



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

Docket No. 50-320

July 25, 1974

APPLICANT: Metropolitan Edison Company
(Met-Ed)

FACILITY: Three Mile Island Nuclear Station,
Unit 2, (TMI-2)

OPERATING LICENSE SAFETY REVIEW SITE VISIT -- SEISMOLOGY, GEOLOGY
AND FOUNDATION ENGINEERING, JULY 18, 1974

A representative of the Licensing, Site Analysis Branch, Foundation Engineering, inspected safety related seismic geologic and foundation engineering features of the Three Mile Island site on July 18, 1974, for a portion of the safety review and evaluation of the application for an operating license for TMI-2. A list of participants is attached (Attachment 1.).

The visit included inspection of the service water intake structure, the dike and riprap in the area around the service water intake structure, the excavation where the air intake structure was being poured, and selected boring cores. The applicants' response to the information requirements in the FSAR, dated April 25, 1974, and current requirements for additional detailed information were discussed. Questions arising from the inspection were also discussed. Notes on the discussions are in Attachment 2.

The applicants' representatives indicated that they would submit the additional information required to complete their previous responses as noted in Attachment 2.

If necessary, formal questions resulting from the site visit and responses to the above discussion will be submitted to the applicants.

A handwritten signature in cursive script, reading "B. Washburn", is written over a horizontal line.

B. Washburn, Project Manager
Light Water Reactors Branch 2-2
Directorate of Licensing

Attachments:
As stated

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SEISMOLOGY, GEOLOGY AND FOUNDATION ENGINEERING SITE VISIT-
July 18, 1974

LIST OF PARTICIPANTS

J. Villaume	Met-Ed
J. Vann	GPUSC
J. Wright	GPUSC
W. Santamour	GAI
M. Kauffman	GAI (F&M)
E. Debbas	Burns & Roe (Part time)
A. Zallnick	Burns & Roe (Part time)
L. Heller	AEC:L
B. Washburn	AEC:L

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SEISMOLOGY, GEOLOGY AND FOUNDATION ENGINEERING SITE VISIT-
July 18, 1974DISCUSSION NOTESQUESTIONSTATUS OF RESPONSE AND COMMENTS

- 13-20 Pertains to foundation safe bearing loads. Unconfined compression test results submitted were for a "perfect" piece of rock. We need
- * test results for a real sample, i.e., with fractures, slippage planes, dipping planes, etc. Slipping mechanism will give less bearing capacity than the "ideal" (180 KIPS). The concern is to relate the safe bearing loads to the actual rock structure. Related questions are 13-31, 37, and 54.
- 13-23 * We need legible subsurface profiles. (See Fig. 2A-2 in the PSAR).
- 13-31 Pertains to available bearing capacity. We
- * need a simple mechanistic analysis. Related to question 13-20.
- 13-32, * Pertain to settlements. Applicants are prepared
33, to make the necessary settlement measurements
& 34 during the hydro testing and will respond around the end of 1974. Applies only to Category I structures not founded on bedrock.
- 13-38 This question is related to 13-20 above. Draft
- * of applicants' analysis was discussed. Submittal of this analysis should be responsive to the question.
- 13-39 This question has two parts. The first pertains to the in situ material involved in that it places lateral pressure on the backfill during flooding and earthquake. (Amendment 16 did not respond to our intent; however, the response in Amendment 18 to Question 13-52 answered the
- * intent of this part of 13-39. The next FSAR amendment should reference the Amendment 18 response to 13-52 as a part of the response to 13-39.)

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QUESTION

STATUS OF RESPONSE AND COMMENTS

- 13-39
(continued)
- * The second part of this question concerns the safeguards provided for Category I water supply system and conduits passing through the soil. We need to know how far the building moves and the provisions for such movements.
- 13-43
- * Pertains to stability of the dike. We need the detail of the assumptions utilized in the analysis and the reasons therefor.
- 13-44
- * Pertains to the stability of the riprap slopes adjacent to the service water intake structure. Our needs are the same as in 13-43 above.
- 13-45
- * Pertains to support of the dike and riprap. Our needs are the same as in 13-43. Response should address slope stability as well as the actual strength of dike material.
- Original question was not clear to the applicant.
- 13-54
- * Pertains to foundation model and analyses of bearing capacity of unweathered rock. Proposed response to 13-20 will answer this.

* - Applicants' representatives indicated that additional responses would be submitted.

The applicants' responses to Questions 13-20 thru 13-55, other than as indicated above, were adequate.

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DISCUSSION NOTES (continued)

Possible sagging and evidence of erosion in the dike between the two service water intake structures were noted during the inspection. We need assurance that this portion of the dike will not slip, under conditions such as SSE or PMP, and create a blockage of the service water intake.

Several questions were generated by the inspection of the air intake structure excavation and construction. The applicants' representatives were asked for the reasons for the re-bars sticking out of the floor, reasons for re-bars mounted in various places in the bedrock near the top of the intake structure wall, and the reason for the jet wells into the rock in various places in the excavation. The applicants' representatives indicated that the contractor started to install re-bar at the top of the wall to tie the wall forms but stopped this installation and went to re-bar in the floor to brace the wall forms. The representatives indicated that the re-bars in the bedrock were not to prevent rock slippage. They also indicated that the jet wells were for water removal to keep the area dry and that these were not installed because of any rock slipping problem.

The observations made during this visit have been discussed with RO (F. Dreher and S. Folsom).