

October 10, 1989

Docket No. 50-320

Mr. M. B. Roche  
Vice President/Director, TMI-2  
GPU Nuclear Corporation  
P. O. Box 480  
Middletown, Pennsylvania 17057

Dear Mr. Roche:

SUBJECT: RECOVERY OPERATIONS PLAN CHANGE REQUEST NO. 44 (TAC 74531)

Reference: Letter from M. B. Roche, 4410-89-L-0087/04828, to NRC,  
dated August 22, 1989, re Recovery Operations Plan Change  
Request No. 44

The referenced letter proposed changes to section 4.2.8.1.1 of the  
Recovery Operations Plan (ROP). These changes would allow flexibility in  
the cross tying of 480 volt busses 2-35 to 2-45 and 2-36 to 2-46.

Based on our enclosed safety evaluation, we have concluded that the  
proposed change is justified and will not adversely affect the health and  
safety of the public. This change does not constitute an unreviewed  
safety question, nor does it involve a significant hazard. We, there-  
fore, approve your request for modification of ROP section 4.2.8.1.1.  
The revised ROP page is enclosed. Our approval of your ROP Change  
Request No. 44 is designated as change approval 42. These changes are  
effective as of the date of this letter.

Sincerely,

/s/

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

Enclosures:  
As stated

cc w/enclosures:  
See next page

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[TMIPC 9/15]

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

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Sincerely,

A handwritten signature in cursive script, reading "John F. Stolz".

John F. Stolz, Director  
Project Directorate 1-4  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:  
As stated

cc w/enclosures:  
See next page

Mr. M. B. Roche  
GPU Nuclear Corporation

Three Mile Island Nuclear Station  
Unit No. 2

cc:

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Mr. M. B. Roche  
GPU Nuclear Corporation

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Unit No. 2

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GPU Nuclear Corporation

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GPU Nuclear Corporation

ENCLOSURE

DOCKET NO. 50-320

Replace the following page of the TMI-2 Recovery Operations Plan with the enclosed page.

4.8-2

## SURVEILLANCE REQUIREMENTS

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### 4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS

#### 4.8.2.1 A.C. DISTRIBUTION

4.8.2.1.1 The specified A.C. busses shall be determined OPERABLE with tie breakers open between redundant busses at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4160 volt Bus # 2-1E  
4160 volt Bus # 2-2E  
4160 volt Busses # 2-3 and 2-4  
480 volt Busses #2-11E and 2-12E  
480 volt Busses # 2-21E and 2-22E  
480 volt Busses # 2-32, 2-35, 2-36\*, 2-42, 2-45\*, and 2-46\*

\*In the event that these A.C. bus pairs are not able to be restored to OPERABLE status within 8 hours as specified in Tech. Spec. 3.8.2.1.1, the tie breakers between these busses may remain in the closed position and a report shall be submitted to the NRC pursuant to 10 CFR 50.73.

4.8.2.1.2 The specified A.C. busses shall be determined OPERABLE at least once per 7 days by verifying correct breaker alignment and indicated power availability.

120 volt A.C. Vital Bus # 2-1V  
120 volt A.C. Vital Bus # 2-2V  
120 volt A.C. Vital Bus # 2-3V  
120 volt A.C. Vital Bus # 2-4V

#### D.C. DISTRIBUTION

4.8.2.2.1 Each D.C. bus train shall be determined OPERABLE and energized with tie breakers open at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4.8.2.2.2 Each 250/125-volt battery bank and charger shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying that:
  1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks.
  2. The pilot cell specific gravity, corrected to 77°F and full electrolyte level, is greater than or equal to 1.20.
  3. The pilot cell voltage is greater than or equal to 2.13 volts.
  4. The overall battery voltage is greater than or equal to 250/125 volts.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO FACILITY OPERATING LICENSE NO. DPR-73

GPU NUCLEAR CORPORATION

THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 2

DOCKET NO. 50-320

INTRODUCTION

On July 26, 1989, the 480 volt AC bus 2-46 transformer failed. The bus was re-energized by cross tying it to bus 2-36. GPU Nuclear Corporation (licensee) was unable to restore bus 2-46 transformer within 8 hours which placed the plant in an action statement of Technical Specification (TS) 3.8.2.1.1 and Recovery Operations Plan section 4.8.2.1.1. The failure was caused by degraded insulation on the primary side windings of the transformer. The licensee's maintenance organization estimated that it would take them 12 to 16 weeks to refurbish the transformer and up to a year to acquire a new transformer and install the replacement. The licensee's engineering staff evaluated the safety significance of cross tying bus pairs 2-35/2-45 and 2-36/2-46 for the remainder of the TMI-2 defueling. The licensee's safety evaluation found the proposal acceptable.

EVALUATION

The NRC staff reviewed the loads of the unit substation (USS) busses, the current status of the plant, and the nuclear safety related (NSR) and important to safety (ITS) functions performed by loads supplied by these busses. The staff and licensee also reviewed the ability of a single transformer to carry the loads imposed by the two cross tied busses.

The TMI-2 reactor is in the final stages of defueling and cleanup following the March 28, 1979 accident. Decay heat is less than one kilowatt. Many safety systems (i.e., decay heat removal and core flood tanks) are no longer required for plant safety and have been removed from the Technical Specifications and the Recovery Operations Plan. Due to a combination of reduced loads due to cleanup operations and conservative design of the original system there remains significant excess capacity of the transformers. The maximum load with both bus pairs cross tied is less than 30% of capacity for either transformer.

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The Nuclear Safety Related/Important to Safety (NSR/ITS) loads supported by the subject busses include fuel handling building and auxiliary building ventilation exhaust systems, one train of reactor building purge exhaust, and reactor building power receptacles. Even with both pairs of busses cross tied, independence of power supply to the above NSR/ITS loads would be maintained. The 2-36/2-46 couple would power one pair of auxiliary building exhaust fans and the 2-35/2-45 couple would power the other redundant pair of auxiliary building exhaust fans.

#### CONCLUSION

The transformers have more than twice the capacity to carry the loads imposed by cross tying bus pairs 2-35/2-45 and 2-36/2-46. The cross tying of the bus pairs will not result in a loss of redundancy. Based on the above evaluation, the proposed change is acceptable. It does not reduce safety margins or result in increased effluents to the environment. The impact of the proposed change falls within the scope of activities previously considered in the March 1981 Programmatic Environmental Impact Statement as supplemented.

DATED: October 10, 1989

Principal Contributor: Lee H. Thonus