UNITED STATES
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. 81
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 November 10, 1981, 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 Appendices A and B, as revised through Amendment No. 81, 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

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: FEB 28 1983

ATTACHMENT TO LICENSE AMENDMENT NO. 81

FACILITY OPERATING LICENSE NO. DPR-50

DOCKET NO. 50-289

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

Remove	Insert
iii	iii
--	3-95a (new)
--	3-95b (new)
--	3-95c (new)

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3.20 SPECIAL TEST EXCEPTIONS

3.20.1 Low Power Natural Circulation Test (LPNCT)

Applicability

During the performance of the Low Power Natural Circulation Test for Cycle 5 Restart. This Technical Specification is cancelled following the completion of this test.

Objective

To provide meaningful technical information concerning natural circulation at TMI-1 and enhance operator training under both normal and certain degraded conditions.

Specification:

3.20.1.1 The limitations of Specifications 3.1.3.1 and 3.1.3.3 may be suspended during the LPNCT - Determination of Indicated Reactor Power Correction Factor provided:

a. The RPS overpower trip is less than or equal to 7% full power.

b. With the RCS temperature (T (cold)) below 525°F, continuous visual monitoring will be initiated within 15 minutes. A manual trip will be initiated if the RCS temperature (T (cold)) drops below 520°F.

3.20.1.2 The limitations of Specifications 2.1.2, 2.3.1, 3.5.1.1, 3.5.1.3 and 3.1.1.1 a. and b., may be suspended during the LPNCT - Establishment of Natural Circulation Flow/Determination of the Effect of Decreased OTSG Levels on Natural Circulation Flow. Suspension of Specification 2.3.1 is limited to Items 1 (max. power), 2 (flux/imbalance/flow), and 3 (pump power) on Table 2.3-1. Suspension of Specifications 3.5.1.1 and 3.5.1.3 is limited only to bypassing the automatic trip functions of the following instrumentation in Table 3.5-1: Item A.7 (flux/imbalance/flow instruments), Item A.9 (pump power instruments) and Items B.1 and B.2 (other reactor trips). Suspension of these specifications is permitted provided:

a. The control rod index shall be maintained within the limits required for 100% FP operation specified in T.S. Figure 3.5-2A.

b. The subcooling margin is greater than or equal to 50°F.

c. The RPS Overpower trip is less than or equal to 7% full power.

d. The average of the five highest core exit thermocouple temperatures is less than or equal to 610°F.

e. T hot is maintained less than or equal to 600°F.

With the reactor coolant system outside the limits of any of the limits of a. through e., a manual trip of the reactor shall be initiated.

3.20.1.3 The limitations of Specifications 2.1.1, 2.1.2, 2.3.1, 3.1.1.1 a. & b., 3.5.1.1 and 3.5.1.3 may be suspended during the LPNCT - Verification of the adequacy of the Pressurizer Heaters on the Emergency Bus. Suspension of Specification 2.3.1 applies to all items on Table 2.3-1 except Item 4 (High RCS pressure), Item 7 (RCS temperature, max.) and Item 8 (High RB pressure). Suspension of Specifications 3.5.1.1 and 3.5.1.3 is limited only to bypassing the automatic trip functions of the following instrumentation in Table 3.5-1: Item A.6 (pressure-temperature instrument), Item A.7 (flux/imbalance/flow instrument), Item A.9 (pump power instrument) and Items B.1 and B.2 (other reactor trips). Suspension of these specifications is permitted provided:

a. **The control rod index shall be maintained within the limits required for 100% full power operation specified in T.S. Figure 3.5-2A.**

b. **The subcooling margin is greater than or equal to 20° F.**

c. **The RPS Overpower trip is less than or equal to 7% full power.**

d. The average of the five highest core exit thermocouple termperatures is less than or equal to 610° F.

e. RCS pressure is between 1700 psig and 2300 psig.

f. The low RCS pressure trip is greater than or equal to 1700 psig.

g. T_{hot} is maintained less than or equal to 600°F.

With the reactor coolant system outside the limits of any of the above limits of a. - g., a manual trip to the reactor shall be initiated.

Bases

During the performance of the special tests, the combination of administrative limits on reactor power ≤5% FP and subcooling margin ≥50°F, RPS overpower trip limit ≤7% FP and manual trip limits of core exit thermocouple temperature ≤610°F, loop T (hot) ≤600°F, loop Tave ≥525°F, and subcooling margin ≥20°F will insure that the integrity of the fuel cladding will be maintained.

During the performance of the special tests, removal of forced flow will be initiated at a reactor thermal power level of approximately 3% FP with an administrative control limit of 5% FP and RPS overpower trip setting of 7% FP. Table 14-13 of the Three Mile Island, Unit 1 FSAR provides calculated values that indicate that the expected natural circulation flow rates at less than or equal to 5% FP will be in excess of flow rates required for the removal of core decay heat without formation of voids in the core or reactor outlet piping.

The power imbalance portion of overpower trip based on reactor coolant flow and reactor power imbalance protects the core from center-line fuel melt by limiting the maximum linear heat rate (Kw/ft) in the fuel at high reactor thermal power levels. The overpower trip setting at 7% FP will prevent exceeding the Kw/ft limit regardless of the core imbalance.

The low pressure and variable low pressure trip setpoints have been established to maintain the DNB ratio $\geq$ 1.3 for those design accidents that result in RCS pressure reductions. To prevent an inadvertent reactor trip during the performance of 3.20.1.3, the variable low pressure trip will be bypassed.

However, constant operator surveillance of reactor power level, reactor coolant system temperatures and pressure, and subcooling margin and operator action will be relied on to provide the protection function normally furnished by this RPS trip. This will be accomplished by manual reactor trip if any of the limits specified are reached.

The low pressure trip prevents operation at pressures which might reduce DNBR margin and provides for reactor trip prior to ESAS actuation on low RCS pressure. In order to retain some automatic low pressure protection and still provide operation flexibility and prevent an inadvertant reactor trip during the performance of 3.20.1.3 only, the low pressure trip setpoint will be lowered to 1700 psig.

Based on TMI-1, Cycle 5 Physics Test Manual predictions, it is expected that a slightly negative moderator temperature coefficient will exist for the conditions of the low power natural circulation testing. This prediction will be verified based on the hot zero power moderator temperature coefficient measured during the zero power physics testing program prior to power escalation.

This technical specification delineates the conditions of the unit instrumentation and safety circuits necessary to assure reactor safety. Technical Specification 3.5.1.1 states that the reactor shall not be in a startup mode or in a critical state unless the requirements of Table 3.5-1, columns A and B are met. Parameter indications from these specified instrument channels will be available at all times but the trip functions for flux/imbalance/flow, power/number of pumps, and pressure/temperature (variable low pressure) will be defeated during previously specified tests.

Technical Specification 3.5.1.3 states that if the number of protection channels operable is less than the limit given in Table 3.5-1, column A, operation shall be limited as specified in Column C. In the cases of the above three protection channels defeated, operation would be limited to Hot Shutdown.

It should be noted that during natural circulation testing, the sensitivity of the reactor power (power range) indicator will be increased such that the actual power is 10 times less than the "indicated" reactor power (i.e. 50% power read on the meter equals 5% power). This will necessitate bypassing the anticipatory trips for loss of turbine (<20% indicated reactor power) and loss of both main feed pumps ($\leq$ 7% indicated reactor power).

Technical Specification Section 3.1.9 "Low Power Physics Testing Restrictions" does not apply during this test.

References

(1) FSAR Chapter 14