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U.S. NUCLEAR REGULATORY COMMISSION

FINDING OF NO SIGNIFICANT IMPACT

ISSUANCE OF SPECIAL NUCLEAR MATERIAL LICENSE NO. SNM-1895

NIAGARA MOHAWK POWER CORPORATION, ET. AL;

OSWEGO COUNTY, NEW YORK

DOCKET NO. 70-2948

The U.S. Nuclear Regulatory Commission (the Commission) is considering the amendment of Special Nuclear Material License No. SNM-1895 to permit the receipt, possession, inspection, and storage of unirradiated nuclear fuel assemblies at the Nine Mile Point Nuclear Station in Oswego County, New York. The unirradiated fuel assemblies will be for eventual use in the Nine Mile Point Nuclear Station (NMP), Unit 2, once its operating license is issued.

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action

The proposed action would authorize the applicants to receive, possess, inspect, and store special nuclear materials in the form of unirradiated fuel assemblies.

The Need for the Proposed Action

The proposed license will allow the applicants to receive and store fresh fuel prior to issuance of the Part 50 operating license in order to inspect the fuel and to finalize fuel preparation needed to load the fuel into the reactor vessel. Actual core loading, however, will not be authorized by the proposed license.

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Environmental Impacts of the Proposed Action

A. Nuclear Criticality and Radiation Safety

Once at Nine Mile Point, Unit 2, the new fuel may be temporarily stored in shipping containers prior to placement in the designated storage locations: the new fuel storage vault and the spent fuel storage pool. Previous analysis of a shipping container array stacked three high and of infinite extent in the horizontal plane, with no separation between containers, and independent of the degree of water moderation and/or reflection has been determined to be critically safe. This analysis envelops the proposed NMP, Unit 2, shipping container array and thus assures nuclear criticality safety for such an array.

Upon removal of the fuel assemblies from the shipping containers, they are inspected and surveyed for any external contamination. Assuming no contamination is found, the assemblies are transferred to their designated storage location. Criticality safety in storage locations is assured by the use of engineered safeguards and administrative controls. This is accomplished by use of neutron poisons in the spent fuel pool and by eliminating sources of water moderation in the new fuel storage vault. Therefore, nuclear criticality safety of the storage racks is assured.

Since the fresh fuel assemblies are sealed sources, the principal exposure pathway is via external radiation. For low-enriched uranium fuel (< 4 percent U-235 enrichment), the exposure level to an individual standing 1 foot from the surface of the fuel would be less than 25 percent of the maximum

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exposure as low as reasonably achievable. Therefore, the staff has concluded that the applicants' requested operations can be carried out with adequate radiation protection of the public and environment.

Only a small amount, if any, of radioactive waste (e.g., smear papers and/or contaminated package materials) is expected to be generated as a result of fuel handling and storage operations. Any waste that is produced will be properly stored onsite until it can be shipped to a licensed disposal facility.

B. Transportation

In the event the applicants must return the fuel to the fuel fabricator, all packaging and transport of fuel will be in accordance with 10 CFR Part 71. No significant external radiation hazards are associated with the unirradiated fuel because the radiation level from the clad fuel pellets is low and because the shipping packages must meet the external radiation standards in 10 CFR Part 20. Therefore, shipment of unirradiated fuel by the applicants is expected to have an insignificant impact upon the environment.

C. Accident Analysis

In the unlikely event that an assembly (either within or outside its shipping container) is dropped during transfer, the fuel cladding is not expected to rupture. Even if the fuel rod cladding were breached and the pellets were released, an insignificant environmental impact would result.

The fuel pellets are composed of a ceramic  $UO_2$  that has been pelletized

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and sintered to a very high density. In this form, release of  $UO_2$  aerosol is unlikely except under conditions of deliberate grinding. Additionally,  $UO_2$  is soluble only in an acid solution so dissolution and release to the environment are extremely unlikely.

D. Conclusion

The environmental impacts associated with the handling and storage of new fuel at NMP, Unit 2, are expected to be insignificant. Essentially no effluents, liquid or airborne, will be released, and acceptable controls will be implemented to prevent a radiological accident. Therefore, the staff concludes that there will be no significant impacts associated with the proposed action.

Alternative to the Proposed Action

The principal alternative would be to deny the requested license. Assuming the operating license will eventually be issued, denial of the storage only license would merely postpone new fuel receipt at NMP, Unit 2. Although denial of the Special Nuclear Materials License for NMP, Unit 2, is an alternative available to the Commission, it would be considered only if significant issues of public health and safety could not be resolved to the satisfaction of regulatory authorities involved.

Alternative Use of Resources

This action does not involve the use of resources not previously considered in connection with the Commission's Final Environmental Statement (NUREG-1085) dated May 1985, related to this facility.

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Agencies and Persons Consulted

The Commission's staff reviewed the applicants' request of June 12, 1985, and its amended request dated September 27, 1985, and did not consult other agencies or persons.

Finding of No Significant Impact

The Commission's Division of Fuel Cycle and Material Safety has prepared an Environmental Assessment related to the issuance of Special Nuclear Materials License No. SNM-1895. On the basis of this assessment, the Commission has concluded that the environmental impact created by the proposed licensing action would not be significant and does not warrant the preparation of an Environmental Impact Statement. Accordingly, it has been determined that a Finding of No Significant Impact is appropriate. The Environmental Assessment and the above documents are available for public inspection and copying at the Commission's Public Document Room, 1717 H Street, NW., Washington, DC. Copies of the Environmental Assessment may be obtained by calling (301)427-4510 or by writing to the Uranium Fuel Licensing Branch, Division of Fuel Cycle and Material Safety, U.S. Nuclear Regulatory Commission, Washington, DC, 20555.

Dated at Silver Spring, Maryland this 4th day of November 1985.

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed By:

W. T. Crow

W. T. Crow, Acting Chief  
Uranium Fuel Licensing Branch  
Division of Fuel Cycle and  
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