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Docket No. 50-289

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Mr. Henry D. Hukill, Vice President  
and Director - TMI-1  
GPU Nuclear Corporation  
P. O. Box 480  
Middletown, Pennsylvania 17057

Dear Mr. Hukill:

We have reviewed your letters dated November 12, 1982 and March 7, 1983 in which you request transferring a TMI-2 condensate storage tank to TMI-1. The tank would not be used during normal TMI-1 operation, but would be available for storage of an additional 250,000 gallons of waste water which would provide operating flexibility in the unlikely event of a Steam Generator tube rupture.

Based on our review as documented in the enclosed Safety Evaluation, we have concluded that:

the tank is no longer needed for Unit 2, at least for the next few years;

the proposed modification will maintain separation between Unit 1 and Unit 2 piping systems; and

the procedures for design, fabrication and operation of the tank for use in Unit 1 meet acceptable standards.

We therefore find acceptable your proposed plans for using the TMI-2 condensate storage tank as a backup for Unit 1.

Sincerely,

ORIGINAL SIGNED BY  
JOHN F. STOLZ

John F. Stolz, Chief  
Operating Reactors Branch #4  
Division of Licensing

Enclosure:  
Safety Evaluation

cc w/enclosure:  
See next page

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UNITED STATES  
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SAFETY EVALUATION  
ADDITIONAL CONTAMINATED WATER STORAGE CAPACITY

METROPOLITAN EDISON COMPANY  
JERSEY CENTRAL POWER AND LIGHT COMPANY  
PENNSYLVANIA ELECTRIC COMPANY  
GPU NUCLEAR CORPORATION

THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 1  
DOCKET NO. 50-289

INTRODUCTION

By letter dated November 12, 1982 (Reference 1), GPU Nuclear (GPUN) described modifications which provided increased storage capacity for Three Mile Island Unit 1 (TMI-1 or Unit 1) contaminated water and requested NRC concurrence prior to use of these modifications. By letter dated January 5, 1983 (Reference 2) we requested information showing that the Unit 2 condensate storage tank is no longer needed for future surge capacity at TMI-2. By letter dated March 7, 1983 (Reference 3) the licensee provided the justification that the 250,000 gallon condensate storage tank is not required for future water storage capacity in TMI-2. By memorandum of March 23, 1983 (Reference 4), B. Snyder, Director, TMI Program Office, NRR, documented review of the licensee's March 7, 1983 letter and found no objection to the transfer of the TMI-2 condensate storage tank to TMI-1.

The proposed modifications consisted of installing valves and piping from the discharge of TMI-1 turbine building sump pumps to existing interconnecting piping which leads to the former TMI-2 condensate storage tank. The additional water storage would make available a 250,000 gallon former TMI-2 condensate storage tank for Unit 1 use. During normal operation, turbine building sump water would be discharged to the Industrial Water Treatment System. In the event of radioactivity in the turbine building sump, as might be encountered during a steam generator tube rupture event, a radiation monitor would trip the sump pumps. The proposed modifications would allow the transfer of potentially contaminated water from the turbine building sump to the former Unit 2 condensate storage tank, thus increasing the waste storage capability of TMI-1 by 250,000 gallons. The licensee would process the stored water using portable demineralizers which would be brought to the site when needed.

EVALUATION

The completed modification package, drawings, and safety evaluations associated with providing the additional water storage capacity were reviewed during NRC Region I Inspection 50-289/84-11 (Reference 5).

The piping associated with these modifications is designed and fabricated in accordance with ANSI B31.1 and the existing condensate storage tank is seismic Category I. Drawings show that all Unit 1/Unit 2 interfaces from the transfer line are isolated. Calculations by the licensee estimate the maximum radionuclide concentration expected within the tank when full (assuming the Technical Specifi-

cation (TS) limit of 1.0% failed fuel) to be well within the limit of TS 3.22.1.4. This TS limits the radioactive material contained in the tank to 10 curies and provides assurance that in the event of an uncontrolled release of the tank's contents, the resulting concentrations would be less than the limits of 10 CFR Part 20, Appendix B, Table II, Column 2, at the nearest potable water supply and the nearest surface water supply in an unrestricted area.

The additional water storage capacity is intended to provide operational flexibility in dealing with any OTSG tube rupture event. The release associated with a tube rupture event has been analyzed and TS 3.1.4.1 specifies the maximum total activity of the reactor coolant to limit the whole body dose at the site boundary in the event of a double ended rupture of a steam generator tube to ensure that the public is adequately protected.

Flow verification and hydrostatic testing has been performed on the modification, and an operating procedure has been prepared which prescribes the system operation. The level instrumentation and alarms which are provided for the tank are located in the Unit 2 control room. Specific instructions have been incorporated into the system operating procedure which require communications with the Unit 2 control room to monitor the condensate storage tank level throughout the transfer evolution to prevent a tank overflow. The administrative control to prevent a tank overflow is considered to be adequate due to the expected limited use of the system. The long term plans are for moving the level and alarm instrumentation to the Unit 1 control room.

#### CONCLUSION

Based on the NRC Region I review discussed above, we conclude the modifications which provide increased storage capacity for TMI-1 contaminated water have been made satisfactory. Further more, we find the proposed use of TMI-2 condensate storage tank for backup radioactive waste storage at TMI-1 acceptable.

Principal Reviewer: W. Baunack, Division of Project and Resident Programs,  
Region I

DATED: June 11, 1984

#### REFERENCES

1. H. D. Hukill (GPUN) Letter to J. F. Stolz (NRC) dated November 12, 1982.
2. J. F. Stolz (NRC) Letter to H. D. Hukill dated January 5, 1983.
3. H. D. Hukill (GPUN) Letter to J. F. Stolz (NRC) dated March 7, 1983.
4. B. J. Snyder (NRC) Memorandum for J. F. Stolz (NRC) dated March 23, 1983.
5. NRC Region I Inspection Report 50-289/84-11 dated May 31, 1984.