Radioactive Waste Management Complex
Transuranic Storage Area Facilities Site Verification Plan

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Idaho National Engineering and Environmental Laboratory
Bechtel BWXT Idaho, LLC
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RADIOACTIVE WASTE MANAGEMENT COMPLEX
TRANSURANIC STORAGE AREA FACILITIES
SITE VERIFICATION PLAN

October 2002

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1. PURPOSE

The purpose of this Site Verification Plan (SVP) is to demonstrate the “as-transferred” radiological condition of the additional facilities in the Transuranic Storage Area (TSA) that are to be transferred from Bechtel BWXT, Idaho (BBWI) via the Department of Energy (DOE) to BNFL, Inc., in accordance with the Advanced Mixed Waste Treatment Project (AMWTP) Tri-Party Memorandum of Agreement (MOA).

The facilities to be transferred are shown as the shaded portion on the Radioactive Waste Management Complex (RWMC) Area SVP Survey Sketches Site Map (see Figure 1). The facilities include, the Type I Waste Storage Module WMF 635, its internal facility WMF 615, the Type II Waste Storage Modules WMF 629, 630, 631, 632, and 633, TRUPACT Loading Facility WMF 618, the Stored Waste Examination Pilot Plant (SWEPP) WMF 610, the Electrical and Instrumentation Maintenance Facility WMF 617; the 30,000 gallon propane tank and its associated distribution and support systems WMF 614, 624, 627, and 703, and the TSA standby generator and associated support systems WMF 660, 734, and 735.

2. SCOPE

The SVP includes two appendixes. The radiological survey approach for each of the facilities is contained in Appendix A. The approach utilizes the on-going regularly scheduled routine contamination survey records of the facilities as performing supplemental surveys close to the time of transfer of these facilities.

The survey approach for all the Type II Waste Storage modules in this plan is the same because they are similar in construction and utilization. Individual survey approaches are specified for each of the other facilities for which radioactive waste operations were conducted inside the facility. The survey approaches for the support facilities (which have not been used for storage or for processing the radioactive waste containers’ material) are grouped together, and a graded level of surveying is specified.

The individual survey forms for documenting supplemental radiological surveys for each of the facilities are contained in Appendix B. The sketches and photos in this appendix will be updated as necessary to reflect current configuration of the facilities.

This SVP does not include sampling for hazardous materials. Because radioactive substances are known to be co-mingled with chemical wastes at the RWMC, radioactive contaminants are reasonable indicators of potential contamination with chemical waste. This sampling approach is addressed in the INEEL Hazardous Waste Management Act, Part B, Permit Application, Volume 5, Book 2, RWMC Closure Plan. The presence of radiation as an indicator of potentially hazardous contaminants was approved by the State of Idaho in the “HWMA Closure Plan for the Certified and Segregated Building and Air Support Building-II” (DOE/ID-10609) dated April 1998. Sampling for radioactive contamination as an indicator has the added advantage of increased sensitivity in comparison to sampling for hazardous constituents.

This SVP deals with the contamination surveys of the transferred facilities and its associated equipment. It does not include the sampling of the outside areas such paved areas, roadways, soil and gravel areas. This is based on prior SVP sampling results showing no detectable activity being found on
the paved and gravel areas surrounding the WMF 634, WMF 636 and the area adjacent to the storage modules that was formerly occupied by the Certified and Segregated Building. Also, there have been no known radioactive spills or radioactive contamination release events in these outside areas.

This SVP also does not include the surveying of the exterior of building structures. If the sampling results from inside the building indicate that contamination levels above release limits (see Table 1) exist inside the building, then an evaluation will be performed of the sampling requirements for the exterior of the building structure.

Table 1. Release limits of contamination levels.

<table>
<thead>
<tr>
<th></th>
<th>Total (dpm/100 cm²)</th>
<th>Removable (dpm/100cm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha</td>
<td>500</td>
<td>20</td>
</tr>
<tr>
<td>Beta/Gamma</td>
<td>5000</td>
<td>1000</td>
</tr>
</tbody>
</table>

Waste Storage Modules WMF 629 through 633 and WMF 635 are currently being used for the storage of mixed TRU waste. The facilities are located within the Transuranic Storage Area (TSA), which is posted as a Radiological Buffer Area (RBA). At the time of transfer, it is anticipated that there will be no mixed TRU waste containers stored in WMF 610, WMF 615 or WMF 618.

The above-mentioned facilities are posted as Radiation Areas. The WMF 632 and WMF 633 facilities contain waste containers that have exterior contamination levels above the radiological release limits. The area surrounding these containers are roped off and posted as a “Contamination Area.” It is not the intent of this SVP to resample these containers; results of prior surveys will be provided.

The WMF 615 Drum Vent Facility silo area and the southeast cubicle of the tent used for the recovery of 55-gallon drums from 83-gallon containers are currently posted as a contamination area.

3. PERFORMANCE OF THE SURVEYS

The radiological contamination surveys will be performed in accordance with BBWI Management Control Procedure (MCP) 139, Radiological Surveys and will be documented in a TSA Facilities Site Verification Plan Survey Report. The survey approach contained in Appendix A will be used. The approach lists approximate number of surveys to be taken in each facility location. However, if the Radiological Control Technician (RCT) staff conducting the survey (or their supervision) determines that additional survey quantities or locations are needed to adequately characterize the facility, these additional surveys will also be included in the survey report. Omission of any survey location or a significant decrease in the number of surveys taken per location, as well as the basis for this deviation, will be so noted in the report.

Following the performance of the supplemental surveys of a facility, the facility will be kept essentially in a “quiescent” state (i.e., no waste handling operations). This is to ensure that the radiological condition as recorded in the surveys remains applicable from the day of turnover. Should an unforeseen circumstance arise (such as the need to move a waste container in the building or the discovery of a spill inside the building) then an evaluation will be performed by Radiological Control (RadCon) to determine the supplemental surveys that need to be performed. This evaluation and any additional surveys that are to be performed will be documented and this information provided to DOE and BNFL, Inc.
4. SURVEY RESULTS

The results of the facility surveys for this SVP will be documented in the TSA Facilities Site Verification Plan Survey Report. The report will include a copy of individual 441.45 Radiological Survey Report forms that were used to record the location of the surveys and their results. The report will also include a narrative on any necessary deviations from the plan and the basis for making the deviation. The individual survey forms will be signed by a Radiological Control Technician performing the survey and will be reviewed and signed by the RCT foremen or work leader. Included in the report will be a copy of the recent applicable routines surveys of the “to be transferred” facilities as well as any additional surveys performed. The composite report will be reviewed and signed by the RWMC Radiological Control Supervisor. It will be transmitted to DOE-ID and BNFL, Inc via letter report.
Figure 1. RWMC SVP survey sketches Site facility map.
Appendix A

Survey Approaches
Appendix A

Survey Approaches

Buildings: Support Structures and Facilities

- Perform surveys on at least the following locations (approximate number of surveys listed in parenthesis):
  - WMF 734 TSA-RE Standby Generator (3)
  - WMF 660 Standby Generator Electrical Room (3)
  - WMF 735 Standby Generator Fuel Tank (3)
  - WMF 703 Propane Tank (6)
  - WMF 614/624/627 Propane System Support Equipment Enclosures (3 per enclosure)
  - WMF 617 Electrical and Instrument Craft Shop (10)
Survey Approach

Building WMF 610

- Utilize results of latest routine contamination surveys that were performed, which covers the following:
  - First and second level floor areas
  - Waste Characterization Equipment.

- Perform surveys on at least the following additional interior locations (approximate number of surveys listed in parenthesis):
  - North Airlock (12) and South Airlock (12)
  - SGRS (3)
  - RTR (3)
  - PAN (3)
  - WAGS and Drum Conveyor (6)
  - Weigh Scale (2)
  - Test Source Storage Room (4)
  - Continuous Air Monitor (3 per CAM)
  - Furnace Room and Fuel tank (2)
  - Stairway (outside on West side) (3)
  - Stairway (inside stairway to break room) (3)
  - High Bay (interior walls and floor) (20)
  - High Bay (overhead lights) (5)
  - High Bay (ventilation intakes) (4)
  - Electrical Room (2)
  - Forklift and Handlers (if located in the building) (4 per item).
Survey Approach

Building    WMF 618

- Utilize results of latest routine contamination surveys that were performed, which covers the following:
  - Floor and the support equipment inside the building (TRUPACT loading platform, equipment stands, and desk tops).

- Perform surveys on at least the following additional locations (approximate number of surveys listed in parenthesis):
  - Walls (12)
  - Floor (8)
  - Overhead Lights (3)
  - Ventilation intakes (2)
  - Structural Steel Members (such as girders/trusses/purlins) (6)
  - Personnel Contamination Monitor (3)
  - Continuous Air Monitors (3 per CAM)
  - TRUPACT Loading Platform (8)
  - TRUPACT Lid Stands (2 per stand)
  - Shrink Wrap Dispenser (2).
Survey Approach

Building Five Type-Two Storage Modules (WMF 629 through 633)

• Utilize results of latest routine contamination surveys that were performed, which covers the following:
  - Floor and selected waste containers inside the building.

• Perform surveys on at least the following additional interior locations (approximate number of surveys listed in parenthesis):
  - Interior Walls (16)
  - Overhead Lights (4)
  - Overhead Exhaust Duct Intake Louvers (2)
  - Floor (16)
  - Electrical Equipment Room (horizontal surfaces and floor) (6)
  - Fire Riser Room (horizontal surfaces and floor) (6)
  - Continuous Air Monitors (3 per CAM).
Survey Approach

Building WMF 635 and Drum Vent/Liquid Absorbent Addition Facility WMF 615

- Utilize results of latest routine contamination surveys that were performed, which covers the following:
  - Floor and exterior of selected waste containers inside the building.

- Perform surveys on at least the following additional interior locations (approximate number of surveys listed in parenthesis):
  - WMF615 Building (interior walls and floor) (10)
  - WMF 615 Silo (interior) (8)
  - WMF 615 Ventilation Filters (2)
  - Temporary Tents (interior) (8 per tent)
  - TRUPACT Loading Stations (6 per station)
  - Drum Conveyors (8)
  - Warming Enclosures (3 per enclosure)
  - Ventilation Exhaust Duct (intake louvers) (2)
  - WMF 635 Walls (16)
  - WMF 635 Floor (20)
  - Electrical Equipment Room (horizontal surfaces and floor) (3)
  - Fire Riser Room (horizontal surfaces and floor) (3)
  - Continuous Air Monitors (3 per CAM)
  - Forklifts and Handlers (if present in the building) (4).
Appendix B
Radiological Survey Report Forms
Appendix B

Radiological Survey Report Forms