

RCRA PART B PERMIT  
FOR THE  
IDAHO NATIONAL  
ENGINEERING AND ENVIRONMENTAL LABORATORY

Volume 18 – Idaho Nuclear Technology and Engineering Center

ATTACHMENT 8a

Radioactive Mixed Waste Staging Facility (CPP-1617)  
and  
Hazardous Chemical and Radioactive Waste Storage Facility (CPP-1619)

Section I  
Closure and Postclosure

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1                                   **SECTION I. CLOSURE AND POST-CLOSURE REQUIREMENTS**  
2

3           This closure plan has been prepared for the Radioactive Mixed Waste Staging Facility (RMWSF)  
4 and Hazardous Chemical and Radioactive Waste Storage Facility (HCRWSF). Both facilities are  
5 container storage units located at the Idaho Nuclear Technology and Engineering Center (INTEC) at the  
6 Idaho National Engineering and Environmental Laboratory (INEEL).  
7

8           RMWSF and HCRWSF are separate Treatment, Storage and Disposal (TSDs). They store  
9 hazardous and mixed wastes that may contain liquids.  
10

11 **I-1 Closure Plans [IDAPA 58.01.05.012 and .008; 40 CFR 270.14(b)(13) and 264.112(a)(1) & (2)]**  
12

13           RMWSF and HCRWSF require closure under the Resource Conservation and Recovery Act  
14 (RCRA) in accordance with the requirements of the Idaho Administrative Procedures Act (IDAPA)  
15 58.01.05.008, Closure and Post-Closure. This closure plan describes the procedures to be used to remove  
16 remaining waste residues and demonstrate that the buildings are clean. This closure plan does not include  
17 plans for closure as a landfill and post-closure maintenance as a disposal unit (i.e., landfill).  
18

19 **Closure Objectives**  
20

21           The primary objective to be achieved by this closure plan is to close the units in accordance with  
22 the requirements of IDAPA 58.01.05.008, Closure and Post-Closure. The closure plan addresses only the  
23 specifications and requirements for RCRA waste removal and cleaning. However, although not regulated  
24 under IDAPA 58.01.05.008, radiological activities related to the closure will be conducted in accordance  
25 with Department of Energy (DOE) Order 435.1, Radioactive Waste Management, and the INEEL  
26 Radiological Controls Manual. Any discussion of radionuclide contamination is provided for information  
27 purposes only, not for purposes of regulation under this closure plan.  
28

29           The standards for closure of the units in accordance with IDAPA 58.01.05.008, Subpart G are as  
30 follows:  
31

- 32           • To minimize the need for further maintenance

- To control, minimize, or eliminate, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere.

As closure preparations progress, additional information will be gained, and amendments to this plan may be required.

#### Unit Description

See Attachment 1a, Section B for a description of the RMWSF and HCRWSF.

#### **I-1a Closure Performance Standards (IDAPA 58.01.05.008; 40 CFR 264.111)**

The Part B permit regulations for closure of container storage areas are included in IDAPA 58.01.05.008, Subpart I, Container Storage.

The closure regulations cited above require the owner or operator to remove all hazardous wastes and hazardous waste residues from the containment system. The remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues must be decontaminated or removed. The units will be considered RCRA-closed when the following requirements have been met:

- All containers have been removed from the buildings/storage areas
- The building walls, floors, exposed structural members, sumps, have been cleaned, as required, to achieve the levels specified in the Closure Performance Standards (CPSs)
- Closure has been certified by an independent registered professional engineer, the facility contractor, and the U.S. Department of Energy Idaho Operations Office (DOE-ID), and the Certification of Closure statements have been completed and signed.

1 Waste Description

2

3 RMWSF and HCRWSF

4

5 The wastes stored at RMWSF and HCRWSF may contain the RCRA Environmental Protection  
6 Agency (EPA) Hazardous Waste Numbers (HWNs) listed in the Part A in Attachment 1 of this Permit.

7

8 See Attachment 2, Section C Waste Characteristics, for a description of the wastes that may be  
9 stored in RMWSF and HCRWSF container storage area.

10

11 Closure Characterization Plan

12

13 A waste determination will be performed on materials to be disposed of and on clean-up materials to  
14 ascertain whether or not they are RCRA hazardous. Tables C-1 and C-2 of Section C in Attachment 2  
15 provide test methods for waste analysis, parameters, and rationale. Test methods are described in  
16 Attachment 2, Section C-2b. A detailed sampling plan will be prepared where required for these closure  
17 activities. Sampling and analytical methods selected for use will be based on EPA, DOE, and other  
18 guidance as appropriate. To ensure the quality and validity of the data generated during closure activities  
19 at the units, Quality Assurance/Quality Control (QA/QC) procedures will be used. Minimum QA/QC  
20 requirements and recommendations are discussed in Attachment 2, Section C-2c(1).

21

22 Sampling Design

23

24 Sampling and analysis will be performed as needed to monitor the effectiveness of the cleaning.  
25 Samples of the last rinse solution batch will be collected and analyzed to verify that the CPSs have been  
26 met. Sampling methods are discussed in Section C-2c of Attachment 2, standard sampling methods are  
27 discussed in Section C-2c(1) of Attachment 2, and debris sampling is discussed in Section C-2c(1)(a) of  
28 Attachment 2.

1 Rinse Solution Sampling

2

3 Initial efforts will focus on decontaminating the building surfaces. If the rinse solution sample  
4 results meet the Closure Performance Standards (CPSs), the surface being cleaned will be considered to  
5 have achieved closure criteria, and no further cleaning efforts will be required. If the samples do not meet  
6 the CPSs, the appropriateness of the decontamination media will be verified and one or more subsequent  
7 decontamination efforts will be undertaken, potentially with different and/or more aggressive chemical  
8 reagents or physical removal methods. If upon completion of subsequent decontamination efforts the  
9 solution samples do not meet the CPSs, a building surface sampling regimen will be considered. Design  
10 and implementation of this sampling regimen and corresponding data quality objectives and performance  
11 standard will be presented to the Idaho Department of Environmental Quality (DEQ), as an amendment to  
12 the closure plan. Depending upon the time frames involved, development, DEQ approval and  
13 implementation of this sampling regimen would likely require an extension of time frame to complete  
14 closure pursuant to IDAPA 58.01.05.008, 40 Code of Federal Regulations (CFR) 264.113(a) and  
15 264.113(b). It is anticipated that results from such a sampling effort would be utilized to assess the  
16 worker, nonresidential scenario risk posed by residual hazardous constituent contamination, such that a  
17 risk-based closure determination could be made and a finding reached that facility closure performance  
18 standards have been attained.

19

20 Solids Sampling

21

22 Solids generated during closure will require sampling and analysis by the Toxicity Characteristic  
23 Leaching Procedure (TCLP) to verify compliance with the CPSs for characteristic wastes, or other  
24 regulations applicable at the time of closure.

25

26 Sample Analysis

27

28 Sample analysis is discussed in Attachment 2, Section C-2b.

1 CPSs

2

3 The CPSs developed for toxicity characteristic wastes correspond to regulatory limits established by  
4 the Idaho Department of Environmental Quality (DEQ) and the EPA. EPA promulgated the TCLP to  
5 identify those wastes that are hazardous and thus subject to regulation under RCRA Subtitle C. The  
6 performance standards that will be used for the toxicity characteristic wastes are the regulatory levels  
7 stated in Table 1 of 40 CFR 261.24.

8

9 The CPSs that will be used for ignitable (D001) and corrosive (D002) wastes will be confirmation  
10 that the wastes do not meet the definition of ignitable waste per 40 CFR 261.21 or corrosive waste per 40  
11 CFR 261.22.

12

13 Closure for characteristic wastes will be achieved by demonstrating compliance with these CPSs or  
14 other regulations applicable at the time of closure.

15

16 The CPSs applied to any equipment or debris contaminated with listed waste during closure  
17 activities will be achieved by application of the treatment corresponding to the standard identified in  
18 regulations applicable at the time of closure.

19

20 Data Evaluation

21

22 Minimum QC guidance is provided in Chapter 1 of SW-846. It is the responsibility of the  
23 laboratory to establish actual operating parameters and in-house QC acceptance criteria, based on its own  
24 laboratory standard operating procedures (SOPs) and in-house QC program, to demonstrate appropriate  
25 performance of the methods used in that laboratory for the RCRA analytical applications for which they  
26 are intended.

27

28 **I-1b Maximum Waste Inventory [IDAPA 58.01.05.008; 40 CFR 264.112(b)(3)]**

29

30 The maximum inventory of containerized waste in storage at any time during the operating life of  
31 RMWSF will be 2,244,156 gallons. The maximum inventory of containerized waste at HCRWSF is  
32 13,860 gallons.

1 **I-1c Disposal or Decontamination of Equipment, Structures, Soils [IDAPA 58.01.05.008;**  
2 **40 CFR 264.111, 264.112, 264.197, 264.112(b)(4), and 264.114]**

3  
4 The decontamination process will include a series of cleanings, with the nature of each successive  
5 step dependent on the results of previous attempts. A variety of materials may be used, depending upon  
6 the experience and judgement of the closure team conducting the cleaning. The methods of application, as  
7 well as the number of steps in decontamination and the duration, will also be dependent on the judgement  
8 of the closure team.

9  
10 The spent rinse solutions generated will be collected and sampled. If the sample results indicate  
11 that the CPSs have been met or if the debris treatment standard or other applicable treatment standard is  
12 achieved, no additional cleaning or decontamination will be necessary. If the sample results indicate  
13 otherwise, cleaning efforts will continue until the CPSs have been met or it is determined that additional  
14 cleaning efforts would be ineffective. In the latter case, a risk assessment may be performed to determine  
15 if the residual contamination poses a risk to human health and warrants the subsequent generation of  
16 additional waste.

17  
18 Generally, cleaning efforts (for example, utilizing acidic, basic, or commercially available rinse  
19 solutions or dry techniques such as carbon dioxide pellet blasting or component removal with debris  
20 treatment on-site) will be conducted until the desired reduction in contamination is achieved. This phase  
21 may also include dismantling of components and removal of structural materials. Solids not considered to  
22 meet the definition of hazardous debris that are removed for disposal will be sampled and analyzed by  
23 TCLP to determine their disposition.

24  
25 **I-1c(1) Closure of Containers [IDAPA 58.01.05.008; 40 CFR 264.178]**

26  
27 Closure activities will be considered complete upon submittal of a Certification of Closure, signed  
28 by an independent registered professional engineer, the Management and Operations (M&O) contractor,  
29 and DOE-ID, to the DEQ Director. Certification of Closure will verify that the units have been closed in  
30 accordance with the specifications of the approved closure plan. Copies of the documentation supporting  
31 the independent, registered professional engineer's certification will remain at the INEEL in the event that  
32 this information is requested by the DEQ Director.

1 **I-1f Schedule for Closure [IDAPA 58.01.05.008; 40 CFR 264.112(b)(6)]**

2

3 Table I-1 presents the projected closure schedule. This schedule is tentative and may need to be  
4 revised as additional information becomes available.

5

6 **Amendments to the Closure Plan**

7

8 This closure plan has been prepared using the information currently available on conditions in the  
9 units. As conditions change, it may be necessary to amend this closure plan as more detailed information  
10 becomes available. A request for permit modification will be submitted to the Director of the DEQ as  
11 conditions that affect closure activities are identified.

12

13 **I-1g Extension for Closure Time [IDAPA 58.01.05.008; 40 CFR 264.112(c), 264.113(a) and (b)]**

14

15 IDAPA 58.01.05.008, 40 CFR 264.113, requires completion of closure activities within 180 days.  
16 Due to unforeseen circumstances, longer time frames may be required for cleaning and waste removal.  
17 Thus, it may be necessary to request an extension pursuant to IDAPA 58.01.05.008, 40 CFR 264.113, as  
18 additional information becomes available and the time required to complete closure becomes more clearly  
19 defined. Subsequent amendments to this closure plan will be submitted accordingly.

20

21 **I-1h Certification of Closure and Notice in Deed [IDAPA 58.01.05.008; 40 CFR 264.115]**

22

23 Certification of Closure will be provided by an independent registered professional engineer, the  
24 M&O contractor, and DOE-ID, stating that the units have been closed in accordance with the  
25 specifications of the approved closure plan. If the units are not closed as a hazardous waste disposal unit  
26 (i.e., closed to landfill standards), a "Notice in Deed" and survey plat are not required. If the units must be  
27 closed as a landfill, a "Notice in Deed" and survey plat will be required in addition to the other  
28 requirements under IDAPA 58.01.05.008, Standards for Owners and Operators of Hazardous Waste  
29 Treatment, Storage, and Disposal Facilities.

**Table I-1. RMWSF and HCRWSF.**

Activity	Number of Days to Complete
Assemble Closure Team	-30
Initiate Closure Activities	0
Initial Decontamination	30
Intensive Decontamination	60
Removal of Existing Wastes	90
Integrity Assessment Complete	120
Physical Closure Completed	180
Certification of Closure Submitted to the Director of the Idaho Department Health and Welfare	60 days after closure