

FIRE PROTECTION
SAFETY EVALUATION REPORT
BY THE
OFFICE OF NUCLEAR REACTOR REGULATION
U.S. NUCLEAR REGULATORY COMMISSION
IN THE MATTER OF
METROPOLITAN EDISON COMPANY,
JERSEY CENTRAL POWER AND LIGHT COMPANY,
AND PENNSYLVANIA ELECTRIC COMPANY
THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 1
DOCKET NO. 50-289
SUPPLEMENT NO. 1

Date: March 16, 1979

Introduction

By letter dated March 5, 1979, Metropolitan Edison Company (Met Ed) requested changes to Facility Operating License No. DPR-50 for the Three Mile Island Nuclear Station, Unit No. 1 (TMI-1). The proposed changes would revise the specification of the completion date for certain modifications required to improve the level of fire protection at TMI-1.

Background

On September 19, 1978, the Commission issued Amendment No. 44 to the TMI-1 operating license. This amendment added a condition to the license which requires completion of the modifications identified in paragraphs 3.1.1 through 3.1.23 of the NRC's Fire Protection Safety Evaluation (FPSE) for TMI-1, dated September 19, 1978. This amendment also added a license condition which requires completion of these modifications in accordance with the schedule given in Table 3.1 of the FPSE. Of these modifications, the schedule calls for completion of 10 items by the end of the 1979 refueling outage at TMI-1 which is currently underway and nearing its conclusion.

By letter dated March 5, 1979, Met Ed requested amendment of the facility license to permit completion of two of these modifications somewhat after the end of the 1979 refueling outage. The reason given for this request is that the schedule for completion was developed at a time when it was believed the 1979 refueling outage would not be completed until approximately April 21, 1979. Actual operating experience, however, has provided a higher percentage of operating capacity than assumed when the schedule was developed. Accordingly, refueling was necessary at an earlier date, and Met Ed now expects to complete the refueling outage about March 14 to 16, 1979.

Met Ed states that because it has expedited the implementation of the fire protection modifications, it will be able to complete all but two of those scheduled to be completed by the end of the current refueling outage. The two that it will not be able to complete are:

3.1.9 Fire Barrier Penetrations

Various types of fire barrier penetrations, including cable and pipe penetrations and building construction joints, will be sealed in various areas of the plant to provide appropriate fire resistance; and

3.1.15 Electrical Cable Penetration Seals (4.9)

Existing electrical cable penetration seals will be upgraded to conform with a design having a demonstrated three-hour fire resistance rating. In certain areas, additional seals will be provided which conform to this same design.

Met Ed believes these modifications can be completed by April 15, 1979, and therefore requests that the completion dates for these modifications given in Table 3.1 of the FPSE be changed to April 15, 1979.

Evaluation

Both of these modifications relate to the sealing of penetrations through fire barriers. When we evaluated the proposed schedule for completion of these modifications during our review of TMI-1 fire protection, we concluded that completion of these modifications by the end of the 1979 refueling outage was acceptable. In drawing this conclusion, we recognized that under normal conditions this outage probably would extend into April of 1979. Actual operating capacity, however, was greater than anticipated so that the need for refueling in 1979 occurred somewhat earlier than expected. Met Ed's request to change the completion date from the end of the 1979 refueling outage to April 15, 1979, therefore, does not constitute a significant change in the implementation schedule for the modifications. Rather, it merely reflects the fact that refueling was necessary at an earlier time, and that the modifications will still be completed in substantial conformance with the original schedule. Accordingly, we conclude that this change in the specification of the completion dates for modifications 3.1.9 and 3.1.15 is acceptable.

Accordingly, the attached Table 3.1 supersedes Table 3.1 of the TMI-1 Fire Protection Safety Evaluation dated September 19, 1978.

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) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) 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: March 16, 1979

TABLE 3.1
IMPLEMENTATION DATE FOR MODIFICATIONS

<u>ITEMS</u>	<u>DATE</u>
3.1.1 Fire Detectors	EOR-80*
3.1.2 Manual Hose Stations	EOR-80
3.1.3 Automatic Water Spray System	EQR-80
3.1.4 Automatic Sprinkler Systems or Coating of Electrical Cables	10-01-80
3.1.5 Halon Extinguishing System in Computer Room	EOR-80
3.1.6 Curbs in Reactor Building	EOR-80
3.1.7 Fire Dampers	10-01-80
3.1.8 Fire Doors	4-15-79
3.1.9 Fire Barrier Penetrations	EOR-80
3.1.10 Thermal Insulation on Valves	Open**
3.1.11 Fire Barriers at Reactor Building Emergency Cooling Valves	EOR-79*
3.1.12 Fire Water Valve Seals	EOR-79
3.1.13 Reactor Coolant Pump Lube Oil Collection System	EOR-79
3.1.14 Separation of Computer Room from Control Room	4-15-79
3.1.15 Electrical Cable Penetration Seals	5-31-79
3.1.16 Battery Room Ventilation Air Flow Monitor	7-01-79
3.1.17 Fire Fighting Plans	10-30-78
3.1.18 Smoking	9-30-78
3.1.19 Control of Combustibles	EOR-80
3.1.20 Backup Manual Hose Coverage	Open**
3.1.21 Alternate Shutdown Capability	7-01-79
3.1.22 Brigade Training	EOR-80
3.1.23 Communication Cable Penetrations	

* EOR-80: By end of refueling outage in 1980
EOR-79: By end of refueling outage in 1979

** By letter dated September 29, 1978, the licensee proposed an implementation date corresponding to the end of the refueling outage in 1981. We are reviewing the acceptability of this date and will specify an acceptable date in a supplement to this report.

Date: March 16, 1979

References

- (1) J. G. Herbein, Three Mile Island Nuclear Station, Unit 1, Docket No. 50-289, Operating License No. DPR-50, Technical Specification Change Request No. 86, Metropolitan Edison Co., December 28, 1978.
- (2) J. G. Herbein, Three Mile Island Nuclear Station, Unit 1, Operating License No. DPR-50, Docket No. 50-289, Cycle 5 Reload - Additional Information, Metropolitan Edison Co., March 1, 1979.
- (3) A.F.J. Eckert, et al., Program to Determine In-Reactor Performance of B&W Fuels - Cladding Creep Collapse, BAW-10084, Rev 1, Babcock & Wilcox, Lynchburg, Virginia, November 1976.
- (4) TMI-1 Fuel Densification Report, BAW-1389, Babcock & Wilcox, Lynchburg, Virginia, June 1973.
- (5) C. D. Morgan and H. S. Kao, TAFY - Fuel Pin Temperature and Gas Pressure Analysis, BAW-10044, Babcock & Wilcox, Lynchburg, Virginia, May 1972.
- (6) R. H. Stoudt, et al., TACO - Fuel Performance Analysis, BAW-10087, Babcock & Wilcox, Lynchburg, Virginia, June 1976.
- (7) H. A. Hassan, et al., Babcock & Wilcox's Version of PDQ07 - User's Manual, BAW-10117, Babcock & Wilcox, Lynchburg, Virginia, June 1976.
- (8) Correlation of Critical Heat Flux in a Bundle Cooled by Pressurized Water, BAW-10000A, May 1976.
- (9) Memo to D. B. Vassallo (NRC) from D. F. Ross (NRC), Revised Interim Safety Evaluation Report on the Effects of Fuel Rod Bowing on Thermal Margin Calculations for Light Water Reactors, February 16, 1977.
- (10) R. C. Jones, et al., ECCS Analysis of B&W's 177-FA Lowered Loop NSS, BAW-10103A, Rev 1, Babcock & Wilcox, Lynchburg, Virginia, July 1977.