



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

METROPOLITAN EDISON COMPANY

JERSEY CENTRAL POWER AND LIGHT COMPANY

PENNSYLVANIA ELECTRIC COMPANY

DOCKET NO. 50-289

THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 70
License No. DPR-50

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Metropolitan Edison Company, Jersey Central Power and Light Company and Pennsylvania Electric Company (the licensees), dated November 7, 1980, 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.

8108120004 810729
PDR ADDCK 05000289
P
PDR

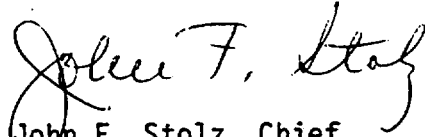
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.c.(2) of Facility Operating License No. DPR-50 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 70, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective 90 days from the date of this amendment.

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: July 29, 1981

ATTACHMENT TO LICENSE AMENDMENT NO. 70

FACILITY OPERATING LICENSE NO. DPR-50

DOCKET NO. 50-289

Revise Appendix A as follows:

<u>Remove Page</u>	<u>Insert Page</u>
3-29	3-29
3-30	3-30
3-32	3-32
	3-32a
3-37	3-37
	3-37a
4-7	4-7
4-39	4-39
4-40	4-40
4-46	4-46

The changes on the revised page are shown by marginal lines.

TABLE 3.5-1

INSTRUMENTS OPERATING CONDITIONS

Functional Unit	(A) Minimum Operable Channels	(B) Minimum Degree of Redundancy	(C) Operator Action if Conditions of Column A Cannot be Met
<u>Reactor Protection System</u>			
1. Manual pushbutton	1	0	Maintain hot shutdown
2. Power range instrument channel	3(a)	1(a)	Maintain hot shutdown
3. Intermediate range instrument channels	1	0	Maintain hot shutdown (b)
4. Source range instrument channels	1	0	Maintain hot shutdown (c)
5. Reactor coolant temperature instrument channels	2	1	Maintain hot shutdown
6. Pressure-temperature instrument channels	2	1	Maintain hot shutdown
7. Flux/imbalance/flow instrument channels	2	1	Maintain hot shutdown

TABLE 3.5-1 Continued

INSTRUMENTS OPERATING CONDITIONS

Functional Unit	(A) Minimum Operable Channels	(B) Minimum Degree of Redundancy	(C) Operator Action if Conditions of Column A Cannot be Met
<u>Reactor Protection System</u>			
8. Reactor coolant pressure			
a. High reactor coolant pressure instrument channels	2	1	Maintain hot shutdown
b. Low reactor coolant pressure instrument channels	2	1	Maintain hot shutdown
9. Power/number of pumps instrument channels	2	1	Maintain hot shutdown
10. High reactor building pressure channels	2	1	Maintain hot shutdown
(a) For channel testing, calibration, or maintenance the minimum number of operable channels may be two and a degree of redundancy of one for a maximum of four hours.			
(b) When 2 of 4 power range instrument channels are greater than 10 percent full power, hot shutdown is not required.			
(c) When 1 of 2 intermediate range instrument channels is greater than 10^{-10} amps, or 2 of 4 power range instrument channels are greater than 10 percent full power, hot shutdown is not required.			

TABLE 3.5-1 Continued

INSTRUMENTS OPERATING CONDITIONS

<u>Functional Unit</u>	(A)	(B)	(C)
Engineered Safeguards	Minimum Operable Analog Channels	Minimum Degree of Redundancy	Operator Action if Conditions of Column A and B cannot be met(a)
3. Reactor Building Isolation and Reactor Building Cooling System			
a. Reactor Building 4 psig * Instrument Channel	2	1	Hot Shutdown
b. Manual Pushbutton	2	1	Hot Shutdown
4. Reactor Building Spray System			
a. Reactor Building 30 psig Instrument Channel	2 (d)	1	Hot Shutdown
b. Spray Pump Manual Switches (c)	2	1	Hot Shutdown

*For hot functional testing, prior to Cycle 5 criticality the 4 psig signal is not required for Nuclear Service Closed Cycle Cooling water, Intermediate Cooling and Reactor Coolant Pump Seal Injection (return line only). Two operable channels of a 30 psig Reactor Building isolation signal with a minimum degree of redundancy of 1 are required if the 4 psig signal is not operable for these lines.

TABLE 3.5-1 (Continued)
INSTRUMENTS OPERATION CONDITIONS

<u>FUNCTIONAL UNIT</u>	(A) Minimum Operable Channels	(B) Minimum degree of redundancy	(C) Operator Action if Conditions of Column A and B Cannot be Met (a)
5. 4.16KV ES Bus Undervoltage Relays			
1. Degraded Grid Voltage relays	2	1	e
2. Loss of Voltage relay	2	1	e
(a) If minimum conditions are not met within 24 hours, the unit shall then be placed in a cold shutdown condition.			
(b) Also initiates Low Pressure Injection.			
(c) Spray valves opened by manual pushbutton listed in item 3 above.			
(d) Two out of three switches in each actuation channel operable.			
(e) If a relay fails in the untripped state, it shall be placed in a tripped state within 12 hours to obtain a degree of redundancy of 1. The relay may be removed from the tripped state for up to 2 hours for functional testing pursuant to Table 4.1-1.			

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:

<u>Initiating Signal</u>	<u>Function</u>	<u>Setpoint</u>
High Reactor Building Pressure (1)	Reactor Building Spray	≤ 30 psig
	High-Pressure Injection	≤ 4 psig
	Low-Pressure Injection	≤ 4 psig
	Start Reactor Building Cooling & Reactor Building Isolation	≤ 4 psig*
Low Reactor Coolant	High Pressure Injection	≥ 1500(2) and
		≥ 500(3) psig
System Pressure	Low Pressure Injection	≥ 1500(2) and
		≥ 500(3) psig
4.16 kv E.S. Buses Undervoltage Relays	Switch to Onsite Power Source and load shedding	3595 volts (4)
		10 sec (5)
Degraded Voltage (5)	Switch to Onsite Power Source and load shedding	2400 Volts (6)
Degraded grid timer		1.5 sec (7)
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 1650 psig and is automatically reinstated above 1650 psig.

- (3) May be bypassed below 900 psig and is automatically reinstated above 900 psig.
- (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 such that protection is provided for the entire spectrum of break sizes and is far enough above normal containment internal pressures to prevent spurious initiation.

Low Reactor Coolant System Pressure

The basis for the 1500 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.

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.

TABLE 4.1-1 (Continued)

<u>CHANNEL DESCRIPTION</u>	<u>CHECK</u>	<u>TEST</u>	<u>CALIBRATE</u>	<u>REMARKS</u>
38. Steam Generator Water Level	W	NA	R	
39. Turbine Overspeed Trip	NA	R	NA	
40. Sodium Thiosulfate Tank Level Indicator	NA	NA	R	
41. Sodium Hydroxide Tank Level Indicator	NA	NA	R	
42. Diesel Generator Protective Relaying	NA	NA	R	
43. 4 KV ES Bus Undervoltage Relays (Diesel Start)				
a. Degraded Grid	NA	M(1)	R	(1) Relay operation will be checked by local test pushbuttons
b. Loss of Voltage	NA	M(1)	R	(1) Relay operation will be checked by local test pushbuttons
44. Reactor Coolant Pressure DH Valve Interlock Bistable	S(1)	M	R	(1) When reactor coolant system is pressurized above 300 psig or Taves is greater than 200°F.
S - Each Shift	T/W - Twice per week			R - Each Refueling Period
D - Daily	B/M - Every 2 months			NA - Not Applicable
W - Weekly	Q - Quarterly			B/W - Every two weeks
M - Monthly	P - Prior to each startup if not done previous week			

4.5 EMERGENCY LOADING SEQUENCE AND POWER TRANSFER, EMERGENCY CORE COOLING SYSTEM AND REACTOR BUILDING COOLING SYSTEM PERIODIC TESTING

4.5.1 Emergency Loading Sequence

Applicability:

Applies to periodic testing requirements for safety actuation systems.

Objective:

To verify that the emergency loading sequence and automatic power transfer is operable.

Specifications:

4.5.1.1 Sequence and Power Transfer Test

- a. During each refueling interval, a test shall be conducted to demonstrate that the emergency loading sequence and power transfer is operable.
- b. The test will be considered satisfactory if the following pumps and fans have been successfully started and the following valves have completed their travel on preferred power and transferred to the emergency power as evidenced by the control board component operating lights, and either the station computer or pressure/flow indication.

- M. U. Pump
- D. H. Pump and D. H. Injection Valves and D. H. Supply Valves
- R. B. Cooling Pump
- R. B. Ventilators
- D. H. Closed Cycle Cooling Pump
- N. S. Closed Cycle Cooling Pump
- D. H. River Cooling Pump
- N. S. River Cooling Pump
- D. H. and N. S. Pump Area Cooling Fan
- Screen House Area Cooling Fan
- Spray Pump. (Initiated in coincidence with a 2 out of 3 R. B. 30 psig Pressure Test Signal.)

- c. Following successful transfer to the emergency diesel, the diesel generator breaker will be opened to simulate trip of the generator then reclosed to verify block load on the reclosure.

4.5.1.2 Sequence Test

- a. At intervals not to exceed 3 months, a test shall be conducted to demonstrate that the emergency loading sequence is operable, this test shall be performed on either preferred power or emergency power.
- b. The test will be considered satisfactory if the pumps and fans listed in 4.5.1.1b have been successfully started and the valves listed in 4.5.1.1b have completed their travel as evidenced by the control board component operating lights, and either the station computer or pressure/flow indication.

Bases

The Emergency loading sequence and automatic power transfer test verifies the operation

of the pumps associated with the emergency core cooling system and reactor building cooling system. In addition, it performs a functional verification of the loss of voltage relays, the block loading circuits, and the emergency diesel generators.

REFERENCES

- (1) FSAR Section 7
- (2) FSAR Section 1.4
- (3) Specification 4.6.1b

4.6 EMERGENCY POWER SYSTEM PERIODIC TESTS

Applicability:

Applies to periodic testing and surveillance requirement of the emergency power system.

Objective:

To verify that the emergency power system will respond promptly and properly when required.

Specification:

The following tests and surveillance shall be performed as stated:

4.6.1 Diesel Generators

- a. Manually-initiate start of the diesel generator, followed by manual synchronization with other power sources and assumption of load by the diesel generator up to the name-plate rating (3000 kw). This test will be conducted every month on each diesel generator. Normal plant operation will not be affected.
- b. Automatically start and loading the emergency diesel generator in accordance with specification 4.5.1.1.b/c including the following:
 - (1) Verify that the diesel generator starts from ambient condition upon receipt of the ES signal and is ready to load in ≤ 10 seconds.
 - (2) Verify that the diesel block loads upon simulated loss of offsite power in ≤ 30 seconds.
 - (3) The diesel operates with the permanently connected and auto connected load for ≥ 5 minutes.
 - (4) The diesel engine does not trip when the generator breaker is opened while carrying emergency loads.
 - (5) The diesel generator block loads and operates for ≥ 5 minutes upon reclosure of the diesel generator breaker.
- c. Each diesel generator shall be given an inspection at least annually in accordance with the manufacturer's recommendations for this class of stand-by service.

4.6.2 Station Batteries

- a. The voltage, specific gravity, and liquid level of each cell will be measured and recorded monthly.
- b. The voltage and specific gravity of a pilot cell will be measured and recorded weekly.
- c. Each time data are recorded, new data shall be compared with old to detect signs of abuse or deterioration.