

Docket 50-320

DEC 17 1976

Docket No. 50-320

MEMORANDUM FOR: D. Vassallo, Assistant Director for Light Water Reactors,
Division of Project Management

FROM: R. L. Tedesco, Assistant Director for Plant Systems,
Division of Systems Safety

SUBJECT: STATUS OF THE OPEN ITEMS IN THE DRAFT SAFETY EVALUATION
REPORT FOR THREE MILE ISLAND NUCLEAR STATION, UNIT 2

Plant Name: Three Mile Island Nuclear Station
 Docket Number: 50-320
 Milestone Number: 24-04
 Licensing Stage: OL
 NSSS Supplier: Babcock & Wilcox
 Architect Engineer: Burns & Roe
 Containment Type: Dry
 Responsible Branch & Project Manager: LWR-2; H. Silver
 Requested Completion Date: November 22, 1976
 Review Status: Incomplete

Enclosed is the status of the open items in the draft Safety Evaluation Report for the Three Mile Island, Unit No. 2. This report has been prepared by the Containment Systems Branch after having reviewed additional information provided by the applicant in Amendment 44 of the FSAR.

The status of the four outstanding items identified in our draft SER is summarized in the following paragraphs:

I. Reactor Cavity Analysis

At the time our draft SER was written, the applicant indicated his intention of using shield plugs to minimize the neutron streaming from the reactor cavity. Because of the uncertainties in the plug dynamics analysis, the staff requested additional information from the applicant. In response to our concerns, the applicant decided to remove the shield plugs and provide a neutron shield platform:

Contact:
F. Eltawila, CSE
492-7711

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about 6-1/2 feet above the reactor vessel seal flange that would be permanently fixed and restrained from movement. Due to anticipated construction difficulties, the applicant has now decided to replace the neutron shield platform with hinged tanks filled with water that would swing out of the way to provide the vent area necessary to relieve the pressure build-up in the reactor cavity following a pipe break. We have not completed our evaluation of the applicant's analysis of the behavior of these water filled tanks under postulated accident conditions, and we will report on the resolution of this matter in a supplement to the Safety Evaluation Report.

2. Main Steam Line Break Accident Analysis

In the draft SER, we reported that the applicant had not analyzed the containment response for a spectrum of postulated main steam line breaks at different power levels, and that we would require further information to complete our review. We have received additional information regarding the main steam line break accident analysis in Amendment 44 to the FSAR which we are reviewing. We are calculating a containment temperature that is 75°F higher than the temperature calculated by the applicant, and plan to meet with the applicant to resolve this discrepancy and discuss the adequacy of the environmental equipment qualification program. We will report on the resolution of this matter in a supplement to the Safety Evaluation Report.

3. Containment Purging During Normal Plant Operation

The applicant has indicated his intention of limiting containment purging during normal plant operation to 90 hours per year (about 1 percent of the time). We find this approach acceptable. However, the FSAR does not reflect the applicant's intentions. The applicant should include the above limitation on the use of the containment purge system in the FSAR, and propose an appropriate Technical Specification. We will report on the resolution of this matter in a supplement to the SER.

4. Containment Heat Removal Systems

In the draft SER, we reported that the HSSS vendor reanalyzed the containment spray system performance. The analysis indicated that the sodium hydroxide tank (SHT), sodium thiosulfate tank (STT), and borated water storage tank (BWST) would not draw down together as previously predicted. This would result in the emptying of the SHT and STT up to twenty-two minutes before reaching the BWST level setpoint. We have requested the applicant to evaluate the effect of uneven drawdown on system performance, including the potential for spray pump cavitation. We will report on the resolution of this

matter in a supplement to the SER.

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5. Containment Sump

Our draft SER does not identify any unresolved concerns with the containment sump. However, in recent discussions with the applicant regarding the model testing that is being done on the Three Mile Island, Unit 2 sump design, we noted that the recirculation piping intakes are not physically separated by screening as required by Regulatory Guide 1.82.

We have discussed this matter with the applicant. The applicant has indicated that they will include in their study the effects of such screening on vortex formation and will provide us with further information.

Since none of the previously identified outstanding items has been resolved to our satisfaction, no changes to our draft SER are necessary at this time.

Original signed by
Robert L. Tedesco

Robert L. Tedesco, Assistant Director
for Plant Systems
Division of Systems Safety

Enclosure
As stated

- cc: R. Hejneman
- S. Hanauer
- R. Boyd
- W. McDonald
- K. Knief
- G. Lainas
- H. Silver
- J. Kudrick
- J. Shapaker
- J. Glynn
- F. Eltawila

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SURNAME →	FEltawila:mc	JShapaker	GLainas	RTedesco		
DATE →	12/15/76	12/15/76	12/15/76	12/15/76		