

Dockets Nos. 50-269/270 & 287

January 27, 1977

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Duke Power Company
 ATTN: Mr. William G. Parker, Jr.
 Vice President
 Steam Production
 Post Office Box 2178
 422 South Church Street
 Charlotte, North Carolina 28242

Gentlemen:

The Commission has issued the enclosed Amendment No. 36 to Facility License No. DPR-38; Amendment No. 36 to Facility License No. DPR-47; and Amendment No. 33 to Facility License No. DPR-55 for the Oconee Nuclear Station. These amendments consist of changes to the Technical Specifications and are in response to your request dated May 27, 1976.

These changes are related to the measurement and control of radioactive liquid and gaseous effluents from the Oconee Nuclear Station and will provide more definitive information from the radiological monitoring program.

A copy of the Safety Evaluation and Federal Register Notice are also enclosed.

Sincerely,

Original
Signed by

A. Schwencer, Chief
 Operating Reactors Branch #1
 Division of Operating Reactors

Enclosures:

1. Amendment No. 36 to DPR-38
2. Amendment No. 36 to DPR-47
3. Amendment No. 33 to DPR-55
4. Safety Evaluation
5. Federal Register Notice

cc w/enclosures:
 See next page

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cc: Mr. William L. Porter
Duke Power Company
P. O. Box 2178
422 South Church Street
Charlotte, North Carolina 28242

J. Michael McGarry, III, Esq.
1747 Pennsylvania Avenue, N. W.
Suite 1050
Washington, D. C. 20006

Oconee Public Library
201 South Spring Street
Walhalla, South Carolina 29691

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

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

Chief, Energy Systems
Analyses Branch (AW-459)
Office of Radiation Programs
U. S. Environmental Protection Agency
Room 645, East Tower
401 M Street, S. W.
Washington, D. C. 20460

U. S. Environmental Protection Agency
Region IV Office
ATTN: EIS COORDINATOR
345 Courtland Street, N. E.
Atlanta, Georgia 30308



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. 36
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 27, 1976, 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.
3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 27, 1977

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 36 TO DPR-38

AMENDMENT NO. 36 TO DPR-47

AMENDMENT NO. 33 TO DPR-55

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

Revise Appendix A as follows:

Remove pages 4.1-11, 4.1-12, 4.11-4 and 4.11-5 and insert identically numbered pages.

TABLE 4.1-3 Cont.

MINIMUM SAMPLING FREQUENCY

<u>Item</u>	<u>Check</u>	<u>Frequency</u>	<u>Sensitivity of Waste Analysis in Lab</u>
7. Low Activity Waste Tank, Condensate Test Tank, Condensate Monitoring Tank, Laundry-Hot Shower Tank	a. Gamma Isotopic Analysis including Dissolved Noble Gases	a. Prior to release of each batch	a. Gamma Nuclides $<5 \times 10^{-7}$ $\mu\text{Ci/ml}$ Dissolved Gases $<10^{-5}$ $\mu\text{Ci/ml}$
	b. Radiochemical Analysis Sr 89,90	b. Monthly	b. $<10^{-8}$ $\mu\text{Ci/ml}$
	c. Tritium	c. Monthly	c. $<10^{-5}$ $\mu\text{Ci/ml}$
	d. Gross Alpha Activity	d. Monthly	d. $<10^{-7}$ $\mu\text{Ci/ml}$
8. Waste Gas Decay Tank	a. Gamma Isotopic Analysis	a. Prior to release of each batch	a. $<10^{-4}$ $\mu\text{Ci/cc}$ (gases) $<10^{-10}$ $\mu\text{Ci/cc}$ (particulates and iodines)
	b. Tritium	b. Prior to release of each batch	b. $<10^{-6}$ $\mu\text{Ci/cc}$
9. Unit Vent Sampling	a. Iodine Spectrum ⁽⁴⁾	a. Weekly	a. $<10^{-10}$ $\mu\text{Ci/cc}$
	b. Particulates ⁽⁴⁾		
	1) Gamma Isotopic Analysis	1) Weekly Composite	1) $<10^{-10}$ $\mu\text{Ci/cc}$
	2) Gross Alpha Activity	2) Quarterly on a sample of one week duration	2) $<10^{-11}$ $\mu\text{Ci/cc}$
	3) Radiochemical Analysis Sr 89,90	3) Quarterly Composite	3) $<10^{-11}$ $\mu\text{Ci/cc}$

TABLE 4.1-3 Cont.

MINIMUM SAMPLING FREQUENCY

<u>Item</u>	<u>Check</u>	<u>Frequency</u>	<u>Sensitivity of Waste Analysis in Lab</u>
	c. Gases by Gamma Isotopic Analysis	c. Weekly	c. $<10^{-4}$ $\mu\text{Ci/cc}$
10. Keowee Hydro Dam Dilution Flow	Measure Leakage Flow Rate	Annually	
11. Condenser Air Ejector Partition Factor	Measure Iodine Partition Factor in Condenser	One time if and when primary to secondary leaks develop	
12. Reactor Building	a. Gamma Isotopic Analysis	a. Each Purge	a. $<10^{-4}$ $\mu\text{Ci/cc}$ (gases) $<10^{-10}$ $\mu\text{Ci/cc}$ (particulates and iodines)
	b. Tritium	b. Each Purge	b. $<10^{-6}$ $\mu\text{Ci/cc}$

- (1) When radioactivity level is greater than 10 percent of the limits of Specification 3.1.4, the sampling frequency shall be increased to a minimum of once each day.
- (2) \bar{E} determination will be started when gross beta-gamma activity analysis indicates greater than 10 $\mu\text{Ci/ml}$ and will be redetermined for each 10 $\mu\text{Ci/ml}$ increase in gross beta-gamma activity analysis thereafter. A radiochemical analysis for this purpose shall consist of a quantitative measurement of 95 percent of the radionuclides in the reactor coolant with half lives greater than 30 minutes. This is expected to consist of gamma isotopic analysis of the primary coolant, including dissolved gaseous activities, radiochemical analysis for Sr-89 and Sr-90, and tritium analysis.

4.1-12

Amendments Nos. 36, 36 & 33

TABLE 4.11-2

OFFSITE RADIOLOGICAL MONITORING PROGRAM

Type Samples	Schedule	Analysis			
		Gross Alpha	Gross Beta	Gamma Analysis	Specific Nuclides
1. Water Supply (raw)	Monthly	x	x	x	¹³¹ I
	Quarterly	x	x	x	⁸⁹ Sr, ⁹⁰ Sr, ³ H
2. Water ⁽³⁾ (other than raw water supply)	Monthly ⁽¹⁾⁽²⁾	x	x	x	⁸⁹ Sr, ⁹⁰ Sr, ³ H
	Quarterly	x	x	x	¹³¹ I
3. Airborne Particulates (including iodine)	Weekly				⁸⁹ Sr, ⁹⁰ Sr
	Monthly	x	x	x	
4. Rain and Settled Dust	Monthly	x	x		
	Quarterly			x	
5. Radiation Dose and Dose Rate (mR, mR/hr)	Quarterly				
6. Lake Bottom and Shoreline Sediment including benthos	Semiannually (as available)			x	⁶⁰ Co, ⁸⁹ Sr, ⁹⁰ Sr
7. Aquatic Vegetation and/or Plankton	Semiannually (as available)			x	¹³⁷ Cs, ⁴⁰ K, ⁸⁹ Sr, ⁹⁰ Sr
8. Terrestrial Vegetation-pasture grass, forage, and commercial crops	Quarterly (as available)			x	¹³⁷ Cs, ⁴⁰ K, ¹³¹ I
9. Milk	Weekly ⁽⁴⁾				¹³¹ I
	Monthly ⁽⁵⁾ , Quarterly			x	⁸⁹ Sr, ⁹⁰ Sr, ¹³⁷ Cs, ⁴⁰ K, ³ H
10. Fish	Semiannually ⁽⁶⁾			x	⁸⁹ Sr, ⁹⁰ Sr, ¹³⁷ Cs, ⁴⁰ K
11. Soil	Triennially			x	⁸⁹ Sr, ⁹⁰ Sr

NOTES: (1) Water supply samples will be composited weekly for monthly analyses.

(2) Record status of waste discharge operations at time of sampling for surface water samples.

(3) Surface water samples are to be collected closely following liquid discharge to allow for sufficient time for movement downstream in order to verify dilution, or monthly for continuous discharge.

(4) When animals are on pasture.

(5) Milk samples will be composited weekly for monthly analysis.

(6) When fish samples are available.

TABLE 4.11-3
ANALYTICAL SENSITIVITIES

The sensitivity of the analyses for various radionuclides in representative samples is typically as follows:

Analysis	Water (pCi/l)	Airborne Particulate or Gas (pCi/m ³)	Fish (pCi/kg, wet)	Milk (pCi/l)	Vegetation (pCi/kg, wet)	Soil (pCi/kg, dry)
gross beta	1	1×10^{-2}				
gross alpha	0.5	1×10^{-3}				
³ H	330			330		
⁴⁰ K			1200	200	400	
⁵⁴ Mn	15		130			
⁵⁹ Fe	30		260			
^{58, 60} Co	15		130			
⁶⁵ Zn	30		260			
⁸⁹ Sr	10	5×10^{-3}	40	10	40	600
⁹⁰ Sr	2	1×10^{-3}	8	2	8	150
⁹⁵ Zr-Nb	10					
¹³¹ I	1.5	7×10^{-2}		0.5	80 ⁽¹⁾	
^{134, 137} Cs	15	1×10^{-2}	130	15	100 ⁽¹⁾	150
¹⁴⁰ Ba-La	15			15		

The sensitivity of the radiation exposure measurements (gross gamma) is approximately 10mR for a three-month integrated exposure and .005mR/hr for exposure rate measurement.

(1) These sensitivities may vary depending on the water content of the vegetation samples.



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. 36
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 27, 1976, 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.
3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 27, 1977



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. 33
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 27, 1976, 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.
3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: January 27, 1977



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 36 TO FACILITY OPERATING LICENSE NO. DPR-38

AMENDMENT NO. 36 TO FACILITY OPERATING LICENSE NO. DPR-47

AMENDMENT NO. 33 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 May 27, 1976, Duke Power Company (licensee) requested changes to the Technical Specifications for the Oconee Nuclear Station. These changes concern the measurement and control of radioactive liquid and gaseous effluents.

Discussion

The changes to the Technical Specifications are:

1. The addition of the condensate monitoring tank and the laundry - hot shower tank to Table 4.1-3 as part of the list of tanks to be sampled for radioactivity prior to release. A gamma isotopic analysis will now be performed instead of gross beta and gamma activity for all tanks.
2. Changes in gamma isotopic analysis sensitivities for the waste gas tanks, unit vent and reactor building purge in Table 4.1-3.
3. Changes in water samples used for offsite radiological monitoring and the addition of a requirement to measure I-131 in Table 4.11-2.
4. Revision of analytical sensitivities in Table 4.11.3.

Evaluation

1. The condensate monitoring tank and the laundry - hot shower tank were added to the list in Table 4.1-3 of tanks to be sampled prior to release of each batch. For the low activity waste tank and condensate test tank the requirement for gross beta and gamma activity, Ba-La-140 and I-131 were deleted. In place of gross activity

analyses, the licensee will now perform a gamma isotopic analysis including dissolved noble gases on the contents of all tanks prior to the release of effluents. We find that these changes will provide more encompassing information than the gross activity measurements and will include the isotopes now being analyzed. We therefore conclude that these changes are acceptable.

2. Gamma isotopic analysis sensitivities for the waste gas decay tank, unit vent and reactor building purge in Table 4.1-3 were revised to include separate sensitivities for gases and for particulates and iodines. Separating the sensitivities is an improvement over having a sensitivity for all of the activity combined, since the sensitivity is now more representative of the type of activity (i.e. gaseous or particulate) being measured. We find these changes to be desirable and conclude that they are acceptable.
3. In the samples required for the offsite radiological monitoring program (Table 4.11-2), water supply samples were divided into two categories: water supply (raw) and water (other than raw water supply). A requirement to measure I-131 in the monthly raw water supply was added to the analyses now performed to check on the intake of this isotope by livestock consuming water from Hartwell Reservoir. The requirement for I-131 analyses on the monthly and quarterly milk samples was deleted since it is performed on the weekly samples. We find these changes to be acceptable.
4. The required analytical sensitivities in Table 4.11-3 were revised to be consistent with current guidance to demonstrate that the effluent releases are within the Appendix I design objective annual exposure limits and to reflect the current Oconee radiological sampling program. Sensitivities were added for 9 isotopes that were not previously listed in the Table. The sensitivity for I-131 analyses on water samples was changed from 0.5 to 1.5 p Ci/m³ since this value is considered to better represent the current state of technology. We conclude that these changes are acceptable.

In summary, we conclude that the requested changes will provide more definitive information from the radiological program.

We have determined that this amendment does 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 amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

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.

Date: January 27, 1977

UNITED STATES NUCLEAR REGULATORY COMMISSION

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

DUKE POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY
OPERATING LICENSES

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendments Nos. 36, 36 and 33 to Facility Operating Licenses Nos. DPR-38, DPR-47 and DPR-55, respectively, issued to Duke Power Company (the licensee), which revised Technical Specifications for operation of the Oconee Nuclear Station Units Nos. 1, 2 and 3 (the facility) located in Oconee County, South Carolina. The amendments are effective as of their date of issuance.

These changes are related to the measurement and control of radioactive liquid and gaseous effluents from the Oconee Nuclear Station and will provide more definitive information from the radiological monitoring program.

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. Prior public notice of these amendments was not required since these 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 §1.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of these amendments.

For further details with respect to this action, see (1) the application for amendment dated May 27, 1976, (2) Amendments Nos. 36, 36 and 33 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, 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 Operating Reactors.

Dated at Bethesda, Maryland, this 27th day of January 1977.

FOR THE NUCLEAR REGULATORY COMMISSION



A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors