



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO THE INSERVICE TESTING PROGRAM REQUESTS FOR RELIEF

COMMONWEALTH EDISON COMPANY

DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3

DOCKET NUMBERS 50-237 AND 50-249

1.0 INTRODUCTION

Title 10 of the Code of Federal Regulations, Section 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 alternatives are authorized or relief is granted by the Commission pursuant to paragraphs (a)(3)(i), (a)(3)(ii), or (f)(6)(i) of Section 50.55a. In order to obtain authorization or 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. Section 50.55a paragraph (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 paragraph (b) of Section 50.55a, subject to the limitations and modifications listed, and subject to Commission approval. The 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 staff.

Section 50.55a authorizes the Commission to approve alternatives or grant relief from ASME Code requirements upon making the necessary findings. The NRC staff's findings with respect to reliefs requested and alternatives proposed as part of the licensee's IST program are contained in this Safety Evaluation (SE).

The licensee submitted their updated IST program for the third ten-year interval for the Dresden Nuclear Power Station, Units 2 and 3, in a letter dated February 28, 1992. The interval is from March 1, 1992, to February 28, 2002. An SE concerning eleven of the relief requests from the licensee's submittal was transmitted to the licensee in a letter dated September 11, 1992. This SE covers the remaining relief requests from the February 28, 1992, submittal. The licensee's program is based on the requirements of Section XI of the ASME Code, 1986 Edition.

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2.0 EVALUATION

The licensee's 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). The Technical Evaluation Report (TER) provided as Attachment 1 is EG&G's evaluation of the licensee's IST program relief requested in the submittal dated February 28, 1992. The staff has reviewed the TER and concurs with the evaluations and conclusions contained therein with exceptions or additions discussed below in Paragraphs 2.1, 2.2, 2.3, and 2.4. Table 1 of this SE presents a summary of the relief request determinations for the February 28, 1992, submittal.

The granting of relief or authorization of proposed alternatives is based upon the fulfillment of any commitments made by the licensee in its basis for each relief request and the alternatives proposed. The implementation of IST program is subject to inspection by the NRC.

The licensee should refer to Appendix A of the TER for a discussion of IST program anomalies identified during the review. The licensee should resolve all anomalies in accordance with the guidance therein.

2.1 Vibration Testing of the High-Pressure Coolant Injection Pumps

In Relief Request RP-23A, the licensee requested relief from the ASME/ANSI OMa-1988, Part 6, vibration velocity acceptance criteria requirements for the high-pressure coolant injection (HPCI) pumps and proposed to use alternate ranges for specific vibration measurement locations. However, no justification to support the use of the higher ranges was provided by the licensee. The staff subsequently examined vibration test data collected for these pumps. The data do not appear to justify the use of the higher ranges that the licensee had proposed. Interim relief is granted to allow a period of time for the licensee to provide justification for using the alternate vibration acceptance criteria. The licensee should consult a paper given in the 1989 Symposium on Inservice Testing of Pumps and Valves entitled, "Introduction to ASME/ANSI OMa-1988, Part 6; Basis of the New Vibration Measurement Criteria and Requirements of Part 6," in NUREG/CP-0111. This paper provides industry standard ranges for vibration levels and would be useful for the licensee to compare the HPCI data to determine if action to address the higher levels of these pumps is necessary. This review should be incorporated into the actions taken prior to expiration of the interim relief.

2.2 Testing of Main Steam Automatic Depressurization System (ADS) Valves

Relief Request RV-02B is evaluated in Section 3.2.1.3 of the TER. The relief request appears to be based on performing the testing in accordance with Technical Specifications rather than OM-1-1981. The licensee has not identified the specific paragraphs or testing requirements of OM-1 from which relief is sought. The requirements are broader than just setpoint testing. If the requirements of OM-1-1981 are met, relief is not required. If there are specific requirements that can not be met, the relief request should be

revised to be explicit as to the relief sought and the alternative testing. Additionally, the relief request is unclear in describing the difference between the Target Rock valve and the electromatic relief valves. The licensee should address this issue and, if relief is required, submit a revised relief request within 90 days of the date of this SE.

2.3 Low Pressure Coolant Injection Keep-Fill Check Valves

Relief Request RV-15B indicates that the subject valves will be leak tested during refueling outages. The leak test should be performed prior to closing the handwheel on the stop check valve 1501-66. This sequence will provide an "as-found" condition. Procedure revisions are to incorporate this sequence prior to the next required test. Additionally, note that if these valves do not have a safety function to open, the leak test is adequate for inservice testing without a supplemental disassembly and inspection. See also Relief Request RV-23C, TER Section 3.8.1.2 for the HPCI keep-fill check valves. Verification that the keep-fill system is maintaining the piping filled is acceptable for the valve opening function, if required. Additionally, the keep-fill pumps should be included in the inservice testing program if they are safety-related and provided with an emergency power source.

2.4 HPCI Turbine Exhaust Vacuum Breaker Check Valves

In Relief Request RV-23D, the licensee has indicated that the HPCI turbine exhaust vacuum breaker check valves will be leak tested as a unit for verification of the closure function and disassembled and inspected for verification of the opening function. This relief is evaluated in Section 3.8.1.3 of the TER. Because the open function of these valves is not to "full-stroke" but rather to open enough to relieve vacuum, the open function may be verified by some means other than disassembly and inspection. If there are system parameters that could be monitored during the HPCI pump test, for example, that would indicate that the valves are performing their function to open, this could meet the inservice testing requirements for the open function. With the leak test verifying closure, the disassembly and inspection could, therefore, be discontinued for inservice testing purposes. If the licensee determines this approach is feasible, the testing will be in conformance with OM-10, paragraph 4.3.2.2. The staff has approved OM-10, *Inservice Testing of Valves in Light-Water Reactor Power Plants*, by incorporation of the 1989 Edition of ASME Section XI in Section 50.55a paragraph (b) by rulemaking effective September 8, 1992 (See 57 Federal Register 34666). Therefore, if the licensee implements the testing as described above and modifies the relief request as necessary, the requisite approval of the use of OM-10 is provided herein pursuant to Section 50.55a paragraph (f)(4)(iv), and further evaluation of the relief request will not be required.

3.0 CONCLUSION

In evaluating the licensee's requests for relief from the requirements of Section XI, the staff considered (1) the acceptability of proposed alternative

testing, (2) whether the hardship of compliance is without a compensating increase in safety, and (3) the impracticality of performing the required testing considering the burden if the requirements were imposed. The TER and the last column of Table 1 identify the regulations under which the requests are granted or alternative authorized.

Pursuant to Section 50.55a paragraph (f)(6)(i), the staff has determined that granting relief is authorized by law and will not endanger life or property, or the common defense and security, and is otherwise in the public interest. The granting of relief or authorization of proposed alternatives is based upon the fulfillment of any commitments made by the licensee in its basis for each relief request and the proposed alternate testing.

Attachments:

1. Technical Evaluation Report
2. Table 1 (Summary of Relief Requests)

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Dated: December 17, 1992