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Docket No. 50-289

OCT 19 1983

Mr. Henry D. Hukill
Vice President
GPU Nuclear Corporation
P. O. Box 480
Middletown, Pennsylvania 17057

Dear Mr. Hukill:

SUBJECT: AMENDMENT NO. 89 TO FACILITY OPERATING LICENSE NO. DPR-50

The Commission has issued Amendment No. 89 to Facility Operating License No. DPR-50 for the Three Mile Island Nuclear Station, Unit No. 1 (TMI-1). This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated January 21, 1983.

This amendment increases by 50 psig the Reactor Coolant System pressure at or below which the High Pressure Injection (from 1725 psig to 1775 psig), Low Pressure Injection (from 875 psig to 925 psig), and Reactor Building Isolation (from 1725 psig to 1775 psig) actuation signals may be bypassed during plant cooldown and depressurization.

A copy of our Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's next Monthly Federal Register notice.

Sincerely,

Original Signed By

James Van Vliet, Project Manager
Operating Reactors Branch #4
Division of Licensing

Enclosures:
1. Amendment No. 89 to DPR-50
2. Safety Evaluation

cc w/enclosures:
See next page

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NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

METROPOLITAN EDISON COMPANY

JERSEY CENTRAL POWER AND 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.89
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 licensees), dated January 21, 1983, 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.

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:

   Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 89 , 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 the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

John F. Stolz, Chief
Operating Reactors Branch #4
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 19, 1983

ATTACHMENT TO LICENSE AMENDMENT NO. 89

FACILITY OPERATING LICENSE NO. DPR-50

DOCKET NO. 50-289

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

Remove Pages	Insert Pages
3-37	3-37
3-37a	3-37a

3.5.3 ENGINEERED SAFEGUARDS PROTECTION SYSTEM ACTUATION SETPOINTS

Applicability:

This specification applies to the engineered safeguards protection system actuation setpoints.

Objective:

To provide for automatic initiation of the engineered safeguards protection system in the event of a breach of Reactor Coolant System integrity.

Specification:

3.5.3.1 The engineered safeguards protection system actuation setpoints and permissible bypasses shall be as follows:

Initiating Signal	Function	Setpoint
High Reactor Building Pressure (1)	Reactor Building Spray	≤ 30 psig
	Reactor Building Isolation	≤ 30 psig
	High-Pressure Injection	≤ 4 psig
	Low-Pressure Injection	≤ 4 psig
	Start Reactor Building Cooling & Reactor Building Isolation	≤ 4 psig*
Low Reactor Coolant System Pressure	High Pressure Injection	≥ 1600(2) and ≥ 500(3) psig
	Low Pressure Injection	≥ 1600(2) and ≥ 500(3) psig
	Reactor Building Isolation	≥ 1600 psig (2)
4.16 kv E.S. Buses Undervoltage Relays		
Degraded Voltage (5)	Switch to Onsite Power Source and load shedding	3595 volts (4)
Degraded grid timer		10 sec (5)
Loss of voltage	Switch to Onsite Power Source and load shedding	2400 Volts (6)
Loss of voltage timer		1.5 sec (7)

(1) May be bypassed for reactor building leak rate test.
(2) May be bypassed below 1775 psig on decreasing pressure and is automatically reinstated before 1800 psig on increasing pressure.
(3) May be bypassed below 925 psig on decreasing pressure and is automatically reinstated before exceeding 950 psig on increasing pressure.

(4) Minimum allowed setting is 3560 v. Maximum allowed setting is 3650 v.
(5) Minimum allowed time is 8 sec. maximum allowed time is 12 sec.
(6) Minimum allowed setting is 2200 volts, maximum allowed setting is 2860 volts.
(7) Minimum allowed time is (1.0) second, maximum allowed time is (2.0) seconds.

*For Hot Functional Testing prior to Cycle 5 criticality, the 4 psig Reactor Building isolation signal is not required for Nuclear Service Closed Cycle Cooling water, Intermediate cooling water and Reactor Coolant Pump seal injection (return line only). Remote Manual and 30 psig Reactor Building isolation signals are required if the 4 psig signal is not operable for these lines.

Bases

High Reactor Building Pressure

The basis for the 30 psig and 4 psig setpoints for the high pressure signal is to establish a setting which would be reached in adequate time in the event of a LOCA, cover a spectrum of break sizes and yet be far enough above normal operation maximum internal pressures to prevent spurious initiation.

Low Reactor Coolant System Pressure

The basis for the 1600 and 500 psig low reactor coolant pressure setpoint for high and low pressure injection initiation is to establish a value which is high enough such that protection is provided for the entire spectrum to break sizes and is far enough below normal operating pressure to prevent spurious initiation. Bypass of HPI below 1775 psig and LPI below 925 psig, prevents ECCS actuation during normal system cooldown.

4.16 KV ES Bus Undervoltage Relays

The basis for the degraded grid voltage relay setpoint is to protect the safety related electrical equipment from loss of function in the event of a sustained degraded voltage condition on the offsite power system. The timer setting prevents spurious transfer to the onsite source for transient conditions.

The loss of voltage relay and timers detect loss of offsite power condition and initiate transfer to the onsite source with minimal time delay.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 89 TO FACILITY OPERATING LICENSE NO. DPR-50

METROPOLITAN EDISON COMPANY
JERSEY CENTRAL POWER AND LIGHT COMPANY
PENNSYLVANIA ELECTRIC COMPANY
GPU NUCLEAR CORPORATION

THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 1

DOCKET NO. 50-289

Introduction

By letter dated January 21, 1983, GPU Nuclear Corporation (the licensee) requested that the Technical Specifications for TMI-1 be changed to provide a 50 psig increase in the allowable setpoints at which the Emergency Core Cooling System (ECCS) injection systems can be manually bypassed during cooldown. The High Pressure Injection (HPI) bypass and Reactor Building Isolation bypass setpoints would be increased from 1725 to 1775 pounds per square inch gauge (psig). The Low Pressure Injection (LPI) bypass setpoint would be increased from 875 to 925 psig. The setpoints for which the manual bypasses would be automatically removed on rising reactor system pressure will remain unchanged at 1800 psig for the HPI and 950 psig for the LPI.

Evaluation

The licensee requests the increases in the maximum allowable bypass setpoints to reduce the potential for inadvertent ECCS actuation during cooldown operations. The licensee believes that uncertainties in instrument calibrations would make inadvertent ECCS actuation more likely with the currently specified setpoints. We have reviewed the change and agree that the increases are in the conservative direction to prevent inadvertent ECCS actuation during cooldown and will not affect ECCS operation since the setpoints to automatically reset and actuate the engineered safeguards systems are not changed. We have further evaluated the change to determine if transients or a loss of coolant during cooldown would pose a safety concern with the proposed setpoint changes. The High Pressure Injection System would not be bypassed until approximately four hours after reactor shutdown at which time the decay heat generation rate would be much lower than was assumed for the design basis transients and accidents analyzed in the Final Safety Analysis Report. The LPI would not be bypassed for an additional hour. Before the ECCS systems are bypassed, sufficient boron is injected into the primary system to preclude criticality at cold shutdown. This action protects against recriticality in the event of an overcooling transient. During cooldown, the operator monitors the reactor coolant saturation margin to prevent coolant boiling and immediately upon loss of saturation margin is instructed to manually actuate ECCS to provide the necessary makeup cooling

water. Since the high containment pressure isolation signal will remain in effect, the proposed increase in the Reactor Building Isolation setpoint manual bypass on decreasing pressure should have no effect in protection against any sudden increase in containment pressure and reactor building isolation. We have, therefore, concluded that the revised ECCS bypass pressures are acceptable and that no new accident is introduced by the proposed setpoint changes.

Environmental Consideration

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

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: October 19, 1983

The following NRC personnel have contributed to this Safety Evaluation: W. Jensen, T. Dunning, D. Wigginton.