

March 21, 1977

MEMORANDUM FOR: William H. Regan, Jr., Chief, Environmental Projects Branch No. 2, DSE

FROM: Donald P. Cleary, Section Leader, Regional Impact Analysis Section, Cost-Benefit Analysis Branch, ET, DCE

SUBJECT: REVISED DRAFT TESTIMONY FOR THREE MILE ISLAND, UNIT 2

PLANT NAME: Three Mile Island, Unit 2
LICENSING STAGE: OL
DOCKET NUMBER: 50-320
RESPONSIBLE BRANCH: Environmental Projects No. 2
PROJECT MANAGER: Jan Morris
DESCRIPTION OF RESPONSE: Revised Draft Testimony

Attached is the revised draft testimony in relation to Contention 3 dealing with cooling towers design adequacy related to earthquakes and tornadoes.

The attachment was prepared by Louis Bykoski, Cost-Benefit Analysis Branch, 492-7906.

Donald P. Cleary, Section Leader
Regional Impact Analysis Section
Cost-Benefit Analysis Branch
Division of Site Safety and
Environmental Analysis

Attachment: As stated

cc: J. Norris
B.J. Youngblood
G. Fess
L. Bykoski

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SURNAME	LBykoski:jme	DCleary	BJYoungblood			
DATE	3-21-77	3-21-77	3- -77			

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

THREE MILE ISLAND NUCLEAR STATION, UNIT 2
DOCKET NO. STM 50-320

NRC STAFF TESTIMONY RELATED TO THE
LOSS OF COOLING TOWERS FROM NATURAL PHENOMENA

BY

LOUIS BYKOSKI
REGIONAL ENVIRONMENTAL ECONOMIST

This testimony addresses Contention 3 which reads:

"The design for the cooling towers is inadequate to withstand the earthquake or tornado that the rest of the plant is built to withstand. As a result, if this earthquake or tornado does occur and the main plant does withstand it, it is highly probable that the cooling towers will not. Then, either the plant will shut down for two or three years while the towers are rebuilt or repaired, or the plant will continue to operate without cooling towers using once-through cooling. In this latter event, it is highly likely that state water quality criteria would be violated and severe environmental impacts would ensue. Therefore, no operating license should be granted until the entire plant is rendered capable of withstanding the maximum anticipated earthquake or tornado or until an adequate cost-benefit analysis pursuant to NEPA is conducted taking into account the impact of possible loss of the cooling towers."

This testimony responds to Contention 3 insofar as it alleges that no operating license for Three Mile Island Nuclear Station, Unit 2 (TMI-2) should be issued until an adequate cost-benefit analysis is conducted which takes into account the impact of possible loss of the cooling towers.

Response

At outset, it should be noted that the plant, as it is designed, is physically incapable of operating a once-through cooling system. Therefore, contrary to a portion of the contention, the plant will not operate in violation of state water quality criteria as a result of the loss of the cooling towers from natural phenomena. Thus, it is unnecessary to prepare a cost-benefit analysis which takes into account the environmental impacts from operation without cooling towers. A second portion of the contention maintains that the entire plant should be rendered capable of withstanding the maximum anticipated earthquake or tornado. Presently, only those plant systems and structures which are necessary to shut the plant down safely and maintain it in a safe shutdown condition are designed to withstand tornadoes and a level of seismic shaking called the Safe Shutdown Earthquake.

These strigent design requirements against the effects of natural phenomena are required by NRC to protect the health and safety of the public. The remaining systems and structures, including the cooling towers, are not specified by NRC regulations with regard to effects of natural phenomena. Plant features not included in the health and safety category are designed by the Applicant to be cost effective and to meet any building codes as may be required by state and local regulations. Furthermore, any additional upgrading of the design of the cooling towers with respect to natural phenomena would not result in reducing the environmental impacts associated with the operation of the cooling towers.