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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D. C. 20555

SECY-80-107A

April 22, 1980

INFORMATION REPORT

FOR: The Commissioners

FROM: H. Denton, Director, Office of Nuclear Reactor Regulation

THRU: W. Dircks, Acting Executive Director for Operations *TRR WJD*

SUBJECT: ADDITIONAL INFORMATION RE: PROPOSED INTERIM HYDROGEN CONTROL REQUIREMENTS

Purpose: To provide the additional information requested by the Commission regarding the Proposed Interim Hydrogen Control Requirements for Small Containments (SECY-80-107).

Discussion: In SECY-80-107, Proposed Interim Hydrogen Control Requirements for Small Containments, dated February 22, 1980, the staff reported its recommendation for certain interim hydrogen control requirements for small containments on the basis of a review of the TMI-2 experience. Specifically, the staff recommended inerting of all Mark I and Mark II containments for boiling water reactors as an interim measure pending a rulemaking proceeding on the subject of degraded cores and hydrogen management.

As a result of the March 19, 1980 meeting in the Commission's Conference Room to discuss SECY-80-107, a memorandum was sent from S. Chilk to W. Dircks requesting that certain additional supporting information be provided to the Commission. The documents identified below are hereby provided in response to the Commissioners' request: (The numbering corresponds to that used in the Chilk memorandum.)

- 1.a The identity of the contractor who performed the calculations of containment capability to accommodate hydrogen generation from metal-water reaction and a copy of the contractor's analysis.

Enclosure 1 contains this information.

Contact: W. Butler, CSB/DSS
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The analysis was performed by Dr. L. F. Greimann of Ames Laboratory. A copy of the contractor's analysis is enclosed.

It is to be noted that the enclosed analysis is a preliminary one in a program designed to refine the ultimate strength characteristics of the Sequoyah/McGuire type of containment.

- 1.b A list of all plants whose containment types fall within the following categories: Mark I, Mark II, Ice Condenser, Mark III, Subatmospheric, and Dry Containment.

Enclosure 2 contains this information.

- 1.c A comparison of the experience with drywell entries for inerted Mark I plants with the information provided by representatives of the Vermont Yankee Nuclear Station, which is a non-inerted Mark I plant.

Enclosure 3 contains this information.

2. The Commission also requested that the views of the General Electric Company on the utility of inerting, including any calculations which differ from those provided by the NRC staff, be provided in writing.

Enclosure 4 is a copy of the April 8, 1980 letter from Richard P. Denise to A. Phillip Bray of General Electric. This letter advises General Electric of the Commission's request and of the staff's planned response. It also acknowledges that General Electric is planning to submit its own letter to the Commission on this subject.

Enclosures 5 through 8 contain the following documents which the staff believes to represent the General Electric views on the subject of inerting.

Enclosure 5 contains copies of the vu-graphs used in the General Electric presentation on October 12, 1979 to Dr. Mattson on the subject of "TMI Evaluation Effort-Review of BWR Hydrogen Accommodation Capability;"

The Commissioners

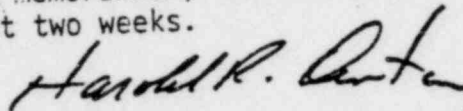
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Enclosure 6 contains copies of the vu-graphs used in the General Electric presentation to the Commission on March 19, 1980 entitled, "The BWR Perspective on Interim Hydrogen Control Measures;"

Enclosure 7 is a copy of the General Electric letter of August 3, 1979 from Mr. Sherwood to Mr. Denton, "Inerting Mark I and II Containment;" and

Enclosure 8 is a copy of the General Electric letter of March 7, 1980 from Mr. Bray to Chairman Ahearne, "BWR Mark I and II Containment Inerting."

The other items requested by the Commission (Items 1.d and 1.e in the Chilk memorandum) are being prepared and will be provided in about two weeks.



Harold R. Denton, Director ^{4/21}
Office of Nuclear Reactor Regulation

Enclosures: - *WBP*
As stated

Port of Secy-80-107A, 4/22/80

ULTIMATE STRENGTH CHARACTERISTICS
OF THE
SEQUOYAH AND MCGUIRE CONTAINMENTS

Dr. L. F. Greimann

January 21, 1980

Ames Research Laboratory

DUPLICATE DOCUMENT

Entire document previously
entered into system under:

AND 8005220784

No. of pages: 37

RICHARD P. DENISE'S LETTER

OF APRIL 8, 1980

TO

A. PHILLIP BRAY OF GENERAL ELECTRIC

Enclosure 4



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

APR 8 1980

A. Phillip Bray
Vice President and General Manager
General Electric Company
Nuclear Power Systems Division
175 Curtner Avenue
San Jose, CA 95125

Dear Sir:

The Commission has requested that the views of the General Electric Company (GE) on the utility of inerting, including any calculations which differ from those provided by the NRC staff, in staff memo SECY-80-107 - "Proposed Interim Hydrogen Control Requirements for Small Containments" - February 22, 1980, be provided in writing. As our response to this request, we plan to provide the Commission with: a) copies of the vu-graphs used in the GE presentation on October 12, 1979 to Dr. Mattson on the subject of "TMI Evaluation Effort-Review of BWR Hydrogen Accommodation Capability;" b) copies of the vu-graphs used in the GE presentation to the Commission on March 19, 1980 entitled, "The BWR Perspective on Interim Hydrogen Control Measures;" c) a copy of Mr. Sherwood's letter of August 3, 1979 to Mr. Denton, - Subject - "Inerting Mark I and II Containment;" and d) a copy of your letter of March 7, 1980 to Chairman Ahearne, Subject - "BWR Mark I and II Containment Inerting."

We are not aware of any fundamental disagreement between the results of your calculations of hydrogen concentrations and the results of hydrogen combustion in an uninerted BWR containment building, although there are some minor differences in calculated values which reflect minor differences in input assumptions. We expect to transmit this information to the Commission on or about April 8, 1980.

We understand that you are currently preparing a document that articulates the GE views on this subject and that you plan to transmit it to the Commission on or about April 11, 1980.

Should you wish to discuss this further with members of the staff, please contact Dr. Walter Butler, Chief of the Containment Systems Branch. His phone number is 301-492-9412. Thank you for your cooperation.

Sincerely,

A handwritten signature in dark ink, appearing to read "Richard P. Denise".

Richard P. Denise, Acting Assistant Director
for Reactor Safety
Division of Systems Safety

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ENCLOSURE 4