

I. TECHNICAL SPECIFICATION CHANGE REQUEST NO. 104, REV. 1

The Licensee requests the attached changed pages replace the following pages of the existing Technical Specification:

Appendix A

Replace 4-12, 4-13 and 4-27a

II. REASON FOR CHANGE REQUEST

As part of the Integrated RV Material Surveillance Program (RVMSP) of the B&W Owners Group (B&W OG), TMI-1 Capsule TMI-1C, which is presently being irradiated at CR-3, is proposed to be withdrawn, tested and evaluated in accordance with a recommended new withdrawal schedule. Implementation of this new schedule will require a change to the Technical Specification for TMI-1, particularly Table 4.2-2.

III. SAFETY EVALUATION JUSTIFYING CHANGE

The following reasons provide the technical basis for the change:

1. The implementation of low leakage fuel cycles at most B&W designed plants, including Three Mile Island Unit 1, caused a corresponding decrease in the estimated end-of-life (EOL) fluences for affected reactor vessels. If capsule withdrawal continues according to the current schedule, a major portion of the capsule currently undergoing irradiation will accumulate fluences well in excess of estimated vessel EOL. Consequently, the data obtained from evaluation of these capsules will not be useful for evaluation of corresponding vessel integrity. The attached table 1 for TMI-1 illustrates the impact of this fuel cycle design change. The revised schedule will assure acquisition of representative capsule data which can be related to the irradiated construction of the vessel.
2. The withdrawal schedule, as specified in ASTM Spec. E-185-79 referenced in 10 CFR 50, Appendix H, requires that capsules be withdrawn at designated intervals such that the capsule fluence will correspond to specified conditions of the reactor vessel with respect to irradiation damage. Although the B&W OG Integrated RVMSP was designed prior to E-185-79, regulations require that the program be maintained, to the extent practical, with the updated requirements. Therefore, to insure that capsules are withdrawn in a manner consistent with the required compatibility of capsule fluence and RV fluence, it is necessary to revise the current withdrawal sequence.

The attached Table 4.2-2 shows the proposed change. This table, which is part of the TMI-1 Tech Spec, should cover the recommended new withdrawal schedule of the B&W OG. Mr. Warren Hazleton of the NRC staff has been consulted on this change and is aware of the new B&W OG withdrawal schedule. Additionally, Sections 4.2.5 and 4.2.6 have been deleted. Section 4.2.5 currently requires submission of a special report or an application for a License Amendment should Crystal River - Unit 3 cumulative reactor utilization factor (CRUF)

drop below 65%. The original TSCR No. 104 requested to change the method in which CRUF was to be calculated. The integrater RVMSP is continuously being updated to reflect actual fluence accumulations in the operating host reactors. Since the B&W OG Integrated Reactor Vessel Material Surveillance Program has been revised, there is no longer a need for either a special report or an application for a license amendment based on Crystal River - Unit 3 CRUF. The special report requested in 4.2.6 was submitted September 17, 1982 (5211-82-225) so this requirement has been fulfilled and need not remain in the TMI-1 Technical Specifications.

In summary, the proposed change in TMI-1 surveillance capsule insertion and withdrawal schedule not only refines our methodology to satisfy the requirements of 10 CFR 50, Appendix G and H, but also results in a more realistic evaluation of vessel integrity.

#### IV. AMENDMENT CLASSIFICATION (10 CFR 170.22)

Check No. 034612 was provided with Technical Specification Change Request No. 104, Rev. 0 dated June 8, 1981.

#### V. IMPLEMENTATION PERIOD

It is requested that this amendment be made effective immediately upon issuance.

TABLE 1  
SUMMARY OF TMI-1C RVSP CAPSULE

FLUENCE ACCUMULATION

o EXPECTED CAPSULE ACCUMULATED FLUENCE IF TMI-1C REMOVED AFTER CR-3 4TH CYCLE AS RECOMMENDED IN 3/83	$5.8 \times 10^{18} \text{ n/cm}^2$
o EXPECTED CAPSULE ACCUMULATED FLUENCE IF TMI-1C REMOVED AFTER CR-3 5TH CYCLE ANTICIPATED IN 9/84	$8.5 \times 10^{18}$
o ESTIMATED PEAK TMI-1 VESSEL FLUENCE ACCUMULATION AS OF 12/31/82	$1.8 \times 10^{18}$
o ESTIMATED PEAK TMI-1 VESSEL FLUENCE ACCUMULATION AT 32EFY (ASSUMING LOW LEAKAGE CORE)	$1.3 \times 10^{19}$
o ESTIMATED 1/4T TMI-1 VESSEL FLUENCE ACCUMULATION AT 32EFY (ASSUMING LOW LEAKAGE CORE)	$7.2 \times 10^{18}$

CONCLUSION:

WITHDRAW TMI-1C AT EARLIEST POSSIBLE DATE (3/83) TO OBTAIN APPROXIMATE 1/4T EOL  
FLUENCE CONSISTENT WITH THE INTENT OF 10CFR50 APPENDIX H AND OBTAIN DATA ON  
WF-25 WELD METAL.

4.2.5

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4.2.6

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4.2.7 A surveillance program for the pressure isolation valves between the primary coolant system and the low pressure injection system shall be as follows:

1. Periodic leakage testing<sup>(a)</sup> at test differential pressure greater than 150 psid shall be accomplished for the valves listed in Table 3.1.6.1 for the following conditions:
  - (a) prior to achieving hot shutdown after returning the valve to service following maintenance repair or replacement work, and
  - (b) prior to achieving hot shutdown following a cold shutdown of greater than 72 hours duration unless testing has been performed within the previous 9 months.
2. Whenever integrity of a pressure isolation valve listed in Table 3.1.6.1 cannot be demonstrated, the integrity of the other remaining valve in each high pressure line having a leaking valve shall be determined and recorded daily. In addition, the position of one other valve located in the high pressure piping shall be recorded daily.

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(a) To satisfy ALARA requirements, leakage may be measured indirectly (as from the performance of pressure indicators) if accomplished in accordance with approved procedures and supported by computations showing that the method is capable of demonstrating valve compliance with leakage criteria.

- b. Because of damage to the surveillance capsule holder tubes originally installed in TMI-1, irradiation of the TMI-1 capsules was to be conducted in TMI-2 pursuant to 10 CFR 50, Appendix H, Section II.C.4. One of the five remaining TMI-1 capsules (Capsule E had been withdrawn and tested earlier) was installed in a holder tube in the TMI-2 reactor at the initial startup of TMI-2. The other four capsules were scheduled for later insertions. However, due to the TMI-2 Incident, Unit 2 may be out of operation for a considerably longer period of time than will be TMI-1. So that TMI-1 will have an ongoing surveillance program, a TMI-1 capsule will be inserted into a holder tube in the Crystal River Unit 3 (CR-3) reactor. Because similarities exist between TMI-1 and CR-3, appropriate adjustments and margins can be imposed to the surveillance capsule irradiation in CR-3 to account for such differences that may exist in the irradiation exposure of the TMI-1 reactor vessel and the surveillance capsule.

The withdrawal schedule has been formulated to optimize the availability of irradiation data from all the capsules being irradiated in the CR-3 reactor.

TABLE 4.2-2

A. SURVEILLANCE CAPSULE INSERTION & WITHDRAWAL SCHEDULE AT TMI-2

(Note: This schedule will be revised at a later date pending the restart schedules of TMI-1 and TMI-2.)

<u>Capsule Designation</u>	<u>Insertion</u>	<u>Withdrawal</u>
TMI-1A	TMI-2 Start-up	End of 3rd Cycle
TMI-1B	End of 1st Cycle	End of 6th Cycle
TMI-1D	End of 6th Cycle	End of 15th Cycle
TMI-1E	Removed end of 1st Cycle of TMI-1	
TMI-1F	End of 10th Cycle	End of 24th Cycle

B. SURVEILLANCE CAPSULE INSERTION & WITHDRAWAL SCHEDULE AT CR-3

<u>Capsule Designation</u>	<u>Insertion</u>	<u>Withdrawal</u>
TMI-1C	End of 2nd Cycle	End of 4th Cycle
TMI-1B	End of 4th Cycle	End of 6th Cycle
TMI-1D	End of 6th Cycle	End of 11th Cycle
TMI-1F	End of 7th Cycle	End of 12th Cycle