ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

BUREAU OF AIR

DIVISION of AIR POLLUTION CONTROL

PERMIT SECTION

PROJECT SUMMARY for the
DRAFT TITLE V - CLEAN AIR ACT PERMIT PROGRAM (CAAPP) PERMIT

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I. INTRODUCTION

This source has applied for a renewal of its Title V - Clean Air Act Permit Program (CAAPP) operating permit (I.D. 043802AAA, Permit #95090195) for its operation. The CAAPP is the program established in Illinois for operating permits for significant stationary sources as required by the federal Clean Air Act, as amended in 1990, and 40 CFR Part 70. Unlike state operating permits, the conditions in a CAAPP permit are enforceable by both the Illinois Environmental Protection Agency (Illinois EPA) and the USEPA. This document is for informational purposes only and does not shield the Permittee from enforcement actions or its responsibility to comply with applicable regulations. This document shall not constitute a defense to a violation of the Act or any rule or regulation.

A Title V permit contains conditions listing the applicable state and federal air pollution control regulations that apply to a source. The permit conditions also establish emission limits, appropriate compliance procedures, and specific operational flexibility. The appropriate compliance procedures may include monitoring, record keeping, and reporting to show compliance with these requirements. The Permittee must carry out these procedures on an on-going basis to demonstrate that the source is operating in accordance with the requirements of the permit.

In order to be subject to the NESHAP regulation under 40 CFR 63 a source must be major for HAP emissions. Argonne National Laboratory has limited its coal usage in order that it not be major for HAPs. However, one of the older NESHAP regulation under 40 CFR 61 for Radionuclides applies even though the source is not major for HAPs.

II. SOURCE DESCRIPTION INFORMATION

a. Location and nature of business

The Argonne National Laboratory (ANL) is located at 9700 South Cass Avenue, Argonne, Illinois, 60439. Argonne National Laboratory is a multipurpose research laboratory owned by the U. S. Department of Energy (DOE) and operated by the University of Chicago. The University of Chicago is responsible for day-to-day operations, including, but not limited to, monitoring, recordkeeping, facility maintenance and reporting. DOE is also a co-operator of the laboratory and is responsible for policy, programmatic funding and scheduling decisions, as well as general oversight. ANL is engaged in basic research involving the physical, life and environmental sciences, and technology research in fission, fusion, fossil energy, energy efficiency and renewable energy.

b. National Ambient Air Quality Standard status for this area

This permit is issued based on the source being located in an area that, as of the date of permit issuance, is designated nonattainment for the National Ambient Air Quality Standards for ozone (moderate) and $PM_{2.5}$ and attainment or unclassifiable for all other criteria pollutants (NO_x, CO, SO_2 and lead).

c. Major source status

The proposed permit is based on:

1. The source requiring a CAAPP permit as a major source of emissions.

2. The source requiring a CAAPP permit because the source is subject to a standard, limitation, or other requirement under Section 111 (NSPS) or Section 112 (HAPs) of the CAA for which USEPA requires a CAAPP permit, or because the source is in a source category designated by the USEPA (see Condition 5.2 of the proposed permit).

d. Significant emission units

Emission Unit	Description	Date Constructed	Emission Control Equipment
Section 7.1			
Alkali Metal Scrubber (Building 206)	A Scrubbing Process to safely dispose of sodium and occasionally other alkali metals	N/A*	Venturi Scrubber and HEPA Filter
Advanced Photon Source (APS)	X-ray radiation beams are produced by accelerating electrons in a circular path at speeds near that of light.	N/A	None
Alpha Gamma Hot Cell Facility	Irradiated nuclear fuel materials that contain plutonium, uranium, and mix-fission products are examined and tested.	N/A	Carbon Adsorber and HEPA Filter
Storage Rooms/Assay Room (Building 306)	Waste material is stored in rooms with concrete floors and cinder block walls with no windows. Assay room is for external viewing of closed waste drums	N/A	HEPA Filters

Emission Unit	Description	Date Constructed	Emission Control Equipment
Sorting/ Decontamination/Size Reduction Rooms (Building 306)	Radioactive, non-radioactive and mixed wastes are separated and reduced.	N/A	HEPA Filters
Waste Treatment R & D (Building 306)	Three waste treatment processes are being evaluated: 1) aqueous mixed waste, 2) solidification process, and 3) transuranic aqueous mixed waste.	N/A	HEPA Filters
Compactor/Vial Crusher and Chemical/Photo-oxidation Unit (Building 306)	Bulking of rad, mixed and organic wastes. Experimental Treatment of org. wastes	N/A	HEPA Filters
Waste Treatment Rooms (Building 306)	Rooms contain a tank system used to neutralize acidic transuranic waste	N/A	HEPA Filters
Service Floor Tank Area (Building 306)	15 storage tanks used to collect radioactive liquid waste for future processing.	N/A	HEPA Filters
High Bay Area with Evaporator/ Concentrator (Building 306)	Evaporator/concentrator system processes aqueous radioactive waste.	N/A	HEPA Filters
CP-5 Reactor	Facility D & D complete - awaiting final disposition	N/A	HEPA Filters
Melt Attack and Coolability Experiment (MACE) (Building 315)	Designed to evaluate the use of water to terminate progression of a core melt accident in a light water reactor system.	N/A	Water Scrubber and HEPA Filters
Intense Pulsed Neutron Source (IPNS)	A pulsed proton beam is delivered onto a heavy metal target which emits a large number of neutrons	N/A	HEPA Filters
NBL - Plutonium Lab Air Handling System	Routine chemical and instrumental analyses of nuclear materials and the preparation and/or characterization of nuclear standards and reference materials are conducted.	N/A	HEPA Filters

Emission Unit	Description	Date Constructed	Emission Control Equipment
NBL - Uranium Lab Air Handling System	Same as for NBL plutonium lab	N/A	HEPA Filters
Radionuclide Hoods	Experimentation involving the use of radioactive materials	N/A	HEPA Filters
Hot Cell D & D Project (Building 301)	Hot cell facility undergoing D & D	N/A	HEPA Filters
WMO Portable Filtration System	Filtration system for waste handling erected at equipment dismantlement sites.	N/A	HEPA Filters
Mixed Waste Storage Facility (Building 303)	Location where low-level radioactive waste generated by various R & D, D & D, and support activities are stored.	N/A	HEPA Filters
Radioactive Waste Facility (Building 331)	The building is used to store and process radioactive waste and mixed waste generated at ANL	N/A	HEPA Filters
WMO Waste Bulking Sheds	These sheds house a bulking process for organic and corrosive acid wastes into 55 gallon drums. (Radionuclide Emissions)	N/A	HEPA Filters
Wastewater Treatmen Plant	The continuous flow wastewater treatment plant has the capability to treat wastewater for metals, suspended solids and organic compounds. (Radionuclide Emissions)	N/A	None
M-Wing Hot Cells (Building 200)	Past experiments that involved nuclear materials which emit Rn_{220}	[a]	HEPA Filters
B-050 Counting Area Ventilation (Building 205)		N/A	
H-Wing Radionuclid Sources		N/A	
Radionuclide Hoods/Gloveboxes (Building 203)		N/A	

Emission Unit	Description	Date Constructed	Emission Control Equipment
Zero Power Reactor D&D Project (Building 315)		N/A	
Section 7.2			
Boiler #1	85,000 Lb/Hr (106 mmBtu/Hr) Dual Fueled Steam Boiler	Pre-1972	None
Boiler #2	85,000 Lb/Hr (106 mmBtu/Hr) Dual Fueled Steam Boiler	Pre-1972	None
Boiler #3	85,000 Lb/Hr (106 mmBtu/Hr) Dual Fueled Steam Boiler	Pre-1972	None
Boiler #4	85,000 Lb/Hr (106 mmBtu/Hr) Dual Fueled Steam Boiler	Pre-1972	None
Section 7.3			
Boiler #5	170,000 lb/hr Steam Boiler, Dual Fueled (212 mmBtu/hr), Natural Gas or Coal.	Pre-1972	Baghouse
Section 7.4			
PCB Cleanup	PCB contaminated sediments are removed from various tanks at the facility. After removal the tanks are cleaned with biodegradable solvent.	1995	None (portable HEPA filter system to control radionuclide emissions during the sludge removal process)
Section 7.5			
WMO Waste Bulking Sheds	These sheds house a bulking process for organic and corrosive acid wastes into 55 gallon drums. (Non-Radionuclide Emissions)	1994	HEPA Filters
Section 7.6			
Wastewater Treatmen Plant	The continuous flow wastewater treatment plant has the capability to treat wastewater for metals, suspended solids and organic compounds. (Non-Radionuclide Emissions)	1995	None

Emission Unit	Description	Date Constructed	Emission Control Equipment
Section 7.7			
APS Emergency Generator #1	1250 kW Caterpillar Diesel Generator	1994	None
APS Emergency Generator #2	1250 kW Kohler Diesel Generator	1994	None
APS Emergency Generator #3	1250kW Kohler Diesel Generator	1994	None
ANL Peak Shaving Generator (Building 200)	500 kW Diesel Generator	1989	None
ANL Peak Shaving Generator (Building 202)	500 kW Diesel Generator	1989	None
Section 7.8			
TRF Buildings Containing Test Engines	Various Internal Combustion Engines	1996	None[b]
Section 7.9			
Tank #2 (Building 46)	10,000 gallon gasoline underground storage tank	1990	Submerged filling pipe; Stage I and II vapor recovery
Tank #3 (Building 46)	10,000 gallon ethanol/gasoline underground storage tank	1990	Submerged filling pipe; Stage I and II vapor recovery
Section 7.10			
Superconducting Cavity Surface Treatment	Surface Treatment with Acid Gases	2004	Packed Bed Scrubber

III. EMISSIONS INFORMATION

The proposed permit limits the source wide maximum annual emissions from significant emission units at the source. Insignificant activities at this source are not accounted for in the source-wide limit. Further unit specific emission unit limitations are found within Sections 5 and 7 of the proposed permit.

For purposes of fees, the source is allowed the following emissions:

Pollutant	Tons/Year
Volatile Organic Material (VOM)	21.53
Sulfur Dioxide (SO_2)	332.20
Particulate Matter (PM)	65.93
Nitrogen Oxides (NO_x)	395.20
Hazardous Air pollutant (HAP), not included in VOM or PM	10.00
TOTAL	824.86

This proposed permit contains terms and conditions that address the applicability, and, if determined applicable, substantive requirements of Title I of the Clean Air Act (CAA) and regulations promulgated thereunder, including 40 CFR 52.21, Prevention of Significant Deterioration (PSD) and 35 IAC Part 203, Major Stationary Sources Construction and Modification. Any such terms and conditions are identified within the proposed permit by T1, T1R, or T1N. Any conditions established in a construction permit [T1] pursuant to Title I and not revised or deleted in this proposed permit, remain in effect pursuant to Title I provisions until such time that the Illinois EPA revises or deletes them. Where the source has requested that the Illinois EPA establish new [T1N] or revise [T1R] such conditions in a Title I permit, those conditions are consistent with the information provided in the Title V application and will remain in effect pursuant to Title I provisions until such time that the Illinois EPA revises or deletes them.

This proposed permit does not establish any new [T1N] requirements or revised [T1R] requirements.

IV. EMISSIONS CONTROL PROGRAMS INFORMATION

a. Emissions Reduction Market System (ERMS)

Because this source is located in the Chicago ozone non-attainment area and emits volatile organic material (VOM), the proposed permit includes conditions to implement the Emissions Reduction Market System (ERMS). The ERMS is a market-based program designed to reduce VOM emissions from stationary sources to contribute to reasonable further progress toward attainment, as further described in Section 6.0 of the proposed permit. The proposed permit contains the Illinois EPA's determination of the source's baseline emissions and allotment of trading units under the ERMS, and identifies units not subject to further reductions.

Argonne National Laboratory is not considered to be a participating source because its past seasonal VOM emissions were less than 10 tons. They have not been issued any Allotment Trading Units. However, they must maintain records to demonstrate that VOM emissions continue to remain less than 10 tons per season.

V. COMPLIANCE ASSURANCE MONITORING (CAM) PLAN INFORMATION

The Compliance Assurance Monitoring (CAM) plan is a program for pollutant-specific emission units which use an add-on control device to achieve compliance with an emission limitation or standard, has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than major source threshold levels, and is not specifically exempt by 40 CFR Part 64. There are no specific emission units that require a CAM plan as identified in the Monitoring Requirements of Subsection 8 for each Section 7, Unit Specific Conditions for Specific Emission Units.

VI. OTHER PERTINENT INFORMATION

a. Fugitive Particulate Matter Operating Program

The fugitive operating program is intended to significantly reduce fugitive particulate matter emissions within certain affected locations and facilities in Illinois. The source is subject to the fugitive operating program for particulate matter. Normally, affected operations by this program include, but are not limited to, addressing normal traffic pattern roads, parking facilities, and material piles and handling. Usually a source addresses the programs through the use of water, oils, or chemical dust suppressants.

b. Risk Management Plan (RMP)

A risk management plan (RMP) is a program required for a source affected by Chemical Accident Prevention for reducing the levels of emissions during an emergency, consistent with safe operating procedures. If the Permittee becomes subject to the RMP then the Permittee would be required to immediately implement the appropriate steps described in this plan should an emergency be declared. The Permittee then would be required to maintain and have this plan on file with the Illinois EPA.

c. Episode Action Plan (EAP)

An episode action plan (EAP) is a program for reducing the levels of emissions during yellow alerts, red alerts, and emergencies, consistent with safe operating procedures. The Permittee is required to immediately implement the appropriate

steps described in this plan should an air pollution alert or emergency be declared. The Permittee is required to maintain and have this plan on file with the Illinois EPA.

d. PM_{10} Contingency Measure Plan

If the Permittee becomes subject to a contingency measure plan then the Permittee will be required to prepare and submit a contingency measure plan reflecting the PM_{10} emission reductions. Such plan will be incorporated by reference into the proposed permit and shall be implemented by the Permittee.

VII. COMPLIANCE INFORMATION

The source has certified compliance with all applicable rules and regulations; therefore, a compliance schedule is not required for this source.

VIII. REQUEST FOR COMMENTS

It is the Illinois EPA's preliminary determination that this source's permit application meets the standards for issuance of a Title V permit. The Illinois EPA is therefore proposing to issue a Title V permit, subject to the conditions proposed in the draft permit.

Comments are requested by the Illinois EPA for the proposed permit. If substantial public interest is shown in this matter, the Illinois EPA will consider holding a public hearing in accordance with 35 Ill. Adm. Code Part 166.

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