STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

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

C.L. "Butch" Otter, Governor
Toni Hardesty, Director

December 30, 2011

Roger Willhemsen, Project Manager
Battelle Energy Alliance, LLC
1955 Fremont Avenue
Idaho Falls, ID 83401

RE: Facility ID No. 023-00001, Idaho National Laboratory (INL)
Idaho Nuclear Technology and Engineering Center (INTEC)
Final Permit Letter

Dear Mr. Willhemsen:

The Department of Environmental Quality (DEQ) is issuing Permit to Construct (PTC) No. P-2011.0124 Project 60932 to Battelle Energy Alliance, LLC for the Idaho Nuclear Technology and Engineering Center PTC revision for the removal of NO_x sources located at the Idaho National Laboratory. 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 September 14, 2011.

This permit is effective immediately and replaces PTC No. P-020521, issued on December 1, 2003. This permit does not release Battelle Energy Alliance, LLC from compliance with all other applicable federal, state, or local laws, regulations, permits, or ordinances.

As requested, 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. Battelle Energy Alliance, LLC 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.

In order to fully understand the compliance requirements of this permit, DEQ highly recommends that you schedule a meeting with Maria Miles, Air Quality Analyst, 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 Kelli Wetzel at (208) 373-0502 or kelli.wetzel@deq.idaho.gov to address any questions or concerns you may have with the enclosed permit.

Sincerely,

Mike Simon
Stationary Source Program Manager
Air Quality Division

MS\KW

Permit No. P-2011.0124 PROJ 60932

Enclosures

Air Quality PERMIT TO CONSTRUCT State of Idaho Department of Environmental Quality	PERMIT NUMBER	CLASS	SIC
	P-2011.0124	A	9999
	FACILITY ID	AQCR	NAICS
	023-00001	61	924110
	UTM ZONE	UTM COORDINATES (km)	
	12	343.9 Easting	4826.0 Northing

PERMITTEE			
U.S. Department of Energy, Idaho Operations Office and CH2M-WG Idaho, LLC			
PROJECT			
PROJECT No. 60932 Idaho Nuclear Technology and Engineering Center (INTEC)			
MAILING ADDRESS	**CITY**	**STATE**	**ZIP**
1955 Fremont Avenue	Idaho Falls	ID	83415
FACILITY CONTACT	**TITLE**	**TELEPHONE**	
Teresa Perkins	Director, Environment & Sustainability Division	(208) 526-1483	
RESPONSIBLE OFFICIAL	**TITLE**	**TELEPHONE**	
Deputy Manager, Operations Support, Department of Energy, Idaho Operations Office ESH&QA Vice President, CH2M-WG Idaho, LLC		(Obtain telephone numbers through facility contact if necessary)	
EXACT PLANT LOCATION		**COUNTY**	
Eight miles north of the southern border of INL on Lincoln Blvd., INL		Butte	
GENERAL NATURE OF BUSINESS & KINDS OF PRODUCTS			
Energy research and development			

PERMIT AUTHORITY

This permit is issued according to the Rules for the Control of Air Pollution in Idaho, IDAPA 58.01.01.200 through 228, and 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.

This permit (a) does not affect the title of the premises upon which the equipment is to be located; (b) 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; (c) does not release the permittee from compliance with other applicable federal, state, tribal, or local laws, regulations, or ordinances; (d) in no manner implies or suggests that the 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.

This permit will expire if construction has not begun within two years of its issue date or if construction is suspended for one year.

This permit has been granted on the basis of design information presented with its application. Changes in design, equipment or operations may be considered a modification. Modifications are subject to DEQ review in accordance with IDAPA 58.01.01.200 through 228 of the Rules for the Control of Air Pollution in Idaho.

Kelli Wetzel **KELLI WETZEL, PERMIT WRITER**	**DATE ISSUED**	December 30, 2011
Mike Simon **MIKE SIMON, STATIONARY SOURCE MANAGER**		

PERMIT TO CONSTRUCT SCOPE

Purpose

1. This is a revised permit to construct for the Idaho Nuclear Technology and Engineering Center (INTEC) located at the Idaho National Laboratory (INL).
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-020521, issued on December 1, 2003.
4. The emission sources regulated by this permit are listed in the following table.

Table 1 REGULATED SOURCES

Source Descriptions	Emission Controls
Flourinel and Storage Facility (FAST)	Four parallel filter banks each containing prefilters and 24 HEPA filters
Liquid Effluent Treatment and Disposal (LET&D)	Two LET&D mist eliminators and two banks of LET&D HEPA filters
Ventilation Air System	VAPS fiberglass bed prefilter and 26 banks of four VAPS HEPA filters
Off-Gas System	PAPS mist eliminator, a single stage of three of five PAPS HEPA filters, VOG mist eliminator, one of two VOG HEPA filters, NWCF HEPA filter (one or two of three banks)

FLUORINEL AND STORAGE FACILITY (FAST)

Process Description

5. Receipt, movement, and general handling of spent nuclear fuel is associated with the storage of fuel in the FAST (Fluorinel and Storage Facility). Storage of fuel is maintained in large water-filled basins. Areas in the building and equipment associated with the spent nuclear fuel dissolution mission were shut down following the cessation of fuel reprocessing operations. The Fluorinel Dissolution Process Area is currently being used for the Remote-Handled Transuranic operations.

6. Emission Controls Description

Table 2 FAST DESCRIPTION

Emissions Units / Processes	Emission Control Devices	Emission Points
FAST fuel storage basin and dissolution cell currently used for the Remote-Handled Waste Disposition Project mission	Prefilters and a stage of HEPA filters	FAST stack CPP-767-001

The FAST final exhaust is vented through four parallel sets of filters consisting of prefilters and a stage of High Efficiency Particulate Air (HEPA) filters. Each stage is made up of 24 individual HEPA filters. Normally all four separate air streams are on-line going through the filters. Any one of the separate filter banks may be isolated to allow maintenance or other activities. All gases emitted from the FAST go through these final stages of HEPA filtration before entering the FAST stack.

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.

8. Opacity Limit

Emissions from any stack, vent, or functionally equivalent opening associated with the FAST, shall not exceed 20% opacity for a period or periods aggregating more than three minutes in any 60-minute period as required by IDAPA 58.01.01.625. Opacity shall be determined by the procedures contained in IDAPA 58.01.01.625.

[December 30, 2011]

Operating Requirements

9. HEPA Filter Requirements

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

9.2 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.

9.3 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 Permit Condition]

Monitoring and Recordkeeping Requirements

10. 40 CFR 61 Subpart H NESHAP Radionuclide Monitoring

    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.

11. HEPA Filter Pressure Drop Monitoring

    When in operation, the permittee shall monitor and record the pressure drop across the HEPA filter stages of the HEPA filter systems at least once per day according to written procedures.

[State-Only Permit Condition]

Reporting Requirements

12. 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.

LET&D, VENTILATION AIR SYSTEM, AND PROCESS OFF-GAS SYSTEM

Process Description

13. The emissions exhausting from the main stack are derived from three separate systems: the Liquid Effluent Treatment and Disposal (LET&D) facility, the ventilation air system, and the process off-gas system.

LET&D Process and Control Description

The LET&D facility treats the Process Equipment Waste (PEW) Evaporator condensate, which is a low-level liquid waste (LLLW), by an acid fractionation process. The acid portion or bottoms are recycled back to the PEW Evaporator System. The remaining gaseous overheads are discharged to the main stack.

The gaseous overheads, produced in the fractionation process, are processed through one of two parallel off-gas trains. The LET&D off-gas trains consist of a mist eliminator, a superheater, two banks of HEPA filters, and a blower. Liquid droplets are removed by mist eliminators and returned to the fractionators. The gas is then heated to ensure there is no liquid water in the stream. Any solids are removed by HEPA filters. There are two HEPA filter banks, one of which is required to be operating whenever a fractionator is operated. Each bank consists of two filter stages in series, each stage consisting of two filters. The blower provides the motive force for the effluent. After the blower, the effluent is discharged to the main stack.

Ventilation Air System Process and Control Description

The ventilation air system is comprised of ventilation air from CPP-604, 649, and 1618. This air is used to heat, ventilate, and to provide contamination control for the above facilities. This air passes through the Ventilation Atmospheric Protection System (VAPS). This gas cleanup system consists of a fiberglass bed prefilter; HEPA filters arranged in 26 parallel banks of four filters; and two blowers; one of which normally operate. The blowers provide the motive force for the system and exhaust the air to the main stack. Atmospheric bleed-in air is also added to provide sufficient air for blower and stack monitoring operation. It enters the VAPS downstream of the fiberglass bed prefilter.

Off-Gas Process and Control Description

The flow from Process Atmospheric Protection System (PAPS) is exhausted to the main stack. The PAPS flow is comprised of two off-gas systems: the vessel off-gas (VOG) from the Tank Farm and Process Equipment Waste Evaporator, and the New Waste Calcining Facility (NWCF) vessel and process off-gas (also includes Bin Set passive "breathing"). The PAPS system emission controls consist of a mist eliminator, superheater, and a single stage of three of five parallel HEPA filters.

The flow in the VOG system is comprised of off-gas from the Tank Farm (4 large waste tanks and several other small tanks), and the PEW Evaporator System. The system provides vacuum and contamination control to vessels in the connected facilities. The VOG system consists of a mist eliminator, a superheater, and one of two parallel HEPA filters.

The flow in the NWCF process off-gas system (POG) is comprised of off-gas from the NWCF. The NWCF was built to reduce high level liquid waste (HLLW) to a smaller volume and more stable solid form known as calcine. The NWCF calciner has undergone RCRA Partial Closure, but the NWCF POG and VOG are still connected to the system.

Flows from the NWCF POG and VOG are routed through banks of HEPA filters. One or two of the HEPA filter banks are normally on-line during operation. Each filter bank is made up of three stages, each with two HEPA filters. Each filter bank provides the removal efficiency equivalent to two stages of HEPA filtration at 99.97% each, during test conditions.

The calcined waste produced was transported by a pneumatic system to the Calcined Solids Storage Bins. Each bin set consists of stainless steel bins inside a concrete vault. The vessel off-gas and pressure relief lines for Calcined Solids Storage Bin Sets 1 through 3 are connected to the PAPS. A small air purge is introduced on the outlet from Bin Set 1 to prevent buildup of moisture in the line running to the PAPS. The only flow from the bins is due to passive "breathing" of the bins. Bin sets 4-7 are physically isolated from the PAPS.

14. Emission Controls Description

Table 3 LET&D, VENTILATION AIR SYSTEM, AND OFF-GAS SYSTEM DESCRIPTION

Emissions Units / Processes	Emission Control Devices	Emission Points
LET&D	Two LET&D mist eliminators and two banks of LET&D HEPA filters	Main Stack CPP-708
Ventilation Air System	VAPS fiberglass bed prefilter and 26 banks of four VAPS HEPA filters	Main Stack CPP-708
Off-Gas System	PAPS mist eliminator, a single stage of three of five PAPS HEPA filters, VOG mist eliminator, one of two VOG HEPA filters, NWCF HEPA filter (one or two of three banks)	Main Stack CPP-708

Emission Limits

15. 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.

16. Opacity Limit

Emissions from any stack, vent, or functionally equivalent opening associated with the LET&D, ventilation air system, and process off-gas system, shall not exceed 20% opacity for a period or periods aggregating more than three minutes in any 60-minute period as required by IDAPA 58.01.01.625. Opacity shall be determined by the procedures contained in IDAPA 58.01.01.625.

[December 30, 2011]

Operating Requirements

17. HEPA Filter Requirements

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

17.2 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.

17.3 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 Permit Condition]

Monitoring and Recordkeeping Requirements

18. 40 CFR 61 Subpart H NESHAP Radionuclide Monitoring

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.

19. HEPA Filter Pressure Drop Monitoring

When in operation, the permittee shall monitor and record the pressure drop across the HEPA filter stages of the HEPA filter systems at least once per day according to written procedures.

[State-Only Permit Condition]

Reporting Requirements

20. 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.

PERMIT TO CONSTRUCT GENERAL PROVISIONS

General Compliance

21. 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.]

22. 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]

23. 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

24. 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

25. 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

26. 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.

27. 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.

28. 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

29. 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

30. 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

31. 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

32. 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

33. 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

34. 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

35. 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]