

August 30, 1989

Docket No. 50-320

Mr. Michael B. Roche
Vice President/Director
Three Mile Island Unit 2
GPU Nuclear Corporation
P.O. Box 480
Middletown, Pennsylvania 17057

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Dear Mr. Roche:

SUBJECT: THREE MILE ISLAND NUCLEAR POWER STATION, UNIT NO. 2 -
TRANSMITTAL OF ENVIRONMENTAL ASSESSMENT (TAC NO. 71119)

Enclosed is a copy of an "Environmental Assessment and Finding of No Significant Impact" for your information. This assessment relates to your application dated February 25, 1987 and revised April 13, 1987, to modify the Appendix A Technical Specifications by deleting the prohibition on disposal of the Accident Generated Water (AGW). This assessment evaluates the environmental impact associated with the transportation of the AGW evaporator bottoms to the Richland, Washington low level waste burial site.

The assessment has been sent to the Office of the Federal Register for publication.

Sincerely,

/s/

Michael T. Masnik, Senior Project Manager
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc w/enclosure:
See next page

[TAC NO. 71119]

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Three Mile Island Nuclear Station
Unit No. 2

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UNITED STATES NUCLEAR REGULATORY COMMISSIONGPU NUCLEAR CORPORATIONDOCKET NO. 50-320ENVIRONMENTAL ASSESSMENT ANDFINDING OF NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (NRC or the Commission) is considering issuance of an amendment to Facility Operating License No. DPR-22 to General Public Utilities Nuclear Corporation (GPUN or the licensee), for Three Mile Island Nuclear Generating Station, Unit No. 2 (TMI-2) located in Dauphin County, Pennsylvania.

ENVIRONMENTAL ASSESSMENTIdentification of Proposed Action:

The proposed amendment would revise the Appendix A Technical Specifications (TS) relating to the disposal of the Accident Generated Water (AGW). The proposed action is in response to the licensee's application dated February 25, 1987 and revised April 13, 1987.

The Need for the Proposed Action:

The NRC staff, in response to the licensee's application for a change in the technical specifications to allow the disposal of the AGW, prepared Supplement 2 to the Programmatic Environmental Impact Statement (PEIS) related to decontamination and disposal of radioactive wastes resulting from the March 28, 1979 accident at TMI-2. Final Supplement 2 to the PEIS, issued in June 1987, evaluated the licensee's proposal and a number of alternatives for the disposal of AGW.

Subsequent to the issuance of Final Supplement 2 the licensee has modified its plans for pretreatment and for the packaging and shipping of the evaporator bottoms to the commercial low level waste disposal site near Richland, Washington. Since the current proposal is different than that evaluated in Final Supplement 2 the staff has evaluated the impacts associated with this change and has determined that implementation of the licensee's plan would result in impacts different than those reported for the licensee's proposal in Supplement 2 to the PEIS.

Environmental Impacts of the Proposed Action

The licensee's original proposal involved feeding the water, which was to be pretreated by ion exchange, to a modified commercially available evaporator. The majority of the liquid would be released to the atmosphere and the residue (evaporator bottoms) would be mixed with Portland cement and the slurry poured into containers for solidification. The solid waste would then be transported to a commercial NRC-licensed low level waste disposal site, near Richland, Washington. The total solidified volume was expected to be between 27,000 and 46,000 ft³. Approximately 80 to 250 shipments between TMI-2 and Richland, Washington would be required. The number of injuries and fatalities due to trucking accidents estimated for the shipping campaign ranged from 0.5 to 1.6 and from 0.04 to 1.3 respectively.

No occupational exposure to the truck crews resulting from the shipping of the evaporator bottoms was expected. No routine radiological dose to the public was calculated due to the low specific activity of the solidified waste and the self shielding characteristics of the Portland cement binder.

Likewise no radiation exposure to the public in the event of a trucking accident was expected since dispersal of the solidified evaporator bottoms was unlikely. The total cost of shipping the solidified waste was estimated to be between \$410,000 and \$690,000.

The licensee's current proposal is to still evaporate the AGW in a commercially available evaporator. However, the evaporator may be used in place of ion exchange for pretreatment. The solid waste stream may contain radionuclides that were expected to be shipped offsite in spent ion exchange resin liners. For the purposes of this assessment the maximum concentration permissible in class A waste was assumed for determining dose. Additionally the evaporator bottoms will not be mixed with a binder and solidified. Instead the bottoms will be pelletized, dried and the pellets packaged in 55 gallon drums and shipped to Richland, Washington. The packaging and shipment of the dry pelletized waste will be in conformance with all regulations governing shipment of low level wastes. The number of shipments is expected to be 14. The number of injuries and fatalities due to trucking accidents for the shipping campaign is estimated at 0.09 and 0.007 respectively. For the entire shipping campaign the dose to the truck crews was estimated at 3.5 person-rem and the estimated dose to the general public along the shipping route (1.3 million people) is 3.6 person-rem.

There is also a small probability that a shipping accident may be severe enough to result in the breach of a waste container and release of some of the waste. To determine the risk of radiation exposure from a damaged waste container, the staff used a model that estimates the population dose by multiplying accident frequencies (the expected number of accidents) by accident consequences. Using this methodology the staff estimated that a dose of about 0.16 person-rem would result from accidents during shipment of all the AGW waste. The shipping cost of the dry pelletized waste is estimated at \$70,000.

Based on the reduced level of injuries and fatalities associated with the reduced number of shipments, the small estimated dose to the general population along the truck route and the low level of truck crew exposure the staff concludes that there are no significant adverse environmental impacts associated with the proposed action. Furthermore, the staff recognizes that the licensee's proposal would result in a significant decrease in the amount of waste to be disposed and a significant reduction in the overall cost of shipping.

Alternatives to the Proposed Action:

Since the staff concluded that there are no significant environmental effects that would result from the proposed action, any alternative with equal or greater environmental impacts need not be evaluated. The principal alternative to the licensee's current proposal would be the licensee's original proposal which was to solidify the wastes prior to shipment. Implementation of this alternative would result in increased cost, increased waste, and increased potential for transportation related accidents without a significant reduction in radiation dose to either the public or the truck crews.

Alternative Use of Resources:

This action does not involve the use of any resources not previously considered in Supplement 2 to the PEIS dated June 1987.

Agencies and Persons Consulted:

The NRC staff reviewed the licensee's request and did not consult other agencies or persons.

FINDING OF NO SIGNIFICANT IMPACT

The staff has determined not to further supplement the environmental impact statement for the proposed license amendment.

Based upon the foregoing environmental assessment, the staff concluded that the proposed action will not have a significant effect on the quality of the human environment.

For further details with respect to this action, see the application for amendment dated February 25, 1987 revised April 13, 1987, the staff's Final Supplement 2 to the PEIS dated June 1987, and the licensee's Technical Evaluation Report dated October 7, 1988, which are all available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, N.W., Washington, D.C. and at the State Library of Pennsylvania Government Publications Section, Education Building, Walnut Street and Commonwealth Avenue, Harrisburg, Pennsylvania 17126.

Dated at Rockville, Maryland, this 31st day of August 1989.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in dark ink, appearing to read "John F. Stolz", is written over the typed name and title.

John F. Stolz, Director
Project Directorate 4-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation