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~~June 30, 2009~~ May 2014

WA7 89000 8967, Part III, Operating Unit Group 5  
325 Hazardous Waste Treatment Units

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## I. INSPECTION REQUIREMENTS

### I.1 INSPECTION PLAN

The purpose and intent of implementing inspection procedures at the 325 HWTUs are to prevent malfunctions, deterioration, operator errors, and/or discharges that might cause or lead to the release of regulated waste to the environment or threats to human health. ~~A-This Addendum describes the system of daily and weekly inspections involving various PNNL departments and levels of management has been implemented at the 325 HWTUs to meet this intent. The Hanford Facility 300 Area Fire Department performs inspection once every four months of the fire suppressant and notification systems and annually an inspection of the sprinkler systems.~~

**Commented [HT1]:** Reworded from application language to addendum language. Class 1, A.1.

**Commented [HT2]:** This sentence duplicates information in Section I.1.1.4 and is out of place here, hence recommended for deletion. Class 1, A.1.

#### I.1.1 General Inspection Requirements

~~I.1.1.1 This section identifies the content and frequency of inspections performed required at the 325 HWTUs are described in this section. Also described is maintenance of inspection records.~~

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~~Observations made and deficiencies and corrective actions noted during an inspection are recorded on the inspection checklist. The checklist includes the inspector's printed name, signature, date, and time. Once approved, the checklist is placed in the 325 HWTUs unit specific operating record. The inspection records and dates are used to help determine any necessary corrective actions. Problems identified during the inspections are prioritized and addressed in a timely fashion as appropriate to mitigate health risks to workers, and to maintain integrity of waste management units.~~

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#### I.1.1.2 Types of Problems

~~Inspections are performed at the 325 HWTUs daily, weekly, quarterly, once every four months, and annual. The types of problems addressed by each of these inspections are described as follows.~~

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**Commented [HT5]:** Descriptive language from the application containing no requirements, hence recommended for deletion. Class 1, A.1.

#### I.1.1.3 I.1.1.1 Daily Inspections

~~The 325 HWTUs staff performs daily inspections whenever waste packaging, transfer, shipping, or movement operations are conducted. Unit personnel monitor container condition and integrity, the containment system, and other building areas daily where waste is handled. Types of Problems. Specific inspection points include, but are not limited, to the following are:~~

**Commented [HT6]:** Reworded to specify what is compliant.

- Container integrity
- Mislabeled or opened containers
- Improper storage (e.g., incompatible waste storage)
- Disorderliness or uncleanness of storage unit
- Accumulation of waste in containment systems

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~~Frequency of Inspection: The 325 HWTUs staff performs daily inspections whenever waste packaging, transfer, shipping, or movement operations are conducted. Unit personnel monitor container condition and integrity, the containment system, and other building areas daily where waste is handled.~~

Results of these daily inspections are documented as part of the 325 HWTUs operating record.

#### I.1.1.4 I.1.1.2 Weekly Inspections

The 325 HWTUs personnel conduct weekly inspections of both safety and operating equipment in the 325 HWTUs. Safety and emergency equipment are inspected for functionality and adequacy of supply. The weekly and daily inspections are usually conducted on or before the last working day of each week,

1 and have the same inspection points. Results of these weekly inspections are documented as a part of the  
2 325 HWTUs operating record.

3 **1.1.1.5.1.1.3 Quarterly, Once Every Four Months, and Annual Inspections**

4 The Hanford Facility 300 Area Fire Department performs a once-every-four-months inspection of fire  
5 suppressant and notification systems (i.e., sprinkler system and fire alarm pull boxes). This inspection  
6 includes flow tests of the sprinklers to ensure that there is no blockage in the system lines; the alarm  
7 system is activated to ensure proper pull box operation. Annually, the Fire Department performs a full  
8 inspection of the sprinkler system, smoke detectors, heat detectors, and pull boxes. A complete flow test  
9 of the sprinkler system is performed from the furthest valve to ensure proper flow through the entire  
10 system. Fire extinguishers also are checked for proper pressure and function. The Hanford Fire  
11 Department retains these records.

12 Additional documented inspections are performed quarterly of the emergency eyewash/shower units, the  
13 fume hoods, and other ventilation system components. Records of these safety equipment inspections  
14 and the results, as well as documentation of any required corrective actions, are maintained by the  
15 appropriate facilities and operations staff.

16 **1.1.1.6.1.1.4 Frequency of Inspections**

17 The frequency of inspections is based on specific regulatory requirements and on the rate of possible  
18 deterioration of equipment and probability of environmental or human health incidents.

19 Areas where dangerous and mixed waste are actively handled, including all of the hot cells, the front and  
20 back face of the SAL, and Rooms 520, 524 and 528 in the HWTU are considered to be areas subject to  
21 spills. These areas are given daily inspections when in use as required by [WAC 173-303-320\(2\)\(c\)](#).

22 The primary and secondary containment systems (i.e., floors, troughs, and sumps) are inspected daily  
23 when in use for accumulation of spilled material. The containment systems are inspected weekly for  
24 structural integrity (i.e., no cracks, gaps, leaks that could result in environmental release of waste in the  
25 event of a spill). This frequency is based on the need to perform timely corrective actions in the event  
26 that problems are noted.

27 Aisle space between containers is inspected weekly when applicable. As the objective of the aisle space  
28 requirements is to allow for unobstructed movement of personnel and equipment in case of an emergency,  
29 the aisle space requirements do not apply to the hot cells, shielded cubicles, or storage cabinets. If  
30 quantities of waste are packaged in large containers or drums, temporarily stored before a transfer, a  
31 minimum aisle space of 76 centimeters is maintained in accordance with [WAC 173-303-340\(3\)](#), As-Low-  
32 As-Reasonably-Achievable (ALARA) concerns, and with applicable standards of the Uniform Building  
33 Code and Life Safety Code. Weekly inspections, where applicable, allow container spacing problems to  
34 be identified and corrected.

35 Emergency and safety equipment and personal protective equipment are inspected weekly. Weekly  
36 inspections will assure this equipment is available and in adequate supply.

37 **I.1.2 Specific Process Inspection Requirements**

38 The following sections detail the inspections to be performed at the 325 HWTUs.

39 **I.1.2.1 Container Inspection**

40 Dangerous and mixed waste containers stored in the 325 HWTUs are inspected daily where waste  
41 handling activities are performed for leakage, evidence of damage or deterioration, proper and legible  
42 labeling, and proper lid and bung closure. Any observations made during the inspections, including any  
43 repairs or remedial actions taken, are documented in the logbook with the date, time, and printed name  
44 and signature of the inspectors. This logbook is maintained in the 325 HWTUs for at least 5 years from  
45 the dates of the inspections. All areas subject to spills are inspected daily when in use. Structural  
46 integrity of the containment systems is checked weekly.

1 **I.1.2.2 Tank System Inspection**

2 The Shielded Analytical Laboratory (SAL) tank located in Room 32 is used to store mixed waste  
3 generated because of waste treatment activities. Routine inspections of the SAL tank system are  
4 conducted in accordance with [WAC 173-303-640](#). Inspections involve a combination of visual,  
5 mechanical, and electronic means. Due to ALARA considerations, visual inspections of the tank system  
6 are conducted by remotely operated cameras mounted in Room 32. These visual inspections are limited  
7 to areas of the tank system that can be observed by the camera. In the event of a camera system  
8 malfunction, the tank system will be visually inspected from the doorway of Room 32 until the  
9 malfunction has been corrected. A mirror is mounted on the back wall of Room 32 to allow viewing the  
10 rear of the tank from the window in the door. A logbook or inspection sheet of all inspections is  
11 maintained in the operating record for at least 5 years from the date of the inspection.

12 **I.1.2.2.1 Tank System External Corrosion and Releases**

13 Aboveground portions of the SAL tank are inspected each operating day to detect corrosion or releases of  
14 waste.

15 **I.1.2.2.2 Tank System Construction Material and Surrounding Area**

16 The SAL tank is double walled and constructed of corrosion resistant stainless steel, with a capacity of  
17 1,218 liters. The outer wall is a cylindrical stainless steel tank that provides containment sufficient to  
18 contain 100 percent of the inner tank volume. The construction materials of the tank and the area  
19 immediately surrounding the externally accessible portion of the tank system, including the secondary  
20 containment systems, are inspected during use to detect erosion or signs of releases of mixed waste  
21 (e.g., wet spots).

22 Any deteriorations or malfunctions observed during inspection of the tank system will be corrected. Any  
23 release to the environment is reported immediately to Ecology, as required  
24 by [WAC 173-303-640](#)(7)(d)(i), and to the National Response Center as required by [40 CFR 302](#).

25 **I.1.2.2.3 Tank System Overfilling Control Equipment**

26 The tank controls for the SAL tank include two high-level alarm systems that respond to overflow  
27 conditions. The initial tank high-level alarm is activated by a conductivity probe, the second by a  
28 capacitance probe. The conductivity probe high-level alarm and associated functions can be tested  
29 electrically by depressing a button on the main control panel in Room 201. Activation of this alarm  
30 results in a visible red light and audible alarm on the main control panel in Room 201, an alarm condition  
31 on the annunciator panel on the second floor of the 325 Building, and closure of electric solenoid valves  
32 on all inlet water supply lines to the hot cell area and tank system. Activation of the capacitance probe  
33 alarm results in a red light and audible alarm.

34 **I.1.2.2.4 Tank System Monitoring and Leak Detection Equipment**

35 The leak detection conductivity probe for the SAL tank is located between the primary and secondary  
36 shells of the double walled tank. The leak detection probe signal activates if any liquids collect in the  
37 annulus between the two walls of the tank. The leak detection probe can be functionally tested  
38 electrically by depressing a test button on the main control panel in Room 201. A leak detection sensor is  
39 also installed in the secondary containment pan underneath the SAL tank and activates if liquids are  
40 detected in the pan.

41 **I.1.3 Inspection Log**

42 Copies of the completed inspection checklists are provided to operations personnel and maintained in the  
43 325 HWTUs files. Any corrective actions noted or deterioration or malfunctions in equipment discovered  
44 by the inspector are delegated to responsible individuals in the operations group. Corrective actions  
45 identified must be completed within 2 weeks unless there is documentation and reason for further delay.  
46 Examples of problems that could be identified and the corresponding remedial action are listed in

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- 1 Table I.1. Inspection reports and corrective action response documentation are retained at the
- 2 325 HWTUs for a minimum of 5 years.
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**Table I.1. Remedial Actions for Major Problems**

<b>Major Problems</b>	<b>Remedial Actions</b>
<b>Containment system failures</b>	
Cracks in floor of container storage area	Remove containers from area and cease use until cracks are repaired.
Cracks in floor of SAL cell liner	Remove containers from area and cease use until cracks are repaired, or provide secondary containment for containers holding liquid waste.
Leaking container in container storage area	Transfer waste to another container. Clean up spill.
Leaking tank or ancillary equipment	For minor leaks or drips, conduct inspection of affected equipment every 12 hours. For major leaks, immediately remove all waste from tank system. Prevent addition of waste to tank system until repaired. Notify Building Emergency Director. Initiate contingency plan if appropriate.
<b>Spills</b>	
Minor spills in container storage area	Clean up spill according to contingency plan.
Major spills in container storage areas	Notify Building Emergency Director. Initiate contingency plan if appropriate.

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