

February 23, 1998

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SUBJECT: ISSUANCE OF AMENDMENT - OCONEE NUCLEAR STATION, UNIT 2  
(TAC NO. MA0607)

Dear Mr. McCollum:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 228 to Facility Operating License No. DPR-47 for the Oconee Nuclear Station, Unit 2. The amendment is in response to your application dated January 15, 1998.

The amendment revises Technical Specifications (TS) Table 4.1-1 and Specification 4.5.2.1.2 to allow a one-time extension for specified Unit 2 refueling outage surveillances during operating cycle 16.

A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Based on our review of the submittal, the staff is concerned about the timeliness of your application. Your staff failed to recognize the effect that extending the operating cycle would have on the inability to perform certain Unit 2 refueling outage surveillances within the interval allowed by the TS. As a result, the amendment application was submitted too close to the start of the refueling outage, which caused agency resources to be diverted and the application to be processed in a nonroutine manner. In addition, confusion and a processing delay arose when the need to add additional surveillances was discovered and verbally transmitted to the staff, causing plans to be made to withdraw the application, which were subsequently reversed. These problems indicate that changes are needed to the process used at the site to control surveillance schedules when a change to the operating cycle is made.

Sincerely,  
ORIGINAL SIGNED BY:  
David E. LaBarge, Senior Project Manager  
Project Directorate II-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

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Docket No. 50-270

Enclosures: 1. Amendment No. 228 to DPR-47  
2. Safety Evaluation

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

February 23, 1998

Mr. William R. McCollum  
Vice President, Oconee Site  
Duke Energy Corporation  
P. O. Box 1439  
Seneca, SC 29679

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Sincerely,

A handwritten signature in black ink, appearing to read "D. LaBarge", with a long horizontal flourish extending to the right.

David E. LaBarge, Senior Project Manager  
Project Directorate II-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-270

Enclosures: 1. Amendment No. 228 to DPR-47  
2. Safety Evaluation

cc w/encl: See next page

Oconee Nuclear Station

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

DUKE ENERGY CORPORATION

DOCKET NO. 50-270

OCONEE NUCLEAR STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 228  
License No. DPR-47

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment to the Oconee Nuclear Station, Unit 2 (the facility) Facility Operating License No. DPR-47 filed by the Duke Energy Corporation (the licensee) dated January 15, 1998, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and Paragraph 3.B of Facility Operating License No. DPR-47 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No.228, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented upon receipt.

FOR THE NUCLEAR REGULATORY COMMISSION



Herbert N. Berkow, Director  
Project Directorate II-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Attachment:  
Technical Specification  
Changes

Date of Issuance: February 23, 1998

ATTACHMENT TO LICENSE AMENDMENT NO. 228

FACILITY OPERATING LICENSE NO. DPR-47

DOCKET NO. 50-270

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the areas of change.

Remove Pages

4.1-7

4.1-8a

4.5-4

4.5-5

Insert Pages

4.1-7

4.1-8a

4.5-4

4.5-5\*

\*overflow page - no change

Table 4.1-1 (CONTINUED)

<u>Channel Description</u>	<u>Check</u>	<u>Test</u>	<u>Calibrate</u>	<u>Remarks</u>
41. Engineered Safeguards Channel 1 HP Injection & Reactor Building Isolation Manual Trip	NA	RF	NA	Includes Reactor Building isolation of non-essential systems only.
42. Engineered Safeguards Channel 2 HP Injection & Reactor Building Isolation Manual Trip	NA	RF	NA	Includes Reactor Building isolation of non-essential systems only.
43. Engineered Safeguards Channel 3 LP Injection Manual Trip	NA	RF	NA	
44. Engineered Safeguards Channel 4 LP Injection Manual Trip	NA	RF	NA	
45. Engineered Safeguards Channel 5 RB Isolation & Cooling Manual Trip	NA	RF(1)	NA	Includes Reactor Building isolation of essential systems only. (1) A one-time extension of the test frequency to a maximum of 23 months is allowed for Oconee Unit 2 during operating cycle 16.
46. Engineered Safeguards Channel 6 RB Isolation & Cooling Manual Trip	NA	RF(1)	NA	Includes Reactor Building isolation of essential systems only. (1) A one-time extension of the test frequency to a maximum of 23 months is allowed for Oconee Unit 2 during operating cycle 16.
47. Engineered Safeguards Channel 7 Spray Manual Trip	NA	RF	NA	
48. Engineered Safeguards Channel 8 Spray Manual Trip	NA	RF	NA	

Table 4.1-1 (CONTINUED)

<u>Channel Description</u>	<u>Check</u>	<u>Test</u>	<u>Calibrate</u>	<u>Remarks</u>
55. Containment Pressure Monitor (PT-230, 231)	MO	NA	AN	TMI Item II.F.1.4
56. Containment Water Level Monitor-Wide Range (LT-90, -91)	MO	NA	RF	TMI Item II.F.1.5
57. Containment Hydrogen Monitor (MT-80,-81)	NA	MO	AN	TMI Item II.F.1.6
58. Wide Range Hot Leg Level	NA	RF(1)	RF(1)	(1) A one-time extension of the channel test and calibration frequency to a maximum of 24 months is allowed for Oconee Unit 2 during operating cycle 16.
59. Reactor Vessel Head Level	NA	RF(1)	RF(1)	(1) A one-time extension of the channel test and calibration frequency to a maximum of 24 months is allowed for Oconee Unit 2 during operating cycle 16.
60. Core Exit Thermocouples	MO	NA	RF(1)	(1) A one-time extension of the calibration frequency to a maximum of 24 months is allowed for Oconee Unit 2 during operating cycle 16.
61. Subcooling Monitors	MO	RF(1)	RF(1)	(1) A one-time extension of the channel test and calibration frequency to a maximum of 24 months is allowed for Oconee Unit 2 during operating cycle 16.

ES - Each Shift  
 DA - Daily  
 WE - Weekly  
 MO - Monthly

QU - Quarterly  
 AN - Annually  
 PS - Prior to startup, if not performed previous week  
 NA - Not Applicable  
 RF - Refueling Outage  
 STB - STAGGERED TEST BASIS

## 4.5.2 Reactor Building Cooling Systems

### Applicability

Applies to testing of the Reactor Building Cooling Systems.

### Objective

To verify that the Reactor Building Cooling Systems are operable.

### Specification

#### 4.5.2.1 System Tests

##### 4.5.2.1.1 Reactor Building Spray System

- a.
  - (1) During each refueling outage, a system test shall be conducted to demonstrate proper operation of the system. A test signal will be applied to demonstrate actuation of the Reactor Building Spray System.
  - (2) The test will be considered satisfactory if visual observation and control board indication verifies that all components have responded to the actuation signal properly; the appropriate pump breakers shall have closed, and all valves shall have completed their travel.
- b. Station compressed air will be introduced into the spray headers to verify the availability of the headers and spray nozzles at least every ten years.

##### 4.5.2.1.2 Reactor Building Cooling System

- a. During each refueling outage<sup>1</sup>, a system test shall be conducted to demonstrate proper operation of the system. The test shall be performed in accordance with the procedure summarized below:
  - (1) A test signal will be applied to actuate the Reactor Building Cooling System for reactor building cooling operation.
  - (2) Verification of the engineered safety features function of the Low Pressure Service Water System which supplies coolant to the reactor building coolers shall be made to demonstrate operability of the coolers.
- b. The test will be considered satisfactory if control board indication verifies that all components have responded to the actuation signal properly, the appropriate valves have completed their travel, and fans are running at half speed.

Oconee 1, 2, and 3

4.5-4

Amendment No. 203(Unit 1)  
Amendment No. 228(Unit 2)  
Amendment No. 200(Unit 3)

<sup>1</sup>A one-time extension of the Reactor Building Cooling system test frequency to a maximum of 23 months is allowed for Oconee Unit 2 during operating cycle 16.

## Bases

The Reactor Building Coolant System and Reactor Building Spray System are designed to remove heat in the containment atmosphere to control the rate of depressurization in the containment. The peak transient pressure in the containment is not affected by the two heat removal systems.

The delivery capability of one reactor building spray pump at a time can be tested by opening the valve in the line from the borated water storage tank, opening the corresponding valve in the test line, and starting the corresponding pump. Pump discharge pressure and flow indication demonstrate performance.

With the pumps shut down and the borated water storage tank outlet closed, the reactor building spray injection valves can each be opened and closed by operator action. With the reactor building spray inlet valves closed, low pressure air or fog can be blown through the test connections of the reactor building spray nozzles to demonstrate that the flow paths are open.

The RB Spray system test required by Specification 4.5.2.1.1 verifies that the RB Spray pumps and valves respond as required to actuation of ES channels 7 and 8. In addition, this test verifies that LP-21, and LP-22 (BWST supply to the RB Spray pumps) respond as required to actuation of ES channels 7 and 8. The test required by Specification 4.5.3 verifies the containment heat removal capability of the RB Spray system (in conjunction with the LPI coolers and RBCUs).

The equipment, piping, valves, and instrumentation of the Reactor Building Cooling System are arranged so that they can be visually inspected. The cooling units and associated piping are located outside the secondary concrete shield. Personnel can enter the Reactor Building during power operations to inspect and maintain this equipment. The service water piping and valves out-side the Reactor Building are inspectable at all times. The reactor building fans are normally operated periodically, constituting the test that these fans are operable.

The RBCU system test required by Specification 4.5.2.1.2 verifies that the RBCU fans respond as required to actuation of ES channels 5 and 6. In addition, this test verifies that LPSW-18 (LPSW for "A" RBCU), LPSW-21, LPSW-565, and LPSW-566 (LPSW for "B" RBCU), and LPSW-24 (LPSW for "C" RBCU) respond as required to actuation of ES channels 5 and 6. The LPI system test required by Specification 4.5.1.1.2 verifies that the LPSW pumps respond as required to actuation of ES channels 3 and 4. The test required by Specification 4.5.3 verifies the containment heat removal capability of the RBCUs (in conjunction with the LPI coolers and RB Spray system).

## REFERENCE

- (1) FSAR, Section 6

Oconee 1, 2, and 3

4.5-5

Amendment No. 203(Unit 1)  
Amendment No. 228(Unit 2)  
Amendment No. 200(Unit 3)



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 228 TO FACILITY OPERATING LICENSE DPR-47,  
DUKE ENERGY CORPORATION  
OCONEE NUCLEAR STATION, UNIT 2

DOCKET NO. 50-270

1.0 INTRODUCTION

By letter dated January 15, 1998, Duke Energy Corporation (the licensee), submitted a request for changes to the Oconee Nuclear Station (ONS), Unit 2 Technical Specifications (TS). The requested changes, which are in support of the upcoming Oconee Unit 2 refueling outage, would provide a one-time extension of the refueling outage interval surveillance test frequency for the (1) Engineered Safeguards (ES) Channel 5 Reactor Building Isolation and Cooling Manual Trip, (2) Engineered Safeguards Channel 6 Reactor Building Isolation and Cooling Manual Trip, (3) Wide Range Hot Leg Level channel test and calibration, (4) Reactor Vessel Head Level channel test and calibration, (5) Core Exit Thermocouples calibration, (6) Subcooling Monitors channel test and calibration, and (7) Reactor Building Cooling System (RBCS). The test frequency change would apply during operating cycle 16 only and would extend the interval for tests (1), (2), and (7) to a maximum of 23 months and the interval for tests (3), (4), (5), and (6) to a maximum of 24 months from the date of performance of the previous surveillance. The maximum allowed interval for these tests as defined in TS 4.0.2 is 22 months, 15 days.

2.0 BACKGROUND

The next ONS Unit 2 refueling outage is presently scheduled to start at the end of operating cycle 16 on March 13, 1998. In preparation for this, the licensee reviewed the testing and calibration requirements to ensure compliance with the schedular requirements of the TS. This review indicated that three instrument channel tests and four instrument calibrations were required to be completed prior to the refueling outage. In addition, testing of the ES channels 5 and 6 and the RBCS was needed prior to the outage. All of these tests are required to be performed at the refueling outage interval and none can be performed during plant operation.

A previous review of surveillances during the forced outage in May of 1997, resulted in the performance of many surveillances during that shutdown that had due dates prior to the projected start date of the next refueling outage. However, the Inadequate Core Cooling Monitor (ICCM) related instruments were incorrectly coded in the ONS work management system and, therefore, were not identified as needing to be performed at that time.

In addition, the ES Channels 5 and 6 surveillances and the RBCS surveillance were not performed at that time because the surveillance review that was performed in May 1997, assumed a refueling outage start date of March 10, 1998, which would have allowed performance of the tests within the required interval. However, during subsequent plant operation, the refueling outage start date was moved to March 13, 1998, which moved the outage beyond the surveillance interval specified in the TS.

### 3.0 EVALUATION

The ICCM is designed to be used during a small break Loss of Coolant Accident (LOCA), steam line break accident, and/or steam generator tube failure when the operator has time to react to the event. It is composed of three interrelated monitoring systems: Reactor Vessel Level Instrumentation, Subcooling Margin Monitor, and Core Exit Thermocouple Monitor. In addition, the ICCM processor is used with other Regulatory Guide 1.97 instruments. The refueling outage frequency and type of surveillance required for these functions are specified in TS Table 4.1-1 Item 58 (Wide Range Hot Leg Level), Item 59 (Reactor Vessel Head Level), Item 60 (Core Exit Thermocouple), and Item 61 (Subcooling Monitors). The TS-required due dates for reperforming the plant procedures that are related to these functions are February 23, 24, and 27, 1998, corresponding to 22 months, 15 days from the date the procedures were last performed. As a result, the tests will become due prior to the scheduled start of the next refueling outage, March 13, 1998, and the licensee has requested that the interval be extended to 24 months.

The ES System is designed to function under accident conditions to reduce the severity of a serious LOCA. When the system detects plant conditions that may indicate a LOCA, it automatically initiates action to provide emergency cooling to assure structural integrity of the core, maintain the integrity of the reactor building, and collect and filter any potential reactor building penetration leakage. The surveillance requirements for instruments related to this function are specified in Table 4.1-1 Item 45 (Engineered Safeguards Channel 5 Reactor Building Isolation and Cooling Manual Trip), Item 46 (Engineered Safeguards Channel 6 Reactor Building Isolation and Cooling Manual Trip), and TS 4.5.2.1.2a (Reactor Building Cooling System). The TS-required due date for re-performing the plant procedure related to these functions is March 12, 1998, corresponding to 22 months, 15 days from the date the procedure was last performed. As a result, the test will become due prior to the scheduled start of the next refueling outage, March 13, 1998, and the licensee has requested that the interval be extended to 23 months.

The licensee has reviewed the performance records of the two previous surveillances for all of these instruments and determined that no adverse trends or excessive drift were indicated. As-found data was well within the specified tolerances. Thus, these instruments have demonstrated reliable and accurate operation.

To implement the proposed change for Items 45 and 46, the following would be added to Table 4.1-1 under Remarks with a reference to the refueling outage test:

A one-time extension of the test frequency to a maximum of 23 months is allowed for Oconee Unit 2 during operating cycle 16.

For Items 58, 59, 60, and 61, the proposed change would be reflected similarly, but 23 months would be changed to 24 months.

To implement the proposed change for TS 4.5.2.1.2a, Reactor Building Cooling System, the following note would be added:

A one-time extension of the Reactor Building Cooling system test frequency to a maximum of 23 months is allowed for Oconee Unit 2 during operating cycle 16.

Periodic surveillance requirements were not intended to adversely affect safe plant operation simply because a specified surveillance interval does not coincide with plant operating schedules. Normally, variations in schedules can be accommodated through the existing technical specifications. Specifically, TS 4.0.2 is an administrative control that ensures surveillance tests are performed within the specified interval, but it provides for an allowable tolerance (25 percent) for performing surveillances beyond the normal surveillance interval. This tolerance provides operational flexibility to allow for scheduling and performance considerations while still ensuring that the reliability of the equipment or system associated with the surveillance is not significantly degraded beyond that obtained from the nominal specified surveillance interval. However, circumstances can develop wherein the relief provided by TS 4.0.2 is inadequate, but good cause for additional relief can be demonstrated by the licensee.

Such is the case here. The licensee has provided compelling evidence that the change in the refueling schedule was not undertaken for a reason or in a manner adverse to safety, that reasonable assurance exists that equipment associated with the subject surveillances will not be degraded significantly by the requested interval extensions, and that good cause exists for granting the extensions. The surveillance interval extensions proposed by the licensee would result in a slightly diminished confidence in the reliability that would be provided by TS 4.0.2, but the licensee has satisfactorily addressed this concern.

Based on our review of the information supplied by the licensee, the staff has determined that the requested one-time extension is acceptable for ONS Unit 2 operating cycle 16 since the extension is of short duration and the instruments have shown no adverse trends that question their reliability or ability to perform their required function.

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the South Carolina State official was notified of the proposed issuance of the amendments. The State official had no comments.

## 5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes requirements with respect to the surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (63 FR 3593 dated January 23, 1998). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

## 6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: David E. LaBarge

Date: February 23, 1998