

DO NOT REMOVE



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

December 29, 1981

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

Posted
Am-106
to DPR-47

Mr. William O. Parker, Jr.
 Vice President - Steam Production
 Duke Power Company
 P. O. Box 33189
 422 South Church Street
 Charlotte, North Carolina 28242

Dear Mr. Parker:

The Commission has issued the enclosed Amendments Nos. 106 , 106 , and 103 to 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 April 17, 1981.

These amendments revise the TS limits on the out-of-service times for the emergency feedwater system.

This license amendment also completes all action required by the NRC on your November 28, 1979 application as the requested changes contained therein have been superseded by the April 17, 1981 application.

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

Philip C. Wagner

Philip C. Wagner, Project Manager
 Operating Reactors Branch #4
 Division of Licensing

Enclosures:

1. Amendment No. 106 to DPR-38
2. Amendment No. 106 to DPR-47
3. Amendment No. 103 to DPR-55
4. Safety Evaluation
5. Notice

cc w/enclosures: See next page

Duke Power Company

cc w/enclosure(s):

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

Oconee County Library
501 West Southbroad Street
Walhalla, South Carolina 29691

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

cc w/enclosure(s) & incoming dtd.:
4/17/81

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

Regional Radiation Representative
EPA Region IV
345 Courtland Street, N.E.
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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. 106
License No. DPR-38

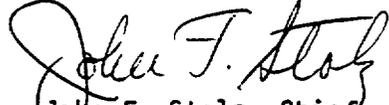
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Duke Power Company (the licensee) dated April 17, 1981, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations 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. 106 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: December 29, 1981



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. 106
License No. DPR-47

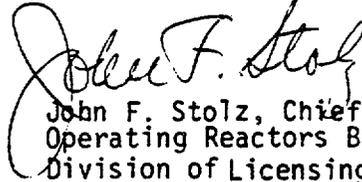
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Duke Power Company (the licensee) dated April 17, 1981, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations 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-47 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. 106 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

A handwritten signature in cursive script, reading "John F. Stolz".

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: December 29, 1981



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.103
License No. DPR- 55

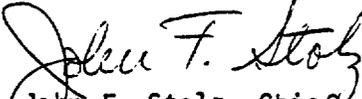
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Duke Power Company (the licensee) dated April 17, 1981, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations 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. 103 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: December 29, 1981

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 106 TO DPR-38

AMENDMENT NO. 106 TO DPR-47

AMENDMENT NO. 103 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

3.4-1

3.4-2

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INSERT PAGES

3.4-1

3.4-2

3.4-3 (added)

3.4-4 (added)

3.4 SECONDARY SYSTEM DECAY HEAT REMOVAL

Applicability

Applies to the secondary system requirements for removal of reactor decay heat.

Objective

To specify minimum conditions necessary to assure the capability to remove decay heat from the reactor core.

Specification

3.4.1 Emergency Feedwater System

The reactor shall not be heated above 250°F unless the following conditions are met:

- a. Three emergency feedwater pumps (one steam driven pump capable of being powered from an operable steam supply system and two motor driven pumps) and associated initiation circuitry shall be operable.
- b. Two 100% emergency feedwater flow paths shall be operable. Each flow path shall have at least one flow indicator operable.

3.4.2 During operation greater than 250°F, the provisions of 3.4.1 may be modified to permit the following conditions:

- a. One motor driven emergency feedwater pump may be inoperable for a period of up to seven days. If the inoperable pump is not restored to operable status within 7 days, the unit shall be brought to hot shutdown within an additional 12 hours and below 250° in another 12 hours.
- b. One turbine driven emergency feedwater pump or one emergency feedwater flow path may be inoperable for a period of up to 72 hours. If the inoperable pump or flow path is not restored to operable status within 72 hours the unit will be at hot shutdown within an additional 12 hours and below 250°F in another 12 hours.
- c. Two motor driven emergency feedwater pumps may be inoperable for a period of up to 12 hours. If an inoperable pump is not restored to operable status within 12 hours, the unit shall be brought to hot shutdown within an additional 12 hours and below 250° in another 12 hours.
- d. With three emergency feedwater pumps and/or both emergency feedwater flow paths inoperable, immediately initiate corrective action to restore at least one emergency feedwater pump and associated emergency feedwater flowpath to operable status. The unit shall be at hot shutdown within 12 hours and below 250°F in another 12 hours.

- 3.4.3 The 16 main steam safety relief valves shall be operable.
- 3.4.4 A minimum of 72,000 gallons of water per operating unit shall be available in the upper surge tank, condensate storage tank, and hot-well. A minimum of 5 ft. (=30,000 Gal.) shall be available in the upper surge tank.
- 3.4.5 The emergency condenser circulating water system shall be operable.
- 3.4.6 The controls of the emergency feedwater system shall be independent of the Integrated Control System.

Bases

The Main Feedwater System and the Turbine Bypass System are normally used for decay heat removal and cooldown above 250°F. Feedwater makeup is supplied by operation of a hotwell pump, condensate booster pump, and a main feedwater pump.

Operability of the Emergency Feedwater System (EFW) assures the capability to remove decay heat and cool down the Reactor Coolant System to the operating conditions for switch over to decay heat removal by the Decay Heat Removal System, in the event that the Main Feedwater System is inoperable. The EFW system consists of a turbine driven pump (380 gpm), two motor driven pumps (450 gpm each), and associated flow paths to the steam generators.

The decay heat and the reactor coolant pump heat following a reactor trip from 102% power, and the EFW flow rate (90°F feedwater) required to remove this heat demand are as follows:

<u>Time</u>	<u>Heat Demand (% of 2568 MWT)</u>	<u>EFW Flowrate (gpm)</u>
1 min	4.65	721
2 min	4.17	647
5 min	3.64	564
10 min	3.28	509
30 min	2.70	419
1 hour	2.35	365
2 hours	2.07	322

The limiting transient requiring maximum EFW flow is the loss of main feedwater with offsite power available. For this transient, a minimum EFW flow rate equivalent to 405 gpm at 1065 psia is adequate. Each of the three EFW pumps is capable of delivering this flow.

A 100% flowpath is defined as: The flowpath to either steam generator including associated valves and piping capable of being supplied by either the turbine driven pump or the associated motor driven pump.

One flow indicator or steam generator level indicator per steam generator is sufficient to provide indication of emergency feedwater flow to the steam generators and to confirm emergency feedwater system operation. In the event that at least one indicator per steam generator is not available, then the flowpath to this steam generator is considered to be inoperable.

The EFW System is designed to start automatically in the event of loss of both main feedwater pumps or low main feedwater header pressure. All automatic initiation logic and control functions are independent from the Integrated Control System (ICS).

Normally, decay heat is removed by steam relief through the turbine bypass system to the condenser. Condenser cooling water flow is provided by a siphon effect from Lake Keowee through the condenser for final heat rejection to the Keowee Hydro Plant tailrace. Decay heat removal via recirculation

flowpath may be maintained for up to 11 hours per unit, assuming the minimum amount of water in the upper surge tanks, condensate storage tank, and hotwell is available. This is based on the conservative estimate of normal makeup being 0.5% of throttle flow. Throttle flow at full load, 11,200,000 lbs/hr., was used to calculate the operation time. For decay heat removal the operation time with the volume of water specified would be considerably increased due to the reduced throttle flow.

Decay heat can also be removed from the steam generators by steam relief through the main steam safety relief valves. The total relief capacity of the 16 main steam safety relief valves is 13,105,000 lbs/hr. In this case the minimum amount of water in the upper surge tank, condensate storage tank, and hotwell is sufficient to remove decay heat and reactor coolant pump heat for 3 hours per unit at hot shutdown conditions.

REFERENCE

FSAR, Section 10.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 106 TO FACILITY OPERATING LICENSE NO. DPR-38

AMENDMENT NO. 106 TO FACILITY OPERATING LICENSE NO. DPR-47

AMENDMENT NO. 103 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 and Background

By letter dated April 17, 1981, Duke Power Company applied for a revision to the Oconee Nuclear Station, Units 1, 2 and 3, Technical Specifications (TSs) related to the Emergency Feedwater System (EFW). The EFW serves as a backup to the Main Feedwater System (MFW) and is provided to allow cooldown of the Reactor Coolant System (RCS) to temperatures where it is possible to initiate long term decay heat removal. Each of the three Oconee Units has three EFW pumps installed - two electric motor driven and one steam turbine driven. Each of these EFW pumps can take suction from its Unit's condenser or upper surge tanks and provide flow to the steam generators. The system is normally aligned for each motor driven pump to provide flow to its associated steam generator while the turbine driven pump is aligned to both steam generators. The system is designed, however, with flexibility to allow any EFW pump to provide flow to either or both steam generators and to take suction from condensate sources at the other two Units.

2.0 Evaluation

Duke's April 17, 1981 application proposed increasing the allowable out-of-service (OOS) time for any one EFW pump from the present 60 hours to 7 days, and allowing operations to continue for up to 60 hours with two of the three EFW pumps inoperable. In addition to these requirements, the TSs would continue to require all three EFW pumps and both flow paths to be operable, except for short periods of time, and require immediate corrective action should all three pumps or both flow paths become inoperable. Duke's bases for concluding that the proposed TSs would continue to result in safe operation are the flow requirements of the EFW during and following postulated plant transients.

Included in Duke's application was an evaluation of the most probable transients (Loss of MFW, Loss of MFW with loss of electrical power, Plant cooldown, Turbine trip, Main Steam Isolation Valve closure, MFW line break, Steam Line break and Small Break Loss of Coolant Accident), each of which

concluded that only one EFW pump was required. In the event of a complete loss of onsite and offsite AC power, the turbine driven EFW pump would be required since the electric motor drives would be without a power source.

We have reviewed this application and agree that any one EFW pump has sufficient capacity to remove the necessary heat from the RCS if required by the unavailability of MFW. We have also evaluated the advisability of allowing any EFW pump to be OOS for up to 7 days in light of the fact that the turbine driven pump could be OOS concurrent with a complete loss of AC power. We have concluded that such an event is highly unlikely due to the stability of the Duke Power Company electrical distribution system, the probability that the other two Oconee Units will be in operation thus supplying electrical power and the low probability that both conditions (turbine driven EFW pump OOS and complete loss of AC power) would occur at the same time. However, we requested and Duke agreed to limiting the OOS time of the turbine driven pump to 72 hours.

Since any one EFW pump and its associated flow path will satisfy the requirements of the system, should its use become necessary, the requirement to maintain two flow paths (each with a separate pump) operable, except for short periods of time for testing and maintenance, ensures that sufficient redundancy is maintained to allow for a single failure. By requiring all three EFW pumps to be operable except for maintenance and testing (one motor driven pump OOS for 7 days or the turbine driven pump OOS for 72 hours), added assurance is provided that redundant trains will be available.

In addition to the considerations discussed above, we have reached the following conclusions on the proposed revisions to the EFW pump OOS requirements:

1. This change is consistent with the requirements imposed on other systems contained in the TSs (i.e. high and low pressure safety injection and containment spray) and is, in fact, more restrictive than the requirements for those systems.
2. As noted, any one EFW pump could provide sufficient cooling flow; however, each of the Oconee Units' EFW systems are capable of being manually cross-connected to provide EFW from one unit to another. In addition to this capability, each Unit also has the capability of providing EFW to its steam generators through the use of the Auxiliary Service Water system.
3. Duke Power Company is in the process of installing a separate, independent Standby Shutdown Facility which will be capable of providing sufficient EFW cooling flow to the steam generators in each Unit in the unlikely event of total loss of all offsite and onsite electrical power.

Based on the above considerations, we find that it is acceptable to allow: 1) one motor driven EFW pump to be OOS for 7 days, 2) one turbine driven EFW pump to be OOS for 72 hours, and 3) both motor driven pumps to be inoperable for 12 hours. (These changes to the April 17, 1981 application were agreed to by Duke representatives.) Therefore, we conclude that the modified request is acceptable.

3.0 Environmental Consideration

We have determined that the amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendments involve an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

4.0 Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the amendments do not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) 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: December 29, 1981

UNITED STATES NUCLEAR REGULATORY COMMISSIONDOCKETS NOS. 50-269, 50-270 AND 50-287DUKE POWER COMPANYNOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY
OPERATING LICENSES

The U.S. Nuclear Regulatory Commission (the Commission) has issued Amendments Nos. 106 ,106 , and 103 to Facility Operating Licenses Nos. DPR-38, DPR-47 and DPR-55, respectively, issued to Duke Power Company, which revised the Technical Specifications (TSs) for operation of the Oconee Nuclear Station, Units Nos. 1, 2 and 3, located in Oconee County, South Carolina. The amendments are effective as of the date of issuance.

These amendments revise the TS limits on the out-of-service times for the emergency feedwater system.

The application for the amendments complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendments. Prior public notice of these amendments was not required since the amendments do not involve a significant hazards consideration.

The Commission has determined that the issuance of these amendments will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

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For further details with respect to this action, see (1) the application for amendments dated April 17, 1981, (2) Amendments Nos. 106 , 106 , and 103 to Licenses Nos. DPR-38, DPR-47 and DPR-55, respectively, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C. and at the Oconee County Library, 501 West Southbroad Street, Walhalla, South Carolina. A copy of items (2) and (3) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Licensing.

Dated at Bethesda, Maryland, this 29th day of December 1981.

FOR THE NUCLEAR REGULATORY COMMISSION


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