



GPU Nuclear, Inc.  
Route 441 South  
Post Office Box 480  
Middletown, PA 17057-0480  
Tel 717-944-7621

1920-99-20643  
December 13, 1999

U.S. Nuclear Regulatory Commission  
Att: Document Control Desk  
Washington, DC 20555

Dear Sir:

Subject: Three Mile Island Nuclear Station, Unit 1 (TMI-1)  
Operating License No. DPR 50/Docket No. 50-289  
Supplement to Technical Specification Change Request No. 265

Enclosed is a supplement to TMI-1 Technical Specification Change Request (TSCR) No. 265, which was submitted on June 4, 1999. On October 5, 1999, a teleconference was held with the TMI Project Manager to discuss questions that arose during the NRC review. The purpose of this supplement is to withdraw a clarifying change to Technical Specification Bases page 3-26c and to provide written background information.

GPU Nuclear has concluded that this supplement does not constitute a change to the previously supplied significant hazards consideration analysis. Also enclosed is a Certificate of Service for this supplement, certifying service to the chief executives of the township and county in which the facilities are located, as well as the designated official of the Commonwealth of Pennsylvania, Bureau of Radiation Protection.

Sincerely,

James W. Langenbach  
Vice President and Director, TMI

AWM

Enclosures: 1) Withdrawal of a Clarifying Change to TS Bases page 3-26c and Background Information  
2) TMI-1 Technical Specifications Revised Bases Page  
3) Certificate of Service for supplement to TMI-1 TSCR 265

cc: Region I Administrator  
TMI-1 Senior Project Manager  
TMI Senior Resident Inspector  
File 98111

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**Enclosure 1**

**Withdrawal of a Clarifying Change to TS Bases page 3-26c and Background Information**

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Enclosure 1

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As part of our June 4, 1999 submittal, we requested a clarifying change to the Bases on page 3-26a to more accurately reference ANSI 5.1-1979. Based on our conversation with the staff on October 5, 1999, we agree the current wording is adequate and request withdrawal of that portion of the request.

Enclosure 2 contains the revised page 3-26a with the clarifying change withdrawn.

GPUN has also been requested to provide a written summary on information discussed in the October 5, 1999 conversation pertaining to the typical operation and administrative controls with respect to TMI's Decay Heat Removal System. The following describes the current guidance in use at TMI and provides some clarification of the Decay Heat Removal System physical design:

The DHR System design incorporates a common suction flow path from the Reactor Coolant System (RCS) that splits into a flow path for each DHR pump/cooler and then returns to the RCS. The TMI-1 design for decay heat removal uses many components that also have a design function for Emergency Core Cooling System (ECCS) Low Pressure Injection (LPI). This dual-function in the original design results in increased DHR System reliability for major portions of the system with respect to equipment failures.

The most significant consequences of the dual-function design considerations are the redundant Safety-Related supporting systems for each DHR System pump/cooler and the increased options for flow to the RCS. Each pump/cooler combination has a dedicated Safety-Related closed cooling water system and river water system that is used to remove core heat to the ultimate heat sink (river) and supply cooling water to the pumps. Each pump/cooler can be lined up through its respective normal LPI flow path to the RCS or cross-connected to flow through the alternate LPI flow path before returning to the RCS. The cross-connection is the same LPI and Long Term Recirculation flow path used in meeting the design criteria for the TMI-1 Core Flood Line Break accident.

TMI-1 has implemented administrative controls in the common pipe portions of DHR System to enhance the system reliability. The motor-operated valves in common sections of the DHR piping will normally be opened and then have their power supply breakers opened to minimize the chance of inadvertent closure whenever the valves are not required for overpressure protection of the DHR System. This directly applies to the motor-operated valves in the common suction piping and similar controls would be applied to the discharge flow path if the system were configured using common discharge piping.

Guidance for outage planning and scheduling is provided to assess the relative risk associated with the plant conditions during the outage. Factors such as water level in the RCS, water level in the Fuel Transfer Canal, Decay Heat Load, and the number of

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Enclosure 1

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OPERABLE DHR components are used in the analysis of risk level. Since the 13R refueling outage, TMI-1 has been using information and insight from computer based risk modeling software, like ORAM-SENTINAL, to augment outage planning and safety assessments. The overall effect has been to increase the availability and reliability of the DHR System during the outage periods.

Since original licensing, TMI-1 has increased the controls and attention placed on Decay Heat Removal. The Technical Specifications were amended to include requirements for Decay Heat Removal system operation via Amendment 119, issued in 1986. As described above, administrative controls were placed on the system to enhance flow path reliability. Training and procedural guidance has been enhanced on Decay Heat Removal System operation to incorporate industry experience and specific TMI analysis. Additionally, increased availability will be assured by this TSCR to eliminate the seven day Allowable Outage Time (AOT) for maintenance.

**Enclosure 2**

**TMI-1 Technical Specifications Revised Bases Page**

When the RCS is below 250°F, a single DHR string, or single OTSG and its associated emergency feedwater flowpath capable of supporting natural circulation is sufficient to provide removal of decay heat at all times following the cooldown to 250°F. The Decay Heat Removal String redundancy required by TS 3.4.2.1 is achieved with independent active components capable of maintaining the RCS subcooled. A single DHR flow path with redundant active components is sufficient to meet the requirements of TS 3.4.2.1.a and 3.4.2.1.b. The requirement to maintain two OPERABLE means of decay heat removal ensures that a single active failure does not result in a complete loss of decay heat removal capability. The requirement to keep a system in operation as necessary to maintain the system subcooled at the core outlet provides the guidance to ensure that steam conditions which could inhibit core cooling do not occur.

With the reactor vessel head removed and 23 feet of water above the reactor vessel flange, a large heat sink is available for core cooling. In this condition, only one DHR loop is required to be Operable because the volume of water above the reactor vessel flange provides a large heat sink which would allow sufficient time to recover active decay heat removal means.

Following extensive outages or major core off loading, the decay heat generation being removed from the Reactor Vessel is so low that ambient losses are sufficient to maintain core cooling and no other means of heat removal is required. The system is passive and requires no redundant or diverse backup system. Decay heat generation is calculated in accordance with ANSI 5.1-1979 to determine when this situation exists.

An unlimited emergency feedwater supply is available from the river via either of the two motor-driven reactor building emergency cooling water pumps for an indefinite period of time.

The requirements of Technical Specification 3.4.1.1 assure that before the reactor is heated to above 250°F, adequate auxiliary feedwater capability is available. One turbine driven pump full capacity (920 gpm) and the two half-capacity motor-driven pumps (460 gpm each) are specified. However, only one half-capacity motor-driven pump is necessary to supply auxiliary feedwater flow to the steam generators in the onset of a small break loss-of-coolant accident.

#### REFERENCES

- (1) UFSAR, Table 6.1-4 - ECCS "Single Failure Analysis"
- (2) UFSAR, 9.5 - Decay Heat Removal System

Enclosure 3

Certificate of Service for Supplement to  
TMI-1 Technical Specification Change Request No. 265

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF GPU NUCLEAR, Inc.

DOCKET NO. 50-289  
LICENSE NO. DPR-50

CERTIFICATE OF SERVICE

This is to certify that a copy of the supplement to Technical Specification Change Request No. 265 to Appendix A of the Operating License for Three Mile Island Nuclear Station Unit 1, has, on the date given below, been filed with executives of Londonderry Township, Dauphin County, Pennsylvania; Dauphin County, Pennsylvania; and the Pennsylvania Department of Environmental Resources, Bureau of Radiation Protection, by deposit in the United States mail, addressed as follows:

Dr. Edward Swartz, Chairman  
Board of Supervisors of  
Londonderry Township  
R.D. #1, Geyers Church Road  
Middletown, PA 17057

Ms. Sally S. Klein, Chairman  
Board of County Commissioners  
of Dauphin County  
Dauphin County Courthouse  
Harrisburg, PA 17120

Director, Bureau of Radiation Protection  
PA Department of Environmental Resources  
Rachel Carson State Office Building  
P.O. Box 8469  
Harrisburg, PA 17105-8469  
ATTN: Mr. Stan T. Maingi

GPU NUCLEAR, Inc.

BY:   
Vice President and Director, TMI

DATE: 12-13-99