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U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Gentlemen:

Subject: Three Mile Island Nuclear Station, Unit 1 (TMI-1)
Operating License No. DPR-70
Docket No. 50-289
Inservice Testing of Pumps and Valves (IST)

GPU Nuclear has completed a review of TMI-1's Inservice Testing Program (IST) using the guidance presented in NRC Generic Letter (GL) 89-04, "Guidance on Developing Acceptable Inservice Testing Programs." Although TMI-1 was not required to respond, our review of GL 89-04 has identified additional testing where relief from certain ASME Section XI Code requirements is needed. The purpose of this letter is to request relief from ASME Section XI code requirements where compliance with the Code is not practical. Also, we wish to clarify GPUN's position concerning the applicability to TMI-1 of ASME Section XI, IWP-3220 and IWV-3417(b).

In accordance with 10 CFR 50.55a(g)(5), if the licensee determines that conformance with certain Code requirements is impractical for its facility, the licensee shall notify the Commission and submit information to support the determinations. Attachment A describes the test program for those Category C valves which are being added to the IST Program where it is not practical to test the closed function except during refueling outages. Attachment B provides the basis for requesting relief.

ASME Section XI, IWV-3412 states that motor-operated valves which cannot be exercised during plant operation shall be identified by the owner and shall be full-stroke exercised during cold shutdowns. Attachment A also identifies those motor-operated valves that are being added to the IST Program which cannot be exercised during power operation.

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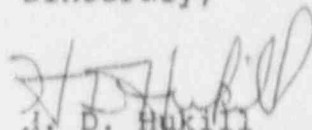
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GPU Nuclear does not agree with GL 89-04, Position 8 which would require declaring a pump inoperable when it is found to be within the Required Action Range or declaring a valve inoperable when it exceeds the limiting value of full stroke time. We believe that the NRC staff's position does not apply to TMI-1 because of differences between TMI-1 Technical Specifications (Tech Specs) and the Standard Tech Specs (STS) and because of the differences in the IST bases as established for TMI-1.

In those cases of IST component test failure where operability is affected, the applicable Tech Spec time clock would be applied. However, in accordance with TMI-1's Tech Specs, it would be possible for a component to fail the IST and still be operable.

GPU Nuclear requests that Code relief be granted as described in Attachment B before TMI-1's next refueling outage which is currently scheduled to begin in October, 1991.

Sincerely,



J. D. Hukill
Vice President and
Director, TMI-1

Attachments
HDH/MRK

cc: Region I Administrator, NRC
Director, Project Directorate I/4, NRC
Senior Project Manager, TMI-1, NRC
Senior Resident Inspector, TMI-1, NRC

TESTS TO BE ADDED TO THE TMI-1 IST PROGRAM.

VALVE NO.	TYPE	SIZE	OPERATOR	CLASS	CATEGORY	TYPE OF TEST	TEST FREQUENCY	RELIEF REQUEST
EF-V12A/B ⁽¹⁾	Check	6"	-	2	C	F (Closed)	R	See Att B
MU-V14A/B ⁽²⁾	Stopcheck	6"	Motor	2	B/C	F (Closed)	R	See Att B
MU-V112	Check	4"	-	2	C	F (Open/Closed)	Q/R	See Att B
RR-V8A/B ⁽³⁾	Check	20"	-	3	C	F (Closed)	R	See Att B
FW-V5A/B	Gate	20"	Motor	None ⁽⁴⁾	B	T	C ⁽⁵⁾	N/A ⁽⁷⁾
FW-V92A/B	Gate	6"	Motor	None ⁽⁴⁾	B	T	C ⁽⁵⁾	N/A ⁽⁷⁾
CF-V1A/B	Gate	14"	Motor	2	B	T	C ⁽⁶⁾	N/A ⁽⁷⁾

SYMBOLS

Symbols which appear in the respective columns of the above table are as follows:

CLASS

The ISI system classification of the portion of the system in which the valve is located.

CATEGORY

As defined in ASME Code, Section XI, 1980 Edition through 1989 Winter Addenda, Paragraph IWV-2200.

TYPE OF TEST

T - Full stroke valve exercise and time measurement for power operated valves.

F - Full stroke functional check of valve operation.

TEST FREQUENCY

Q - Quarterly test frequency,

C - Cold shutdown test frequency (when shutdown exceeds 48 hours and more than 92 days have elapsed since the previous test was performed). This testing will continue until complete or the plant is ready to return to power. Completion of any valve testing will not be a prerequisite to return to power. Any testing not completed at one cold shutdown will be performed at subsequent cold shutdowns. (This is in accordance with an NRC staff position presented during a meeting on October 18, 1978.)

R - Refueling outage test frequency

Footnotes

- (1) Also tested open (at accident design flowrate) each refueling or cold shutdown when cold shutdown exceeds 30 days. This frequency related relief request was approved by the NRC in the Safety Evaluation Report (SER) for the current IST interval, dated October 3, 1986.
- (2) Also stroke timed each quarter and tested open at accident design flowrate at each refueling. The refueling open test frequency request was approved by the SER dated October 3, 1986.
- (3) Also tested open at accident design flowrate each refueling. The refueling open test frequency relief request was approved by SER dated October 3, 1986.
- (4) ASME Section XI, IWA 1400(a) references Reg. Guide 1.26 for the classification of components. Regulatory Guide 1.26, paragraph 2.1.d states that the Class 2 boundary ends at the outermost containment isolation valve; for the Main Feedwater System this is FW-V12A/B FW-V5A/B and 92A/B are upstream of FW-V12A/B and Regulatory Guide 1.26, Class 3 requirements are not applicable. Therefore, FW-V5A/B and 92A/B are not ISI class piping.
- (5) FW-V5A/B and 92A/B are the Main Feedwater Block Valves. They close on main steam line break and reactor trip to prevent overcooling the RCS. Overcooling the RCS could add positive reactivity to the reactor's core. FW-V5A/B and 92A/B do not have jog control and during normal plant operation it is not possible to close these valves without upsetting the plant. Therefore, in accordance with ASME Section XI, IWV-3412, these valves will be stroke tested on a cold shutdown frequency.
- (6) CF-V1A/B are the accumulator isolation Motor Operated Valve (MOV) at TMI-1. When the RCS is greater than 650 psig these valves are open. On Steam Generator Tube Rupture (SGTR) and Small Break LOCA, CF-V1A/B are closed to allow RCS cooldown and depressurization in a timely manner to reduce offsite radiation releases. CF-V1A/B do not have jog control and as a prerequisite to criticality, Technical Specification Section 3.3.1.2c requires that CF-V1A/B be open and that the breakers for CF-V1A/B control be open. Consequently, a quarterly stroke test of CF-V1A/B can not be performed. Therefore, CF-V1A/B will be stroke timed closed at the cold shutdown frequency.
- (7) ASME Section XI, IWV-3412 states that valves which cannot be exercised during plant operation shall be identified by the owner and shall be full-stroke exercised during cold shutdowns. Therefore, specific relief from the ASME Section XI Code is not required.

RELIEF REQUESTS FOR ADDITIONAL TESTING

I CATEGORY C VALVES WHICH WILL BE TESTED CLOSED ONLY DURING REFUELING OUTAGESA. Valve Identification

<u>Valve Name and Function</u>	<u>Valve No.</u>
Emergency Feedwater (EFW) to OTSG A/B	EF-V12A/B
Borated Water Storage Tank (BWST) to HPI Pumps	MU-V14A/B
Makeup (MU) Tank to MU Pumps (HPI Pumps)	MU-V112
Inlet to Reactor Bldg. Emergency Coolers	RR-V8A/B

B. ASME Code Section XI Requirements from which Relief is Requested

Paragraph IWV-3522 states that check valves which cannot be operated during normal plant operation shall be full-stroke exercised during each cold shutdown. In case of frequent cold shutdowns these valves need not be exercised more often than once every three months.

C. Basis for Requesting ReliefEF-V12A/B

Check valve, EF-V12A/B is the last valve between the EFW Pumps and the OTSG. EF-V12A/B have a closed safety function (Reactor Building isolation) since the OTSGs provide the first RCS boundary and EF-V12A/B provide the second RCS boundary. However, EF-V12A/B are not Appendix J containment isolation valves. In addition, EF-V12A/B provide the first boundary valve to prevent EFW Pump steam binding (IEB 85-01 concern). Temperature indicators (checked each day) on the EFW Pump discharge piping resolve concerns for steam binding. EF-V12A/B can only be tested closed during refueling when nitrogen at approximately 150 psig is applied to the secondary side of the OTSGs. It is not practical to perform this evolution on a quarterly or cold shutdown frequency. Cold shutdown testing may delay reactor startup. The appropriate frequency is each refueling outage. EF-V12A/B were disassembled and inspected in the 7R Outage (7/5/88) and they were found in excellent condition. TMI-1 does not use EFW to startup the plant. EF-V12A/B see very infrequent and very short term injection flow. It is concluded that EF-V12A/B see little service and are expected to remain in excellent condition. Therefore, a refueling closed test is appropriate for EF-V12A/B.

RELIEF REQUESTS FOR ADDITIONAL TESTING

C. Basis for Requesting Relief (Continued)MU-V14A/B

For some small break LOCAs, the LPI Pumps are needed to supply water from the Reactor Building Sump to the HPI Pumps. Significant seat leakage through stop check valves MU-V14A/B will increase the level of the BWST with radioactive water from the Reactor Building Sump and 10CFR50 Appendix I limits could be exceeded. Therefore, a closed test has been added for MU-V14A/B. The refueling closed test of MU-V14A/B requires the MU Tank to be depressurized with the HPI Pumps secured. Seat leakage through MU-V14A/B is then determined by measuring the MU Tank level increase over time with flow into the MU Tank isolated except for the head of water from the BWST through MU-V14A/B. These special test conditions are difficult to obtain and cold shutdown frequency testing is likely to significantly delay reactor startup. The appropriate frequency for this testing is each refueling interval. It is not practical to perform this testing evolution on a quarterly or cold shutdown frequency.

MU-V112

For some small break LOCAs, the LPI Pumps supply water from the Reactor Building Sump to the HPI Pumps. The discharge pressure of the LPI Pump is approximately 200 psig, but the MU Tank is only designed for 100 psig. Therefore, check valve MU-V112 must close to isolate the MU Tank even though the MU Tank is protected by a small relief valve. The refueling closed test of MU-V112 requires the MU Tank to be depressurized with the HPI Pumps secured. Seat leakage through MU-V112 is then determined by measuring the MU Tank level increase over time with flow into the MU Tank isolated except for the head of water from the BWST through MU-V112. These special test conditions are difficult to obtain and cold shutdown frequency testing is likely to significantly delay reactor startup. The appropriate frequency for this testing is each refueling interval. It is not practical to perform this testing evolution on a quarterly or cold shutdown frequency.

RR-V6A/B

During the functional test of these check valves, river water, silt, and corrosives are introduced into the Reactor Building Emergency Cooling Coils. After the test, these cooling coils must be first drained and then flushed with Nuclear Service Closed Cooling Water. The drain and flush water is drained to the Reactor Building Sump and this produces large quantities of water that must be processed through the Liquid Waste Disposal System. Therefore, a quarterly or cold shutdown test is not practical. In accordance with Technical Specification 4.5.2, these check valves will continue to be tested on a refueling interval frequency (approximately every 18 months).