-steel wainscot.

The steam spray booth has about 589 $ft^2$ (31 x 19 ft) of floor space. The booth has a 3/16-in. stainless-steel primary containment floor and is placed on a 1/4-in. Series 300 stainless-steel (original) floor, that is part of the secondary containment system.

The floors and liners of the decon cell, decon cubicles, and steam spray booth have been certified free of cracks or gaps, as documented in leak test reports. The floors and liners in these areas are impervious to, and compatible with, wastes to be treated in the soak tanks.

**D-1a(3)(b) Containment System Drainage [IDAPA 58.01.05.012 and 58.01.05.008; 40 CFR 270.15(a)(2) and 264.175(b)(2)]**

The decon cell floor is sloped toward a trench located on the west side of the cell, running the length of the west wall from north to south. The trench is sloped southerly, toward a cell drain. The trench also has a spare drain. The drains are routed to VES-NCD-123 or -129, which can be a part of and the collection point of the secondary containment system, depending on if the drain valves are open or closed.

In each decon cubicle the floor is sloped toward a gutter along the north wall. Each gutter is sloped toward two drains, with one routed to VES-NCD-123 and the other to -129, which can be a part of and the collection point of the secondary containment system, depending on if the drain valves are open or closed.

In the steam spray booth the floor is sloped toward a drain. The drain line is routed to VES-NCD-123, which is part of and a collection point of the secondary containment system.

The matrix in Appendix D-1 defines the boundaries of primary and secondary containment for each treatment unit under various drain scenarios possible in CPP-659.

**D-1a(3)(c) Containment System Capacity [IDAPA 58.01.05.012 and 58.01.05.008; 40 CFR 270.15(a)(3) and 264.175(b)(3)]**

The containment system for each location in which tank treatment may occur has sufficient capacity to contain the liquid contents of the largest container (VES-NCD-138 ~520 gal). Any leak or spill would be collected on the floor of the area where the treatment is taking place and drained to VES-NCD-123 (~3800 gal) or VES-NCD-129 (~520 gal) where the leak would be detected.

Tank monitoring is achieved via level instrumentation, data readings, and level alarms. High-level alarm set points for VES-NCD-123 and VES-NCD-129 allow sufficient reserve head capacity for unexpected additions and secondary containment needs. In addition, whenever permitted areas are used VES-NCD-123 and/or VES-NCD-129 fluid level instrumentation is inspected to ensure adequate head capacity exists for the treatment activity to take place.

**D-1a(3)(d) Control of Run-on [IDAPA 58.01.05.012 and 58.01.05.008; 40 CFR 270.15(a)(4) and 264.175(b)(4)]**

Treatment in the soak tanks will occur in rooms within a completely enclosed, self-supporting structure that is designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the individual rooms. Building entry floors are elevated abovegrade by several feet. The CPP-659 Level 1 floors are at an elevation of about 4,917 ft, with the surrounding grade at elevations varying from 4,914 ft to below 4,913 ft near the bottom end of the south ramp up into the truck bay. This elevation difference of 3 to 4 ft prevents run-on from entering the building. Thus, the soak tank treatment areas in CPP-659 will not be susceptible to run-on.

**D-1a(3)(e) Removal of Liquids from Containment System [IDAPA 58.01.05.012 and 58.01.05.008; 40 CFR 270.15(a)(5) and 264.175(b)(5)]**

The valves on the drain lines from the decon cell and the decon cubicles will be open during debris treatment in soak tanks in these areas. The steam spray booth has no drain valve. The drain lines from the decon cell and decon cubicles are routed to VES-NCD-123 or -129 (normally -123). The drain line from the steam spray booth is routed to -123. Thus, any liquid wastes spilled or leaked in these processing areas will be detected and collected in VES-NCD-123 or -129.

See the following drawings for details on the trenches, drains, and piping used to remove liquids from the decon cell (134621), the decon cubicles (132464 and 133446), and (384870).

## D-1b. Containers without Free Liquids

### D-1b(1) Test for Free Liquids [IDAPA 58.01.05.012; 40 CFR 270.15(b)(1)]

Wastes to be stored in the container storage areas in the FDP cell and CPP-659/-1659 will be verified to not contain free liquids prior to acceptance. This verification may be done in one of three ways: (1) visual examination of the waste, (2) testing by means of the paint filter liquids test (*SW-846* Method 9095), or (3) process knowledge of the waste.

The following process information assures no free liquids are in the FDP HEPA filters. The FDP dissolver off-gas system contained a series of fine mesh demisters, which trapped collected condensate from the vented air before it passed through the HEPA filters. The air was then subjected to a heating element, which raised the temperature to approximately 65°C and drove off the remaining moisture before it entered the filter. During the years that the FDP was operated, periodic inspections of the HEPA filter housing were conducted during filter change out to look for any signs of corrosion caused by moisture. These inspections have never shown evidence of corrosion. The cell off-gas system also has a series of demisters and a preheater.

The following process information assures no free liquids are associated with the NWCF HEPA filters. Liquid droplets of scrub solution and dissolved solids are removed in a de-entrainment separator and a mist eliminator. Process off-gas then passes through an adsorber superheater to ensure the off-gas temperature is above the dewpoint before the off-gas enters ruthenium absorbers. Prior to passing through the final HEPA filters, the off-gas passes through a mist collector and heater to prevent condensation of water vapor in the HEPA filter housings. Vessel off-gas (air from sparging, purging, and jet operations) joins the process off-gas just prior to the mist collector.

**D-1b(2) Description of Containers [IDAPA 58.01.05.008; 40 CFR 264.171 and 264.172]**

Various containers may be used to store acceptable waste types within the designated storage areas of CPP-659/-1659 and the FDP cell. If a container holding hazardous and/or mixed waste or debris is not in good condition, the waste will be transferred into a container that is in good condition. The containers will be compatible with the waste stored. Table D-2 contains examples of acceptable package types, including their construction materials, dimensions, usable volumes, and other specifications.

**D-1b(3) Container Management Practices [IDAPA 58.01.05.008; 40 CFR 264.173]**

Containers will be kept closed during storage, except when waste is being added or removed (such as sampling/verification activities). Containers will not be opened, handled, or stored in a manner that may cause them to rupture or to leak. INTEC personnel follow established procedures designed to minimize the probability of waste container accidents.

Waste is generally received at INTEC by flatbed semitrailers or trucks from other areas on the INEEL. Waste movement between buildings within INTEC is generally by flatbed semitrailers, truck, or forklift.

Containers of hazardous and/or mixed waste and debris generated within the INTEC perimeter and stored in the container storage areas are subject to the marking/labeling requirements of INTEC, which are consistent with Resource Conservation and Recovery Act (RCRA) regulations.

Hazardous materials shipments, including hazardous waste shipments generated outside of the INTEC (or shipped from the INTEC), must comply with applicable U. S. Department of Energy (DOE), Department of Transportation (DOT), U. S. Environmental Protection Agency (EPA), and management and operations (M&O) contractor requirements, as specified in the INEEL/M&O contractor *Packaging and Transportation Manual* (current edition). Container loading and unloading activities are conducted according to established procedures for:

**Table D-2. Examples of acceptable waste containers for storage and transport.**

| Container | Size | Comments |
|---|---|---|
| Shipping transfer drum | 17 Gallons | Stainless steel |
| Container | 55 Gallons | With 80-mil poly liner. Equipped with lifting bail |
| Container | 35 Gallons | Without liner. Equipped with lifting bail |
| Container | 30 Gallons | Without liner |
| Container | 8 Gallons | Without liner |
| Container | 55 Gallons | Without liner |
| Container | 15 Gallons | |
| Container | 55 Gallons | Stainless steel |
| Container | 30 Gallons | Stainless steel |
| Container | 15 Gallons | Stainless steel |
| Composite drum | 55 Gallons | Steel, with 40-mil liner |
| Fiber drum | 55 Gallons | |
| Plywood box | Various | INEEL wooden waste boxes with 8-mil poly liner |
| Filter box | 25.5 x 25.5 x 49.5 in. | Series 300 stainless steel |
| Metal bin | 4 x 4 x 6 ft | INEEL B-25 metal waste bin |
| Metal bin | 4 x 4 x 6 ft | INEEL Modified B-25 metal waste bin |
| Approved poly bags | Various | 4 mil |
| TX4 box | Various | Mild steel welded construction with a gasketed bolted closure. Comes in various sizes from 74-92 in. long, 46-52 in. wide, and 36-57 in. high |

- Work Control
- Receipt, inspection, and documentation of waste
- Operations at CPP-659/-1659 and CPP-666
- Log keeping practices and checklists
- Radiation and contamination control
- Industrial and fire safety
- As low as reasonably achievable (ALARA) radiation protection program
- Truck waste container unloading
- General waste movement within INTEC.

INEEL personnel may include on the label any other information deemed helpful to waste storage and treatment operations. The information may indicate that the waste contains hazardous substances or that the waste requires special handling.

Operating personnel visually inspect the container storage areas in the FDP cell and CPP-659/-1659 by direct visual examination, by looking through the shielding windows, or by other means as necessary. Inspections are recorded and maintained at the facility for at least three years. Details on inspections are provided in Section F of this permit application.

**CPP-659/-1659**

Typically, waste may be brought into CPP-1659 through one of two doors, a telescoping door (14 x 20 ft) on the west end of Room 418 and a man door on the south end of CPP-1659.

Typically, waste may be brought into CPP-659 through one of two entrances: the vehicle entry way (417) or the unloading dock on the north side of the building into Room 428 (see Exhibit D-1). Waste is transferred to lower-level areas through hatches in Room 418 or 428. Overhead cranes are used to transfer the waste to the lower levels of CPP-659.

Waste enters from the north loading dock either through telescoping doors (14 ft x 16 ft) on the north end of Room 428 or through Room 427 via telescoping doors (10 x 14 ft) on the east, and into Room 428 through telescoping doors (8 x 10 ft) on the south of Room 427.

The vehicle entrance prevents direct exposure of the equipment decon room (418) and the low-level decon room (415) to the outside atmosphere. The outside door, an 18 ft x 20 ft-high roll-up door, opens to the south. The entrance area is 65 ft long and 26 ft wide, with a 4-ft walkway on either side. The floor is of Type 304 1/4-in. stainless steel and is recessed 4 in. below the walkways. The floor slopes from the outer door to prevent spills from moving outside of the controlled area. A 12 x 1-1/2 x 1-1/2 ft trench with a removable stainless-steel grating drains the area to the holdup tank, VES-NCD-123. See the photograph package for a picture of the vehicle entrance. See Exhibit D-1 for waste transfer pathways.

Once in the vehicle entrance, items can be transferred through 10-ft wide x 22-ft high sliding doors or a man door into the low-level decon room (415) or the vehicle can be moved into the truck bay in the equipment decon room (418) through an 18-ft wide x 20-ft high roll-up door. Normally, before either transfer is made, the outer door is closed to ensure proper ventilation flow. However, if the size of the load is unusually large, both inner and outer doors may be opened briefly to allow the load to enter the building. Once the load is transported completely within the building, the outer door will be closed. Waste transfers within Rooms 416 and 417 are made by hand, by forklift, or by a 3-ton monorail hoist. A hoist runs nearly the entire length of the vehicle entry area and into Room 415. See the photograph package for a picture of the truck bay.

Free air transfers of unshielded items with high radiation levels may be made from Room 418 directly into Room 308/309, Room 306, or Rooms 421 and 422 (decon rooms). An overhead bridge crane services Room 418, including the truck bay area, for loading and unloading large items. Another crane is used to lower waste into the 200 level, via Room 428. Smaller items may be hand carried or moved by stainless-steel carts or hand trucks.

Items from the NWCF Calciner Area may be transferred directly into the Decon Area as follows. Hazardous and/or mixed waste and debris from the calciner cells can be moved through the transfer room

(419). The transfer room is a 16 x 26 ft area connecting Rooms 428 and 418. Telescoping doors, 12 ft wide x 14 ft high, on the east and west ends of Room 419 are used to control ventilation and potential airborne contamination. During transfer, only one door is open at a time. Bridge cranes in Rooms 428 and 418 do not overlap. Items to be moved are set on a transfer cart in the calciner area with the calciner overhead bridge crane and moved with an appropriate vehicle through Room 419 into Room 418. The decon area bridge crane may lower items into Room 308/309, or Room 306 through removable roof hatches. Forklifts may also be used to move wastes inside Room 418.

Access to Rooms 308 and 309 is through hatches using a crane or through a personnel access door on the second level (entry way 307). The concrete hatches can be removed by the decon area bridge crane and items lowered into the rooms.

Within Room 418, containers may be hand carried through personnel doors or moved by forklift, pallet lifter, overhead crane, etc. Carts or hand trucks may be used to move hazardous and/or mixed waste and debris inside the facility. The forklift, pallet lifter, and overhead crane(s) will be maintained in accordance with current procedures for equipment maintenance and control.

Container storage will involve a stacking arrangement of no more than three containers high and no more than two containers wide in all container storage areas of CPP-659/-1659. An adequate aisle space will be maintained between containers. An adequate aisle space will be maintained between rows of containers. Exceptions to these rules are in Room 205.

Room 205, the hot sump tank removal and access cell, may contain hazardous and/or mixed waste and debris, such as containerized HEPA filters. HEPA filters stored in Room 205 will be transferred to Room 309 for treatment in the HFLS. The storage configuration in Room 205 is protective of human health and the environment. The radiation level for the HEPA filters stored in Room 205 is >50 rem/hr on contact.

The wastes/waste containers will be segregated within the CPP-659/-1659 container storage areas according to the following criteria:

- Flammability/Ignitability. No flammables or ignitables will be allowed in the storage areas.
- Compatibility. Wastes will be evaluated for compatibility according to waste compatibility groups and concentration of constituents. Incompatible wastes and materials will be kept separate. The compatibility requirements of 40 CFR 264, Appendix V, are the standard for determining compatibility (although these requirements do not take into account concentration of constituents).

**FDP Cell**

The HEPA filters currently in storage in the FDP cell are segregated according to their generation source. Most of these filters are from the FDP dissolver off-gas system, located inside the main FDP cell. Others are from the FDP dissolver off-gas system, located outside the main FDP cell.

During the dissolution process, two stages of HEPA filtration were used for off-gas cleanup as part of the dissolver off-gas system. The first stage of HEPA filtration was located inside the main FDP cell. The in-cell dissolver off-gas system filter bank contained two filters (one operational and one backup) for each of the three dissolver trains.

The second stage of dissolver off-gas system HEPA filtration was located in the process off-gas room (206) outside the main FDP cell. The out-of-cell filter bank also contained two filters for each of the three dissolver trains.

In addition, the FDP cell off-gas system, which continues to operate, contains HEPA filters. The cell off-gas HEPA filter bank is located outside the main FDP cell at the -31'- 0" level.

In-cell filters and out-of-cell filters are currently stored in 35- and 55-gal drums. The FDP process is no longer operated, so no more filters will be generated from the dissolver off-gas system.

In the FDP cell, containers are currently stored on grating at the -13'- 0" level under interim status. Containers will be stored on grating at the 0'- 0" level, also, although none are currently stored there. Exhibit D-4 depicts the two container storage areas at the -13'- 0" level of the FDP cell. Exhibit D-5 depicts the container storage area located at the 0'- 0" level of the FDP cell. See Drawings 149885 and 149886 in the drawing package for details on the grating.

In the FDP cell, containers are currently stored on grating at the -13'- 0" level under interim status. Containers will be stored on grating at the 0'- 0" level also. The requirement for adequate aisle space is for the movement of emergency equipment in the storage area. No emergency equipment will be used in the FDP cell. No liquids will be stored or introduced in the FDP cell and the containers will not be exposed to any other factors that may induce deterioration. Therefore, aisle space will be kept at a minimum to allow for the maximum of area for waste storage. Inspections from the shielded windows will be adequate to detect deterioration.

Wastes are transferred in and out of the FDP cell remotely by means of cranes and hoists. A 30-ton crane located at the +28'- 0" level can be used to transfer equipment in or out of the cell, via the crane maintenance area. The cell is equipped with a 7.5-ton bridge crane, which travels the full length of the FDP cell. This bridge also has an auxiliary hoist with a capacity of 5.0 tons. Also, an electromechanical in-cell manipulator, mounted on the trolley of the bridge crane, can be used to handle wastes. This manipulator has a wrist, shoulder, elbow, and telescoping tube. Also mounted on the trolley is a 2-ton auxiliary hoist and a television camera reel. The cell is additionally equipped with 16 master slave manipulators at the 0'- 0" level and 12 at the -13'- 0" level. These are located along the perimeter walls of the cell and have a hand lift capacity of 100 lb.

Since waste movement within the FDP cell is not a routine operation, equipment serviceability may come into question. Therefore, prior to movement of waste, the operators must check the preventative maintenance tag to ensure the equipment is usable. If the tag is out-of-date, preventative maintenance must be performed on the equipment prior to use.

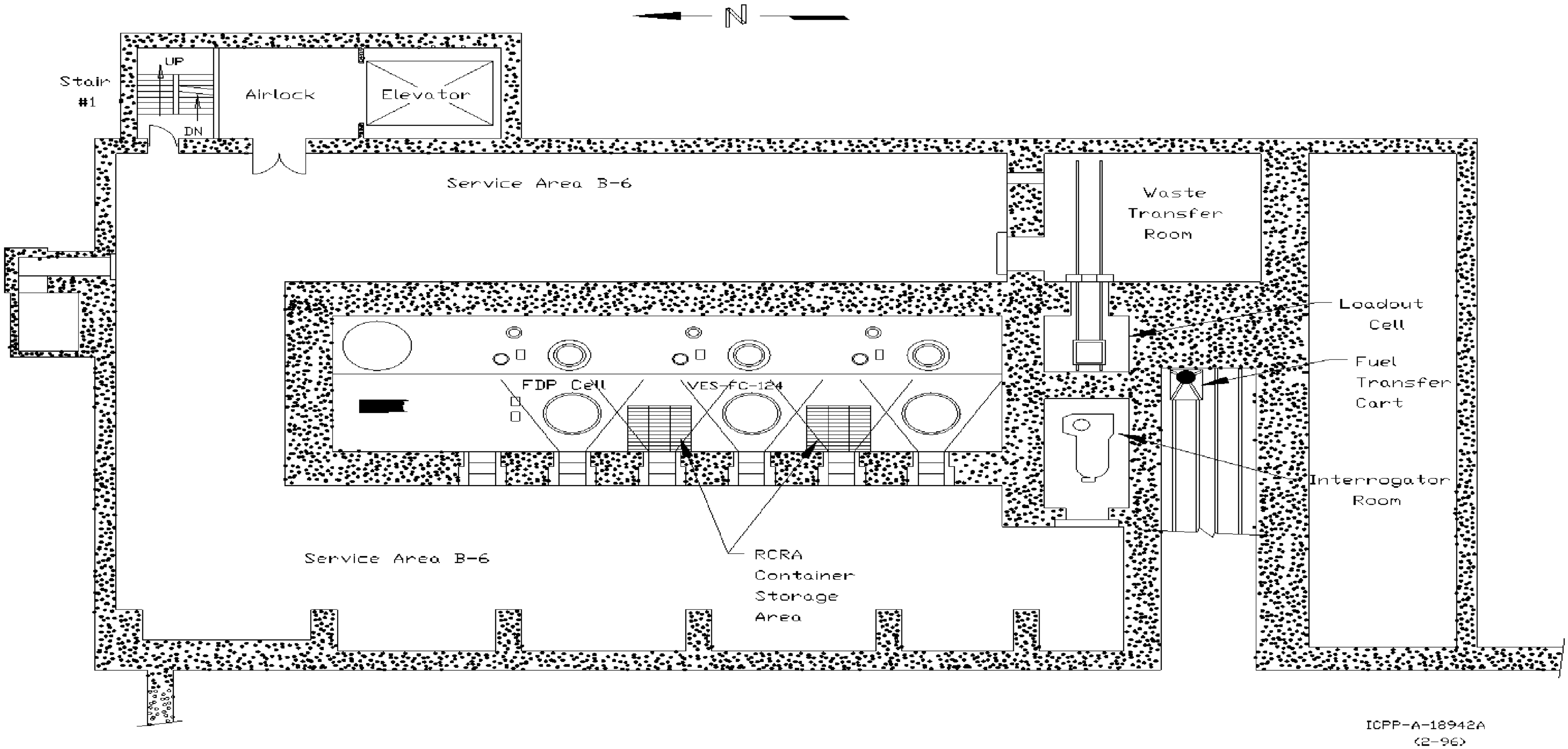



**Exhibit D-4. Container storage area at the -13' -0" level of the FDP cell.**

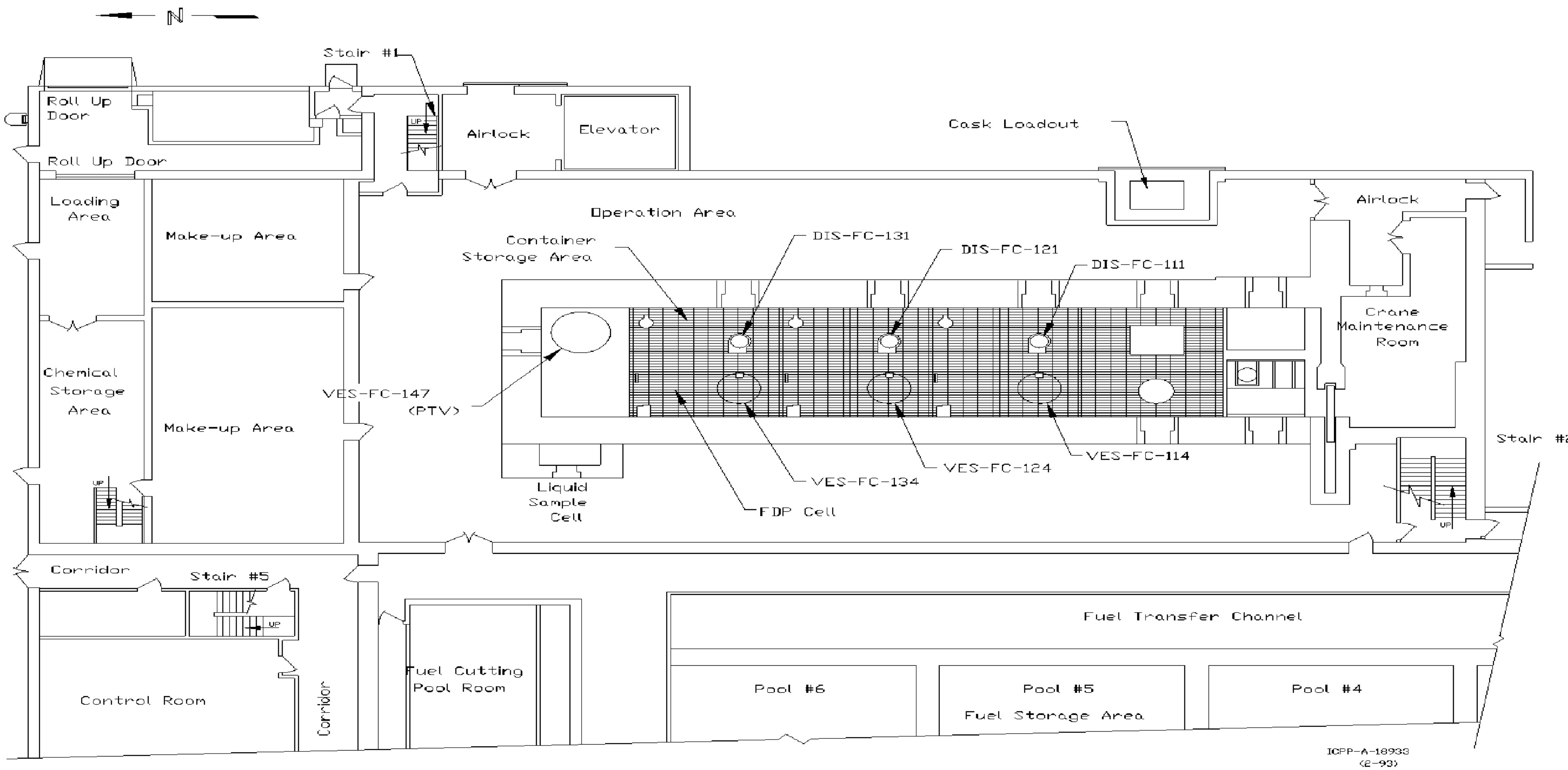



**Exhibit D-5. Container storage area at the -0' -0" level of the FDP cell.**

Waste containers are normally transferred into and out of the FDP cell through the waste loadout system. The waste transfer pathway is shown in Exhibit D-6. Waste containers are brought into the FDP cell by essentially reversing the removal steps described below. The waste containers are removed from the FDP cell in a shielded waste transfer box, which is stored in the waste transfer room at the -13'- 0" level of the FDP area. The waste transfer box holds one 55-gal drum at a time, or two 35-gal containers, or one wooden box. The waste containers are removed for transfer to the HFLS or another unit according to the following procedure.

First, the shielded waste transfer box is transferred, using the cable-driven waste transfer cart, from the waste transfer room to the waste loadout cell, also at the -13'- 0" level of the FDP area. The cart and shielded waste transfer box are positioned directly under the loadout cell hatch cover, which is located in the floor at the 0'- 0" level of the FDP cell, and the hatch is removed by the in-cell crane. Finally, the hazardous waste container is lowered by crane into the shielded waste transfer box below.

The waste transfer cart returns the shielded waste transfer box containing the waste container to the waste transfer room, where the shielded waste transfer box lid is placed on the box. The box is positioned directly in line with the waste transfer room hatch cover (PLUG-FA-941) and 15-ton overhead monorail hoist (HST-FA-901), and the box is lifted from the room with the hoist and placed on a flatbed truck for transport within the INTEC.

Drawing 142423 represents the shielded waste transfer box that is used to transport the containers within the FDP cell area. Drawing 142404 gives details on the hatch covers for the waste loadout cell and waste transfer room.

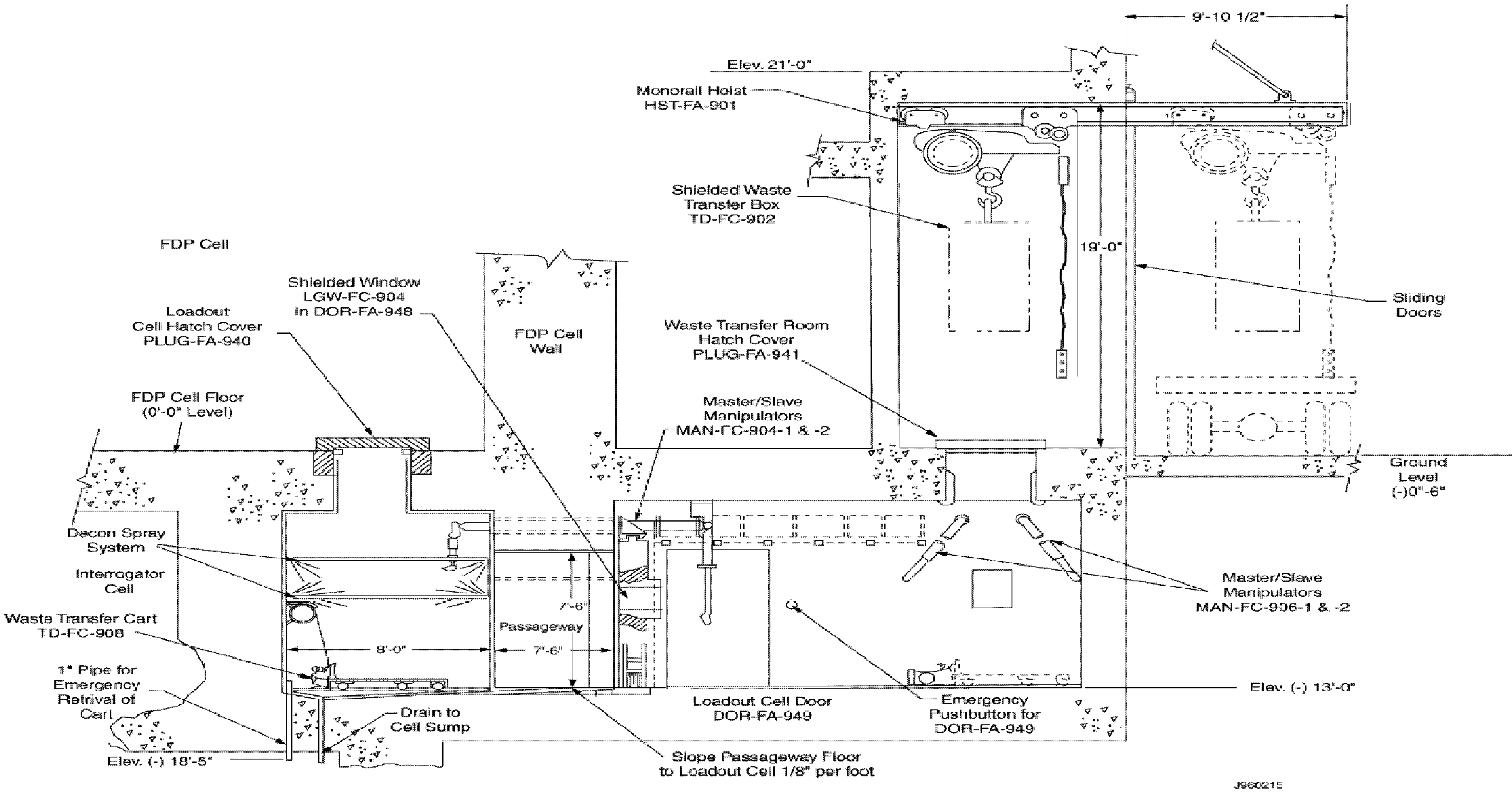



**Exhibit D-6. FDP cell waste transfer pathway.**

The following equations illustrate the typical load/ft$^2$ for each type of waste container currently in storage in the FDP cell container storage area. The combined load of the waste containers in the FDP cell will not exceed 500 lb/ft$^2$, which is the maximum loading for the grating in the FDP cell.

Load/ft$^2$ = Total Weight ÷ Area of Container

17-gal Stainless-Steel Container:

Area of container base = 2.13 ft$^2$

Total weight = 150 lb/container + 40 lb (filters, for example) = 190 lb

Load/ft$^2$ = 190 lb ÷ 2.13 ft$^2$ = 89.2 lb/ft$^2$.

35-gal Carbon Steel Drum:

Area of container base = 2.18 ft$^2$

Total weight = 20 lb/drum + 52 lb (filters, for example) = 72 lb

Load/ft$^2$ = 72 lb ÷ 2.18 ft$^2$ = 33 lb/ft$^2$.

55-gal Carbon Steel Drum:

Area of drum base = 3.14 ft$^2$

Total weight = 30 lb/drum + 170 lb (filters, for example) = 200 lb

Load/ft$^2$ = 200 lb ÷ 3.14 ft$^2$ = 63.7 lb/ft$^2$.

Wooden Box Container:

Area of box base = 9 ft$^2$

Total weight = 60 lb/box + 25 lb (filters, for example) = 85 lb

Load/ft$^2$ = 85 lb ÷ 9 ft$^2$ = 9.4 lb/ft$^2$.

## D-1b(4) Container Storage Area Drainage [IDAPA 58.01.05.012 and 58.01.05.008; 40 CFR 270.15(b)(2) and 264.175(c)]

### CPP-659/-1659 Container Storage Areas

The containment systems in the CPP-659/-1659 container storage areas are designed and operated to collect and remove liquids resulting from leaks or spills from processes. The floors are sloped toward drains that lead to area liquid accumulation tanks: the decon area holdup tank (VES-NCD-123), the decon area collection tank (VES-NCD-129), the fluoride hot sump tank (VES-NCC-119), and the non-fluoride hot sump tank (VES-NCC-122). Liquids accumulated in these tanks are used as feed for the NWCF processes, the Process Equipment Waste Evaporator (PEWE), or the Tank Farm Facility (TFF).

VES-NCD-123 and VES-NCD-129 are described later in this application. VES-NCC-119 and VES-NCC-122 are interim status multipurpose tanks. They are part of the secondary containment for the calcining side of the building, waste tanks for the High Level Liquid Waste Evaporator (HLLWE), overflow protection for equipment associated with the HLLWE and calcining operations, and a draining point for the sample station when sampling other tanks in the building. VES-NCC-119 and VES-NCC-122 will be permitted with the HLLWE. Therefore, VES-NCC-119 and VES-NCC-122 will not be part of this application.

### FDP Cell

The containment system in the FDP cell was designed and operated to drain and remove liquids resulting from leaks or spills from process and cell equipment. The floor at the (-)27' 0" level is constructed of 3-ft thick concrete lined with 300 Series stainless steel. The floor slopes toward the northwest corner of the cell, where liquids would be collected in a sump with an internal diameter of 5 in. and a depth of 18 in. Exhibit D-7 illustrates the (-)27' 0" level of the FDP cell. All sources of liquid from process and cell equipment have been isolated and containers with free liquids will not be stored in the FDP cell, eliminating the potential for any free liquids to accumulate. (Note: The tanks in the cell, formerly used for processing spent nuclear fuel, have been emptied of any process residues and have been verified to not contain hazardous constituents.)

General information on the floodplain determination and prevention of run-on is located in Section B-3(b) of Volume 3 of the INEEL RCRA Part B Permit Application. Run-on to CPP-659 and the FDP Cell is specifically addressed in Attachment 6 of this permit.

**D-2. Tank Systems**

Tank systems addressed in this permit application are the HFLS, the sinks, the ultrasonic cleaner, and the holdup and collection tanks.

Debris items may be sized in the debris treatment areas in order to fit the items into treatment units. Examples of sizing are cutting of pipe or manual disassembly of valves.

Sizing will not reduce the size of debris to less than 60 mm. Sizing will not be used to circumvent the debris treatment standard for evaluation of a clean surface.

For information applicable to all these units regarding the vent scrubbing system and heating, ventilation, and air conditioning systems, see Appendix D-2; for information on the makeup of treatment solutions, see Appendix D-3.

**D-2a. Existing Tank Systems**

Existing tank systems (as defined at 40 CFR 260.10) addressed in this permit application are the sinks, ultrasonic cleaner, and the holdup and collection tanks.

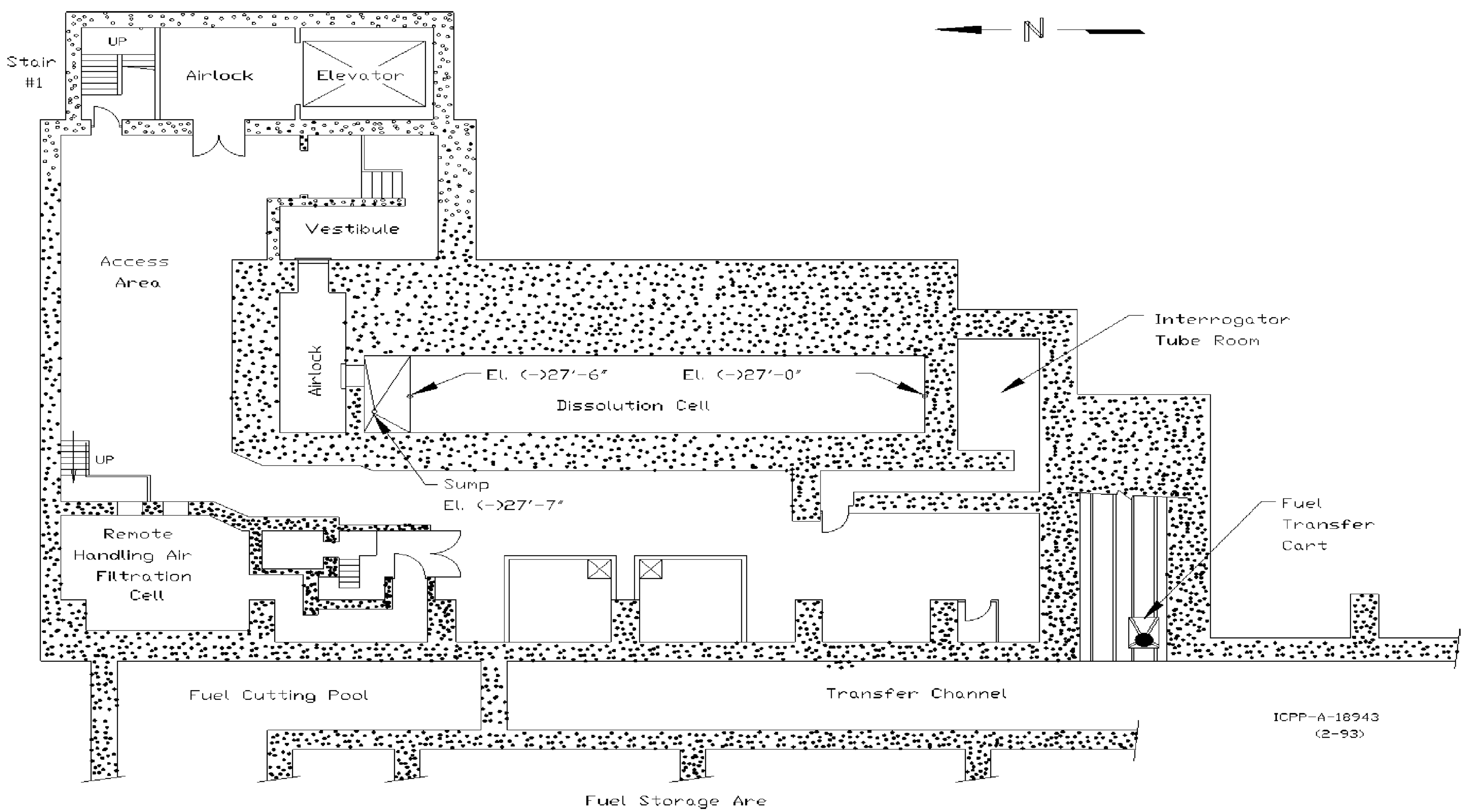



**Exhibit D-7. FDP cell floor ( -27' 0" elevation).**

## Sinks

### Small Sink

The small sink (SH-NCD-934), located in the low-level decon room (415), is a stainless-steel sink set in a slightly recessed counter within a hood. Utilities are available within the hood. The sink drains to the decon holdup tank (VES-NCD-123) through a 1 ½-in. drain line (PLAD-2640). On the left inner wall are stainless-steel lab-type fittings, two for chemical solutions (one from each makeup tank), one for water/steam, and one for plant air. A valve for each extends through the front left side of the hood.

The small sink is used for hands-on treatment of small items such as piping and small valves. Treatment solutions can be fed to the sink through the permanent fittings, via either chemical makeup tank VES-NCD-127, or VES-NCD-128. Smaller amounts of treatment solutions can be made up outside the tank and placed into the sink, or solutions can be made up in the sink itself. Items can be scrubbed, left to soak, or sparged with air or steam. Air emissions are controlled by a hood that vents to the vent air scrubber system.

### Large Sink

The large sink (SH-NCD-933), also located in the low-level decon room (415), is similar to the small sink, except for size and location of utilities. The large sink is long enough for pipe sections, large valves, or other long items, or a combination. The unit contains two sash windows, divided by a 5 ½-in. wide support in the center.

Steam and air are fed directly into the bottom of the tank in two ½-in. sparge pipes, 8 ft long. The air sparge pipe runs along the front of the sink bottom; the steam sparge line runs along the back of the sink bottom. The two chemical solution outlets are located on the right side near the bottom, as is the inlet for water. Items can be scrubbed, left to soak, or heated with a steam sparge line. The sink drains to VES-NCD-123 through 1 ½"-PLAD-2641. Air emissions are controlled by a hood that vents to the vent air scrubber system.

Small stainless-steel buckets/containers ($\leq$10 gal) may be used within either the small or the large sink for treatment of smaller debris items.

Ultrasonic Cleaner

Ultrasonic cleaning involves the use of high-frequency mechanical vibrations in a liquid to produce a strong cleaning action at solid/liquid interfaces. A device called a transducer is used to convert electrical energy to mechanical vibration at the transducer's surface. These vibrations cause the liquid to circulate, and the alternating pressure waves produce bubbles. This process is known as cavitation.

These bubbles rapidly implode, producing a concentrated shock wave with a vigorous scrubbing action. This vigorous agitation enhances cleaning above that obtained by other mechanical liquid agitation methods.

The tank of ultrasonic cleaner UC-NCD-921 is made of heavy-duty stainless steel and fitted with an acoustic lid. UC-NCD-921 is located in the low-level decon room (415). Items are generally cleaned in a basket (with appropriate size mesh) to allow the cavitation to work on all sides of the item. Items can be directly cleaned in the stainless-steel tank if detergents are used; if caustic or acidic solutions are needed, a polypropylene inner tank can be lowered into the tank and bolted around the top edge. Solutions in the inner tank are heated through the polypropylene wall by hot water in the outer tank. The outer tank solution is heated only when it is recirculating. Because the recirculation pump will shut off before the inner tank's solution is as hot as the water in the outer tank, the water must be recirculated several times to raise the inner tank's temperature. A thermometer is used to measure temperature in the inner tank.

The outer tank can be fed water directly. Treatment solutions (from either makeup tank) are fed to the outer or inner tank through flexible hoses that can be connected to quick-release-type fittings on the left of the cleaner hood. A water connection is also available to feed water to the inner tank through a fill hose. The inner and outer tanks must be filled simultaneously, to avoid splitting or cracking of the inner tank. When the inner tank is used, gas bubbles forming under the bottom of the tank during the de-gassing heating process must be removed by pressing the bottom of the flexible tank with a suitable object such as the end of one of the fill hoses.

Cavitation must be performed with the tank filled to just below the overflow outlet, and the level in the inner and outer tanks must be within 6 in. of each other to protect the polypropylene tank from splitting. The power input to the transducers can be varied to adjust for maximum cleaning efficiency under a variety of conditions. The generator cabinet, located in the supply air plenum room, contains generators and a transformer. Most small materials, except wood, can be treated in the ultrasonic cleaner.

A hood assembly over the cleaner is connected to the vent air scrubber system to wash the air stream (when using nitric acid) before it is discharged to the calciner exhaust tunnel. The ultrasonic cleaner drains to VES-NCD-123 through 1 ½"-PLAD-2643.

**Holdup and Collection Tanks**

Liquid treatment solutions from the treatment systems addressed in this permit application are discharged to and stored in the decon area holdup tank (VES-NCD-123) or the decon area collection tank (VES-NCD-129). Occasionally, solutions will be pH adjusted in these tanks to prepare the solutions for processing destinations. The holdup and collection tanks will be (and are currently) used not only for the collection of liquid hazardous waste from RCRA treatment activities, but also for collection of liquid waste solutions generated during decontamination of radioactive, nonhazardous items.

VES-NCD-123 is a horizontal, cylindrical tank on two saddle supports. It is located in the decon holdup tank cell, Room 219. VES-NCD-129 is a vertical, cylindrical tank mounted on four support legs. It is located in the decon collection tank and pump cell, Room 203. Both tanks are located on the third level in the middle of CPP-659. Associated tank equipment and piping are also located at this level.

### D-2a(1) Assessment of Existing Tank System's Integrity [IDAPA 58.01.05.008 and 58.01.05.012; 40 CFR 264.191 and 270.16(a)]

A written assessment, reviewed and certified by an independent, qualified, registered professional engineer (PE), has been done on the structural integrity and suitability of each existing tank system (the sinks, ultrasonic cleaner, and the holdup and collection tanks) for handling waste. This written assessment was provided as Appendix D-4 of the permit application.

### D-2a(2) External Corrosion Protection [IDAPA 58.01.05.008 and 58.01.05.012; 40 CFR 264.191(b)(3) and 270.16(e)]

Corrosion protection for the existing tank systems addressed in this permit application is provided by materials of construction and corrosion allowances. Materials of construction were selected based on suitability for process service and compatibility with decontamination solutions. Appendix D-5 of the permit application contained details on the physical properties and chemical resistance data for 300 Series stainless steel.

#### Sinks

Both the small and large sinks have Series 300 stainless-steel exterior faces on the units, Series 300 stainless-steel interiors, and 16-gauge stainless-steel sinks. The cabinets of both have an acid-resistant, baked enamel finish and stainless-steel bottom, and their treatment solution valves and hose connections are also constructed of stainless steel.

#### Ultrasonic Cleaner

The tank and cabinet of the UC-NCD-921 ultrasonic cleaner is of Series 300 stainless steel. The unit's hood is also constructed of stainless steel. Also, the unit has a removable polypropylene tank insert for use with caustic solutions.

#### Holdup and Collection Tanks

The holdup tank (VES-NCD-123) and the collection tank (VES-NCD-129) are both constructed of Series 300 stainless steel.

### D-2b. New Tank Systems

One new tank system (as defined at 40 CFR 260.10) is addressed in this permit: the HFLS.

The HFLS, located in the filter handling cell (309), is designed to treat spent HEPA filters by leaching the hazardous waste contaminants from the filters using a nitric acid solution. The time, temperature limits, and chemical concentrations for the HFLS were determined by pilot plant tests and optimization studies.

Once a filter has been brought into the filter handling cell, it is placed into a filter basket on the filter handling table. Then the filter medium is inspected for any damage or degradation. The filter medium may be breached, as directed by supervision, if the filter was taken out of service because of restricted air flow. If the filter media shows signs of degradation or damage, so as to allow the penetration of leaching liquid, it need not be breached. Breaching is accomplished by raising and lowering the filter breaching tool several times so that the filter medium is punctured across the face of the filter. The basket and filter are transferred into the leaching tank, VES-NCD-141 (see Drawing 444389). The leaching tank lid is placed on top of the leaching tank, and the leaching cycles begin. These operations are all performed with the use of the above-mentioned remote handling equipment.

A minimum of three leaching cycles and two rinse water cycles are performed on each filter. The leaching tank is filled with nitric acid solution from the decontamination makeup tank(s) until the filter is completely submerged. This level is indicated on the control panel by a signal from the appropriate point level indicator, and can be visually monitored also. The acid temperature is then raised by using a steam sparge and measuring the temperature with a thermocouple in the tank. The temperature is displayed on the control panel in the operating corridor. When the required temperature is reached, an air sparge is applied in order to agitate the leaching solution. The filter is leached for a minimum of 15 minutes, and the leaching solution is drained into a floor drain[1] through a drain basket. The drain basket is designed to prevent clogging of the drain by trapping any loose filter media that may have separated from the filter and filter basket during leaching.

[1] All tank components which provide drainage of leaching and/or rinsing solutions are piped directly to the floor drain via the drain basket. The floor drain is doubly contained.

Following the required leaching cycles, the rinse water cycles are applied. The rinse water cycles are equivalent to the leaching cycles, except that water, instead of acid, is used and the water is not heated.

After the final rinse water cycle, the filter basket is removed from the leaching tank and placed back onto the filter handling table. The filter handling table is designed with a grated top to allow the filters to drip dry and a drip pan underneath it to contain any drips during this transfer and dripping stage. The drip pan is sloped to drain into the floor drain via a drain basket.

After drip drying, the filter basket is transferred into the drying tank, VES-NCD-142 (see Drawing 444389). The drying tank is designed to receive heated air at the bottom of the tank, sending it through the filter and out a vent at the top of the tank as described in Section D-2(d).

When the filter has been dried, the filter basket is removed from the drying tank. The leached filter and basket are removed from the filter handling cell and prepared for packaging for disposal. (See the photograph package for a picture of the HFLS equipment.)

HEPA filters to be treated can also be stored in Room 309 during treatment process shutdowns or during maintenance to the remote handling equipment.

### D-2b(1) Assessment of New Tank System's Integrity [IDAPA 58.01.05.008 and 58.01.05.012; 40 CFR 264.192 and 270.16(a)]

An assessment of the HFLS tank system has been completed by an independent, qualified, registered PE to determine that the foundation, structural support, seams, connections, and pressure controls for the tanks are adequately designed. The tank assessment was included as Appendix D-6 in the permit application. Table D-3 summarizes the design parameters of these tanks.

**Table D-3. NWCF HFLS tank design parameters.**

| Parameter | VES-NCD-141 | VES-NCD-142 |
|---|---|---|
| Tank Design Pressure | 0.5 psig internal<br>0.5 psig external | 0.5 psig internal<br>0.5 psig external |
| Tank Operating Pressure | Atmospheric | Atmospheric |
| Tank Design Temperature | 250EF | 500EF |
| Seismic | UBC Zone IIB | UBC Zone IIB |
| Location | Indoor | Indoor |

The HFLS tanks are designed in accordance with the following codes and standards:

**American National Standards Institute (ANSI)**

| | |
|---|---|
| ANSI B16.5 | Steel Pipe Flanges and Flanged Fittings |
| ANSI B16.9 | Wrought Steel Buttwelding Fittings |
| ANSI B36.19 | Stainless-Steel Pipe |
| ANSI B31.3 | Chemical Plant and Petroleum Refinery Piping |

**American Society of Mechanical Engineers (ASME)**

| | |
|---|---|
| ASME | Boiler and Pressure Vessel Code Section II, Material Specifications |
| ASME | Boiler and Pressure Vessel Cold Section V, Nondestructive Examination |
| ASME | Boiler and Pressure Vessel Code Section VIII, Div. 1, Pressure Vessels, Appendix 13, Vessels of Noncircular Cross Section |
| ASME | Boiler and Pressure Vessel Code Section IX Welding and Brazing Qualifications |

**American Society for Nondestructive Testing (ASNT)**

| | |
|---|---|
| SNT-TC-1A | Personnel Qualification and Certification in Nondestructive Testing |

**American Society for Testing and Materials (ASTM)**

| | |
|---|---|
| ASTM A167 | Stainless and Heat Resisting Chromium Nickel Steel Plate, Sheet, and Strip |
| ASTM A240 | Heat Resisting Chromium and Chromium Nickel Stainless-Steel Plate, Sheet, and Strip for Pressure Vessels |
| ASTM A276 | Stainless Bars and Shapes |
| ASTM A312 | Seamless and Welded Austenitic Stainless-Steel Pipe |
| ASTM A403 | Wrought Austenitic Stainless-Steel Fittings |
| ASTM A479 | Stainless-Steel Bars and Shapes for Use in Boilers and Other Pressure Vessels |

**American Welding Society (AWS)**

| | |
|---|---|
| AWS A5.4 | Corrosion Resisting Chromium and Chromium Nickel Steel Covered Welding Electrodes |
| AWS A5.9 | Corrosion Resisting Chromium and Chromium Nickel Steel Bare and Composite Metal Cored and Stranded Welding Electrodes and Welding Rods |

**Uniform Building Code (UBC)**

| | |
|---|---|
| UBC-91 | Uniform Building Code, Section 2330 Earthquake Regulations |

### D-2b(2) External Corrosion Protection [IDAPA 58.01.05.008 and 58.01.05.012; 40 CFR 264.192(f) and 270.16(e)]

Corrosion protection for the HFLS is provided by materials of construction and corrosion allowances. Materials of construction for the HFLS tanks (VES-NCD-141 and -142) were selected based on their acid resistance, corrosion control, and chemical compatibility. VES-NCD-141 and -142, the ancillary equipment, and the secondary containment are constructed of 300 Series stainless steel. 300 Series stainless steel is known for its excellent corrosion resistance to nitric acid. Appendix D-5 of the permit application contained details on the physical properties and chemical resistance data for 300 Series stainless steel.

### D-2b(3) Description of Tank System Installation and Testing Plans and Procedures [IDAPA 58.01.05.008 and 58.01.05.012; 40 CFR 264.192(b)(e) and 270.16(f)]

A description of the tank system installation and testing plans and procedures is included as part of a PE assessment of the HFLS. This assessment was included as Appendix D-7 of the permit application. This assessment certified that the HFLS has sufficient structural integrity and is acceptable for the treatment of hazardous waste.

### D-2c. Dimensions and Capacity of Each Tank [IDAPA 58.01.05.012; 40 CFR 270.16(b)]

#### HEPA Filter Leaching System

The leaching tank and the drying tank are located within the filter handling cell (309). The leaching tank, VES-NCD-141, is a 300 Series stainless steel, rectangular-shaped tank with the following inside dimensions: 2 ft 11 in. by 2 ft 5 in. by 2 ft 2 in. (L x W x H). However, in order to facilitate draining the tank, the base is sloped on the bottom, adding an additional 4 in. to the height of the tank. The capacity of the leaching tank is approximately 120 gal.

The drying tank, VES-NCD-142, is a 300 Series stainless-steel, rectangular-shaped tank with the following inside dimensions: 2 ft 11 in. by 2 ft 5 in. by 1 ft 4 in. (L x W x H). The capacity of the drying tank is approximately 70 gal.

**Sinks**

The sink of SH-NCD-934 is 18 x 20 x 18 in. deep. The sink's capacity is about 28 gal. The overall dimensions of the unit (including hood) are 4 x 3 x 10 ft.

The sink of SH-NCD-933 is 119 x 24 x 19 in. deep. The sink's capacity is about 234gal. The overall dimensions of the unit (including hood) are 12 x 3 x 10 ft.

**Ultrasonic Cleaner**

The tank of ultrasonic cleaner UC-NCD-921 is 26 x 26 x 27 in. deep, and has a capacity of approximately 79 gal. The overall dimensions of the unit (excluding hood) are 49 x 36 x 44 in.

**Holdup and Collection Tanks**

The inside diameter of the holdup tank (VES-NCD-123) is 7.5 ft and its tangent-to-tangent length is 9 ft. Drawing 132797 shows the tank's dimensions. Its capacity is 3,800 gal.

The inside diameter of the collection tank (VES-NCD-129) is 4 ft and its tangent-to-tangent length is 5 ft 6 in. Drawing 132799 shows the tank's dimensions. Its capacity is 530 gal.

## D-2d. Description of Feed Systems, Safety Cutoffs, Bypass Systems, and Pressure Controls [IDAPA 58.01.05.012; 40 CFR 270.16(c)]

**HEPA Filter Leaching System**

**Feed Systems**. Decontamination technicians transfer the HEPA filters into and out of the filter handling cell by hand and/or by using a combination of cranes, manipulators, and filter handling tools. Additional influents to the HFLS include steam, water, air, and allowable decontamination solutions from the chemical makeup system. Solution volumes are controlled by; adding predetermined volumes of liquids, level indicators on the tanks, and by visual observation. Decontamination technicians transfer the solutions by pump and manually operated valves.

**Safety Cutoffs**. An air heater is used to heat the air to the drying tank. The air heater is designed to shut off when the air exceeds maximum temperature, indicating insufficient air flow or heater malfunction. Personnel can detect this system upset at the heater control panel during their system inspections. Other devices used to alert decontamination technicians of process operations are; low liquid level alarms, high liquid level alarms, and temperature indicators.

**Bypass Systems**. There are no bypass systems associated with the HFLS. The process stops when the system is shut down.

**Pressure Controls**. The leaching and drying tanks are each provided with a 2-in. vacuum line that removes hazardous fumes and vapors. These lines discharge into the decontamination cell main exhaust ductwork. The exhaust is then routed through two separate banks of HEPA filters and controlled by two independent blowers and control dampers. In addition, the two tanks are equipped with loose-fitting covers that allow excess gases to be released into the decontamination cell. These gases are then exhausted from the cell into the decontamination room main exhaust ductwork (see Appendix D-2).

## Sinks and Ultrasonic Cleaner

Debris items to be treated will be placed into these units manually or by means of cranes, hoists, or other equipment. There are no safety cutoffs or bypass systems. Both sinks and the ultrasonic cleaner have hoods through which air is vented to the scrubber system. The sinks and ultrasonic cleaner are also supplied with water, air, steam, and allowable decon chemicals from the decontamination solution makeup and feed system.

## Holdup and Collection Tanks

**Feed Systems**. The holdup tank (VES-NCD-123) and collection tank (VES-NCD-129) will receive liquid mixed waste from the debris treatment processes addressed in this permit application. Sources of mixed waste for VES-NCD-123 are as follows: the vent air scrubber system, floor drains throughout the Decon Area, the sinks, the ultrasonic cleaner, the steam spray booth, and VES-NCD-129 (overflow). According to valves selected, either VES-NCD-123 or -129 can receive waste from the remote decon cell, the filter handling cell, or the decon cubicles. In addition to mixed waste, both tanks will continue to receive radioactive, nonhazardous waste from decontamination processes in the Decon Area. VES-NCD-123 also would receive drainage from the steam spray booth, dry chemical mezzanine storage area (Room 502), solution from the overflow outlets on the makeup tank drains (Room 415), the makeup solution transfer pumps and transfer lines, and overflow from VES-NCD-129.

If pH adjustment is necessary in either VES-NCD-123 or -129, the treatment agent will be added through appropriate drain lines leading to the tank.

**Safety Cutoffs**. Level instrumentation on each tank measures the differential pressure between two pneumatic probes in the tank. There are high-level alarm set points for both VES-NCD-123 and -129.

**Bypass Systems**. VES-NCD-129 has an overflow outlet, which drains solution to VES-NCD-123. Both VES-NCD-129 and VES-NCD-123 are fitted with high-level detection equipment and associated alarms. Receipt of an unexpected high-level alarm will prompt an investigation into the cause. If capacity is exceeded, VES-NCD-123 will overflow to the off-gas system. Liquids entering the off-gas system will alter the vacuum pressure within the system. An alarm will be activated when vacuum monitoring equipment within this system detects upset conditions. If the vacuum pressure in the off-gas system is completely disrupted, any vapors or fumes will remain contained within the ducting. Liquids will not cause appreciable deterioration of the system, due to the stainless steel construction of the ducting and the short duration of contact between liquids and the piping. If an overflow continues, it will eventually drain to the quench tank (VES-NCC-108), which also has a high-level alarm.

Either an investigation, caused by a high-level alarm in VES-NCD-129 or VES-NCD-123, indicating an overflow condition, or additional alarms received from the off-gas system and/or VES-NCC-108 will trigger a manual shutdown of all transfers to these tanks.

**Pressure Controls**. Both VES-NCD-123 and -129 are vented to the vent air scrubber system, and have temperature, density, level, and pressure instrumentation.

## D-2e. Diagrams of Piping, Instrumentation, and Process Flow [IDAPA 58.01.05.012; 40 CFR 270.16(d)]

The following drawings show mechanical flow in the Decon Area: 133443, 133444, 133446, 133447, and 133448. These are included in the drawing package in this permit application. Other drawings included are noted below.

### HEPA Filter Leaching System

Drawings 444389 and 444390 show piping, instrumentation, and process flow for the HFLS.

### Sinks

Drawing 133444 shows details about piping and process flow for the sinks.

### Ultrasonic Cleaner

Drawing 133444 shows details about piping and process flow for the ultrasonic cleaner.

### Holdup and Collection Tanks

The following drawings show piping, instrumentation, and process flow for the holdup tank (VES-NCD-123) and the collection tank (VES-NCD-129): 132797, 132799, 133447, and 133448. Exhibit D-8 is a simplified piping diagram for the treatment equipment/areas addressed in this permit application, including tank systems, that drain to VES-NCD-123 and -129.

## D-2f. Containment and Detection of Releases

### D-2f(1) Plans and Description of the Design, Construction, and Operation of the Secondary Containment System [IDAPA 58.01.05.012 and 58.01.05.008; 40 CFR 270.16(g) and 264.193]

#### D-2f(1)(a) Tank Age Determination [IDAPA 58.01.05.008; 40 CFR 264.193(a)]

**HEPA Filter Leaching System**

The HFLS tank system was installed in May 1995.

**Sinks**

Sinks SH-NCD-933 and -934 were placed in service in 1982.

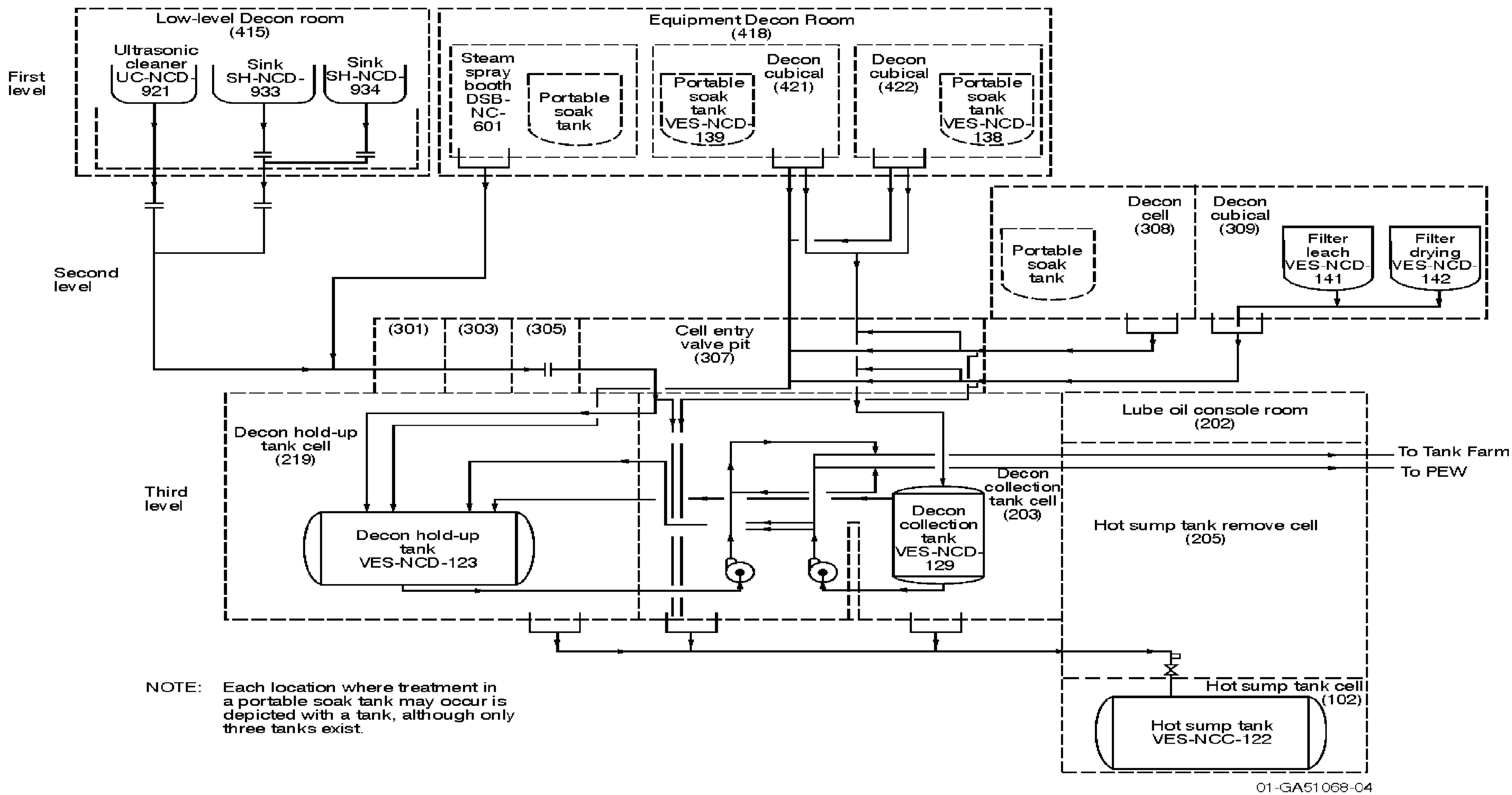



**Exhibit D-8. Simplified diagram for equipment/areas draining to the holdup and collection tanks.**

**Ultrasonic Cleaner**

Ultrasonic cleaner UC-NCD-921 was placed in service in 1982.

**Holdup and Collection Tanks**

The holdup and collection tanks were placed in service in 1982.

### D-2f(1)(b) Requirements for Secondary Containment and Leak Detection [IDAPA 58.01.05.012 and 58.01.05.008; 40 CFR 270.16(g) and 264.193]

The tanks of the tank systems addressed in this permit are located in cells or other rooms that are secondarily contained with stainless-steel-lined floors. These floors are sloped toward trenches/gutters and/or drains. The drains from the HFLS, sinks, and ultrasonic cleaner are routed to the holdup tank (VES-NCD-123) or the collection tank (VES-NCD-129). The drains from the rooms in which VES-NCD-123 and -129 are located are routed to the nonfluoride hot sump tank (VES-NCC-122).

The secondary containment systems for the tank systems are designed, installed, and operated to prevent any migration of waste or accumulated liquid to the environment. Materials of construction in these secondary containment systems are compatible with the wastes to be treated in the tank systems. The secondary containment systems have sufficient strength and thickness to prevent failure caused by pressure gradients, physical contact with the wastes, and stress of daily operations.

The secondary containment systems for these tank systems are designed and operated to drain, collect, and remove liquids resulting from leaks or spills. The systems have visual or instrumented leak detection systems designed and operated to detect failure of the primary containment.

The secondary containment systems are placed on a foundation or base that is capable of providing support, resisting pressure gradients above and below the system, and preventing failure due to settlement, compression, or uplift.

The matrix in Appendix D-1 defines the boundaries of primary and secondary containment for each treatment unit under various drain scenarios possible in CPP-659. See Section D-2f(1)(d) for a description of secondary containment and leak detection for equipment ancillary to these tank systems.

# HEPA Filter Leaching System

The filter handling cell has approximately 320 $ft^2$ (16 by 20 ft) of floor space and is about 19 ft high. The walls and ceiling are of 3-ft thick reinforced concrete. The walls are lined with 300 Series stainless-steel sheet, and the floor is covered with 300 Series stainless-steel plates. These stainless-steel liners serve as secondary containment.

The cell floor is sloped toward a trench located on the east side of the cell, running the length of the east wall from north to south. The trench is sloped southerly, toward a cell drain. All tank components that provide drainage of leaching or rinsing solutions are piped directly to the floor drain. A spare drain is also situated in the trench. The drains are routed to the holdup tank (VES-NCD-123) or the collection tank (VES-NCD-129).

An oil-filled, ion-shielding window provides viewing of the interior of the cell from the operating corridor. The physical arrangement of the HFLS within the filter handling cell is shown in Drawing 444390. The tanks and ancillary equipment are positioned so that they are visible from the filter handling cell shielding window and are accessible. This window is used to perform daily inspections for leak detection when the system is in use (see Section F).

Because the valve on the drain line from the filter handling cell is kept open during HFLS treatment, any leaks or spills from the HFLS tanks would flow to VES-NCD-123 or -129. Unexpected increases in the liquid level in VES-NCD-123 or -129 could indicate leaks from the HFLS tanks. During filter leaching activities, the level in the leach tank is observed by visual inspection. The receiving tanks VES-NCD-123 and -129 have level instruments with alarms that monitor the rate of increase based on operational activities. Unexpected sudden raises in liquid levels are investigated to determine if primary containment has failed or operational activities will account for the increase. After the assessment has been conducted, appropriate corrective action is taken. These procedures and equipment ensure detection of accumulated liquid in the secondary containment system or failure of the primary structure within 24 hours.

## Sinks

Sinks SH-NCD-933 and -934 are located along the east wall of the low level decon room (Room 415) within a curbed area (see drawing 092723). This area has approximately 178.8 $ft^2$ (see Appendix D-4) of floor space. The area is completely floored with 1/16-in. Series 300 stainless steel, and a 6-in. stainless-steel-lined curb and wall encircles the floor. The walls above the curb are concrete or metal siding with nonporous epoxy paint. Both sinks are piped directly to drain lines in order to drain used solutions. The curbed and isolated area within Room 415 used for treatment in sinks is neither sloped nor is the area equipped with a floor drain. Outside the curbed and isolated area, the floor for Room 415 is sloped and equipped with a floor drain to VES-NCD-123 or -129. The sinks and their drain lines will be visually inspected for leaks or spills during treatment activities. Any leaks or spills would be identified visually and removed manually.

## Ultrasonic Cleaner

Ultrasonic cleaner UC-NCD-921 is located along the east wall of the low-level decon room, (Room 415) within a curbed area (see Drawing 092723). This area has approximately 178.8 $ft^2$ (see Appendix D-4) of floor space. The area is completely floored with 1/16-in. Series 300 stainless steel, and a 6-in. stainless-steel-lined curb and wall encircles the floor. The walls above the curb are concrete or metal siding with nonporous epoxy paint.

Used treatment solutions drain directly from UC-NCD-921's stainless-steel tank through 1 ½-in. drain line PLAD-2643 to VES-NCD-123. Solutions in the inner polypropylene tank must be pumped out with a portable pump and solutions fed to PLAD-2643 through a connection on the line where it enters the floor. The curbed area within Room 415 used for treatment in sinks is neither sloped nor is the area equipped with a floor drain. The ultrasonic cleaner and its drain line will be visually inspected for leaks or spills during treatment activities. Any leaks or spills would be identified visually and removed manually.

## Holdup and Collection Tanks

**Holdup Tank**. The holdup tank (VES-NCD-123) is located in the decon holdup tank cell (Room 219). The floor and lower 6 in. of the walls are covered with 10-gauge, Series 300 stainless steel. This liner serves as secondary containment. The cell has a floor drain and 18-in. thick concrete cell walls.

The low point of the floor is 2 in. below the high point. The cell floor is sloped to a gutter along the south wall. The gutter slopes to a floor drain near the southwest corner of the cell.

The holdup tank cell's floor drain is piped through 3"-PLAD-4215 to the nonfluoride hot sump tank (VES-NCC-122). On this pipe is a valve, PL-122-5, that is normally closed, above VES-NC-122 (see Exhibit D-8). Also on this pipe is a liquid level sensor (LE-219). If approximately 10 gal of liquid accumulates in this pipe above PL-122-5, LE-219 will be actuated, which in turn sets off a Distributed Control System (DCS) alarm (L-NC-219C) in the NWCF control room. Receipt of an alarm requires operators to (1) inform supervision, (2) open Valve PL-122-5 to drain the pipe to VES-NCC-122, and (3) determine the source of the liquid. An alarm could be an indication that the holdup tank or that the floor of the steam spray booth is leaking. This leak detection system will ensure that leaked or spilled wastes are detected within 24 hours. Accumulated liquids in 3"-PLAD-4215 will be drained to VES-NCC-122 within 24 hours of detection.

Tank VES-NCC-122 is addressed in NWCF RCRA documents, and is not discussed further in this permit application.

Personnel access to the decon holdup tank cell is gained via a doorway in the north wall which leads to the manipulator parking area (Room 218) and then to the level three corridor. Because of ALARA exposure concerns, visual inspections are limited to infrequent occasions during equipment maintenance and repair.

**Collection Tank**. The collection tank (VES-NCD-129) is located in the decon collection tank cell (Room 203). The floor and lower 6 in. of the 18-in. thick, densely reinforced, concrete walls in this cell are lined with 10-gauge, Series 300 stainless steel. This liner serves as secondary containment. The walls above the stainless-steel wainscot are coated with three coats of epoxy coating. The floor is sloped to a gutter along the north side of the cell. The low point of the floor is 2 in. below the high point. The gutter slopes to a drain at the northwest corner of the cell. The floor drain is piped through 3"-PLAD-4215 to VES-NCC-122. This pipe is equipped with a normally closed valve and level sensor in order to detect leaks, as described above for the holdup tank. An alarm could be an indication that the collection tank is leaking. This leak detection system will ensure that leaked or spilled wastes are detected within 24 hours. Accumulated liquids in 3"-PLAD-4215 will be drained to VES-NCC-122 within 24 hours of detection.

Tank access in the decon collection tank cell is gained through the blocked-in opening in the east wall. This wall adjoins the hot sump tank removal and access cell. Because of ALARA exposure concerns, visual inspections are limited to infrequent occasions during equipment maintenance and repair.

### D-2f(1)(c) Requirements for External Liner, Vault, Double-walled Tank or Equivalent Device [IDAPA 58.01.05.008 and 58.01.05.012; 40 CFR 264.193(d) and 270.16(g)]

All of the tanks addressed in this permit are located within CPP-659. The roof area of CPP-659 has been designed and constructed to provide adequate protection from precipitation. Typically, the roof consists of a solid deck (either concrete or sheet metal) overlain by two layers of solid insulating material. Covering the insulating material is a layer of gravel to provide protection against the elements.

In CPP-659, belowgrade walls and floors and abovegrade floors where hazardous and/ or mixed waste storage and debris storage and treatment will occur are constructed of steel-reinforced concrete. The abovegrade structure is constructed of a combination of a structural steel post and beam frame and steel-reinforced concrete. The abovegrade wall material is either steel-reinforced concrete, or exterior steel sheathing over 6 in. of insulation with steel sheathing on the interior of the wall. Therefore, the secondary containment systems of the tanks addressed in this permit application will not encounter any run-on or infiltration of precipitation.

The secondary containment systems for the tanks addressed in this permit surround their tanks completely. All the tanks drain to either the holdup tank (VES-NCD-123) or the collection tank (VES-NCD-129), which are both located in stainless-steel-lined cells. These systems prevent the migration of wastes to the environment.

The floors and liners for each tank system (HFLS, sinks, ultrasonic cleaner, and holdup and collection tanks) have been certified free of cracks or gaps, as documented in leak test reports.

#### HEPA Filter Leaching System

The secondary containment system for the HFLS, including VES-NCD-141 and -142, consists of a stainless-steel-lined floor, stainless-steel-lined walls, and the decon holdup or collection tank, depending on valve position. The lining is constructed of Series 300 stainless steel.

The holdup tank VES-NCD-123 (~3800 gallons) and the collection tank VES-NCD-129 (~530 gallons) each provide secondary containment to contain greater than 100% capacity of the largest tank, VES-NCD-141 (120 gal), within its boundary.

## Sinks

The area within the low-level decon room, in which the sinks are located, is separated from the rest of the room by a stainless-steel wall that forms part of the containment. The rest of the containment is provided by a stainless-steel floor liner and a 6-in. curb on the outer wall.

Calculations showing that the external liner system in the low-level decon room is capable of containing 100% of the capacity of the largest tank within its boundary (sink SH-NCD-933) were presented in Appendix D-4 of the permit application.

## Ultrasonic Cleaner

The area within the low-level decon room, in which ultrasonic cleaner UC-NCD-921 is located, is separated from the rest of the room by a stainless-steel wall that forms part of the containment. The rest of the containment is provided by a stainless-steel floor liner and a 6-in. curb on the outer wall.

Calculations showing that the external liner system in the low-level decon room and VES-NCC-123 or VES-NCD-129 are capable of containing 100% of the capacity of the largest tank within its boundary (sink SH-NCD-933) were presented in Appendix D-4 of the permit application.

## Holdup and Collection Tanks

**Holdup Tank**. The holdup tank (VES-NCD-123) is located within the holdup tank cell (Room 219). The secondary containment system consists of a 10-gauge, Series 300 stainless-steel external liner. This cell is 14 ft 4 in. by 13 ft 9 in. and has a 6-in.-high stainless-steel wainscot. A sloped, 1-ft-deep gutter runs along the south wall. Calculations showing that the liner system in Room 219 (and adjacent areas) is capable of containing 100% of the capacity of the largest tank within its boundary (VES-NCD-123) were presented in Appendix D-4 of the permit application.

**Collection Tank**. The collection tank (VES-NCD-129) is located in the collection tank cell (Room 203). This cell is 10 ft by 7 ft 10 in. and has a 6-in.-high stainless-steel wainscot. The secondary containment system consists of a 10-gauge, Series 300 stainless-steel external liner. A sloped, 1-ft-deep gutter runs along the north wall to a drain. Calculations showing that the liner system in Room 203 (and the adjacent pump cell) is capable of containing 100% of the largest tank within its boundary (VES-NCD-129) were presented in Appendix D-4 of the permit application.

### D-2f(1)(d) Secondary Containment and Leak Detection Requirements for Ancillary Equipment [IDAPA 58.01.05.008; 40 CFR 264.193(f)]

Most of the ancillary equipment for the tank systems addressed in this permit are contained within the same cells/rooms as the tanks. All these cells/rooms are secondarily contained, as detailed in Section D-2f(1)(b). Waste lines outside of these cells/rooms for these tank systems are doubly encased in stainless-steel pipe.

**HFLS, Sinks, and Ultrasonic Cleaner**

The out-of-cell/room piping that drains the HFLS, the sinks, and the ultrasonic cleaner is doubly encased until it reaches the holdup tank cell. Here, the outer encasement of piping (pipe secondary containment) is diverted to the cell gutter, while the primary piping continues on to the holdup tank and the collection tank. As explained in Section D-2f(1)(b), the holdup tank cell gutter drains through 3"-PLAD-4215 to hot sump tank VES-NCC-122. 3"-PLAD-4215 has a normally closed valve (PL-122-5) and a level sensor (LE-219), above VES-NCC-122, to detect leaks. Activation of LE-219 could indicate leakage of the primary drain piping from the HFLS, sinks, or ultrasonic cleaner into the outer encasement of piping.

The information presented in Section D-2f(1)(b) is applicable to the tank ancillary equipment located within the processing cells/areas.

**Holdup and Collection Tanks**

Pumps for transferring liquids from the holdup and collection tanks to waste processing destinations are located in the pump cell, Room 203. Pump P-NCD-223 serves the holdup tank (VES-NCD-123); Pump P-NCD-229 serves the collection tank (VES-NCD-129). The pump cell is a 5 x 10-ft area separated from the collection tank cell by a shielding wall. The secondary containment system in the pump cell consists of a 10-gauge, Series 300 stainless-steel external liner. A sloped gutter runs along the north wall to a drain. The drain is piped into the same line that drains VES-NCD-123 and -129 (3"-PLAD-4215). As explained in Section D-2f(1)(b), this line has a level sensor. Activation of the sensor could indicate a leak from the pump cell.

Doubly encased piping from VES-NCD-123 and -129 exits CPP-659 en route to processing destinations (the PEWE and the TFF). This piping outside 659 is addressed in RCRA interim status documents for the PEWE and the TFF, and is not addressed in this permit.

### D-2f(2) Requirements for Tank Systems Until Secondary Containment Is Implemented [IDAPA 58.01.05.008; 40 CFR 264.193(I)]

Every tank system addressed in this permit has secondary containment and does not have nonenterable underground tanks; therefore, this section is not applicable.

### D-2g. Controls and Practices to Prevent Spills and Overflows [IDAPA 58.01.05.012 and 58.01.05.008; 40 CFR 270.16(I) and 264.194(b)]

Personnel monitor the treatment processes for the tank systems addressed in this permit. System instrumentation and alarms are monitored to ensure that no errors have been made or process changes have occurred. Administrative controls are implemented to ensure that the processes are performed safely. Transfers of treatment solutions and treatment residuals are governed by written procedures.

To prevent hazardous waste spills and overflows, decontamination technicians and waste operators visually inspect or monitor instrumentation for tanks, piping, valves, and secondary containment devices on a daily basis when these tank systems are in use. For more information regarding inspections and monitoring, refer to Attachment 4 of this permit.

### HEPA Filter Leaching System

The HFLS is designed with a remote control panel for control and overfill protection. The HFLS remote control panel is located in the operating corridor next to the filter handling cell shielding window. The control panel consists of instruments and alarms to detect system upsets or operator error. Personnel record tank levels and compare them to previous readings to determine if any spills or leaks have occurred. If a monitor reading is found to be outside of its operating range, the operator checks the operability of the instruments, the status of the process, and any liquid in the secondary containment. The leaching tank also is designed with an overflow line that transfers any solution overflow to the drain line. See the photograph package for a picture of the HFLS control panel.

### Sinks

As required by procedure, the liquid level in the sink being operated is periodically checked and adjusted if needed.

### Ultrasonic Cleaner

As required by procedure, the liquid level in the ultrasonic cleaner is periodically checked and adjusted if needed. In addition, the top of the tank has overflow outlets to prevent overflowing of the stainless-steel tank.

### Holdup and Collection Tanks

Before any solutions are generated by the debris treatment processes, personnel verify that the selected waste tank (VES-NCD-123 or -129) has adequate volume to hold the generated liquid. Personnel also check for ongoing activities that could cause the liquid level in VES-NCD-123 or -129 to increase. Tank liquid level recorders and alarms on Control Panel CP-NCD-989 in the low-level decon room provide the liquid levels in these tanks and a warning of high level with alarms. High-level alarm set points for VES-NCD-123 and VES-NCD-129 allow sufficient reserve head capacity for unexpected additions and secondary containment needs. At a minimum, a volume equal to 100% capacity of the largest tank within the boundary (538 gal) will be maintained as reserve capacity.

Activities are coordinated to allow control of levels in VES-NCD-123 or -129. All activities are controlled by approved procedures. Liquids generated by these activities are tracked using balance sheets. The volume of liquid that is used in the process is balanced against the volume that is sent to VES-NCD-123 or -129. Any discrepancies are identified, reconciled, and recorded on the balance sheet and in the operating log.

VES-NCD-129 has an overflow outlet, which drains solution to VES-NCD-123. Both VES-NCD-129 and VES-NCD-123 are fitted with high-level detection equipment and associated alarms. Receipt of an unexpected high-level alarm will prompt an investigation into the cause. If capacity is exceeded, VES-NCD-123 will overflow to the off-gas system. Liquids entering the off-gas system will alter the vacuum pressure within the system. An alarm will be activated when vacuum monitoring equipment within this system detects upset conditions. If the vacuum pressure in the off-gas system is completely disrupted, any vapors or fumes will remain contained within the ducting. Liquids will not cause appreciable deterioration of the system, due to the stainless steel construction of the ducting and the short duration of contact between liquids and the piping. If an overflow continues, it will eventually drain to the quench tank (VES-NCC-108), which also has a high-level alarm.

Either an investigation, caused by a high-level alarm in VES-NCD-129 or VES-NCD-123, indicating an overflow condition or additional alarms received from the off-gas system and/or VES-NCC-108 will trigger a manual shutdown of all transfers to these tanks. See Section D-2f(1)(b) for a description of the leak detection and removal system for this drain pipe.

The control systems for the holdup and collection tanks are illustrated in Drawings 133447 and 133448.

## D-3. Waste Piles

### D-3a. List of Wastes [IDAPA 58.01.05.012; 40 CFR 270.18(a)]

Pending treatment, spent HEPA filters and other debris may be stored in piles in the following rooms in CPP-659:

| | |
|---|---|
| Filter Cell/Valve Cubicle | Room 216 |
| Manipulator Parking and Maintenance Area | Room 218 |
| Equipment Decontamination Storage Area | Room 306 |
| Decon Cell | Room 308 |
| Filter Handling Cell | Room 309 |
| Crane Maintenance and Transfer Area | Room 323 |
| Transfer Area | Room 326 |
| Shielded Storage Area | Room 416 |

See Exhibits D-1, D-2, and D-3 for locations of these rooms. The characteristics of these spent HEPA filters are described in Attachment 2, Section C of this permit.

### D-3b. Exemption from Liner and Groundwater Monitoring Requirements [IDAPA 58.01.05.012; 40 CFR 270.18(b)]

#### D-3b(1) Enclosed Piles [IDAPA 58.01.05.012 and 58.01.05.008; 40 CFR 270.18(b) and 264.251(b)]

An exemption is requested, per 40 CFR 264.251(b) from the requirements in 40 CFR 264 Subpart L, except as outlined in 40 CFR 264.256, 264.257, and 264.258(a). The requested waiver is included as Appendix D-8 located in Attachment 9.

## D-8. Miscellaneous Units [IDAPA 58.01.05.012 and 58.01.05.008; 40 CFR 270.23 and 264.601]

Four miscellaneous units are addressed in this permit: the two decon cubicles, the steam spray booth, and the decon cell.

## D-8a. Description of Miscellaneous Units [IDAPA 58.01.05.012; 40 CFR 270.23(a)(1) and (2)]

### Decon Cubicles

Within the decon cubicles, chemical extraction (e.g., scrubbing with water-based chemicals) or physical extraction (e.g., steam, high-pressure hot water, $CO_2$ blasting) treatments will be performed on mixed waste debris. Located in adjacent Rooms 421 and 422, the decon cubicles provide isolated areas for hands-on treatment of items with high potential for contamination spread within the Decon Area. The cubicles can also be used for treatment of debris in portable soak tanks [see Sections D-1a(1), D-1a(2), and D-1a(3)]. The roof hatch of each cubicle can be removed to lower larger items or cleaning equipment, such as a soak tank, into the cubicles; smaller items can be brought in by hand through the personnel access doors. The initial rinsing of smaller items, which may be necessary before they can be transferred to other areas for further debris treatment work, will often take place in the decon cubicles.

Each cubicle is about 12 x 16 ft. The walls are of high-density concrete with epoxy coating. The floors are lined with stainless steel. See Drawing 132464, included in the drawing package, for details on the decon cubicles.

The cell entry acts as an airlock for the two cubicles. Differential pressure indicators are located in the entry area for each cubicle. When a hatch is removed, a manual damper can be adjusted to increase cubicle air flow. Procedures are in place for maintaining proper air flow during hatch removal and for other decon cubicle operations. During hatch removals, constant air monitors or portable air sampling equipment may be used. If there is an upset in the ventilation system, air samples will be taken. Upon exiting the cubicle entry, personnel self-monitor for radioactivity.

Fittings in the cubicles provide access to water, air, treatment solution from either makeup tank (VES-NCD-127 or -128), and steam. Control valves for these utilities are located in each cubicle and in the entry corridor. Whenever an operator/decon technician is working in the cubicle, a second technician must be stationed in the cubicle entry. The operator/technician can observe the interior of the cubicle through a window in the cubicle door. A 5 x 2-ft work table, with a ring stand for a bucket, is attached to the wall opposite the door. Steam, water, and air are also available in the entry corridor for cleaning the area.

When debris treatment of a given waste stream has been completed, the walls, floor, drain trough, and the removable metal filter in the cubicle air duct are rinsed with water. The floor is sloped to the cubicle trough. The trough is sloped to a floor drain. The rinsate is drained to either VES-NCD-123 or -129.

**Steam Spray Booth**

The steam spray booth will be a confinement area for treatment of mixed waste debris by chemical extraction (e.g., scrubbing with water-based chemicals) or physical extraction (e.g., steam, high-pressure hot water, $CO_2$ blasting). Also within the booth, mixed waste debris will be treated by means of spalling/scarification in an integrated vacuum/scabbling system. A portable soak tank may occasionally be moved into the booth for debris treatment [see Sections D-1a(1), D-1a(2), and D-1a(3)]. The booth will also be used for staging of contaminated equipment prior to transfer to the decon cubicles or the decon cell. The steam spray booth measures 31.3 x 18.5 x 15.0 ft high (excluding the glove box).

The steam spray booth is a multipurpose, multimedia spray/blast booth. It has steam spray capabilities plus high-pressure hot water capability and an attached liquid abrasive spray glove box. The interior of the glove box is accessible through a door from inside the steam spray booth, through glove ports from the exterior, and through a pass through port/airlock on the south end of the glove box. The glove box process cabinet measures 4 x 4 x 8 ft long.

The walls of the steam spray booth are constructed from 18-gauge stainless-steel wall panels. The holes cut into the walls of the steam spray booth for the liquid abrasive spray glove box are reinforced with structural stainless-steel frames. See Section D-8b(2) for details on the containment system's materials of construction.

The liquid abrasive spray glove box is a stainless-steel sheet structure. The process cabinet consists of a Series 300 stainless-steel shell mounted on a stainless-steel framework. Glove box equipment are constructed of noncorrodible material.

The glove box provides the following treatment capabilities:

- Liquid abrasive spray blasting
- Pressurized hot water washing
- $CO_2$ blasting.

The steam spray booth was placed in service in 1988. The liquid abrasive spray glove box was placed into service in 1997.

The operating principle of liquid abrasive spray blasting is the bombardment of components or equipment with a high-volume recirculated flow of solid particles in water. The solid medium abrasive (for example, aluminum oxide, plastic beads, or glass beads) does the treatment work, but a cushion of water always exists between the component surface and the media particles. This prevents impregnation, surface damage, and excessive breakdown of the medium while removing the fixed contamination in the oxide layer.

The glove box's high-pressure hot water generator consists of a skid-mounted unit with a triplex pump. High pressure water will be pumped through an electrically operated heat exchanger. This water will be directed to a hand-held spray gun positioned within the glove box and booth.

The $CO_2$ blasting system treats debris by impinging solid $CO_2$ (dry ice) particles at high velocity onto the surface to be cleaned. The $CO_2$ removal mechanism operates by an "impact flushing" cleaning action. Upon impact, the particle penetrates to the underlying surface. As it strikes the surface, the particle breaks apart and creates a high-velocity flow of dry ice particles that blasts out from the point of impact in a fluid-like flow that lifts the coating or contaminant from underneath. This action removes the coating without damaging the substrate. By adjusting the particle parameters (size, hardness, velocity, and quantity), it is possible to clean a wide spectrum of surfaces.

The $CO_2$ particles are conveyed by air flow to the point of application, where they are accelerated to high velocity, using high-pressure air through a nozzle directed onto the surface to be treated. When the $CO_2$ particles are delivered to the blast nozzle, high-pressure air is injected in order to ensure adequate particle velocity for the blast cleaning process.

The integrated vacuum/scabbling equipment is portable, but is used mainly within the steam spray booth. The scabbling head is moved out of the booth during steam spray or high-pressure hot water treatments after it has been surveyed and deconned. The scabbling head is decontaminated to remove radiological contaminants by being wiped down or rinsed as necessary and then bagged with the hose. The scabbling vacuum system is operated from outside the booth. The integrated vacuum/scabbling equipment is stored within the decon area when it is not being used. The vacuum/scabbling equipment is constructed of stainless steel. The system is equipped with a pneumatically operated scabbler and needle gun. The scabbler and needle gun are both manually operated and have shrouds and vacuum hoses that collect the debris as it is being removed. The scabbler looks similar to a system that is used to wax floors and is designed to scabble concrete. The needle gun is a hand-held unit designed to remove contaminants from outside edges and inside corners of porous and nonporous materials. The needle gun has adjustable shrouds that conform to all surface types. Both the needle gun and the scabbler leave the surface that is being cleaned with a smooth and even profile. Both units have the capability of removing up to approximately 1/16 in. per pass on concrete surfaces. These units will also remove paint and oxide layers from porous and nonporous materials.

The dust and debris created by the scabbling equipment are captured by the shrouds covering the tool surface and then transported through a vacuum hose by a VAC PAC HEPA filtered vacuum and waste packaging system. The portable VAC PAC system has two stages of filters. The first stage of filters is located in the plenum; these are self-cleaning prefilters, cleaned by reverse-flow pulses of high-pressure air. The dust that is collected on the first stage prefilters is knocked off using the reverse-flow pulse. The resulting material is collected in a stainless-steel collection drum for disposal. The second stage of filters is located at the top of the VAC PAC system; these are HEPA filters. The debris and dust are transported to the VAC PAC system and deposited into standard 55- or 23-gal stainless-steel drums. The VAC PAC system has also been fitted with a drum ring, which will allow for the operator to place plastic bags inside the drums if the area to be treated is small. The VAC PAC system is about 4 x 4.3 x 6 ft (L x W x H).

The vacuum/scabbling system allows the operator to fill, seal, remove, and replace full drums/bags with empty drums or plastic bags under vacuum conditions, which eliminates the possibility of spreading contaminants during changing of waste drums/bags. The vacuum/scabbling system has a high-level indicator that is lowered into the drum/bag and automatically alarms at preset limits. The residuals from the spalling/scarification processes will be evaluated per the parameters and rationale identified in Section C, Tables C-1 and C-2. The material will then either be stored in permitted storage pending appropriate disposition or be packaged and sent to an appropriate facility for further treatment, as required.

Debris to be treated will be placed into the steam spray booth (including the liquid abrasive spray glove box) manually, or by means of cranes, hoists, forklifts, carts, or other equipment (or combinations thereof). All loading of waste into the glove box will be done manually.

**Decon Cell**

Within the decon cell, chemical extraction (e.g., treatment with water-based chemicals) or physical extraction (e.g., steam, high-pressure hot water, $CO_2$ blasting) treatments will be performed on mixed waste debris. The cell may also be used for treatment of debris in portable soak tanks [see Sections D-1a(1), D-1a(2), and D-1a(3)]. The roof hatches of the cell can be removed to lower larger items or cleaning equipment, such as a soak tank, into the cell; smaller items can be brought in by hand through the personnel access doors.

The decon cell is approximately 24 x 16 ft. The walls are of 3 ft thick, high-density concrete. The cell is entirely lined stainless steel, including the bottoms of the roof hatches.

The cell entry acts as an airlock for the cell. Differential pressure indicators are located in the entry area for the cell. When a hatch is removed, a manual damper can be adjusted to increase cell air flow. Procedures are in place for maintaining proper air flow during hatch removal and for other decon operations.

Fittings inside the cell provide access to water, air, treatment solutions from either makeup tank (VES-NCD-127 or -128), and steam. Control valves for these utilities are located outside the cell. The operator/technician can observe the interior of the cell through a window.

When debris treatment of a given waste stream has been completed, the appropriate areas of the walls and the floor drain trough in the cell are rinsed with water. The floor is sloped to the cell trough. The trough is sloped to a floor drain. The rinsate is drained to either VES-NCD-123 or -129.

If debris treatment is performed in a container, such as a portable soak tank, which is drained directly to the cell drain through a flex hose, then only the cell drain is rinsed.

### D-8b. Environmental Performance Standards for Miscellaneous Units [IDAPA 58.01.05.008 and 58.01.05.012; 40 CFR 264.601 and 270.23(c)]

Various types of mixed waste debris will be treated in the decon cubicles, the decon cell, and the steam spray booth. The decon cubicles, decon cell, and booth are located, designed, and operated in a manner to preclude the release of hazardous waste or hazardous constituents that may have adverse effects on human health or the environment. The cubicles are configured with numerous barriers (concrete walls and ceilings, concrete floors lined with stainless steel, epoxy paint layers, drain piping routed to collection tanks, and a ventilation system for confinement of hazardous materials) to prevent releases to the environment. The decon cell is configured with numerous barriers (concrete walls, ceilings, and floors lined with stainless steel, drain piping routed to collection tanks, and a ventilation system for confinement of hazardous materials) to prevent releases to the environment. The steam spray booth is configured with similar barriers, except that it is constructed of stainless steel and its floor and drain system are secondarily contained. Administrative/engineering controls for the cubicles, the decon cell, and the steam spray booth provide additional assurance that hazardous materials are not released to the environment.

No viable pathway exists for migration of hazardous waste or hazardous constituents from the mixed waste treated in the cubicles, the decon cell, or the steam spray booth to soil, ground water, and/or surface water.

A potential pathway for release of waste constituents is through the exhaust air of the decon cubicles, decon cell, and steam spray booth. Any release would be limited to the period during which debris is being actively treated. The minimization of release of hazardous constituents through the exhaust air system that potentially could have adverse effects on human health or the environment is accomplished by the following:

(1) The initial waste constituents in the debris waste are in de minimis or trace quantities. Attachment 2, Section C-2f of this permit states the basis upon which hazards associated with the debris and debris treatment have been determined.

(2) The treatment processes, primarily chemical liquid extraction, further contain the de minimis or trace constituents from release through the exhaust system to the environment. Treatment will contain the waste constituents in the liquid extraction solutions and, thus, only minute amounts of waste constituents can potentially escape the process.

(3) As a second stage of entrapment, any escaping waste constituents would then have to pass through two banks of HEPA filters. Although not specifically designed to trap organic constituents, HEPA filters would trap any particulate that may contain hazardous constituents.

**D-8b(1) Miscellaneous Unit Wastes [IDAPA 58.01.05.008; 40 CFR 264.601(a)(1), 264.601(b)(1), and 264.601(c)(1)]**

The wastes to be treated in the decon cubicles, decon cell, and steam spray booth are solid, manufactured objects exceeding a 60-mm particle size that are intended for disposal. The chemical characteristics of the wastes are described in Attachment 2, Section C of this permit.

The floors of the decon cubicles are lined with stainless steel, and the walls are concrete with epoxy coating. The floor, walls and ceiling of the decon cell are also lined with stainless steel. These materials are compatible with the wastes to be treated and the treatment solutions to be used. Solutions in the cubicles and decon cell are drained to either the collection tank (VES-NCD-129) or to the holdup tank (VES-NCD-123). The cells in which VES-NCD-123 and -129 are located are secondarily contained, as described in Attachment 1, Section D-2f(1)(b) of this permit.

For a discussion of the potential of the waste to react or evaporate to form gaseous, aerosol, or particulate products that enter the atmosphere, see Attachment 2, Section C-2f of this permit.

A negative pressure is maintained in the decon cubicles. The cell air is discharged to either the calciner exhaust tunnel or through the vent air scrubber system to the calciner exhaust tunnel. The cell air is washed in the vent air scrubber system, to remove acid fumes, whenever boiling acid is used in the decon cubicles. Normal exit for the ventilation air is through the exhaust tunnel to the calciner exhaust plenum. The ventilation air normally passes through a prefilter and two stages of HEPA filters and out the calciner exhaust stack. The heating, ventilation, and air conditioning (HVAC) system does not have a carbon absorption system to remove organics from the air; however, any organics associated with the debris materials to be treated in the decon cubicles will be a result of the contained in rule and as such will be in de minimis or nondetectable concentrations.

A negative pressure is maintained in the steam spray booth and discharges directly to the calciner exhaust tunnel. Normal exit for the ventilation air is through a prefilter and two stages of HEPA filters and out one of two NWCF building stacks. The HVAC system does not have a carbon absorption system to remove organics from the air; however, any organics associated with the debris materials to be treated in the steam spray booth will be a result of the contained in rule, and as such, will be in de minimis or nondetectable concentrations.

**D-8b(2) Containment System [IDAPA 58.01.05.008 and 58.01.05.012; 40 CFR 264.601(b)(2) and 270.23(a)(2)]**

**Decon Cubicles**

The decon cubicles are designed to prevent the spread of contamination during treatment activities. The floors of the cubicles are lined with stainless steel, and the walls are concrete with epoxy coating. In each cubicle the floor is sloped toward a drain gutter along the north wall. In each cubicle the gutter has two drain lines, with one leading to VES-NCD-129 and the other to VES-NCD-123. During treatment in the cubicles, the valve on the drain line leading to the selected tank is kept open, allowing solutions to drain to that tank. For details on the draining of portable soak tanks after treatment in the decon cubicles, see Attachment 1, Sections D-1a(1), D-1a(2), and D-1a(3) of this permit.

The drain piping between the decon cubicles and VES-NCD-123 and -129, which runs through the second level corridor (303) and the cell entry valve pit (307), is not doubly encased. Any leaks from either this piping in Room 303 or the decon cubicle floors would be visually detected on the concrete floor in the 303 corridor. The concrete floor in the 303 corridor is coated with an acid-resistant epoxy coating. The liquid would not make direct contact with the concrete. Any leaks from the drain piping in Room 307 would drain via Room 307's floor drain and the holdup tank cell drain toward the hot sump tank (VES-NCC-122), and would be detected by means of level sensor LE-219 [see Section D-2f(1)(b)]. In addition, this section of drain piping is inspected daily, when the cubicles are in use, for evidence of a leak.

For details on the drain piping between the decon cubicles and VES-NCD-123 and -129, see Drawing 133446. For details on inspections related to leak detection for the decon cubicles, see Attachment 4, Section F-2b(8) of this permit. For details on the secondary containment of tanks VES-NCD-123 and -129, see Attachment 1, Section D-2f(1)(b).

## Decon Cell

The decon cell is designed to prevent the spread of contamination during treatment activities. The floor, ceiling and walls are lined with stainless steel. The floor is sloped toward a drain gutter along the west wall. The cell gutter drain line can be valved to either VES-NCD-129 or to VES-NCD-123. Treatment can be done in portable soak tanks, allowing the treatment solution to be heated if necessary. During these types of treatment activities, the valve on the drain line leading to the selected tank is kept open, allowing solutions to drain to the selected tank. During other treatment activities in the cell, the valves on the drain lines are closed and treatment solution is heated with steam in the gutter. The heated treatment solution from the gutter is then jetted onto items (waste and materials for reuse) being treated in the cell. Upon completion of the treatment, one of the valves is opened and the solution is drained to the appropriated tank.

The drain piping from the decon/filter handling cells runs under the cell entry (room 307) through an encased line to the valve pit to either the waste collection cell (room 219) to VES-NCD-123 or to the hold up tank cell (room 203) to VES-NCD-129. Any leaks from the drain piping in the valve pit or pipe encasements would drain to the hold up tank cell drain and would be detected by means of level sensor LE-219 [see Section D-2f(1)(b)].

For details on the drain piping between the decon cell and VES-NCD-123 and -129, see Drawing 133446. For details on inspections related to leak detection for the decon cell, see Section F-2b(8) of this permit application. For details on the secondary containment of tanks VES-NCD-123 and -129, see Section D-2f(1)(b).

## Steam Spray Booth

The steam spray booth, including the liquid abrasive spray glove box, is located in the truck bay area of the equipment decon room, Room 418. This room has about 4,161 $ft^2$ (57 x 73 ft) of floor space. The floor of the equipment decon room is covered with 1/16-in. Series 300 stainless steel, except for the truck bay, which has a 1/4-in. stainless-steel floor. The walls are either concrete or steel girders with metal siding covered with a nonporous epoxy coating.

The steam spray booth measures 31.3 x 18.5 x 15.0 ft high (excluding the glove box). The booth has a 3/16-in. stainless-steel primary containment floor and a 1/4-in. stainless-steel secondary containment (original) floor. Drain lines are located between the primary floor and the secondary floor. The drain lines are secondarily contained by the original floor and the steam spray booth trench. Drainage from any secondary containment in the CPP-1659 trench, equipment decon room, truck bay trench, or the steam spray booth is collected in the low point of the steam spray booth trench, from which it drains into a 6-in. secondary containment drain system leading to the gutter in the decon holdup tank cell (Room 219). A liquid level sensor, LE-219, detects liquid in the holdup tank cell gutter drain pipe (3"-PLAD-4215), which could be an indication of a leak into the steam spray booth's secondary containment system.

The drain for the liquid abrasive spray glove box is tied directly into the drain to VES-NCD-123 from the steam spray booth's primary containment floor. The drain pipe secondary containment is provided by the Room 418 stainless-steel floor between the glove box and the booth wall. The steam spray booth floor provides secondary containment until the pipe penetrates the booth's floor connection into the drain to VES-NCD-123. Piping under the steam spray booth floor has the secondary containment provided by the trench, 6-in. piping encasement, and LE-219 leak detection. For the glove box shell, any leaks are retained by the stainless-steel floor of Room 418 or the floor of the steam spray booth.

The matrix in Appendix D-1 defines the boundaries of primary and secondary containment for each treatment unit under various drain scenarios possible in CPP-659.

**D-8b(3) Site Air Conditions [IDAPA 58.01.05.008 and 58.01.05.012; 40 CFR 264.601(c)(4) and (5), and 270.23(b)]**

The following paragraphs describe air conditions at the INEEL (source: *DOE Programmatic Spent Nuclear Fuel Management and INEEL Environmental Restoration and Waste Management Programs Final Environmental Impact Statement*, Volume 1, Appendix B).

## Climatology and Meteorology

The Eastern Snake River Plain climate exhibits low relative humidity, wide daily temperature swings, and large variations in annual precipitation. Average seasonal temperatures measured on the INEEL Site range from 18.8°F in winter, to 64.8°F in summer, with an annual average temperature of about 42°F. Temperature extremes range from a summertime maximum of 103°F to a wintertime minimum of -49°F. The annual average relative humidity is 50%, with monthly average maximum values ranging from 59% in July to 89% in February and December, and with monthly average minimum values ranging from 16% in June and July to 47% in January.

The INEEL Site is in the belt of prevailing westerlies; however, the mountain ranges bordering the Eastern Snake River Plain normally channel these winds into a southwest wind. Most off-Site locations experience the predominant southwest-northeast wind flow of the Eastern Snake River Plain, although subtle terrain features near some locations cause considerable variations from this flow regime. The annual average wind speed measured at the 20-ft level at the Central Facilities Area Weather Station is 7.5 mph. Monthly average values range from 5.1 mph in December, to 9.3 mph in April and May. The highest hourly average near-ground wind speed measured on-Site is 51 mph from the west-southwest, with a maximum instantaneous gust of 78 mph. The winds at the Test Area North monitoring station are predominantly from the north-northwest, whereas the winds from the other stations are predominantly from the southwest.

Air pollutant dispersion is a result of the processes of transport and diffusion of airborne contaminants in the atmosphere. Transport is the movement of a pollutant in the wind field, while diffusion refers to the process whereby turbulent eddies dilute a pollutant plume. The temperature gradient of the atmosphere (i.e., the change in temperature with altitude) can restrict or enhance the vertical diffusion of pollutants. Lapse rate conditions, which tend to enhance vertical diffusion, occur slightly less than 50% of the time. Conversely, thermal stratification or inversion conditions, which inhibit vertical diffusion, occur slightly more than 50% of the time. The height to which the pollutants can freely diffuse is the mixing depth, while the layer of air from the ground to the mixing depth is the mixed layer. Estimates of the monthly average depth of the mixed layer range from 1,312 ft in December, to 9,843 ft in July. With calm winds and mostly clear skies, nocturnal inversions begin forming after sunset and dissipate about 1 to 2 hours after sunrise. These inversions are often ground-based, meaning the atmospheric temperature increases with height from the ground.

Other than thunderstorms, severe weather is uncommon. Five funnel clouds (tornadoes not touching the ground) and no tornadoes were reported on the Site between 1950 and 1988. Visibility in the region is good because of the low moisture content of the air and minimal sources of visibility-reducing pollutants. From Craters of the Moon National Monument, the seasonal visual range is from 81 to 97 mi.

**Nonradiological Air Quality**

The INEEL is in the Eastern Idaho Intrastate Air Quality Control Region. Neither the INEEL nor any of the surrounding counties is designated as a nonattainment area for the National Ambient Air Quality Standards. Ambient air quality data monitored in the vicinity of the INEEL indicate that the Site is in compliance with applicable air quality standards.

The Clean Air Act contains requirements to prevent the deterioration of air quality in areas designated to be in attainment with the ambient air quality standards. These requirements are administered through a program that limits the increase in specific air pollutants above the levels that existed in what has been termed a baseline (or starting) year, which is 1977. The requirements specify maximum allowable ambient pollutant concentration increases or increments. They specify increment limits for pollutant level increases for the nation as a whole (Class II areas) and prescribe more stringent increment limits (as well as ceilings) for designated national resources, such as national forests, parks, and monuments (Class I areas). Three areas in the INEEL vicinity are Prevention of Significant Deterioration Class I ambient air quality areas: Craters of the Moon Wilderness Area, approximately 33 mi to the west-southwest; Yellowstone National Park, approximately 89 mi to the northeast; and Grand Teton National Park, approximately 90 mi to the east-northeast.

The DOE evaluates proposed new and modified sources of emissions at INEEL to determine the net emissions increase of all pollutants. The INEEL is considered a major source, because facility-wide emissions of specific regulated air contaminants exceed 250 tons/yr. Therefore, a Prevention of Significant Deterioration analysis must be performed for all significant emission increases of specified regulated pollutants. Debris treatment in the decon cubicles, decon cell, and the steam spray booth will not increase significant emissions of hazardous waste/constituents. Levels of significance for net emission increases range from very small quantities (less than 1 lb) for beryllium, up to 100 tons/yr for carbon monoxide. Their significance is dependent on the toxicity of the substance.

Ambient air quality standards for Idaho are the same as the National Ambient Air Quality Standards, but include total suspended particulate and fluorides. The Idaho Department of Environmental Quality also has ambient concentration limits for hazardous and toxic air pollutants. Table D-4 lists emission rates of hazardous/toxic air pollutants at the INEEL. The types and amounts of nonradioactive emissions from INEEL facilities and activities are similar to those from other industrial complexes that are the same size as the INEEL. Combustion sources such as boilers and emergency generators emit both criteria and toxic pollutants. Other sources include chemical processing operations, transportation, waste management activities, and research laboratories.

**D-8b(4) Prevention of Air Emissions [IDAPA 58.01.05.008 and 58.01.05.012; 40 CFR 264.601(c)(2) and 270.23(a)(2)]**

The decon cubicles are served by the NWCF HVAC system. Air exits each decon cubicle through an exhaust outlet to the vent air scrubber system or directly to the calciner vent tunnel. The decon cell vent air is sent to the vent air scrubber system when boiling acid is used. In the steam spray booth, ventilation air from the booth goes directly to the calciner exhaust air tunnel. Each exhaust air plenum is equipped with prefilters and two banks of HEPA filters in series.

The prefilters and HEPA filters remove approximately 99% of all particles in the exhaust air. A radiation detector alarms if the radiation level from the particles collected on the filters increases above a preset limit. From the plenums, the filtered exhaust air is ducted through one of two stacks to the atmosphere.

**Table D-4. Baseline annual average and maximum hourly emission rates of hazardous/toxic air pollutants at the INEEL.**

| Hazardous/Toxic Air Pollutants[a] | Annual Average(kg/yr) | Maximum Hourly (kg/hr) |
|---|---|---|
| Acetaldehyde | 31 | 0.39 |
| Ammonia | 1,600 | 3.4 |
| Arsenic | 4.2 | $9.0 \times 10^{-4}$ |
| Benzene | 370 | 16 |
| 1,3-Butadiene | 220 | 0.8 |
| Carbon tetrachloride | 28 | 0.08 |
| Chloroform | 1.9 | $5.5 \times 10^{-3}$ |
| Chromium – trivalent | 3.1 | $2.5 \times 10^{-3}$ |
| Chromium – hexavalent | 0.4 | $6.2 \times 10^{-4}$ |
| Cyclopentane | 350 | 0.58 |
| Dichloromethane | 620 | 0.29 |
| Formaldehyde | 960 | 8.9 |
| Hydrazine | 8.3 | $9.5 \times 10^{-4}$ |
| Hydrochloric acid | 1,500 | 0.34 |
| Mercury | 200 | 0.023 |
| Naphthalene | 16 | 2.2 |
| Nickel | 270 | 0.057 |
| Nitric Acid | 1,500 | 1.7 |
| Phosphorous | 56 | 0.024 |
| Potassium hydroxide | 990 | 0.24 |
| Propionaldehyde | 62 | 0.24 |
| Styrene | 4.7 | 0.74 |
| Tetrachloroethylene | 980 | 0.11 |
| Toluene | 580 | 56 |
| Trichloroethylene | 4.7 | 0.013 |
| Trimethylbenzene | 87 | 12 |

Source: *DOE Programmatic Spent Nuclear Fuel Management and INEEL Environmental Restoration and Waste Management Programs Final Environmental Impact Statement*, Volume 1, Appendix B, Table 4.7-1, p. 4.7-5. See that table for assumptions and sources of information.

a. Hazardous/toxic air pollutants that are listed in State of Idaho regulations and are emitted in levels that exceed screening criteria.

**D-8b(5) Operating Standards [IDAPA 58.01.05.008 and 58.01.05.012; 40 CFR 264.601(c)(3) and 270.23(a)(2)]**

For information on the operating characteristics of the decon cubicles, the decon cell, and the steam spray booth, see Section D-8b of this permit. For a discussion of the likelihood of air emissions and the potential for the production of toxic or explosive gases, aerosols, or particulate, see Attachment 2, Section C-2f.

**D-8b(6) Site Hydrogeologic Conditions [IDAPA 58.01.05.008 and 58.01.05.012; 40 CFR 264.601(a)(2), (3), and (4), 264.601(b)(3) and (5), and 270.23(b)]**

The following paragraphs describe hydrogeologic conditions at the INEEL (source: *DOE Programmatic Spent Nuclear Fuel Management and INEEL Environmental Restoration and Waste Management Programs Final Environmental Impact Statement*, Volume 1, Appendix B).

**Hydrogeology**

The INEEL Site covers 890 $mi^2$ of the north-central portion of the Snake River Plain Aquifer. Depth to groundwater from the land surface at the Site ranges from approximately 200 ft in the north, to over 900 ft in the south. Groundwater flow is generally toward the south-southwest, and the upper surface is primarily unconfined (not overlain by impermeable soil or bedrock). However, the aquifer behaves as if it were partially confined because of localized geologic conditions. The occurrence and movement of groundwater in the aquifer depends on the geologic setting and the recharge and discharge of water within that setting.

Most of the aquifer consists primarily of numerous relatively thin, basaltic lava flows with interbedded sediments extending to depths of 3,500 ft below the land surface. Most of the groundwater migrates horizontally through fractured, basaltic interflow zones (broken and rubble zones) that occur at various depths. Water also migrates vertically along joints and the interfingering edges of interflow zones. Sedimentary interbeds restrict the vertical movement of groundwater. The variability in how the aquifer stores and transmits water increases the difficulty in aquifer investigations and modeling.

The rate at which water moves through the ground depends on the hydraulic gradient (change in elevation and pressure with distance in a given direction) of the aquifer, the effective porosity (percentage of void spaces), and hydraulic conductivity (capacity of a porous media to transport water) of the soil and bedrock. Because aquifer porosity and hydraulic conductivity decrease with depth, most of the water in the aquifer moves through the upper 200 to 500 ft of the basalts. Estimated flow rates within the aquifer range from 5 to 20 ft per day.

The aquifer's ability to transmit water (transmissivity), and its ability to store water (storativity) are important physical properties of the aquifer. In general, the hydraulic characteristics of the aquifer enable the easy transmission of water, particularly in the upper portions.

Recharge to the aquifer originates off the Site from precipitation in the mountains to the west and north. Most of the inflow to the aquifer results from the underflow of groundwater along alluvial-filled valleys adjacent to the Eastern Snake River Plain and adjacent surface-water drainages (i.e., Big and Little Lost rivers and Birch Creek). In addition, recharge at the Site is related to the amount of precipitation, particularly snowfall, for a given year.

## Groundwater Quality

Previous waste discharges to unlined ponds and deep wells at the INEEL have introduced radionuclides, nonradioactive metals, inorganic salts, and organic compounds to the subsurface. Table D-5 summarizes the highest detected nonradioactive contaminant concentrations in groundwater at the INEEL between 1987 and 1992. The following paragraphs discuss each category of contaminants and comparisons of observed concentrations to maximum contaminant levels.

Sodium, chromium, lead, and mercury have been released onto the INEEL and into the subsurface through unlined ponds and deep wells. Of these metals, the INEEL released sodium in the greatest quantity from waste treatment processes; however, sodium is not toxic and does not have an established maximum contaminant level. In 1988, chromium concentrations exceeding the maximum contaminant level were measured near the Test Reactor Area. Lead and mercury have occurred at concentrations below the maximum contaminant level near the INTEC.

Human activities at the INEEL have released chloride, sulfate, and nitrate into the subsurface. Although chloride and sulfate releases have occurred, only nitrate has exceeded maximum contaminant levels (near the INTEC in 1981). Disposal of nitrates to the injection well and infiltration ponds at the INTEC account for the elevated nitrate levels in the central portion of the INEEL. By 1988, the levels of nitrate decreased to below the maximum contaminant level. Irrigation in the Mud Lake area might be causing these contaminants to enter the northeastern portion of the INEEL in concentrations comparable to those in nearby irrigated areas.

Concentrations of volatile organic compounds have been detected in the aquifer beneath the INEEL. However, many of these compounds were detected at amounts below the detection limit (0.002 milligram per liter), or two parts per billion, which is the lowest concentration at which a specific analytical method can detect a contaminant.

**D-8b(7) Site Precipitation [IDAPA 58.01.05.008; 40 CFR 264.601(b)(4)]**

Annual precipitation at the INEEL is light, averaging 8.71 in., with monthly extremes of 0 to 5 in. The maximum 24-hour precipitation rate is 1.8 in. The greatest short-term precipitation rates are attributable primarily to thunderstorms, which occur approximately two or three days per month during the summer. The average annual snowfall is 27.6 in., with a maximum of 59.7 in. and a minimum of 6.8 in.

**Table D-5. Highest detected contaminant concentrations in groundwater at the INEEL (1987 to 1992)**

| Parameter | Highest detected recent concentration[a] (year) | Recent boundary condition (year) | Current maximum contaminant level |
|---|---|---|---|
| | **Nonradioactive metal** | **(mg/L)** | |
| Cadmium | 0.0073 (1992) | Background (1988) | 0.005 |
| Chromium (total) | 0.21 (1988) | Background (1988) | 0.1 |
| Lead | 0.009 (1987) | Background (1987) | 0.015 |
| Mercury | 0.0004 (1987) | Background (1987) | 0.002 |
| | **Inorganic salts** | **(mg/L)** | |
| Chloride | 200 (1991) | | 250 |
| Nitrate | 5.4 (as $NO_3$) (1988) | Background (1988) | 10 (as N) |
| Sulfate | 140 (1985) | Background (1985) | 250 |
| | **Organic compounds** | **(mg/L)** | |
| Carbon tetrachloride | 0.0066 (1993) | <detection limit (1988) | 0.005 |
| Chloroform | 0.95 (1988) | <detection limit (1988) | 0.1 |
| 1,1-dichloroethylene | 0.009 (1989) | <detection limit (1989) | 0.007 |
| Cis-1,2-dichloroethylene | 3.9 (1992) | <detection limit (1988) | 0.07 |
| Trans-1,2-dichloroethylene | 2.6 (1988) | <detection limit (1988) | 0.1 |
| Tetrachloroethylene | 0.051 (1992) | <detection limit (1988) | 0.005 |
| 1,1,1-trichloroethane | 0.012 (1989) | <detection limit (1988) | 0.2 |
| Trichloroethylene | 4.6 (1992) | <detection limit (1989) | 0.005 |
| Vinyl chloride | 0.027 (1989) | <detection limit (1989) | 0.002 |

Source: *DOE Programmatic Spent Nuclear Fuel Management and INEEL Environmental Restoration and Waste Management Programs Final Environmental Impact Statement*, Volume 1, Appendix B, Table 4.8-1, p. 4.8-10. See that table for assumptions and sources of information.

a. Concentrations are generally for 1987 to 1992.

**D-8b(8) Groundwater Usage [IDAPA 58.01.05.008; 40 CFR 264.601(a)(5)]**

Groundwater use on the Snake River Plain includes irrigation, food processing and aquaculture, and domestic, rural, public, and livestock supply. Water use for the upper Snake River drainage basin and the Snake River Plain Aquifer was 4.3 trillion gal/yr in 1985, which was more than 50% of the water used in Idaho and approximately 7 percent of agricultural withdrawals in the nation. Most of the water withdrawn from the Eastern Snake River Plain (0.47 trillion gal/yr) is for agriculture. The aquifer is the source of all water used at the INEEL. Site activities withdraw water at an average rate of 1.9 billion gal/yr. However, the baseline annual withdrawal rate dropped to 1.7 billion gal in 1995. The average annual withdrawal is equal to approximately 0.4% of the water consumed from the Eastern Snake River Plain Aquifer, or 53% of the maximum annual yield of a typical irrigation well. Of the quantity of water pumped from the aquifer, a substantial portion is discharged to the surface or subsurface and eventually returned to it.

The DOE holds a Federal Reserved Water Right for the INEEL, which permits a water pumping capacity of 80 $ft^3$/sec and a maximum water consumption of 11.4 billion gal/yr for drinking, process water, and noncontact cooling.

Source for the above paragraphs: *DOE Programmatic Spent Nuclear Fuel Management and INEEL Environmental Restoration and Waste Management Programs Final Environmental Impact Statement*, Volume 1, Appendix B).

**D-8b(9) Surface Waters and Surface Soils [IDAPA 58.01.05.008; 40 CFR 264.601(b)(6), (7), and (8)]**

The following paragraphs describe surface water conditions at the INEEL (source: *DOE Programmatic Spent Nuclear Fuel Management and INEEL Environmental Restoration and Waste Management Programs Final Environmental Impact Statement*, Volume 1, Appendix B).

**Surface Water**

Other than surface-water bodies formed from accumulated run-off during snowmelt or heavy precipitation and manmade infiltration and evaporation ponds, there is little surface water at the INEEL.

The INEEL is in the Pioneer Basin, a closed drainage basin that includes three main surface-water bodies: the Big Lost River, the Little Lost River, and Birch Creek. These water bodies drain mountain watersheds directly west and north of the Site. However, most of the surface-water flow is diverted for irrigation before it reaches Site boundaries, resulting in little or no flow for several years inside the Site boundaries. At nearest approach, the Big Lost River, Little Lost River, and Birch Creek are about 0.5 mi, 15 mi, and 23 mi, respectively, from the miscellaneous units addressed in this permit (decon cubicles, decon cell and the steam spray booth).

The Big Lost River drains approximately 1,450 $mi^2$ of land before reaching the INEEL. Approximately 30 mi upstream of Arco, Idaho, Mackay Dam controls and regulates the flow of the river, which continues southeast past the towns of Moore and Arco and onto the Eastern Snake River Plain. The river channel then crosses the southwestern boundary of the Site, where the INEEL Diversion Dam controls surface-water flow. During heavy run-off events, the dam diverts surface water to a series of natural depressions, designated as spreading areas. The Big Lost River continues northeasterly across the INEEL to an area of natural infiltration basins (playas or sinks) near Test Area North. In dry years, surface water does not usually reach the western boundary of the INEEL, and because the INEEL is located in a closed drainage basin, surface water never flows off the Site.

Birch Creek drains an area of approximately 750 $mi^2$. In the summer, upstream of the INEEL, surface water from Birch Creek is diverted to provide irrigation and to produce hydropower. In the winter, water flow crosses the northwest corner of the INEEL, entering a man-made channel 4 mi north of Test Area North, where it then infiltrates into channel gravels.

The Little Lost River drains an area of approximately 705 $mi^2$. Streamflow is diverted for irrigation north of Howe, Idaho. Surface water from the Little Lost River has not reached the INEEL in recent years; however, during high stream flow years, water will reach the INEEL and infiltrate into the subsurface.

Surface water generated from local precipitation will flow into topographic depressions (lower elevations than the surrounding terrain) on the INEEL. This surface water either evaporates or infiltrates into the ground, increasing subsurface saturation and enhancing subsurface migration.

Water quality in the Big Lost River, Little Lost River, and Birch Creek is similar and has not varied a great deal over the period of record. Measured physical, chemical, and radioactive parameters have not exceeded applicable drinking water quality standards. Chemical composition is determined primarily by the mineral composition of the rocks in the mountain ranges northwest of the Site and by the chemical composition of irrigation water in contact with the surface water.

INEEL activities do not directly affect the quality of surface water outside the Site because discharges from INEEL facilities are to man-made seepage and evaporation basins or stormwater injection wells. Effluents are not discharged to natural surface waters. In addition, surface water does not flow directly off the Site. However, water from the Big Lost River, as well as seepage from evaporation basins and stormwater injection wells, does infiltrate the Snake River Plain Aquifer. These areas are inspected, monitored, and sampled as stipulated in the INEEL Stormwater Pollution Prevention Program.

**D-8b(10) Area Land Use [IDAPA 58.01.05.008 and 58.01.05.012; 40 CFR 264.601(a)(6) and (b)(9), and 270.23(b)]**

The source of the following information is *DOE Programmatic Spent Nuclear Fuel Management and INEEL Environmental Restoration and Waste Management Programs Final Environmental Impact Statement*, Volume 1, Appendix B.

**Land Uses at the INEEL**

Categories of land use at the INEEL include facility operations, grazing, general open space, and infrastructure such as roads. Facility operations include industrial and support operations associated with energy research and waste management activities (the DOE also conducts such activities at its Idaho Falls facilities). In addition, the DOE uses INEEL land for recreation and environmental research associated with the designation of the INEEL as a National Environmental Research Park.

Much of the INEEL is open space that DOE has not designated for specific uses. Some of this open space serves as a buffer zone between INEEL facilities and other land uses.

Facilities and operations use about 2% of the total INEEL Site area (11,400 acres). Public access to most facility areas is restricted. Approximately 6% of the INEEL, or 32,985 acres, is devoted to public roads and utility rights-of-way that cross the Site. Recreational uses include public tours of general facility areas and the Experimental Breeder Reactor-I (a National Historic Landmark), and controlled hunting, which is generally restricted to 0.5 mi inside the INEEL boundary.

Cattle and sheep grazing occupies between 300,000 and 350,000 acres. The U.S. Sheep Experiment Station uses a 900-acre portion of this land, at the junction of Idaho State Highways 28 and 33, for a winter feed lot for approximately 6,500 sheep. Grazing is not allowed within 2 mi of any nuclear facility, and to avoid the possibility of milk contamination by long-lived radionuclides, dairy cattle are not permitted on the Site. The Department of the Interior's Bureau of Land Management grants and administers rights-of-way and grazing permits. Exhibit D-9 shows selected land uses at the INEEL and the surrounding region.

The INEEL Site is within the Medicine Lodge Resource Area (approximately 140,415 acres in the eastern and southern portions of the INEEL Site) and the Big Butte Resource Area (430,499 acres in the central and western portions); the Bureau of Land Management administers both of these areas. Under resource management plans, the Bureau manages portions of these resource areas for grazing and wildlife habitat. No mineral exploration or development is allowed on INEEL land.

DOE land use plans and policies applicable to the INEEL include the *INEEL Institutional Plan - Fiscal Year 1994 - 1999* and the *INEEL Technical Site Information Report*. The *Institutional Plan* provides a general overview of INEEL facilities, outlines strategic program directions and major construction projects, and identifies specific technical programs and capital equipment needs. The *Technical Site Information Report* presents a 20-year master plan for development activities at the INEEL. Under the scope of these planning documents, energy research and waste management activities would continue in existing facility areas, and in some instances, expand into currently undeveloped Site areas. These documents also describe environmental restoration, waste management, and spent nuclear fuel activities. Projected land use scenarios for the next 25 to 50 years include the outgrowth of current functional areas and the possible development of waterfowl production ponds in existing grazing areas.

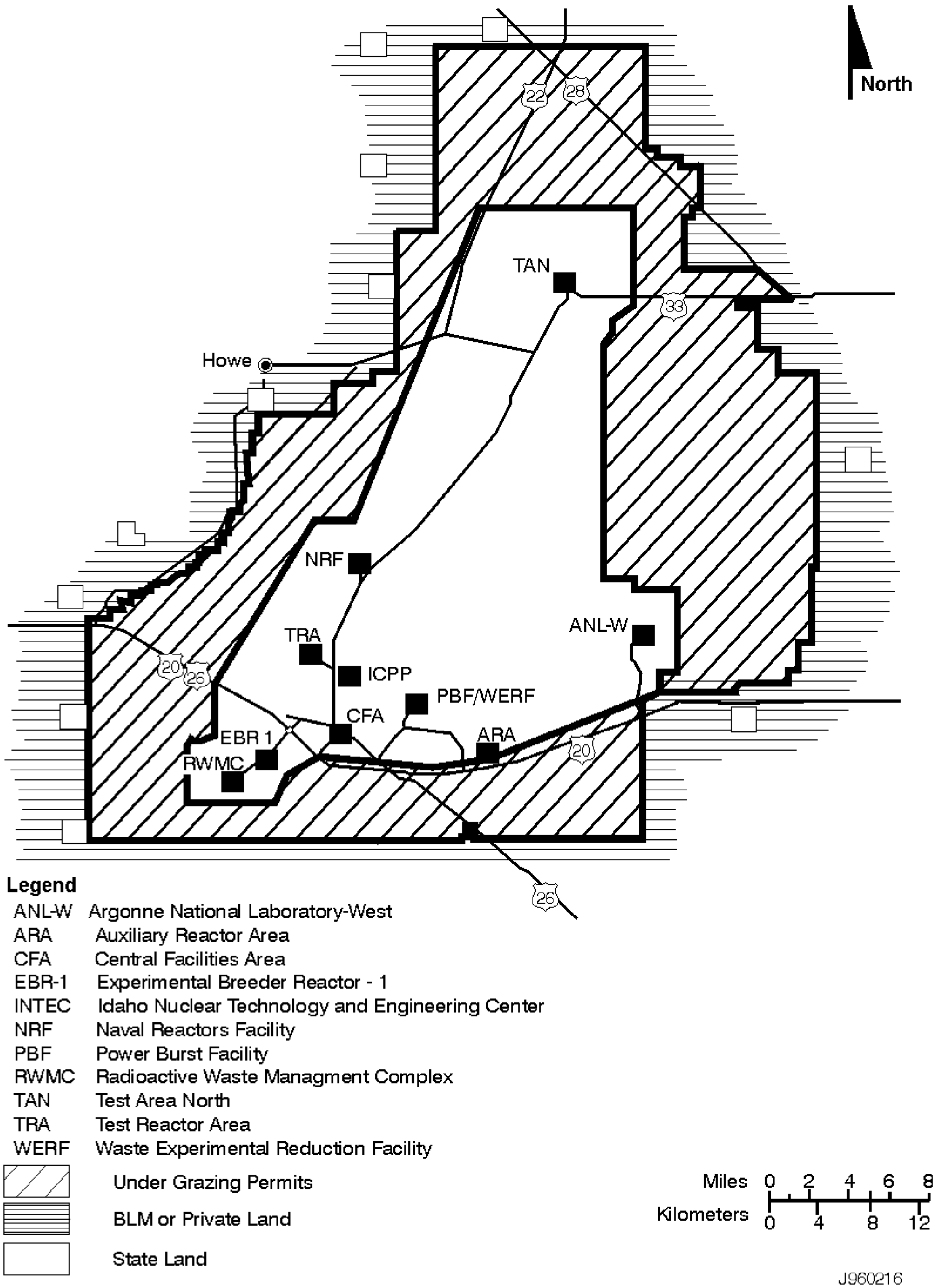



Exhibit D-9. Selected land uses at the INEEL and in the surrounding region.

## Land Use in Surrounding Areas

The federal government, the State of Idaho, and private parties own the lands surrounding the INEEL Site. Land uses on federally owned land consist of grazing, wildlife management, range land, mineral and energy production, and recreational uses. State-owned lands are used for grazing, wildlife management, and recreational purposes. Privately owned lands are used primarily for grazing, crop production, and range land. Small communities and towns near the INEEL boundaries include Mud Lake to the east; Arco, Butte City, and Howe to the west; and Atomic City to the south. The larger communities of Idaho Falls, Rexburg, Blackfoot, and Pocatello and Chubbuck are to the east and southeast of the INEEL Site. The Fort Hall Indian Reservation is to the southeast of the INEEL. Recreation and tourist attractions in the region around the INEEL include the Craters of the Moon National Monument, Hell's Half Acre Wilderness Study Area, Black Canyon Wilderness Study Area, Camas National Wildlife Refuge, Market Lake State Wildlife Management Area, North Lake State Wildlife Management Area, Yellowstone National Park, Grand Teton National Park, Jackson Hole Recreation Complex, Targhee and Challis National Forests, and the Snake River.

Lands surrounding the INEEL Site are subject to federal and state planning laws and regulations. Federal rules and regulations that require public involvement in their implementation govern planning for and use of federal lands and their resources. Land use planning in the State of Idaho is derived from the Local Planning Act of 1975. Because the state currently has no land use planning agency, the Idaho legislature requires each county to adopt its own land use planning and zoning guidelines. Land use planning for INEEL facilities within the Idaho Falls city limits is subject to Idaho Falls planning and zoning restrictions.

All county plans and policies accept development adjacent to previously developed areas to minimize the need to extend infrastructure improvements and to avoid urban sprawl. Because the INEEL is remote from most developed areas, INEEL lands and adjacent areas are not likely to experience residential and commercial development; no new development is planned near the INEEL Site. However, DOE expects recreational and agricultural uses to increase in the surrounding area in response to greater demand for recreational areas and the conversion of range land to crop land.

**D-8b(11) Migration of Waste Constituents [IDAPA 58.01.05.008; 40 CFR 264.601(a)(7)]**

For reasons discussed in Sections D-8b, D-8b(1), D-8b(2), and D-8b(4), the potential is extremely small for deposition or migration of waste constituents into subsurface physical structures and into the root zone of food chain crops and other vegetation. This includes migration of waste in gaseous or vapor forms.

**D-8b(12) Evaluation of Risk to Human Health and the Environment [IDAPA 58.01.05.008; 40 CFR 264.601(a)(8) and (9), 264.601(b)(10) and (11), and 264.601(c)(6) and (7)]**

For information on the risk to human health and the environment of the decon cubicles, decon cell, and the steam spray booth, see Section D-8b.

# Appendix D-1. Containment Matrix for CPP-659

## Containment Matrix for CPP-659

| Treatment Unit / Tank | Location | Valve(s) | Valve Position | Primary Containment | Secondary Containment |
|---|---|---|---|---|---|
| Ultrasonic Cleaner UC-NCD-921 | Low-Level Decon Room (Rm. 415) | PL-921-1[1] | CLOSED[2] | Stainless-steel sink | Stainless-steel-lined floor, stainless-steel-lined 6" curb, stainless-steel-lined wall, and the Decon Hold-up Tank (VES-NCD-123) |
| Sink SH-NCD-933 | Low-Level Decon Room (Rm. 415) | PL-933-1[1] | CLOSED[2] | Stainless-steel sink | Stainless-steel-lined floor, stainless-steel-lined 6" curb, stainless-steel-lined wall, and the Decon Hold-up Tank (VES-NCD-123) |
| Sink SH-NCD-934 | Low-Level Decon Room (Rm. 415) | PL-934-1[1] | CLOSED[2] | Stainless-steel sink | Stainless-steel-lined floor, stainless-steel-lined 6" curb, stainless-steel-lined wall, and the Decon Hold-up Tank (VES-NCD-123) |
| Steam Spray Booth | Equipment Decon Room (Rm. 418) | None | N/A | Stainless-steel-lined floor, stainless-steel-lined wall, and the Decon Holdup Tank (VES-NCD-123) | Stainless-steel-lined floor and stainless-steel-lined 6" curb in the Decon Holdup Tank Cell (Rm. 219) |
| Decon Cubicle (Rm. 421) | Equipment Decon Room (Rm. 418) | PL-3[3]<br>PL-5[3] | OPEN<br>CLOSED | Stainless-steel-lined floor, concrete walls covered with an epoxy coating, and the Decon Holdup Tank (VES-NCD-123) | Stainless-steel-lined floor and stainless-steel-lined 6" curb in the Decon Holdup Tank Cell (Rm. 219) |
| Decon Cubicle (Rm. 421) | Equipment Decon Room (Rm. 418) | PL-3[3]<br>PL-5[3] | CLOSED<br>OPEN | Stainless-steel-lined floor, concrete walls covered with an epoxy coating, and the Decon Collection Tank (VES-NCD-129) | Stainless-steel-lined floor and stainless-steel-lined 6" curb in the Decon Collection Tank Cell (Rm. 203) |
| Decon Cubicle (Rm. 422) | Equipment Decon Room (Rm. 418) | PL-7[3]<br>PL-9[3] | OPEN<br>CLOSED | Stainless-steel-lined floor, concrete walls covered with an epoxy coating, and the Decon Holdup Tank (VES-NCD-123) | Stainless-steel-lined floor and stainless-steel-lined 6" curb in the Decon Holdup Tank Cell (Rm. 219) |
| Decon Cubicle (Rm. 422) | Equipment Decon Room (Rm. 418) | PL-7[3]<br>PL-9[3] | CLOSED<br>OPEN | Stainless-steel-lined floor, concrete walls covered with an epoxy coating, and the Decon Collection Tank (VES-NCD-129) | Stainless-steel-lined floor and stainless-steel-lined 6" curb in the Decon Collection Tank Cell (Rm. 203) |

| **Treatment Unit / Tank** | **Location** | **Valve(s)** | **Valve Position** | **Primary Containment** | **Secondary Containment** |
|---|---|---|---|---|---|
| Decon Cell | (Rm. 308) | PL-11[3]<br>PL-13[3] | CLOSED<br>CLOSED | Stainless-steel Floor and Gutter Drain | (VES-NCD-123)<br>(VES-NCD-129) |
| Portable Soak Tanks:<br>TK-NC-136<br>TK-NC-137<br>VES-NCD-138 | in Steam Spray Booth | None | N/A | Stainless-steel soak tank | Stainless-steel-lined floor, stainless-steel-lined wall, and the Decon Holdup Tank (VES-NCD-123) |
| Portable Soak Tanks:<br>TK-NC-136<br>TK-NC-137<br>VES-NCD-138 | in Decon Cubicle (Rm. 421 or 422) | see Decon Cubicle references above[4] | see Decon Cubicle references above[4] | Stainless-steel soak tank | Same as primary containment for Decon Cubicle references above[4] |
| Portable Soak Tanks:<br>TK-NC-136<br>TK-NC-137<br>VES-NCD-138 | in Decon Cell (Rm. 308) | PL-11[3]<br>PL-13[3] | OPEN<br>CLOSED | Stainless-steel soak tank | Stainless-steel-lined floor, stainless-steel-lined wall, and the Decon Holdup Tank (VES-NCD-123) |
| Portable Soak Tanks:<br>TK-NC-136<br>TK-NC-137<br>VES-NCD-138 | in Decon Cell (Rm. 308) | PL-11[3]<br>PL-13[3] | CLOSED<br>OPEN | Stainless-steel soak tank | Stainless-steel-lined floor, stainless-steel-lined wall, and the Decon Collection Tank (VES-NCD-129) |
| HFLS Leaching Tank<br>VES-NCD-141 | Filter Handling Cell (Rm. 309) | PL-141-1[5]<br>PL-15[3]<br>PL-17[3] | CLOSED[2]<br>OPEN<br>CLOSED | Stainless-steel tank | Stainless-steel-lined floor, stainless-steel-lined wall, and the Decon Holdup Tank (VES-NCD-123) |
| HFLS Leaching Tank<br>VES-NCD-141 | Filter Handling Cell (Rm. 309) | PL-141-1[5]<br>PL-15[3]<br>PL-17[3] | CLOSED[2]<br>CLOSED<br>OPEN | Stainless-steel tank | Stainless-steel-lined floor, stainless-steel-lined wall, and the Decon Collection Tank (VES-NCD-129) |
| HFLS Drying Tank<br>VES-NCD-142 | Filter Handling Cell (Rm. 309) | PL-15[3]<br>PL-17[3] | OPEN<br>CLOSED | Stainless-steel tank | Stainless-steel-lined floor, stainless-steel-lined wall, and the Decon Holdup Tank (VES-NCD-123) |

| Treatment Unit / Tank | Location | Valve(s) | Valve Position | Primary Containment | Secondary Containment |
|---|---|---|---|---|---|
| HFLS Drying Tank VES-NCD-142 | Filter Handling Cell (Rm. 309) | PL-15[3]<br>PL-17[3] | CLOSED<br>OPEN | Stainless-steel tank | Stainless-steel-lined floor, stainless-steel-lined wall, and the Decon Collection Tank (VES-NCD-129) |
| Decon Holdup Tank VES-NCD-123 | Decon Holdup Tank Cell (Rm. 219) | None | N/A | Stainless-steel tank | Stainless-steel-lined floor and stainless-steel-lined 6" curb in the Decon Holdup Tank Cell (Rm. 219) |
| Decon Collection Tank VES-NCD-129 | Decon Collection Tank Cell (Rm. 203) | None | N/A | Stainless-steel tank | Stainless-steel-lined floor and stainless-steel-lined 6" curb in the Decon Collection Tank Cell (Rm. 203) |

[1] See Drawing Number 133444 in Appendix 2 to this permit application.

[2] Valve is always closed during debris treatment.

[3] See Drawing Number 133446 in Appendix 2 to this permit application.

[4] The valve configurations possible are the same as noted for the Decon Cubicles (Rooms 421 and 422). The secondary containment for the portable soak tank is the same as the primary containment for a decon cubicle with the same valve alignment.

[5] See Drawing Number 444389 in Appendix 2 to this permit application.

# Appendix D-2. CPP-659 Vent Scrubber and HVAC Systems

# Vent Scrubber and HVAC Systems

## Vent Air Scrubber System

Selected debris treatment equipment and cells are vented to the vent air scrubber system. The vented air frequently contains acid vapors. The scrubber system washes the air stream before it is discharged to the calciner exhaust tunnel.

## Heating, Ventilation, and Air Conditioning (HVAC) Systems

Two heating, ventilation, and air conditioning (HVAC) systems supply rooms and areas used for storage or treatment of mixed waste in the decon area: the calciner system and the decon area system.

The HVAC systems maintain confinement of radioactive materials through a multiple-zone philosophy. Pressure differentials are maintained between the various building confinement zones and between the building and the outside atmosphere to assure that airflow is from zones of lesser contamination potential to zones of greater contamination potential. Normal exit for the ventilation air is through a prefilter and two stages of HEPA filters and out of two NWCF building stacks.

To help control the spread of contamination, supply air is ducted to the top of each cell and exhausted from the bottom. Each cell supply duct is equipped with a HEPA filter to protect the ducting from contaminants in the unlikely event of cell pressurization. Each cell outlet is equipped with steel mesh covers to prevent large particles from being drawn into the exhaust ducting and plenums.

Two exhaust blowers, BLO-NCD-287-1 and -2, draw the used air from the various decon areas through the main decon exhaust duct and decon exhaust plenums. Each of the exhaust air plenums is equipped with prefiltration and two banks of HEPA filters in series.

The second exhaust system functions the same as the first, except the blowers are BLO-NCM-285-1, -2, and -3.

The prefilters and HEPA filters remove particles greater than .3 mm in diameter in the exhaust air, leaving a nonradioactive air stream. A radiation detector alarms if the radiation level from the particles collected on the filters increases above a preset limit. From the plenums, the filtered exhaust air is ducted through one of the two stacks to the atmosphere.

# Appendix D-3. Makeup of Debris Treatment Solutions

## Makeup of Debris Treatment Solutions

Debris treatment solutions normally consist of water, to which specified amounts of acids, alkalis, detergents, or some combination of these are added. The solution may be heated to increase the efficiency of the cleaning action or to aid in mixing. The major equipment items in the makeup process are as follows:

- Decon solution makeup tanks (VES-NCD-127 and -128)
- Chemical scale
- Decon tank agitators
- Chemical addition funnels.

### Makeup Tanks

The two makeup tanks are identical. VES-NCD-127 is normally dedicated to nitric acid solutions. VES-NCD-128 is used for other solution makeups as necessary. Each tank has a 530- gal capacity, a 48-in. inner diameter, and is 6 ft 9 in. high. The tanks are located in the northwest corner of the low-level decon room (415). This area of the room, including the decon solution transfer pumps, is surrounded by a 4-in. stainless steel curb to contain spills. The area under the tanks and pumps is lined with stainless steel and drains to a gutter along the east side of the area; the gutter drains to the decon area holdup tank, VES-NCD-123.

Each makeup tank is vertically mounted above the floor on four support legs and has a hinged access lid for visual inspection. The tanks are surrounded on three sides by a 3-ft-high stainless-steel mesh platform for access to valves and instrumentation. Each tank has 2 in. of insulation on the sides and bottom.

Inputs to each tank include the following:

- Dry chemicals
- Nitric acid
- Water
- Steam or air sparge
- Steam heat.

Dry chemicals are added to each tank through its chemical addition funnel. The funnels stand approximately 2 ft above the mezzanine (Room 502) floor. Each funnel opening is 18-in. diameter and is fitted with a hinged lid. A dry chemical chute extends from the base of each through the floor to the top of the makeup tanks. Chemicals to be added to water in the tanks are measured/weighed prior to addition.

The amount and order of addition of chemicals is specified on makeup sheets as directed by supervision. VES-NCD-127 will normally contain 6M nitric acid. Stock nitric acid, at 13M, is mixed with water already in the tank to reach the specified concentration. Nitric acid is transferred from VES-NCC-117 or -118 in the calciner decon solution makeup room. It is also possible to transfer nitric acid from CPP-601 to the decon solution makeup tanks.

Solutions are mixed by using either a single-prop agitator bolted to the top of each tank or by sparging. The agitators consist of an electric motor turning a prop on a shaft extending into the bottom half of the tank. Hand switches on the local control panel activate the agitators. A sparge ring, located on the tangent line at the bottom of the tank, can be supplied with steam, air, or both to aid in mixing solutions. Sparging with steam will heat the solution as well as dilute it. Solutions--before, during, or after mixing--can also be heated using steam coils in the bottom half of each tank. The prepared treatment solution exits the tank through a line at the bottom of the tank to the decon transfer pumps.

Samples of the solution can be manually taken. The tanks are protected with overflow lines about 6 in. below the top of the tank. Instrumentation for each tank is located on local Control Panel CP-NCD-989. Each tank can be monitored for liquid level, specific gravity, and temperature.

**Treatment Solution Transfer**

Each tank has a parallel but separate system of piping to transfer made-up solution to the debris treatment equipment and cells throughout the decon area. The separate lines allow different treatment solutions to be used in sequence without a makeup waiting period, if several different solutions are necessary.

Motive force for transfers is provided by two pumps (P-NCD-227 for VES-NCD-127, and P-NCD-228 for VES-NCD-128) located immediately to the east of the tanks and within the curbed area surrounding the tanks. These are vertical centrifugal pumps capable of 300 gpm at a normal operating pressure of 80 to 90 psig. All wetted parts of the pumps and the solution makeup and transfer system are constructed of stainless steel.

The pumps can be operated either from the local control board or from the platform around the makeup tanks. Two operators are necessary for transferring treatment solution: one at the pump control and one at the solution destination. Pressure gauges for each pump are located near the pump on the discharge line.

Each pump has two lines that drain into the gutter. A system for water and/or air flushing transfer lines ensure that treatment solutions are not mixed. The pumps and transfer lines drain to the holdup tank (VES-NCD-123). The volume of treatment solution transferred to each tank or line is recorded on a makeup transfer data sheet. See Drawing 133443 for a mechanical flow diagram focusing on the makeup tanks.

**Small-Volume Treatment Solution Makeup**

Debris treatment solutions can be made up outside of the regular makeup tanks (VES-NCD-127 and -128 if a smaller volume is needed or if these tanks are in use. There are three general ways of doing this.

- Treatment solutions can be made up directly in any soak tank for use in that tank
- Small amounts of solution (1 to 10 gal) can be made up in stainless steel buckets or other appropriate containers
- Treatment solutions can also be made up in place in the small sink, large sink, ultrasonic cleaner, and soak tanks.

The decision on where to make up treatment solutions will be made by the technician or by supervision when determining the treatment procedures. Decisions will be based on the current use of the makeup tanks, the volume of solution needed, and any special conditions that might apply to the situation.