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ADDENDUM I
INSPECTION REQUIREMENTS

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ADDENDUM I
INSPECTION REQUIREMENTS

Contents

I. INSPECTION REQUIREMENTS.....I.1
I.1 Inspection PlanI.1
I.1.1 General Inspection RequirementsI.1
I.1.2 Schedule for Remedial Action for Problems Revealed.....I.2
I.1.3 Specific Process or Waste Type Inspection RequirementsI.2

Tables and Figures

Table I.1. Container Storage InspectionsI.5
Table I.2. Landfill Inspections during Pre-Active Life*I.5
Table I.3. Landfill Inspections during Active LifeI.6
Figure I.1. Typical Average Daily Action Leakage Rate CalculationI.7

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2
3
4
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1 **I. INSPECTION REQUIREMENTS**

2 **I.1 Inspection Plan**

3 This section describes the method and schedule for inspections of the IDF. These inspections help to
4 ensure that situations do not exist that might cause or lead to the release of waste to the environment,
5 degradation of safety equipment and/or systems, or that might pose a threat to human health. Abnormal
6 conditions identified by inspections must be corrected.

7 **I.1.1 General Inspection Requirements**

8 The content and frequency of inspections are described in this section. Inspection discrepancies are
9 documented on inspection checklists and log sheets. The schedule and inspection records will be kept in
10 the inspection logbooks and retained by the IDF operations personnel. Inspection records will be retained
11 in accordance with Permit Condition II.I.1 and contain the following information:

- 12 • Date and time of inspection
- 13 • Printed name and the hand written signature of the inspector
- 14 • Notation of the observations made
- 15 • An account of spills or discharges in accordance with [WAC 173-303-145](#)
- 16 • Date and nature of any repairs or remedial actions taken.

17 The inspection checklists consist of a listing of items that are assessed during each inspection. A yes/no
18 response will be made for each listed item. A 'yes' response means that the item is in compliance with the
19 conditions stated on the checklist. Any problems identified during the inspection, as indicated by a 'no'
20 response on the checklist, will be reported immediately to the IDF operations supervisor.

21 **I.1.1.1 Types of Problems**

22 Types of problems looked for during an inspection in Pre-Active Life are in Table I.2. Types of problems
23 looked for during an inspection in Active Life are in Table I.3. Once the IDF begins to receive dangerous
24 waste, the requirements in Table I.2 are no longer applicable. Each day mixed waste containers and/or
25 bulk waste are handled within the IDF; an operator will perform a daily inspection of areas subject to
26 spills (e.g., loading and unloading areas and waste handling areas).

27 **I.1.1.2 Frequency of Inspections**

28 Table I.2 provides inspection frequencies during the Pre-Active Life. Tables I.1 and I.3 provide inspection
29 frequencies during the Active Life. For clarification, areas with operations that may result in spills are
30 described below

31 Each step in the waste placement operation occurs in the landfill over the double HDPE liner system that
32 provides containment of any spill from the waste handling operation.

33 Waste Handling Operations involve the following:

- 34 • Unloading of the waste shipment in the landfill Placement of the cover soil over the waste container
- 35 During Active Life leachate,¹ movement occurs within the double-contained leachate handling system.
36 There is a potential for a leachate spill on the concrete containment slab of the Crest Pad Building,
37 Leachate Transfer Building, and/or the Leachate Loading Truck Pad.

38 Leachate Handling Operations involve the following:

- 39 • Pumping leachate from the collection sumps to the Crest Pad Building
- 40 • Activities within the Crest Pad Building

¹ [WAC 173-303-040](#) defines "Leachate" as any liquid, including any components suspended in the liquid that has percolated through or drained from dangerous waste.

- 1 • Transfer of leachate to and from the double-lined Leachate Tanks
- 2 • All activities that occur in the Leachate Transfer Building
- 3 • Pumping of leachate to a tanker truck on the Truck Loading Pad

4 Liquid handling operations involve the following:

- 5 • The Secondary Leak Detection System (SLDS) is similar to the LDS, except that it is equipped with
6 liquid level indication instrumentation only. A low-capacity submersible pump can be inserted into
7 the SLDS sump if required. Pumping of liquid from the collection sump to the small, portable
8 container on the SLDS Pad may be required. Collected liquid in the SLDS that may be construction
9 water and/or liquid from other sources.

10 Note: The secondary leak detection system is not a design requirement of [WAC 173-303-665](#), however
11 DOE has added the design feature pursuant to its authority under the *Atomic Energy Act of 1954*
12 (AEA) and not for the purposes of compliance with the dangerous waste regulations. Therefore,
13 information regarding the design, construction, and operation of the SLDS is provided for
14 information only. Pursuant to AEA, DOE has sole and exclusive responsibility and authority to
15 regulate the source, special nuclear and by-product material component of radioactive mixed
16 waste at DOE-owned nuclear facilities. Source, special nuclear and by-product materials, as
17 defined by AEA, are not subject to regulation under RCRA or the Hazardous Waste Management
18 Act, by the State of Washington and are not be subject to State dangerous waste permit, orders, or
19 any other enforceable instrument issued there under. DOE recognizes that radionuclide data may
20 be useful in the development and confirmation of geohydrologic conceptual models.
21 Radionuclide data contained herein is therefore provided as a matter of comity so the information
22 may be used for such purposes.

23 **I.1.2 Schedule for Remedial Action for Problems Revealed**

24 The operating organization will remedy any problems revealed by the inspection on a schedule that
25 prevents hazards to human health and the environment. Where a hazard is imminent or already has
26 occurred immediate action will be taken. Immediate actions will be implemented based on ALARA
27 considerations, availability of supplies, equipment, and personnel.

28 **I.1.3 Specific Process or Waste Type Inspection Requirements**

29 The following sections detail the inspections to be performed at the IDF.

30 **I.1.3.1 Container Inspection**

31 On receipt, operations personnel will confirm appropriate documentation by inspecting each mixed
32 wasted container for disposal and compliance with the container receipt inspection criteria (Addendum B)
33 before the mixed waste is placed in the IDF.

34 If present, off-specification waste and vitrified waste requiring cooling in storage will be subject to the
35 specific items and/or problems noted during weekly container inspection (Table I.1) include the
36 following:

- 37 • Condition of trench floor and sides
- 38 • Container structural integrity
- 39 • Containers closed
- 40 • At a minimum, 76.2 centimeters aisle spacing
- 41 • Corrosion of containers
- 42 • Evidence of spills or leaks
- 43 • Container labels and markings in place, legible, and unobscured
- 44 • Areas in and around stored waste are free of combustibles (e.g., tumbleweeds)
- 45 • Waste separations such as tape, rope, chain or other cordon mechanism are intact.

1 If present, transport vehicles containing off specification waste or vitrified waste requiring cooling will be
2 subject to the specific items and/or problems noted during weekly inspection include the following:

- 3 • Transport vehicle structural integrity
- 4 • At a minimum, 76.2 centimeters aisle spacing between transporters
- 5 • Evidence of spills or leaks
- 6 • Areas in and around transport vehicles are free of combustibles (e.g. tumbleweeds)
- 7 • Separations such as tape, rope, chain or other cordon mechanism are intact.

8 Transport vehicles will not be subject to an individual container inspection within the transporter.

9 Records of inspection will be maintained as detailed in Section F.2.1.

10 **I.1.3.2 Landfill Inspection**

11 The IDF will be inspected according to the frequencies in Table I.2 during Pre-Active Life and in
12 accordance with Table I.3 during Active Life.

13 **I.1.3.2.1 Run-on and Runoff Control System**

14 A run-on control system is installed around the perimeter of each lined trench (Addendum C). The
15 system consists of a berm along the outer margin of each trench that prevents run-on from entering the
16 trench. All run-on control system berms are inspected quarterly (Table I.2) and after storms for signs of
17 deterioration, malfunction, or improper operation. During Active Life, any precipitation that falls
18 between the run-on control berm and the edge of the trench excavation eventually might flow into the
19 primary leachate control and removal system sump and will be treated as leachate.

20 **I.1.3.2.2 Leak Detection System**

21 Leak detection for lined trench at the IDF is accomplished by the following:

- 22 • Monitoring liquid level above the secondary liner
- 23 • Monitoring liquid levels above primary liner
- 24 • Inspecting for the presence of liquids after significant precipitation events
- 25 • Verifying certain gauges and instruments are in current calibration; calibration is performed annually
26 or more frequently at intervals suggested by the manufacturer (Addendum C, Section C.3.7.4)
- 27 • Recording secondary sump levels on a daily action leakage rate calculation sheet (Figure I.1).

28 If the action leakage rate (Addendum C.4) has not been exceeded, the liner system will be functioning
29 properly.

30 **I.1.3.2.3 Wind Dispersal Control System**

31 Waste is inspected on receipt for evidence of damage, corrosion, or deterioration that might lead to
32 dispersal of the contents.

33 Unpackaged or bulk waste with any potential for wind dispersal is covered or sprayed with fixative after
34 being placed in a trench.

35 In addition, unpackaged or bulk waste handling operations are suspended in winds exceeding
36 24 kilometers per hour unless specifically approved by operations supervisors. The supervisor only
37 would grant approval to operate in winds over 24 kilometers per hour after determining that the risk to
38 human health or the environment would be diminished by completing the work activity, or that the nature
39 and form of the waste handling activity was such that the wind speed would have no significant impact.

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1 **I.1.3.2.4 Leachate Collection and Removal System**

2 Liquids in the Leachate Collection and Removal System and Leak Detection System are monitored daily
3 to ensure the action leakage rate (Addendum C.1) is not exceeded and will be inspected per Table I.2. In
4 addition, a flow meter is used to check if the amount of actual leachate pumped corresponds to the
5 amount accumulated in the leachate collection tank. This check will verify the proper function of the
6 leachate collection and removal sump pumps with each use.

7 In addition, evaluations on the leachate transfer lines for freeze and thaw damage will be conducted when
8 appropriate.

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Table I.1. Container Storage Inspections

Requirement Description	Inspection Frequency	Types Of Problems
-630(6) Containers	Weekly	Leaking Containers Deteriorating containers
-630(6) Containment System	Weekly	Deteriorating containment system
-395(1)(d) Ignitable or reactive waste	Not Applicable	Not Applicable

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Table I.2. Landfill Inspections during Pre-Active Life*

Requirement Description	Inspection Frequency	Types Of Problems
-665(4)(b)(i) Run-on and run-off control	Quarterly and after storms*	Deterioration, malfunction, or improper operation
-665(4)(b)(ii) Wind dispersal control systems	Quarterly and after storms*	Proper functioning
-665(4)(b)(iii) Leachate collection and removal systems	Quarterly and after storms*	Presence of leachate; proper functioning
-665(4)(c)(i) Leak detection system sump	Quarterly and after storms*	Amount of liquids removed
Secondary leak detection system sump**	Monthly**	Presence of unexpected liquid volume**
Security “Danger unauthorized personnel keep out” signs	Quarterly	Signs are posted and legible
Areas subject to spills	Daily when any activities may take place that have a potential for a spill or release to occur	Evidence of spills

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* Once the IDF begins to receive dangerous waste, the requirements in Table I.2 are no longer applicable, and inspection requirements will be as provided in Table I.3

Table I.3. Landfill Inspections during Active Life

Requirement Description	Inspection Frequency	Types Of Problems
-665(4)(b)(i) Run-on and run-off control	Weekly and after storms*	Deterioration, malfunction, or improper operation
-665(4)(b)(ii) Wind dispersal control systems	Weekly and after storms*	Proper functioning
-665(4)(b)(iii) Leachate collection and removal systems	Weekly and after storms*	Presence of leachate; proper functioning
-665(4)(c)(i) Leak detection system sump	Weekly and after storms*	Amount of liquids removed
Secondary leak detection system sump**	Monthly**	Presence of unexpected liquid volume**
Security devices: "Danger unauthorized personnel keep out" signs	Weekly	Signs are posted and legible
Areas subject to spills	Daily when waste management activities having a potential for a spill to occur	Evidence of spills

*A storm is any atmospheric disturbance with either wind gust of 35 miles per hour or greater, or precipitation of 0.5 inch or greater within a 24-hour period.

Note: Secondary leak detection system is not a design requirement of [WAC 173-303-665](#), however DOE is adding the design feature pursuant to its authority under the Atomic Energy Act of 1954 (AEA) and not for the purposes of compliance with the dangerous waste regulations. Therefore, formation regarding the design, construction, and operation of the secondary leak detection system is provided for information only. Pursuant to AEA, DOE has sole and exclusive responsibility and authority to regulate the source, special nuclear and by-product material component of radioactive mixed waste at DOE-owned nuclear facilities. Source, special nuclear and by-product materials, as defined by AEA, are not subject to regulation under RCRA or the Hazardous Waste Management Act, by the State of Washington and are not be subject to State dangerous waste permit, orders, or any other enforceable instrument issued there under. DOE recognizes that radionuclide data may be useful in the development and confirmation of geohydrologic conceptual models. Radionuclide data contained herein is therefore provided as a matter of comity so the information may be used for such purposes.

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