

July 29, 1988

Docket No. 50-289

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

Dear Mr. Hukill:

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. 66354)

The Commission has issued the enclosed Amendment No. 144 to Facility Operating License No. DPR-50 for the Three Mile Island Nuclear Station, Unit No. 1, in response to your letter dated September 15, 1987.

The amendment incorporates action statements and surveillance requirements into the TMI-1 Technical Specifications for certain post-accident monitoring instrumentation required by NRC Regulatory Guide 1.97. By NRC Order dated July 18, 1985, GPU Nuclear was required to complete implementation of R.G. 1.97 requirements during refueling outage 7R, currently in progress.

A copy of the related Safety Evaluation and Notice of Issuance are also enclosed.

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

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Enclosures:

1. Amendment No. 144 to DPR-50
2. Safety Evaluation
3. Notice

cc w/enclosures:

See next page

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Mr. Henry D. Hukill  
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Three Mile Island Nuclear Station,  
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Washington, D.C. 20555



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. 144  
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 September 15, 1987, 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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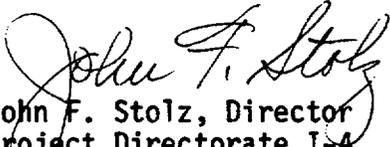
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.c.(2) of Facility Operating License No. DPR-50 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 144, 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 and shall be implemented within 30 days thereafter.

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: July 29, 1988

ATTACHMENT TO LICENSE AMENDMENT NO.

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 numbers and contain vertical lines indicating the area of change.

Remove

3-40b

3-40d

4-10a

Insert

3-40b

3-40d

4-10a

The Emergency Feedwater System is provided with two channels of flow instrumentation on each of the two discharge lines. Local flow indication is also available for the emergency feedwater system.

Although the pressurizer has multiple level indications, the separate indications are selectable via a switch for display on a single display. Pressurizer level, however, can also be determined via the patch panel and the computer log. In addition, a second channel of pressurizer level indication is available independent of the NNI.

Although the instruments identified in Table 3.5-2 are significant in diagnosing situations which could lead to inadequate core cooling, loss of any one of the instruments in Table 3.5-2 would not prevent continued, safe, reactor operation. Therefore, operation is justified for up to 7 days (48 hours for pressurizer level). Alternate indications are available for Saturation Margin Monitors using hand calculations, the PORV/Safety Valve position monitors using discharge line thermocouple and Reactor Coolant Drain Tank indications, and for EFW flow using Steam Generator level and EFW pump discharge pressure. Pressurizer level has two channels, one channel from NNI (3 D/P instrument strings through a single indicator) and one channel independent of the NNI. Operation with the above pressurizer level channels out of service is permitted for up to 48 hours. Alternate indication would be available through the plant computer.

Monitors for containment pressure, containment water level, containment hydrogen level and various high range radiation monitors are useful to evaluate and predict the course of accidents which go beyond the plant design basis (see Table 3.5-3). These instruments should be maintained for that purpose. (This capability is consistent with the recommendations of NUREG 0737, II.F.1.) Operability of the additional post-accident monitoring instrumentation identified in Table 3.5-3, ensures that sufficient information is available on selected plant parameters to monitor and assess these variables following an accident. (This capability is consistent with the recommendations of Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident," Rev. 3, May 1983.)

TABLE 3.5-3

POST ACCIDENT MONITORING INSTRUMENTATION

<u>FUNCTION</u>	<u>INSTRUMENTS</u>	<u>REQUIRED NUMBER OF CHANNELS</u>	<u>MINIMUM NUMBER OF CHANNELS</u>	<u>ACTION</u>
1.	High Range Noble Gas Effluent			
	a. Condenser Vacuum Pump Exhaust (RM-A5-Hi)	1	1	A
	b. Condenser Vacuum Pump Exhaust (RM-G25)	1	1	A
	c. Auxiliary and Fuel Handling Building Exhaust (RM-A8-Hi)	1	1	A
	d. Reactor Building Purge Exhaust (RM-A9-Hi)	1	1	A
	e. Reactor Building Purge Exhaust (RM-G24)	1	1	A
	f. Main Steam Lines Radiation (RM-G26/RM-G27)	1 each OTSG	1 each OTSG	A
2.	Containment High Range Radiation (RM-G22/G-23)	2	2	A
3.	Containment Pressure	2	1	B
4.	Containment Water Level	2	1	B
5.	Containment Hydrogen	2	1	B
6.	Wide Range Neutron Flux	2	1	A
7.	Reactor Coolant System Cold Leg Water Temperature (TE-959, 961; TI-959A, 961A)	2	1	A
8.	Reactor Coolant System Hot Leg Water Temperature (TE-958, 960; TI-958A, 960A)	2	1	A
9.	Reactor Coolant System Pressure (PT-949, 963; PI-949A, 963)	2	1	A
10.	Steam Generator Pressure (PT-950, 951, 1180, 1184; PI-950A, 951A, 1180, 1184)	2/OTSG	1/OTSG	A
11.	Condensate Storage Tank Water Level (LT-1060, 1061, 1062, 1063; LI-1060, 1061, 1062, 1063)	2/Tank	1/Tank	A

TABLE 4.1-4

POST ACCIDENT MONITORING INSTRUMENTATION

<u>FUNCTION</u>	<u>INSTRUMENTS</u>	<u>CHECK</u>	<u>TEST</u>	<u>CALIBRATE</u>	<u>REMARKS</u>
1.	Noble Gas Effluent				
	a. Condenser Vacuum Pump Exhaust (RM-A5-Hi)	W	M	R	(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 this monitor is functioning.
	b. Condenser Vacuum Pump Exhaust (RM-G25)	W(1)	M	R	
	c. Auxiliary and Fuel Handling Building Exhaust (RM-A8-Hi)	W	M	R	
	d. Reactor Building Purge Exhaust (RM-A9-Hi)	W	M	R	
	e. Reactor Building Purge Exhaust (RM-G24)	W(1)	M	R	
	f. Main Steam Lines Radiation (RM-G26/RM-G27)	W(1)	M	R	
2.	Containment High Range Radiation (RM-G22/G23)	W	M	R	
3.	Containment Pressure	W	N/A	R	
4.	Containment Water Level	W	N/A	R	
5.	Containment Hydrogen	W	M	R	
6.	Wide Range Neutron Flux	W	N/A	R	
7.	Reactor Coolant System Cold Leg Water Temperature (TE-959, 961; TI-959A, 961A)	W	N/A	R	
8.	Reactor Coolant System Hot Leg Water Temperature (TE-958, 960; TI-958A, 960A)	W	N/A	R	
9.	Reactor Coolant System Pressure (PT-949, 963; PI-949A, 963)	W	N/A	R	
10.	Steam Generator Pressure (PT-950, 951, 1180, 1184; PI-950A, 951A, 1180, 1184)	W	N/A	R	
11.	Condensate Storage Tank Water Level (LT-1060, 1061, 1062, 1063; LI-1060, 1061, 1062, 1063)	W	N/A	R	



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 144 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 September 15, 1987, GPU Nuclear Corporation (GPUN/licensee) submitted a request for revision of the Technical Specifications, Appendix A to Operating Licensee DPR-50 for the Three Mile Island Nuclear Station Unit No. 1 (TMI-1). The proposed changes would incorporate surveillance and operability requirements for post-accident monitoring instrumentation installed to satisfy Regulatory Guide (R.G.) 1.97.

The proposed revision incorporates surveillance and operability requirements for reactor coolant system (RCS) cold leg temperature, steam generator pressure, condensate storage tank water level, wide range neutron flux monitoring, RCS hot leg temperature, and RCS pressure instrumentation.

2.0 EVALUATION

The licensee has proposed to include, in the Technical Specifications, instrumentation for Type A variables RCS cold leg temperature, steam generator pressure, and condensate storage tank water level and for Category 1 variables wide range neutron flux monitoring, RCS hot leg temperature, and RCS pressure.

This proposal would incorporate, into the Technical Specifications, surveillance and operability requirements for the instrumentation the licensee identified as Type A variables. The proposal would also incorporate all Category 1 variables except for coolant inventory and containment valve position indication.

The incorporation of RCS cold leg temperature, steam generator pressure, condensate storage tank water level, wide range neutron flux monitoring, RCS hot leg temperature, and RCS pressure instrumentation, in the Technical Specifications, provides a high degree of confidence that this instrumentation will be available in a post-accident situation.

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The licensee identified Category 1 variables coolant inventory and containment valve position as not required for incorporation into the Technical Specifications. The licensee's basis for non-incorporation is that these two variables do not meet the criteria delineated in NRC Proposed Policy Statement on Technical Specification Improvements of Nuclear Power Reactors, issued February 6, 1987, for determining the required scope of Technical Specifications. The licensee states that this position is consistent with the B&W Owners Group Technical Specification Committee's Standard Technical Specification Disposition Matrix.

A letter from T. Murley, NRR, to W. Wilgus, B&W Owners Group, dated May 9, 1988, with enclosure "NRC Staff Review of Nuclear Steam Supply System Vendor Criteria to Standard Technical Specifications" discussed the subject of the inclusion of Category 1 instrumentation in the Technical Specifications. On page 6 of the enclosure, to the May 9, 1988 letter, the staff concluded that it is unable to confirm the Owners Group's conclusion that Category 1 Post-Accident Monitoring Instrumentation is not of prime importance in limiting risk. Recent PRAs have shown the risk significance of operator recovery actions which would require a knowledge of Category 1 variables. Furthermore, recent severe accident studies have shown significant potential for risk reduction from accident management, which may include knowledge of these variables. The B&W Owners Group has been requested to develop further risk-based justification in support of not including Category 1 variables in the Technical Specifications. Therefore, we find the licensee's request to not include coolant inventory and containment valve position instrumentation in the Technical Specifications to be premature. This subject is one of continuing discussion between the NRC and the B&W Owners Group. The outcome of those discussions will determine if additional actions are necessary at TMI-1.

Based on the above evaluation, the staff concludes that the licensee's request to revise the TMI-1 Technical Specifications to include RCS cold leg temperature, steam generator pressure, condensate storage tank water level, wide range neutron flux monitoring, RCS hot leg temperature, and RCS pressure instrumentation is acceptable and conforms to the R.G. 1.97, Revision 3, criteria.

The staff finds that the licensee's request to not include coolant inventory and containment valve position instrumentation in the Technical Specifications is premature for the reasons discussed above.

### 3.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32, and 51.35, an environmental assessment and finding of no significant impact have been prepared and published in the Federal Register on July 29, 1988 (53 FR 28733). Accordingly, based upon the environmental assessment, the Commission has determined that the issuance of this amendment will not have a significant effect on the quality of the human environment.

#### 4.0 CONCLUSION

We have 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, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: July 29, 1988

Principal Contributor: Barry S. Marcus

UNITED STATES NUCLEAR REGULATORY COMMISSIONGPU NUCLEAR CORPORATION, ET AL.DOCKET NO. 50-289NOTICE OF ISSUANCE OF AMENDMENT TO  
FACILITY OPERATING LICENSE

The U.S. Nuclear Regulatory Commission (Commission) has issued Amendment No.        to Facility Operating License No. DPR-50, issued to GPU Nuclear Corporation, et al. (the licensee), which revised the Technical Specifications for operation of the Three Mile Island Nuclear Station, Unit No. 1, located in Dauphin County, Pennsylvania.

The amendment adds to the Technical Specifications action statements and surveillance requirements for certain instrumentation used to monitor plant parameters following an accident as required by Regulatory Guide 1.97.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment.

Notice of Consideration of Issuance of Amendment and Opportunity for Hearing in connection with this action was published in the FEDERAL REGISTER on December 2, 1987 (52 FR 45882). No request for a hearing or petition for leave to intervene was filed following this notice.

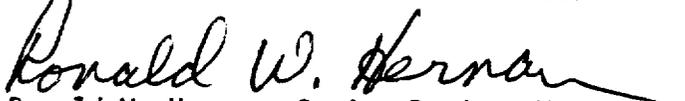
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The Commission has prepared an Environmental Assessment related to the action and has determined not to prepare an environmental impact statement. Based upon the environmental assessment, the Commission has concluded that the issuance of this amendment will not have a significant effect on the quality of the human environment.

For further details with respect to the action see (1) the application for amendment dated September 15, 1987, (2) Amendment No.        to License No. DPR-50, (3) the Commission's related Safety Evaluation, and (4) the Commission's Environmental Assessment. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street NW, and at the Local Public Document Room, Government Publications Section, State Library of Pennsylvania, Walnut Street and Commonwealth Avenue, Box 1601, Harrisburg, Pennsylvania 17105. A copy of items (2) (3) and (4) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Reactor Projects I/II.

Dated at Rockville, Maryland this 29th        day of        July        1988.

FOR THE NUCLEAR REGULATORY COMMISSION

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