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October 20, 1989  
4410-89-L-0107/0480P

US Nuclear Regulatory Commission  
Washington, DC 20555

Attention: Document Control Desk

Three Mile Island Nuclear Station, Unit 2 (TMI-2)  
Operating License No. DPR-73  
Docket No. 50-320  
Safety Evaluation Report to Remove Metallurgical Samples  
From the TMI-2 Reactor Vessel

Dear Sirs:

Attached is a revision to the Safety Evaluation Report (SER) for Removal of Metallurgical Samples from the TMI-2 Reactor Vessel (RV) which was submitted for NRC review and approval via GPU Nuclear letter 4410-89-L-0085 dated August 18, 1989. This revision modifies Section 2.1, "Prerequisites," to delete reference to the Defueling Completion Report (DCR). Submittal of the DCR is not a prerequisite to commencement of the proposed Reactor Vessel sampling activities. This revision clarifies that Mode 1 Technical Specification controls will remain in place until such time as the Technical Specification requirements for transition to Mode 2 have been satisfied.

Sincerely,

M. B. Roche  
Director, TMI-2

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P PNU

RDW/emf

Attachment

cc: W. T. Russell - Regional Administrator, Region I  
J. F. Stolz - Director, Plant Directorate I-4  
L. H. Thonus - Project Manager, TMI Site  
F. I. Young - Senior Resident Inspector, TMI

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# SAFETY ANALYSIS

SA No. 4000-3555-89-01

Rev. No. 1

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## TITLE

REMOVAL OF METALLURGICAL SAMPLES  
FROM THE TMI-2 REACTOR VESSEL

Originator *W. Welch* Date 10/12/89

## CONCURRENCE

Lead Engineer *W. Kelly* Date 10/12/89 SRG *J. L. L.* Date 10/16/89

RTR *Robert F. Ryan* Date 10/12/89

Design Cognizant Engineer *Robert F. Ryan* Date 10/12/89 Rad Con N/A Date           

## APPROVAL

Mgr Eng. Section N/A Date           

Site Ops Director *J. L. L.* Date 10/17/89



**Title** Safety Evaluation Report for Removal of Metallurgical Samples  
From The TMI-2 Reactor Vessel**Page** 2 **of** 29

Rev.	SUMMARY OF CHANGE	Approval	Date
0	Initial submittal.	<i>me</i>	'8/89
1	Revised Section 2.1,	<i>me</i>	10/89

As this operations proceeds, the potential exists that activities or equipment described in this report will need to be modified or new activities and/or tooling developed. Any modifications to existing activities or equipment or the introduction of new activities or equipment will be reviewed and documented in accordance with TMI-2 administrative procedures to ensure that no potential hazards or safety concerns, not bounded by this SER, are created. If no such hazards or safety concerns are created, this operation may proceed based on the new or modified activities or equipment without a requirement to revise this SER; however, such changes would be evaluated in accordance with and would be reported annually per requirements of 10 CFR 50.59, "Changes, Tests, and Experiments."

## 2.0 PREREQUISITES AND MAJOR ACTIVITIES

The sampling operations will be performed in accordance with detailed, approved procedures. Any of the approved activities performed or tools used during Initial, core region, Lower Core Support Assembly/Lower Head (LCSA/LH) defueling, or Upper Core Support Assembly (UCSA) defueling are considered acceptable. Appropriate limits and requirements of the relevant SERs will be in effect when performing these approved activities.

### 2.1 Prerequisites

It is important to recognize that this operation is designed to take place after all RV defueling activities have been completed and it has been determined that the remaining residual fuel does not pose a criticality concern. Once this defueled condition exists, all remaining risks of operations in the Reactor Vessel, such as this sampling, are minimal. To put this in perspective, the following is a list of prerequisites that will be met prior to initiating any new activities associated with this sampling work.

- The Reactor Vessel and Reactor Coolant System will have been defueled to the extent reasonably achievable as required by the TMI-2 Technical Specifications. The remaining residual fuel will be in a subcritical configuration. However, Mode 1 controls will remain in place (Reference 1) until such time as the Technical Specification requirements for transition to Mode 2 have been satisfied.
- Sections of the lower core support plates will have been disassembled and removed from the RV to allow sufficient access to the bottom head.
- The lower head will have been cleaned of fuel material and vacuumed of loose debris. A thin layer of tightly adherent non-conductive material may exist on the bottom head prior to sampling operations. Those areas will be cleaned locally as needed to cut samples.