



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO INSERVICE TESTING PROGRAM RELIEF REQUESTS FOR
OMAHA PUBLIC POWER DISTRICT
FORT CALHOUN STATION
DOCKET NO. 50-285

1.0 INTRODUCTION

The Code of Federal Regulations, 10 CFR 50.55a, requires that inservice testing (IST) of certain 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 relief has been requested and granted or proposed alternatives have been authorized by the Commission pursuant to 10 CFR 50.55a(f)(6)(i), (a)(3)(i), or (a)(3)(ii). In order to obtain authorization or relief, the licensee must demonstrate that: (1) conformance is impractical for its facility; (2) the proposed alternative provides an acceptable level of quality and safety; or (3) compliance would result in a hardship or unusual difficulty without a compensating increase in the level of quality and safety. Section 50.55a(f)(4)(iv) provides that inservice tests of pumps and valves may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in 10 CFR 50.55a(b), subject to the limitations and modifications listed, and subject to Commission approval. NRC guidance contained in Generic Letter (GL) 89-04, "Guidance on Developing Acceptable Inservice Testing Programs," provided alternatives to the Code requirements determined to be acceptable to the NRC and authorized the use of the alternatives in Positions 1, 2, 6, 7, 9, and 10 provided the licensee follows the guidance delineated in the applicable position. When an alternative is proposed which is in accordance with GL 89-04 guidance and is documented in the IST program, no further evaluation is required; however, implementation of the alternative is subject to NRC inspection.

Section 50.55a authorizes the Commission to grant relief from ASME Code requirements or to approve proposed alternatives upon making the necessary findings. The NRC's findings with respect to granting or not granting the relief requested or authorizing the proposed alternative as part of the licensee's IST program are contained in this safety evaluation (SE).

In a letter dated June 21, 1995, Omaha Public Power District submitted Revision 2 to their third 10-year interval program for inservice testing of pumps and valves. The submittal includes responses to 11 anomalies identified in the NRC SE dated June 21, 1994. Also included were four revised valve relief requests, G1, E1, E2, and E3. Resubmitted without change was valve relief request E6. Deleted were relief requests E3 for pumps and E5 for

valves. An evaluation of the responses to the anomalies and the relief requests is provided below.

The licensee's IST program covers the third 10-year IST interval from September 26, 1993, to September 25, 2003. The Fort Calhoun Station IST program, Revision 2, was developed in accordance with the requirements of the 1989 Edition, Section XI, of the ASME Boiler and Pressure Vessel Code.

2.0 SUMMARY OF ANOMALY RESPONSES TO JUNE 21, 1994, SAFETY EVALUATION

Anomaly	Relief Request	Description of Issue	Licensee Response	NRC Action
1		The licensee was requested to include information on how IST components were selected and how testing requirements were identified for each component.	The requested information is provided in Section 1.2 of the revised IST program.	Licensee's response is appropriate. No further NRC action is required.
2	E3 for Pumps	Pump relief request E3 from the flow rate acceptance criteria of OM-6 was denied for the charging pumps in question. The licensee proposed not to use an Alert Range and to use <35 gpm and >40 gpm for the Required Action Range.	This relief request has been deleted.	No further NRC action is required.
3	E1, E2, and E3 for Valves	The licensee indicated compliance with GL 89-04, Position 2, but did not specifically address all aspects of the GL. The licensee was informed that relief requests must be submitted for any deviations from GL 89-04 positions for these relief requests. The licensee was requested to consider non-intrusive techniques (NIT) to verify the full-stroke capability of the check valves in question.	The licensee provided additional bases for extending the disassembly interval to one valve every other refueling outage but did not address the extreme hardship of disassembling one valve every refueling outage per GL and did not address non-intrusive methods.	Investigation of NIT should be performed. Bases should be expanded to show extreme hardship if disassembly cannot be performed every refueling outage. Compliance with the GL 89-04 provisions is subject to NRC inspection.

Anomaly	Relief Request	Description of Issue	Licensee Response	NRC Action
4	E2 and E3 for Valves	The licensee indicated compliance with GL 89-04, Position 2, but did not specifically address the practicality of partial-stroke exercising following disassembly and inspection. If this exercising is impractical, the licensee was requested to propose an alternative that offers a reasonable assurance of the valves' operational readiness following reassembly.	The licensee did not specifically address this anomaly for valve relief request E2. Valve relief request E3 has been revised to include partial-stroke exercise following reassembly.	The licensee should specifically address this Anomaly for valve relief request E2.
5	G1 for Valves	The licensee's proposal to control testing of thermal relief valves, in generic terms, under the preventative maintenance program was denied.	Valve relief request G1 has been revised to include only those thermal relief valves that are outside the scope of Section XI along with the bases for excluding the valves from the IST program.	Relief request is not required since the valves in question have been indicated to be outside the scope of IST program. The bases for excluding the valves may be subject to review during NRC inspections.
6	E6 for Valve	The alternative to test the relief valve every third refueling outage was authorized pursuant to (a)(3)(i) until OM-1 Working Group can clarify this issue during a meeting on June 20 & 21, 1994.	The OM-1 Working Group chose not to clarify this issue; the licensee, therefore, resubmitted this relief request for NRC review.	Relief request is not required since the test interval is extended to coincide with a refueling outage and the extension is less than 25% of the test interval (see NUREG 1482, Section 3.1.3).

Anomaly	Relief Request	Description of Issue	Licensee Response	NRC Action
7		Deferred test justifications J19, J5, J8, J11, J21, J29, and J35 do not adequately demonstrate the impracticality of testing the valves quarterly and/or during cold shutdowns.	J19 and J29 were deleted; J5, J8, J11, J21, and J35 were revised to demonstrate the impracticality of testing quarterly and/or during cold shutdowns.	Deferred test justifications are subject to review during NRC inspections.
8		The bases for justifications J25, J32, and J37 do not adequately demonstrate the impracticality of testing the valves quarterly.	J25, J32, and J37 were deleted.	No further NRC action is required.
9		For deferred test justifications J6 and J13, additional bases demonstrating the impracticality of testing the valves every cold shutdown are needed.	J6 and J13 were revised to include testing the valves every cold shutdown.	No further NRC action is required.
10		For deferred test justification J7, the closed function of the check valves should be reevaluated to see if there is a safety function to prevent excessive back leakage that could cause vapor binding of the auxiliary feedwater pump or exceeding the piping temperature limits. Also, the OM-22 Working Group and the NRC have taken the position that the check valve exercise test should involve verifying a valve in both the open and the closed positions, regardless of the valve's safety position in the system.	Justification J7 has been revised to indicate that the safety function of the system does not require these valves to close since there are two normally closed upstream isolation valves and an upstream check valve that is exercised closed quarterly. The valves will be full-stroked exercised only in the open direction. Licensee is evaluating the safety benefit of closure verification relative to cost.	No further NRC action is required. The NRC is currently reexamining the adequacy of Position 1 of GL 89-04. The licensee may wish to consider the need for other positive means to verify full obturator movement.

Anomaly	Relief Request	Description of Issue	Licensee Response	NRC Action
11		The proposed alternative testing in deferred test justification J11 does not address valves SI-196, 199, 202, and 205. In addition, the basis for this justification needs to be clarified and augmented.	Justification J11 has been clarified and augmented; the proposed alternative testing has been revised to address the valves in question.	No further NRC action is required.

3.0 EVALUATION OF REVISED VALVE RELIEF REQUEST G1

Generic valve relief request G1 was revised to justify removing certain relief valves from the IST program. In the SE dated June 21, 1994, relief from the scope of OM-1 for thermal relief valves in generic terms was denied. Valve relief request G1 has been revised to include only those thermal relief valves that are outside the scope of Section XI along with the bases for excluding the valves from the IST program. Relief request is not required since the valves in question have been indicated to be outside the scope of IST program. The bases for excluding the valves may be subject to review during NRC inspections.

4.0 EVALUATION OF REVISED VALVE RELIEF REQUESTS E1, E2, AND E3

The SE dated June 21, 1994, found that the licensee indicated compliance with GL 89-04, Position 2, to perform sample disassembly and inspection for valves identified in the relief requests E1, E2, and E3, but that the licensee did not specifically address all aspects of the GL position. The valves in question are: SI-139 and -140, safety injection refueling tank discharge check valves; SI-159 and -160, ECCS pump suction check valves from the containment sump; and SI-175 and -176, containment spray header check valves. The licensee was informed that a relief request must be submitted for any deviations from the GL 89-04 position.

As called for in Anomaly 3 of the SE, the licensee provided additional bases in the revised relief requests E1, E2, and E3 for extending the disassembly interval to one valve every other refueling outage but did not address non-intrusive methods. Further, the licensee did not address the "extreme hardship" aspects required by the GL for extending the interval from one valve every refueling outage to one valve every other refueling outage.

The Anomaly 4 indicated that for valve relief request E2 and E3, the licensee should address the practicality of partial-stroke exercising following disassembly and inspection. Valve relief request E3 has been revised to include partial-stroke exercise following reassembly; however, the revised E2 did not specifically address this Anomaly.

The disassembly interval should be one valve every refueling outage unless documentation for valve relief requests E1, E2, and E3 can show extreme hardship of complying with this interval. Investigation of NIT should be performed as called for in the SE dated June 21, 1994. For valve relief request E2, the licensee should specifically address the impracticality of partial-stroke exercising following reassembly in accordance with the SE dated June 21, 1994, and GL 89-04. If this exercising is impractical, the licensee should propose an alternative that offers a reasonable assurance of the valve's operational readiness following reassembly. If an alternative is proposed which is in accordance with GL 89-04 guidance and is documented in the IST program, no further evaluation is required; however, implementation of the alternative is subject to NRC inspection.

5.0 EVALUATION OF VALVE RELIEF REQUEST E6

In the SE dated June 21, 1994, the licensee's proposal to test the auxiliary feedwater pump oil cooler relief valve FW-1525 every 54 months in lieu of every 48 months specified in the Code was authorized pursuant to (a)(3)(i) until OM-1 Working Group could clarify this issue during a meeting on June 20 and 21, 1994. The OM-1 Working Group, however, chose not to clarify this issue at this meeting; the licensee, therefore, resubmitted this relief request for NRC review.

A reevaluation of this relief request shows that the proposal to test the relief valve every third refueling outage is consistent with the NRC's interpretation of the Code requirements. The licensee's proposed extension of the test interval by 6 months (to 54 months, corresponding to every third refueling outage) is less than 25 percent of the Code-specified test interval of 48 months. As indicated in NUREG-1482, Section 3.1.3, the test intervals specified in the Code may be extended by up to 25 percent to allow the interval to coincide with a refueling outage. A relief request would not be required to test this valve every third refueling outage in this case. This interpretation of the Code is based on the standard technical specifications, which have been approved by the NRC. These intervals and extensions apply directly to IST which is a technical specification surveillance requirement.

6.0 EVALUATION OF VALVE DEFERRED TEST JUSTIFICATION J7

Deferred testing justification J7 states that the check valves in question will be full-stroke exercised only in the open direction. The licensee has adequately responded to the NRC comment regarding J7 as stated in our June 21, 1994, SE. However, the NRC is currently reexamining the adequacy of Position 1 of GL-89-04, which states that "a check valve's full-stroke to the open position may be verified by passing the maximum required accident condition flow through the valve," since merely passing design basis flow does ensure obturator movement or indicate a missing, misaligned or stuck-open obturator. Any change in Position 1 will be addressed in future correspondence. Therefore, for those cases where only design basis flow is used to verify full-stroke of check valves, the licensee may wish to consider including other positive means to verify full obturator movement.

7.0 CONCLUSION

The NRC's evaluation of the Omaha Public Power District's responses to the anomalies identified in the SE dated June 21, 1994, for Fort Calhoun Station's third 10-year interval IST program shows that with the exception of Anomalies 3, 4, and 10, the responses are acceptable. For Anomaly 3 regarding valve relief request E1, E2, and E3, the licensee should perform an investigation of non-intrusive testing and expand the bases to show extreme hardship as required by GL 89-04 if the disassembly interval is extended from one valve every refueling outage to one valve every other refueling outage. For Anomaly 4 regarding valve relief request E2, the licensee should specifically address the impracticality of partial-stroke exercising following reassembly in accordance with the SE dated June 21, 1994, and GL 89-04. If this exercising is impractical, the licensee should propose an alternative that offers a reasonable assurance of the valve's operational readiness following reassembly. If an alternative is proposed which is in accordance with GL 89-04 guidance and is documented in the IST program, no further evaluation is required; however, implementation of the alternative is subject to NRC inspection. Response to deferred testing justification J7, as addressed in Anomaly 10 for check valves FW-163 and -164 in the auxiliary feedwater system, is acceptable. However, the licensee may wish to consider the need for including other positive means to verify full obturator movement.

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