

**CAPSULE INTERIM STORAGE
PART III, OPERATING UNIT GROUP 19
UNIT-SPECIFIC PERMIT CONDITIONS
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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UNIT-SPECIFIC PERMIT CONDITIONS**

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2 **PART III, OPERATING UNIT GROUP 19, UNIT-SPECIFIC PERMIT CONDITIONS**
3 **CAPSULE INTERIM STORAGE**
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6 **UNIT DESCRIPTION**

7 Capsule Interim Storage (CIS) is a dangerous waste operating unit group located in the 200 East Area.
8 CIS contains one Dangerous Waste Management Unit (DWMU), the Capsule Storage Area (CSA). The
9 CSA is a miscellaneous unit due to the unique nature of the waste and storage system design. CIS also
10 includes an Operating Pad for staging and maneuvering equipment and a graveled area for drainage and
11 radiological buffering.

12 The CSA stores cesium chloride and strontium fluoride salts separated from Hanford tank waste from
13 1969 through 1984. The cesium and strontium salts are stored within Cask Storage Systems (CSSs).
14 Each CSS consists of a Vertical Concrete Cask (VCC) housing a stainless steel Transportable Storage
15 Canister (TSC). The TSC is loaded with a TSC Basket holding up to 22 Universal Capsule Sleeves
16 (UCSs). A UCS can hold up to six standard capsules or two of the larger Type W overpacks. Total
17 permitted storage is 1,936 capsules loaded into 25 VCCs to specific aggregate heat generation thresholds.

- 18 • The CSA dangerous waste management unit consists of a concrete pad with a surface of
19 approximately 90 feet by 184 feet. An area of approximately 90 feet by 90 feet within the inner
20 security fence is the primary storage area housing the 25 VCCs during normal operation. If
21 needed (e.g., for isolation and individual monitoring), VCCs can be moved from the inner area to
22 the portion of the CSA pad between the two security fences.
- 23 • The concrete Operating Pad has a surface of approximately 45 feet by 45 feet and is located
24 adjacent to the CSA pad between the two security fences. This pad is not part of any DWMU and
25 cannot be used for dangerous or mixed waste loading, unloading, storage, handling, or treatment.
- 26 • The graveled area comprising the remainder of the area between the two security fences is not
27 part of a DWMU. This area provides a physical buffer and drainage, but cannot be used for
28 dangerous or mixed waste loading, unloading, storage, handling, or treatment.

29 Addendum A, Attachment A, contains maps and diagrams of the CIS layout. CSSs are received at the
30 CSA, completely assembled, from the Waste Encapsulation and Storage Facility (WESF) and no
31 additional waste sampling is required for receipt of the specific capsules identified in Addendum C. CSA
32 is not currently authorized to receive or store any other wastes.

33 **LIST OF ADDENDA SPECIFIC TO OPERATING UNIT GROUP 19**

34	Addendum A	Part A Form
35	Addendum B	Waste Analysis Plan
36	Addendum C	Process Information
37	Addendum D	Groundwater Monitoring - RESERVED
38	Addendum E	Security
39	Addendum F	Preparedness and Prevention
40	Addendum G	Personnel Training
41	Addendum H	Closure Plan
42	Addendum I	Inspection Plan
43	Addendum J	Contingency Plan

1 **DEFINITIONS**

2 The terms **capsule(s)**, **cesium and strontium capsule(s)**, and **cesium capsule(s)** are assumed to include
3 both **standard capsules** and **Type W overpacks** unless the type is specified.

4 **Standard capsules** are the 1,913 double-walled capsules containing cesium chloride and strontium
5 fluoride mixed waste constructed at WESF from 1974 through 1985 which have not been overpacked.
6 These capsules have an approximate inner capacity of 1 liter.

7 **Type W overpacks** are the 23 larger capsules produced from 1997 through 1999 to encapsulate bulging
8 cesium **standard capsules** and loose cesium chloride mixed waste. There are no **Type W overpacks**
9 containing strontium fluoride mixed waste.

10 A **Vertical Concrete Cask** or “**VCC**” is the passively-ventilated outer concrete shell of a **Capsule**
11 **Storage System** or “**CSS**.” A single **Transportable Storage Canister** or “**TSC**” can be inserted into the
12 storage space inside the VCC.

13 A **Transportable Storage Canister** or “**TSC**” is the combination of a sealed stainless steel shell and
14 Transportable Storage Canister Basket. Twenty-two Universal Capsule Sleeves or “**UCSs**” can be
15 inserted into the storage space inside a TSC.

16 A **Universal Capsule Sleeve** or “**UCS**” is a sealed stainless steel shell capable of holding up to six
17 standard capsules or two Type W overpacks. Stainless steel capsule spacers may be loaded into a UCS to
18 take the place of a capsule.

19 A **Vertical Cask Transporter** or “**VCT**” is a mobile structure capable of lifting a fully-assembled **CSS**
20 for transport under power of a **Tug** which is equivalent to the device described on page C-13 of
21 CHPRC-02538, Revision 0. A VCT and Tug are the standard method for moving a CSS.

22 A **Tug** is a self-propelled piece of mobile equipment capable of towing a **VCT** and fully-assembled **CSS**
23 to a new position.

24 **ACRONYMS**

25	CIS	Capsule Interim Storage
26	CSA	Capsule Storage Area
27	CSS	Capsule Storage System
28	DWMU	Dangerous Waste Management Unit
29	LDR	Land Disposal Restrictions
30	OUG	Operating Unit Group
31	TSC	Transportable Storage Canister
32	VCC	Vertical Concrete Cask

- 1 **III.19.A COMPLIANCE WITH UNIT-SPECIFIC PERMIT CONDITIONS**
- 2 **III.19.A.1** The Permittees will comply with all Permit conditions in this Chapter and its Addenda
3 with respect to dangerous waste management and DWMU in Operating Unit Group 19,
4 CIS, in addition to requirements in Permit Part I and II.
- 5 **III.19.B GENERAL WASTE MANAGEMENT**
- 6 **III.19.B.1** The Permittees are authorized to accept mixed waste for storage in this DWMU that
7 satisfies the waste acceptance criteria in Permit Addendum B according to the waste
8 acceptance procedures in Permit Addendum B. (Washington Administrative Code
9 [WAC] 173-303-300)
- 10 **III.19.B.2** The Permittees are authorized to store in the CSA, the specific mixed wastes identified in
11 Addendum C, Section C.2.1. These mixed wastes will be stored according to the
12 requirements of this Chapter and will be received and stored in the CSS, which includes
13 the VCC and TSC, according to the requirements detailed in Addendum C, Section C.2.
- 14 **III.19.C WASTE ANALYSIS**
- 15 **III.19.C.1** If sampling or analysis of wastes associated with the CSA is to be conducted, the
16 Permittees will submit to Department of Ecology (Ecology) a permit modification request
17 in accordance with WAC 173-303-830 to incorporate an appropriate sampling and
18 analysis plan and a quality assurance plan into the permit. [WAC 173-303-300(2)]
- 19 **III.19.C.2** The Permittees will have an accurate and complete description of each waste
20 stream managed at the CSA as necessary to document designation according to
21 WAC 173-303-070, applicable land disposal restriction treatment standards pursuant to
22 WAC 173-303-140, and any other information necessary to ensure management of the
23 waste streams in accordance with requirements of this Permit.
- 24 **III.19.C.2.a** For the specific mixed wastes identified in Addendum C, Section C.2.1, the description of
25 waste streams will consist of, at a minimum, the supporting references cited in
26 Addendum B, Section B.2.
- 27 **III.19.C.2.b** This description of waste streams will be maintained in the Hanford Facility Operating
28 Record, CIS File required by Permit Condition II.I.1 and must be available upon request.
29 [WAC 173-303-380(1)(a)]
- 30 **III.19.D RECORDKEEPING AND REPORTING**
- 31 **III.19.D.1** The Permittees will place the following into the Hanford Facility Operating Record, CIS
32 File required by Permit Condition II.I.1. (WAC 173-303-380)
- 33 **III.19.D.1.a** The quantity and profile of each mixed waste stream managed at CSA. [WAC 173-303-
34 380(1)(a), and -(b)]
- 35 **III.19.D.1.b** Records required by WAC 173-303-380(1)(o), incorporated by reference.
- 36 **III.19.D.1.c** An inspection log, summarizing inspections conducted pursuant to Permit Condition
37 III.19.H.1. [WAC 173-303-380(1)(e)]
- 38 **III.19.D.1.d** Summary reports and details of all incidents that require implementation of the
39 Contingency Plan according to the requirements of Permit Condition II.A.1.
40 [WAC 173-303-380(1)(d)]

- 1 **III.19.E SECURITY**
- 2 **III.19.E.1** The Permittees will comply with the Security requirements specific to CIS in
3 Addendum E and Permit Attachment 3 as required by Permit Condition II.M.
4 [WAC 173-303-310(2)(c)]
- 5 **III.19.F PREPAREDNESS AND PREVENTION**
- 6 **III.19.F.1** The Permittees will comply with the Preparedness and Prevention requirements specific
7 to CIS in Addendum F and Permit Condition II.B. (WAC 173-303-340)
- 8 **III.19.G CONTINGENCY PLAN**
- 9 **III.19.G.1** The Permittees will comply with Contingency Plan requirements specific to CIS in
10 Addendum J in addition to the requirements of Permit Condition II.A when applicable.
11 (WAC 173-303-350)
- 12 **III.19.H INSPECTIONS**
- 13 **III.19.H.1** The Permittees will comply with the Inspection Plan requirements specific to CIS in
14 Addendum I and Permit Condition II.O. [WAC 173-303-320(2)]
- 15 **III.19.I TRAINING PLAN**
- 16 **III.19.I.1** The Permittees will comply with the Personnel Training requirements specific to CIS in
17 Addendum G and Permit Condition II.C. (WAC 173-303-330)
- 18 **III.19.J OTHER GENERAL REQUIREMENTS**
- 19 RESERVED
- 20 **III.19.K CLOSURE**
- 21 **III.19.K.1** The Permittees will close the CIS dangerous waste management units in accordance with
22 Addendum H, “Closure Plan” and Permit Condition II.J. [WAC 173-303-610(3)(a)]
- 23 **III.19.L MISCELLANEOUS UNITS**
- 24 **III.19.L.1** The Permittees will construct and maintain the physical structure of CIS as documented
25 in Addendum A, Attachment A, Figure A-2 and Addendum C, Section C1.1.
26 [WAC 173-303-680(2), WAC 173-303-630(7)(c)(i)]
- 27 **III.19.L.2** The Permittees will construct and maintain each CSS as documented in Addendum C,
28 Section C.2.2, including maintaining CSS physical structure and the integrity of each
29 mixed waste containment. [WAC 173-303-680(2), WAC 173-303-630(7)(c)(ii)]
- 30 **III.19.L.3** The Permittees will handle and store each CSS in a manner which will not cause the TSC
31 to rupture or cause it to leak. [WAC 173-303-680(2)]
- 32 **III.19.L.4** In the event damage to or degradation of a CSS may reasonably lead to a spill or release
33 from a TSC, the Permittees will initiate the Contingency Plan, if appropriate, in
34 accordance with Permit Condition III.19.G.1 and will develop a strategy to repair,
35 replace, or transfer components of the CSS in a manner which will prevent release of
36 stored mixed waste. When such criteria are met, the Permittees will perform such repairs,
37 replacements, or transfers as soon as practicable with consideration of worker safety,
38 protection of human health and the environment, and the risk posed by the condition of
39 the affected CSS. [WAC 173-303-680(2)]
- 40 **III.19.L.5** The Permittees will ensure that equipment which is capable of safely moving a CSS will
41 be available and properly maintained. [WAC 173-303-680(2)]

1 **III.19.L.6** If a CSS temperature monitoring system is not functional, visual inspection of the
2 associated CSS passive ventilation system inlet and outlet vents will be substituted for
3 daily temperature monitoring required by Addendum I. Operating in this manner is not,
4 by itself, a failure to properly operate and maintain CSS passive ventilation systems or
5 CSS temperature monitoring systems. If visual inspections are conducted because the
6 CSS temperature monitoring system is not functional the Permittees will notify Ecology
7 and provide a timeline for resuming normal operations of the temperature monitoring
8 system.

9 **III.19.L.7** The Permittees will comply with any applicable requirements for evaluation of
10 alternatives for long-term storage or disposal of the mixed waste at a location other than
11 the CSA as well as requirements for acquisition or modification of facilities for treatment,
12 storage, and/or disposal of the capsules required by and enforceable under Hanford
13 Federal Facility Agreement and Consent Order Milestone M-092.

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