

**AIR QUALITY**  
**PERMIT TO CONSTRUCT**

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**Permittee** U.S. Department of Energy – Idaho Operations  
**Permit Number** P-2013.0023  
**Project ID** 61181  
**Facility ID** 023-00001  
**Facility Location** Scoville, Idaho. Hwy. 20/26 between Arco and Idaho Falls, and  
Hwy.33 between Mud Lake and Arco  
Scoville, ID 83401

**Permit Authority**

This permit (a) is issued according to the “Rules for the Control of Air Pollution in Idaho” (Rules), IDAPA 58.01.01.200–228; (b) pertains only to emissions of air contaminants regulated by the State of Idaho and to the sources specifically allowed to be constructed or modified by this permit; (c) has been granted on the basis of design information presented with the application; (d) does not affect the title of the premises upon which the equipment is to be located; (e) does not release the permittee from any liability for any loss due to damage to person or property caused by, resulting from, or arising out of the design, installation, maintenance, or operation of the proposed equipment; (f) does not release the permittee from compliance with other applicable federal, state, tribal, or local laws, regulations, or ordinances; and (g) in no manner implies or suggests that the Idaho Department of Environmental Quality (DEQ) or its officers, agents, or employees assume any liability, directly or indirectly, for any loss due to damage to person or property caused by, resulting from, or arising out of design, installation, maintenance, or operation of the proposed equipment. Changes in design, equipment, or operations may be considered a modification subject to DEQ review in accordance with IDAPA 58.01.01.200–228.

**Date Issued** PROPOSED or month Day, 2013

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## PERMIT TO CONSTRUCT SCOPE

### *Purpose*

1. This is the initial permit to construct for the distillation of sodium from wastes at the Idaho National Laboratory (INL), Idaho Nuclear Technology and Engineering Center (INTEC).
2. The emission sources regulated by this permit are listed in the following table.

**Table 1. SUMMARY OF REGULATED SOURCES**

<b>Source Description</b>	<b>Emissions Control(s)</b>
Distillation of Sodium Contained in Remote-handled Transuranic (RH-TRU) Waste Lots 6 and 7 at INTEC	Two Banks of HEPA Filters PM <sub>10</sub> Control Efficiency: 99.97%, each

## DISTILLATION OF SODIUM FROM WASTE AT INTEC

### 3. Process Description

The sodium distillation system (SDS) consists of the following components: distillation vessel with a knife gate valve and electric furnace, condenser heated and cooled by a thermal fluid system, collection vessel, transfer vessel, sintered metal filter, and vacuum pump.

The sodium distillation system is installed in Building CPP-666, the Fluorinel Dissolution Process (FDP) and Fuel Storage Facility, containing the FDP cell at the Idaho Nuclear Technology and Engineering Center (INTEC). Remote-handled transuranic (RH-TRU) wastes are sorted, sized, and repackaged for disposal in this building. The objective of the permit is to remove sodium, using the distillation process, from the RH-TRU wastes. The sodium-vapor-distillation system is located at the minus 31-ft level of CPP-666. A tube, delayed neutron interrogator tube, extending from the FDP cell down to the sodium distillation vessel will be used as a pass-through to lower remote-handled radioactive waste, which is contaminated with elemental sodium, down into the SDS for sodium removal. Once the waste has been secured in the sodium distillation vessel, the device used to lower the waste into the vessel from the FDP cell will be detached and removed from the vessel. Then, the top of the vessel will be sealed remotely using the servo motor driven knife gate valve on the top of the vessel, and the sodium will be distilled from the vessel and collected in a collection vessel. After completion of the distillation cycle, the waste in the distillation vessel will be retrieved up through the delayed neutron interrogator tube to the FDP cell, where it can be repackaged for final disposition.

### 4. Emissions Control Description

Table 2. DISTILLATION OF SODIUM AT INTEC

Emissions Unit(s) / Process(es)	Emissions Control Device	Emissions Point
SDS at INTEC	Two Banks of HEPA Filters Control efficiency: 99.97%, each	CPP-767-001 Stack

## ***Emissions Limits***

### 5. Radionuclide Emissions Limits - NESHAP

In accordance with 40 CFR 61.92, emissions of radionuclides to the ambient air from Department of Energy facilities shall not exceed those amounts that would cause any member of the public to receive, in any year, an effective dose equivalent of 10 millirems per year (mrem/yr).

[DRAFT, 40 CFR 61, Subpart H]

## ***Operating Requirements***

### 6. CPP-767-001 Stack CEMS - NESHAP

In accordance with 40 CFR 61.93, the permittee shall have in place, calibrated, and operating, an in-stack continuous emission monitoring system (CEMS) for the measurement of radionuclides from the CPP-767-001 exhaust stack.

[DRAFT, 40 CFR 61, Subpart H]

### 7. SDS HEPA Filter Systems

The permittee shall comply with the following requirements for the SDS HEPA filter system:

- Each HEPA filter shall have a minimum particle removal efficiency of no less than 99.97%.

- The permittee shall maintain and operate instrumentation to measure the pressure drop across the filter(s). HEPA filter efficiency shall be tested according to the ASME N510 and/or N511 testing standard(s). Records of any testing performed shall be maintained in accordance with the General Provisions of this permit.
- The permittee shall maintain written documentation to ensure compliance with this permit. This shall include, at a minimum, written procedures that specify how the pressure drop across the filter will be measured, the frequency of pressure drop monitoring, and the conditions that require change-out of the filters.

[DRAFT, State-only Requirement]

### ***Monitoring and Recordkeeping Requirements***

#### 8. **Radionuclide Emission Monitoring - NESHAP**

- In accordance with 40 CFR 61.93, the permittee shall monitor and record radionuclide emissions from the CPP-767-001 exhaust stack.
- In accordance with 40 CFR 61.93, the permittee shall determine radionuclide emissions and calculate effective dose equivalent values to members of the public using EPA-approved methods.

[DRAFT, 40 CFR 61, Subpart H]

#### 9. **HEPA Filter Pressure Drop Monitoring**

The permittee shall monitor and record the pressure drop across the HEPA filter stages of the HEPA filter system at least once per day according to written procedures.

[DRAFT, State-only Requirement]

### ***Reporting Requirements***

#### 10. **Radionuclide Emissions Compliance and Reporting - NESHAP**

The permittee shall submit annual reports and maintain records documenting radionuclide emissions and effective dose equivalent values in accordance with 40 CFR 61.94 and 61.95.

[DRAFT, 40 CFR 61, Subpart H]

### ***Incorporation of Federal Requirements by Reference***

11. For permit conditions referencing or cited in accordance with 40 CFR Part 61 Subparts A or H, should there be any conflict between the requirements of the permit condition and the requirements of the CFR subpart, the requirements of the CFR subpart shall govern, including any amendments to that regulation.

[DRAFT, 40 CFR 61, Subparts A and H]

## GENERAL PROVISIONS

### *General Compliance*

12. The permittee has a continuing duty to comply with all terms and conditions of this permit. All emissions authorized herein shall be consistent with the terms and conditions of this permit and the “Rules for the Control of Air Pollution in Idaho.” The emissions of any pollutant in excess of the limitations specified herein, or noncompliance with any other condition or limitation contained in this permit, shall constitute a violation of this permit and the “Rules for the Control of Air Pollution in Idaho,” and the Environmental Protection and Health Act, Idaho Code §39-101, et seq.  
**[Idaho Code §39-101, et seq.]**
13. The permittee shall at all times (except as provided in the “Rules for the Control of Air Pollution in Idaho”) maintain in good working order and operate as efficiently as practicable, all treatment or control facilities or systems installed or used to achieve compliance with the terms and conditions of this permit and other applicable Idaho laws for the control of air pollution.  
**[IDAPA 58.01.01.211, 5/1/94]**
14. Nothing in this permit is intended to relieve or exempt the permittee from the responsibility to comply with all applicable local, state, or federal statutes, rules and regulations.  
**[IDAPA 58.01.01.212.01, 5/1/94]**

### *Inspection and Entry*

15. Upon presentation of credentials, the permittee shall allow DEQ or an authorized representative of DEQ to do the following:
- Enter upon the permittee’s premises where an emissions source is located or emissions-related activity is conducted, or where records are kept under conditions of this permit;
  - Have access to and copy, at reasonable times, any records that are kept under the conditions of this permit;
  - Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
  - As authorized by the Idaho Environmental Protection and Health Act, sample or monitor, at reasonable times, substances or parameters for the purpose of determining or ensuring compliance with this permit or applicable requirements.
- [Idaho Code §39-108]**

### *Construction and Operation Notification*

16. This permit shall expire if construction has not begun within two years of its issue date, or if construction is suspended for one year.  
**[IDAPA 58.01.01.211.02, 5/1/94]**
17. The permittee shall furnish DEQ written notifications as follows:
- A notification of the date of initiation of construction, within five working days after occurrence; except in the case where pre-permit construction approval has been granted then notification shall be made within five working days after occurrence or within five working days after permit issuance whichever is later;

- A notification of the date of any suspension of construction, if such suspension lasts for one year or more;
- A notification of the anticipated date of initial start-up of the stationary source or facility not more than sixty days or less than thirty days prior to such date;
- A notification of the actual date of initial start-up of the stationary source or facility within fifteen days after such date; and
- A notification of the initial date of achieving the maximum production rate, within five working days after occurrence - production rate and date.

**[IDAPA 58.01.01.211.03, 5/1/94]**

### ***Performance Testing***

18. If performance testing (air emissions source test) is required by this permit, the permittee shall provide notice of intent to test to DEQ at least 15 days prior to the scheduled test date or shorter time period as approved by DEQ. DEQ may, at its option, have an observer present at any emissions tests conducted on a source. DEQ requests that such testing not be performed on weekends or state holidays.
19. All performance testing shall be conducted in accordance with the procedures in IDAPA 58.01.01.157. Without prior DEQ approval, any alternative testing is conducted solely at the permittee's risk. If the permittee fails to obtain prior written approval by DEQ for any testing deviations, DEQ may determine that the testing does not satisfy the testing requirements. Therefore, at least 30 days prior to conducting any performance test, the permittee is encouraged to submit a performance test protocol to DEQ for approval. The written protocol shall include a description of the test method(s) to be used, an explanation of any or unusual circumstances regarding the proposed test, and the proposed test schedule for conducting and reporting the test.
20. Within **30 days, or up to 60 days when requested** following the date in which a performance test required by this permit is concluded, the permittee shall submit to DEQ a performance test report. The written report shall include a description of the process, identification of the test method(s) used, equipment used, all process operating data collected during the test period, and test results, as well as raw test data and associated documentation, including any approved test protocol.

**[IDAPA 58.01.01.157, 4/5/00]**

### ***Monitoring and Recordkeeping***

21. The permittee shall maintain sufficient records to ensure compliance with all of the terms and conditions of this permit. Monitoring records shall include, but not be limited to the following: (a) the date, place, and times of sampling or measurements; (b) the date analyses were performed; (c) the company or entity that performed the analyses; (d) the analytical techniques or methods used; (e) the results of such analyses; and (f) the operating conditions existing at the time of sampling or measurement. All monitoring records and support information shall be retained for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Supporting information includes, but is not limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation and copies of all reports required by this permit. All records required to be maintained by this permit shall be made available in either hard copy or electronic format to DEQ representatives upon request.

**[IDAPA 58.01.01.211, 5/1/94]**

## **Excess Emissions**

22. The permittee shall comply with the procedures and requirements of IDAPA 58.01.01.130-136 for excess emissions due to startup, shutdown, scheduled maintenance, safety measures, upsets and breakdowns.

[IDAPA 58.01.01.130-136, 4/5/00]

## **Certification**

23. All documents submitted to DEQ—including, but not limited to, records, monitoring data, supporting information, requests for confidential treatment, testing reports, or compliance certification—shall contain a certification—shall contain a certification by a responsible official. The certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete.

[IDAPA 58.01.01.123, 5/1/94]

## **False Statements**

24. No person shall knowingly make any false statement, representation, or certification in any form, notice, or report required under this permit or any applicable rule or order in force pursuant thereto.

[IDAPA 58.01.01.125, 3/23/98]

## **Tampering**

25. No person shall knowingly render inaccurate any monitoring device or method required under this permit or any applicable rule or order in force pursuant thereto.

[IDAPA 58.01.01.126, 3/23/98]

## **Transferability**

26. This permit is transferable in accordance with procedures listed in IDAPA 58.01.01.209.06.

[IDAPA 58.01.01.209.06, 4/11/06]

## **Severability**

27. The provisions of this permit are severable, and if any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

[IDAPA 58.01.01.211, 5/1/94]