



Department of Energy

Argonne Site Office
9800 South Cass Avenue
Argonne, Illinois 60439

JUL 29 2011

Dr. Eric D. Isaacs
Director, Argonne National Laboratory
President, UChicago Argonne, LLC
9700 South Cass Avenue
Argonne, Illinois 60439

Dear Dr. Isaacs:

SUBJECT: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) DETERMINATION FOR
ARGONNE NATIONAL LABORATORY (ANL)

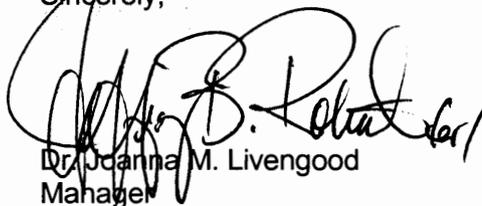
The Argonne Site Office (ASO) has approved the following as a categorical exclusion (CX) under the category of "B 2.5 Safety and environmental improvements of a facility, replacement/upgrade of facility components".

- Building 108 Boilers 1-5 NOx Emission Reduction Project (ASO-CX-290)

Therefore, no further NEPA review is required. However, if any modification or an expansion of the scope is made to the above project, additional NEPA review will be necessary.

Enclosed please find a copy of the approved Environmental Review Form (ERF) for the project. If you have any questions, please contact Kaushik Joshi of my staff at extension 2-4226.

Sincerely,



Dr. Joanna M. Livengood
Manager

Enclosure:
As Stated

cc: M. Kamiya, ANL/ESQ, 201, w/encl.
J. Frego, ANL/FMS, 214, w/encl.
P. Rash, ANL/FMS, 214, w/encl.

Environmental Review Form for Argonne National Laboratory

Click on the blue question marks (?) for instructions, contacts, and additional information on specific line items.

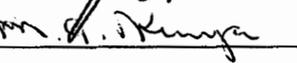
(?) **Project/Activity Title:** Building 108 NOx Emission Reduction Project

(?) **ASO NEPA Tracking No.** _____ (?) **Type of Funding:** IGPP
B&R Code _____

(?) **Identifying number:** OPS-01115 WFO proposal # _____ CRADA proposal # _____
Work Project # 08115 ANL accounting # (item 3a in Field Work Proposal) _____
Other (explain) _____

(?) **Project Manager:** Jim Frego Signature:  Date: 4/11/11

(?) **NEPA Owner:** Philip C. Rash Signature:  Date: 4/11/11

ANL NEPA Reviewer: M. A. Kamiya Signature:  Date: 7/26/2011

I. (?) **Description of Proposed Action:**

All work will be within the interior of the Building 108 Boiler house. Boilers Nos. 1-5 will be affected. The project will replace the existing natural gas burner rings in Boilers Nos. 1-4, that operate solely on natural gas, with new burner rings that operate at a capacity of ~95 mmbtu/hr; This is below the January 1 2012 Illinois Environmental Protection Agency (IEPA) imposed limit of 100 mmbtu/hr. This procedure was approved by the IEPA in a March 2010 construction permit (Attached). Since natural gas is the primary fuel for Boilers Nos. 1-4, this action will allow Argonne to de-rate each boiler. This action will reduce the rated heat output of each boiler from the current rating of 106 mmbtu/hr to ~95 mmbtu/hr.

In addition, the project will install flue gas recirculation (FGR) in Boiler No. 5 to allow operation of the boiler when firing gas to meet the NOx RACT emission limit of 0.08 lb NOx/mmbtu. Compliance with the NOx RACT rule when firing coal is still being evaluated and beyond the scope of this project. The project will also install a NOx continuous emission monitor (CEM) as required by the rule to ensure compliance with the NOx emission limit. IEPA issued a construction permit in April, 2011 for this part of the project (attached).

II. (?) **Description of Affected Environment:**

The proposed work will occur inside an existing building. This work reduces impacts to the environment by meeting the new IEPA Standards.

III. (?) **Potential Environmental Effects:** (Attach explanation for each "yes" response. See Instructions for Completing Environmental Review Form)

A. Complete Section A for all projects.

1. (?) **Project evaluated for Pollution Prevention and Waste Minimization opportunities and details provided under items 2, 4, 6, 7, 8, 16, and 20 below, as applicable** Yes X No _____

2. (?) **Air Pollutant Emissions** Yes X No _____

This project will result in the de-rating of the natural gas burner units of Boilers Nos. 1-4 that will result in the ability to continue to burn natural gas without the requirement to meet a numeric NOx emission limit or require the use of a CEM. In addition, Boiler No. 5 will be modified to ensure adherence to the new IEPA NOx emission standards of .08 lb/mmBtu for the burning of natural gas. A NOx CEM will be installed into the stack of Boiler No. 5 as required by rule to verify compliance.

In addition, asbestos insulation will be removed during the modifications work. The volume is expected to be about 200 SF which is below the reporting requirements.

3. (?)Noise Yes No

Minor standard construction associated noises. Any work above limits will be executed using the proper PPE for the action.

4. (?)Chemical/Oil Storage/Use Yes No

Standard construction chemicals associated with boiler work/upgrade. MSDS sheets will be available at the work site. They will be stored and used in accordance with ANL requirements. No oil containing equipment will be modified or installed as part of this project.

5. (?)Pesticide Use Yes No

6. (?) Polychlorinated Biphenyls (PCBs) Yes No

7. (?) Biohazards Yes No

8. (?)Liquid Effluent (wastewater) Yes No

Small amounts of water will be purged from the boilers during retrofitting. This water will be collected and disposed into ANL's laboratory wastewater system.

9. (?)Waste Management

- a) Construction or Demolition Waste Yes No

Construction waste will be collected and disposed by the contractor.

- b) Hazardous Waste Yes No

- c) Radioactive Mixed Waste Yes No

- d) Radioactive Waste Yes No

- e) PCB or Asbestos Waste Yes No

ACM is found in and around the boilers. As required, removal of all ACM will be done by a qualified sub-contractor certified and trained in ACM abatement. ACM waste will be placed in Argonne provided containers, and disposed of by ANL.

- f) Biological Waste Yes No

- g) No Path to Disposal Waste Yes No

- h) Nano-material Waste Yes No

10. (?)Radiation Yes No

11. (?)Threatened Violation of ES&H Regulations or Permit Requirements Yes ___ No X
12. (?)New or Modified Federal or State Permits Yes X No ___
- A construction permit for work on Boilers 1-4 has been granted by the IEPA (March 2010).
A construction permit for work on Boilers 5 has been granted by the IEPA (April 2011).
13. (?)Siting, Construction, or Major Modification of Facility to Recover, Treat, Store, or Dispose of Waste Yes ___ No X
14. (?)Public Controversy Yes ___ No X
15. (?)Historic Structures and Objects Yes ___ No X
16. (?)Disturbance of Pre-existing Contamination Yes ___ No X
17. (?)Energy Efficiency, Resource Conserving, and Sustainable Design Features Yes ___ No X

B. For projects that will occur outdoors, complete Section B as well as Section A.

18. (?)Threatened or Endangered Species, Critical Habitats, and/or other Protected Species Yes ___ No X
19. (?)Wetlands Yes ___ No X
20. (?)Floodplain Yes ___ No X
21. (?)Landscaping Yes ___ No X
22. (?)Navigable Air Space Yes ___ No X
23. (?)Clearing or Excavation Yes ___ No X
24. (?)Archaeological Resources Yes ___ No X
25. (?)Underground Injection Yes ___ No X
26. (?)Underground Storage Tanks Yes ___ No X
27. (?)Public Utilities or Services Yes ___ No X
28. (?)Depletion of a Non-Renewable Resource Yes ___ No X

This work improves operation of and efficiency of the existing Boiler House.

C. For projects occurring outside of ANL complete Section C as well as Sections A and B.

29. (?)Prime, Unique, or Locally Important Farmland Yes ___ No ___
30. (?)Special Sources of Groundwater (such as sole source aquifer) Yes ___ No ___
31. (?)Coastal Zones Yes ___ No ___

32. (?) Areas with Special National Designations (such as National Forests, Parks, or Trails) Yes ___ No ___

33. (?) Action of a State Agency in a State with NEPA-type Law Yes ___ No ___

34. (?) Class I Air Quality Control Region Yes ___ No ___

IV. Subpart D Determination: (to be completed by DOE/ASO)

Are there any extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal? Yes ___ No X

Is the project connected to other actions with potentially significant impacts or related to other proposed action with cumulatively significant impacts? Yes ___ No X

If yes, is a categorical exclusion determination precluded by 40 CFR 1506.1 or 10 CFR 1021.211? Yes ___ No ___

Can the project or activity be categorically excluded from preparation of an Environment Assessment or Environmental Impact Statement under Subpart D of the DOE NEPA Regulations? Yes X No ___

If yes, indicate the class or classes of action from Appendix A or B of Subpart D under which the project may be excluded. APPENDIX B 2.5 Safety and environmental improvements of a facility, replacement/upgrade of facility components.

If no, indicate the NEPA recommendation and class(es) of action from Appendix C or D to Subpart D to Part 1021 of 10 CFR.

ASO NEPA Coordinator Review: Kaushik N. Joshi

Signature: [Signature] Date: 7-26-11

ASO NCO Approval of CX Determination:

The preceding pages are a record of documentation that an action may be categorically excluded from further NEPA review under DOE NEPA Regulation 10 CFR Part 1021.400. I have determined that the proposed action meets the requirements for the Categorical Exclusion identified above.

Signature: [Signature] Date: 7/26-11

Peter R. Siebach
Acting Argonne Site Office NCO

ASO NCO EA or EIS Recommendation:

Class of Action: _____

Signature: _____ Date: _____

Peter R. Siebach
Acting Argonne Site Office NCO

Concurrence with EA or EIS Recommendation:

CH GLD: _____

Signature: _____

Date: _____

ASO Manager Approval of EA or EIS Recommendation:

An ___ EA ___ EIS shall be prepared for the proposed _____ and
_____ shall serve as the document manager.

Signature: _____
Dr. Joanna M .Livengood
Manager

Date: _____

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

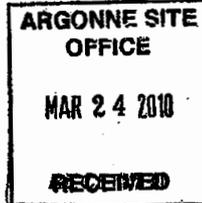
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19506, SPRINGFIELD, ILLINOIS 62794-9506 - (217) 782-2113

PAT QUINN, GOVERNOR

DOUGLAS P. SCOTT, DIRECTOR

217/782-2113

CONSTRUCTION PERMIT



PERMITTEE

U.S. Department of Energy
C/O Argonne National Laboratory
Attn: Dr. Joanna M. Livengood, Acting Manager - Argonne Site Office
9800 South Cass Avenue
Argonne, Illinois 60439

Application No.: 10020024 I.D. No.: 043802AAA
Applicant's Designation: Date Received: February 10, 2010
Subject: NOx RACT Control Program (De-rating of Boilers 1 - 4)
Date Issued: March 22, 2010
Location: 9700 South Cass Avenue, Argonne, DuPage County

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a NOx RACT Control Program for existing Boilers 1 through 4 (the affected boilers), that entails de-rating of the boilers, as described in the above referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This permit authorizes a formal NOx RACT Control Program that the Permittee must implement for Boilers 1 through 4 (the affected boilers). This Program addresses compliance with 35 IAC 217, Subparts D and E, which establish requirements that reflect Reasonably Available Control Technology (RACT) for boilers related to emission of nitrogen oxide (NOx). As part of the Program, the Permittee must take actions to constrain and limit the heat input to each affected boiler to no more than 100 mmBtu/hour. For natural gas, which is the primary fuel of the boilers, the Permittee must physically de-rate each boiler. This will be accomplished by replacement of the gas burner rings with new ring assemblies with a design gas pressure of 8.0 psig. (This will reduce the rated heat input of each boiler from the current rating of 106 mmBtu/hour to approximately 95 mmBtu/hour.) For oil, which is the backup fuel for the affected boilers, the Permittee must never fire more than 100 mmBtu/hour in a boiler. Under this Program, as the heat input to each boiler is limited to no more than 100 mmBtu/hr, the Permittee will only have to comply with the requirements of 35 IAC Part 217, Subpart E, for smaller boilers.
b. This permit does not relax or revise any requirements and conditions that apply to the operation of the source, including applicable monitoring, testing, recordkeeping, and reporting requirements in the current CAAPP permit for the source.
2. Pursuant to 35 IAC 217.152 and 217.164(a), beginning January 1, 2012, the Permittee shall comply with applicable requirements of 35 IAC Part 217 Subparts D and E for the affected boilers, including:

- a. Pursuant to 35 IAC 217.150(e), the Permittee shall operate each boiler in a manner consistent with good air pollution control practice to minimize NO_x emissions;
- b. Pursuant to 35 IAC 217.156(c) and 217.166, the Permittee shall perform combustion tuning on each boiler at least annually. The combustion tuning must be performed by an employee of the owner or operator or a contractor who has successfully completed a training course on the combustion tuning of boilers firing the fuel or fuels that are fired in the boiler. The Permittee shall maintain the following records, which must be made available to the Illinois EPA upon request:
 - i. The date the combustion tuning was performed;
 - ii. The name, title, and affiliation of the person who performed the combustion tuning;
 - iii. Documentation demonstrating the provider of the combustion tuning training course, the dates the training course was taken, and proof of successful completion of the training course;
 - iv. Tune-up procedure followed and checklist of items (such as burners, flame conditions, air supply, scaling on heating surface, etc.) inspected prior to the actual tune-up; and
 - v. Operating parameters recorded at the start and at conclusion of combustion tuning.
- 3a. The rated heat input capacity of each affected boiler for firing of natural gas shall not exceed 100 mmBtu/hour. This requirement shall be met with a permanent physical change to the burners in each boiler, such as an appropriate change to the burner ring assembly.
- b.
 - i. Until an affected boiler is physically de-rated for firing of oil, the usage of oil shall not exceed 100 mmBtu/hour and 714 gallons/hour.
 - ii. If the Permittee decides to install permanent storage tank(s) and other supporting equipment for use of oil in the affected boiler(s), the Permittee shall evaluate the heat input capacity of the oil burners in the boiler(s) and, if greater than 100 mmBtu/hour, make permanent physical change to the burners on the boiler(s) to reduce the rated capacity to less than or equal to 100 mmBtu/hour.
 - iii. Thereafter, the rated heat input capacity of the affected boiler(s) for firing of oil shall not exceed 100 mmBtu/hour.
- c. The actual firing rate of each affected boiler for all fuels, combined, shall not exceed 100 mmBtu/hour.
- d. The requirements of Conditions 3 and 4 shall become effective on January 1, 2012.

4. The Permittee shall maintain the following records for the affected boilers in addition to other required records:
 - a. A file containing the following information for each affected boiler:
 - i. The rated heat input capacity, mmBtu/hour, for firing of natural gas, with supporting documentation.
 - ii. The actual or rated heat input capacity, mmBtu/hour, for firing of oil, with supporting documentation, if the Permittee is relying on this capacity being less than or equal to 100 mmBtu/hour.
 - b. An operating log or other records for each affected boiler that, at a minimum, shall include the following information:
 - i. Periods when oil was fired.
 - ii. Information to show the actual heat input to the boiler was not more than 100 mmBtu/hour.
 - iii. Information identifying any deviation from Condition 3.
- 5a. For the affected boilers, the Permittee shall notify the Illinois EPA, of deviations with the permit requirements within 30 days of an occurrence. Reports shall describe the deviations, the probable cause of such deviations, the corrective actions taken, and any preventive measures taken.
- b. The Permittee shall notify Illinois EPA within 90 days of installation of permanent oil storage tanks and supporting equipments to be used for the affected boiler(s) and the actions taken to comply with the requirements of Condition 3(b)(ii).
6. All records required by this permit shall be retained on site for a period of at least five years and shall be readily available for inspection and copying by the Illinois EPA upon request. Any record retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA request for records during the course of a source inspection.
7. Two copies of all required reports and notifications shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

Telephone: 217/782-5811 Fax: 217/782-6348

and one copy of all required reports and notifications shall be sent to the Illinois EPA's regional office at the following address, unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Regional Field Office
9511 West Harrison
Des Plaines, Illinois 60016

Telephone: 847/294-4000 Fax: 847/294-4018

- 8a. This permit will expire if the construction/modification of the affected boilers is not begun by December 31, 2011. This condition supersedes Standard Condition 1.
- b. If construction/modification is begun in a timely manner, the Permittee is allowed to operate the affected boilers with the NO_x RACT requirements under this permit until a revised or renewed CAAPP permit is issued addressing requirements of 35 IAC Part 217, Subparts D and E for the affected boilers. This condition supersedes Standard Condition 6.

If you have any questions concerning this permit, please contact Manish Patel at 217/782-2113.

Edwin C. Bakowski

Edwin C. Bakowski, P.E.
Manager, Permit Section
Division of Air Pollution Control

Date Signed: March 22, 2010

ECB:MNP:psj

cc: FOE - Region 1, Illinois EPA
CAAPP Permit File, 95090195