



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

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

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

April 8, 2011

Ms. Jo Anna Stenzel, Director, Environmental Support and Services
Battelle Energy Alliance, LLC
P. O. Box 1625
Idaho Falls, ID 83415

RE: Facility ID No. 011-00022, Materials and Fuels Complex, Idaho National Laboratory
Fuel Manufacturing Facility
Final Permit Letter

Dear Ms. Stenzel:

The Department of Environmental Quality (DEQ) is issuing Permit to Construct (PTC) No. P-2011.0077 Project 60807 for the Materials and Fuels Complex (MFC) Fuel Manufacturing Facility (FMF) 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 February 3, 2011.

This permit is effective immediately. This permit does not release the permittee from compliance with all other applicable federal, state, or local laws, regulations, permits, or ordinances.

This PTC was processed in accordance with IDAPA 58.01.01.209.05.a. 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, and the applicable requirements contained in the PTC will be incorporated into the existing Tier I permit upon renewal, as applicable to that 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 the DEQ Idaho Falls Regional Office; 900 N. Skyline, Ste B; Idaho Falls, ID 83402; Fax no. 528-2695.

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 Ken Hanna at (208) 373-0283 or 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, appearing to read "Mike Simon".

Mike Simon
Stationary Source Program Manager
Air Quality Division

MS\KH
Permit No. P-2011.0077 PROJ 60807
Enclosures

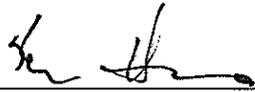
| | | | |
|--|--|-----------------------------|---------------|
| Air Quality PERMIT TO CONSTRUCT State of Idaho Department of Environmental Quality | PERMIT NUMBER | CLASS | SIC |
| | P-2011.0077 | A | 8733 |
| | FACILITY ID | AQCR | NAICS |
| | 011-00022 | 61 | 541710 |
| | UTM ZONE | UTM COORDINATES (km) | |
| 12 | 366.2 Easting | 4828.2 Northing | |
| PERMITTEE | | | |
| U.S. Department of Energy, Idaho Operations Office (DOE-ID), Idaho National Laboratory (INL) | | | |
| PROJECT | | | |
| PROJECT No. 60807, Materials and Fuels Complex (MFC) Fuel Manufacturing Facility (FMF) | | | |
| MAILING ADDRESS | CITY | STATE | ZIP |
| 1955 Fremont Avenue | Idaho Falls | ID | 83401 |
| FACILITY CONTACT | TITLE | TELEPHONE | |
| Tim Solle | Project and Program Support - MFC, BEA | (208) 533-7544 | |
| RESPONSIBLE OFFICIAL/TITLE | | TELEPHONE | |
| Manager, Department of Energy-Idaho Operations Office Secretary, Battelle Energy Alliance, LLC | | See Tier I Air Permit | |
| EXACT PLANT LOCATION | | COUNTY | |
| Scoville, Idaho. 35 miles west of Idaho Falls on U.S. Highway 20, 3.4 miles north on Taylor Blvd. | | Bingham | |
| GENERAL NATURE OF BUSINESS & KINDS OF PRODUCTS | | | |
| Spent Fuel Treatment and Nuclear Energy Research and Development | | | |
| PERMIT AUTHORITY | | | |
| <p>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.</p> <p>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.</p> <p>This permit will expire if construction has not begun within two years of its issue date or if construction is suspended for one year.</p> <p>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.</p> | | | |
|  | | DATE ISSUED | April 8, 2011 |
| KEN HANNA, PERMIT WRITER | | | |
|  | | | |
| MIKE SIMON, STATIONARY SOURCE MANAGER | | | |

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Acronyms, Units, and Chemical Nomenclature

| | |
|---------|--|
| AQCR | Air Quality Control Region |
| ANSI | American National Standards Institute |
| ASTM | American Society for Testing and Materials |
| ASME | American Society of Mechanical Engineers |
| BEA | Battelle Energy Alliance, LLC |
| CEMS | continuous emission monitoring system |
| CFR | Code of Federal Regulations |
| DEQ | Department of Environmental Quality |
| DOE-ID | U.S. Department of Energy, Idaho Operations Office |
| EBR-II | Experimental Breeder Reactor No. 2 |
| EPA | U.S. Environmental Protection Agency |
| FCRD | Fuel Cycle Research and Development |
| FFTF | Fast Flux Test Facility |
| FMF | Fuel Manufacturing Facility |
| HEPA | high efficiency particulate air (filter) |
| IDAPA | a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act |
| INL | Idaho National Laboratory |
| km | kilometer |
| MFC | Materials and Fuels Complex |
| mrem/yr | millirem per year |
| NESHAP | National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 61 |
| NAICS | North American Industry Classification System |
| Np | neptunium |
| O&M | operation and maintenance |
| PTC | permit to construct |
| Pu | plutonium |
| R&D | research and development |
| scfm | standard cubic feet per minute |
| SIC | Standard Industrial Classification |
| TRU | transuranic |
| UTM | Universal Transverse Mercator |

PERMIT TO CONSTRUCT SCOPE

Purpose

1. This is the initial permit to construct for the MFC Fuel Manufacturing Facility.
2. The emission sources regulated by this permit are listed in the following table.

Table 1. SUMMARY OF REGULATED SOURCES

| Permit Section | Source Description | Emissions Control(s) |
|-----------------------|---|---------------------------------|
| 2 | Gloveboxes and hoods at the Fuel Manufacturing Facility | HEPA filter, 99.97% efficiency. |

MFC FUEL MANUFACTURING FACILITY (FMF)

3. Process Description

Current activities conducted in gloveboxes and under hoods as part of the FMF mission include (1) processing surplus nuclear material currently stored at MFC for use or consolidation elsewhere in the DOE complex, (2) R&D on new fabrication methods for high density low enrichment fuel forms, (3) fuel fabrication for the Fuel Cycle Research and Development (FCRD) to investigate options for actinide transmutation fuels and targets, and (4) storage of programmatic uranium and transuranic (TRU) material, including plutonium (Pu) and neptunium (Np).

4. Emissions Control Description

Table 0. MFC FMF DESCRIPTION

| Emissions Unit(s) / Process(es) | Emissions Control Device | Emissions Point |
|--|--------------------------|-----------------|
| Combined emissions from FMF processing area gloveboxes, hoods and ventilation system | HEPA filter | FMF 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).

[40 CFR 61, Subpart H]

Operating Requirements

6. FMF Stack CEMS - NESHAP

In accordance with 40 CFR 61.93, when handling fuel outside its primary container, the permittee shall have in place, calibrated, and operating, an in-stack continuous emission monitoring system (CEMS) for the measurement of radionuclides from the FMF Stack.

[40 CFR 61, Subpart H]

7. Process and Building HEPA Filter Systems

When in operation, the permittee shall comply with the following requirements for the FMF HEPA filter system:

- 7.1 The permittee shall install, operate, and maintain a certified aerosol tested HEPA filter system to filter building exhaust system air prior to discharge through the FMF Stack.
- 7.2 Each HEPA filter shall have a minimum particle removal efficiency of no less than 99.97%. If the removal efficiency of a certified HEPA filter or HEPA filter bank, as applicable, falls below 99.97% as determined by ASME N510-1989 testing, the permittee shall isolate or replace the certified filters to achieve the minimum required efficiency within ten (10) days, or according to a DEQ approved alternative schedule.
- 7.3 The permittee shall maintain and operate instrumentation to measure the pressure drop across the filter stages.

- 7.4 HEPA filter efficiency shall be tested in accordance with the ASME N510-1989 testing standard. HEPA filters shall be tested in-place within ninety (90) days after installation or replacement and on an annual basis thereafter, or per a DEQ approved alternative schedule. All HEPA filters must be pre-tested and certified prior to installation and must meet the performance specifications of DOE-STD-3020-05 and the overpressure and rough handling requirements of ASME AG-1.
[IDAPA 58.01.01.211.01, 5/1/94 (State-only Requirement)]

8. **Operations and Maintenance Manual and Quality Assurance Plan Requirements**

Within 60 days after startup of any processing capability, the permittee shall have developed an operations and maintenance (O&M) manual that describes the procedures that will be followed to assure compliance with this permit. This shall include, at a minimum, written procedures that specify how the pressure drop across the filters will be measured, the frequency of pressure drop recording, and the conditions that require change out of the filters. The manual shall remain on site at all times and shall be made available to DEQ representatives upon request.

[IDAPA 58.01.01.211.01, 5/1/94 (State-only Requirement)]

Monitoring and Recordkeeping Requirements

9. **Radionuclide Emission Monitoring - NESHAP**

9.1 In accordance with 40 CFR 61.93, when handling fuel outside its primary container, the permittee shall continuously monitor and record radionuclide emissions from the FMF Stack.

9.2 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.

[40 CFR 61, Subpart H]

10. **HEPA Filter Pressure Drop Monitoring**

When facility is accessed for 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.

[IDAPA 58.01.01.211.01, 5/1/94 (State-only Requirement)]

Reporting Requirements

11. **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.

[40 CFR 61, Subpart H]

Incorporation of Federal Requirements by Reference

12. 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.

[40 CFR 61, Subparts A and H]

PERMIT TO CONSTRUCT GENERAL PROVISIONS

General Compliance

13. 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.]
14. 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]
15. 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

16. Upon presentation of credentials, the permittee shall allow DEQ or an authorized representative of DEQ to do the following:
- a. 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;
 - b. Have access to and copy, at reasonable times, any records that are kept under the conditions of this permit;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
 - d. 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

17. The permittee shall furnish DEQ written notifications as follows in accordance with IDAPA 58.01.01.211:
- a. A notification of the date of initiation of construction, within five working days after occurrence;
 - b. A notification of the date of any suspension of construction, if such suspension lasts for one year or more;
 - c. 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;

- d. A notification of the actual date of initial start-up of the stationary source or facility within fifteen days after such date; and
- e. 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, 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.

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.

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

19. 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

20. 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

21. 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

22. 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

23. 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

24. 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

24. 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 58.01.01.322.15.h, 5/1/94; 40 CFR 70.6(a)(5)]