



Department of Energy
 Office of Science
 Fermi Site Office
 Post Office Box 2000
 Batavia, Illinois 60510

June 25, 2024

Mr. Marc Clay
 Chief Safety Officer, Interim
 Fermilab
 P.O. Box 500
 Batavia, IL 60510

SUBJECT: NATIONAL ENVIRONMENTAL POLICY ACT DETERMINATION
 AT FERMI NATIONAL ACCELERATOR LABORATORY –
 UTILITIES INFRASTRUCTURE PROJECT (AMENDED)

Reference: Memo from M. Clay to R. Hersemann; Subject: National Environmental
 Policy Act Environmental Evaluation Notification Form for Utilities
 Infrastructure Project (Amended); Dated June 6, 2024

Dear Mr. Clay:

The Fermi Site Office (FSO) has reviewed the National Environmental Policy Act (NEPA) Environmental Evaluation Notification Form (EENF) for the Utilities Infrastructure Project (Amended). Based on the information provided in the EENF, the following categorical exclusion (CX) is approved.

<u>Project Name</u>	<u>Approved</u>	<u>CX</u>
Utilities Infrastructure Project	6/11/2024	B1.15, B1.16, B1.18, B1.23, B1.34, B1.3, B2.1, B2.5, B4.11, B5.2

Enclosed is a signed copy of the EENF for your records. No further NEPA review is required. This project falls under categorical exclusions provided in 40 *CFR* 1021, as amended in November 2011.

If you have any questions, please contact Rick Hersemann, of my staff, at (630) 840-4122 or by email at rick.hersemann@science.doe.gov.

Sincerely,

**ROGER
 SNYDER**

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 ROGER SNYDER
 Date: 2024.06.25
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Roger E. Snyder
 Manager, Fermi Site Office

Enclosures: As Stated

Cc:

J. Sawyer, FRA

M. Michels, FRA

L. Huntoon, FRA

S. Panock, FRA

R. Hersemann, DOE-FSO

J. Scott, DOE-FSO

**FERMILAB ENVIRONMENTAL EVALUATION NOTIFICATION FORM
(EENF) for documenting compliance with the National Environmental Policy
Act (NEPA), Department of Energy (DOE) NEPA Implementing
Regulations, and the DOE NEPA Compliance Program of DOE Policy
451.1**

Project/Activity Title: Utilities Infrastructure Project (UIP) Amended
ES&H Tracking Number: 01147

I hereby verify, via my signature, the accuracy of information in the area of my contribution for this document and that every effort would be made throughout this action to comply with the commitments made in this document and to pursue cost-effective pollution prevention opportunities. Pollution prevention (source reduction and other practices that eliminate or reduce the creation of pollutants) is recognized as a good business practice which would enhance site operations thereby enabling Fermilab to accomplish its mission, achieve environmental compliance, reduce risks to health and the environment, and prevent or minimize future Department of Energy (DOE) legacy wastes.

Fermilab Action Owner: Jonathan Hunt (X4312)
Signature and Date **Jonathan
Hunt**

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I. Description of the Proposed Action and Need

Purpose and Need:

The purpose of the proposed action/project is to upgrade the utility systems identified below in the Proposed Action section. Most of the utility systems were constructed in the 1970s and the system components are reaching the end of their useful life. These system upgrades will provide dependable utility infrastructure from which science can be accomplished and allow necessary re-investment to support current and future Fermi National Accelerator Laboratory (Fermilab) operational and scientific needs.

Proposed Action:

The Utility Infrastructure Project (UIP) includes improvements to sitewide utilities to support Fermilab's mission over the next 40 years. Reliability and flexibility of options, as well as optimized cost and minimized public resistance, are project objectives.

The scope of work for this project may include the following:

345 kV Power Supply, 12.47 kV & 13.8 kV Electrical Substations and Power Distribution Systems

This project may include approximately 10,000 linear feet of underground ductbank and may:

- Address aging equipment and existing conditions in the Kautz Road Substation yard, as well as a new, and larger, prefabricated control house with updated switchgear equipment.
- Replace unit substations across the site as well as end of life (EOL) underground feeder cables, overhead power poles and associated equipment, and pole mounted transformers.
- Replace exterior lighting across the site with new light emitting diode (LED), dark-sky compliant luminaires, bases, and cabling that would reduce lab costs, reduce light pollution, and improve site lighting for personnel safety.
- install new electrical service meters for qualified buildings across the site.
- address aging equipment and existing conditions in the Master Substation yard as well as installation of a new feeder to the Main Injector to supply redundant power.

Domestic Water System (DWS)

This project may include approximately 50,000 linear feet of new piping and may address pipe corrosion and increasing rates of water main breaks that the lab has experienced since 2005 to ensure that potable water service, as well as fire protection services in the Village, be provided to all service areas. The DWS upgrades may cover most areas of the Fermilab site.

Storm Sewer and Site Drainage Systems

This project may include excavation of approximately 300,000 cubic yards of compensatory storage and ditch regrade and may address flooding issues at Casey's Pond Pumphouse (Kress Creek) and Dusaf Pond (Ferry Creek) and restore drainage ditch flowlines across the site.

Surface Water Management and Treatment

This project may also make upgrades to the chlorination and dechlorination systems at Casey's Pond and Swan Lake. The ICW system requires treatment to eradicate zebra mussels within the system and to reduce biomass and scaling in piping and equipment.

Sanitary Sewer Collection System

This project may include approximately 18,000 linear feet of new piping and may address infiltration and inflow issues caused by leaks in the system. These leaks cause excessive flows to be discharged to the Publicly Owned Treatment Works (POTW)s of Batavia and Warrenville, resulting in overtaxing of their water treatment systems and increased fees in DOE budgets. This issue needs to be addressed to maintain services and good relations with neighboring municipalities.

Industrial Cooling Water (ICW)/Fire Protection Supply and Distribution System

This project may include approximately 70,000 linear feet of new piping and may enhance the reliability of the system for fire protection and cooling needs and would ensure that experiments continue to be cooled without shutdown. Upgrades to the system may include pipe, valve, and fire hydrant replacements across the site.

Chilled Water Plant and Central Utility Building Upgrades

This project includes upgrades to the chilled water, heating hot water, low conductivity water, domestic water, industrial cooling water, makeup water, controls system, electrical distribution system, and the Central Utility Building (CUB), to assure safe, reliable, and efficient service to mission critical facilities. In addition, the project will perform upgrades to obsolete, end-of-life components, which will increase capacity, reliability, and personnel safety for critical utilities. The refurbishment of the existing CUB will include an 8,000 square foot addition. The addition will expand into Booster Pond. Removal of fish in Booster Pond will be conducted in coordination with DuPage County. Partial dewatering of Booster Pond will occur in order to collect bore samples to ensure the integrity of the area and allow expansion of the CUB. Water will be pumped to Kidney Pond.

The location of the various subprojects can be found in Section VII.

Alternatives Considered:

Alternatives were explored and evaluated for each of the utility systems. For example, a new CUB was compared to refurbishing the existing CUB and building a new dedicated chilled water plant. For domestic water, a new source provider was evaluated. The alternatives were evaluated extensively and documented in the UIP Analysis of Alternatives, but none would result in a substantial change in environmental impact.

Due to the deteriorating conditions of the existing utilities systems, the 'No Action' alternative would not meet the purpose and need for this proposed activity.

II. Description of the Affected Environment

Figure 1 in Section VII illustrates the project areas. Specific environmental effects are presented in Section III.

III. Potential Environmental Effects (If the answer to the questions below is "yes", provide comments for each checked item and where clarification is necessary.)

- A. Sensitive Resources: Would the proposed action result in changes and/or disturbances to any of the following resources?

- Threatened or endangered species
- Other protected species
- Wetland/Floodplains
- Archaeological or historical resources
- Non-attainment areas

B. Regulated Substances/Activities: Would the proposed action involve any of the following regulated substances or activities?

- Clearing or Excavation
- Demolition or decommissioning
- Asbestos removal
- PCBs
- Chemical use or storage
- Pesticides
- Air emissions
- Liquid effluents
- Underground storage tanks
- Hazardous or other regulated waste (including radioactive or mixed)
- Radioactive exposures or radioactive emissions
- Radioactivation of soil or groundwater

C. Other Relevant Disclosures: Would the proposed action involve any of the following actions/disclosures?

- Threatened violation of ES&H permit requirements
- Siting/construction/major modification of waste recovery or TSD facilities
- Disturbance of pre-existing contamination
- New or modified permits
- Public controversy
- Action/involvement of another federal agency
- Public utilities/services
- Depletion of a non-renewable resource

IV. Comments on checked items in section III.

Wetland/Floodplain

Wetlands and other ecologically significant areas will be determined, and potential environmental impacts will be evaluated. Alternatives will be considered if impact to a wetland or ecologically significant area is determined. Activities within a wetland will require further evaluation, approval, and permitting.

Clearing and/or Excavation and Demolition and Decommissioning

345 kV Power Supply, 12.47 kV & 13.8 kV Electrical Substations and Power Distribution Systems

This project may result in approximately 3,000 cubic yards of spoils. Spoils will be properly disposed per Fermilab policy and environmental regulations.

Domestic Water System (DWS)

This project may result in approximately 70,000 cubic yards of spoils. Spoils will be properly disposed per Fermilab policy and environmental regulations.

Sanitary Sewer Collection System

This project may result in approximately 40,000 cubic yards of spoils. Spoils will be properly disposed per Fermilab policy and environmental regulations.

Industrial Cooling Water/Fire Protection Supply and Distribution System

This project may result in approximately 100,000 cubic yards of spoils. Spoils will be properly disposed per Fermilab policy and environmental regulations.

Chilled Water Plant (CWP) and Central Utility Building (CUB) Upgrades

This project may result in approximately 10,000 cubic yards of spoils. This estimated quantity is due to the silt/sedimental that has been collecting at the bottom of the Booster Pond and will need to be relocated or removed. In Spring of 2024, The Fermilab Environmental Monitoring Team collected and analyzed sediment samples from the bottom of Booster Pond. Spoils will be properly disposed per Fermilab policy and environmental regulations.

Asbestos Removal

There is a possibility of encountering asbestos within CUB mechanical piping and its footprint. In this case, the pipe would be bagged, abandoned in place, and properly disposed per Fermilab policy and environmental regulations.

Chemical Use or Storage

This project may make upgrades to the chlorination and dechlorination systems at Casey's Pond and Swan Lake. The ICW system requires treatment to eradicate zebra mussels within the system and to reduce biomass and scaling in piping and equipment.

Air Emissions

This project may work with Heating, Venting, and Air Conditioning (HVAC) systems in the CUB and building expansion. This project may include the existing CUB boilers and standby generators. Hours of operation for boilers and generators will be tracked by Fermilab facility and/or maintenance personnel and reported to the Fermilab Environmental Program Department (EPD) to ensure continued compliance with Fermilab's Air Permitting Program. Consultation with Fermilab EPD and the Fermilab Sustainability Management Group will occur before purchase and installation of new HVAC systems to explore alternative refrigerant usage, where feasible.

Liquid Effluents

This project may involve multiple water systems at the CUB, sanitary sewers, and stormwater management.

New or modified permits

A National Pollutant Discharge Elimination System (NPDES) permit may be required for stormwater discharge and a Storm Water Pollution Prevention Plan (SWPPP), if necessary, will be included in the final design drawings.

If dredging is necessary, it would be ensured that soil erosion control measures are consistent with Fermilab procedures and that permits be obtained. Soil and water testing of the ponds would be conducted. The Environmental Monitoring Team will be consulted.

Additionally, the project may include installation of a new transfer ditch to Kress Creek. The transfer ditch would be used for flood control. Since Kress Creek are waters of the State, permits may be needed from the Army Corps of Engineers and appropriate adjustments to Fermilab's NPDES permit will be made.

Hazardous or Regulated Waste

There is a possibility of encountering asbestos caulk and lead paint within CUB. Material will be surveyed ahead of construction so that remediation can be planned for. In all cases, the materials will be disposed of and documented in the appropriate manner per established Fermilab policy and procedures. Industrial Hygiene (IH) Department and Hazardous Control Technology Team (HCTT) will be consulted.

Radioactive Exposure or Emissions

There is a possibility of radioactive exposure at certain locations around the CUB site. These locations have been surveyed and documented to reduce risk and exposure. In addition, as removal and replacement take place, materials will be surveyed to ensure that they are not contaminated. If materials are found to be contaminated, they will be disposed of per established Fermilab policy and procedures. HCTT and Radiation Control Technicians (RCTs) will be consulted. As low as reasonably achievable

(ALARA) will be followed.

Radioactivation of soil or groundwater

Silt/sedimental that has been collecting at the bottom of the Booster Pond at CUB will need to be moved. In Spring of 2024, The Fermilab Environmental Monitoring Team collected and analyzed sediment samples from the bottom of Booster Pond. In addition, radiation concentrations and tritium concentrations around and within Booster Pond has been evaluated. Spoils will be properly disposed per Fermilab policy and environmental regulations. Booster Pond is lined and bound with clay and bentonite. Bore sampling will not impact this lining, therefore soil and groundwater remain protected.

V. NEPA Recommendation

Fermilab environmental protection staff with the Fermilab Environmental Program Department have evaluated the proposed action and have determined that several DOE Categorical Exclusions (CXs) apply. It is determined that the proposed action meets the description found in DOE's NEPA Implementation Procedures, 10 CFR 1021, Subpart D, as follows:

B1.15 Support Buildings

Siting, construction or modification, and operation of support buildings and support structures (including, but not limited to, trailers and prefabricated and modular buildings) within or contiguous to an already developed area (where active utilities and currently used roads are readily accessible). Covered support buildings and structures include, but are not limited to, those for office purposes; parking; cafeteria services; education and training; visitor reception; computer and data processing services; health services or recreation activities; routine maintenance activities; storage of supplies and equipment for administrative services and routine maintenance activities; security (such as security posts); fire protection; small-scale fabrication (such as machine shop activities), assembly, and testing of non-nuclear equipment or components; and similar support purposes, but exclude facilities for nuclear weapons activities and waste storage activities, such as activities covered in B1.10, B1.29, B1.35, B2.6, B6.2, B6.4, B6.5, B6.6, and B6.10 of the 10 CFR 1021 appendix.

B1.16 Asbestos Removal

Removal of asbestos-containing materials from buildings in accordance with applicable requirements (such as 40 CFR part 61, "National Emission Standards for Hazardous Air Pollutants"; 40 CFR par 763, "Asbestos"; 29 CFR part 1910, subpart I, "Personal Protective Equipment"; and 20 CFR part 1926, "Safety and Health Regulations for Construction"; and appropriate state and local requirements, including certification of removal contractors and technicians).

B1.18 Water supply wells

Siting, construction, and operation of additional water supply wells (or replacement wells) within an existing well field, or modification of an existing water supply well to restore production, provided that there would be no drawdown other than in the immediate vicinity of the pumping well, and the covered actions would not have the potential to cause significant long-term decline of the water table, and would not have the potential to cause significant degradation of the aquifer from the new or replacement well.

1.23 Demolition and disposal of buildings

Demolition and subsequent disposal of buildings, equipment, and support structures (including, but not limited to, smokestacks and parking lot surfaces), provided that there would be no potential for release of substances at a level, or in a form, that could pose a threat to public health or the environment.

B1.3 Routine Maintenance

Routine maintenance activities and custodial services for buildings, structures, rights-of-way, infrastructures (including, but not limited to, pathways, roads, and railroads), vehicles and equipment, and localized vegetation and pest control, during which operations may be suspended and resumed, provided that the activities would be conducted in a manner in accordance with applicable requirements. Custodial services are activities to preserve facility appearance, working conditions, and sanitation (such as cleaning, window washing, lawn mowing, trash collection, painting, and snow removal). Routine maintenance activities, corrective (that is, repair), preventive, and predictive, are required to maintain and preserve buildings, structures, infrastructures, and equipment in a condition suitable for a facility to be used for its designated

purpose. Such maintenance may occur as a result of severe weather (such as hurricanes, floods, and tornados), wildfires, and other such events. Routine maintenance may result in replacement to the extent that replacement is in kind and is not a substantial upgrade or improvement. In-kind replacement includes installation of new components to replace outmoded components, provided that the replacement does not result in a significant change in the expected useful life, design capacity, or function of the facility. Routine maintenance does not include replacement of a major component that significantly extends the originally intended useful life of a facility (for example, it does not include the replacement of a reactor vessel near the end of its useful life).

B1.34 Lead-based paint containment, removal, and disposal

Containment, removal, and disposal of lead-based paint in accordance with applicable requirements (such as provisions relating to the certification of removal contractors and technicians at 40 CFR part 745, "Lead Based Paint Poisoning Prevention In Certain Residential Structures").

B2.1 Workplace enhancements

Modifications within or contiguous to an existing structure, in a previously disturbed or developed area, to enhance workplace habitability (including, but not limited to, installation or improvements to lighting, radiation shielding, or heating/ventilating/air conditioning and its instrumentation, and noise reduction).

B2.5 Facility safety and environmental improvements

Safety and environmental improvements of a facility (including, but not limited to, replacement and upgrade of facility components) that do not result in a significant change in the expected useful life, design capacity, or function of the facility and during which operations may be suspended and then resumed. Improvements include, but are not limited to, replacement/upgrade of control valves, in-core monitoring devices, facility air filtration systems, or substation transformers or capacitors; addition of structural bracing to meet earthquake standards and/or sustain high wind loading; and replacement of aboveground or belowground tanks and related piping, provided that there is no evidence of leakage, based on testing in accordance with applicable requirements (such as 40 CFR part 265, "Interim status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities" and 40 CFR part 280, "Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks"). These actions do not include rebuilding or modifying substantial portions of a facility (such as replacing a reactor vessel).

B4.11 Electrical power substations and interconnection facilities

Construction or modification of electric power substations or interconnection facilities (including, but not limited to, switching stations and support facilities).

B5.2 Modifications to pumps and piping

Modifications to existing pump and piping configurations (including, but not limited to, manifolds, metering systems, and other instrumentation on such configurations conveying materials such as air, brine, carbon dioxide, geothermal system fluids, hydrogen gas, natural gas, nitrogen gas, oil, produced water, steam, and water). Covered modifications would not have the potential to cause significant changes to design process flow rates or permitted air emissions.

B5.4 Repair or replacement of pipelines

Repair, replacement, upgrading, rebuilding, or minor relocation of pipelines within existing rights-of-way, provided that the actions are in accordance with applicable requirements (such as Army Corps of Engineers permits under section 404 of the Clean Water Act). Pipelines may convey materials including, but not limited to, air, brine, carbon dioxide, geothermal system fluids, hydrogen gas, natural gas, oil, produced water, steam, and water.

NEPA Program Manager: Samantha Panock
Signature and Date

**Samantha
Panock**

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Samantha Panock
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VI. DOE/Fermi Site Office (FSO) NEPA Review

Based upon my review of information conveyed to me and in my possession concerning the proposed action, as NEPA Compliance Officer (as authorized under DOE Policy 451.1), I have determined that the proposed action fits within the specified class of actions, the other regulatory requirements set forth above are met, and the proposed action is hereby categorically excluded from further NEPA review.

FSO NEPA Compliance Officer: Rick Hersemann

RICK HERSEMANN

Signature and Date

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HERSEMANN
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VII. Diagrams

UIP Potential Project Areas

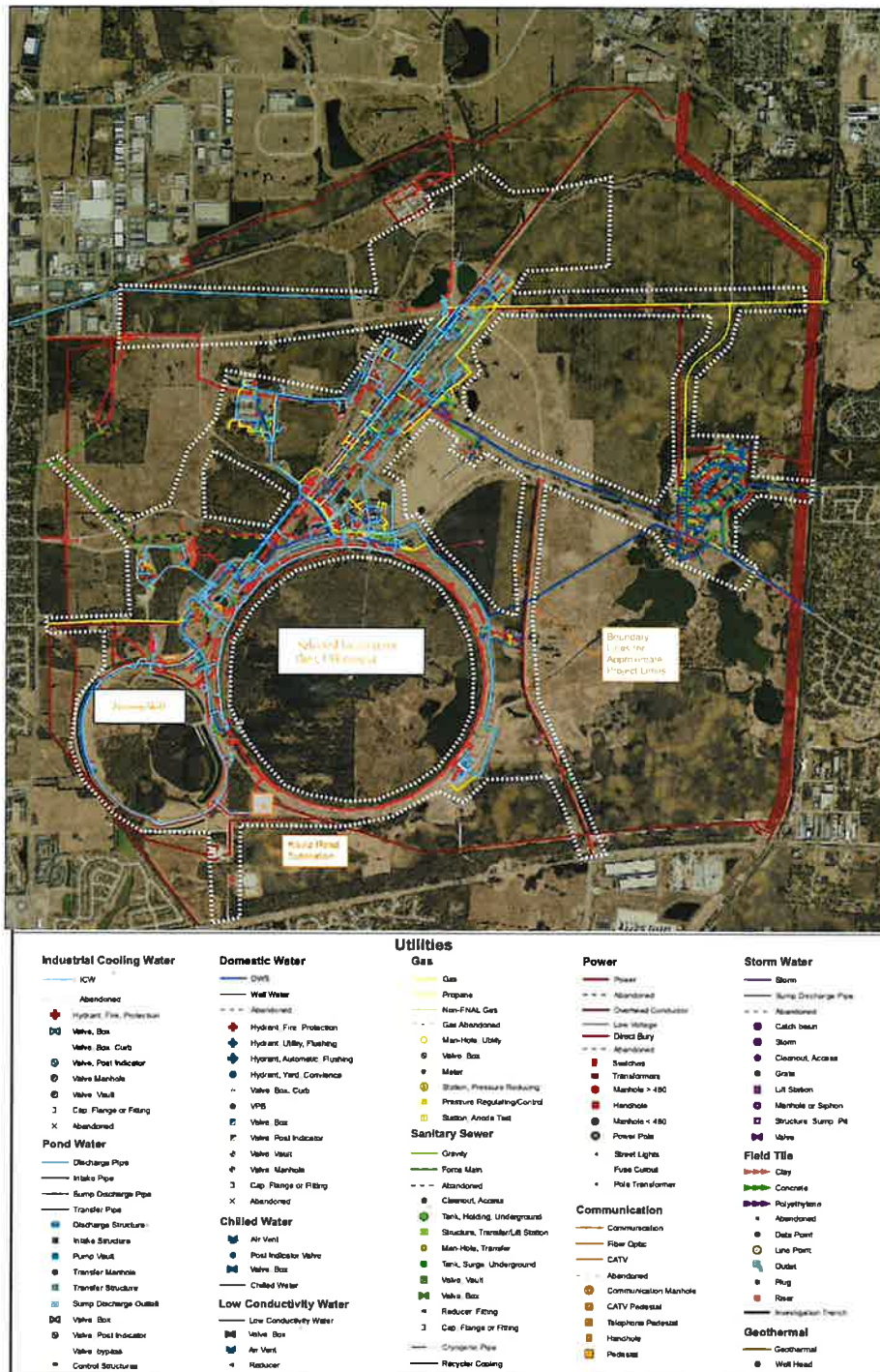


Figure 1: Areas of activity are indicated with an orange arrow