ATTACHMENT 1

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
OF THE SECOND TEN YEAR INTERVAL INSERVICE INSPECTION PROGRAM PLAN
REQUEST FOR RELIEF NO. 93-12
FOR
DUKE POWER COMPANY
OCONEE NUCLEAR STATION, UNITS 2 AND 3
DOCKET NUMBERS: 50-270 AND 50-287

1.0 INTRODUCTION

The Technical Specifications for Oconee Nuclear Station, Units 2 and 3, 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 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).
10 CFR 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 ten-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 twelve 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, Units 2 and 3, second 10-year inservice inspection (ISI) interval is the 1980 Edition through

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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.

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 November 15, 1993, the licensee, Duke Power Company, submitted Request for Relief No. 93-12, requesting relief from the requirements of American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI. Additional information in support of Request for Relief No. 93-12 was provided by the licensee in a letter dated February 9, 1994. In a letter dated July 7, 1994, the licensee requested to expand Request for Relief 93-12 to include the equivalent Unit 2 valve.

2.0 EVALUATION AND CONCLUSIONS

The staff, with technical assistance from its contractor, the Idaho National Engineering Laboratory (INEL), has evaluated the information provided by the licensee in support of its second ten-year interval inservice inspection program plan Request for Relief No. 93-12 for Oconee Nuclear Station, Units 2 and 3. Based on the information submitted, the staff adopts the contractor's conclusions and recommendations presented in the Technical Evaluation Letter Report attached. For Request for Relief No. 93-12, pursuant to 10 CFR 50.55a(g)(6)(i) relief is granted as requested.

ATTACHMENT 2

TECHNICAL EVALUATION LETTER REPORT
ON THE SECOND TEN-YEAR INTERVAL INSERVICE INSPECTION
REQUEST FOR RELIEF NO. 93-12
FOR
DUKE POWER COMPANY
OCONEE NUCLEAR STATION, UNITS 2 AND 3
DOCKET NUMBERS: 50-270 AND 50-287

1.0 INTRODUCTION

By letter dated November 15, 1993, the licensee, Duke Power Company, submitted Request for Relief No. 93-12, requesting relief from the requirements of American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Section XI. Additional information in support of Request for Relief No. 93-12 was provided by the licensee in a letter dated February 9, 1994. In a letter dated July 7, 1994, the licensee requested to expand Request for Relief 93-12 to include the equivalent Unit 2 valve. The Idaho National Engineering Laboratory (INEL) staff has evaluated the information provided by the licensee in support of this request for relief in the following section.

2.0 EVALUATION

The information provided by the licensee in support of Request for Relief No. 93-12 has been evaluated and is documented below. The Code of record for the Oconee Nuclear Station, Units 2 and 3, second 10-year inservice inspection (ISI) interval is the 1980 Edition through Winter 1980 Addenda of Section XI of the ASME Code.

A. Request for Relief No. 93-12, IWA-4400, System Hydrostatic Pressure Testing of Repairs Made by Welding for Class 3 Condenser Emergency Discharge Valves 2CCW-7 (Unit 2) and 3CCW-93 (Unit 3)

Code Requirement: Subarticle IWA-4400(a) states that after repairs by welding on the pressure-retaining boundary, a system hydrostatic pressure test in accordance with IWA-5000 shall be performed.

Licensee's Code Relief Request: The licensee requested relief from performing the Code-required system hydrostatic pressure test for the 30 inch fillet welds attaching the new slip-on flanges for the replacement of Class 3 condenser emergency discharge Valves 2CCW-7 (Unit 2) and 3CCW-93 (Unit 3).

Licensee's Basis for Requesting Relief (as stated in the November 15, 1993, letter):

"Performing a hydro to examine the fillet welds attaching these two flanges for Valve 3CCW-93 would require extensive piping modifications resulting in an excessive burden without a compensating increase in the level of quality or safety.

"The inability to isolate valve 3CCW-93 from Units 1 and 2 would make the Emergency CCW inoperable for all three units. This would incur a 7 day LCO. If we could perform the hydrostatic test for these welds, the pressurized boundary valves would be:

Unit-1:
1CCW-1, 2, 3, 4, 5 and 6; IV-176, 191, 193 and 195.
Unit-2:
2CCW-7 and 30.
Unit-3:
3CCW-1, 2, 3, 4, 5, 6, and 240; and 3V-195
Unit-1,2&3:
CCW-8 and 9 (generic to all 3 units)

"Of the above listed valves, there is a 48-inch, a 24-inch, and twelve 12-inch butterfly valves. The safety function for twelve of these butterfly valves is to open with little concern for leakage. With only two 1" hydro connections (CCW drain line taps) available, it is impossible to outrun the valve seat leakage to obtain the hydrostatic test pressure. This means in order to perform the hydrostatic pressure test, Oconee would have to 1) modify one of the drain taps to 2 inches or larger, 2) refurbish some of the valves and 3) possibly replace these valves for one more designed for pressure test boundary functions.

"The PT nondestructive examinations assures that there were no significant flaws in the welds. The VT-2 examinations at normal operating pressure will substantiate the ability of the welds to maintain leak tightness for the conditions they were designed for. The performance test will also demonstrate that the piping will function as designed. Additionally, from a statistical bases, Oconee has a greater than 95-95 confidence level for acceptable hydro test.

"The alternate examinations, the performance test and Oconee's excellent welding record provides an acceptable level of assurance for the quality of these welds, and the health and safety of the general public has not been diminished."

The licensee also stated that Valve 3CCW-93 serves as the Unit 3 condenser emergency discharge valve and connects the condenser component cooling water (CCW) outlets to the CCW emergency header. The emergency discharge header provides a path for CCW to be discharged back to the intake canal or the "Keowee tailrace". The discharge path back to the intake canal is to mitigate the effects of a Keowee Dam break (a weir is provided in the intake canal to assure that a sufficient amount of water is retained for CCW operation). The path to the Keowee tailrace is to mitigate the effects of losing the CCW pumps (an unassisted siphon is formed, establishing a supply of cooling water through the condenser to remove decay heat).

In the July 7, 1994, letter, the licensee stated:

"The basis for including 2CCW-7 as a part of this relief request is the same as specified for 3CCW-93. Due to leakage at the hydrostatic test boundary isolation butterfly valves, system modification and valve rework or replacement would be required to be able to obtain the required test pressure, The hydrostatic test boundary isolation valve would change from 2CCW-7 and 30 to 2CCW-1, 2, 3, 4, 5, 6, and 2V-195. The remaining test boundary valves listed in the original relief request would be unchanged.

"The alternate examinations for 2CCW-7 would be the same as those proposed for 3CCW-93. A surface, nondestructive examination (MT or PT) will be performed on the fillet welds for the new slip on flanges used to install the valve into the system. A system pressure test, with the associated VT-2 examination, will be performed at the normal system operating pressure. As specified in our February 9, 1994 letter, a performance test is performed on these systems each refueling outage."

Licensee's Proposed Alternative Examination: The subject welds will receive a surface examination (PT or MT) and a VT-2 visual examination during pressure testing at operating pressure. In addition, this piping will be tested per Performance Test Procedure PT/3/A/0261/07 to demonstrate that the Emergency Circulating Water System gravity flow can

be maintained and the intake canal recirculation flow path can be established in the event of a dam failure. The performance test will be performed each refueling outage.

Evaluation: The Code requires a system hydrostatic test of repairs made by welding. However, the subject valves have common connections with the other Oconee units and are not isolable. Thus performance of the system hydrostatic test would disable the emergency component cooling water system for all three units. Therefore, the Code-required system hydrostatic pressure test is impractical for the subject repair welds. To perform the required pressure test, extensive piping modifications would be necessary to isolate the valves. This would represent a significant burden on the licensee.

As an alternative, the licensee proposed a surface examination of the repair welds, a VT-2 visual examination when the system is at normal operating pressure, and a test of the system's flow path. This alternative should detect any problems associated with the repair welds and will provide reasonable assurance of the operational readiness of the system. Therefore, it is recommended that relief be granted pursuant to 10 CFR 50.55a(g)(6)(i).

3.0 CONCLUSION

The INEL staff has reviewed Request for Relief No. 93-12 and concludes that the requirements of the Code are impractical for Oconee Nuclear Station, Units 2 and 3, and recommends that relief be granted, pursuant to 10 CFR 50.55a(g)(6)(i). The alternative examination and testing proposed by the licensee should provide reasonable assurance of the operational readiness of the subject system.