

November 9, 1992

Docket No. 50-289

Mr. T. G. Broughton, Vice President
and Director - TMI-1
GPU Nuclear Corporation
Post Office Box 480
Middletown, Pennsylvania 17057

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Dear Mr. Broughton:

SUBJECT: ISSUANCE OF AMENDMENT FOR THREE MILE ISLAND NUCLEAR STATION,
UNIT NO. 1 (TAC NO. M84599)

The Commission has issued the enclosed Amendment No. 165 to Facility Operating License No. DPR-50 for the Three Mile Island Nuclear Station, Unit No. 1. The amendment consists of changes to the Technical Specifications in response to your application transmitted by letter dated August 24, 1992.

The amendment revises the Technical Specifications to delete requirements to demonstrate, by testing, that a redundant system/component is operable when a emergency core cooling system/component is removed from service for maintenance. In lieu of testing the redundant system/component to demonstrate its operability, the Technical Specifications are being revised to require an administrative check of plant records to verify operability of the redundant system/component.

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

Original signed
by

Ronald W. Hernan, Senior Project Manager
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 165 to DPR-50
2. Safety Evaluation

cc w/enclosures:
See next page

OFFICE	LA:PDI-4 <i>for</i>	PM:PDI-4 <i>cy</i>	PM:PDI-4 <i>cy</i>	PDI-4 <i>for</i>	OGC <i>cy</i>
NAME	SNorris	SYoung:cn	RHernan <i>WRT</i>	JStolz <i>for</i>	<i>M Young</i>
DATE	10/27/92	10/27/92	10/27/92	10/27/92	10/13/92

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Mr. T. Gary Broughton
GPU Nuclear Corporation

Three Mile Island Nuclear Station,
Unit No. 1

cc:

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

METROPOLITAN EDISON COMPANY

JERSEY CENTRAL POWER & LIGHT COMPANY

PENNSYLVANIA ELECTRIC COMPANY

GPU NUCLEAR CORPORATION

DOCKET NO. 50-289

THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 165
License No. DPR-50

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by GPU Nuclear Corporation, et al. (the licensee) dated August 24, 1992, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.c.(2) of Facility Operating License No. DPR-50 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 165, are hereby incorporated in the license. GPU Nuclear Corporation shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



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

Attachment:
Changes to the
Technical Specifications

Date of Issuance: November 9, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 165

FACILITY OPERATING LICENSE NO. DPR-50

DOCKET NO. 50-289

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the area of change.

Remove

3-23

3-24

Insert

3-23

3-24

3.3.3 Exceptions to 3.3.2 shall be as follows:

- a. Both core flood tanks shall be operable at all times.
- b. Both the motor operated valves associated with the core flood tanks shall be fully open at all times.
- c. One reactor building cooling fan and associated cooling unit shall be permitted to be out-of-service for seven days.

3.3.4 Prior to initiating maintenance on any of the components, the duplicate (redundant) component shall be verified to be operable.

Bases

The requirements of Specification 3.3.1 assure that, before the reactor can be made critical, adequate engineered safety features are operable. Two engineered safeguards makeup pumps, two decay heat removal pumps and two decay heat removal coolers (along with their respective cooling water systems components) are specified. However, only one of each is necessary to supply emergency coolant to the reactor in the event of a loss-of-coolant accident. Both core flooding tanks are required because a single core flooding tank has insufficient inventory to reflood the core for hot and cold line breaks (Reference 1).

The operability of the borated water storage tank (BWST) as part of the ECCS ensures that a sufficient supply of borated water is available for injection by the ECCS in the event of a LOCA (Reference 2). The limits on BWST minimum volume and boron concentration ensure that 1) sufficient water is available within containment to permit recirculation cooling flow to the core, and 2) the reactor will remain at least one percent subcritical at 70°F without any control rods in the core following mixing of the BWST and RCS water volumes (Reference 3).

The contained water volume limit of 350,000 gallons includes an allowance for water not usable because of tank discharge location. The limits on contained water volume, NaOH concentration and boron concentration ensure a pH value of between 8.5 and 11.0 of the solution sprayed within containment after a design basis accident. The minimum pH of 8.5 assures that iodine will remain in solution while the maximum pH of 11.0 minimizes the potential for caustic damage to mechanical systems and components. Redundant heaters maintain the borated water supply at a temperature greater than 40°F.

The post-accident reactor building emergency cooling may be accomplished by three emergency cooling units, by two spray systems, or by a combination of one emergency cooling unit and one spray system. The specified requirements assure that the required post-accident components are available.

The iodine removal function of the reactor building spray system requires one spray pump and sodium hydroxide tank contents.

The spray system utilities common suction lines with the decay heat removal system. If a single train of equipment is removed from either system, the other train must be assured to be operable in each system.

When the reactor is critical, maintenance is allowed per Specification 3.3.2 and 3.3.3 provided requirements in Specification 3.3.4 are met which assure operability of the duplicate components. The specified maintenance times are a maximum. Operability of the specified components shall be based on the satisfactory completion of surveillance and inservice testing and inspection required by Technical Specification 4.2 and 4.5.

The allowable maintenance period of up to 72 hours may be utilized if the operability of equipment redundant to that removed from service is verified based on the results of surveillance and inservice testing and inspection required by Technical Specification 4.2 and 4.5.

In the event that the need for emergency core cooling should occur, operation of one makeup pump, one decay heat removal pump, and both core flood tanks will protect the core. In the event of a reactor coolant system rupture their operation will limit the peak clad temperature to less than 2,300°F and the metal-water reaction to that representing less than 1 percent of the clad.

Two nuclear service river water pumps and two nuclear service closed cycle cooling pumps are required for normal operation. The normal operating requirements are greater than the emergency requirements following a loss-of-coolant.

REFERENCES

- (1) UFSAR, Section 6.1 - "Emergency Core Cooling System"
- (2) UFSAR, Section 14.2.2.3 - "Large Break LOCA"
- (3) UFSAR, Section 14.2.2.1 - "Fuel Handling Accident"



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 165 TO FACILITY OPERATING LICENSE NO. DPR-50

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

THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 1

DOCKET NO. 50-289

1.0 INTRODUCTION

By letter dated August 24, 1992, GPU Nuclear Corporation (the licensee) submitted a request for a change to the Three Mile Island Nuclear Station, Unit No. 1 Technical Specifications. The requested changes would revise Technical Specification Section 3.3.4 to delete the current requirements to demonstrate, by testing, that a redundant emergency core cooling system/component is operable prior to initiating maintenance on the other system/component. These operability verifications would be accomplished by administrative checks of appropriate plant records (e.g., appropriate surveillance records, temporary modification logs, equipment tagging records, operating logs, and shift turnover logs).

2.0 EVALUATION

The requirement to demonstrate the operability, by testing, of a redundant system/component when an emergency core cooling system/component is removed from service for maintenance is a typical requirement that was included in technical specifications when Three Mile Island Unit 1 was granted its operating license. However, based on further operating experience, the NRC staff subsequently dropped such testing requirements. Testing of redundant systems/components is not required in the NRC's Standard Technical Specifications nor in recently issued technical specifications. Deletion of such testing requirements was implemented by the NRC staff since the added operability assurance provided by such testing is not sufficient to justify the loss of safety function during the test, provided the periodic surveillance testing is current and that there are no known reasons to suggest that the redundant system/component is inoperable. The periodic surveillance tests and the proposed verifications that the redundant systems/components are operable are sufficient to demonstrate the operability of the redundant system/component. Therefore, the proposed changes to delete demonstration of operability by testing of redundant system/components are acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released off site, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (57 FR 47139). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Francis Young

Date: November 9, 1992