

May 20, 1991

Docket No. 50-289

Mr. T. G. Broughton, Vice President  
and Director - TMI-1  
GPU Nuclear Corporation  
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Dear Mr. Broughton:

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. 80048)

The Commission has issued the enclosed Amendment No. 162 to Facility Operating License No. DPR-50 for the Three Mile Island Nuclear Station, Unit No. 1, in response to your letter dated March 25, 1991.

The amendment adds an allowable outage time to the Technical Specification for turbine bypass valve operability.

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,

/s/

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. 162 to DPR-50
2. Safety Evaluation

cc w/enclosures:  
See next page

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GPU Nuclear Corporation

Three Mile Island Nuclear Station,  
Unit No. 1

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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. 162  
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 March 25, 1991, 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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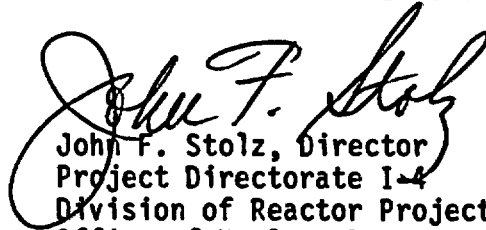
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.c.(2) of Facility Operating License No. DPR-50 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 162, 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, to be implemented within 30 days 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: May 20, 1991

ATTACHMENT TO LICENSE AMENDMENT NO. 162

FACILITY OPERATING LICENSE NO. DPR-50

DOCKET NO. 50-289

Replace the following page of the Appendix A Technical Specifications with the attached page. The revised page is identified by amendment number and contains vertical lines indicating the area of change.

Remove

3-25  
4-5a

Insert

3-25  
4-5a

### 3.4 DECAY HEAT REMOVAL CAPABILITY

#### Applicability

Applies to the operating status of systems and components that function to remove decay heat when one or more fuel bundles are located in the reactor vessel.

#### Objective

To define the conditions necessary to assure continuous capability of decay heat removal.\*

#### Specification

- 3.4.1 Reactor Coolant System temperature greater than 250°F.
- 3.4.1.1 With the Reactor Coolant temperature greater than 250°F, three independent EFW pumps and associated flow paths shall be OPERABLE\*\* with:
- a. Two EFW pumps, each capable of being powered from an OPERABLE emergency bus, and one EFW pump capable of being powered from an OPERABLE steam supply system.
    - (1) With one pump or flow path inoperable, restore the inoperable pump or flow path to OPERABLE status within 72 hours or be in COLD SHUTDOWN within the next 12 hours.
    - (2) With more than one EFW pump or flow path inoperable, restore the inoperable pumps or flow paths to OPERABLE status or be subcritical within 1 hour, in at least HOT SHUTDOWN within the next 6 hours, and in COLD SHUTDOWN within the following 6 hours.
  - b. Four of the six turbine bypass valves OPERABLE. With more than two turbine bypass valves inoperable, restore operability of at least four turbine bypass valves within 72 hours.
  - c. The condensate storage tanks (CSTs) OPERABLE with a minimum of 150,000 gallons of condensate available in each CST.
    - (1) With a CST inoperable, restore the CST to operability within 72 hours or be in at least HOT SHUTDOWN within the next 6 hours, and COLD SHUTDOWN within the next 30 hours.
    - (2) With more than one CST inoperable, restore the inoperable CST to OPERABLE status or be subcritical within 1 hour, in at least HOT SHUTDOWN within the next 6 hours, and in COLD SHUTDOWN within the following 6 hours.

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\*These requirements supplement the requirements of Sections 3.1.1.1.c, 3.1.1.2, 3.3.1, and 3.8.3.

\*\*HSFS operability is specified in Section 3.5.1.

TABLE 4.1-1 (Continued)

<u>CHANNEL DESCRIPTION</u>	<u>CHECK</u>	<u>TEST</u>	<u>CALIBRATE</u>	<u>REMARKS</u>
28. Radiation Monitoring Systems*	W(1)(3)	M(3)	Q(2)	<p>(1) Using the installed check source when background is less than twice the expected increase in cpm which would result from the check source alone. Background readings greater than this value are sufficient in themselves to show that the monitor is functioning.</p> <p>(2) Except area gamma radiation monitors RM-G5, RM-G6, RM-G7 and RM-G21 which are located in the Reactor Building. When purging is permitted per T.S. 3.6, RM-G5 and RM-G21 will be calibrated quarterly. If purging is not permitted per T.S. 3.6, RM-G5 and RM-G21 shall be calibrated at the next scheduled reactor shutdown following the quarter in which calibration would normally be due. RM-G6 and RM-G7, which are in high radiation areas shall be calibrated at the next scheduled reactor shutdown following the quarter in which calibration is due, if a shutdown during the quarter does not occur.</p> <p>(3) Surveillances are required to be performed only when containment integrity is required. This applies to monitors which initiate containment isolation only.</p>
29. High and Low pressure Injection Systems: Flow Channels	N/A	N/A	R	

\*Does not include the monitors covered under Specification 3.5.5.2 and 4.1.3 or Specifications 3.21.1, 3.21.2 and 4.21.1, 4.21.2.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 162 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 March 25, 1991, GPU Nuclear Corporation (the licensee) requested an amendment to the Technical Specifications (TS) for Three Mile Island Unit 1, (TMI-1). The proposed change would add an allowable outage time (AOT) for the Turbine Bypass Valves (TBVs) to clarify time requirements when fewer than four of the six TBVs are operational.

2.0 BACKGROUND

The TMI-1 design incorporates six TBVs that bypass the main turbine and direct steam from the main steam system into the main condenser. The primary purpose of the valves is to provide pressure control following a load rejection or primary-to-secondary load mismatch by passing approximately 22.5% of full steam flow. Other means of providing pressure control in the main steam system under these conditions are the atmospheric dump valves (ADVs) and the Main Steam Safety Valves (MSSVs). The current TS, in Section 3.4.1, have certain requirements for maintaining decay heat removal capability. One of those requirements is that four of the six TBVs must be operable. The TS give no time limit to return TBVs to operable status in the event that less than four are operable. Because this condition has occurred for a limited time in the past, and because the lack of a specified AOT has caused some confusion in the past, the licensee has taken the initiative to upgrade the TS in this area. The proposed change also includes some minor format improvements for clarification. Only page 3-25 is affected by these proposed changes.

3.0 EVALUATION

The licensee has proposed adding an AOT of 72 hours for having fewer than four TBVs operational when reactor coolant system temperature is greater than 250 degrees Fahrenheit. The following additional sentence is proposed: "With more than two turbine bypass valves inoperable, restore operability of at least four turbine bypass valves within 72 hours." The licensee did not propose an action statement, however, for definitive action if four valves could not be made operational within 72 hours. The licensee's safety evaluation justifying the

change states that the only safety function provided by these valves is reduction of radioactive doses during certain accident scenarios. Specifically, following a steam generator tube rupture accident, the TMI-1 Updated Final Safety Analysis Report (UFSAR) takes credit for bleeding steam into the main condenser via the TBVs to take advantage of the scrubbing action of the main condenser in removing radioactive particulates and iodines, thereby significantly reducing the quantities of these isotopes released to the environment. The other two methods of pressure relief, the ADVs and the MSSVs, are less desirable because they discharge directly to the atmosphere with no scrubbing action. The licensee states that with no TBVs operable following a steam generator tube rupture, radioactive releases to the atmosphere would still be well within the limits of 10 CFR Part 100. The Standard TS for Babcock & Wilcox (B&W) designed plants have no operability requirements for TBV's because other B&W plants do not necessarily assume the dose reduction realized by dumping steam to the main condenser via the TBVs following a steam generator tube rupture. The licensee did give consideration to revising the UFSAR and removing the TBV operability requirements from the TS altogether. The licensee also stated that, because the TBVs are the preferred method of depressurizing the steam generators during a plant cooldown (for the same reasons as discussed above), it would be incorrect to require a plant shutdown and cooldown for most cases of TBV inoperability. Therefore, although an AOT would now be spelled out in the TS for the TBVs, a decision regarding what action would be taken with the plant if the AOT could not be met would be made on a case-by-case basis. Shutting down the plant only because fewer than four TBVs are operable could actually result in a higher radiation dose to the public because ADVs may have to be used to vent slightly radioactive steam directly to the atmosphere. The licensee therefore states that plant shutdown and cooldown in this instance may not be in the best interest of public health and safety.

The staff has reviewed the licensee's justification for this TS change and has no reason to disagree with the conclusions. Since there is a safety benefit that can be realized by having TBVs operable in the event of a steam generator tube rupture, the licensee should make a good faith effort to maintain as many TBVs operable as possible at all times. Consistent with other provisions in the TMI-1 TS, the staff agrees that the appropriate action in the event of less than four TBVs operable is not to necessarily shut down the plant, unless there is a clear net safety benefit in doing so.

Page 4-5a was included with this amendment solely to correct an administrative error in Amendment No. 161, issued on April 22, 1991. The error was that the changes approved in Amendment No. 156 were inadvertently omitted in Amendment No. 161.

### **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 offsite, 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 (56 FR 15642). 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: R. Hernan

Date: May 20, 1991