



Department of Energy

Fermi Site Office  
Post Office Box 2000  
Batavia, Illinois 60510

MAR 27 2009

Dr. Bruce Chrisman  
Chief Operating Officer  
Fermilab  
P.O. Box 500  
Batavia, IL 60510

Dear Dr. Chrisman:

SUBJECT: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) DETERMINATION AT  
FERMI NATIONAL ACCELERATOR LABORATORY (FERMILAB) – MI-8  
EXPANSION PROJECT

- References:
1. Letter, J. Livengood, to B. Chrisman, dated March 20, 2009, Subject:  
National Environmental Policy Act (NEPA) Determination at Fermi National  
Accelerator Laboratory (Fermilab) - Development of a Traveling Wave  
Accelerating Structure for a Superconducting Accelerator
  2. Letter, B. Chrisman to J. Livengood, dated March 10, 2009, Subject:  
National Environmental Policy Act Environmental Evaluation Notification  
Form (EENF) for the MI-8 Expansion Project

I am writing to correct an error in the subject line of my letter dated March 20, 2009 (Reference 1). The subject should have read, "National Environmental Policy Act (NEPA) Determination at Fermi National Accelerator Laboratory (Fermilab) - MI-8 Expansion Project". I am resending the NEPA determination for the MI-8 Expansion Project under the appropriate Subject line.

The Fermi Site Office has reviewed the Fermilab Environmental Evaluation Notification Form (EENF) for the MI-8 Expansion. This project falls under a categorical exclusion provided in 10 CFR 1021, as amended in November 1997. Based on the information provided in the EENF, I have approved the following categorical exclusion (CX):

<u>Project Name</u>	<u>Approved</u>	<u>CX(s)</u>
MI-8 Expansion	3/13/2009	B1.15

MAR 27 2009

In my March 20, 2009 letter, I enclosed a signed copy of the EENF for your records. No further NEPA review is required.

Sincerely,

A handwritten signature in cursive script that reads "Joanna M. Livengood". The signature is written in black ink and is positioned above the printed name and title.

Dr. Joanna M. Livengood  
Site Manager

Enclosure: None

cc: P. Oddone  
Y.-K. Kim  
C. Trimby  
M. Champion  
B. Scerini  
N. Grossman  
T. Dykhuis



Department of Energy

Fermi Site Office  
Post Office Box 2000  
Batavia, Illinois 60510

MAR 20 2009

Dr. Bruce Chrisman  
Chief Operating Officer  
Fermilab  
P.O. Box 500  
Batavia, IL 60510

Dear Dr. Chrisman:

SUBJECT: NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) DETERMINATION AT FERMILAB NATIONAL ACCELERATOR LABORATORY (FERMILAB) – “DEVELOPMENT OF A TRAVELING WAVE ACCELERATING STRUCTURE FOR A SUPERCONDUCTING ACCELERATOR”

Reference: Letter, B. Chrisman to J. Livengood, dated March 10, 2009, Subject: National Environmental Policy Act Environmental Evaluation Notification Form (EENF) for the MI-8 Expansion Project

I have reviewed the Fermilab Environmental Evaluation Notification Form (EENF) for the subject proposed project transmitted by your referenced letter. Based on the information provided in the EENF, I have approved the following project as a categorical exclusion (CX):

<u>Project Name</u>	<u>Approved</u>	<u>CX(s)</u>
MI-8 Expansion	3/13/2009	B1.15

I am returning a signed copy of the EENF for your records. No further NEPA review is required. This project falls under a categorical exclusion(s) provided in 10 CFR 1021, as amended in November 1997.

Sincerely,

Dr. Joanna M. Livengood  
Site Manager

Enclosure:  
As Stated

cc: P. Oddone, w/o encl.  
Y.-K. Kim, w/o encl.  
C. Trimby, w/o encl.  
M. Champion, w/o encl.  
B. Scerini, w/o encl.  
N. Grossman, w/encl.  
T. Dykhuis, w/o encl.

March 10, 2009

Dr. Joanna M. Livengood  
Site Manager  
Fermi Site Office  
U.S. Department of Energy  
P. O. Box 2000  
Batavia, Illinois 60510

Dear Dr. Livengood:

SUBJECT: National Environmental Policy Act (NEPA) Environmental Evaluation Notification Form (EENF) for the MI-8 Expansion Project

Enclosed is the EENF for the MI-8 Expansion Project. Teri Dykhuis, of the Environmental Protection Group, has concluded that a NEPA determination is needed for the above project. Please review the attached notification and let us know of your decision.

If you have any questions concerning this information, please contact Teri at X3607.

Sincerely,



Bruce L. Chrisman  
Chief Operating Officer

Attachments: EENF (5 pages)  
MI-8 Layout (1 page)  
MI-8 Overview including driveway and parking area

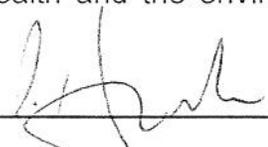
cc: J. Anderson (AD)  
R. Dixon (AD)  
T. Dykhuis (ESH)  
B. Fritz (AD)  
N. Grossman (ESH)  
P. Hurh (AD)  
S. Holmes  
Y.-K. Kim  
M. Michels (ESH)  
P. Oddone  
R. Ortgiesen (FESS)  
R. Walton (FESS)

ES&amp;H File: EEs

## FERMILAB ENVIRONMENTAL EVALUATION NOTIFICATION FORM

**Project/Activity Title:** MI-8 Expansion  
**ES&H Tracking Number:** 01073  
**Funding Source:** GPP  
**Fermilab Project Manager:** Pat Hurh (x2814)

I hereby certify via my signature that every effort would be made throughout this project to pursue 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 the Lab to accomplish its mission, achieve environmental compliance, reduce risks to health and the environment, and prevent/minimize future DOE legacy wastes.

Signature 

Date 3-3-09

**Fermilab NEPA Reviewer:** Teri L. Dykhuis

Signature Teri L. Dykhuis

Date 3/09/09

### I. Description of the Proposed Action and Need

The expansion of the MI-8 service building is needed to house the growing NuMI Target Hall operations group (spare Horn and Target production) as well as the AP-0 Target Hall operations group that currently has an inadequate work area at Booster Tower West.

The proposed building addition would be 62-ft, 8 inches by 150 ft. The rear portion of MI-8 would also be expanded slightly in order to create a corridor connecting the new addition with the existing high bay area. This would necessitate relocation of two small concrete pads, one of which supports a HVAC condenser. The new structures would add a total of 12,150 sq. ft of floor space to the building. A new parking lot and driveway to Indian Creek Road would also be constructed.

The addition would house spare device construction activities (horns, targets, lithium lenses, pulsed magnets, etc.) for both NuMI and P-bar Target Halls, which would be moved into the new facility from their current respective locations at MI-8 and Booster Tower West 1<sup>st</sup> floor.

The new Target Support Facility will include a large floor area (with crane coverage) for horn and target assembly, heavy assembly area, machine tool

area, heat treatment furnace area (relocated from Booster Tower West), horn welding area, mechanical testing and prototype area, and general module assembly area. The south end of the addition is planned to have a mezzanine level with crane coverage for storage of critical device spares, parts and supplies. The mezzanine would be 62'-8" x 31'-4" or 1,950 sq. ft. Underneath the mezzanine level will be a light assembly area and technician bench area as well as separate rooms for a microscopy station, cleaning station, kitchenette, and small conference room. See attached preliminary layout.

Specific advantages include:

1) NuMI Target/Horn Group expansion-

Expanding current NuMI Target Hall support operations into the new addition at MI-8 is overcomes a number of drawbacks of the existing MI-8 service-building:

- The current location of the horn welding machine will soon be used to house an LCW heat exchanger needed to maintain capacity of the MI LCW system. This forces re-location of the welding machine. The resulting floor space is not adequate for full support of critical device construction.
- Currently the NuMI Target Hall group does not have access to any small machine shop tools which limits their productivity when needing to quickly modify parts and/or react to crisis situations.
- The group does not have access to a suitable cleaning area for cleaning critical device parts.
- The horn testing area is currently in the main MI-8 structure, making it unsafe to test pulse horns while the building is occupied (noise levels). The addition will allow work on horn and target production to continue while test pulsing in MI-8 service building.
- Existing space at the MI-8 service building is not enough to safely store completed and tested horns and targets. The proposed storage area on the mezzanine level of the new addition provides ample room to store several spares of each critical device, avoiding over-road transport.
- Existing space at MI-8 service building is not enough to allow for several parallel assembly stations necessary to increase horn production rates to acceptable levels.

The expansion would also provide added functionality and reduces risk (both to equipment and personnel), thereby increasing productivity and quality assurance.

## 2) AP-0 Target Group out of Booster Tower West

Likewise, there are drawbacks to the AP-0 Target Group's current location in Booster Tower West:

- BTW 1st floor is not an industrial area. It is a high traffic area, with the main thoroughfare for the first floor passing through the center of the assembly and cleaning areas.
- There is no crane coverage, making moving and aligning heavy devices difficult and inefficient.
- There is no local drain or water source making cleaning operations difficult and inefficient.
- The distance between BTW and AP-0 Target Hall is far enough to require vehicle transport, resulting in lost time (whereas MI-8 is a walk across the street from AP-0).

Moving AP-0 Target Group to a new MI-8 facility would overcome these drawbacks by placing the work in a proper industrial setting. In addition, the new facility will have features (welding area, cleaning station, etc.) that will result in increased productivity and better quality work. The combination of the two groups in one area will hopefully also result in cross-training, providing a larger work pool for both target halls during crisis situations.

Alternatives considered included expansion of MI-65 instead, rejected for reasons other than environmental impacts. The impacts of the project are largely independent of location. No action would fail to accomplish the goals of the project.

## II. Description of the Affected Environment

The affected environment is the area immediately adjacent to the west side of the MI-8 service building. See comments in Section V pertaining to each item checked in Section III.

## III. Potential Environmental Effects (Provide comments for each checked item and where clarification is necessary.)

- A. Sensitive Resources: Will 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; Will 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

- 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. NEPA Recommendation

Fermilab has reviewed this proposed action and conclude that the appropriate level of NEPA determination is a Categorical Exclusion. The conclusion is based on the proposed action meeting the applicable requirements in DOE's NEPA Implementation Procedures, 10 CFR 1021, Subpart D, Appendix B1.15.

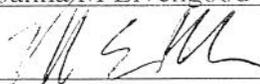
#### V. DOE/CH-FAO NEPA Coordinator Review

Concurrence with the recommendation for determination:

NEPA Coordinator reviewer \_\_\_\_\_

Signature *[Handwritten Signature]*

Date *3/23/2009*

Fermi Area Manager Dr. Joanna M Livengood  
Signature   
Date 3/19/09

**VI. Comments on checked items in section III.**

**Clearing or Excavation**

The footprint of the main addition would be 9,400 sq. ft. The new corridor and relocated pads would occupy about an additional 800 sq. ft. The new parking area and driveway would affect about 6,200 sq. ft. See attached drawing. All of this area is previously disturbed. The amount of soil required to be excavated is estimated at approx. 700 cu. yd., including caissons, foundation walls, and topsoil stripping. Excess soils would be stockpiled on site. Silt fencing would be installed around the limits of construction to control erosion.

**Air emissions**

Some welding operations may be moved from MI-8 to the addition, but there would be no net increase in these activities. Bake-out and furnace operations are not expected to release regulated air pollutants (only water vapor).

**Chemical use or storage**

Electrical needs for the building are still being evaluated. An additional oil-filled transformer may need to be installed. If so, it would be fitted with appropriate secondary containment. Typical cleaning activities for vacuum assembly such as ultrasonic cleaning would be conducted in the addition using Alconox/Citronox or other common cleaning detergents and ethyl/isopropyl alcohol and ultra-high-purity water for rinsing. This work is currently going on at Booster Tower West.

**Liquid Effluent**

The kitchenette would have a sink plumbed to sanitary. Although the drawing indicates a toilet in the addition, this has been dropped from the plans, the facilities in the existing building having been deemed adequate. Storm water would be routed through roof drains down to splash pads at grade level. Floor drains would be piped to the sanitary sewer. Wastewater from detergent cleaning of parts is normally suitable for sanitary discharge.

**Hazardous or other regulated waste (including radioactive or mixed)**

The type and quantities of regulated waste currently produced in MI-8 and Booster Tower West are not expected to change with the move into the proposed addition. The subcontractor would be encouraged to recycle construction waste wherever possible. E.g., demolished siding would be recycled as scrap metal.





