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**U.S. Department of Energy**

**Finding of No Significant Impact**

**Proposed Casey's Pond Improvement Project**

**Fermi National Accelerator Laboratory**

**Batavia, Illinois**

**AGENCY:** U.S. Department of Energy

**ACTION:** Finding of No Significant Impact (FONSI)

**SUMMARY:**

The U.S. Department of Energy (DOE) has prepared an Environmental Assessment (EA), evaluating the impacts associated with the proposed Casey's Pond Improvement Project at the Fermi National Accelerator Laboratory (Fermilab) in Batavia, Illinois. The improvement project would maximize the efficiency of the Fermilab Industrial Cooling Water (ICW) distribution system, which removes (via evaporation) the thermal load from experimental and other support equipment supporting the high energy physics program at Fermilab. The project would eliminate the risk of overheating during fixed target experiments, ensure that the Illinois Water Quality Standards are consistently achieved and provide needed additional water storage for fire protection.

Based on the analysis in the EA, the DOE has determined that the proposed action does not constitute a major Federal action significantly affecting the quality of the human environment, within the meaning of the National Environmental Policy Act (NEPA) of 1969. Therefore, the preparation of an Environmental Impact Statement is not required.

## DESCRIPTION OF THE PROPOSED ACTION:

The proposed action consists of the construction of an additional 6 acre pond approximately 100 feet from the existing Casey's Pond, and connection of Casey's Pond to Lake Law with an 8-inch transfer pipe approximately 3 miles long. The proposed new pond would be located southeast of the current Casey's Pond, across McChesney Road, in a currently vacant area characterized by weedy, old-vegetation. Construction of the new pond would require the construction of a temporary access road from the pond site to the soil stockpile site to accommodate large earthmoving equipment. An abandoned gas main that extends north from Lake Law would be used in place for the segment of the transfer pipe from Casey's pond to Wilson Street. New pipe would be laid by trenching along the north side of Wilson Street and Road C West. A pumphouse would be built on the north side of Lake Law to house equipment required for pumping water between Casey's Pond and Lake Law.

## ALTERNATIVES:

Five alternatives to the proposed action were considered: (1) excavation of a new pond at a different location, (2) utilization of groundwater, (3) increasing the volume of water pumped from the Fox River, (4) installation of air towers, and (5) no action.

### Excavation of a New Pond at a Different Location

Theoretically, a new pond could be constructed in any location on the Fermilab site, and the water pumped to Casey's Pond. However, this alternative would not avoid any potential impacts of pond construction, and would entail a significant added cost as well as additional

**Installation of Air Towers**

This alternative could provide sufficient cooling capacity for the system. However, air to water cooling is less efficient than water to water cooling and would require the use of ethylene glycol in the system to eliminate the chance of freezing during cold weather. The ethylene glycol would then need to be disposed of as special waste. The use of air towers would avoid any impacts from pond construction. This is not a feasible alternative because it would not address the problem of storage capacity.

**The "No Action" Alternative**

No action in this case would result in the continuation of the present cooling system utilizing Casey's Pond as it has operated in the past and continued inefficient utilization of site surface water storage capacity. Although no action would avoid the land disturbance associated with the proposed action, it would result in higher water temperatures at the outfall and would not eliminate the risk of system shut-downs due to inadequate cooling and storage capabilities. Also, occasional discharges of excess water to Kress Creek could exceed the limits for thermal pollution established by the National Pollutant Discharge Elimination System (NPDES) permit and Illinois Water Quality Standards. Therefore, this alternative is not a feasible alternative. The land in the area of the proposed project would be left undisturbed.

**ENVIRONMENTAL IMPACTS:**

The EA analyzes the impacts of construction and operation of the proposed Casey's Pond Improvement Project. The environmental impacts are summarized below.

**Impacts of Normal Operation:**

Direct and indirect impacts of this project are expected to be minor. Neither site groundwater nor surface water would be negatively impacted during operation of this facility. The increased efficiency of cooling would result in an elimination in potential for thermal pollution. This project would not affect chemical or radiological water quality. Volumes of water leaving the laboratory via Kress Creek would not change appreciably once the system came to equilibrium.

**Human Health:**

Impacts on human health resulting from normal operation and credible accident scenarios are considered to be negligible due to the nature of the project.

**Cumulative Impacts:**

There would be no cumulative adverse impacts due to the construction and operation of this project. However, the project does involve a potential for positive cumulative environmental consequences. The existing Casey's Pond is utilized by numerous wading and shore birds, waterfowl, and other wildlife, and the proposed pond would augment this use. The pond also would increase the volume of flood storage in the area, potentially alleviating flooding impacts downstream.

**DETERMINATION:**

Based on the analysis in the EA, the DOE has determined that the proposed construction and operation of the proposed Casey's Pond Improvement Project at Fermilab does not constitute a