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. 32
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 February 10, 1977, as revised August 12, 1977, 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:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 32, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment becomes effective 30 days after the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 30, 1977

ATTACHMENT TO LICENSE AMENDMENT NO. 32

FACILITY OPERATING LICENSE NO. DPR-50

DOCKET NO. 50-289

Revise Appendix A as follows:

Remove Pages	Insert Pages
1-5	1-5
-	3-86 thru 3-93
-	4-72 thru 4-73c
-	4-74 thru 4-76
6-2	6-2
6-3	6-3
6-6a	6-6a
6-11	6-11
-	6-26

Changes on the revised pages are shown by marginal lines.

1.6 POWER DISTRIBUTION

1.6.1 QUADRANT POWER TILT

Quadrant power tilt is defined by the following equation and is expressed in percent.

$$100 \left[\frac{\text{Power in any core quadrant}}{\text{Average power of all quadrants}} - 1 \right]$$

The quadrant tilt limits are stated in Specification 3.5.2.4.

1.6.2 REACTOR POWER IMBALANCE

Reactor power imbalance is the power in the top half of the core minus the power in the bottom half of the core expressed as a percentage of rated power. Imbalance is monitored continuously by the RPS using input from the power range channels. Imbalance limits are defined in Specification 2.1 and imbalance setpoints are defined in Specification 2.3.

1.7 CONTAINMENT INTEGRITY

Containment integrity exists when the following conditions are satisfied:

a. The equipment hatch is closed and sealed and both doors of the personnel hatch and emergency hatch are closed and sealed except as in "b" below.

b. At least one door on each of the personnel hatch and emergency hatch is closed and sealed during refueling or personnel passage through these hatches.

c. All nonautomatic containment isolation valves and blind flanges are closed as required by the "Containment Integrity Check List" attached to the operating procedure "Containment Integrity and Access Limits."

d. All automatic containment isolation valves are operable or locked closed.

e. The containment leakage determined at the last testing interval satisfies Specification 4.4.1.

1.8 FIRE SUPPRESSION WATER SYSTEM

A FIRE SUPPRESSION WATER SYSTEM shall consist of: a water source, gravity tank or pump and distribution piping with associated sectionalizing control or isolation valves. Such valves include yard hydrant curb valves, and the first valve upstream of the water flow alarm device on each sprinkler, hose standpipe or spray system riser.

3.18 FIRE PROTECTION

3.18.1 FIRE DETECTION INSTRUMENTATION

Applicability: At all times when equipment in that fire detection zone is required to be operable.

Objective: To insure adequate fire detection capability.

Specification:

3.18.1.1 The minimum fire detection instrumentation for each fire detection zone shown in Table 3.18-1 shall be operable.

3.18.1.2 With the number of OPERABLE fire detection instruments less than required by Table 3.18-1.

a. Within 1 hour, establish a fire watch patrol to inspect the zone with the inoperable instrument(s) at least once per hour, and

b. Restore the inoperable instrument(s) to OPERABLE status within 14 days or prepare and submit a special report to the Commission within the next 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the instrument(s) to OPERABLE status.

Bases

OPERABILITY of the fire detection instrumentation ensures that adequate warning capability is available for the prompt detection of fires. This capability is required in order to detect and locate fires in their early stages. Prompt detection of fires will reduce the potential for damage to safety related equipment and is an integral element in the overall facility fire protection program.

In the event that a portion of the fire detection instrumentation is inoperable, the establishment of frequent fire patrols in the affected areas is required to provide detection capability until the inoperable instrumentation is restored to operability.

TABLE 3.18-1

FIRE DETECTION INSTRUMENTS

	Instrument Location	Total Number of Detectors		Minimum Instruments Operable	
		Heat	Smoke	Heat	Smoke
1.	Control Building Elev. 355'				
	Control Room	0	4	NA	2
	Computer Room	0	4	NA	2
2.	Control Building Elev. 338'				
	1D 4160 V SWGR	0	1	NA	1
	1E 4160 V SWGR	0	1	NA	1
	ESAS Cabinets	0	1	NA	1
	Cable Spreading	4	1	2	1
3.	Control Building Elev. 322'				
	1P 480 V SWGR	0	1	NA	1
	1S 480 V SWGR	0	1	NA	1
	Battery Room A	0	1	NA	1
	Battery Room B	0	1	NA	1
	Inverter Room A	0	1	NA	1
	Inverter Room B	0	1	NA	1
	Remote Shutdown Panel	0	1	NA	1
4.	Diesel Generators				
	Diesel A	1	0	1	NA
	Diesel B	1	0	1	NA
5.	Screen House	2	0	1	NA
6.	Aux. and Fuel Handling Building	1	1	1	1

3.18.2 FIRE SUPPRESSION WATER SYSTEM

Applicability: All operating conditions

Objective: To insure adequate fire suppression capability

Specification:

3.18.2.1 The Fire Suppression Water System shall be operable with:

a. Two (2) high pressure pumps of the following four (4), shall be operable with their discharge aligned to the fire suppression header and automatic initiation logic operable. Any two of the pumps provide combined capacity greater than 3575 gal/min:

1. Circulating Water Flume Diesel Fire Pump
2. River Water Diesel Fire Pump, Unit 1
3. River Water Diesel Fire Pump, Unit 2
4. River Water Motor Fire Pump, Unit 1

b. Two (2) separate water supplies of the following four (4) each containing a minimum of 90,000 gallons:

1. Altitude Tank
2. Circulating Water Flume
3. Unit I River Water Intake
4. Unit II River Water Intake

c. An operable flow path capable of taking suction from two of the operable sources listed in b, above, and transferring the water through distribution piping with operable sectionalizing control or isolation valves to the yard hydrant curb valves and the front valve ahead of the water flow alarm device on each sprinkler, hose standpipe or spray system riser.

3.18.2.2

a. With less than the above required equipment OPERABLE restore the inoperable equipment to OPERABLE status within 7 days or prepare and submit a Special Report to the Commission within the next 30 days outlining the plans and procedures to be used to provide for the loss of redundancy in this system.

b. With the FIRE SUPPRESSION WATER SYSTEM INOPERABLE:

1. Establish a backup FIRE SUPPRESSION WATER SYSTEM within 24 hours, and provide Prompt Notification with Written Follow-up pursuant to Specification 6.9.2.A outlining the actions taken, the cause of the inoperability, and the plans and schedule for restoring the system to OPERABLE status, or

2. Be in hot shutdown within 1 hour and cold shutdown within the next 30 hours.

3.18.3 DELUGE/SPRINKLER SYSTEMS

Applicability: At all times when equipment in the area is required to be operable.

Objective: To assure adequate fire suppression capability.

Specification:

3.18.3.1 The Deluge and/or Sprinkler Systems located in the following areas shall be operable.

a. Diesel Generator and Radiator Rooms
b. Diesel Generator Combustion Air Intakes
c. Diesel Generator Cooling Air Intake
d. Control Building Filter (AH-F3A, AH-F3B) Rooms
e. Air Intake Tunnel (3 zones)
f. Charcoal Filter (AH-F10, AH-F11)
g. Intake Screen Pump House
h. Diesel-driven fire pump areas
i. Control Building at elevation 306'.

3.18.3.2 With any of the above deluge and/or sprinkler systems in any room or zone inoperable:

a. Establish a continuous fire watch with backup fire suppression equipment for the unprotected area(s), within one hour except that no fire watch is required in the air intake tunnel.

b. Restore the system to OPERABLE status within 14 days or prepare and submit a Special Report to the Commission within the next 30 days outlining the action taken, the cause of inoperability and the plans and schedule for restoring the system to OPERABLE status.

3.18.4 CO_2 SYSTEM

Applicability: At all times when the equipment in the area is required to be operable.

Objective: To insure adequate fire suppression capability.

Specification:

3.18.4.1 The CO_2 system for the Cable Spreading Room shall be operable with a minimum level corresponding to 8500 lbm and a minimum pressure of 300 psig in the associated storage tank(s).

3.18.4.2 With the CO_2 system for the Cable Spreading Room inoperable:

a. Establish a continuous fire watch with backup fire suppression equipment for the unprotected area within one hour.

b. Restore the system to OPERABLE status within 14 days or prepare and submit a Special Report to the Commission within the next 30 days outlining the action taken, the cause of inoperability and the plans and schedule for restoring the system to OPERABLE status.

3.18.5 HALON SYSTEM

Applicability: At all times except when the Control Building ventilation is on recirculation.

Objective: To assure adequate fire suppression for the Air Intake tunnel.

Specification:

3.18.5.1 The Halon Systems for the air intake tunnel shall be operable except for testing or maintenance not to exceed 48 hours that requires the air tunnel to be occupied. The Halon storage tanks shall have at least 90% of full charge pressure and 95% full charge weight.

3.18.5.2 If the Halon system in any zone is inoperable:

a. The Air Intake Tunnel Deluge system shall be in service unless the tunnel is occupied.

b. Restore the system to OPERABLE status within 14 days or prepare and submit a Special Report to the Commission within the next 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to operable status.

3.18.6 FIRE HOSE STATIONS

Applicability: At all times when the equipment in the area is required to be operable.

Objective: To insure adequate fire suppression capability.

Specification:

3.18.6.1 The fire hose stations listed in Table 3.18-2 shall be operable or an additional hose must be routed to the unprotected area from an operable hose station within one (1) hour.

Bases:

The OPERABILITY of the fire suppression systems ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety related equipment is located. The fire suppression system consists of the water system, spray and/or sprinklers, CO_2, Halon and fire hose stations. The collective capability of the fire suppression systems is adequate to minimize potential damage to safety related equipment and is a major element in the facility fire protection program.

In the event that portions of the fire suppression systems are inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the inoperable equipment is restored to service.

In the event the fire suppression water system becomes inoperable, immediate corrective measures must be taken since this system provides the major fire suppression capability of the plant. The requirement for a twenty-four hour report to the Commission provides for prompt evaluation of the acceptability of the corrective measures to provide adequate fire suppression capability for the continued operation of the nuclear plant.

Table 3.18-2

HOSE STATIONS

Intermediate Building

1. Fire hose near northeast piping chamber stairway at elev. 309'. (2 stations)

Auxiliary Building

1. Fire hose near stairway at northeast end of building near valve room at elev. 285'.
2. Fire hose near waste evaporator condensate tank and auxiliary steam condensate return unit elev. 285'.
3. Fire hose near stairway at northeast end of auxiliary building and engineered safeguards control center, elev. 309'.
4. Fire hose near radioactive waste control center, elev. 309'.

Turbine Building

1. Fire hose along west side of building near 12th stage extraction feedwater heaters, elev. 326'.
2. Fire hose along west side of building near 10th stage extraction feedwater heaters, elev. 359'.

4.17 FIRE PROTECTION SYSTEMS

4.17.1 FIRE PROTECTION INSTRUMENTS

Applicability: Instruments listed in Table 3.18-1

Objective: To insure operability of fire detection instruments.

Specification:

4.17.1.1 Each of the fire detection instruments listed in Table 3.18-1 shall be demonstrated operable:

a. Once each 6 months by a Channel Functional Test.

4.17.1.2 The non-supervised circuits between the local panels for the instruments in Table 3.18-1 and the control room shall be demonstrated OPERABLE at least once per month.

4.17.2 FIRE SUPPRESSION WATER SYSTEM

Applicability: Fire Suppression Water System as defined in Specification 1.8.

Objective: To insure system operability.

Specification:

4.17.2.1 The system shall be demonstrated operable:

a. Once per 7 days by verifying 90,000 gallons of water in the altitude tank, equivalent level in the circulating water flume, and/or equivalent level in the river.

b. Once per month on a staggered test basis by starting each pump and operating it for 15 minutes on recirculation flow.

c. At least once per 31 days by verifying that each valve (manual, power operated or automatic) in the flow path is in its correct position.

d. At least once per 6 months by performance of a system flush.

e. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel.

f. At least once per 18 months by performing a system functional test which includes simulated automatic actuation of the system throughout its operating sequence, and:

1. Verifying that each automatic valve in the flow path actuates to its correct position on a test signal,

2. Verifying that each pump develops at least 2500 gpm at a system head of 260 feet for FS-P-1 and 294 feet for FS-P-2 and FS-P-3,

3. Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel, and

4. Verifying that each high pressure pump starts to maintain the fire suppression water system pressure $\geq$ 125 psig.

g. At least once per 3 years by performing a flow test of the system in accordance with Chapter 5, Section 11 of the Fire Protection Handbook, 14th Edition, published by the National Fire Protection Association.

4.17.2.2 The fire pump diesel engines shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying;

1. The fuel storage tanks contain at least 250 gallons of fuel, and

2. The diesels start from ambient conditions and operate for at least 20 minutes.

b. At least once per 92 days by verifying that a sample of diesel fuel from each fuel storage tank, obtained in accordance with ASTM-D270-65, is within the acceptable limits specified in Table 1 of ASTM-D975-74 with respect to viscosity, water content and sediment for the type of fuel specified for the diesels.

c. At least once per 18 months, during shutdown, by:

1. Subjecting each diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for the class of service, and

2. Verifying each diesel starts from ambient conditions on the auto-start signal and operates for $\geq$ 20 minutes while loaded with the fire pump.

4.17.2.3 Each fire pump diesel starting 24-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 battery is above the plates, and

2. The overall battery voltage is $\geq$ 24 volts.

b. At least once per 92 days by verifying that the specific gravity is appropriate for continued service of the battery.

c. At least once per 18 months by verifying that:

1. The batteries, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration, and

2. The battery-to-battery and terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material.

4.17.3 DELUGE/SPRINKLER SYSTEMS

Applicability: Deluge and Sprinkler Systems.

Objective: To insure system operability.

Specification:

4.17.3.1 The deluge and/or sprinkler systems listed in Specification 3.18.3.1 shall be demonstrated to be operable:

a. Once per month by a flush through the drain/test valves at the inlet to each deluge valve.

b. Once per month by flowing water through the inspectors test connection on each wet sprinkler header to verify absence of header blockage.

c. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel.

d. Once per 18 months by performing a system functional test which includes tripping detectors and: (a) verifying actuation of trip devices on associated deluge valves, and (b) cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel. This functional test will not normally involve flowing water through the sprinkler/deluge header. Deluge sprinkler valves will be inspected internally to verify operability in all instances where header flooding during the test is undesirable.

e. Once per 18 months by visual inspection of deluge headers to verify their integrity.

f. Once per 18 months by visual inspection (from floor level) of each nozzle to verify absence of spray pattern blockage.

g. Once per 3 years by a gas or water flow test of any open type deluge head to verify absence of blockage.

4.17.4 CO_2 SYSTEM

Applicability: CO_2 System for the Cable Spreading Room.

Objective: To insure system operability.

Specification:

4.17.4.1 The CO_2 system shall be demonstrated operable:

a. At least once per week by verifying the CO_2 storage tank level and pressure.

b. At least once per 18 months by verifying the system valves and associated ventilation dampers actuate manually and automatically in response to a simulated actuation signal. A brief flow test shall be made to verify flow from each nozzle. ("Puff Test")

4.17.5 Halon Systems

Applicability: Halon Systems described in Specification 3.18.5.

Objective: To insure system operability.

Specification:

4.17.5.1 The Halon System shall be verified operable:

a. At least once per 6 months by verifying each Halon storage tank weight and pressure.

b. At least once per 18 months by:

1. Verifying that the system, including associated ventilation dampers, actuates automatically to a simulated test signal.

2. Functional test of the ultraviolet detectors, test of the pressure valve detectors, and replacement of the explosive actuators.

4.17.6 HOSE STATIONS

Applicability: Hose stations listed in Table 3.18-2.

Objective: To insure system operability.

Specification:

4.17.6.1 Each fire hose station shall be verified operable:

a. At least once per month by visual inspection of the station to assure all equipment is at the station.

b. At least once per 18 months by removing the hose for inspection and re-racking, and replacing all gaskets in the couplings that are degraded.

c. At least once per 3 years, partially open hose station valves to verify valve operability and no blockage.

d. At least once per 3 years by conducting a hose hydrostatic test at a pressure at least 50 psi greater than the maximum pressure available at that hose station.

b. Proposed tests and experiments,

and to make an initial determination that "a" and "b" above do not constitute an unreviewed safety question.

NOTE: The Unit Superintendent shall report directly to the Manager-Generation Operations-Nuclear and is responsible to him for the administration, operation and maintainance of Three Mile Island Nuclear Station Unit 1.

6.2 ORGANIZATION

OFFSITE

6.2.1 The organization of the Met-Ed Corporate Technical Support staff for Station management and technical support shall be functionally as shown in Figure 6-1.

FACILITY STAFF

6.2.2 The organization within the station for operations, technical support, and maintenance shall be functionally as shown in Figure 12-1 of the Final Safety Analysis Report.

a. Each on-duty shift shall,as a minimum,be composed of the following shift crew:

Shift Supervisor or Shift Foreman (See Notes 1 & 3)	1
Control Room Operator (See Notes 2 & 3)	2
Auxiliary Operator (See Note 3)	2
Additional Station Personnel Available to Serve on the Fire Brigade (See Note 4)	5
Men/Shift	10

b. At least two licensed Reactor Operators shall be at the station, one of whom shall be in the Control Room at all times when there is fuel in the reactor vessel. One of these operators shall hold a Senior Reactor Operator's License.

c. At least two licensed Reactor Operators shall be present in the Control Room during reactor start-up, scheduled reactor shutdown and during recovery from reactor trips.

d. At least one member of each operating shift shall be qualified to implement necessary radiation protection procedures.

e. A licensed Senior Reactor Operator with no other concurrent operational duties shall directly supervise: (a) irradiated fuel handling and transfer activities onsite, and (b) all unirradiated fuel handling and transfer activities to and from the Reactor Vessel.

NOTES:

1. The Shift Supervisor, or the Shift Foreman if a Shift Supervisor is not assigned, shall have an NRC Senior Reactor Operator's License.

2. Only one licensed Control Room Operator shall be required per shift during cold shutdown or refueling operations.

3. Shift Supervisor, Control Room Operator and Auxiliary Operator refer to functions that are to be performed and do not refer to the title of the individual. These functions may be performed by any individual possessing the necessary licenses and qualifications.

4. The same 5 personnel on the fire brigade can satisfy the requirements on Units 1 and 2.

6.3 STATION STAFF QUALIFICATIONS

6.3.1 Comprising the station staff shall be supervisory and professional personnel encompassing the qualifications described in Section 4 of ANSI N18.1- 1971 , "Selection and Training of Nuclear Power Plant Personnel."

6.4 TRAINING

6.4.1 A retraining and replacement training program for the facility staff shall be maintained under the direction of the Supervisor of Training and shall meet or exceed the requirements and recommendations of Section 5.5 of ANSI N18.1-1971 and Appendix "A" of 10 CFR Part 55.

6.5 REVIEW AND AUDIT

6.5.1 PLANT OPERATIONS REVIEW COMMITTEE (PORC)

FUNCTION

6.5.1.1 The Plant Operations Review Committee shall function to advise the Unit Superintendent on all matters related to nuclear safety.

COMPOSITION

6.5.1.2 The Plant Operations Review Committee shall be composed of:

a) Unit Superintendent
b) Supervisor of Operations
c) Supervisor of Maintenance
d) Unit Electrical Engineer
e) Unit Mechanical Engineer
f) Unit-Nuclear Engineer
g) Unit Instrument and Control Engineer
h) Supervisor of Radiation Protection and Chemistry
i) PORC Chairman
j) Other plant engineers assigned by the Unit Superintendent

The Unit Superintendent shall designate the members, the Chairman, and the Vice Chairman of the Plant Operations Review Committee.

ALTERNATES

6.5.1.3 Alternate members shall be appointed in writing by the Unit Superintendent to serve on a temporary basis. For purposes of this specification, a designated alternate shall be considered to have the

k. Periodically audit the areas listed below to verify compliance with the Three Mile Island Operating Quality Assurance Plan, internal rules and procedures, federal regulations, and operating license provisions:

1) The 18 Critiera of 10CFR50, Appendix B

2) Normal Station Operation

3) Inservice Inspection

4) Refueling

5) Radiological Controls

6) Station Maintenance

7) Technical Specifications

8) Training and Qualifications of Station Staff

9) Emergency Plan

10) Industrial Security Program

11) Fire Protection Program and Implementing Procedures

In performing these audits, written procedures and/or checklists shall be used. As a minimum, each area shall be audited at least once every two years.

6.8 PROCEDURES

6.8.1 Written procedures and administrative policies shall be established, implemented and maintained that meet or exceed the requirements and recommendations of Sections 5.1 and 5.3 of ANSI N18.7-1972 and Appendix "A" of USNRC Regulatory Guide 1.33 November 1972 except as provided in 6.8.2 and 6.8.3 below.

Implementation of the Fire Protection Program shall be by means of written procedures.

6.8.2 Each nuclear safety related procedure and administrative policy of 6.8.1 above, and changes thereto, shall be reviewed by the Plant Operations Review Committee and approved by the Unit Superintendent prior to implementation and periodically as may be set forth in each document.

6.8.3 Temporary changes to procedures of 6.8.1 above may be made provided:

a. The intent of the original procedure is not altered.

b. The change is approved by two members of the plant management staff, at least one of whom holds a Senior Reactor Operator's License on the unit affected.

c. The change is documented, reviewed by the Plant Operations Review Committee and approved by the Unit Superintendent within 7 days of implementation.

6.14 FIRE PROTECTION INSPECTION

1. An independent fire protection and loss prevention, inspection and audit shall be performed annually utilizing either qualified off-site licensee personnel or an outside fire protection firm.

2. An inspection and audit by an outside qualified fire consultant shall be performed at intervals no greater than three years.