

October 9, 1985

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

<u>Distribution</u>	WJones
<u>Docket File</u>	LHarmon
LPDR	TBarnhart+12
NRC PDR	HNicolaras
ORB#4 Rdg	RIgram
Gray Files+4	ACRS-10
HThompson	EButcher
CMiles	JPartlow
OELD	EJordan
BGrimes	RDiggs
EBlackwood	HOornstein

Mr. Hal B. Tucker  
Vice President - Nuclear Production  
Duke Power Company  
P. O. Box 33189  
422 South Church Street  
Charlotte, North Carolina 28242

Dear Mr. Tucker:

The Commission has issued the enclosed Amendments Nos. 143 , 143 ,  
and 140 to Facility Operating Licenses Nos. DPR-38, DPR-47 and DPR-55 for  
the Oconee Nuclear Station, Units Nos. 1, 2 and 3. These amendments consist  
of changes to the Station's common Technical Specifications (TSs) in response  
to your request dated February 10, 1983.

These amendments revise the TSs to allow the use of the Reactor Coolant  
System (RCS) inservice leak and hydrostatic test heatup and cooldown  
limitations during the performance of leak tests of connected systems when  
the RCS pressure-temperature limits are controlling. Other changes  
requested in the February 10, 1983 submittal have been approved by amendments  
dated August 27 and September 13, 1984.

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

Sincerely,  
Original signed by

Helen Nicolaras, Project Manager  
Operating Reactors Branch #4  
Division of Licensing

Enclosures:

1. Amendment No. 143 to DPR-38
2. Amendment No. 143 to DPR-47
3. Amendment No. 140 to DPR-55
4. Safety Evaluation

cc w/enclosures:  
See next page

ORB#4:DL  
RIgram  
10/9/85

ORB#4:DL  
HNicolaras;cr  
7/29/85

ORB#4:DL  
JScotz  
7/20/85

OELD  
EJ  
8/2/85

AD:DR:DL  
GLainas  
7/16/85

Mr. H. B. Tucker  
Duke Power Company

Oconee Nuclear Station  
Units Nos. 1, 2 and 3

cc:

Mr. William L. Porter  
Duke Power Company  
P. O. Box 33189  
422 South Church Street  
Charlotte, North Carolina 28242

J. Michael McGarry, III, Esq.  
Bishop, Liberman, Cook, Purcell & Reynolds  
1200 Seventeenth Street, N.W.  
Washington, D.C. 20036

Mr. Robert B. Borsum  
Babcock & Wilcox  
Nuclear Power Generation Division  
Suite 220, 7910 Woodmont Avenue  
Bethesda, Maryland 20814

Manager, LIS  
NUS Corporation  
2536 Countryside Boulevard  
Clearwater, Florida 33515

Senior Resident Inspector  
U.S. Nuclear Regulatory Commission  
Route 2, Box 610  
Seneca, South Carolina 29678

Regional Administrator  
U.S. Nuclear Regulatory Commission  
101 Marietta Street, N.W.  
Suite 3100  
Atlanta, Georgia 30303

Mr. Heyward G. Shealy, Chief  
Bureau of Radiological Health  
South Carolina Department of Health  
and Environmental Control  
2600 Bull Street  
Columbia, South Carolina 29201

Office of Intergovernmental Relations  
116 West Jones Street  
Raleigh, North Carolina 27603

Honorable James M. Phinney  
County Supervisor of Oconee County  
Walhalla, South Carolina 29621



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

DUKE POWER COMPANY

DOCKET NO. 50-269

OCONEE NUCLEAR STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 143  
License No. DPR-38

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Duke Power Company (the licensee) dated February 10, 1983, 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;
  - 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 amended by 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:

3.B Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 143 are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

8510210194 851009  
PDR ADOCK 05000269  
P PDR

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



John F. Stolz, Chief  
Operating Reactors Branch #4  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: October 9, 1985



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

DUKE POWER COMPANY

DOCKET NO. 50-270

OCONEE NUCLEAR STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 143  
License No. DPR-47

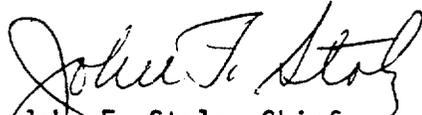
1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Duke Power Company (the licensee) dated February 10, 1983, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations 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;
  - 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 amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.8 of Facility Operating License No. DPR-47 is hereby amended to read as follows:

3.8 Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 143 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 the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



John F. Stolz, Chief  
Operating Reactors Branch #4  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: October 9, 1985



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

DUKE POWER COMPANY

DOCKET NO. 50-287

OCONEE NUCLEAR STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 140  
License No. DPR-55

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Duke Power Company (the licensee) dated February 10, 1983, 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;
  - 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 amended by 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:

3.B Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 140 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 the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

  
John F. Stolz, Chief  
Operating Reactors Branch #4  
Division of Licensing

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: October 9, 1985

ATTACHMENTS TO LICENSE AMENDMENTS

AMENDMENT NO. 143 TO DPR-38

AMENDMENT NO. 143 TO DPR-47

AMENDMENT NO. 140 TO DPR-55

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

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by amendment numbers and contain vertical lines indicating the area of change.

Remove Pages

3.1-3  
3.1-3a  
3.1-4  
3.1-5

Insert Pages

3.1-3  
3.1-3a  
3.1-4  
3.1-5

3.1.2 Pressurization, Heatup, and Cooldown Limitation

Specification

- 3.1.2.1 The reactor coolant pressure and the system heatup and cooldown rates (with the exception of the pressurizer) shall be limited as follows:

Heatup:

Heatup rates and allowable combinations of pressure and temperature shall be limited in accordance with Table 3.1-1 and Figure

3.1.2-1A Unit 1

3.1.2-1B Unit 2

3.1.2-1C Unit 3

Cooldown:

Cooldown rates and allowable combinations of pressure and temperature shall be limited in accordance with Table 3.1-2 and Figure

3.1.2-2A Unit 1

3.1.2-2B Unit 2

3.1.2-2C Unit 3

- 3.1.2.2 Leak tests required by Specification 4.3 and ASME Section XI shall be limited to the heatup and cooldown rates and allowable combinations of pressure and temperature provided in Tables 3.1-1, 3.1-2 and Figure 3.1.2-3A Unit 1

3.1.2-3B Unit 2

3.1.2-3C Unit 3

- 3.1.2.3 For leak test of connected systems required by License Condition 3.H. outlined in Section 4.5.4.2, where the reactor coolant system allowable pressure-temperature limits are controlling, the RCS may be pressurized to the limits set forth in Specification 3.1.2.2.

- 3.1.2.4 For thermal steady state system hydro tests required by ASME Section XI the system may be pressurized to the limits set forth in Specification 2.2 and 3.1.2.2.

- 3.1.2.5 The secondary side of the steam generator shall not be pressurized above 237 psig if the temperature of the vessel shell is below 110°F.

- 3.1.2.6 The pressurizer heatup and cooldown rates shall not exceed 100°F/hr. The spray shall not be used if the temperature difference between the pressurizer and the spray fluid is greater than 410°F.

3.1.2.7 Prior to exceeding fifteen (Unit 1)  
fifteen (Unit 2)  
fifteen (Unit 3)

effective full power years of operation.

Figures 3.1.2-1A (Unit 1), 3.1.2-2A (Unit 1)  
3.1.2-1B (Unit 2), 3.1.2-2B (Unit 2)  
3.1.2-1C (Unit 3), 3.1.2-2C (Unit 3)

and 3.1.2-3A (Unit 1)  
3.1.2-3B (Unit 2)  
3.1.2-3C (Unit 3)

and Technical Specification 3.1.2.1, 3.1.2.2 and 3.1.2.3 shall  
be updated for the next service period in accordance with  
10 CFR 50, Appendix G, Section V.B and V.E.

3.1.2.8 The updated proposed technical specification referred to in  
3.1.2.7 shall be submitted for NRC review at least 90 days  
prior to the end of the service period for Units 1, 2 and 3.

### Bases - Units 1, 2 and 3

All components in the Reactor Coolant System are designed to withstand the effects of cyclic loads due to system temperature and pressure changes. These cyclic loads are introduced by normal load transients, reactor trips, startup and shutdown operations, and inservice leak and hydrostatic tests. The various categories of load cycles used for design purposes are provided in Table 5.2-1 of the FSAR.

The major components of the reactor coolant pressure boundary have been analyzed in accordance with Appendix G to 10 CFR 50. Results of this analysis, including the actual pressure-temperature limitations of the reactor coolant pressure boundary, are given in BAW-1699 and BAW-1697.

The Figures specified in 3.1.2.1, 3.1.2.2 and 3.1.2.4 present the pressure-temperature limit curves for normal heatup, normal cooldown and hydrostatic tests respectively. The limit curves are applicable up to the indicated effective full power years of operation. These curves are adjusted by 25 psi and 10°F for possible errors in the pressure and temperature sensing instruments. The pressure limit is also adjusted for the pressure differential between the point of system pressure measurement and the limiting component for all operating reactor coolant pump combinations.

The cooldown limit curves are not applicable to conditions of off-normal operation (e.g., small LOCA and extended loss of feedwater) where cooling is achieved for extended periods of time by circulating water from the HPI through the core. If core cooling is restricted to meet the cooldown limits under other than normal operation, core integrity could be jeopardized.

The pressure-temperature limit lines shown on the figures specified in 3.1.2.1 for reactor criticality and on the figures referred to in 3.1.2.4 for hydrostatic testing have been provided to assure compliance with the minimum temperature requirements of Appendix G to 10 CFR 50 for reactor criticality and for inservice hydrostatic testing.

The actual shift in  $RT_{NDT}$  of the beltline region material will be established periodically during operation by removing and evaluating, in accordance with Appendix H to 10 CFR 50, reactor vessel material irradiation surveillance specimens which are installed near the inside wall of this or a similar reactor vessel in the core region, or in test reactors.

The limitation on steam generator pressure and temperature provide protection against nonductile failure of the secondary side of the steam generator. At metal temperatures lower than the  $RT_{NDT}$  of +60°F, the protection against nonductile failure is achieved by limiting the secondary coolant pressure to 20 percent of the preoperational system hydrostatic test pressure. The

limitations of 110°F and 237 psig are based on the highest estimated RT<sub>NDT</sub> of +40°F and the preoperational system hydrostatic test pressure of 1312 psig. The average metal temperature is assumed to be equal to or greater than the coolant temperature. The limitations include margins of 25 psi and 10°F for possible instrument error.

The requirements to perform leakage tests of systems outside of containment which could potentially contain radioactivity were established by the NRC following TMI. Oconee performs the leak test of LPI by establishing RCS pressure at about 300 psig and with LPI at this same pressure, checking for leakage. Such a test is within the scope of testing upon which the curves referenced in Specification 3.1.2.2 are based--that is, they are not routine evolutions, such as heatup and cooldown, but rather infrequent leak tests conducted on a refueling outage basis. As such, the hydrostatic/leak test pressure-temperature limitations are applicable for the RCS when performing leak tests of the LPI system.

The spray temperature difference is imposed to maintain the thermal stresses at the pressurized spray line nozzle below the design limit.

#### REFERENCES

- (1) Analysis of Capsule OCII-A from Duke Power Company Oconee Unit 2 Reactor Vessel Materials Surveillance Program, BAW-1699, December 1981.
- (2) Analysis of Capsule OCIII-B from Duke Power Company Oconee Unit 3 Reactor Vessel Materials Surveillance Program, BAW-1697, October 1981.
- (3) Analysis of Capsule OCI-E from Duke Power Company Oconee Unit 1 Reactor Vessel Materials Surveillance Program, BAW-1436, September, 1977.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
SUPPORTING AMENDMENT NO. 143 TO FACILITY OPERATING LICENSE NO. DPR-38  
AMENDMENT NO. 143 TO FACILITY OPERATING LICENSE NO. DPR-47  
AMENDMENT NO. 140 TO FACILITY OPERATING LICENSE NO. DPR-55

DUKE POWER COMPANY

OCONEE NUCLEAR STATION, UNITS NOS. 1, 2, AND 3

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

1.0 Introduction

By letter dated February 10, 1983, Duke Power Company (the licensee) proposed changes to the Technical Specifications (TSs) of Facility Operating Licenses Nos. DPR-38, DPR-47, and DPR-55 for the Oconee Nuclear Station, Units Nos. 1, 2, and 3 (ONS 1, 2, 3). These amendments would consist of changes to the Station's common TSs. Other changes requested in the February 10, 1983 submittal have been approved by amendments dated August 27 and September 13, 1984.

TS 3.1.2 would allow the use of the Reactor Coolant System (RCS) inservice leak and hydrostatic test heatup and cooldown limitations during the performance of leak tests of connected systems when the RCS pressure-temperature (P-T) limits are controlling.

2.0 Evaluation

License condition 3.H requires the licensee to implement a program to reduce leakage from systems outside containment that would or could contain highly radioactive fluids during a serious transient or accident to as low as practical levels. One such system is the low pressure injection (LPI) system. TS 4.5.4.2, among other things, requires that the LPI system be leak tested at 350 psig.

The licensee usually tests the LPI system during heatup or cooldown. When the reactor is in either of these modes, TS 3.1.2 provides curves that allow only certain P-T combinations. Curves for hydrostatic testing provide higher P-T combinations. By adding the proposed TS 3.1.2.3, the licensee is requesting to perform the LPI leakage test under the P-T curves which apply for hydrostatic testing. These curves would give more margin between the LPI system test pressure of 350 psig and the limits imposed by the P-T curves.

The proposed changes state that the leak test of the LPI system will be conducted by establishing RCS pressure at the desired test pressure and

with the LPI system at the same pressure, checking for leakage. In that the RCS is used to establish the test pressure, one of the required controls is the limitation imposed by the RCS heatup and cooldown rates and the allowable combinations of P-T as shown by TS Figures 3.1.2-3A for Oconee Unit 1, 3.1.2-3B for Unit 2, and 3.1.2-3C for Unit 3. The test pressure for the LPI system is specified as 350 psig. The TS figures allow a pressure of 509 psig at 70° for Unit 1; 519 psig at 70° for Unit 2; and 499 psig at 70° for Unit 3 for the first fifteen effective full power years (EFPY).

After reviewing the licensee's request, we have concluded that the use of the RCS inservice leak and hydrostatic test heatup and cooldown limitations for the testing of the LPI system is a conservative measure which would become an important factor if there were to be a large change in the P-T limitation curves for the RCS.

### 3.0 Environmental Consideration

These amendments involve a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. We have determined that the amendments involve 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 these amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, these 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 these amendments.

### 4.0 Conclusion

We have 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, and  
(2) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Dated: October 9, 1985

Principal Contributor: J. Blake