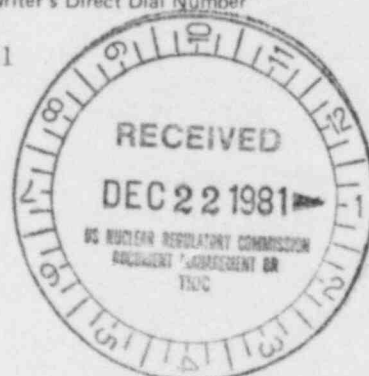




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Writer's Direct Dial Number

December 16, 1981
LIL 348



Office of Nuclear Reactor Regulation
Attn: John F. Stolz, Chief
Division of Licensing
Operating Reactors Branch No. 4
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Sir:

Three Mile Island Nuclear Station, Unit 1 (TMI-1)
Operating License No. DPR-50
Docket No. 50-289
NUREG 0737 Schedule Relief Justification

By letter dated October 27, 1981, (LIL 312) we provided preliminary notification that six NUREG 0737 1/1/82 modifications may not be completed on the schedule specified in TLL 680 dated January 23, 1981. The purpose of this letter is to describe the difficulties associated with completing these modifications and provide you with our revised commitment dates. Compensating measures that we believe justify deferment of completion of these items from the standpoint of reactor safety are also discussed.

Attached are summaries of the status of each item delineated as follows:

1. Modification Status and Problems Impeding Completion
2. Proposed Schedule
3. Compensating Measures & Impact of Deferral

A generic problem being encountered in completing all modifications is the overall magnitude of modifications being implemented on TMI-1. Our experience is that a maximum construction work force (as distinguished from active maintenance work force) that can efficiently be managed in an operating plant during shutdown conditions is approximately 250-300 men. The current construction force pursuing modifications in TMI-1 is approximately 250. During power operation, the size of a construction work force that is efficient and safely manageable is heavily influenced by plant conditions. Regulatory requirements on maintenance of containment integrity, ALARA consideration, component and systems operability, and worker safety consideration restrict the ability to accomplish this type work under certain plant conditions. Therefore, during operations,

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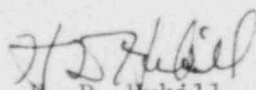
the number of construction workers must be significantly reduced. In addition, all work in progress and system status must be constantly known to plant operators and operational personnel, whether TMI-1 is in shutdown or power operation. We will not lessen the significance of maintaining control and awareness of the status of TMI-1 within operator capabilities. With completion of construction (including Construction Testing and Quality Assurance) modification packages are turned over to our Startup and Test group. A comparison of work scope with and without the 1/1/82 modifications which are not awaiting engineering or materials (i.e. construction duration is known and planned) has identified additional manpower in critical Startup and Test department discipline areas that are needed to avoid schedule slippage for many modifications. Although personnel augmentation is occurring to minimize the impact, we do expect the 1/1/82 0737 modifications to have a schedule impact on restart if they are required before restart.

We have and are continuing to evaluate our programatic approach to achieving modifications at TMI-1. We fully understand our regulatory commitments and testimony presented before the ASLB on TMI-1 restart and will abide by these commitments for restart of TMI-1. In some areas, we will exceed these commitments for modifications we believe are significant (for example, EFW cavitating ventures will be complete by restart although our ASLB and NUREG 0737 response, agreed to by the NRC, indicated Cycle 6 refueling). The scope of concerns and problems we are encountering relate to the long term NUREG 0737 requirements that are beyond the scope of the August 9, 1979 NRC Commission Order.

All six 1/1/82 modifications, where relief is being sought, are intended to assure post-accident understanding and information availability. They will not, by virtue of being deferred, increase the likelihood of TMI-1 experiencing an accident. Compensating measures are control grade, in general, and provide the ability to obtain identical information to that available if the long term modifications are complete.

In summary, we propose to complete the six items identified in LIL 312 by Cycle 6 refueling. Aspects of these modifications are being worked on now and will continue to be worked over the next months that precede startup. Our emphasis, however, is on completing those portions of these modifications that require the plant to be in cold shutdown. Thus, substantial remaining work on these modifications may be non-plant controlling at restart; i.e. they can be safely completed without TMI-1 being in cold shutdown. We believe the compensating measures that will be available at TMI-1 restart fully justify this delay in final implementation; and deferral of these NUREG 0737 requirements represent insignificant risk to the health and safety of the public.

Sincerely,


H. D. Hukill
Director, TMI-1

HDH:WJM:vjf

Attachments

cc: R. C. Haynes
R. Jacobs
T. Novak

ATTACHMENT I

Engineering & Procurement and Compensating Measure Status for 1/1/82 NUREG 0737 Modifications

II.B.3 Post Accident Sampling - RCS Liquid

-- Modification Status & Problems Impeding Completion

The guidance specified in NUREG 0737 is being implemented in two basic steps as follows:

- 1) Modification of existing sample system to obtain and analyze post accident RCS samples as specified in Restart Report, Section 2.1.2.4.1.
- 2) Installation of additional equipment to quantify dissolved gases via pressurized RCS samples.

At the time of Restart, (5% Power) TMI-1 plans to have completed system tie-ins that are controlled by plant conditions and that Item 1 above will be completed as described in Restart report, Section 2.1.2.4. This permits drawing a RCS sample within the NUREG 0737 exposure limits and analyzing the sample within three hours of reactor trip for isotopic identification, and boron analysis. Chloride samples will be obtainable and quantifiable within 4 days in accordance with regulatory criteria. Engineering and procurement is basically completed on this portion of the RCS sampling modification. Construction is currently scheduled to complete before 5% power. Turnover from construction, completion of final testing and final turnover to the plant will require an additional 6 weeks. The ability to obtain and analyze samples, however, will not be inoperative during this period and requirements for daily sampling and analysis will be met.

The engineering for pressurized sampling for total dissolved gases has recently been released to the site. Construction sequencing and procurement are in progress. Minor procurement problems have been identified to date. A preliminary operating procedure has been prepared. Construction and startup and test personnel resources constitute the major obstacle to 1/1/82 completion.

-- Proposed Schedule

Licensee intends to complete this modification before or during Cycle 6 refueling outage. We are attempting to complete those portions of the modification that require a plant condition of cold shutdown. As resources permit, this modification will be worked during plant operation.

-- Compensating Measures & Impact of Deferral

As discussed above, the portion of the modification which allows drawing an RCS sample, for analysis will be complete before restart. Compensating measures for quantifying total RCS dissolved gases will not be available. The results obtained in a post-accident environment of total RCS dissolved gases are in Licensee's view of limited benefit to protecting the health

and safety of the public. These results could provide additional confirmatory data for reconstruction of an accident or to more precisely ascertain the extent of core damage for very large accidents. Each of these items, however, are better determined by alternative, more direct indications such as isotopic distribution which are available.

II.B.3 Post Accident Sampling - Containment Atmosphere

-- Modification Status & Problems Impeding Completion

Completion of final system to support this modification is being delayed due to procurement difficulties and availability of qualified personnel as discussed in the cover letter. The scheduled vendor shipping date for a critical Control Panel is 12/6/81. This material was ordered via purchase orders issued 3/12/81 and 4/6/81, respectively. Other material including a safety relief valve was scheduled to be shipped in late November.

-- Proposed Schedule

This modification can be completed during plant operation once containment penetrations are isolated and will not interfere with containment integrity. Although we intend to proceed with this modification during plant operations, resources permitting, our scheduled completion is cycle 6 refueling.

-- Compensating Measures & Impact of Deferral

Sample panels available as part of RM-A2 (Containment Air Monitors) permit obtaining containment atmosphere samples. Once samples are drawn, results will be available for hydrogen in 5 to 60 minutes (depending upon warm up time for analytical equipment) and similar time frames for other common elements and isotopes. The deferral of this modification does not, therefore, pose significant risk to the health and safety of the public.

II.F.1 - Post Accident Containment Pressure - Safety Grade

-- Modification Status & Problems Impeding Completion

A major procurement problem in obtaining qualified recorders is affecting completion of this and other modifications. Recorders (ordered by purchase requisitions of 4/14/81 and 10/26/81) are scheduled for shipment from the vendor on 3/15/82, although expediting to early February is in progress. Current delivery date for qualified Rosemont transmitters is 1/30/82. The design provides input to the plant computer. In addition, availability of qualified personnel in the startup and test department also impacts our ability to complete this modification.

-- Proposed Schedule

As with several of the 1/1/82 modifications, much of the work can be completed during plant operation once containment penetrations and containment integrity are established. Although we will continue to pursue completion of this modification during plant operation, completion is scheduled for cycle 6 refueling outage.

-- Compensating Measures & Impact of Deferral

Previous instrumentation (control grade) designed to measure containment pressure beyond design pressure (0-100 psig) will be operational to provide reliable indication and recording. Inasmuch as operator action and automatic protective system operation (Containment isolation and Reactor Building Sprays) initiate well below design pressure, additional actions that an operator might take based upon quantifying containment pressure between 100 psig and 180 psig are limited. The deferral of this modification does not, therefore pose significant risk to the health and safety of the public.

II.F.1 Post Accident Containment Hydrogen Monitoring

-- Modification Status & Problems Impeding Completion

We are encountering problems associated with procuring long lead time equipment. Although the analyzing equipment that was ordered on 2/19/81 is about to be shipped, we are having difficulty obtaining qualified control switches. Other materials such as seamless steel piping and cabinet racks ordered recently are not anticipated to be limiting. Dilution of resources constitutes the major obstacle to modification completion by Restart.

-- Proposed Schedule

As with several of the 1/1/82 modifications, much of the work can be completed during plant operation once containment penetrations and containment integrity are established. Although we will continue to pursue completion of this modification during plant operation, completion is scheduled for cycle 6 refueling outage.

-- Compensating Measures & Impact of Deferral

As discussed under item II.B.3, analytical results can be obtained in five minutes to one hour after drawing a local sample, which is adequate compensation in the interim period.

II.F.1 Reactor Building Sump Water Level - Safety Grade

-- Modification Status & Problems Impeding Completion

Completion of this modification is currently constrained by personnel resource limitations and late delivery (12/30/81 promised delivery date) of control cabinets (purchase requisition dated of 3/5/81 and 6/15/81). Level instruments ordered on 12/11/80, 1/26/81 and 3/5/81 are not delaying modification completion at this time. This modification may not be completed during plant operations. The control cabinet mounting and electrical tie-in would disable the PORV position indication. Therefore, we do not currently plan to complete this modification until the next refueling outage.

-- Proposed Schedule

This modification will be completed before or during cycle 6 refueling outage.

-- Compensating Measures & Impact of Deferral

At restart, sump level (normal subfloor drain sump) indication will be available in the control room and provide indication of 25%, 50%, 75%, 100% full. Wide range containment level control grade instrumentation will also be available to provide a calibrated range (0'->120") of reactor building water level. In view of the availability of control grade instrumentation, and increased operational personnel staffing levels for TMI-1, delay through the next refueling outage of this modification is not considered significant.

II.F.2 Backup Incore Thermocouples

-- Modification Status & Problem Impeding Completion

These modifications are being undertaken in several phases. The modifications committed to pursuant to NUREG 0752 (Control Room Human Factors) will be completed prior to power operation (5% power). Detailed design is projected for issuance in early December for NUREG 0737 scope of modifications. Details of procurement and equipment qualification are not yet fully known. This modification cannot be completed during plant operation because electrical tie-in would disable all thermocouple readout capability.

-- Proposed Schedule

Actual completion date for this 0737 modifications will depend on the ability to qualify existing equipment to IE requirements, and procure new qualified output devices. Completion is currently scheduled for cycle 6 refueling outage.

-- Compensating Measure & Impact of Deferral

Thermocouple information is available through use of the NUREG 0752 committed modifications, tie-in to the plant computer, and additional capability to measure output with portable meters, if necessary using additional on-shift personnel. Based on these available provisions, deferral beyond 1/1/82 does not constitute a significant risk to the health and safety of the public.