

**WASTE ENCAPSULATION AND STORAGE FACILITY
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 a “**Last Modification Date**” which represents the last date the portion of the unit has been modified. 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.

Last modification to Waste Encapsulation and Storage Facility

Addenda	Last Modification Date	Modification Number
Unit-Specific Permit Conditions		
A. Part A Form		
B. Waste Analysis Plan		
C. Process Information		
D. Groundwater Monitoring – Reserved		
E. Security		
F. Preparedness & Prevention		
G. Personnel Training		
H. Closure Plan		
I. Inspection Plan		
J. Contingency Plan		

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**WASTE ENCAPSULATION AND STORAGE FACILITY
PART III, OPERATING UNIT GROUP 14
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

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**WASTE ENCAPSULATION AND STORAGE FACILITY
PART III, OPERATING UNIT GROUP 14
UNIT-SPECIFIC PERMIT CONDITIONS**

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2 **PART III, OPERATING UNIT GROUP 14 UNIT-SPECIFIC PERMIT CONDITIONS**
3 **WASTE ENCAPSULATION AND STORAGE FACILITY**
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6 **UNIT DESCRIPTION**

7 The Waste Encapsulation and Storage Facility (WESF) Operating Unit Group (OUG) 14 contains active
8 Dangerous Waste Management Units (DWMUs) dedicated to storage, packaging, and transfer of capsules
9 containing mixed waste. This mixed waste is cesium chloride and strontium fluoride salts with metal
10 contaminants separated from Hanford tank waste from 1969 through 1984. This waste is contained
11 encapsulated in 1,936 capsules which are being stored underwater in pool cells, but will be loaded into
12 Cask Storage Systems (CSSs) prior to being shipped to dry storage at the Capsule Interim Storage,
13 OUG-19.

14 Each CSS consists of a Vertical Concrete Cask (VCC) housing a stainless steel Transportable Storage
15 Canister (TSC). The TSC contains a TSC Basket holding up to 22 Universal Capsule Sleeves (UCSs).
16 Each UCS can hold up to six standard capsules or two of the larger Type W overpacks. Each CSS can
17 hold a maximum of 132 standard capsules, but spacers and inventory knowledge will be used to ensure
18 each VCC is loaded to a specified heat generation level.

19 OUG-14 contains the following three DWMUs, all of which are considered X99 miscellaneous units due
20 to the unique characteristics of the capsules and stored waste:

- 21 • Pool Cells 1 through 8 and 12 are dedicated to safe storage and cooling of the capsules prior to
22 packaging into a UCS. Pool Cells 1 and 3 through 7 contain storage racks which are the primary
23 storage location for capsules.
- 24 • Hot Cell G provides a shielded location for packaging of capsules into a UCS, inspection and
25 storage of individual capsules, and capsule maintenance or repairs which might be necessary.
- 26 • The Truckport serves as the final assembly location for CSSs prior to being shipped out of the
27 WESF.

28 The WESF itself also contains Closing Unit Group 6 for Hot Cells A through F which are undergoing
29 initial closure activities and therefore are no longer part of OUG-14. Hot Cells A through F are not
30 addressed by the Part III conditions below. Addendum A, Attachment A, contains maps and diagrams of
31 the WESF layout.

32 **LIST OF ADDENDA SPECIFIC TO OPERATING UNIT GROUP 14**

33	Addendum A	Part A Form
34	Addendum B	Waste Analysis Plan
35	Addendum C	Process Information
36	Addendum D	Groundwater Monitoring – Reserved
37	Addendum E	Security
38	Addendum F	Preparedness and Prevention
39	Addendum G	Personnel Training
40	Addendum H	Closure Plan
41	Addendum I	Inspection Plan
42	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 **Cask Storage**
11 **System** or “**CSS**.” A single **Transportable Storage Canister** or “**TSC**” can be inserted into the storage
12 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 **ACRONYMS**

20	CIS	Capsule Interim Storage
21	CSS	Cask Storage System
22	DWMU	Dangerous Waste Management Unit
23	LDR	Land Disposal Restrictions
24	OUG	Operating Unit Group
25	TSC	Transportable Storage Canister
26	VCC	Vertical Concrete Cask

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- 1 **III.14.A COMPLIANCE WITH UNIT-SPECIFIC PERMIT CONDITIONS**
- 2 **III.14.A.1** The Permittees will comply with all Permit conditions in this Chapter and its Addenda
3 with respect to dangerous waste management and DWMUs in OUG-14, WESF, in
4 addition to requirements in Permit Part I and II.
- 5 **III.14.B GENERAL WASTE MANAGEMENT**
- 6 **III.14.B.1** The Permittees are authorized to store mixed wastes identified in Addendum C, Section
7 C.2.1, in three DWMUs: Pool Cells 1 through 8 and 12, Hot Cell G, and the Truckport.
8 These mixed wastes will be stored according to the requirements of this Chapter.
- 9 **III.14.C WASTE ANALYSIS**
- 10 **III.14.C.1** If sampling or analysis of capsule waste associated with the WESF OUG is to be
11 conducted, the Permittees will submit to Ecology a permit modification request in
12 accordance with Washington Administrative Code (WAC) 173-303-830 to incorporate an
13 appropriate Sampling and Analysis Plan and a Quality Assurance Plan into the Permit.
14 [WAC 173-303-300(2)]
- 15 **III.14.C.2** The Permittees will have an accurate and complete description for each waste stream
16 managed at the WESF OUG as necessary to document designation according to
17 WAC 173-303-070, applicable Land Disposal Restriction Treatment Standards pursuant
18 to WAC 173-303-140, and any other information necessary to ensure management of the
19 waste streams in accordance with requirements of this Permit. [WAC 173-303-380(1)(a)]
- 20 **III.14.C.2.a** For the specific mixed wastes identified in Addendum C, Section C.2.1, the description of
21 waste streams will consist of, at a minimum, the supporting references cited in
22 Addendum B, Section B.2.
- 23 **III.14.C.2.b** This description of waste streams will be maintained in the Hanford Facility Operating
24 Record, WESF File required by Permit Condition II.I.1 and must be available upon
25 request. [WAC 173-303-380(1)(a)]
- 26 **III.14.D RECORDKEEPING AND REPORTING**
- 27 **III.14.D.1** The Permittees will place the following into the Hanford Facility Operating Record,
28 WESF File, required by Permit Condition II.I.1. (WAC 173-303-380)
- 29 **III.14.D.1.a** The quantity and description of each mixed waste stream managed at the WESF OUG.
30 [WAC 173-303-380(1)(a) and (b)]
- 31 **III.14.D.1.b** Records documenting the packaging of capsules into CSSs, including records identifying
32 the capsules loaded into each CSS and the location of any capsules suspected or known to
33 be compromised.
- 34 **III.14.D.1.c** Summary reports and details of all incidents that require implementation of the
35 Contingency Plan according to the requirements of Permit Condition II.A.1.
36 [WAC 173-303-380(1)(d)]
- 37 **III.14.D.1.d** Records of compromised or suspected compromised capsules, as well as actions taken in
38 response to discovery of such capsules, for Permit Condition III.14.L.4. [WAC 173-303-
39 380(1)(d)-(f)]
- 40 **III.14.D.1.e** Records documenting stalled loading or transport operations for Permit Condition
41 III.14.L.5, if operations have stalled.
- 42 **III.14.D.1.f** Records required by WAC 173-303-380(1)(o), incorporated by reference.

- 1 **III.14.D.1.g** An inspection log, summarizing inspections conducted pursuant to Permit Condition
2 III.14.H.1.
- 3 **III.14.E SECURITY**
- 4 **III.14.E.1** The Permittees will comply with the Security requirements specific to WESF OUG in
5 Addendum E and Permit Attachment 3 as required by Permit Condition II.M.
6 [WAC 173-303-310(2)(c)]
- 7 **III.14.F PREPAREDNESS AND PREVENTION**
- 8 **III.14.F.1** The Permittees will comply with the Preparedness and Prevention requirements specific
9 to the WESF OUG in Addendum F and Permit Condition II.B. (WAC 173-303-340)
- 10 **III.14.G CONTINGENCY PLAN**
- 11 **III.14.G.1** The Permittees will comply with Contingency Plan requirements specific to the WESF
12 OUG in Addendum J in addition to the requirements of Permit Condition II.A when
13 applicable. (WAC 173-303-350)
- 14 **III.14.H INSPECTIONS**
- 15 **III.14.H.1** The Permittees will comply with the Inspection Plan requirements specific to the WESF
16 OUG in Addendum I and Permit Condition II.O. [WAC 173-303-320(2)]
- 17 **III.14.I TRAINING PLAN**
- 18 **III.14.I.1** The Permittees will comply with the Personnel Training requirements specific to the
19 WESF OUG in Addendum G and Permit Condition II.C. (WAC 173-303-330)
- 20 **III.14.J OTHER GENERAL REQUIREMENTS**
- 21 Reserved
- 22 **III.14.K CLOSURE**
- 23 **III.14.K.1** The Permittees will comply with the Closure Plan requirements specific to the WESF
24 OUG in Addendum H and permit Condition II.J. [WAC 173-303-610(3)(a)]
- 25 **III.14.L MISCELLANEOUS UNITS**
- 26 **III.14.L.1** The Permittees will maintain the physical structure of the WESF DWMUs as documented
27 in Addendum C, Section C.1. This includes the historical slow leak identified in
28 Addendum C, Section C.1.1.2.2, unless this leak is repaired. [WAC 173-303-680(2)]
- 29 **III.14.L.1.a** Water collected in the pool cell sumps, other than that intentionally introduced for leak
30 detection testing or other purposes, shall be monitored to determine if the leak rate for
31 any pool cell changes from the expected baseline leak rate. The baseline leak rate for this
32 analysis is the rate listed in Addendum C, Section C.1.1.2.2.
- 33 **III.14.L.1.b** If the water collection rate for Pool Cell 5 increases or decreases by more than 25% from
34 the baseline leak rate for two or more consecutive weeks the Permittees will notify
35 Ecology immediately and evaluate whether repair or other intervention is necessary to
36 address the issue.
- 37 **III.14.L.1.c** If the water collection rate for Pool Cell 5 increases or decreases by more than 75% from
38 the baseline leak rate for any single week or any other pool cell sump begins collecting
39 water, the Permittees will notify Ecology immediately and evaluate whether repair or
40 other intervention is necessary to address the issue.

- 1 **III.14.L.2** The Permittees will manage capsules in a manner that ensures they will not rupture or
2 caused to leak. This includes capsules which are currently being, or have already been,
3 packaged into a CSS. [WAC 173-303-680(2)]
- 4 **III.14.L.3** The Permittees will repackage or over-pack any capsule which lacks structural integrity,
5 or shows signs of damage or corrosion that may reasonably result in a spill or release of
6 the contents, or from which a spill or release has occurred. When such criteria are met,
7 the Permittees will repackage or over-pack as soon as practicable and in a manner
8 consistent with worker safety and protection of human health and the environment.
9 If appropriate, a UCS may serve as an overpack. [WAC 173-303-680(2)]
- 10 **III.14.L.3.a** Records of capsules which have leaked or which are suspected of being compromised
11 will be placed in the Hanford Facility Operating Record, WESF OUG File.
12 [WAC 173-303-380(1)(d)-(f)]
- 13 **III.14.L.4** The Permittees will construct and maintain each CSS as documented in Addendum C,
14 Section C.2.2, including maintaining CSS physical structure and the integrity of each
15 mixed waste containment. [WAC 173-303-680(2)].
- 16 **III.14.L.5** Once loading of a specific TSC has started, if loading operations in the Truckport or
17 transport operations from the Truckport apron are stalled, the Permittees will notify
18 Ecology and provide a description of what has caused the delay and when it is estimated
19 operations will resume. [WAC 173-303-680(3)].
- 20 **III.14.L.5.a** Notifications for stalled operations only apply to a TSC or CSS which holds at least one
21 waste-containing capsule.
- 22 **III.14.L.5.b** Loading operations are considered stalled if seven calendar days pass without the
23 addition of a UCS to a partially or completely filled TSC which has not been sealed.
- 24 **III.14.L.5.c** Transport off of the Truckport apron is considered stalled if a loaded CSS sits on the
25 Truckport apron for seven calendar days without being transferred to OUG-19, Capsule
26 Interim Storage, or other appropriate facility.
- 27 **III.14.L.6** The Permittees will comply with any requirements of Hanford Federal Facility
28 Agreement and Consent Order Milestone M-092 which are applicable to activities at the
29 WESF OUG, including those pertaining to transfer of capsules to dry storage and
30 acquisition or modification of facilities for treatment, storage, and/or disposal of the
31 capsules.

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