Docket

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

March 2, 1979

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

Mr. William O. Parker, Jr.
Vice President - Steam Production
Duke Power Company
422 South Church Street
P. O. Box 2178
Charlotte, North Carolina 28242

Dear Mr. Parker:

The Commission has issued the enclosed Amendments Nos. 69, 69, and 66 for 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 Appendix B Environmental Technical Specifications in partial response to your request dated December 2, 1977, as supplemented September 11, 1978.

These amendments revise the Environmental Technical Specifications by deleting the Aquatic Surveillance Program and special study programs.

These amendments do not involve significant new safety information of a type not considered by a previous Commission safety review of the facility. They do not involve a significant increase in the probability or consequences of an accident, do not involve a significant decrease in a safety margin, and therefore do not involve a significant hazards consideration. We have also concluded that there is reasonable assurance that the health and safety of the public will not be endangered by this action.

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Copies of the Environmental Impact Appraisal and the Notice of Issuance/Negative Declaration are also enclosed.

Sincerely,

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Enclosures:
1. Amendment No. 69 to DPR-38
2. Amendment No. 69 to DPR-47
3. Amendment No. 66 to DPR-55
4. Environmental Impact Appraisal
5. Notice/Negative Declaration

cc w/enclosures: See next page

Duke Power Company

cc w/enclosure(s):
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Oconee Public Library
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Honorable James M. Phinney
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U. S. Environmental Protection Agency
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ATTN: EIS COORDINATOR
345 Coutland Street, N. E.
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cc w/enclosures & incoming dtd:
12/2/77 & 9/11/78
Office of Intergovernmental Relations
116 West Jones Street
Raleigh, North Carolina 27603

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. 69
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 December 2, 1977, as supplemented September 11, 1978, 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.69 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

Robert W. Reid

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 2, 1979

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. 69
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 December 2, 1977, as supplemented September 11, 1978, 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. 69 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

Robert W. Reid

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 2, 1979

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. 66
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 December 2, 1977, as supplemented September 11, 1978, 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. 66 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

Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 2, 1979

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 69 TO DPR-38

AMENDMENT NO. 69 TO DPR-47

AMENDMENT NO. 66 TO DPR-55

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

Revise Appendix B as follows:

Remove Pages	Insert Pages
Table of Contents	Table of Contents
1-18	1-3

Changes on the revised pages are indicated by a marginal line.

TECHNICAL SPECIFICATIONS

Table of Contents

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1.1	Station Cooling Water Systems Thermal Limits.....	1
1.2	Chemical Discharge Limits.....	2

1.1 STATION COOLING WATER SYSTEMS THERMAL LIMITS

Objective: To specify thermal limiting conditions for the operation of the station cooling water systems.

Applicability: Applies to the maximum temperature and rate of change of temperature of the cooling water discharged from the station condenser cooling and service water systems.

Specification:

A. The cooling water effluent temperature at the discharge shall not exceed 100°F for a time period in excess of two hours. In the event of the once-in-20 years combination of extreme natural conditions the station's generating capacity shall be limited as necessary to keep the discharge temperature from exceeding 100°F unless there is a serious need for the lost power. A serious need for lost power is defined here as a condition which would result in voltage reductions or load shedding (except contracted interruptable loads). Under these circumstances, the licensee shall notify AEC/DOL immediately by telephone and the discharge temperature shall not be allowed to exceed 103°F.

B. Temperature rise from the condenser intake to the discharge shall not exceed 28°F. Further, the temperature rise should not exceed 22°F when the inlet temperature is greater than 68°F.

C. Normal station operations shall be programmed so that effluent temperatures shall not decrease more than 6°F per hour during the winter and 10°F per hour during the spring, summer, and fall.

Monitoring: Station cooling water intake and discharge temperature and cooling water flow rate shall be measured continually at intervals of less than 1 minute. Summaries to include maximum, minimum, and average values shall be printed out hourly; and during periods when the measuring equipment is defective or under repair, representative data readings shall be logged hourly.

Basis: The limits on plant discharge temperature and rate of temperature change permit sufficient operational flexibility to allow for the starting or shutdown of a circulation water pump during plant loading and unloading, while at the same time requiring that procedures incorporate the programming of load changes to minimize the resulting transient thermal change.

Specification C recognizes that a slower rate of plant unloading during the cooler months is desirable due to the fact that some aquatic organisms require more time to adapt during those periods.

Whenever feasible, refueling and scheduled maintenance shall be performed during periods when the ambient lake surface temperatures are above 60°F.

1.2 CHEMICAL DISCHARGE LIMITS

Objective

To insure that all chemical releases from the station are controlled so as to be nontoxic to aquatic organisms and non-deleterious to downstream water quality in Hartwell Reservoir.

Applicability

Applies to release of chemical effluents from the station.

Specification

A. Limits for certain chemical wastes and pH of water released from the Waste Water Treatment System and the Low Level Radwaste System shall not exceed the concentrations indicated in Table 1.2-1, "Limits and monitoring Requirements on Certain Chemicals and pH of Water Released from Oconee Nuclear Station."

B. Chlorine or other chemical biocides will not be used for condenser cleaning.

Monitoring

The concentration of the chemicals and pH of water allowed to be released from the station under this specification shall be monitored as specified in Table 1.2-1.

Action Requirements

In the event any of the above specified limits are exceeded, a report shall be made within 24 hours by telephone to the Director of the Regional Regulatory Operations Office, followed by a written report within one week to the Director of the Regional Inspection and Enforcement Office (cc to Director of Nuclear Reactor Regulation).

The written report and to the extent possible, the preliminary telephone report, will: (a) describe, analyze and evaluate the occurrence, including extent and magnitude of the impact, (b) describe the cause of the occurrence, and (c) indicate the corrective action (including any significant changes made in procedure) taken to preclude repetition of the occurrence and to prevent similar occurrences involving similar components or systems.

Bases

Operation within the chemical monitoring and effluent limits specified in Table 1.2-1 will assure that concentrations of chemical effluents are maintained at levels that will provide adequate protection of aquatic and downstream water quality, and will assure that the water quality is not degraded beyond that described in the FES.

TABLE 1.2-1

LIMITS AND MONITORING REQUIREMENTS ON CERTAIN CHEMICALS AND pH OF WATER RELEASED FROM OCONEE NUCLEAR STATION

Type Monitoring	Waste Water Treatment System[a]		Low Level Rad Waste System[b]	
	Frequency	Limit	Frequency	Limit
pH	Daily	6.0 - 9.0		
Hydrazine	Daily	0.7 ppm	Prior to Release	0.1 ppm
Boron			Prior to Release	1.0 ppm

[a]Monitored at point of release to Hartwell Reservoir.

[b]Concentrations are measured prior to point of discharge. Limits apply on downstream incremental increases in concentration in the Hartwell Reservoir following dilution in the Keowee tailrace.

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

ENVIRONMENTAL IMPACT APPRAISAL BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 69 TO FACILITY OPERATING LICENSE NO. DPR-38

AMENDMENT NO. 69 TO FACILITY OPERATING LICENSE NO. DPR-47

AMENDMENT NO. 66 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

Introduction

By letter dated December 2, 1977, as supplemented September 11, 1978, Duke Power Company (the licensee) requested changes to their Environmental Technical Specifications (ETS) for Oconee Nuclear Station. We have discussed these proposals with the licensee and are deferring action on their request to delete limiting conditions for operation from the ETS, to which the licensee has agreed.

This amendment deletes the specifications for the General Aquatic Surveillance Program and special studies. Water temperature, chemistry, and fisheries studies were begun on Lake Keowee prior to 1971, when Lake Keowee reached full-pond elevation. Phytoplankton, zooplankton, and benthos studies were begun around mid-1973. The purpose of these studies is to detect and quantify the effects of the operation of Oconee Nuclear Station (ONS) on the aquatic environment and to verify the findings of the Final Environmental Statement (FES).

Appraisal

Dissolved Oxygen:

The FES stated that reduction of oxygen concentration in the surface waters near the plant discharge could occur during periods when the plant was drawing oxygen deficient water from the hypolimnion and discharging it to the surface. The lowest value observed during the

1974 through 1976 period was 3.4 mg/liter. The FES indicated that the dissolved oxygen concentration could fall below 1.0 mg/liter in the discharge area. The study indicated that oxygen concentrations were considerably higher than those estimated in the FES.

Thermal:

Appendix III-1 of the FES predicted the thermal plume for various season and lake conditions. The study resulted in general confirmation of the thermal plume as well as other thermal predictions of the FES. The thermal study resulted in the following conclusions:

a) a distinct thermal "plume" from the Station discharge was evident from September through March of each year, resulting in localized vertical thermal gradients or stratification;

b) a thermal plume was not apparent from April through August of each year;

c) maximum summer temperatures in the lake's surface waters were only slightly different from preoperational values;

d) winter minimum temperatures, except in the immediate vicinity of the ONS discharge, were mainly a function of meteorological conditions each year; there was no significant "carryover" in the lake's heat content from one year to the next;

e) ONS's use of bottom waters resulted in a less distinct summer thermocline in the lake, and complete destratification of the top 20 or 25 m of the water column earlier (mid-September) than observed in preoperational years; and

f) maximum temperatures of the deep (20 to 30 m) waters of the lake in September of 1975 and 1976 were about ten degrees Celsius (18 deg. F) warmer than in the preoperational period.

Aquatic Chemistry:

The FES stated that the plant would discharge small quantities of chemicals into Hartwell Reservoir and that these discharges were not expected to have discernible effects in the reservoir. The results of the monitoring program generally confirm this prediction. The results of the monitoring program can be summarized as follows:

a) Lake Keowee has low dissolved and suspended solids and nutrient concentrations, low hardness, and is mildly acidic;

b) the mineral composition of the lake during the ONS operational period was very similar to that of the Keowee River prior to its impoundment;

c) based on the nitrogen/phosphorus ratios observed, phosphorus appeared to be the limiting nutrient for primary production in Lake Keowee; total phosphorus, ammonia and nitrate-nitrite concentrations have steadily decreased since the reservoir was impounded, probably due to natural "aging;" and

d) seasonal fluctuations in the concentrations of ammonia, nitrate-nitrite, manganese and iron, among others, were less pronounced during the ONS operational period than they were previously, attributed to the induced mixing and resultant higher dissolved oxygen content of the lake caused by ONS's use of bottom waters.

Fisheries Studies:

The FES predicted that some fishes would be impinged on the intake screens, and that shad could possibly die in large numbers during the winter months. The FES also discussed in detail the potential thermal effects on fishes due to the heated discharge.

The studies indicate that the overall effect of the Station on the fish populations was small and they generally confirm the findings of the FES. No gas bubble disease was observed in any of the fish sampled in the program. Very little impingement and entrainment was observed. Fishes tended to reproduce in the shallower areas of the lake and not in the long, deep intake canal; therefore, entrainment of young fish forms into the plant was small.

The studies of species composition and general distribution of fish in the lake indicate no adverse effects resulting from the operation of the Station. While abundance of many species has changed during the study period, these changes could not be distinguished from those predicted to occur naturally.

Phytoplankton and Zooplankton:

The FES stated that the plant may cause shifts in the dominance of green algae to the undesirable blue-green types in small areas of the lake. The FES also suggested that some suppression of photosynthesis could occur for organisms passing through the condensers. The study showed that there was neither a shift to obnoxious blue-green algae types, nor was there any appreciable decrease in photosynthesis rates as a result of entrainment.

The FES stated that during the months of August and September, the lengthy exposure to temperatures approaching or exceeding the thermal tolerance limits could cause a reduction in zooplankton organisms in the thermal plume. The zooplankton abundance in the surface water near the Station discharge was similar to the abundance in the intake cove, but substantially lower than in most other areas of the lake. This is because the skimmer wall allows only deep water, which has lower concentrations of organisms, into the intake canal. The design minimizes the impact on these organisms. The actual entrainment had little effect on the viability of these organisms. Overall, the effect of the plant on these populations was less than that predicted in the FES.

Benthos and Periphyton:

The FES stated that the discharge flow could cause some scouring and would probably eliminate all benthic organisms in the immediate discharge area. The study showed that there was little, if any, effect on the benthic population. Bottom type and depth appeared to be the important factors determining the type of benthos population. Further, no substantial changes in taxonomic composition of benthos were observed over the operational period.

Periphyton was studied because of its value as an indicator of major spatial or temporal changes in water quality. The results of the program indicate that, although year-to-year and spatial differences were observed, the operation at the Station did not significantly change the trophic status or water quality of Lake Keowee with respect to the periphyton community.

Conclusion and Basis for Negative Declaration

We conclude that the impact of the Oconee Nuclear Station on the aquatic environment is within the bounds of the FES, as indicated above, and that the environmental impact of the Station has stabilized. As a consequence, the General Aquatic Surveillance Program and Special Study Programs of the ETS are no longer needed and may be terminated immediately.

On the basis of the foregoing analysis, we conclude that there will be no environmental impact attributable to the proposed action. The changes assessed herein are to the environmental monitoring programs and do not involve any change in plant design or operation or involve an increase in effluent types or quantities. The impact of the overall plant has already been predicted and described in the Commission's FES for ONS. On this basis and in accordance with 10 CFR §51.5, the Commission concludes that no environmental impact statement for the proposed action need be prepared and a negative declaration to this effect is appropriate.

Dated: March 2, 1979