

**CAPSULE INTERIM STORAGE UNIT
ADDENDUM F
PREPAREDNESS AND PREVENTION
CHANGE CONTROL LOG**

Change Control Logs ensure that changes to this unit are performed in a methodical, controlled, coordinated, and transparent manner. Each unit addendum will have its own change control log with a modification history table. The “**Modification Number**” represents Ecology’s method for tracking the different versions of the permit. This log will serve as an up to date record of modifications and version history of the unit.

Modification History Table

Modification Date	Modification Number
02/20/2020	8C.2020.1F

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**ADDENDUM F
PREPAREDNESS AND PREVENTION**

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ADDENDUM F
PREPAREDNESS AND PREVENTION

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1 **F.1 Preparedness and Prevention**

2 This addendum addresses the preparedness and prevention measures in effect at the Capsule Interim
3 Storage (CIS) Operating Unit Group and, furthermore, complies with the requirements set forth in
4 Washington Administrative Code (WAC) 173-303-340, Dangerous Waste Regulations, *Preparedness and*
5 *prevention*; WAC 173-303-806(4)(a)(viii), *Final facility permits*; and WAC 173-303-395(4), *Other*
6 *general requirements*.

7 CIS operations provide for continued safe storage and maintenance of the 1,936 capsules containing
8 cesium and strontium mixed waste. The double-encapsulated cesium and strontium salts are stored in a
9 Cask Storage System (CSS) on the Capsule Storage Area (CSA) Dangerous Waste Management Unit
10 (DWMU) storage pad. CIS storage operations are designed to protect human health and the environment
11 from the encapsulated mixed waste.

12 **F.2 Preparedness and Prevention Requirements**

13 The purposes of preparedness and prevention are to minimize the damage caused by a fire, natural
14 disaster or explosion, and help avoid or mitigate any unplanned releases of dangerous waste constituents
15 to the air, soil, surface water, or groundwater. The following subsections describe preparedness and
16 prevention measures at CIS, which help avoid or mitigate such situations.

17 The following equipment is available for use, in accordance with the requirements of
18 WAC 173-303-340(1). All communications, alarms, and notifications are tested and maintained to ensure
19 proper operation in time of emergency, in accordance with Addendum I, "Inspection Plan."

20 **F.2.1 Internal Communication**

21 The CSA DWMU will not be a normally occupied area and does not require a telephone system.
22 Personnel at CIS will use hand-held two-way radios as a portable communication device
23 (WAC 173-303-340(1)(b) and (2)).

24 Whenever casks are being handled at CIS, all personnel involved must have immediate access to a
25 hand-held two-way radio capable of directing emergency communication with another employee. The
26 communication device described in this section meets the internal communication requirements of
27 WAC 173-303-340(1)(a) and (2)(a).

28 Emergency notifications are conveyed through the use of hand-held two-way radios and site-wide alerts.
29 Sirens broadcast the Hanford Site Emergency Alerting System in case of emergency (DOE/RL-94-02,
30 *Hanford Emergency Management Plan*, Section 5.2.5).

31 **F.2.2 External Communications**

32 As required by WAC 173-303-340(1)(b), the communications equipment described in Section F2.1 must
33 have the capability for contacting the Hanford Patrol Operations Center and Hanford Fire Department to
34 request the assistance of local emergency response organizations. Hand-held radios can be used to notify
35 dispatch personnel to request emergency assistance. The Hanford Patrol Operations Center Point of
36 Contact can be contacted for 24-hour emergency communications and for information relays by dispatch
37 personnel.

38 State and local response organizations are contacted through the Hanford Patrol Operations Center.
39 Onsite responders are notified and dispatched through the Hanford Patrol Operations Center.

40 In the instance that just one employee is at CIS during operations, the individual must have immediate
41 access to a hand-held two-way radio capable of summoning external emergency assistance
42 [WAC 173-303-340(2)(b)].

1 **F.2.3 Emergency Equipment and Water for Fire Control**

2 CIS stores double-walled capsules containing mixed waste that are further protected from external
3 conditions by a CSS. The capsules are stored inside a sealed container, which is designed to contain the
4 hazardous waste under accident condition. The CSSs contain no liquid waste and remain stationary due
5 to the CSS configuration. Therefore, emergency equipment, such as spill control and decontamination
6 equipment are not maintained at the CIS. In the unlikely event of an unplanned release, Addendum J,
7 “Contingency Plan,” will be implemented.

8 National Fire Protection Association compliant fire hydrants, providing water at adequate volume and
9 pressure, are located within accessible distances from the CSA. When needed, the Hanford Fire
10 Department will use these hydrants to supply fire control equipment and water for fire suppression. The
11 Hanford Fire Department can also respond to fire related emergencies at the CSA with pump engines
12 capable of providing water at adequate volume and pressure for fire suppression.

13 CIS does not produce products for use, have any production processes, or receive waste from offsite
14 facilities. For further details on CIS and storage operation, refer to CIS Addendum C, “Process
15 Information.”

16 **F.3 Preventive Procedures, Structures, and Equipment**

17 The following sections describe preventive procedures, structures, and equipment in effect at CIS.

18 **F.3.1 Aisle Spacing Requirements**

19 The CSS has an internal support structure used to confine the capsules and prevent releases of hazardous
20 waste (see CIS Addendum C for further details on the CSS design and capsule storage configuration). As
21 described in Addendum C, the CSA design and CSS storage configuration maintains aisle space between
22 casks to allow the unobstructed movement of personnel and emergency equipment to any area of the CSA
23 in the event of an emergency, thereby meeting the requirements of WAC 173-303-340(3).

24 **F.3.2 Loading and Unloading Operations**

25 To minimize potential for accidental release of dangerous waste during loading and unloading activities,
26 CIS personnel shall implement the following preventive measures, as addressed in Addendum C:

- 27 • The casks are handled by equipment appropriate for loading and transport operations.
- 28 • Management approval must be obtained prior to conducting cask transport operations.
- 29 • Pathways for loading and unloading operations must remain clear of obstructions.
- 30 • Transport vehicles are positioned in a manner that provides an unobstructed workspace to move
31 the casks.

32 **F.3.3 Prevention of Run On, Runoff, and Contamination to Water Supplies**

33 Run on is prevented through engineered controls. As described in CIS Addendum C, the mixed waste
34 capsules are stored in a CSS. The CSS protects the waste from contact with accumulated liquids. The
35 casks are elevated on the concrete pad. The concrete storage pad is also sloped to prevent precipitation
36 accumulation, thus preventing run on from entering the casks. Run on is not considered a relevant factor
37 in evaluating the protectiveness of mixed waste storage activities at CIS. Because no precipitation can
38 enter the cask to contact the mixed waste contents, no runoff can occur.

39 **F.3.4 Equipment and Power Failure**

40 **F.3.4.1 Equipment Failure**

41 The CSS has been designed to minimize the possibility of equipment failure. As described in
42 Addendum C, the capsules are sealed within universal capsule sleeves (UCS), which are within a sealed
43 transportable storage canister (TSC). In the event of a capsule failure, the UCS and TSC are fabricated

1 from 316L corrosion resistant stainless steel that are sealed to contain any releases. The system is
2 designed with a passive cooling system to eliminate concerns related to cooling equipment failure. The
3 inlet air vents contain screens to prevent foreign material from entering the cask and interfering with the
4 passive air cooling system.

5 **F.3.4.2 Power Failure**

6 CIS is designed for safe operation during power outages. A temporary loss of electrical power does not
7 affect the safe storage of the dangerous waste and would not result in a release of mixed waste, therefore,
8 it would not constitute an emergency. In the event of a loss of electrical power, the temperature
9 monitoring system would not be operational. However, actions would be taken to restore the loss of
10 power and provide alternate monitoring of the casks to ensure air flow. A visual inspection would be
11 conducted in place of remote temperature monitoring.

12 **F.3.5 Personal Protection Equipment**

13 CIS minimizes personnel exposure to occupational injury and dangerous waste by ensuring the use of
14 adequate personal protective equipment (PPE) during normal operations and emergencies. All personnel
15 are required to wear PPE specified by work authorization documentation, and in accordance with training,
16 posted requirements, and administrative instruction. PPE requirements will vary depending on the form,
17 content, and waste handling activities. When possible, engineering and/or administrative controls are first
18 implemented to minimize the possibility of exposure.

19 **F.4 Prevention of Reaction of Ignitable, Reactive, and Incompatible Waste**

20 CIS does not and will not store ignitable waste, reactive waste, or waste found incompatible with the
21 mixed waste capsules.

22 **F.5 Arrangements with Local Authorities**

23 Written emergency assistance agreements exist with local authorities that include arrangements to
24 familiarize and furnish local hospitals, police departments, fire departments, and city and county
25 emergency response teams with Hanford Facility information [WAC 173-303-340(4)(a) through (c)], as
26 described in DOE/RL-94-02. The response agreements designate primary emergency authority
27 [WAC 173-303-340(4)(d)]. If state or local authorities decline to enter into a response agreement or
28 familiarization arrangement with the Hanford Facility, the Permittees will record the refusal in the
29 Hanford Facility Operating Record, as required by WA7890008967, Hanford Facility Resource
30 Conservation and Recovery Act Permit, Condition II.I.1.g [WAC 173-303-340(5)].

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