August 21, 1991

Docket Nos. 50-269, 50-270
and 50-287

Distribution
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Mr. M. S. Tuckman
Vice President -
Nuclear Operations
Duke Power Company
P.O. Box 1007
Charlotte, North Carolina 28201-1007

Dear Mr. Tuckman:

SUBJECT: ISSUANCE OF AMENDMENT NOS. 189 , 189 AND 186 TO FACILITY OPERATING LICENSES DPR-38, DPR-47 AND DPR-55 - OCONEE NUCLEAR STATION, UNITS 1, 2 AND 3 (TACS 79876/79877/79878)

The Nuclear Regulatory Commission has issued the enclosed Amendment Nos. 189 , 189 and 186 to Facility Operating Licenses Nos. DPR-38, DPR-47 and DPR-55 for the Oconee Nuclear Station, Units 1, 2 and 3. These amendments consist of changes to the Station's Technical Specifications (TSs) in response to your request dated February 11, 1991.

The amendments revise the value for the containment free volume (CFV) currently specified in TS 5.2.1 and associated bases.

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

Sincerely,

/s/

Leonard A. Wiens, Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No.189 to DPR-38
2. Amendment No.189 to DPR-47
3. Amendment No.186 to DPR-55
4. Safety Evaluation

cc w/enclosures:
See next page

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

August 21, 1991

Docket Nos. 50-269, 50-270
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Enclosures:
1. Amendment No.189 to DPR-38
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cc w/enclosures:
See next page

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DATED: August 21, 1991

AMENDMENT NO. 189 TO FACILITY OPERATING LICENSE DPR-38 - Oconee Nuclear Station, Unit 1
AMENDMENT NO. 189 TO FACILITY OPERATING LICENSE DPR-47 - Oconee Nuclear Station, Unit 2
AMENDMENT NO. 186 TO FACILITY OPERATING LICENSE DPR-55 - Oconee Nuclear Station, Unit 3

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

DUKE POWER COMPANY

DOCKET NO. 50-269

OCONEE NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 189
License No. DPR-38

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment to the Oconee Nuclear Station, Unit 1 (the facility) Facility Operating License No. DPR-38 filed by the Duke Power Company (the licensee) dated February 11, 1991, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations 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 license 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-38 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 189, 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.

FOR THE NUCLEAR REGULATORY COMMISSION

/s/

David B. Matthews, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: August 21, 1991

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

DUKE POWER COMPANY

DOCKET NO. 50-270

OCONEE NUCLEAR STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 189
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 Power Company (the licensee) dated February 11, 1991, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations 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 license 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. 189, 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.

FOR THE NUCLEAR REGULATORY COMMISSION

David B. Matthews, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: August 21, 1991

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

DUKE POWER COMPANY

DOCKET NO. 50-287

OCONEE NUCLEAR STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 186
License No. DPR-55

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment to the Oconee Nuclear Station, Unit 3 (the facility) Facility Operating License No. DPR-55 filed by the Duke Power Company (the licensee) dated February 11, 1991, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations 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 license 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-55 is hereby amended to read as follows:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 186 , 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.

FOR THE NUCLEAR REGULATORY COMMISSION

David B. Matthews, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: August 21, 1991

ATTACHMENT TO LICENSE AMENDMENT NO. 189

FACILITY OPERATING LICENSE NO. DPR-38

DOCKET NO. 50-269

AND

TO LICENSE AMENDMENT NO. 189

FACILITY OPERATING LICENSE NO. DPR-47

DOCKET NO. 50-270

AND

TO LICENSE AMENDMENT NO. 186

FACILITY OPERATING LICENSE NO. DPR-55

DOCKET NO. 50-287

Replace the following page of the Appendix "A" Technical Specifications with the enclosed page. The revised page is identified by Amendment number and contains vertical lines indicating the area of change. The corresponding overleaf page is also provided to maintain document completeness.

Remove Pages	Insert Pages
5.2.1	5.2.1
5.2.2*	5.2.2*

*Overleaf page

5.2 CONTAINMENT

Specification

The containment for this unit consists of three systems which are the reactor building, reactor building isolation system, and penetration room ventilation system.

5.2.1 Reactor Building

The reactor building completely encloses the reactor and its associated reactor coolant system. It is a fully continuous reinforced concrete structure in the shape of a cylinder with a shallow domed roof and flat foundation slab. The cylindrical portion is prestressed by a post tensioning system consisting of horizontal and vertical tendons. The dome has a three-way post tensioning system. The structure can withstand the loss of 3 horizontal and 3 vertical tendons in the cylinder wall or adjacent tendons in the dome without loss of function. The foundation slab is conventionally reinforced with high strength reinforcing steel. The entire structure is lined with 1/4" welded steel plate to provide vapor tightness.

The internal volume of the reactor building is approximately 1.836 x 10^6 cu. ft. The approximate inside dimensions are: diameter--116'; height--208 1/2'. The approximate thickness of the concrete forming the building are: cylindrical wall--3 3/4'; dome--3 1/4'; and the foundation slab--8 1/2'.

The concrete containment structure provides adequate biological shielding for both normal operation and accident situations. Design pressure and temperature are 59 psig and 286°F, respectively.

The reactor building is designed for an external atmospheric pressure of 3.0 psi greater than the internal pressure. This is greater than the differential pressure of 2.5 psig that could be developed if the building is sealed with an internal temperature of 120°F with a barometric pressure of 29.0 inches of Hg and the building is subsequently cooled to an internal temperature of 80°F with a concurrent rise in barometric pressure to 31.0 inches of Hg. Since the building is designed for this pressure differential, vacuum breakers are not required.

Penetration assemblies are seal welded to the reactor building liner. Access openings, electrical penetrations, and fuel transfer tube covers are equipped with double seals. Reactor building purge penetrations and reactor building atmosphere sampling penetrations are equipped with double valves having resilient seating surfaces. (1)

Amendment No. 189 (Unit 1)
Amendment No. 189 (Unit 2)
Amendment No. 186 (Unit 3)

The principal design basis for the structure is that it be capable of withstanding the internal pressure resulting from a loss of coolant accident, as defined in FSAR Section 15 with no loss of integrity. In this event the total energy contained in the water of the reactor coolant system is assumed to be released into the reactor building through a break in the reactor coolant piping. Subsequent pressure behavior is determined by the building volume, engineered safety features, and the combined influence of energy sources and heat sinks.

5.2.2 Reactor Building Isolation System

Leakage through all fluid penetrations not serving accident-consequence-limiting systems is to be minimized by a double barrier so that no single, credible failure or malfunction of an active component can result in loss-of-isolation or intolerable leakage. The installed double barriers take the form of closed piping systems, both inside and outside the reactor building and various types of isolation valves. (2)

5.2.3 Penetration Room Ventilation System

This system is designed to collect, control, and minimize the release of radioactive materials from the reactor building to the environment in post-accident conditions. It may also operate intermittently during normal conditions as required to maintain satisfactory temperature in the penetrations rooms. When the system is in operation, a slight negative pressure will be maintained in the penetration room to assure inleakage. (3)

REFERENCES

(1) FSAR Sections 6.2.1, and 6.2.3

(2) FSAR Section 6.2.3

(3) FSAR Section 6.5.1.1

The principal design basis for the structure is that it be capable of withstanding the internal pressure resulting from a loss of coolant accident, as defined in FSAR Section 15 with no loss of integrity. In this event the total energy contained in the water of the reactor coolant system is assumed to be released into the reactor building through a break in the reactor coolant piping. Subsequent pressure behavior is determined by the building volume, engineered safety features, and the combined influence of energy sources and heat sinks.

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REFERENCES

(1) FSAR Sections 6.2.1, and 6.2.3

(2) FSAR Section 6.2.3

(3) FSAR Section 6.5.1.1

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 189 TO FACILITY OPERATING LICENSE DPR-38

AMENDMENT NO. 189 TO FACILITY OPERATING LICENSE DPR-47

AMENDMENT NO. 186 TO FACILITY OPERATING LICENSE DPR-55

DUKE POWER COMPANY

OCONEE NUCLEAR STATION, UNITS 1, 2 AND 3

DOCKET NOS. 50-269, 50-270 AND 50-287

1.0 INTRODUCTION

By letter dated February 11, 1991, the Duke Power Company (the licensee) submitted a request for changes to the Oconee Nuclear Station, Units 1, 2, and 3, Technical Specifications (TSs). The requested changes would revise the value for the containment free volume (CFV) currently specified in TS 5.2.1 and associated bases.

Specifically, the requested change would replace the current CFV value in TS 5.2.1 from 1.91×10^6 cubic feet to 1.836×10^6 cubic feet. The initial value was based on preliminary estimates of the CFV made prior to the completion of the containment, while the proposed CFV value is based on as-built drawings. Therefore, the proposed CFV value reflects the as-built internal volume of the reactor building as documented in Section 3.8.1.1 and Table 15.16 of the Oconee Final Safey Analysis Report (FSAR).

2.0 EVALUATION

The licensee has proposed to revise the current value of the CFV specified in TS 5.2.1 from 1.91×10^6 cubic feet to 1.836 cubic feet. This value is used as an input for the leak rate test (ILRT) calculations for containment integrity and the FSAR Chapter 15 Loss of Coolant Accident (LOCA) analyses. The proposed reduction in the CFV value resulted from the use of the as-built internal volume of the reactor building as documented in Section 3.8.1.1 and Table 15.16 of Oconee FSAR.

The smaller CFV value will result in higher containment pressure and temperature for the accident pressurization scenario. Reanalysis of the containment pressures and temperatures for the worst case LOCA analysis resulted in a 2 psi increase in the peak containment pressure and a slight increase in peak containment temperature. However, the worst case maximum pressure is well below the design building pressure (59 psig), and the margin between the peak temperature and the limiting equipment qualification temperature profile per IEEE-323 (1974) is maintained.

The ILRT Type A, B, and C test results are not impacted by the the proposed change in CFV value. The licensee has utilized the design pressure rather than the analyzed peak accident pressure values as the basis for the ILRT. Therefore, the increased accident containment pressure values were still well below the design pressure, and there was no impact on the final results of the Type A tests. For the Type B and C tests the use of a smaller CFV value would result in more restrictive leak rate test criteria. However, a comparison of the new leak rate test criteria and the previous test results indicates that they would meet the revised acceptance criteria and, therefore, would remain valid. In summary, the licensee has evaluated the effects of the proposed change in CFV value on the peak containment pressure and temperature, the effect on accident analysis and equipment qualification, and ILRT calculations as applicable to leak rate test criteria and has found that all parameter and test results remain acceptable.

The NRC staff has reviewed the licensee's request and agrees with the licensee's conclusion. The change would not pose an undue risk to public health and safety and would result in a more accurate parameter for CFV. Therefore, the changes are acceptable.

3.0 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.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. 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 (56 FR 20034). Accordingly, the amendments meet 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.

5.0 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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: F. Rinaldi, PDII-3/DRPE
L. Wiens, PDII-3/DRPE

Date: August 21, 1991