



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

*Copy for
TMI-2
PDR
LPDR
Reid
cc 7/18/79-JM*

July 6, 1979

MEMORANDUM FOR: Ben C. Rusche, GPU
FROM: John T. Collins, Deputy Director, TMI-2 Support
SUBJECT: GROUNDWATER MONITORING AT TMI-2

Reference is made to the attached memo from L. G. Hulman, Chief, Hydrology-Meteorology Branch, NRR, to R. H. Vollmer, dated June 26, 1979, subject as above. We request that you review the enclosed monitoring program criteria at TMI and provide me with an assessment indicating how you intend to implement these criteria and the proposed schedule for implementation. If you believe all or part of the program is not necessary you should provide technical justification to support this position. We would appreciate your response to this memo by July 13, 1979.

John T. Collins
John T. Collins, Deputy Director
TMI-2 Support

Enclosure:
As Stated

cc: R. Arnold, GPU
 Vollmer
L. Hulman

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J. Collins



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

Docket No. 50-320

JUN 26 1979

MEMORANDUM FOR: Richard H. Vollmer, Assistant Director
for Systems & Projects, DOR

THRU: William E. Kreger, Assistant Director
for Site Analysis, DSE *W.E.K.*

FROM: L. G. Hulman, Chief
Hydrology-Meteorology Branch, DSE

SUBJECT: GROUNDWATER MONITORING AT THREE MILE ISLAND,
UNIT 2, DOCKET NO. 50-320

6/25/79

During my site visit to the subject plant on June 6, I discussed the water-tightness of the Unit 2 containment and auxiliary buildings with you and J. Collins. Upon consideration of my understanding of the design of the structures and the number of penetrations through the structure below grade, I recommend that the groundwater in the vicinity of the structures be closely monitored to assure that highly contaminated water is not leaking from the structures. If such a condition is detected early by monitoring, mitigating action should be taken. Techniques of mitigation should be considered and contingency plans made as part of the implementation of this program. The enclosed criteria for such monitoring system is recommended.

Because of the character of the island subsurface materials, any leakage would most likely flow fairly rapidly toward the Susquehanna River (in as little as 14 days). There appears to be no possibility of regional aquifer contamination.

L. G. Hulman
L. G. Hulman, Chief
Hydrology-Meteorology Branch
Division of Site Safety and
Environmental Analysis

Enclosure:
Recommended g.w.
monitoring criteria

cc: See next page

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7905075220

JUN 26 1979

Richard H. Vollmer

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cc: w/enclosure
H. Denton
D. Muller
R. Mattson
R. DeYoung
D. Eisenhut
J. Collins ✓
R. Bangart
W. Houston
W. Bivins
PDR
T. Murphy

694 265

MONITORING PROGRAM CRITERIA @ TMI

The objective of the proposed seepage monitoring program is to assure that no contaminated surface or groundwater migrates toward the property boundary undetected. The system should be designed to provide early warning of leakage, and to allow prompt and effective mitigation.

The gradient of the groundwater slopes away from approximately the center of the island and groundwater can move in several directions. Therefore, a ring of monitoring wells should be established around the containment and auxiliary buildings. The wells should be spaced about 200 feet apart and extend through the island sands and gravels to the shale surface. The wells should be placed as close to the buildings as is practicable. Well screens should be designed to allow water collection at all levels above the shale-sand surface. Pumping equipment and storage facilities should be on hand to pump the contaminated water out if contamination occurs. Due to the potential rapid rate of groundwater movement, the wells should be monitored once every day or two by pumping and testing water samples for activity. This monitoring frequency should be sufficient to detect activity in time to initiate mitigation measures. Mitigation measure planning should also be initiated.

The wells should be constructed to monitor groundwater above elevation 270 ft msl and should be large enough to handle a submersible pump. Electric power will be necessary to the pumps. Installation of the wells should be carefully undertaken because of the large number of underground conduits.