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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION OF THE SECOND 10-YEAR INTERVAL INSERVICE TESTING PROGRAM PLAN REQUESTS FOR RELIEF RV-45 AND RV-58 NEBRASKA PUBLIC POWER DISTRICT COOPER NUCLEAR STATION DOCKET NO. 50-298

1.0 INTRODUCTION

The Code of Federal Regulations, 10 CFR 50.55a, requires that inservice testing (IST) of certain American Society of Mechanical Engineers (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 alternatives have been authorized or relief has been granted by the Commission pursuant to Sections (a)(3)(i), (a)(3)(ii), or (f)(6)(i) of 10 CFR 50.55a. In proposing alternatives or 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 and safety; or (3) conformance is impractical for its facility. NRC guidance contained in Generic Letter (GL) 89-04, "Guidance on Developing Acceptable Inservice Testing Programs," provides alternatives to the Code requirements determined acceptable to the staff without further NRC review. Implementation of the GL 89-04 positions is subject to NRC inspection.

Furthermore, in rulemaking effective September 8, 1992 (see 57 FR 34666), the 1989 edition of Section XI of the ASME Code was incorporated into 10 CFR 50.55a(b). The 1989 edition provides that the rules for IST of pumps and valves shall meet the requirements set forth in ASME Operations and Maintenance Standards Part 6 (OM-6), "Inservice Testing of Pumps in Light-Water Reactor Power Plants," and Part 10 (OM-10), "Inservice Testing of Valves in Light-Water Reactor Power Plants." Pursuant to 10 CFR 50.55a(f)(4)(iv), portions of subsequent Code editions or addenda incorporated by reference in paragraph 10 CFR 50.55a(b) may be used, provided that all related requirements of the respective editions or addenda are met, and subject to Commission approval. Therefore, specific relief is not required for those inservice tests that are conducted in accordance with OM-6 and OM-10, or portions thereof, provided all related requirements are met and Commission approval is granted. The NRC will confirm that all related Code requirements are met through future inspections.

Section 10 CFR 50.55a authorizes the Commission to approve alternatives and to grant relief from ASME Code requirements upon making the necessary findings. The NRC staff's findings with respect to authorizing alternatives and granting or not granting the relief requested as part of the licensee's IST program are contained in this Safety Evaluation (SE). This SE concerns relief requests and associated information submitted in a letter dated July 6, 1993, by the Nebraska Public Power District (the licensee) for the Cooper Nuclear Station (CNS) IST program. That letter addressed items specified in the staff's April 7, 1993, SE, regarding relief requests RV-28 and RV-45 and included a new relief request, RV-58, which is an updated version of RV-28. Relief requests RV-45 and RV-58 were also documented in subsequent revisions to the CNS IST program, submitted by letters dated February 21, 1994 and July 14, 1995.

The IST program evaluated in this SE covers the second 10-year IST interval for the CNS. The interval began July 1, 1984, and has been extended until February 29, 1996, due to several long outages. The second 10-year interval IST program is based on the requirements of the 1980 Edition, including addenda through the Winter of 1981 Addenda, of Section XI of the ASME Code.

2.0 NEW RELIEF REQUEST RV-58

The licensee requested relief from the requirements of Section XI, Paragraph IWP-3521, to exercise quarterly or during each cold shutdown certain check valves required for vacuum relief of the main steam relief valve discharge lines to the suppression pool. The licensee proposed to mechanically exercise these valves during cold shutdown periods when the drywell is de-inerted. RV-58 is an updated version of RV-28, which was evaluated in the April 7, 1993, NRC staff SE, and subsequently withdrawn by the licensee in the letter dated July 6, 1993.

2.1 Licensee's Basis for Requesting Relief

The licensee states the following in support of relief request RV-58:

> These vacuum breaker check valves are located inside containment and are not equipped with actuators or position indicators. Manual exercising requires drywell access. The drywell is not accessible during normal station operations and therefore the valves cannot be full-stroked or partial-stroke exercised during normal station operations.
>
> These valves can only be exercised during cold shutdown when the drywell is de-inerted. These valves are located in the drywell and, therefore, are only accessible when the plant is shutdown and the drywell is de-inerted.
>
> The drywell is not normally de-inerted when reaching the cold shutdown condition and is undesirable due to the cost and amount of time required. Except for refueling outages, cold shutdowns are usually unnecessary and if a shutdown occurs, down time is kept to a minimum. De-inerting containment for check valve testing is considered to be an unreasonable burden.

2.2 Alternative Testing

The licensee proposes the following alternative testing:

> Each valve will be mechanically exercised during cold shutdown, in accordance with IWV-3522, when the drywell is de-inerted.

2.3 Evaluation

The main steam relief valve discharge line vacuum breaker check valves described in this relief request are not equipped with actuators or position indicators and require drywell access in order to be manually exercised. As discussed in the staff's April 7, 1993, SE, (regarding relief request RV-28, which has been replaced by this relief request) the licensee has addressed the impracticality of performing these tests during power operation. That SE also stated that the licensee should partial- and full-stroke exercise these valves during cold shutdowns, when the drywell is de-inerted, if practicable, in order to be consistent with the requirements of Paragraph 4.3.2 of OM-10.

ASME/ANSI OMa-1988 Part 10 (OM-10), allows an exercising frequency of every refueling outage if higher frequency is impractical. To test the valves at every cold shutdown, the licensee would incur a significant burden in terms of the time and effort involved in de-inerting and re-inerting the drywell, replacing lost nitrogen gas, and the possible delay in returning to power operation. Requiring individuals to enter an inerted containment to perform the testing would constitute an unacceptable personnel safety hazard. However, performing the tests during cold shutdowns when the drywell is de-inerted, due to the need for other maintenance or testing, is reasonable and consistent with OM-10. Because OM-10 allows the testing frequency to be extended to every refueling outage for valves which cannot be tested during power operation or cold shutdown, the staff finds that in this case it is similarly acceptable to extend testing for those valves which cannot reasonably be tested unless the containment is de-inerted.

In final rulemaking effective September 8, 1992, published in the Federal Register, Volume 57, No. 152, Thursday, August 6, 1992, the staff approved the 1989 Edition of ASME Section XI, which references OM-10 as alternative rules for IST of valves. 10 CFR 50.55a(f)(4)(iv) provides that inservice tests of valves may meet the requirements set forth in subsequent editions and addenda of the Code that are incorporated by reference in 50.55a(b), subject to the limitations and modifications listed, and subject to Commission approval. Portions of editions or addenda may be used, provided that all related requirements of the respective editions or addenda are met. The related requirements in this case are Paragraphs 4.3.2 and 6.2(d) of OM-10. The licensee's proposal to manually exercise the valves during cold shutdown periods when the drywell is de-inerted is consistent with OMa-1988 Part 10, Paragraph 4.3.2, which allows full-stroke exercising that is not practicable during power operation or cold shutdown to be deferred to refueling outages. This relief request is also consistent with the provisions of OM-10, Paragraph 6.2(d) for the deferral of stroke testing.

2.4 Conclusion

Based on the finding that the proposed alternative meets OM-10, Paragraphs 4.3.2 and 6.2(d), the related requirements of the later Code edition that the staff finds acceptable and approves for use, the alternative testing is approved pursuant to 10 CFR 50.55a(f)(4)(iv), and specific relief is not required. Implementation of related requirements will be subject to NRC inspection.

3.0 REVISED RELIEF REQUEST RV-45

The licensee requested relief from the requirements of Section XI, Paragraphs IWV-3421 and IWV-3426 of the ASME Code, relative to the individual leak testing of Category A primary containment isolation valves and proposed to leak test the affected valves in combination. The measured leakage from the testing of each set of valves for a given containment penetration will be conservatively assigned as the leakage rate for each individual valve. The licensee considered this relief request to be preapproved by GL 89-04. In our April 7, 1993, SE, the staff disagreed that RV-45 was within the scope of GL 89-04, based on the position that the addition of new valves to a previous relief request invalidated the preapproval, and that Position 4 of GL 89-04 required the individual leak testing of Event V pressure isolation valves.

In its July 6, 1993, submittal, the licensee indicated that the revised relief request RV-45 was only changed by deleting two valves and changing two valves (RCIC-AO-22 to RCIC-CV-26CV and HPCI-AO-18 to HPCI-CV-29CV) in the list of primary containment isolation valves. These two valves were modified and given new identifiers; they were not new valves added to the relief request. Therefore, the original relief request was essentially unchanged. In addition, the licensee indicated that since there are no Event V pressure isolation valves at CNS, none of the valves subject to this relief request are Event V valves.

Based on this additional information, the staff concludes that this relief request was within the scope of GL 89-04. This approval will remain in effect for the remainder of the second 10-year interval, which ends February 29, 1996.

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