

Additional Facility Details for Release of ‘Waste Area 3’ (Seattle, Washington)

1. Description of facility to be released.

The facility to be released is a separate structure, identified and referred to as *Waste Area 3* and also as *Waste Station #3*, in documents and survey forms, located at the Seattle VA Medical Center (VA PSHCS). VA PSHCS is a United States Department of Veterans Affairs facility with a street address of 1660 South Columbian Way, Seattle, Washington. The VA PSHCS site encompasses approximately 44-acre site and contains 20 buildings and five parking areas. Waste Area 3 was constructed in 1988 as a temporary storage site for decay-in-storage waste. Waste Area 3 was a single floor, sheet-metal enclosed structure bolted onto an 8 x 14 x 8 foot fence frame. The structure could be adequately described as a chain-linked fence with a padlocked gate surrounded by 1 mm thick corrugated metal with a the same thickness of corrugated metal roof bolted to the top to prevent direct exposure to the elements. The entire structure sat upon a poured asphalt floor approximately ¾” thick. **Enclosure 1** provides the location of Waste Area 3 in relation to the Seattle VA Medical Center site and shows it as the second “Radwaste Storage Shed” from the top of the site plan and adjacent to the building labeled *Engineering Shops* (Bldg. 16).

2. Date license initially issued.

The first broad scope license for use of radioactive materials at VA PSHCS was issued October 1, 1977, by the US Nuclear Regulatory Commission (NRC). The License No. issued was 46-00990-01. On March 17, 2003, NRC issued a broad-scope Master Materials License (MML) to the Department of Veterans Affairs (VA). Concurrent with issuance of the MML, VA facility licenses were converted into “Materials Permits,” which are issued under various conditions of the MML. The Material Permits are administered by the Veterans Health Administration’s National Health Physics Program (NHPP), located in North Little Rock, Arkansas. The use of radioactive materials at VA PSHCS is now authorized under VHA Materials Permit # 46-00990-01.

3. Type of licensed material used.

VA PSHCS has used licensed material for both medical diagnostic and treatment purposes and research purposes, including animal studies. Waste Area 3 began use as a research waste decay-in-storage facility in 1988. Based on a Historical Site Assessment and radioactive material disposal records, with the exception of small amounts of H-3 and C-14, only radionuclides with half-lives less than 120 days were introduced into the storage area.

4. Type of licensed activities engaged in.

With respect to all licensed activities at VA PSHCS, the facility has been engaged in both research and medical use. With respect to Waste Area 3, the licensed activity was interim decay-in-storage of *in vitro* research and radiation oncology radioactive wastes.

5. Site description: size (square feet, square miles, acres), structures (labs, office space), surrounding area (residential, commercial, industrial, mixed).

Waste Area 3 was a single floor, sheet-metal enclosed structure bolted onto an 8’ x 14’ x 8’ fence frame. Waste Area 3 was approximately a 112 square foot (896 ft³), un-compartmented, structure with no electrical, ventilation, heating system, drainage system, water, sewer or septic system of any kind. The structure was on VA-controlled land and surrounded by other VA-controlled buildings. The VA PSHCS site encompasses

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approximately 44-acre site and contains 20 buildings and five parking areas. The VA PSHCS is situated in a metropolitan area surrounded by residential neighborhoods and commercial enterprises, the nearest of which is approximately 500 feet away.

6. Size and description of affected area(s): building, rooms, areas, size.

Waste Area 3 was a single floor, sheet-metal enclosed structure bolted onto an 8 x 14 x 8 foot fence frame. Waste Area 3 was approximately a 112 square foot (896 ft³). The structure could be adequately described as a chain-linked fence with a padlocked gate surrounded by 1 mm thick corrugated metal with a the same thickness of corrugated metal roof bolted to the top to prevent direct exposure to the elements. The entire structure sat upon a poured asphalt floor approximately 3/4" thick. A general layout of Waste Area 3 is provided as **Enclosure 2**.

7. Date licensed activities ceased.

The last recorded usage of Waste Area 3 was 15 November 2006; the last decay-in-storage radioactive waste drum was placed into Waste Area 3 in June of 2005. Licensed materials continue to be used in other buildings at the VA PSHCS site in accordance with the facility's VHA Materials Permit. Waste Area 3 ceased to be used because a generator explosion in an adjacent area in November 2006 (which did not directly impact any stored radioactive materials in WS#3) necessitated its demolition so that the area could be used for a new larger generator.

8. Date decontamination activities started.

Decontamination activities started 15 November 2006. Extensive decontamination efforts were deemed unnecessary based on the activity, types and half-lives of materials stored for decay and based on disposal records. All waste containers were removed from Waste Area 3 and placed in a separate storage area, Waste Area 2 (approximately 40 feet from Waste Area 3), which is an approved radioactive waste storage area at the site.

9. Date(s) final status surveys performed and areas surveyed.

Final status surveys were performed on November 17, 2006 with additional surveys on April 10, 2007. On November 17, 2006, representative wipes of the shed were taken at points on the outside walls, inside walls and the deck surface. There were 15 wipes total counted by Tri-Carb liquid scintillation counter Model 1600TR. The LSC counter gave an efficiency for H-3 of 60.95% and efficiency for C-14 of 96.23%. Background was 20 DPM. The highest reading recorded on the wipe samples was 30 DPM. Wipes on the outside and inside walls covered a 4ft x 4ft area each. Single smears of accessible surfaces, including the asphalt floor (after removal of all drums) was performed yielding no counts higher than 20 dpm/100cm². An ambient exposure rate survey was performed in the area using a Victoreen Model 451B detector; results were at background levels of 0.02-0.03 mR/hr.

On April 10, 2007, additional surveys were performed as further evidence that Waste Area 3 was highly unlikely to have been contaminated above release levels. Waste barrels that had been removed during November 2006 from Waste Area 3 were wipe-tested at several locations on the top, bottom, and sides to verify that contamination leakage from storage barrels was highly unlikely. Ten wipes per barrel were performed for a total of 180 wipes and counted by Tri-Carb liquid scintillation counter Model 1600TR. The LSC counter gave an

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efficiency for H-3 of 62.42% and efficiency for C-14 of 95.95%. Background was 23.5 dpm. The highest wipe count obtained was 48 dpm/100cm², less than two times background.

10. List of radionuclides used with half-life greater than 120 days.

H-3, C-14, Cl-36, Co-57, Au-195, Ge-68, U-235 have been used at VA PSHCS; however, a historical review of the area's use indicated that the only radionuclides with greater than 120 days half-life, stored in Waste Area 3, were H-3 and C-14.

11. What DCGLs were used?

Based on VHA permit commitments, the facility uses criteria in NUREG-1556, Volume 7, Appendix Q for unrestricted release of equipment and research facilities. The release levels for equipment released for unrestricted use (e.g., drums and fencing) are 1000 dpm/100 cm² for beta-gamma emitters. The release values for building surfaces are 1.2×10^8 dpm/100 cm² and 3.7×10^6 dpm/100 cm² for total H-3 and C-14, respectively. The building surface screening values represent total surface concentrations of individual radionuclides that would be deemed in compliance with the 0.25 mSv/yr (25 mrem/yr) unrestricted release dose limit in 10 CFR 20.1402. Based on the above discussion and follow-up efforts on the site contents, it is believed that no release limits were exceeded for equipment and building surfaces and that no significant residual contamination levels remain.

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Enclosure 2 (General Layout of Waste Area 3)

Waste Area Three Survey Map

