



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
OF THE SECOND TEN YEAR INTERVAL INSERVICE INSPECTION PROGRAM PLAN

REQUEST FOR RELIEF NO. 94-04

FOR

DUKE POWER COMPANY

OCONEE NUCLEAR STATION, UNITS 1 AND 2

DOCKET NOS. 50-269 AND 50-270

1.0 INTRODUCTION

The Technical Specifications for the Oconee Nuclear Station state that the inservice inspection of the American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by Title 10 of the Code of Federal Regulations (10 CFR) 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). Section 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if (i) the proposed alternatives would provide an acceptable level of quality and safety or (ii) compliance with the specified requirements would result in hardship or unusual difficulties without a compensating increase in the level of quality and safety.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) on the date 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The applicable edition of Section XI of the ASME Code for the Oconee Nuclear Station, second 10-year inservice inspection (ISI) interval, is the 1980 Edition through Winter 1980 Addenda. The components (including supports) may meet the requirements set forth in subsequent editions and addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(b) subject to the limitations and modifications listed therein and subject to Commission approval.

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Pursuant to 10 CFR 50.55a(g)(5), if the licensee determines that conformance with an examination requirement of Section XI of the ASME Code is not practical for its facility, information shall be submitted to the Commission in support of that determination and a request made for relief from the ASME Code requirement. After evaluation of the determination, pursuant to 10 CFR 50.55a(g)(6)(i), the Commission may grant relief and may impose alternative requirements that are determined to be authorized by law, will not endanger life, property, or the common defense and security, and are otherwise in the public interest, giving due consideration to the burden upon the licensee that could result if the requirements were imposed.

By letter dated June 6, 1994, Duke Power Company (the licensee), submitted Request for Relief No. 94-04, requesting relief from the requirements of the ASME Boiler and Pressure Vessel Code Section XI.

## 2.0 EVALUATION

The staff has evaluated the information provided by the licensee in support of Request for Relief No. 94-04 as follows:

### Request for Relief No. 94-04:

The licensee requested relief from performing the Code-required periodic hydrostatic pressure test for the portion of the Low Pressure Service Water (LPSW) system which is shared by Units 1 and 2.

### Code Requirement:

Table IWD-2500-1, Examination Category D-B, Item D2.10, requires a hydrostatic pressure test on the pressure-retaining boundary once each 10-year inspection interval for the LPSW system.

### Licensee's Basis for Requesting Relief (as stated in the June 6, 1994, letter):

In order to perform the Hydrostatic Test both Units 1 and 2 must be in, as a minimum, Hot Shutdown conditions. The preferred configuration would be one Unit in Cold Shutdown and defueled with the other at least in Hot Shutdown to further reduce LPSW loads. This is necessary due to the system configuration and the sharing of the LPSW System on Units 1 and 2. Up until February 9, 1994 the Oconee Technical Specifications only allowed one train of the LPSW system to be out of service for maintenance or testing for 24 hours which was not an adequate amount of time to perform this test. The current Technical Specifications allow one train of the LPSW system to be out of service for maintenance or testing for 72 hours. It is anticipated the hydrostatic test would take approximately 46 hours to perform assuming no problems are encountered. This creates a challenge and pressure on the operations and test personnel to perform this test and restore the system to operable status within this time frame.

There has not been an opportunity, nor are there any current plans to create an opportunity to have the units in a condition to perform this test during the Third Inservice Inspection Period of the Second Inservice Inspection Interval when this test is required to be performed.

To bring one Unit down to coincide with a scheduled or unscheduled outage of the other unit in order to perform the Hydrostatic Test would cost Duke Power approximately \$650,000 dollars in lost revenues. This includes such items as:

- 1) Approximately .5 Hours to bring the unit down to Hot Shutdown conditions from when the Electric Generator must be taken off line and approximately 13 Hours to get the unit from Hot Shutdown back to where the Electric Generator can be placed back on line.
- 2) Approximately 32 Hours to prepare the system for the tests and then restore it afterwards. The test would have to be performed in two parts to maintain one train operable.
- 3) Approximately 14 Hours to pressurize and hold pressure prior to the VT-2 Examination and perform the examination for both test[s].

The performance of the hydrostatic test would result in an excessive burden without a compensating increase in the level of quality or safety. The VT-2 examination during the system performance test, at the elevated pressure, will provide the equivalent assurance of a hydrostatic test of the structural integrity, functionality, and leak tightness of the portion of the system addressed in this relief request.

#### Licensee's Proposed Alternative Examination:

This piping will receive a VT-2 visual examination during the system performance test. The system pressure will be elevated above the design pressure by running all three LPSW pumps, to a pressure approximately 2 to 5 psig below the required hydrostatic pressure.

#### Staff Evaluation:

The Code requires a system hydrostatic test of this system once each 10-year inspection interval. Performance of the test within the allowed outage times of the Oconee Technical Specifications would be difficult and would place significant pressure on operations and test personnel to complete the test and restore the system to service. To allow for possible problems in the conduct of the test, Units 1 and 2 would need to be shut down, preferably with one of the shutdown units in cold shutdown and defueled. There have been no occasions during the required inspection period when these conditions have existed. The establishment of the conditions to safely perform the test would impose a significant hardship on the licensee in terms of unplanned unit outages.

As an alternative, the licensee proposed a VT-2 visual examination when the system is at an elevated operating pressure, approximately 2 to 5 psig below the required hydrostatic pressure. This is very close to the required hydrostatic pressure of 110 psig, and is well above the normal operating pressure of 85-95 psig. Any leakage due to a lack of structural integrity which would occur at the hydrostatic pressure would almost certainly occur at the elevated pressure. This alternative should detect any problems associated with the system and will provide reasonable assurance of the operational readiness of the system. Little or no additional assurance of the structural integrity and leak tightness of the system would be gained by requiring the test to be performed at the slightly higher pressure. Based on the hardship and/or unusual difficulty of complying with the Code-required hydrostatic pressure test for Oconee Units 1 and 2 LPSW system, without a compensating increase in the level of quality and safety, alternatives may be authorized pursuant to 10 CFR 50.55a(a)(3)(ii).

### 3.0 CONCLUSION

The NRC staff has reviewed Request for Relief No. 94-04 and concludes that compliance with the specified hydrostatic test requirements of Section XI would result in hardship and/or unusual difficulty without a compensating increase in the level of quality and safety for Oconee Nuclear Station, Units 1 and 2, and (a)(3)(ii), alternatives may be authorized, pursuant to 10 CFR 50.55a(a)(3)(ii). The alternative examination and testing proposed by the licensee should provide reasonable assurance of the operational readiness of the subject system.

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Date: