



STATE OF IDAHO  
DEPARTMENT OF  
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, Idaho 83706 • (208) 373-0502

C.L. "Butch" Otter, Governor  
Curt Fransen, Director

July 31, 2013

Danny Nichols, President and AMWTP Project Manager  
Idaho Treatment Group LLC  
850 Energy Drive, Suite 100  
Idaho Falls, ID 83401

RE: Facility ID No. 023-00001, AMWTP TSA-RE, TSA-R CCE, INL  
Final Permit Letter

Dear Mr. Nichols:

The Department of Environmental Quality (DEQ) is issuing Permit to Construct (PTC) No. P-2011.0109 Project 61188 to the Idaho Treatment Group LLC (ITG) for a project to revise requirements for the Transuranic Storage Area - Retrieval Enclosure (TSA-RE) Retrieval Contamination Enclosure (RCE) and Inner Contamination Enclosure (ICE), and the proposed Contamination Control Enclosure (CCE). These facilities are located at the Advanced Mixed Waste Treatment Project (AMWTP) at the Idaho National Laboratory (INL). This PTC is issued in accordance with IDAPA 58.01.01.200 through 228 (Rules for the Control of Air Pollution in Idaho) and is based on the certified information provided in your PTC application received April 18, 2013.

This permit is effective immediately and replaces PTC No. P-2011.0109, issued on September 19, 2011. This permit does not release the permittee from compliance with all other applicable federal, state, or local laws, regulations, permits, or ordinances.

In accordance with IDAPA 58.01.01.209.05.a, the terms of the PTC will be incorporated into the Tier I permit at the time of renewal. The permittee may operate the source after the PTC is issued so long as it does not violate any terms or conditions of the existing Tier I operating permit.

Pursuant to the Construction and Operation Notification General Provision of your permit, it is required that construction and operation notification be provided. Please provide this information as listed to DEQ's Idaho Falls Regional Office at 900 Skyline, Suite B, Idaho Falls, ID 83402, Fax no. (208) 528-2695.

In order to fully understand the compliance requirements of this permit, DEQ highly recommends that you schedule a meeting with Teri Tyler, Air Quality Analyst, at the Idaho Falls Regional Office, at (208) 528-2650 to review and discuss the terms and conditions of this permit. Should you choose to schedule this meeting, DEQ recommends that the following representatives attend the meeting: your facility's plant manager, responsible official, environmental contact, and any other staff responsible for day-to-day compliance with permit conditions.

Pursuant to IDAPA 58.01.23, you, as well as any other entity, may have the right to appeal this final agency action within 35 days of the date of this decision. However, prior to filing a petition for a contested case, I encourage you to contact Ken Hanna at (208) 373-0502 or [kenneth.hanna@deq.idaho.gov](mailto:kenneth.hanna@deq.idaho.gov) to address any questions or concerns you may have with the enclosed permit.

Sincerely,

A handwritten signature in black ink that reads "Mike Simon". The signature is written in a cursive style with a large, prominent "M" and "S".

Mike Simon  
Stationary Source Program Manager  
Air Quality Division

MS\KH

Permit No. P-2011.0109 PROJ 61188

Enclosures

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

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**Permittee** U.S. Department of Energy and Idaho Treatment Group, LLC (ITG)  
AMWTP, TSA-RE

**Permit Number** P-2011.0109

**Project ID** 61188

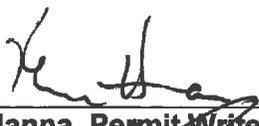
**Facility ID** 023-00001

**Facility Location** 850 Energy Drive, Suite 200  
Idaho Falls, ID 83415

### 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** July 31, 2013

  
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**Ken Hanna, Permit Writer**

  
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**Mike Simon, Stationary Source Manager**

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# PERMIT TO CONSTRUCT SCOPE

## Purpose

1. This is a modification of the permit to construct (PTC) for the Transuranic Storage Area – Retrieval Enclosure (TSA-RE). The purpose of this PTC is to add a soft sided (or similar) Contamination Control Enclosure (CCE) located within the TSA-RE for waste retrieval and waste treatment operations. The CCE will be located in the TSA-R, and will be referred to as the TSA-R CCE. The TSA-R CCE is in addition to the already existing Retrieval Contamination Enclosure (RCE) and Inner Contamination Enclosure(s) (ICE) within the TSA-RE.
2. Those permit conditions that have been modified or revised by this permitting action are identified by the permit issue date citation located directly under the permit condition and on the right hand margin.
3. This PTC replaces Permit to Construct No. P-2011.0109 issued on September 19, 2011.
4. The emission sources regulated by this permit are listed in the following table.

**Table 1 REGULATED SOURCES**

Source Descriptions	Emission Controls
Vehicle and Retrieval Operations inside the RCE/ICE and the TSA-R CCE at the TSA-RE; Includes but not limited to excavators, skid loaders, conveyors (if used), dump trucks and trailers	Reasonable control of fugitive dust (e.g., water or surfactant spray; shrouds; portable HEPA-filtered vacuums; access controls; use of radiological control areas; HEPA-filtered tents; operational, radiological and hazardous material control procedures; etc.)
TSA-RE Standby Generator, diesel-fired Caterpillar Model 3412, 500 kW output	Good combustion control
Propane-Fired Heaters (one unit rated at 150,000 Btu/hr & one unit rated at 75,000 Btu/hr)	Good combustion control
Propane-Fired Make-up Air Units (three units rated at 1.2 Million Btu/hr each)	Good combustion control

[JULY 31, 2013]

## TSA-RE RCE/ICE AND TSA-R CCE

### Process Description

5. Located on pad TSA 1 in the TSA-RE is an enclosure that surrounds the remaining waste that is left to be retrieved on Cells 1, 2, and 3. This enclosure, the Retrieval Contamination Enclosure (RCE), also contains an Inner Contamination Enclosure(s) (ICE) (or equivalent structure) that is used for the retrieval of severely degraded containers and/or treatment of wastes. Additionally, located on Pad R in the TSA-RE, the soft-sided (or similar) Contamination Control Enclosure (CCE) is used for the retrieval of severely degraded containers and/or the treatment of wastes. The RCE/ICE and TSA-R CCE are used to store, characterize, and treat radioactive only waste and mixed waste. Wastes currently in storage at the AMWTP, as well as newly-generated on Site waste, may be moved to, stored, characterized, and treated in the RCE/ICE and TSA-R CCE.

[JULY 31, 2013]

6. Emission Controls Description

**Table 2 TSA-RE RCE/ICE and TSA-R CCE DESCRIPTION**

Emissions Units / Processes	Emission Control Devices	Emission Points
Vehicle and Retrieval Operations inside the RCE/ICE and TSA-R CCE at the TSA-RE; Includes but is not limited to excavators, skid loaders, conveyors (if used), dump trucks and trailers	Reasonable control of fugitive dust (e.g., water or surfactant spray; shrouds; portable HEPA-filtered vacuums; access controls; use of radiological control areas; HEPA-filtered tents; operational, radiological and hazardous material control procedures; etc.)	RCE/ICE and TSA-R CCE Stack
TSA-RE Standby Generator, diesel-fired Caterpillar Model 3412, 500 kW output	Good combustion control	Generator stack
Propane-Fired Heaters (one unit rated at 150,000 Btu/hr & one unit rated at 75,000 Btu/hr)	Good combustion control	Heater stacks
Propane-Fired Make-up Air Units (three units rated at 1.2 Million Btu/hr each)	Good combustion control	Heater stacks

[JULY 31, 2013]

### Emission Limits

7. 40 CFR 61 Subpart H NESHAP Radionuclide Dose Impact Limit

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 millirem per year (mrem/yr) in accordance with 40 CFR 61.92.

[SEPTEMBER 19, 2011]

8. Criteria Pollutant Emission Limits

Nitrogen oxides (NO<sub>x</sub>) emissions from the mobile equipment operating within the RCE/ICE and TSA-R CCE at the TSA-RE shall not exceed 33.4 tons per any consecutive 12-month period. The NO<sub>x</sub> limit applies to equipment used to move soil and retrieve/treat waste within the RCE/ICE at the TSA-RE.

The NO<sub>x</sub> limit does not apply to dump trucks, tugs, yard cranes, and other equipment that enters the RCE/ICE and TSA-R CCE at the TSA-RE to move soil, retrieved waste, or other materials from the RCE/ICE and TSA-R CCE to another location outside of the RCE/ICE and TSA-R CCE. This permit condition no longer applies after retrieval of the existing waste containers, and the soil covering those waste containers, within the RCE/ICE and TSA-R CCE has been completed.

[JULY 31, 2013]

9. Opacity Limit

Emissions from any stack, vent, or functionally equivalent opening associated with the RCE/ICE and TSA-R CCE at the TSA-RE, shall not exceed 20% opacity for a period or periods aggregating more than three minutes in any 60-minute period in accordance with IDAPA 58.01.01.625. The permittee shall determine opacity by the procedures contained in IDAPA 58.01.01.625.

[JULY 31, 2013]

10. In absence of any other credible evidence, compliance is assured by complying with permit operating, monitoring, and record keeping requirements.

[SEPTEMBER 19, 2011]

## Operating Requirements

### 11. Limits for TSA-RE Waste Retrieval and Waste Treatment

Retrieval of breached containers and treatment of waste containers (liquid treatment, physical sizing and/or repackaging) may be performed in any combination provided the Equivalent Emission Units (EEU) value calculated in accordance with Equation 1 is less than 752 per day. One (1) EEU is equal to the emissions associated with retrieval of one (1) 55-gallon drum when the emissions are controlled using three (3) stages of HEPA filtration.

Equation 1:

- Definitions of incorporated variables (the number of containers shall be calculated in terms of 55-gallon drum equivalents [DE]):
  - **br** is the number of breached containers, in drum equivalents, retrieved in one day
  - **re** is the number of containers, in drum equivalents, treated by repackaging and/or resizing in one day
  - **li** is the number of containers, in drum equivalents, treated for liquids in one day
- **2h** is the sum of retrieval and treatment involving two stages of HEPA filtration:
  - $2h = (3 \times [br + re]) + (4 \times li)$
- **3h** is the sum of retrieval and treatment involving three stages of HEPA filtration:
  - $3h = (1 \times [br + re]) + (3 \times li)$
- Equivalent Emission Units (EEU):
- $EEU = 2h + 3h$

- 11.1 Equation 1 shall not incorporate any variable for the number of breached containers retrieved (**br**) after retrieval of the existing waste containers, and the soil covering those waste containers, within the RCE/ICE and TSA-R CCE has been completed.

[State-Only Requirement, JULY 31, 2013]

### 12. Heater Fuel

The permittee shall combust propane exclusively in the RCE/ICE and TSA-R CCE heaters and make-up air units.

[JULY 31, 2013]

### 13. Standby Generator Hours of Operation

The maximum annual hours of operation of the standby generator shall not exceed 500 hours per any consecutive 12-month period.

### 14. Standby Generator Fuel Consumption

The maximum hourly fuel consumption of the standby generator shall not exceed 40 gallons hours per hour.

### 15. RCE/ICE and TSA-R CCE HEPA Filter System

When waste is being retrieved or treated in the RCE/ICE or TSA-R CCE, the permittee shall operate and maintain each associated HEPA filter system according to the requirements specified below:

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

15.2 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.

15.3 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.

[State-Only Requirement, JULY 31, 2013]

16. RCE/ICE and TSA-R CCE Ventilation System

The permittee shall maintain the RCE/ICE ventilation system in operation while TSA-R CCE operations are occurring. If the RCE/ICE ventilation system is not operating, the TSA-R CCE shall not be in operation.

[State-Only Requirement, JULY 31, 2013]

### Monitoring and Recordkeeping Requirements

17. Waste Retrieval Throughput Monitoring

The permittee shall monitor and record the following on a daily basis to demonstrate compliance with the corresponding operating limits:

- Breached drum equivalents retrieved per day in areas with at least two stages of HEPA filtration inside the RCE/ICE or TSA-R CCE;
- Breached drum equivalents retrieved per day in areas with at least three stages of HEPA filtration inside the RCE/ICE or TSA-R CCE;
- This permit condition no longer applies after retrieval of the existing waste containers, and the soil covering those waste containers, within the RCE/ICE and TSA-R CCE has been completed.

[State-Only Requirement, JULY 31, 2013]

18. Waste Treatment Throughput Monitoring

The permittee shall monitor and record the following on a daily basis to demonstrate compliance with the corresponding operating limits:

- drum equivalents of contact-handled waste treated through liquid absorption, liquid neutralization, or liquid decanting per day inside the RCE/ICE or TSA-R CCE, accounting individually for those treated in areas with 2 stages of HEPA filtration and for those treated in areas with 3 stages of HEPA filtration;
- drum equivalents of contact handled waste treated through repackaging/resizing per day inside the RCE/ICE or TSA-R CCE, accounting individually for those treated in areas with 2 stages of HEPA filtration and for those treated in areas with 3 stages of HEPA filtration;

[State-Only Requirement, JULY 31, 2013]

19. Equipment Hours of Operation

The permittee shall monitor and record on a monthly basis the hours of operation for each piece of equipment that operates inside the RCE/ICE or TSA-R CCE of the TSA-RE.

This permit condition does not apply to dump trucks, tugs, yard cranes, and other equipment that enters the RCE/ICE or TSA-R CCE at the TSA-RE to move soil, retrieved waste, or other materials from the RCE/ICE or TSA-R CCE to another location outside of the RCE/ICE or TSA-R CCE.

This permit condition no longer applies after retrieval of the existing waste containers, and the soil covering those waste containers, within the RCE/ICE and TSA-R CCE has been completed.

[JULY 31, 2013]

20. 40 CFR 61 Subpart H NESHAP Radionuclide Monitoring
- 20.1 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 in the stack that exhausts to the atmosphere from the RCE/ICE and TSA-R CCE.
- 20.2 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.

[JULY 31, 2013]

21. NOx Emissions Calculations

The permittee shall calculate NOx emissions from the TSA-RE per consecutive 12-month period in the following manner:

- 21.1 On a monthly basis, for each piece of equipment operated within the TSA-RE as discussed in Permit Condition 8, the permittee shall multiply the hours of operation recorded in accordance with Permit Condition 19 by the horsepower rating for the equipment.
- 21.2 The permittee shall multiply the total from Permit Condition 21.1 by the appropriate emission factor. The emission factor to be used is 0.031 pounds NOx per horsepower-hour or a DEQ-approved alternative.
- 21.3 The permittee shall sum the NOx emissions from the previous consecutive 12-months.
- 21.4 This permit condition does not apply to dump trucks, tugs, yard cranes, and other equipment that enters the RCE/ICE or TSA-R CCE at the TSA-RE to move soil, retrieved waste, or other materials from the RCE/ICE or TSA-R CCE to another location outside of the RCE/ICE or TSA-R CCE.
- 21.5 This permit condition no longer applies after retrieval of the existing waste containers, and the soil covering those waste containers, within the RCE/ICE and TSA-R CCE has been completed.

[JULY 31, 2013]

22. Standby Generator Hours of Operation

Each month, the permittee shall monitor and record the hours of operation of the standby generator for that month and for the most recent 12-month period.

23. Standby Generator Fuel Monitoring

The permittee shall maintain documentation which demonstrates the standby generator does not exceed the 40 gallons per hour combustion rate limit. Documentation may consist of manufacturer performance specifications.

24. HEPA Filter Pressure Drop Monitoring

When RCE/ICE or TSA-R CCE is operating, 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.

[State-Only Requirement, JULY 31, 2013]

## Reporting Requirements

25. 40 CFR 61 Subpart H NESHAP Annual Report

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 40 CFR 61.95.

[SEPTEMBER 19, 2011]

## PERMIT TO CONSTRUCT GENERAL PROVISIONS

### General Compliance

25. 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.]**
26. 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]**
27. 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

28. 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

29. The permittee shall furnish DEQ written notifications as follows in accordance with IDAPA 58.01.01.211:
- 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; and
  - A notification of the actual date of initial start-up of the stationary source or facility within fifteen days after such date.
- [IDAPA 58.01.01.211, 5/1/94]**

## Performance Testing

30. 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, at its option, may 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.
31. 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.
32. Within 30 days 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

33. The permittee shall maintain sufficient records to ensure compliance with all of the terms and conditions of this permit. Records of monitoring information 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

34. 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

35. 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 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

36. 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**

37. 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**

38. 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**

39. 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]