UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO THE INSERVICE TESTING PROGRAM AND REQUESTS FOR RELIEF

DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3

DOCKET NOS. 50-237 AND 50-249

1.0 INTRODUCTION

The Code of Federal Regulations, 10 CFR 50.55a(g), requires that inservice testing (IST) of ASME Code Class 1, 2, and 3 pumps and valves be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda, except where specific written relief has been requested by the licensee and granted by the Commission pursuant to 10 CFR 50.55(a)(3)(i), (a)(3)(ii), or (g)(6)(i). In requesting relief, the licensee must demonstrate that: (1) the proposed alternatives provide an acceptable level of quality and safety; (2) compliance would result in hardship or unusual difficulty without a compensating increase in the level of quality or safety; or (3) the conformance with certain requirements of the applicable Code edition and addenda is impractical for its facility.

The IST program addressed in this Safety Evaluation (SE) covers the second ten year inspection interval from March 1, 1982 to March 1, 1992. The licensee's pump and valve IST program is described in an enclosure to a letter dated July 12, 1989 entitled, "Inservice Testing Programs for ASME Class 1, 2, 3 and Saftey Related Pumps and Valves," Revision 3, July 1, 1989. This submittal supercedes all previous submittals.

The program is based on the requirements of Section XI of the ASME Code, 1977 Edition through the Summer 1989 Addenda.

2.0 EVALUATION

The IST program and the requests for relief from the requirements of Section XI have been reviewed by the staff with the assistance of its contractor, EG&G, Idaho, Inc. (EG&G). In addition, EG&G and staff members met with licensee representatives on May 23 and 24, 1989, in a working session to discuss questions resulting from the review. The Technical Evaluation Report (TER) provided as Attachment 1 is EG&G's evaluation of the licensee's inservice testing program and relief requests. The staff has reviewed the TER and concurs with the evaluations and conclusions contained in the TER. A summary of the pump and valve relief request determinations is presented in Table 1. The granting of relief is based upon the fulfillment of any commitments made by the licensee in its basis for each relief request and the alternative proposed testing.

Two relief requests were denied (TER Sections 4.3.2.3 and 4.3.3.1); eleven relief requests were granted with certain conditions (TER Sections 3.1.1, 3.5.1, 4.1.1.1, 4.1.1.2, 4.1.2.1, 4.2.1.1, 4.2.1.2, 4.4.1.2, 4.4.1.4, 4.9.1.1, and 4.10.1.1) and one relief request was granted on an interim bases (TER Section 3.3.1). The licensee should refer to the specific TER section for a detailed discussion of these cases. These conditions are listed in the TER Appendix C, which also lists other IST program anomalies identified during the review.

The licensee should resolve the anomalies identified in Appendix C in accordance with the staff positions. Required program changes should be made within six months of receipt of this SER.

3.0 CONCLUSION

Based on the review of the licensee's IST program and relief requests, the staff concludes that the IST program, as evaluated and modified by this SE, will provide reasonable assurance of the operational readiness of the pumps and valves covered by the IST program to perform their safety related functions. The staff has determined that granting relief, pursuant to 10 CFR 50.55(a)(3)(i), (a)(3)(ii) and (g)(6)(i), is authorized by law and will not endanger life or property, or the common defense and security and is otherwise in the public interest. In making this determination the staff has considered the alternate testing being implemented, compliance resulting in a hardship without a compensating increase in safety, and the impracticality of performing the required testing considering the burden if the requirements were imposed. The last column of Table 1 identifies the regulation under which the requested relief is granted.

During the review of the licensee's inservice testing program, the staff has identified certain misinterpretations or omissions of Code requirements. These items are summarized in the TER Appendix C. The IST program for March 1, 1982 to March 1, 1992 contained in a submittal dated July 12, 1989, is acceptable for implementation provided that the items noted above are corrected within six months of receipt of this SE (unless otherwise noted in the SE). New or revised relief requests contained in any subsequent revisions may not be implemented without prior approval by NRC unless they are relief requests meeting the positions in Generic Letter 89-04, Attachment 1.

Principal Reviewer: H. Shaw

Dated:

DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3
SER TABLE 1
SUMMARY OF RELIEF REQUESTS

RELIEF REQUEST NUMBER	TER SECTION	SECTION XI REQUIREMENT & SUBJECT	EQUIPMENT IDENTIFICATION	ALTERNATE METHOD OF TESTING	RELIEF REQUEST STATUS
Pump PR-1	3.1.1	IWP-4500 Measure vibration displacement.	All pumps in IST program.	Utilize vibration testing program in IST program.	Relief Granted (a)(3)(i) Provided compliance with all OM-6 vibration criteria.
Pump PR-2	3.1.2	IWP-3300 Measure bearing temperature.	All pumps in IST program.	Measure vibration in units of velocity quarterly.	Relief Granted (a)(3)(i)
Pump PR-3	3.1.3	IWP-3400 Test frequency.	All pumps in IST program.	Test pumps quarterly.	Relief Granted (a)(3)(ii)
Pump PR-4	3.2.1	IWP-4200 Measure inlet pressure.	Diesel generator fuel oil transfer pumps: 2-5203, 2/3-5203, & 3-5203	Evaluate using pump discharge pressure and flow.	Relief Granted (a)(3)(i)
Pump PR-5	3.3.1	IWP-4600 Measure flow rate.	Diesel Generator cooling water pumps: 2-3903, 2/3-3903, & 3-3903	Monitor monthly to ensure adequate cooling water temperatures.	Interim Relief Granted (g)(6)(i) until end of next refueling outage.
Pump PR-6	3.4.1	IWP-3100 Measure inlet pressure.	Standby liquid control pumps: 2(3)A-1102 & 2(3)B-1102	Determine suction pressure prior to start, set pump discharge pressure for test.	Relief Granted (a)(3)(i)
Pump PR-7	3.5.1	IWP-4500/OM-6 Vibration velocity acceptance criteria.	High pressure coolant injection pumps: 2(3)-2302	Utilize limits in relief request based on reference values.	Relief Granted (g)(6)(i) Provided appropriate limiting values of vibration velocity assigned.

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Valve VR-5	4.1.1.1	IWV-3413 Stroke timing.	Power-operated valves with maximum stroke times less than 10s.	Stroke time in accordance with newer edition of the Code.	Relief Granted (g)(6)(i) Provided stroke timing to at least nearest second.
Valve DAIM-V1	4.1.1.2	IWV-3413(c) Stroke time measurements.	All power operated valves with stroke times greater than 2s.	Assign alert range limits based on reference stroke time values.	Relief Granted (g)(6)(i) Provided compliance with GL 89-04, Position 5.
Valve VR-6	4.1.2.1	IWV-3420 Category A leak testing requirements.	Primary containment isolation valves.	Test to criteria of Appendix J and Technical Specifications.	Relief Granted (a)(3)(i) Provided compliance with GL 89-04, Position 10.
Valve VR-24	4.1.3.1	IWV-3521 Test frequency.	All excess flow check valves.	Test to Technical Specification requirements.	Relief Granted (g)(6)(i)
Valve VR-8	4.2.1.1	IWV-3413 Test method.	CRD ARI/ATWS air header bleed valves: 2(3)-0339-524A -524B, -548A, -548B, -549A, & -549B	Exercise each cold shutdown without stroke timing.	Relief Granted (g)(6)(i) Provided valve operation is verified within acceptance criteria.
Valve VR-9	4.2.1.2	IWV-3413 Test frequency and method.	CRD backup scram and scram dump valves: 2(3)-0302-19A, -19B, -20A, & -20B	Exercise without stroke timing each cold shutdown.	Relief Granted (g)(6)(i) Provided valve operation is verified within acceptance criteria.

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Valve VR-1	4.2.2.1	IWV-3413 & -3521 Test frequency and method.	CRD scram and scram pilot valves: 2(3)-0305-114, -117, -118, -126, & -127	Verify operation via Technical Specification testing.	Relief Granted (g)(6)(i)
Valve VR-16	4.3.1.1	IWV-3522 Test method.	Main steam relief valve discharge vacuum breaker check valves: 2(3)-0220-105A B, C, D, & E	Manually full-stroke disk and visually inspect valve internals during cold shutdowns when de-inerted and refueling.	Relief Granted (g)(6)(i)
Valve VR-3	4.3.2.1	IWV-3413 Stroke time measurements.	ADS Target Rock and electromatic relief valves: 2(3)-0203-3A, B, C, D & E	Verify proper operation each refueling outage.	Relief Granted (g)(6)(i)
Valve VR-4	4.3.2.2	IWV-3512 Setpoint check.	ADS Target Rock and electromatic relief valves: 2(3)-0203-3A, B, C, D, & E	Calibrate pressure switches and verify proper operation each refueling outage.	Relief Granted (a)(3)(i)
Valve VR-10	4.3.2.3	IWV-3512 Relief valve setpoint as-found test.	Main steam Target Rock safety relief valves: 2(3)-0203-3A	Replace valve pilot assembly section each refueling outage and replace valve body every other refueling outage.	Relief Denied
Valve VR-15	4.4.1.1	IWV-3521 Test frequency and method.	High pressure coolant injection torus suction check valves: 2(3)-2301-39	Part-stroke quarterly and sample disassembly and inspection as described in IST program.	Relief Granted (g)(6)(i)

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Valve VR-18	4.4.1.2	IWV-3521 Test frequency and method.	High pressure coolant injection keep fill check valves: 2(3)-2354-500	Verify closure by sample disassembly and inspection as described in IST program.	Relief Granted (g)(6)(i) Provided the valve series is leak tested each refueling outage.
Valve VR-19	4.4.1.3	IWV-3521 Test frequency and method.	High pressure coolant injection turbine exhaust vacuum breakers: 2(3)-2399-76A, -76B, -77A, & -77B	Verify full-stroke capability by sample disassembly and inspection as described in IST program.	Relief Granted (g)(6)(i) as requested or to functionally test the set each refueling outage.
Valve VR-22	4.4.1.4	IWV-3521 Test frequency.	High pressure injection check valves: 2(3)-2301-7	Part-stroke exercise open each cold shutdown and full-stroke exercise open and closed each refueling outage.	Relief Granted (g)(6)(i) Provided valves are exercised open at cold shutdown with torque measured and exercised to both positions at refueling.
Valve VR-17	4.5.1.1	IWV-3521 Test frequency.	Inboard isolation reactor head spray line isolation check valves: 2(3)-205-27	Full-stroke exercise and leak test each refueling outage.	Relief Granted (g)(6)(i)
Valve VR-21	4.6.1.1	IWV-3521 Test frequency.	Inboard and outboard feedwater header isolation check valves: 2(3)-0220-58A, -58B, -62A, & -62B	Full-stroke exercised closed each refueling outage.	Relief Granted (g)(6)(i)

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Valve VR-20	4.6.2.1	IWV-3521 Test frequency	High pressure injection backflow prevention check valves: 2(3)-0220-59	Full-stroke exercised closed each refueling outage.	Relief Granted (g)(6)(i)
Valve VR-11	4.7.1.1	IWV-3521 Test frequency.	Isolation condenser makeup check valves: 2(3)-1301-11, -36, & 2(3)-4107-501	Verify full-stroke capability by sample disassembly and inspection as described in IST program.	Relief Granted (g)(6)(i)
Valve VR-12	4.8.1.1	IWV-3521 Test frequency.	Standby liquid control system injection check valves: 2(3)-1101-15 & -16	Exercise open and leak test each refeuling outage.	Relief Granted (g)(6)(i)
Valve VR-13	4.9.1.1	IWV-3521 Test frequency and method.	Core spray system keep fill check valves: 2(3)-1402-34A & -34B	Verify closure capability by sample disassembly and inspection as described in IST program.	Relief Granted (g)(6)(i) Provided the valve series is leak tested each refueling outage.
Valve VR-14	4.10.1.1	IWV-3521 Test frequency and method.	Low pressure coolant injection system keep fill check valves: 2(3)-1501-67A & -67B	Verify closure capability by sample disassembly and inspection as described in IST program.	Relief Granted (g)(6)(i) Provided the valve series is leak tested each refueling outage.

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Valve VR-7	Deleted				
Valve VR-2	4.3.3.1	IWV-3513 Test sample expansion.	Main steam safety valves: 2(3)-0203-4A through -4H	Replace or test half of these valves each refueling outage.	Relief Denied
Valve VR-23	4.3.3.2	IWV-3521 Test frequency.	MSIV air accumulator check valves listed in IST program.	Full-stroke exercise each refueling outage.	Relief Granted (g)(6)(i)
Valve DAIM-V21	4.11.1.1	IWV-3521 Test frequency.	TIP system purge check valves: 2(3)-4799-514	Full-stroke exercise each cold shutdown when the containment is de-inerted and each refueling outage.	Relief Granted (g)(6)(i)