



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. 34  
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 & Light Company, and Pennsylvania Electric Company (the licensees) dated February 3, 1977, as supplemented May 24 and July 21, 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. 34, are hereby incorporated in the license. The licensee 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



Karl R. Goller, Assistant Director  
for Operating Reactors  
Division of Operating Reactors

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: December 19, 1977

ATTACHMENT TO LICENSE AMENDMENT NO. 34

FACILITY OPERATING LICENSE NO. DPR-50

DOCKET NO. 50-289

Remove Pages

3-55 & 3-56

5-7

Insert Pages

3-55 & 3-56

5-7

The changed areas on the revised pages are shown by marginal lines.

### 3.11 HANDLING OF IRRADIATED FUEL

#### Applicability

Applies to the operation of the fuel handling building crane when within the confines of Unit 1 and there is any spent fuel in storage in the Unit 1 fuel handling building.

#### Objective

To define the lift conditions and allowable areas of travel when loads to be lifted and transported with the fuel handling building crane are in excess of 15 tons or between 3000 lbs. and 15 tons or consist of irradiated fuel elements.

#### Specification.

- 3.11.1 Spent fuel elements having less than 120 days for decay of their irradiated fuel shall not be loaded into a spent fuel transfer cask in the shipping cask area.
- 3.11.2 The key operated travel interlock system for automatically limiting the travel area of the fuel handling building crane shall be imposed whenever loads in excess of 15 tons are to be lifted and transported with the exception of fuel handling bridge maintenance.
- 3.11.3 The lowest surface of all loads in excess of 15 tons shall be administratively limited to an elevation one foot or less above the concrete surface at the nominal 348 ft-0 in. elevation in the fuel handling building.
- 3.11.4 Loads in excess of hook capacity shall not be lifted, except for load testing.
- 3.11.5 Following modifications or repairs to any of the load bearing members, the crane shall be subjected to a test lift of 125 percent of its rated load.
- 3.11.6 Except as specified in 3.11.2 and 3.11.3 above, loads in excess of 3000 lbs. shall be administratively controlled so that they are handled at the lowest practicable elevation and so that the center of mass of the load is: (1) maintained below elevation 348 ft.-0 in. or (2) maintained at such distance from the edge of a fuel storage pool containing irradiated fuel that should the load be released and tip over (such that the long dimension of the load was substantially horizontal) in any direction, the center of mass of the load would be at least six feet from the edge of any pool containing irradiated fuel.
- 3.11.7 A spent fuel shipping cask shall not be permitted in the Unit 1 Fuel Handling Building.

#### Bases

This specification will limit activity releases to unrestricted areas resulting from damage to spent fuel stored in the spent fuel storage pools in the postulated event of the dropping of a heavy load from the fuel handling building crane. When a loaded spent fuel transfer cask is moved out of the decontamination pit area and along the centerline of the spent fuel pool's west wall to the receiving/shipping area (Figure 9-18, Section 9), it has a potential drop of 43 feet which is 13 feet greater than its design basis drop. An analysis (1) was performed assuming that the cask and its entire contents of ten fuel assemblies are sufficiently dam-

aged as a result of dropping the cask, to allow the escape of all noble gases and iodine in the gap. This release was assumed to be directly to the atmosphere and to occur instantaneously. The site boundary doses resulting from this accident are 5.25 R whole body and 1.02 R to thyroid, and are within the limits specified in 10 CFR 100.

Specification 3.11.1 requires that spent fuel, having less than 120 days decay post-irradiation, not be loaded in a spent fuel transfer cask in order to ensure that the doses resulting from a highly improbable spent fuel transfer cask drop would be within those calculated above.

Specification 3.11.2 requires the key operated interlock system, which automatically limits the travel area of the fuel handling crane (refer to Figure 9-18A, Section 9) while it is lifting and transporting the spent fuel shipping cask, to be imposed whenever loads in excess of 15 tons are to be lifted and transported while there is any spent fuel in storage in the spent fuel storage pools in Unit 1. This automatically ensures that these heavy loads travel in areas where, in the unlikely event of a load drop accident, there would be no possibility of this event resulting in any damage to the spent fuel stored in the pools or doing any unacceptable structural damage to the spent fuel pool structure. As described in Section 9.7.1.1, the shipping cask area is designed to withstand the drop of the spent fuel shipping cask from an elevation of 349 ft without unacceptable damage to the spent fuel pool structure.

Specification 3.11.3 ensures that the lowest surface of any heavy load never gets higher than one foot above the concrete surface of the 348 ft-0 in. elevation in the fuel handling building (nominal elevation 349 ft-0 in.) thereby keeping any impact force from an unlikely load drop accident within acceptable limits.

Specification 3.11.4 ensures that the proper capacity crane hook is used for lifting and transporting loads thus reducing the probability of a load drop accident.

Following modification or repairs, specification 3.11.5 confirms the load rating of the crane.

Specification 3.11.6 imposes administrative limits on handling loads weighing in excess of 3000 lbs. to prevent damage to irradiated fuel. Handling loads of less than 3000 lbs. without these restrictions is acceptable because the consequences of dropping loads in this weight range are comparable to those produced by the fuel handling accident considered in the FSAR and found acceptable.

Specification 3.11.7 prohibits the presence of a spent fuel cask in the Unit 1 Fuel Handling Building. This prohibition will be retained until the NRC has completed its review of spent fuel cask handling operations at TMI-1 and concluded that such operations can be performed safely.

(1) FSAR, Supplement 2, Part VII

South End of Fuel Transfer Canal RB	Spent Fuel Pool A North End of Fuel Handling Building	Spent Fuel Pool B South End of Fuel Handling Building	Dry New Fuel Storage Area Fuel Handling Building
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Fuel Assys	64 *	256 **	496 ***	66
Cores	0.36	1.45	2.8	0.37

- NOTES:
- \* includes one space for accommodating a failed fuel detection container.
  - \*\* includes three spaces for accommodating failed fuel containers.
  - \*\*\* Spent Fuel Pool B contains spent fuel storage racks with a reduced center-to-center spacing of 13 5/8 inches to increase the storage capacity of the pool.

e. All of the fuel assembly storage racks provided are designed to Seismic Class 1 criteria to the accelerations indicated below:

	Fuel Transfer Canal in Reactor Building	Fuel Handling Building Dry New Fuel Storage Area And Spent Fuel Pool A	Fuel Handling Building Spent Fuel Pool B
Horiz.	0.76 g	0.38 g	*
Vertical	0.51 g	0.25 g	*

\* The "B" pool fuel storage racks are designed using the floor response spectra of the Fuel Handling Building.

f. Fuel in the storage pool shall have a U-235 loading equal to or less than 46.8 grams of U-235 per axial centimeter of fuel assembly

REFERENCES

(1) FSAR, Section 9.7