

AUG 1 1975

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

Duke Power Company  
ATTN: Mr. Austin C. Thies  
Senior Vice President  
422 South Church Street  
P. O. Box 2178  
Charlotte, North Carolina 28201

Gentlemen:

The Nuclear Regulatory Commission has issued Amendment Nos. 9, 9, and 6 to License Nos. DPR-38, DPR-47, and DPR-55 (copies enclosed) for the Oconee Nuclear Station Units 1, 2, and 3, respectively, based on Change Nos. 19, 14, and 6 to the Technical Specifications.

The amendments provide for administrative procedure changes of the environmental surveillance program to convert to metric measurements, change from variable sampling station locations to fixed locations, redesignate sampling locations, and clarify sampling frequency requirements already specified in the special studies specification requirements in Sections 1.3.1, 1.3.4, 1.3.5, and 1.6 of Appendix B Technical Specifications as follows:

1. Technical Specification 1.3.1.A - Water Quality

To incorporate use of meters in lieu of feet for depth measurement of temperature, dissolved oxygen and biochemical oxygen demand to effect compatibility with other investigations.

2. Technical Specification 1.3.4 - Phytoplankton-Zooplankton Receiving Water Studies

To substitute two fixed monitoring stations in the thermal plume in place of the existing two station points at which the plume surface temperature is 0.9 and 0.5 of the temperature excess of the discharge over ambient surface temperature to provide more reliable data.

3. Technical Specification 1.3.5 - Benthos

To redesignate Keowee River below Keowee Dam as Lake Hartwell for clarity. To change sampling station location from 605 to 606 to obtain more reliable data and for safety of data collector.

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Duke Power Company

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4. Technical Specification 1.6 - Plume Mapping for Temperature and Dissolved Oxygen

To delete requirement for sampling on a seasonal basis in conjunction with thermal plume mapping for temperature and dissolved oxygen special studies because sampling will not be strictly on a seasonal basis. Specific temperature, acreage and dissolved oxygen conditions are already specified for these studies in the specifications.

These changes are in connection with your request dated May 23, 1975.

The Commission has evaluated the potential impact of the operating plant in accordance with the amendments and has concluded that there will be no change in effluent types or total amounts nor an increase in power level, as previously evaluated in the Final Environmental Statement for Oconee Nuclear Station Units 1, 2, and 3 dated March 1972 and will not result in any significant environmental impact. The amendments revise administrative procedures and controls only and should provide more reliable data and result in a more effective monitoring program at Oconee Nuclear Station. Having made this determination, the Commission has further concluded, pursuant to 10 CFR 51.5(d)(4), that an environmental statement, negative declaration or environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

The amendments address administrative processes only and do not involve new safety information of a type not considered by a previous Commission review of the facility. It does not involve a significant increase in the probability or consequences of an accident, does not involve a significant decrease in a safety margin of the facility, and therefore does not involve significant hazard considerations. The Commission has also concluded that there is reasonable assurance that health and safety of the public will not be endangered by the proposed action.

Sincerely,

*RS*  
Robert A. Purple, Chief  
Operating Reactors Branch No. 1  
Division of Reactor Licensing

Enclosures:

1. Amendments Nos. 9, 9, and 6
2. Federal Register Notice

OFFICE	CC: See attached sheet					
SURNAME						
DATE						

AUG 1 1975

cc: William L. Porter, Esq.  
 Associate General Counsel  
 Duke Power Company  
 P. O. Box 2178  
 Charlotte, North Carolina 28201

Mr. Dave Hopkins  
 Environmental Protection Agency  
 1421 Peachtree Street  
 Atlanta, Georgia 30309 w/encs. and incoming

Mr. Elmer Whitten  
 State Clearinghouse  
 Office of the Governor  
 Division of Administration  
 1205 Pendleton Street, 4th Floor  
 Columbia, South Carolina 29201 w/encs. and incoming

Honorable Reese A. Hubbard  
 County Supervisor, Oconee County  
 Walhalla, South Carolina 29621 w/encs. and incoming

Troy B. Conner, Esq.  
 Conner, Hadlock & Knotts  
 1747 Pennsylvania Avenue, N. W.  
 Washington, D. C. 20006

bcc: J. R. Buchanan, HNL  
 T. B. Abernathy, DTIE  
 A. Rosenthal, ASLAB  
 N. H. Goodrich, ASLBP

~~DIST:~~

~~DOCKET FILES (ENVIRON)~~ MAu  
 NRR Reading PKreutzer  
 EP-2 Reading GDicker  
 NRC-PDR DMuller  
 LOCAL-PDR ELD  
 I&E (3) RPurple  
 BJones (w/4 encs.) SSheppard  
 NDube LMcDonough G. Zech  
 RVollmer  
 SKari (w/o tech specs)  
 SVarga  
 BScharf (w/15 copies tech specs)  
 ACRS (16) as category B

Retyped per instructions from  
 L. Brenner, OELD, 7/21/75

OFFICE ➤	RL:EP-2 <i>pk</i> PKREUTZER	RL:EP-2 <i>GD</i> GDicker <i>for</i>	RL:EP-2 <i>GD</i> DMuller	ORB-1 SSheppard LMcDonough	ELD <i>EL</i> Tourette	ORB-1 RPurple
SURNAME ➤	MAU/rw <i>mk</i>					
DATE ➤	7/2/75 <i>7/7/75</i>	7/7/75	7/8/75	7/9/75	8/1/75	8/1/75

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. 9  
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 May 23, 1975, 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; and
- 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.

2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment and Paragraph 3.B of Facility License No. DPR-38 is hereby amended to read as follows:

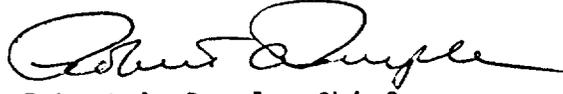
"B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications, as revised by issued changes thereto through Change No. 19."



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

FOR THE NUCLEAR REGULATORY COMMISSION



Robert A. Purple, Chief  
Operating Reactors Branch No. 1  
Division of Reactor Licensing

Attachment:  
Change No. 19 to Technical  
Specifications

Date of Issuance: **AUG 1 1975**

ATTACHMENT TO LICENSE AMENDMENT NO. 9  
CHANGE NO. 19 TO THE TECHNICAL SPECIFICATIONS  
FACILITY OPERATING LICENSE NO. DPR-38  
DUKE POWER COMPANY  
OCONEE NUCLEAR PLANT UNIT NO. 1  
DOCKET NO. 50-269

Revise Appendix B as follows:

1. Remove pages 7, 8, 13, 14, 17, and 18.
2. Insert revised pages 7, 8, 13, 14, 17, and 18.

### 1.3 GENERAL AQUATIC SURVEILLANCE

Objective: To determine the effects of Oconee Nuclear Station's operation on the aquatic ecosystem of Lake Keowee and the area of Lake Hartwell influenced by the thermal and chemical discharges.

Specification: Surveillance programs shall be conducted to detect and quantify Oconee's effects on water quality, fish, periphyton, plankton, and benthos.

Bases: Requirements and details of the aquatic surveillance specifications are described in Sections 1.3.1 through 1.3.5.

A tabular summary of the aquatic surveillance program items is included in Table 1.0-1.

### 1.3.1 WATER QUALITY

Specification:

- A. Synoptic water quality surveys at nine (9) sampling stations on Lake Keowee, four (4) stations on Lake Hartwell, and a station on the Keowee River between the lakes shall be conducted. Sampling locations are shown on Fig. 1.3-1 and Fig. 1.3-2, and required sampling parameters are listed in Table 1.0-1.

Temperature and dissolved oxygen measurements shall be made at 0.3, 1.5, 5.0, 6.5, 8.0, 10.0 meters and thereafter every 2.5 meters to one meter off the bottom for lake samples. BOD measurements on Lake Keowee shall be taken at 0.3 meters, 3.0 meters and bottom depths. BOD measurements on Lake Hartwell shall be made on samples which are a composite of water from 0.3 meters, mid-depth and bottom depths. All other specified parameters shall be measured at a minimum of three depths for each lake sampling station. At sampling station 605 (Figure 1.3-2), the Keowee River shall be sampled from 0.3 meters.

19 14 6

Dissolved oxygen will also be measured weekly from May through November at three locations: (1) the Oconee discharge, (2) the lake surface (0.3 meter depth) the Keowee intake structure, and (3) the Keowee tailrace during hydroelectric plant operation.

- B. Water temperature recording stations shall be established at stations 502, 503, and 504. Temperature shall be monitored in a multi-point vertical profile, accurate to 0.5°C. Sensors shall be placed at a depth of 0.3 meters below the surface, on the bottom, and at a minimum of six (6) intervals to describe the temperature profile.

A fourth temperature recording station shall be established to monitor the waters discharged from Lake Keowee through the Keowee Hydro Plant.

Bases:

Water quality measurements will be used to: (1) establish base line data, (2) determine effects from Oconee Nuclear Station on the water quality and, (3) provide supporting data for the benthos, plankton, periphyton, and fish sampling programs.

AUG 1 1975

#### 1.3.4 PHYTOPLANKTON - ZOOPLANKTON RECEIVING WATER STUDY

Objective: The species composition and numbers of organisms per unit volume obtained by sampling at stations affected by the discharge plume will be compared to similar data collected at control stations.

Specification: Bimonthly sampling (6 times/yr.) shall be done at Stations 500, 503, 505, 506, 509.5 (intake structure), 508 (discharge cove), and 508.5 (approximately midway between 508 and 504). The latter two stations shall be geographically fixed points used to examine for cooling water effects. 19 14 6

Both whole water samples and samples concentrated using a plankton net will be collected. The sampling at stations affected by the discharge shall consist of samples taken at water depths, both affected and not affected by the plume. At the control stations, samples will also be taken at these corresponding depths.

Basis: Stations 500 and 506 will serve as controls. Stations 503, 505, discharge stations as stated, and at the intake serve to detect plant operation effects. The discharge plume stations and depths sampled will be selected to determine (1) effects due to condenser passage on the species composition and concentration of organisms in the area affected by the plume, and (2) possible recovery and reincorporation effects at points along the discharge plume. Both determinations can be used to express the net system effects.

Sampling at depths affected by the plume and at depths below the plume is an attempt to detect any change in species composition or number of organisms at the greater depths that may result from the inability of condenser entrained organisms to maintain themselves in the plume. This selection of sampling depths in the plume and below the plume will be based on all, or any combination, of the following methods: temperature, dissolved oxygen, chlorophyll "a", irradiance, or transmissometry profiles.

AUG 1 1975

1.3.5 BENTHOS

Specification

The benthic macroinvertebrate populations of Lakes Keowee and Hartwell shall be sampled four (4) times per year. Sampling stations shall be located on the lake side of the skimmer wall (502), in the vicinity of the discharge (discharge canal and 504), at control stations on Lake Keowee (501 and 506), and in Lake Hartwell below Keowee Dam (604 and 606). Quantitative samples shall be taken with a modified Peterson grab. Qualitative samples (e.g., sweep netting) shall be done along the shore nearest each of the stations listed above.

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Benthic organisms collected shall be identified to the genus level where practicable. Diversity indices shall be calculated as well as data on the standing crop of benthic organisms, such as number per square meter and/or grams per square meter.

Bases

Benthic organisms are valuable as indicators of water quality near the bottom of a lake or river. Their relative immobility and several-month life spans are qualities which help make them "continuous monitors" whose survival may be limited by extreme conditions even when average conditions are favorable. They cannot avoid adverse conditions and are slow to repopulate an area, so that detrimental effects are not easily erased. Benthic organisms may also be an important source of food for fish.

Inasmuch as the distribution and abundance of benthic organisms are greatly dependent upon the bottom type available to them, the bottom type at each sampling station will be classified and reported.

The benthic samples taken by the techniques proposed above should be representative of both deep and shallow areas of Lake Keowee and of the several habitats presented by the Keowee River below the dam.

AUG 1 1975

## 1.6 PLUME MAPPING FOR TEMPERATURE AND DISSOLVED OXYGEN

Objective: To provide temperature and dissolved oxygen data for defining the discharge plume and for checking the accuracy of predictions of plume characteristics.

Specification: At least four times per year, special sampling studies shall be made to identify and characterize the cooling water discharge plume with respect to dissolved oxygen and temperature. Data shall be collected from a minimum of 30 sampling points, following a sampling pattern designed to achieve coverage of the plume. | 19 14

Three of the surveys shall be conducted during periods when the following conditions are expected:

- 1) Maximum condenser cooling water discharge temperature
- 2) Maximum acreage of discharge plume
- 3) Minimum condenser cooling water dissolved oxygen concentration.

Bases: The mapping program will define the temperature and dissolved oxygen gradients in the plume, especially in the region near the discharge where momentum and mixing are the prevalent processes influencing the plume's horizontal and vertical dimensions.

This mapping program will effectively complement the surveillance program defined in Section 1.3.

AUG 1 1975

## 1.7 GAS BUBBLE DISEASE STUDY

Objectives: To determine the incidence and severity of gas-bubble disease among fishes in the heated effluent of Oconee Nuclear Station and the associated saturation values of the gases oxygen and nitrogen dissolved in Lake Keowee waters.

Specification:

- A. The fish collected as a part of the population dynamics study (1.3.2) shall be examined for symptoms of gas-bubble disease. Those fish which exhibit symptoms of gas-bubble disease shall be identified, weighed, and measured; this data plus the date and location of capture will be tabulated.
- B. Determination of the percent saturation values of the gases oxygen and nitrogen dissolved in Lake Keowee waters shall be made at stations 502, 504, 505, intake structure, discharge structure, and discharge cove at depths of 1, 5, 10 and 20 feet. The study shall be performed monthly during the winter period, November to April, starting in November 1973.

Bases: The winter time occurrence of gas-bubble disease associated with the operation of a steam electric station has been noted. Thus, it is necessary to determine whether or not gas-bubble disease does occur and if so, then what the incidence rate and severity is. The findings of other researchers on this subject will be reviewed and incorporated into this study.

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. 9  
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 May 23, 1975, 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; and
  - 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.
2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment and Paragraph 3.B of Facility License No. DPR-47 is hereby amended to read as follows:

"B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications, as revised by issued changes thereto through Change No. 14."



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

FOR THE NUCLEAR REGULATORY COMMISSION



Robert A. Purple, Chief  
Operating Reactors Branch No. 1  
Division of Reactor Licensing

Attachment:  
Change No. 14 to Technical  
Specifications

Date of Issuance: AUG 1 1975

ATTACHMENT TO LICENSE AMENDMENT NO. 9  
CHANGE NO. 14 TO THE TECHNICAL SPECIFICATIONS  
FACILITY OPERATING LICENSE NO. DPR-47  
DUKE POWER COMPANY  
OCONEE NUCLEAR PLANT UNIT NO. 2  
DOCKET NO. 50-270

Revise Appendix B as follows:

1. Remove pages 7, 8, 13, 14, 17, and 18.
2. Insert revised pages 7, 8, 13, 14, 17, and 18.

### 1.3 GENERAL AQUATIC SURVEILLANCE

Objective: To determine the effects of Oconee Nuclear Station's operation on the aquatic ecosystem of Lake Keowee and the area of Lake Hartwell influenced by the thermal and chemical discharges.

Specification: Surveillance programs shall be conducted to detect and quantify Oconee's effects on water quality, fish, periphyton, plankton, and benthos.

Bases: Requirements and details of the aquatic surveillance specifications are described in Sections 1.3.1 through 1.3.5.

A tabular summary of the aquatic surveillance program items is included in Table 1.0-1.

### 1.3.1 WATER QUALITY

Specification:

- A. Synoptic water quality surveys at nine (9) sampling stations on Lake Keowee, four (4) stations on Lake Hartwell, and a station on the Keowee River between the lakes shall be conducted. Sampling locations are shown on Fig. 1.3-1 and Fig. 1.3-2, and required sampling parameters are listed in Table 1.0-1.

Temperature and dissolved oxygen measurements shall be made at 0.3, 1.5, 5.0, 6.5, 8.0, 10.0 meters and thereafter every 2.5 meters to one meter off the bottom for lake samples. BOD measurements on Lake Keowee shall be taken at 0.3 meters, 3.0 meters and bottom depths. BOD measurements on Lake Hartwell shall be made on samples which are a composite of water from 0.3 meters, mid-depth and bottom depths. All other specified parameters shall be measured at a minimum of three depths for each lake sampling station. At sampling station 605 (Figure 1.3-2), the Keowee River shall be sampled from 0.3 meters.

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Dissolved oxygen will also be measured weekly from May through November at three locations: (1) the Oconee discharge, (2) the lake surface (0.3 meter depth) the Keowee intake structure, and (3) the Keowee tailrace during hydroelectric plant operation.

- B. Water temperature recording stations shall be established at stations 502, 503, and 504. Temperature shall be monitored in a multi-point vertical profile, accurate to 0.5°C. Sensors shall be placed at a depth of 0.3 meters below the surface, on the bottom, and at a minimum of six (6) intervals to describe the temperature profile.

A fourth temperature recording station shall be established to monitor the waters discharged from Lake Keowee through the Keowee Hydro Plant.

Bases:

Water quality measurements will be used to: (1) establish base line data, (2) determine effects from Oconee Nuclear Station on the water quality and, (3) provide supporting data for the benthos, plankton, periphyton, and fish sampling programs.

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Specification: Bimonthly sampling (6 times/yr.) shall be done at Stations 500, 503, 505, 506, 509.5 (intake structure), 508 (discharge cove), and 508.5 (approximately midway between 508 and 504). The latter two stations shall be geographically fixed points used to examine for cooling water effects. 19 14 6

Both whole water samples and samples concentrated using a plankton net will be collected. The sampling at stations affected by the discharge shall consist of samples taken at water depths, both affected and not affected by the plume. At the control stations, samples will also be taken at these corresponding depths.

Basis: Stations 500 and 506 will serve as controls. Stations 503, 505, discharge stations as stated, and at the intake serve to detect plant operation effects. The discharge plume stations and depths sampled will be selected to determine (1) effects due to condenser passage on the species composition and concentration of organisms in the area affected by the plume, and (2) possible recovery and reincorporation effects at points along the discharge plume. Both determinations can be used to express the net system effects.

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Benthic organisms collected shall be identified to the genus level where practicable. Diversity indices shall be calculated as well as data on the standing crop of benthic organisms, such as number per square meter and/or grams per square meter.

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Benthic organisms are valuable as indicators of water quality near the bottom of a lake or river. Their relative immobility and several-month life spans are qualities which help make them "continuous monitors" whose survival may be limited by extreme conditions even when average conditions are favorable. They cannot avoid adverse conditions and are slow to repopulate an area, so that detrimental effects are not easily erased. Benthic organisms may also be an important source of food for fish.

Inasmuch as the distribution and abundance of benthic organisms are greatly dependent upon the bottom type available to them, the bottom type at each sampling station will be classified and reported.

The benthic samples taken by the techniques proposed above should be representative of both deep and shallow areas of Lake Keowee and of the several habitats presented by the Keowee River below the dam.

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Specification: At least four times per year, special sampling studies shall be made to identify and characterize the cooling water discharge plume with respect to dissolved oxygen and temperature. Data shall be collected from a minimum of 30 sampling points, following a sampling pattern designed to achieve coverage of the plume. | 19 14 6

Three of the surveys shall be conducted during periods when the following conditions are expected:

- 1) Maximum condenser cooling water discharge temperature
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## 1.7 GAS BUBBLE DISEASE STUDY

Objectives: To determine the incidence and severity of gas-bubble disease among fishes in the heated effluent of Oconee Nuclear Station and the associated saturation values of the gases oxygen and nitrogen dissolved in Lake Keowee waters.

- Specification:
- A. The fish collected as a part of the population dynamics study (1.3.2) shall be examined for symptoms of gas-bubble disease. Those fish which exhibit symptoms of gas-bubble disease shall be identified, weighed, and measured; this data plus the date and location of capture will be tabulated.
  - B. Determination of the percent saturation values of the gases oxygen and nitrogen dissolved in Lake Keowee waters shall be made at stations 502, 504, 505, intake structure, discharge structure, and discharge cove at depths of 1, 5, 10 and 20 feet. The study shall be performed monthly during the winter period, November to April, starting in November 1973.

Bases: The winter time occurrence of gas-bubble disease associated with the operation of a steam electric station has been noted. Thus, it is necessary to determine whether or not gas-bubble disease does occur and if so, then what the incidence rate and severity is. The findings of other researchers on this subject will be reviewed and incorporated into this study.

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. 6  
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 May 23, 1975, 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; and
  - 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.
2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment and Paragraph 3.B of Facility License No. DPR-55 is hereby amended to read as follows:

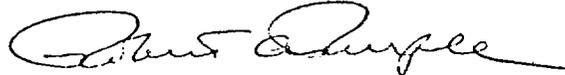
"B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications, as revised by issued changes thereto through Change No. 6."



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

FOR THE NUCLEAR REGULATORY COMMISSION.



Robert A. Purple, Chief  
Operating Reactors Branch No. 1  
Division of Reactor Licensing

Attachment:  
Change No. 6 to Technical  
Specifications

Date of Issuance: AUG 1 1975

ATTACHMENT TO LICENSE AMENDMENT NO. 6  
CHANGE NO. 6 TO THE TECHNICAL SPECIFICATIONS  
FACILITY OPERATING LICENSE NO. DPR-55  
DUKE POWER COMPANY  
OCONEE NUCLEAR PLANT UNIT NO. 3  
DOCKET NO. 50-287

Revise Appendix B as follows:

1. Remove pages 7, 8, 13, 14, 17, and 18.
2. Insert revised pages 7, 8, 13, 14, 17, and 18.

### 1.3 GENERAL AQUATIC SURVEILLANCE

Objective: To determine the effects of Oconee Nuclear Station's operation on the aquatic ecosystem of Lake Keowee and the area of Lake Hartwell influenced by the thermal and chemical discharges.

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Specification:

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Temperature and dissolved oxygen measurements shall be made at 0.3, 1.5, 5.0, 6.5, 8.0, 10.0 meters and thereafter every 2.5 meters to one meter off the bottom for lake samples. BOD measurements on Lake Keowee shall be taken at 0.3 meters, 3.0 meters and bottom depths. BOD measurements on Lake Hartwell shall be made on samples which are a composite of water from 0.3 meters, mid-depth and bottom depths. All other specified parameters shall be measured at a minimum of three depths for each lake sampling station. At sampling station 605 (Figure 1.3-2), the Keowee River shall be sampled from 0.3 meters.

19 14 6

Dissolved oxygen will also be measured weekly from May through November at three locations: (1) the Oconee discharge, (2) the lake surface (0.3 meter depth) the Keowee intake structure, and (3) the Keowee tailrace during hydroelectric plant operation.

- B. Water temperature recording stations shall be established at stations 502, 503, and 504. Temperature shall be monitored in a multi-point vertical profile, accurate to 0.5°C. Sensors shall be placed at a depth of 0.3 meters below the surface, on the bottom, and at a minimum of six (6) intervals to describe the temperature profile.

A fourth temperature recording station shall be established to monitor the waters discharged from Lake Keowee through the Keowee Hydro Plant.

Bases:

Water quality measurements will be used to: (1) establish base line data, (2) determine effects from Oconee Nuclear Station on the water quality and, (3) provide supporting data for the benthos, plankton, periphyton, and fish sampling programs.

AUG 1 1975

1.3.4 PHYTOPLANKTON - ZOOPLANKTON RECEIVING WATER STUDY

Objective: The species composition and numbers of organisms per unit volume obtained by sampling at stations affected by the discharge plume will be compared to similar data collected at control stations.

Specification: Bimonthly sampling (6 times/yr.) shall be done at Stations 500, 503, 505, 506, 509.5 (intake structure), 508 (discharge cove), and 508.5 (approximately midway between 508 and 504). The latter two stations shall be geographically fixed points used to examine for cooling water effects.

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Both whole water samples and samples concentrated using a plankton net will be collected. The sampling at stations affected by the discharge shall consist of samples taken at water depths, both affected and not affected by the plume. At the control stations, samples will also be taken at these corresponding depths.

Basis: Stations 500 and 506 will serve as controls. Stations 503, 505, discharge stations as stated, and at the intake serve to detect plant operation effects. The discharge plume stations and depths sampled will be selected to determine (1) effects due to condenser passage on the species composition and concentration of organisms in the area affected by the plume, and (2) possible recovery and reincorporation effects at points along the discharge plume. Both determinations can be used to express the net system effects.

Sampling at depths affected by the plume and at depths below the plume is an attempt to detect any change in species composition or number of organisms at the greater depths that may result from the inability of condenser entrained organisms to maintain themselves in the plume. This selection of sampling depths in the plume and below the plume will be based on all, or any combination, of the following methods: temperature, dissolved oxygen, chlorophyll "a", irradiance, or transmissometry profiles.

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1.3.5 BENTHOS

Specification

The benthic macroinvertebrate populations of Lakes Keowee and Hartwell shall be sampled four (4) times per year. Sampling stations shall be located on the lake side of the skimmer wall (502), in the vicinity of the discharge (discharge canal and 504), at control stations on Lake Keowee (501 and 506), and in Lake Hartwell below Keowee Dam (604 and 606). Quantitative samples shall be taken with a modified Peterson grab. Qualitative samples (e.g., sweep netting) shall be done along the shore nearest each of the stations listed above.

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Benthic organisms collected shall be identified to the genus level where practicable. Diversity indices shall be calculated as well as data on the standing crop of benthic organisms, such as number per square meter and/or grams per square meter.

Bases

Benthic organisms are valuable as indicators of water quality near the bottom of a lake or river. Their relative immobility and several-month life spans are qualities which help make them "continuous monitors" whose survival may be limited by extreme conditions even when average conditions are favorable. They cannot avoid adverse conditions and are slow to repopulate an area, so that detrimental effects are not easily erased. Benthic organisms may also be an important source of food for fish.

Inasmuch as the distribution and abundance of benthic organisms are greatly dependent upon the bottom type available to them, the bottom type at each sampling station will be classified and reported.

The benthic samples taken by the techniques proposed above should be representative of both deep and shallow areas of Lake Keowee and of the several habitats presented by the Keowee River below the dam.

AUG 1 1975

## 1.6 PLUME MAPPING FOR TEMPERATURE AND DISSOLVED OXYGEN

Objective: To provide temperature and dissolved oxygen data for defining the discharge plume and for checking the accuracy of predictions of plume characteristics.

Specification: At least four times per year, special sampling studies shall be made to identify and characterize the cooling water discharge plume with respect to dissolved oxygen and temperature. Data shall be collected from a minimum of 30 sampling points, following a sampling pattern designed to achieve coverage of the plume. | 19 14 6

Three of the surveys shall be conducted during periods when the following conditions are expected:

- 1) Maximum condenser cooling water discharge temperature
- 2) Maximum acreage of discharge plume
- 3) Minimum condenser cooling water dissolved oxygen concentration.

Bases: The mapping program will define the temperature and dissolved oxygen gradients in the plume, especially in the region near the discharge where momentum and mixing are the prevalent processes influencing the plume's horizontal and vertical dimensions.

This mapping program will effectively complement the surveillance program defined in Section 1.3.

AUG 1 1975

## 1.7 GAS BUBBLE DISEASE STUDY

Objectives: To determine the incidence and severity of gas-bubble disease among fishes in the heated effluent of Oconee Nuclear Station and the associated saturation values of the gases oxygen and nitrogen dissolved in Lake Keowee waters.

- Specification:
- A. The fish collected as a part of the population dynamics study (1.3.2) shall be examined for symptoms of gas-bubble disease. Those fish which exhibit symptoms of gas-bubble disease shall be identified, weighed, and measured; this data plus the date and location of capture will be tabulated.
  - B. Determination of the percent saturation values of the gases oxygen and nitrogen dissolved in Lake Keowee waters shall be made at stations 502, 504, 505, intake structure, discharge structure, and discharge cove at depths of 1, 5, 10 and 20 feet. The study shall be performed monthly during the winter period, November to April, starting in November 1973.

Bases: The winter time occurrence of gas-bubble disease associated with the operation of a steam electric station has been noted. Thus, it is necessary to determine whether or not gas-bubble disease does occur and if so, then what the incidence rate and severity is. The findings of other researchers on this subject will be reviewed and incorporated into this study.

UNITED STATES NUCLEAR REGULATORY COMMISSION

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

DUKE POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY  
OPERATING LICENSES

Notice is hereby given that the U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment Nos. 9, 9, and 6 to Facility Operating License Nos. DPR-38, DPR-47, and DPR-55 issued to Duke Power Company which revised Technical Specifications for operation of the Oconee Nuclear Station Units 1, 2, and 3 located in Oconee County, South Carolina. The amendments are effective as of the date of issuance.

The amendments provide for administrative modifications of the environmental surveillance program to convert to metric measurements, modify sampling stations, redesignate and change sampling locations and change sampling frequency requirements.

The application for these 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. The Commission has evaluated the potential impact of the operating plant in accordance with the amendments and has concluded that there will be no change in effluent types or amounts nor an increase in power level, as previously evaluated in the Final Environmental Statement for Oconee Nuclear Station Units 1, 2 and 3 dated March 1972 and will not result in any significant environmental impact. Having made this

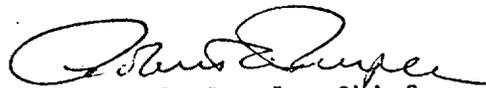
determination, the Commission has further concluded, pursuant to 10 CFR 51.5(d)(4), that an environmental statement, negative declaration or environmental impact appraisal need not be prepared in connection with the issuance of these amendments. Prior public notice of these amendments is not required since the amendments do not involve a significant hazards consideration.

For further details with respect to this action, see (1) the application for amendment dated May 23, 1975, (2) the letter dated August 1, 1975 from R. Purple to Duke Power Company, and (3) Amendment Nos. 9, 9, and 6 with Change Nos. 19, 14 and 6 to License Nos. DPR-38, DPR-47, and DPR-55. 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, 201 South Spring Street, Walhalla, South Carolina, 29691.

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 Reactor Licensing.

Dated at Bethesda, Maryland, this 1st day of August 1975.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert A. Purple, Chief  
Operating Reactors Branch No. 1  
Division of Reactor Licensing