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SUBJECT: Requests exemption from 10CFR50.46 for ONS,, Units 1 & 2 for  
short duration of Keowee Emergency Power & Engineered  
Safeguards Functional (KEP/ESF) Test.

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October 21, 1998

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555-0001

Subject: Oconee Nuclear Station  
Docket Nos. 50-269, -270, -287  
Request for Exemption from 10 CFR Part 50.46-  
Keowee Emergency Power Engineered Safeguards  
Functional Test

Reference: Duke Energy to NRC letter dated September  
17, 1998. Request for Amendment- Keowee  
Emergency Power Engineered Safeguards  
Functional Test (TAC NOS. MA3595, MA3596, And  
MA3597)

In a phone conversation between the NRR Project Manager and Oconee, a need was identified for Duke Energy Corporation (Duke) to request an exemption from the requirements of 10CFR50.46 for Oconee Units 1 and 2 during the proposed Keowee Emergency Power and Engineered Safeguards Functional (KEP/ESF) Test. This KEP/ESF test has been deemed to result in an unreviewed safety question (USQ). A proposed amendment to the Oconee Updated Final Safety Analysis Report was submitted to the staff in a letter dated September 17, 1998. This proposed license amendment is currently under review by the NRC.

During the KEP/ESF Test, Unit 3's ES loads will be intentionally placed on the Keowee Hydro Unit feeding the underground emergency power path. Assuming a simultaneous LOCA/LOOP on one of the two operating units, the emergency power system could be placed in a condition outside the design basis.

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Therefore, pursuant to 10 CFR 50.12, Duke is hereby requesting an exemption from 10 CFR 50.46 for Oconee Units 1 and 2 for the short duration ( $\approx$  24 hours) of the KEP/ESF Test. The justification for this request is provided as Attachment 1 to this letter.

If you have any questions regarding this request, please contact Fred Owens at (864) 885-3042.

Sincerely,

A handwritten signature in dark ink, appearing to read 'W. R. McCollum, Jr.', is written over the typed name.

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

FEO

Attachment

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cc: L. A. Reyes, Regional Administrator  
Region II

M. A. Scott, Senior Resident Inspector  
Oconee Nuclear Site

D. E. LaBarge, Project Manager  
NRR

V. R. Autry,  
DHEC

## ATTACHMENT 1

### Justification for Keowee Emergency Power and Engineered Safeguards Functional Test (KEP/ESF) Exemption Request

#### Background

The planned KEP/ESF test will be performed with Unit 3 at cold shutdown with its engineered safeguards (ES) loads on the Standby Buses. The other two Oconee units should not be affected by the test. However, in the extremely unlikely (probability  $\approx 2E-9$ ) event that a real LOCA/LOOP were to occur on either of the operating units during the simulated LOCA/LOOP test on Unit 3, the Oconee EPS would be placed in a condition outside the design bases. The EPS may not be capable of handling the electrical loading of two instantaneous LOCA/LOOP events without some safety related equipment being adversely affected, i.e. tripping off, experiencing low voltage, etc. The EPS would be able to handle the electrical loading if the two events were offset in time ( $\approx 10$  seconds) to allow the first unit's load to reach steady state condition prior to the second unit's emergency loads starting. Therefore, an infinitesimally small, but non-zero, increase in the probability of a malfunction of equipment important to safety and the potential consequences of a LOCA/LOOP event is created by the test.

The emergency core cooling system (ECCS) is designed to assure that the consequences of the spectrum of loss of coolant accidents (LOCAs), coincident with a loss of offsite power (LOOP), are within the acceptance criteria specified in 10 CFR 50.46. The planned test on Unit 3 could challenge these acceptance criteria in the extremely unlikely event that a LOCA and LOOP occurred coincident with the test. As a result, a temporary exemption from the requirements of 10 CFR 50.46 is necessary. The following information provides the basis for the exemption request to 10CFR50.46 requirements for Oconee Units 1 and 2 for the duration of the KEP/ESF test.

10CFR50.12 states that the Commission may grant an exemption from requirements contained in 10CFR50 provided that:

1. The requested exemption is authorized by law:

NRC's authority to grant exemptions from the requirements of Title 10 of the Code of Federal Regulations, Part 50 is codified in 10 CFR 50.12. Since the exemption request does not present an undue risk to the public health and safety and will not endanger the common defense and security, as described below, the NRC is authorized to issue this exemption.

2. The requested exemption will not present an undue risk to the public health and safety

A risk evaluation was performed to determine the probability of a LOCA/LOOP occurring on one of the operating Oconee Units during the postulated period of twenty four hours duration of the KEP/ESF test. That probability was calculated to be  $(2E-9)$  for the entire twenty four hours. Furthermore, the emergency power system (EPS) would be able to handle the electrical loading if the two events were offset in time ( $\approx 10$  seconds) to allow the first unit's load to reach steady state condition prior to the second unit's emergency load starting. Considering the very low probability of a concurrent LOCA/LOOP on one of the operating units, the KEP/ESF test will not present an undue risk to public health and safety.

3. The requested exemption will not endanger the common defense and security

To ensure that the common defense and security are not endangered, the exemption request must demonstrate that the loss or diversion of Special Nuclear Material (SNM) is precluded. Duke has systems and processes in place which provide protection for the public from diversion of SNM that Duke is licensed to possess. These systems and processes are those embodied in the Oconee Physical Security Plan, the Safeguards Contingency Plan, and the Training and Qualification Plan for security personnel. The request for exemption from the requirements of 10 CFR 50.46 for the

short duration of the KEP/ESF test does not affect the systems and processes described above. Therefore, this exemption does not affect the common defense and security.

4. Special circumstances are present which require issuance of the exemption to the requirements of 10CFR50.46

10 CFR 50.12(a)(2) states that the NRC will not consider granting an exemption to the regulations unless special circumstances are present. The requested exemption meets the special circumstances of 10 CFR 50.12(a)(2)(iv) in that the exemption would result in benefit to the public health and safety that compensates for the small decrease in safety that may result from granting the exemption. The benefit is that this test will produce data to support a proposed modification to the loading scheme of the Keowee Hydro Unit to improve the overall reliability of the Oconee EPS which supports the ECCS. The exemption meets the special circumstance in 10 CFR 50.12(a)(2)(v) in that the exemption will provide only temporary relief from the requirements of 10 CFR 50.46 (for the duration of the KEP/ESF test) which is expected to take no more than twenty four hours.

Additionally, the test is being conducted under a comprehensive test plan which includes special management oversight, just in time training for the operators which includes power system failures, and detailed contingency plans. Other precautions to protect the power systems will be in place. These contingency plans are described in more detail in Duke's September 19, 1998, submittal to the staff. No other work will be allowed on the electrical system or engineered safeguards system of any unit during this test. A Lee gas turbine will be powering CT-5 to provide additional defense in depth for the EPS during the test.

10 CFR 50.46(d) states "the requirements of this section are in addition to any other requirements applicable to ECCS set forth in this part. The criteria set forth in paragraph (b), with cooling performance calculated in accordance with an acceptable evaluations model, are in implementation of the general requirements with respect to ECCS performance design set forth in this part, including in particular Criterion 35 of appendix A." The principle design criteria for Oconee 1, 2, and 3 were developed in consideration of the seventy General Design Criteria for Nuclear Power Plant Construction

Permits proposed by the AEC in a proposed rule-making published for 10 CFR Part 50 in the Federal Register of July 11, 1967. As such, the general design criteria of 10 CFR 50 Appendix A do not apply and an exemption from criteria in Appendix A is not required. The general design criteria for Oconee are specified in Section 3 of the Oconee Updated Final Safety Analysis Report (UFSAR). Relevant design criteria that would be impacted by the planned test are:

UFSAR 3.1.39 Criterion 39 "Emergency Power for Engineered Safety Features (Category A)", 3.1.37 Criterion 37 "Engineered Safety Features Basis for Design (Category A)", and 3.1.44 Criterion 44 "Emergency Core Cooling Systems Capability (Category A)".

These design criteria assure that structures, systems, and components can perform their intended function during a design basis accident. However, as described earlier, a postulated LOCA/LOOP coincident with the planned KEP/ESF test would result in an event not contemplated in the design of the plant. In that event, the Emergency Core Cooling System of the affected unit might not be able to perform its intended safety function. It is Duke's position that such a postulated event is extremely unlikely. As such, performing the test does not present an undue risk to public health and safety. Therefore, a temporary deviation from the above design criteria specified in Section 3 of the UFSAR is considered justified.

##### 5. Conclusion for Exemption Acceptability

The exemption request from the requirements of 10 CFR 50.46 for the KEP/ESF Test is justified. The probability of a coincident LOCA/LOOP on one of the operating units ( $\approx 2E-9$ ) was calculated for the entire duration (24 hours) of the KEP/ESF Test. In reality, if a separation in time of greater than 10 seconds exists between initiation of the test and a coincident event, the ECCS on the affected unit will be capable of performing its intended safety function. The benefit to the Oconee Emergency Power System from performing this test along with the low probability of a concurrent



LOCA/LOOP on one of the two operating Oconee Units provide the justification for granting this exemption request.