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50-289

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ORG: HERBEIN J G
METROPL EDISON

DOCDATE: 02/21/78
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SUBJECT:

RESPONSE TO NRC'S LTR DTD 02/02/78, FURNISHING INFO RE THE REACTOR
CAVITY ANNULUS SEAL RING AND ASSOCIATED BIOLOGICAL SHIELDING OVER
THE REACTOR VESSEL CAVITY.

PLANT NAME THREE MILE ISLAND - UNIT 1

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METROPOLITAN EDISON COMPANY

POST OFFICE BOX 54, READING, PENNSYLVANIA 19603

TELEPHONE 215 - 929-3601

February 21, 1978
GQL 0282

Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Sir:

Three Mile Island Nuclear Station Unit 1 (TMI-1)
Operating License No. DPR-50
Docket No. 50-289



Your letter of February 2, 1978, requested information regarding the reactor cavity annulus seal ring and associated biological shielding over the reactor vessel cavity. The following is hereby submitted:

- (a) During normal operation of TMI-1, the reactor cavity annulus seal ring is not left in place; it is supported approximately 5" above the cavity annulus. However, during normal operation, biological shielding in the form of sand-filled shield plugs is installed in the cavity annulus.
- (b) During the licensing stages of TMI-1, discussions were held with the NRC (then AEC) concerning the design of the sand-filled shield plugs. Calculations were performed to verify that the sand-filled shield plugs would rupture as a result of a pipe break inside of the reactor cavity annulus. TMI-1 was subsequently licensed to operate with the sand-filled shield plugs. However, in an attempt to fully address your letter of February 2, 1978, Metropolitan Edison Company has made the conservative assumption that the shield plugs would eject intact and unimpeded and strike the annulus seal ring (at which time the shield plugs would rupture). The seal ring could then potentially become a missile.
- (c) Because of the potential that the seal ring could become a missile, Met-Ed is considering removal and/or relocation of the cavity annulus seal ring during normal operations. Met-Ed intends to evaluate the impact of the above action and resolve the issue prior to the Cycle 4 startup.
- (d) The probability of the previously analyzed pipe break occurring inside of the reactor cavity annulus is considered to be extremely remote. The probability of this accident occurring before the end of Cycle 3 is even more remote. Combined with the conservatisms assumed for the seal plate to become a potentially damaging missile, the possibility

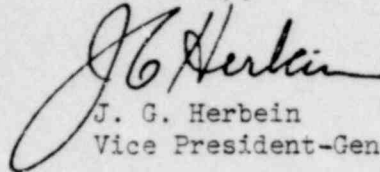
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February 21, 1978
GOL 0282

of an accident of this type is considered incredible. Therefore, continued operation does not create undue risk to the health and safety of the public.

Sincerely,



J. G. Herbein
Vice President-Generation

JGH:RJS:cjg

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