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

October 16, 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 – EMERGENCY RESPONSE AND TRANSFORMER REPAIR AT KAUTZ ROAD SUBSTATION

Reference: Memorandum from M. Clay to R. Hersemann; Subject: National Environmental Policy Act Environmental Evaluation Notification Form for Emergency Response and Transformer Repair at Kautz Road Substation; Dated: October 4, 2024,

Dear Mr. Clay:

The Fermi Site Office (FSO) has reviewed the National Environmental Policy Act (NEPA) Environmental Evaluation Notification Form (EENF) for the Emergency Response and Transformer Repair at Kautz Road Substation. Based on the information provided in the EENF, the following categorical exclusion (CX) is approved.

Project Name	Approved	CX
Emergency Response and Transformer Repair at Kautz Road Substation	10/8/2024	B4.6, B4.11, B5.6, B6.1

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
Digitally signed by ROGER SNYDER
Date: 2024.10.17 10:20:04 -05'00'

Roger E. Snyder
Manager, Fermi Site Office

Enclosure: As Stated

cc:
J. Sawyer, FRA
M. Michels, FRA
L. Huntoon, FRA
S. Panock, FRA
R. Hersemann, DOE-FSO
J. Scott, DOE-FSO
S. Wallace, 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: Emergency Response and Transformer Repair at Kautz Road Substation
ES&H Tracking Number: 2024-28381

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: Frank Gattuso
Signature and Date Frank Gattuso, UID:fgattuso Digitally signed by Frank Gattuso, UID:fgattuso Date: 2024.10.04 08:59:37 -05'00'

I. Description of the Proposed Action and Need

Purpose and Need:
The purpose of this EENF is to review the emergency response, investigation, and repair activities that occurred due to the unpredicted and accidental deflagration and ensuing fire and oil release at the Kautz Road Substation at Fermi National Accelerator Laboratory (Fermilab) in Batavia, IL. In accordance with the Council of Environmental Quality (CEQ) and DOE guidance, "Emergency Actions Under NEPA" (CEQ-NEPA-2020-01), emergency responses occurred immediately and appropriate NEPA documentation is being submitted subsequent to the responses.

The need of this review is to ensure Fermilab's continued compliance with NEPA and adherence to CEQ/DOE guidance on, "Emergency Actions Under NEPA," (CEQ-NEPA-2020-01).

Proposed Action:
On Saturday, August 3rd at approximately 11 p.m., a small deflagration and ensuing fire occurred at the Kautz Road Substation, one of the two electrical substations that power the Fermilab Batavia site. As a result of the event, one of four transformers (T88) at the substation is out of commission. Fermilab's fire department, local fire departments, Environmental Program Department, and the High Voltage Team and technicians responded to the event. Coordinating with ComEd, the local utility provider, the electrical power line was de-energized to allow the fire departments to fight the fire. Using a combination of firefighting foam and water, the fire was extinguished by midnight. Throughout the night and early morning, the High Voltage Team and technicians transferred vital loads from the Kautz Road Substation to the Master Substation. The impacted equipment was isolated and put into a safe condition. General working conditions at Fermilab remained unchanged.

The scope of work for the emergency response, investigation, and repair includes the following:

- Oil rags were placed along the perimeter of the oil spill. A sorbent boom was placed at the outfall of the building sump and a sorbent pillow was placed in the T88 containment sump. Drip pans were laid out to collect oil, which were emptied by a duty electrician. All of the equipment used for oil absorption was collected and properly disposed by the Fermilab Hazard Control Technology Team (HCTT). Oil drums were collected and moved by HCTT to the Hazardous Waste Storage Facility.
- Hand digging of stone 6" around the T88 pad, 8" deep was conducted. There was about 10 cubic feet of oil contaminated stone.

- The exterior of T88 was pressure washed, and the inside and outside of T88 was tested for function and potential damage.
- The rest of the substation yard was inspected for damage from shrapnel from the bushing.
- T88 was drained of ~11,000 gallons of oil. The oil was stored in a frack tank, and it was disposed of through our contractor and coordinated with HCTT.
- The buswork from the load side of MOD 88 was removed, along with two damaged post insulators from the MOD 88 345kV break switch and two bus support insulators. Three bus support insulators were salvaged, and three new were installed.
- Electrical acceptance testing was performed on T87, T86, and T85, SF6 breaker, and substation relays. The report of results and functional status of all equipment was shared.
- A sample of oil was collected from T85 and then 3,000 gallons of oil was drained into the frack tank. Twelve low side bushings were removed, and gaskets were replaced. 24-hour oil processing took place for gas and moisture removal. T85 was repressurized with Nitrogen, and a follow up oil sample was taken.
- The SF6 yard breaker was radiologically inspected.
- The substation transformers will be reenergized, and oil samples will be taken at intervals; Immediately after energization, 12 hours after energization, 24 hours after load, 72 hours after load, 1-2 weeks after load, and 3-4 weeks after load.

Alternatives Considered:

The, "doing nothing," alternative would have allowed fire and oil to spread into additional infrastructure and the environment and ultimately compromise Fermilab's ability to supply power to major experiments and therefore not meet the scientific mission.

II. Description of the Affected Environment

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.

Clearing and Excavation
Hand digging of stone 6" around the transformer pad and 8" deep was conducted to ensure sufficient oil clean up. There was about 10 cubic feet of oil contaminated stone. Clearing and excavation was less than 1 acre. It was confirmed that all spilled oil was contained in the secondary containment of the substation. There was no impact to soils.

Demolition or Decommissioning
Due to the damages caused by the fire, the transformer is currently decommissioned and cannot supply power. The transformer may be repaired or replaced. If repairs are made, the transformer will be taken off-site.

Chemical Use or Storage
There was 11,180 gallons of transformer oil collected and properly disposed by HCTT. It was confirmed that all spilled oil was contained in the secondary containment of the substation.

Air Emissions
The initial fire may have released particulate matter, carbon dioxide, and other fire related air pollution into the immediate atmosphere. An emergency generator was turned on at the start of the event and ran until power could be restored to the facility. A gas-powered pressure washer and gas-powered transfer pump were used during the emergency response activities. Due to the small size, the air emission units listed above are exempt from Fermilab's air emission program and therefore do not affect Fermilab's compliance with its air emission program.

Hazardous or other regulated waste
Drums of Special Waste (11 total) were collected and properly disposed of by HCTT.

Public Controversy
Reports and photos of the incident were posted on public social media platforms. Fermilab's communication office sent out a lab wide internal message to address the event and provide accurate information.

V. NEPA Recommendation

Fermilab staff has evaluated the proposed action and believe that several Categorical Exclusions apply. It is believed that the actions meet the description found in DOE's NEPA Implementation Procedures, 10 CFR 1021, Subpart D, as follows:

B4.6 Additions and Modifications to Transmission Facilities
Additions or modifications to electric power transmission facilities within a previously disturbed or developed facility area. Covered activities include, but are not limited to, switchyard rock grounding upgrades, secondary containment projects, paving projects, seismic upgrading, tower modifications, load shaping projects (such as the installation and use of flywheels and battery arrays), changing insulators, and replacement of poles, circuit breakers, conductors, transformers, and crossarms.

B 4.11 Electric 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).

B5.6 Oil Spill Cleanup
Removal of oil and contaminated materials recovered in oil spill cleanup operations and disposal of these materials in accordance with applicable requirements (such as the National Oil and Hazardous Substances Pollution Contingency Plan).

B6.1 Clean Up Activities.
Small-scale, short-term cleanup actions, under RCRA, Atomic Energy Act, or other authorities, less than approximately 10 million dollars in cost (in 2011 dollars), to reduce risk to human health or the environment from the release or threat of release of a hazardous substance other than high-level radioactive waste and spent nuclear fuel, including treatment (such as incineration, encapsulation, physical or chemical separation, and compaction), recovery, storage, or disposal of wastes at existing facilities currently handling the type of waste involved in the action.

Fermilab NEPA Program Manager: Samantha Panock Samantha Panock Digitally signed by Samantha Panock Date: 2024.10.04 10:22:58 -05'00'
Signature and Date_____

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 actions fit 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 Digitally signed by RICK HERSEMANN Date: 2024.10.08 09:27:23 -05'00'
Signature and Date_____

VII. Diagrams

N/A