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**: 200 Area Chilled Water Plant

(?)**ASO NEPA Tracking No.** ~~ERF-01006~~ ASO-CX-263 (?)**Type of Funding**: IGPP

B&R Code _____

(?)**Identifying number**: ERF-01006 WFO proposal # _____ CRADA proposal # _____

Work Project # 08109 ANL accounting # (item 3a in Field Work Proposal) _____

Other (explain) ESQ Log #0968

(?)**Project Manager**: Jason Budd Signature: _____ Date: 1-11-10

(?)**NEPA Owner**: Phil Rash Signature: _____ Date: 1-11-10

ANL NEPA Reviewer: *M. A. Kamiya* Signature: _____ Date: 1/11/2010

I. (?)Description of Proposed Action:

This proposed action will construct a new centrally located chilled water plant in the North West corner of the 200 Area of Argonne National Laboratory. Refer to the attached site map showing the proposed building location and supporting utility line connections. The 100' x 85' facility will be one story and contain a 20' x 12' partial basement located on a 3 acre parcel of land. Two cooling towers will be installed along the west exterior of the facility. The plant will connect to the laboratory sewer, canal and domestic waters, and the site electrical grid. There are no plans to connect the chilled water plant to the sanitary sewer, natural gas system or storm water discharge systems. A self composting toilet will be installed for this primarily unoccupied building. This facility will primarily support the cooling needs of ALCF-2 and Magellan programs located in the TCS building with any excess capacity provided to the 200 area chilled water loop.

Nine (9) soil borings will be taken at various locations to gather geotechnical information required for the design of the facility. The initial work at the site will execute extensive land clearing resulting in the removal of older growth trees and excavation/grading of the soil. Topsoil from the site and existing excess topsoil will be stored, pulverized, and used to provide the final cover on the site grounds. Where ever possible trees >6"shall not be cut however the site is located on a heavily wooded area and trees will be removed. A tree line shall either remain or be replanted around all sides of facility to provide a visual screen from the rest of the laboratory campus. New trees will be replanted at the Laboratory at a yet to be determined location to replace those removed.

All storm water from the site will be managed and controlled. The clean storm water will be guided from the building roofs into grass swales and/or bio-swales to encourage the maximum absorption into the ground. An existing gravel road to the east of the facility will direct storm water towards Outer Circle Road and away from the wetlands located further east of the facility. The project in general is expected to minimize the non-permeable surfaces by having only a small multicar parking lot to support the mostly unoccupied facility.

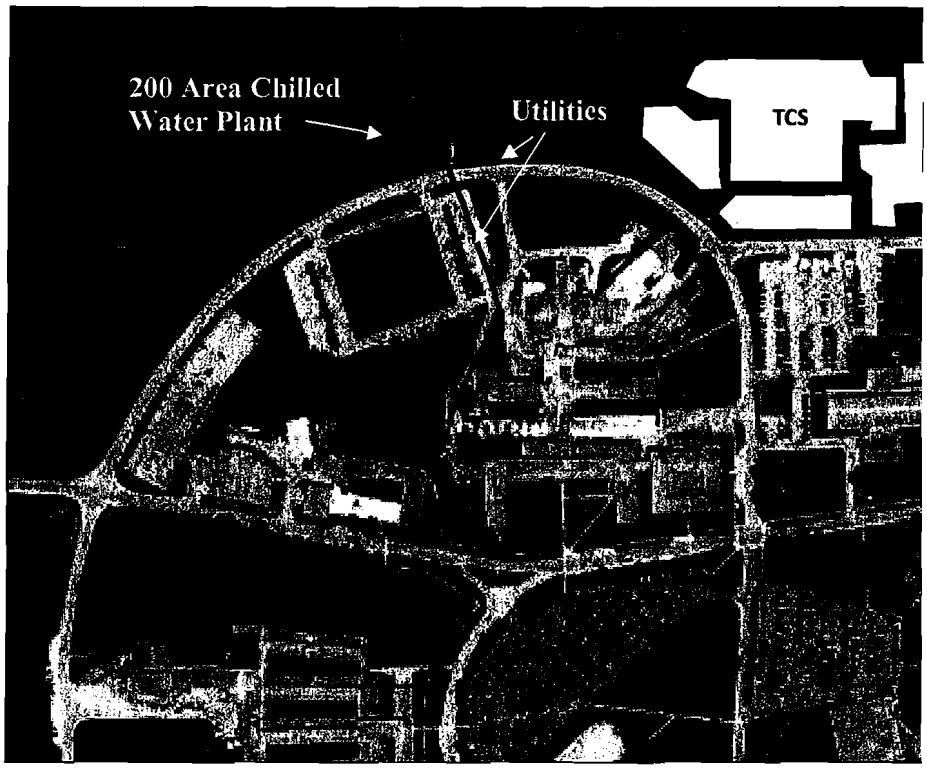

Figure 1. Chilled Water Plant Site Location

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

All this work will take place outside. The single story facility will be constructed on an undeveloped site at Argonne National Laboratory. The building will be constructed in an existing wooded and native grass area. Storm water management techniques will be employed to ensure no sensitive environmental areas (e.g. wetlands) will be impacted by the construction of the facility.

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 ____

   The project will be registered for LEEDS accreditation.

2. (?)Air Pollutant Emissions Yes X No ____
   Minor emissions from cars, Light-duty vehicles, and larger earth moving equipment will occur during construction. No emissions are expected from this building that will need special permitting.

3. (?)Noise Yes X No ____
   Construction type noises will be generated during the construction phase of this project. Excessive noises that would disturb the surrounding buildings are not expected. Large excavation equipment will be operating in the area. Multiple repetitive noises such as

hammering, banging, will be heard also. However, none of these activities will generate excessive noises above accepted maximum standards. However, when it may occur, appropriate precautions and warning will be put in place.

4. (?)Chemical Storage/Use Yes X No ____

Standard construction and operational chemicals will be used on site. Construction industry chemicals such as grease, gasoline, and oil will be used. The materials shall be stored in proper containers and protected from spillage. In addition, emergency clean up plans shall be in place incase of accidently releases. During facility operations water treatment chemicals will be used. Chemical storage, handling and emergency procedures will be in accordance with approved plans and approaches proven effective through years of operation at the Bld 371 central chilled water plant.

5. (?)Pesticide Use Yes X No ____

During the initial establishment of mow-able and native planting on the work site, herbicides and pesticides may be used to assist in the establishment of the permanent vegetation.

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

7. (?) Biohazards Yes ____ No X

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

This facility is a chilled water production building. It will house both mechanical equipment inside the structure and exterior to it. A self composting toilet will be installed in the facility preventing the need for a sanitary sewer connection for waste streams. The cooling towers shall, during blow down operations, discharge significant amounts of liquid effluent into the laboratory sewer. It is estimated that the new plant will discharge approximately 6.75 million gallons yearly. Additionally, floor drains in the building will discharge minimal amounts of waste water to the laboratory sewer. No process water shall be discharged to a non-treated system. Storm water from the site will be managed through a Storm Water Pollution Prevention Plan (SWPPP). Due to the location of the facility, all storm water shall be discharged onto grass areas and allowed to absorb into the surface. Grass, bio-swales or detention areas shall be part of the discharge path from the roof of the building and parking lot. A foundation drain sump pump would discharge clean ground water into either the bio-swales or other grass areas within the site.

9. (?)Waste Management

a) Construction or Demolition Waste Yes X No ____

During the construction of the facility, there will be construction debris and standard waste generated. Per the requirements of LEEDS, the project will establish trash collection areas where all debris can be sorted and recycled materials placed in appropriate containers. Due to the location, excavated materials such as asphalt, gravel, concrete should not be present. During construction these types of debris may be created (specifically concrete from washout) and collected for recycling off site by the contractor.

b) Hazardous Waste Yes ____ No X

During the operation of the facility it is not expected that hazardous wastes could be generated aside from standard chemically tainted water streams. If hazardous waters are

ever generated, albeit unlikely, these wastes will be managed via the requirements of the Argonne National Laboratory's Waste management manual.

c) Radioactive Mixed Waste — Yes ___ No X
None expected

d) Radioactive Waste — Yes ___ No X
None expected

e) PCB or Asbestos Waste — Yes ___ No X
None expected

f) Biological Waste — Yes ___ No X
None expected

g) No Path to Disposal Waste — Yes ___ No X

h) Nano-material Waste — Yes ___ No X

10. (?)Radiation — Yes ___ No X

11. (?)Threatened Violation of ES&H Regulations or Permit Requirements — Yes ___ No X

12. (?)New or Modified Federal or State Permits — Yes ___ No X

This is being determined based on the anticipated discharge rates to the Laboratory sewers from the plant.

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

The site will not encroach on any established historic areas or structures.

16. (?)Disturbance of Pre-existing Contamination — Yes ___ No X

17. (?)Energy Efficiency, Resource Conserving, and Sustainable Design Features — Yes X No ___

This new facility will seek the highest LEEDs level achievable for a non-office building. This will likely result in LEED certified and possibly Gold. The latest modern energy saving systems, components, part, and materials will be used to attain that level. Many sustainable design features will be used including lights, windows, porous asphalt. By locating the new chilled water plant in the 200 area, significant energy savings will be achieved by no longer having to pump a majority of chilled water up hill and several thousand feet from the chilled water plant in the 300 area. This reduction in distance results in a reduction in electrical needs from water pumps and chillers.

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

A wetland delineation was conducted to outline the wetlands and appropriate buffer zones required for the facility. Based on this information the proposed site location is a significant distance from known wetlands and 100-year flood plains. .

20. (?)Floodplain — Yes ___ No X

21. (?)Landscaping — Yes X No ___

With the construction of the facility, the existing landscape will be completely removed. Large native hardwoods exist on the site. These trees will be saved where practical.

Native trees and shrubs will be planted throughout the site upon completion of the facility. Native deep rooted grass species will be planted where appropriate in grass and bio-swales. Native grasses will be used extensively and where practical in mowed areas of the site.

22. (?)Navigable Air Space — Yes ___ No X

23. (?)Clearing or Excavation — Yes X No ___

The construction of the facility will result in an extensive amount of excavation activities. The entire site is approximately 3 acres. Not all the site will see extensive excavation activities. The building foot print will be about .2 acres. The volume of excavated materials is estimated at 3,550 CY. However, much of the excavated topsoil and clay materials will be recycled on the site. The site in general is a wooded area with densely populated trees >6" in diameter. Most of these trees in the area will be removed. Where practical, trees will be left to create a natural screening of the facility. Specifically, a native tree line will remain or be replanted to provide cover along the northern fence line of the Argonne National Laboratory property and the nature preserve. Tree cover will also remain around all other sides of the facility to provide a natural screen for the laboratory. A Storm Water Pollution Prevention Plant will be developed to manager storm water in this area and prevent impacts to the surrounding environments.

24. (?)Archaeological Resources — Yes ___ No X

This location has been previously investigated and found to not contain archaeologically significant materials. As such a letter will notify local State of Illinois Cultural Resources of the Laboratory's intent to build on this property.

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

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

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. B 1.15 siting / construction / operation of support buildings / structures.

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: Ken Chiu

Signature: Ken Chiu Date: 1/22/10

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: Peter R. Siebach Date: 1/25/10

Peter R. Siebach
Acting Argonne Site Office NCO

ASO-CX-263

ASO NCO EA or EIS Recommendation: N.A

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: _____ Date: _____

Ronald J. Lutha
Site Manager