



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

April 30, 1987

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

Posted
Amat. 158
to DPR-47
See Correction letter
of 4-28-89

Mr. H. B. Tucker, Vice President
Nuclear Production Department
Duke Power Company
422 South Church Street
Charlotte, North Carolina 28242

Dear Mr. Tucker:

Subject: Issuance of Amendment Nos. 158, 158, and 155 to Facility Operating Licenses DPR-38, DPR-47, and DPR-55 - Oconee Nuclear Station, Units 1, 2, and 3 (TAC Nos. 61377, 61378, 61379)

The Nuclear Regulatory Commission has issued the enclosed Amendment Nos. 158, 158, and 155 to Facility Operating Licenses Nos. DPR-38, DPR-47 and DPR-55 for the Oconee Nuclear Station, Units 1, 2, and 3. These amendments consist of changes to the Station's common Technical Specifications (TSs) in response to your request dated February 12, 1986, as revised on October 10 and additional information sent on October 20, 1986.

The amendments revise the TSs to describe the operation and maintenance of the containment hydrogen recombiner system which will be the primary method for maintaining hydrogen concentration in the post-accident atmosphere below the deflagration limit. The Hydrogen Purge System which presently contributes to hydrogen control will be available as a backup system if needed.

A copy of our Safety Evaluation is also included. Notice of issuance of the enclosed amendments will be included in the Commission's bi-weekly Federal Register notice.

Sincerely,

Helen N. Pastis

Helen N. Pastis, Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II

Enclosures:

1. Amendment No. 158 to DPR-38
2. Amendment No. 158 to DPR-47
3. Amendment No. 155 to DPR-55
4. Safety Evaluation

cc w/enclosures: See next page

Mr. H. B. Tucker
Duke Power Company

Oconee Nuclear Station
Units Nos. 1, 2 and 3

cc:

Mr. A. V. Carr, Esq.
Duke Power Company
P. O. Box 33189
422 South Church Street
Charlotte, North Carolina 28242

Duke Power Company
Post Office Box 33189
422 South Church Street
Charlotte, North Carolina 28242

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

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

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

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

Regional Administrator
U.S. Nuclear Regulatory Commission
101 Marietta Street, N.W.
Suite 2900
Atlanta, Georgia 30323

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

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

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



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

DUKE POWER COMPANY

DOCKET NO. 50-269

OCONEE NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 158
License No. DPR-38

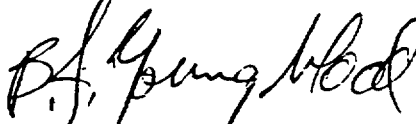
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment to the Oconee Nuclear Station, Unit 1 (the facility) Facility Operating License No. DPR-38 filed by the Duke Power Company (the licensee) dated February 12, 1986, as revised October 10 and additional information sent on October 20, 1986, 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 set forth in 10 CFR Chapter 1;
 - D. The issuance of this license 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 attachments 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. 158, 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 its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in dark ink, appearing to read "B.J. Youngblood", is written over the typed name.

B.J. Youngblood, Director
Project Directorate II-3
Division of Reactor Projects - I/II

Attachment:
Technical Specification
Changes

Date of Issuance: April 30, 1987



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. 158
License No. DPR-47

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment to the Oconee Nuclear Station, Unit 1 (the facility) Facility Operating License No. DPR-47 filed by the Duke Power Company (the licensee) dated February 12, 1986, as revised October 10 and additional information sent on October 20, 1986, 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 1;
 - 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 set forth in 10 CFR Chapter 1;
 - D. The issuance of this license 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 attachments 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. 158, 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 its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in dark ink, appearing to read "B.J. Youngblood", is written over the typed name and title.

B.J. Youngblood, Director
Project Directorate II-3
Division of Reactor Projects - I/II

Attachment:
Technical Specification
Changes

Date of Issuance: April 30, 1987



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. 155
License No. DPR-55

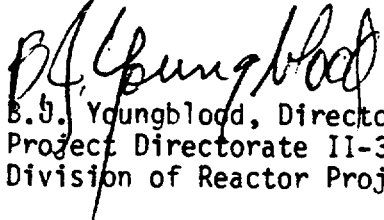
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment to the Oconee Nuclear Station, Unit 1 (the facility) Facility Operating License No. DPR-38 filed by the Duke Power Company (the licensee) dated February 12, 1986, as revised October 10 and additional information sent on October 20, 1986, 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 set forth in 10 CFR Chapter 1;
 - D. The issuance of this license 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 attachments 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. 155, 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 its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION


B.J. Youngblood, Director
Project Directorate II-3
Division of Reactor Projects - I/II

Attachment:
Technical Specification
Changes

Date of Issuance: April 30, 1987

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 158 TO DPR-38

AMENDMENT NO. 158 TO DPR-47

AMENDMENT NO. 155 TO DPR-55

DOCKET 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 number and contain vertical lines indicating the areas of change.

<u>Remove</u> <u>Page</u>	<u>Insert</u> <u>Page</u>
3.16-1	3.16-1
--	3.16-2
4.4-17	4.4-17
4.4-18	4.4-18
4.4-19	--

3.16 CONTAINMENT HYDROGEN CONTROL SYSTEMS

Applicability

Applies to the Containment Hydrogen Recombiner System (including portable hydrogen recombining unit and the Hydrogen Recombiner System flow path) and the Reactor Building Hydrogen Purge System whenever any Oconee unit is above cold shutdown conditions.

Objective

To define the conditions necessary to assure the availability of adequate containment hydrogen control capability.

Specifications

- 3.16.1 The Containment Hydrogen Control Systems shall be operable as follows:
- a. A portable hydrogen recombining unit shall be operable and available for connection to the affected unit.
 - b. If no portable hydrogen recombining unit is operable and available for connection to the affected unit, a portable hydrogen recombining unit shall be restored to an operable status within 7 days.
 - c. If the conditions in 3.16.1.b cannot be satisfied, the Reactor Building Hydrogen Purge System shall be verified operable within the next 48 hours.
 - d. With the Reactor Building Hydrogen Purge System operable, restore a hydrogen recombining unit to operating status within 30 days or submit a report to the NRC within the next 30 days describing the circumstances resulting in inoperable equipment and plans for returning the equipment to service and for any interim surveillance testing of the purge system.
 - e. With a portable hydrogen recombining unit operable, the Reactor Building Hydrogen Purge System is not required to be operable.
- 3.16.2 If the conditions under Technical Specification 3.16.1.c are not met, the Oconee Units shall be in hot shutdown within the next 12 hours and in cold shutdown in an additional 24 hours.
- 3.16.3 Components in the Containment Hydrogen Control Systems' flow path shall be operable on each Oconee unit with the following exceptions.
- a. If the flow path is inoperable it shall be restored to operable status within 7 days.
 - b. If an inoperable flow path is not restored to operable status within 7 days, then the affected unit shall be at hot shutdown within the next 12 hours and at cold shutdown within an additional 24 hours.

Bases

The Containment Hydrogen Control Systems are required at approximately 460 hours (19.2 days) following a LOCA to limit hydrogen concentration to 4.1 percent by volume.

The Containment Hydrogen Recombiner System is utilized as the primary method to maintain the post-accident containment atmosphere hydrogen concentration below its lower flammability limit of 4.1 percent by volume. The Containment Hydrogen Recombiner System includes a portable hydrogen recombiner which will be moved to the affected unit following a LOCA, anchored to its foundation, and connected to piping penetrations. Also included is a portable control panel, which will be locally mounted near the recombiner, anchored to its foundation and connected to its motor control center and the recombiner.

The Reactor Building Hydrogen Purge System is composed of a portable purging station and a portion of the Penetration Room Ventilation System. The purge system is operated as necessary (if the Containment Hydrogen Recombiner System is inoperable) to maintain the hydrogen concentration below the control limit.

The Containment Hydrogen Recombiner System is the preferable method of post-accident hydrogen control since it produces no radioactive gaseous release to the atmosphere. Therefore, the Containment Hydrogen Recombiner System will be utilized as the primary method to control the containment hydrogen concentration below 4.1 percent by volume.

Reference

FSAR, Section 15.16

4.4.3 CONTAINMENT HYDROGEN CONTROL SYSTEMS

Applicability

Applies to the Containment Hydrogen Control Systems.

Objective

To verify that the Containment Hydrogen Control Systems are operable.

Specifications

4.4.3.1 Containment Hydrogen Control System Piping

During each refueling, the permanent piping for the Containment Hydrogen Control System shall be tested as follows:

- a. The post-LOCA flow paths shall be verified by connecting and operating either the Hydrogen Purge Unit or the Hydrogen Recombiner through each flow path as follows:
 1. The hydrogen Recombiner flow path circulates Reactor Building atmosphere at a flow greater than 50 SCFM.
 2. The Hydrogen Purge flow path removes Reactor Building atmosphere and discharges to the Unit vent stack at a flow greater than or equal to 45 SCFM.
- b. The blind isolation flanges on the Containment Hydrogen Control System permanent piping shall be leak tested after each installation to ensure adequate isolation.

4.4.3.2 Containment Hydrogen Recombiner System Operational Performance Testing

- a. The testing requirement of this section may be performed without connecting the system to either of the Reactor Buildings.
- b. At a refueling frequency:
 1. Visual inspection of the unit.
 2. Calibrate all recombiner instrumentation and control circuits.
 3. Operate a recombiner unit at design flow rate 10% and allow unit to reach recombination temperature.

4.4.3.3 Reactor Building Hydrogen Purge System, Pre-Operational Testing

- a. Prior to declaring this system operable, a Pre-operational system test shall be performed.

b. This pre-operational test shall consist of:

1. Visual inspection of the system.
2. Installation of new carbon and HEPA filters and in-place filter leakage test per ANSI-N510-1975 (minimum DOP efficiency 99%, minimum halogenated hydrocarbon removal 99%).
3. Flow measurement using flow instruments in the portable purging station.
4. Verification that the pressure drop across the combined HEPA filters and charcoal absorber banks is less than six inches of water at the system design flow rate ($\pm 10\%$).
5. Verification of the operability of the heater at rated power when tested in accordance with ANSI N510-1975.

Bases

The control panel mounted near the recombiner enables the operator to control and monitor system parameters for all functions of the recombiner system except containment isolation valve operation. The control and monitor functions include: process temperature indications, temperature control, flow indication, start/stop switch, low temperature timer and various annunciators. Therefore, the operational performance testing ensures operability.

The penetrations to and from the hydrogen recombiner are shared with the gaseous radiation monitoring pump. Since this pump is normally in operation and since there is no system isolation valve on the supply branch to the recombiner, the blind flanges are the only means of system isolation. Therefore, these flange joints should be leak tested after each removal and installation to ensure adequate isolation.

The hydrogen recombiner unit operational performance test should be conducted with full flow and with the heaters energized. The capability of the recombiner to achieve the required recombination temperature and flow rate is considered an adequate test of recombination efficiency. Gas inlet and outlet sampling is not required.

The pre-operational testing requirements for the Reactor Building Hydrogen Purge System are applicable only when the system is required to be operable as required by Technical Specification 3.16.1.c. Requirements for interim surveillance testing of the Reactor Building Hydrogen Purge System during any period of its required operability will be reported to the NRC as described in Technical Specification 3.16.1.d.

New carbon and HEPA filters are installed during pre-operational testing. HEPA filters are installed before the charcoal adsorbers to prevent clogging of the iodine adsorbers. The charcoal adsorbers are installed to reduce the potential release of radioiodine. Bypass leakage for the charcoal adsorbers and particulate removal efficiency for HEPA filters are determined by halogenated hydrocarbon and DOP, respectively.