SEP 2 1981

Distribution:
Docket No. 50-320
NRCPDR
LPDR
TERA
TMIPO R/F
TMI Site R/F
BJSnyder
LBarrett
HRDenton
EGCase
RHartfield, MPA
GBennington, MPA
AFasano (TMI Site)
RConte (TMI Site)
LChandler, ELD
I&E (3)
BScharf (10)
ACRS (16)
OPA
SECY
OLynch
RWeller
TCPoindexter
DBrinkman
Service list
(see attached)

Docket No. 50-320

Mr. Gale K. Hovey
Vice President and
Director of TMI-2
Metropolitan Edison Company
P.O. Box 480
Middletown, Pennsylvania 17057

Dear Mr. Hovey:

The Nuclear Regulatory Commission hereby grants Metropolitan Edison Company, et. al, an exemption from certain requirements of 10 CFR Part 50, Appendix J for the Three Mile Island Nuclear Station Unit 2. This exemption consists of relief from the requirement to perform Type A, B, and C leakage tests on the TMI-2 reactor building and is in response to your request of May 11, 1981. This exemption does not provide relief from the requirements to leak test the air lock door seals in accordance with Appendix J, subsection III.D.2.b.iii within three days after the door has been opened. See Surveillance Requirement 4.6.1.3.2. By performing the air lock door seal test, air lock integrity can be verified without the radiation hazards applicable to performing Type A, B, and C tests.

We have determined that the granting of this exemption involves an action which is insignificant from the standpoint of environmental impact and that there is reasonable assurance that the health and safety of the public will not be endangered by this action. Having made this determination, we have further concluded that pursuant to 10 CFR §51.5 (d) (4) an environmental impact appraisal need not be prepared in connection with the granting of this exemption.

Copies of the related Safety Evaluation and the Notice of Issuance, which has been forwarded to the Office of the Federal Register for publication, are also enclosed.

Sincerely,

Bernard J. Snyder, Program Director
TMI Program Office
Office of Nuclear Reactor Regulation

Enclosures:
1. Safety Evaluation
2. Notice of Issuance

change not substantial Subject to changes noted on p. 3 of SE.

cc w/encls: See attached

OFFICE	TMIPO:NRR	TMIPO:NRR	TMIPO:NRR	OELD	TMIPO:NRR
NAME	PKaltenbach	RWeller for	DBrinkman	SHLewin	BJSnyder
DATE	8/10/81	8/12/81	8/10/81	8/16/81	8/31/81

SAFETY EVALUATION IN SUPPORT OF EXEMPTIONS FROM CERTAIN REQUIREMENTS OF THE COMMISSION'S RULES AND REGULATIONS BY THE OFFICE OF NUCLEAR REACTOR REGULATION U. S. NUCLEAR REGULATORY COMMISSION IN THE MATTER OF METROPOLITAN EDISON COMPANY JERSEY CENTRAL POWER & LIGHT PENNSYLVANIA ELECTRIC COMPANY THREE MILE ISLAND NUCLEAR STATION, UNIT 2 DOCKET NO. 50-320

SAFETY EVALUATION IN SUPPORT OF AN EXEMPTION FROM CERTAIN REQUIREMENTS OF APPENDIX J TO 10 CFR PART 50

I. INTRODUCTION

Metropolitan Edison Company has requested (reference 1) exemption from certain requirements of 10 CFR, Part 50, Appendix J, which states the criteria to be used for verifying primary reactor containment leak tight integrity. The licensee has proposed the exemption based on the reactor and the containment's current and future status, and the minimal consequences per Met-Ed's calculations for any containment pressurization accident. The TMI Program Office staff has reviewed the licensee's technical justification and concludes that the request for exemption from Appendix J is justified and acceptable. Our basis for this conclusion follows.

II. EVALUATION

Per 10 CFR Part 50 Appendix J. paragraph III.D.1.(a), after the preoperational leakage rate tests, a set of three type A tests are required at approximate equal intervals during each 10 year service period. This required testing measures primary reactor containment overall integrated leakage under design basis accident pressure conditions. The applicable test pressure is discussed in paragraph III.A.4 of Appendix J.

For Type B tests, paragraph III.D.2 of 10 CFR 50, Appendix J requires that air locks be tested at 6 month intervals. Penetrations are also required to be tested every other reactor shutdown for refueling but in no case at intervals greater that 3 years. These tests will detect local leaks and measure leakage across each pressure containing or leakage limiting

boundary for a reactor containment penetration. All of these tests are performed by local pneumatic pressurization of the containment penetration either individually or in groups at a pressure not less than the calculated peak containment internal pressure related to the design basis accident. This pressure at TMI-2 is 56.2 psig.

Type C tests measure containment isolation valve leakage and have acceptability requirements set forth in paragraph III.D.3 of 10 CFR 50, Appendix J. Type C tests shall be performed during each reactor shutdown for refueling but in no case at intervals greater than 2 years.

In addition to the Type A, B, and C tests discussed, paragraph IV.A of Appendix J requires that any major modification or replacement of a component which is part of the primary reactor containment boundary or resealing of a seal welded door, performed after the preoperational leakage rate test shall be followed by either a Type A, B, or C test as applicable for the area affected by the modification tests.

In reviewing the applicability of Appendix J, an analysis was performed by the licensee (reference 1) to estimate the maximum containment building pressure change in the event that internal equipment or piping failed. The TMIPO staff performed a similar analysis and confirmed the licensee's results. The worst case equipment failure analysis was based on the loss of all Reactor Building Air Coolers which are located inside the reactor building. Primarily because of the low decay heat in the reactor coolant system (less than 32.2 kw) the effects of the loss of the coolers has been minimized. The analysis concluded that the pressure inside of the containment building would take several days

to increase by one to two psi, assuming this scenario occurred during the summer months which would be the worst case ambient condition. Another analysis based on the worst case piping failure assumed the instantaneous release of all reactor coolant to containment. The pressure of the reactor coolant system is maintained at 90$\pm$ 10 psig and the temperature of the coolant ranges from approximately 120^{o}F in the hot leg to 75^{o}F in the cold leg. At these temperatures and pressures, the effects on the containment atmosphere is minimized. Therefore, the LOCA analysis resulted in approximately 2 psi pressure increase in the containment building. The only transient that would cause the pressure to exceed approximately 2 psi would be a recriticality accident. This event was discussed in the Final Programmatic Environmental Impact Statement (PEIS) for TMI-2 issued in March 1981. Paragraph 4.1 of the PEIS states that "the most probable (although very unlikely) cause of recriticality was found to be boron dilution, which would be a slow enough process that any approach to criticality can be detected and remedied." This statement is still valid; therefore, the staff has concluded that this accident need not be designed against in reference to containment integrity.

The containment is a prestressed reinforced concrete structure that provides biological shielding for normal and accident conditions. It is also constructed to contain the pressures associated with a loss of coolant or steam generator blowdown accident occurring at 100% power. Since the containment has been analyzed for capability to withstand such accidents, the accidents discussed in this safety evaluation are within the limits of those for which TMI-2 was originally designed and evaluated as discussed in the safety evaluation report for operation (NUREG-0107, Supplements 1 and 2).

Consequently, the granting of this exemption would not result in a significant increase in the probability or consequences of accidents previously considered nor a significant reduction in a margin of safety, and does not involve a significant hazards consideration.

In addition to the discussed analyses results, Type A, B, and C tests would require a considerable amount of work and operator time spent in high radiation areas resulting in significant exposure to personnel, which would not be consistent with the ALARA concept.

There has been no detectable leakage of radioactive materials from the containment since the March 28, 1979 accident, however, a pressure test of the structure and its penetrations at the design pressure of 60.0 psig could induce a leak resulting in an uncontrolled release of radioactivity. This pressure would increase the potential for a containment leak and therefore not benefit the public interest. Based on the analyses, the ALARA implications, no apparent leakage from the containment and the increased risk associated with performing the tests, the TMI Program Office staff concludes that the public interest is served by not imposing the applicable requirements of Appendix J to 10 CFR Part 50 since such imposition would result in hardship or unusual difficulties without a compensating increase in the level of quality and safety. However, if a subsequent decision is made to restore TMI-2 to operation, all of the requirements of Appendix J shall again be applicable.

III. CONCLUSIONS

Based on the foregoing, we have determined that, pursuant to 10 CFR Section 50.12, an exemption to the periodic leak rate testing requirements of Appendix J to 10 CFR Part 50 is authorized by law and can be granted without endangering life or property or the common defense and security and is

otherwise in the public interest. In making this determination we have given due consideration to the burden that would result if these requirements were imposed on the facility. The granting of this relief does not involve a significant hazards consideration. We have determined that the granting of this exemption 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. We have concluded that this exemption would be insignificant from the standpoint of environmental impact and pursuant to Paragraph (d) (4) of Section 51.5 of 10 CFR Part 51 that an environmental impact statement, or negative declaration and environmental impact appraisal, need not be prepared in connection with this action.

REFERENCE

1. Letter to Lake Barrett, NRC, from G. K. Hovey, Metropolitan Edison Company, "Request for an Exemption from the Testing Requirements of 10 CFR 50, Appendix J," LL2-81-0094, May 11, 1981.

UNITES STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-320

METROPOLITAN EDISON COMPANY
JERSEY CENTRAL POWER AND LIGHT COMPANY
PENNSYLVANIA ELECTRIC COMPANY

GRANTING OF RELIEF FROM APPENDIX J REQUIREMENTS

OF 10 CFR PART 50

The U.S. Nuclear Regulatory Commission (the Commission) has granted relief from certain requirements of Appendix J to 10 CFR Part 50, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors", to Metropolitan Edison Company, Jersey Central Power and Light Company, and Pennsylvania Electric Company. The relief relates to the leakage testing requirements for tests in areas which are radiologically inaccessible.

The request for relief complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulation in 10 CFR Chapter I, which are set forth in the NRC Staff Safety Evaluation Report in this matter dated

The Commission has determined that the granting of this relief will not result in any significant environmental impact and that pursuant to 10 CFR §51.5 (d) (4) and environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with this action.

For further details with respect to this action, see (1) the request for relief (2) dated May 11, 1981, and (3) the Commission's letter to the licensee dated September 2,1981.

These items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C. 20555 and at the Government Publications Section, State Library of Pennsylvania, Education Building, Commonwealth and Walnut Streets, Harrisburg, Pennsylvania 17126. A copy of item (2) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, TMI Program Office.

Dated at Bethesda, Maryland this September 2, 1981.

FOR THE NUCLEAR REGULATORY COMMISSION

Bernard J. Snyder, Program Director
Three Mile Island Program Office
Office of Nuclear Reactor Regulation