

August 8, 1985

Docket No. 50-320

Mr. F. R. Standerfer  
Vice President/Director  
Three Mile Island Unit 2  
GPU Nuclear Corporation  
P.O. Box 480  
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Dear Mr. Standerfer:

Subject: Three Mile Island Unit 2  
License No. DPR-73  
Docket No. 50-320  
Recovery Operations Plan Change Request No. 46

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By letters dated November 6, 1984 and March 27, 1985, GPU Nuclear Corporation (GPUNC) requested modifications to the requirements contained in the Proposed Technical Specifications (PTS) and the Recovery Operations Plan (ROP). The staff responded to the PTS request in a separate Amendment of Order which had as an enclosure a safety evaluation (SE) discussing each issue. We have also completed our review of the proposed ROP changes as discussed herein. In addition to the discussions in the above mentioned Amendment of Order which becomes effective September 23, 1985, we have prepared another safety evaluation which is enclosed. Based on these SE's, we concur with your proposed Recovery Operations Plan Changes. Affected pages are also enclosed. These changes shall be effective September 23, 1985.

Sincerely,

/s/

Bernard J. Snyder, Program Director  
Three Mile Island Program Office  
Office of Nuclear Reactor Regulation

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Enclosures:

- 1. Safety Evaluation
- 2. Modified Pages

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SAFETY EVALUATION  
BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
FOR RECOVERY OPERATIONS PLAN CHANGE REQUEST #46

INTRODUCTION

By letter dated November 6, 1984, the licensee requested the approval of modifications to the Proposed Technical Specifications (PTS) and the Recovery Operations Plan (ROP). The staff has concurrently issued a safety evaluation (SE) for the PTS changes as an attachment to an Amendment of Order which becomes effective September 23, 1985. Discussed herein are ROP changes.

DISCUSSION

Section 4.1.1 Boration Control

Boron Cooling Water Injection

As stated in the staff's discussion on proposed changes to PTS Section 3.1.1 in a concurrently issued Safety Evaluation and Amendment of Order, the Limiting Conditions for Operation related to the operability of the Standby Reactor Coolant System Pressure Control System, the decay heat removal pump and its recirculation pathway, the Mini-Decay Heat Removal System can be deleted. The staff, therefore, concurs with the licensee's proposal to delete the Surveillance Requirements (SR) in the ROP for demonstrating that those systems are operable. Instead, the proposed changes to PTS Section 3.1.1 would require that: (1) two flow paths of the Borated Water Storage Tank (BWST) downstream of the common dropline be operable, (2) the BWST contains at least 390,000 gallons of borated water

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with a boron concentration of between 4,350 and 6,000 ppm, and (3) dedicated on-site equipment for a Reactor Building Sump Recirculation System be operable.

The licensee has proposed to change the ROP to demonstrate that: (1) the valves associated with the BWST gravity feed pathway are operable, (2) the BWST inventory and boron concentration, as specified in Section 3.1.1, are maintained, and (3) the reactor building sump recirculation pumps are operable. These surveillance requirements are appropriate to demonstrate that the PTS Section 3.1.1 requirements are being met. The staff, therefore, concurs with these changes.

#### Section 4.4.9.1.1 Reactor Coolant System Temperature

As stated in the staff's discussions in Section 3.1.1 in a concurrently issued Safety Evaluation and Amendment of Order, decay heat removal is via loss-to-ambient. RCS temperature is affected by decay heat, RCS level and ambient conditions. Licensee's analysis has shown that should the reactor coolant level drain to the bottom of the hot-leg nozzles, an acceptable RCS temperature would still be maintained. Therefore, there is no credible accident that could cause an undesirably high RCS temperature. Additionally, the licensee is required to maintain reactor building ambient temperature above 50°F. There is no credible event that could cause an undesirably low RCS temperature. The staff, therefore, concurs that the surveillance requirements on RCS temperature can be deleted.



Table 4.3-2 Radiation Monitoring Instrumentation Surveillance Requirements

As stated in the staff's discussions in Section 3.1.1 in a concurrently issued Safety Evaluation and Amendment of Order, the staff concurs that the SR for MDHR monitors can be deleted.

Table 4.3-7 Essential Parameters Monitoring Instrumentation Surveillance Requirements

Per discussion in 4.4.9.1.1 above, the RCS temperature channel surveillance requirements are proposed to be deleted. The staff concurs with this proposal.

Section 4.7.3.1 Nuclear Services Closed Cooling System (NSCCS)

Per discussions in Section 3.7.3.1 of the concurrently issued Safety Evaluation and Amendment of Order, the staff concurs that the SR for the NSCCS can be deleted.

Section 3.7.3.2 Decay Heat Closed Water System (DHCWS)

As discussed in Section 3.7.3.2 of the concurrently issued Safety Evaluation and Amendment of Order, the staff concurs with the proposal to delete the SR for the DHCWS.

Section 4.7.3.3 Mini Decay Heat Removal System (MDHRS)

Per discussion in Section 3.7.3.3 of the concurrently issued Safety Evaluation and Amendment of Order, the staff concurs that the SR for the MDHRS can be deleted.

Enclosure 2

RECOVERY OPERATIONS PLAN CHANGES



FACILITY OPERATING LICENSE NO. DPR-73

DOCKET NO. 50-320

Replace the following pages of the TMI-2 Recovery Operations Plan with the enclosed pages as indicated.

4.1-1

4.3-4

4.3-5

4.3-11

4.4-1

4.7-1

4.7-2

## SURVEILLANCE REQUIREMENTS

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### 4.1 WATER INJECTION COOLING AND REACTIVITY CONTROL SYSTEMS

#### 4.1.1 BORATION CONTROL

##### BORATED COOLING WATER INJECTION

4.1.1.1 The systems capable of injecting borated cooling water into the Reactor Coolant System shall be demonstrated OPERABLE:

- A. At least once per 31 days by verifying that each accessible (per occupational exposure considerations) valve in each flowpath that is not locked, sealed, or otherwise secured in position, is in its correct position.
- B. At least once per 7 days by:
  - 1. Verifying the boron concentration in the BWST is between 4350 and 6000 ppm.
  - 2. Verifying the contained borated water volume in the BWST is at least 390,000 gallons:
- C. At least once per 24 hours by verifying the BWST temperature is at least 50 degrees Fahrenheit when the outside temperature is less than 50 degrees Fahrenheit.
- D. At least once per 6 months by verifying the pumps associated with the Reactor Building Sump Recirculation System produce sufficient head and flow to meet makeup requirements.



TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ACTION</u>
1. CONTAINMENT						
a. Reactor Building Purge Sampler (AMS-3)	D	SA	W	1	Note 1	Note 3
2. FUEL HANDLING BUILDING Exhaust Monitors (HPR-221A or HPR-221B)						
a. Gaseous Activity	S	R	M	1	Note 5	Note 6
b. Particulate Activity	S	R	M	1	Note 5	Note 6
3. SDS MONITORS						
a. Process Monitor (IX04)	S	R	M	1	Note 1	Note 4
b. Area Monitor (IX03)	S	SA	M	1	Note 1	Note 2

(See following page for notes)

TABLE 4.3-3 (Con't)

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

NOTES:

- 1) During operation of the monitored system.
- 2) If monitor becomes inoperable, repair or replace by equivalent equipment within 12 hours. If not completed within 12 hours terminate operation of the monitored system and restore the inoperable monitor(s) to operable status.
- 3) Restore the inoperable monitor(s) to operable status within 72 hours.
- 4) If ion exchange effluent monitor is inoperable, sample on 4 hour frequency for gross beta. If inoperable longer than 24 hours then terminate operation of ion exchange system and restore the inoperable monitor to operable status.
- 5) With radioactive waste in the fuel handling building.
- 6) With the required instrumentation inoperable, suspend all operations involving movement of radioactive wastes in the fuel handling building, restore the inoperable equipment to operable status within 48 hours.



## SURVEILLANCE REQUIREMENTS

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### 4.4 REACTOR COOLANT SYSTEM

#### REACTOR COOLANT LOOPS

4.4.1 Verify that surveillance of the Reactor Coolant System is being performed in accordance with procedures approved pursuant to Specification 6.8.2.

#### 4.4.2 REACTOR VESSEL WATER LEVEL MONITORING

4.4.2 The Reactor Vessel Level Monitoring Instrumentation shall be demonstrated OPERABLE as required by Table 4.3-7.

#### SAFETY VALVES

4.4.3 Not applicable.

#### 4.4.9 PRESSURE/TEMPERATURE LIMITS

##### REACTOR COOLANT SYSTEM

4.4.9.1.1 Deleted.

4.4.9.1.2 Deleted.

4.4.9.1.3 Deleted.

4.4.9.1.4 The pH of the reactor coolant shall be determined to be greater than or equal to 7.5 and less than 8.4 at least once per 7 days.

4.4.9.1.5 The Chloride concentration in the reactor coolant shall be determined to be less than or equal to 5 ppm at least once per 7 days.

TABLE 4.3-7

## ESSENTIAL PARAMETERS MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL<sup>(1)</sup> CALIBRATION</u>	<u>READOUT LOCATION(S)</u>	<u>MINIMUM OPERABLE CHANNELS</u>
1. Reactor Building Pressure	S	R	Control Room	2
2. Reactor Vessel Level	S/W(2)	SA	Control Room <sup>(2)</sup>	2 <sup>(2)</sup>
3. Incore Thermocouples	S	R	Control Room or Cable Room	All Available <sup>(3)</sup>
4. NI Intermediate Range Level Log N	M	R	Cab 217 & Control Room	1
5. NI Source Range Level	M	R	Cab 217 <sup>(4)</sup> & Control Room	2
6. Reactor Building Water Level	NA	SA	Control Bldg. Area West	1
7. Borated Water Storage Tank Level	S	R	Control Room	1
8. Steam Generator Level	NA	NA	NA	1/Generator

## Notes:

- 1) Nuclear detectors and all channel components located inside containment may be excluded from CHANNEL CALIBRATION.
- 2) One channel may consist of a visual indication such as a level standpipe. The seven day surveillance applies to standpipe only. Level standpipe readout may be in the reactor building or by remote television.
- 3) Report all failures pursuant to Specification 6.9.1.8.
- 4) Only one readout required at Cab 217.



SURVEILLANCE REQUIREMENTS

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4.7 PLANT SYSTEMS

4.7.1 FEEDWATER SYSTEM

Deleted.

4.7.2 SECONDARY SERVICES CLOSED COOLING WATER SYSTEM

Deleted.

4.7.3 CLOSED CYCLE COOLING WATER SYSTEM

NUCLEAR SERVICES CLOSED COOLING SYSTEM

4.7.3.1 Deleted.

SURVEILLANCE REQUIREMENTS

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DECAY HEAT CLOSED WATER SYSTEM

4.7.3.2 Deleted.

MINI DECAY HEAT REMOVAL SYSTEM (MDHRS)

4.7.3.3 Deleted.