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SUBJECT: Requests exemption from requirements of 10CFR50, App J, Section III.D(b)(ii) re containment air locks leakage testing. Exemption would allow performance of air lock door seal test in lieu of full pressure test.

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October 5, 1999

U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Document Control Desk

Subject: Oconee Nuclear Station
Docket Numbers 50-269, 270, and 287
Request for exemption from 10 CFR Part 50, Appendix
J, Type B Local Leak Rate Testing Requirements for
Containment Air Locks

Duke Energy Corporation hereby requests an exemption from the Nuclear Regulatory Commission's requirements set forth in 10 CFR 50 Appendix J Section III.D.2(b)(ii) regarding containment air lock leakage testing for Oconee Nuclear Station. The exemption would allow performance of an air lock door seal test in lieu of a full pressure test.

Information supporting this request is contained in the attached exemption request. Duke Energy has concluded that for the reasons specified in the attachment, special circumstances as defined in 10 CFR 50.12 exists that support this exemption, and that the granting of the requested exemption will not present an undue risk to the health and safety of the public and is consistent with the common defense and security.

Approval of this exemption request is needed to minimize adverse schedule impact should a containment entry be required. The exemption would allow performance of an air lock door seal test in lieu of a full pressure test should a containment entry be required. This request is consistent with a similar exemption request that has been approved for a nuclear plant of another utility.

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The addition of Shutdown Cooling requirements to Technical Specifications, as part of the ONS Improved Technical Specification conversion, makes it more likely that a containment entry for valve alignment would be required that could unnecessarily result in requiring a subsequent full pressure test of the air lock. As described in the attached exemption request, a full pressure test is not necessary to achieve the underlying purpose of 10 CFR 50 Appendix J. Duke Energy Corporation requests a decision regarding this exemption request be made by March 2000 to support the Unit 3 refueling outage currently scheduled to begin in April 2000.

Should you have any questions or require additional information, please contact Boyd Shingleton at (864) 885-3428.

Very truly yours,



W. R. McCollum, Jr., Vice President
Oconee Nuclear Site

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Attachment 1
Oconee Nuclear Station

EXEMPTION REQUEST

In accordance with 10 CFR 50.12, Duke Energy requests an exemption for the Oconee Nuclear Station (ONS) from the requirements specified in 10 CFR Part 50 Appendix J Section III.D.2(b)(ii) regarding Type J testing of containment air locks.

Background

10 CFR 50.54(o) requires primary reactor containments for water cooled power reactors to be subject to the requirements set forth in 10 CFR Part 50, Appendix J. Section III.D.2(b) of Appendix J states:

(i) Air locks shall be tested prior to initial fuel loading and at 6-month intervals thereafter at an internal pressure not less than P_a .

(ii) Air locks opened during periods when containment integrity is not required by the plant's Technical Specifications shall be tested at the end of such periods at not less than P_a .

(iii) Air locks opened during periods when containment integrity is required by the plant's Technical Specifications shall be tested within 3 days after being opened. For air lock doors opened more frequently than once every 3 days, the air lock shall be tested at least once every 3 days during the period of frequent openings. For air lock doors having testable seals, testing the seals fulfills the 3-day test requirements. In the event that the testing for this 3-day interval cannot be at P_a , the test pressure shall be as stated in the Technical Specifications. Air lock door seal

testing shall not be substituted for the 6-month test of the entire air lock at not less than P_a .

(iv) The acceptance criteria for air lock testing shall be stated in the Technical Specifications.

ONS Technical Specification (TS) Section 3.6.2, Containment Systems, Containment Air Locks, presently includes the following Surveillance Requirement (SR);

"SR 3.6.2.1 Perform required air lock leakage rate testing in accordance with 10 CFR 50, Appendix J, Option A, as modified by approved exemptions."

Appendix J was revised in 1980 (45 FR 62789) to relax the restrictive requirement to perform an air lock leak test after each opening. However, at this time, Section III.D.2(b)(ii) was added to test the air locks at P_a prior to entering the mode where containment integrity is required.

This revised Appendix J requirement applies whenever the plant is in Mode 5 (Cold Shutdown), i.e., containment integrity is not required (Technical Specification 3.6.1 requires that containment integrity be maintained in Modes 1 through 4). However, if an air lock is opened during Mode 5, Section III.D.2(b)(ii) requires that an air lock leakage test at not less than P_a be conducted prior to entry into Mode 4.

The requested exemption would, if granted, allow the requirements of Appendix J Section III.D.2(b)(ii) to be met by performance of an air lock door seal leakage test, provided that no maintenance has been performed on the air lock that could affect the air lock sealing capability. This SR would be performed during plant startup prior to entering Mode 4 where containment integrity is required. If maintenance has been performed on the air lock that could affect the air lock sealing capability, then an overall air lock leakage test at P_a would be necessary prior to establishing containment integrity.

Basis for Exemption Request

10 CFR 50.12, permits the Nuclear Regulatory Commission to grant exemptions which are authorized by law, will not present an undue risk to the health and safety of the public, and are consistent with the common defense and security, provided that special circumstances are present. Duke Energy submits that the exemption requested is authorized by law, and if granted would not present an undue risk to the public health and safety. Allowing the substitution of an air lock door seal test for an air lock full pressure test prior to entry into Mode 4 during plant startup would have no impact upon plant operation or safety. The six month test requirement of Section III.D.2(b)(i) of Appendix J, the three day test requirement of Section III.D.2(b)(iii) of Appendix J, and the need for testing after maintenance has been performed on the air lock in order to declare the air lock operable will continue to demonstrate containment integrity. Therefore, analysis of post accident radiological releases, as described in the ONS Updated Safety Analysis Report, would not be affected. Furthermore, this exemption has no impact on plant radiological or non-radiological effluents and involves no significant occupational exposure.

Duke Energy submits this issuance of an exemption is also supported by the existence of special circumstances as set forth in 10 CFR 50.12(a)(2)(ii). Full pressure (P_a) testing of the containment air locks in Mode 5 (Cold Shutdown) prior to establishing containment integrity is not required to achieve the underlying purpose of Appendix J.

The underlying purpose of 10 CFR 50 Appendix J, as set forth in the introduction to 10 CFR Appendix J (page 782, Section I of the 1999 version), is to assure that: a) leakage through the primary reactor containment, and systems and components penetrating primary containment shall not exceed allowable leakage rate values as specified in the Technical

Specifications or associated Bases, and b) periodic surveillance of reactor containment penetrations and isolation valves is performed so that proper maintenance and repairs are made during the service life of the containment, and systems and components penetrating primary containment.

Both of these purposes can be accomplished by performance of air lock door seal testing except for those cases where maintenance has been conducted that could affect the air lock sealing capability. This exemption will allow Duke Energy to use an alternative method to the requirements for conducting a full pressure air lock leakage test. Duke Energy proposes to utilize seal leakage testing as described in Section III.D.2.b(iii) when the reactor is in Mode 5 (Cold Shutdown) or Mode 6 (Refueling) and when no maintenance has been performed that affects air lock sealing capabilities. A full pressure air lock leakage test will continue to be performed at least once every six months and following any maintenance that could affect air lock sealing capability. This six month test will verify that the sealing capability of the air lock has not been degraded as a result of routine use or maintenance since the previous test. It will also verify that the overall air lock leakage rate is within the Technical Specification limits.

This exemption request is also supported by special circumstances in 10 CFR 50.12(a)(2)(iii). In this case, Duke Energy compliance with the existing requirements of Appendix J, Section III.D.2(b)(ii) are significantly in excess of those incurred by others similarly situated. Performing an air lock test in accordance with III.D.2(b)(ii) takes approximately 12 hours per air lock and requires installation of a strong back device on the inside air lock door (test pressure applied inside the air lock tends to unseat this door because it is designed to seat with accident pressure from inside containment). An exemption would eliminate this requirement. Even if the periodic 6-month test required by Section III.D.2(b)(i) of Appendix J has been satisfied, to meet the requirement of Section III.D.2(b)(ii),

no access to the containment can be allowed while preparing to leave Mode 5 until air locks that have been opened in Mode 5 are first tested and the plant has entered Mode 4. Thus the test is effectively required every time Mode 5 is entered. The containment must either be cleared of personnel during performance of this test or they must be required to remain inside containment during the test and until the plant reaches Mode 4. Often there are several minor operational and maintenance occurrences that require containment entry just prior to entering Mode 4. The special air lock test must wait until all such occurrences requiring containment entry are first addressed. This is a very restrictive requirement and slows the process of returning to operation. Additionally, this extra testing is a drain on personnel resources with no resulting increase in assurance the air lock will not experience excessive leakage.

The 6-month frequency of the full pressure test is considered adequate since the door operator (hand wheel) shaft seals experience very little alteration as the shafts rotate within packing and operating history indicates the shaft seals are effective in maintaining the sealing capability, even with door operation. In contrast to the shaft seals, the door seals could experience alteration when the doors cycle. Pressurization of the volume between the seals to 60 psig after each opening, and prior to establishing containment integrity, provides the necessary surveillance to ensure the sealing capability of the door seals. Additionally, a full pressure test every six months and after maintenance assures operability.

The granting of this exemption is authorized by law, will not present an undue risk to the public health and safety and is consistent with the common defense and security. As described above, the application of this requirement is not necessary to achieve the underlying purpose of the rule. NRC granted a similar exemption to First Energy's Davis Besse Nuclear Station in November 1994. The current requirement for testing is an unnecessary hardship as described above and is

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one that other utilities have been granted exemption from. Consideration of this exemption is requested by March 2000 to support the Unit 3 refueling outage.