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November 13, 1990

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

Posted
Amdt. 185 to DPR-47

Mr. H. B. Tucker, Vice President
Nuclear Production Department
Duke Power Company
P.O. Box 1007
Charlotte, North Carolina 28201-1007

Dear Mr. Tucker:

SUBJECT: ISSUANCE OF AMENDMENT NOS. 185, 185 AND 182 TO FACILITY OPERATING LICENSES DPR-38, DPR-47, and DPR-55 - OCONEE NUCLEAR STATION, UNITS 1, 2, AND 3 (TACS 68473/68474/68475)

The Nuclear Regulatory Commission has issued the enclosed Amendment Nos. 185, 185 and 182 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 TSs in response to your request dated May 31, 1988, as revised and supplemented April 26, June 5 and August 1, 1990.

The amendments incorporate limits on allowable primary-to-secondary leakage, delete a requirement that an assessment be made as to whether operations may safely continue for leak rates less than the limit, and delete a redundant reporting requirement.

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

Sincerely,

/S/

Leonard A. Wiens, Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 185 to DPR-38
2. Amendment No. 185 to DPR-47
3. Amendment No. 182 to DPR-55
4. Safety Evaluation

cc w/enclosures:
See next page

LA:PDII3	PM:PDII3	OGC	D:PDII3
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Mr. H. B. Tucker
Duke Power Company

Oconee Nuclear Station
Units Nos. 1, 2 and 3

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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. 185
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 May 31, 1988, as revised and supplemented April 26, June 5, and August 1, 1990, 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 I;

   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 hereby amended by page 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:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No.185 , 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

Darl Hood

for David B. Matthews, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: November 13, 1990

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. 185
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 2 (the facility) Facility Operating License No. DPR-47 filed by the Duke Power Company (the licensee) dated May 31, 1988, as revised and supplemented April 26, June 5, and August 1, 1990, 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 I;

   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 hereby amended by page 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:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 185 , 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

Darl Hood

for David B. Matthews, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: November 13, 1990

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. 182
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 3 (the facility) Facility Operating License No. DPR-55 filed by the Duke Power Company (the licensee) dated May 31, 1988, as revised and supplemented April 26, June 5, and August 1, 1990, 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 I;

   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 hereby amended by page 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:

Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 182, 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

Darl Hood

for David B. Matthews, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification
Changes

Date of Issuance: November 13, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 185

FACILITY OPERATING LICENSE NO. DPR-38

DOCKET NO. 50-269

AND

TO LICENSE AMENDMENT NO. 185

FACILITY OPERATING LICENSE NO. DPR-47

DOCKET NO. 50-270

AND

TO LICENSE AMENDMENT NO. 182

FACILITY OPERATING LICENSE NO. DPR-55

DOCKET NO. 50-287

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the areas of change.

Remove Pages	Insert Pages
3.1-14	3.1-14
3.1-16	3.1-16
4.17-4	4.17-4

3.1.6 Leakage

Specification

3.1.6.1 If the total reactor coolant leakage rate exceeds 10 gpm, the reactor shall be shutdown within 24 hours of detection.

3.1.6.2 If unidentified reactor coolant leakage (excluding normal evaporative losses) exceeds 1 gpm or if any reactor coolant leakage is evaluated as unsafe, the reactor shall be shutdown within 24 hours of detection.

3.1.6.3 If any reactor coolant leakage exists through a non-isolable fault in a RCS strength boundary (such as the reactor vessel, piping, valve body, etc., except the steam generator tubes), the reactor shall be shutdown, and cooldown to the cold shutdown condition shall be initiated within 24 hours of detection.

3.1.6.4 If the total leakage through the tubes of any one steam generator equals or exceeds 0.35 gpm, a reactor shutdown shall be initiated within 4 hours and the reactor shall be in a cold condition within the next 36 hours.

3.1.6.5 If reactor shutdown is required by Specification 3.1.6.1, 3.1.6.2 or 3.1.6.3, the rate of shutdown and the conditions of shutdown shall be determined by the safety evaluation for each case and justified in writing as soon thereafter as practicable.

3.1.6.6 Action to evaluate the safety implication of reactor coolant leakage shall be initiated within 4 hours of detection. The nature, as well as the magnitude, of the leak shall be considered in this evaluation. The safety evaluation shall assure that the exposure of offsite personnel to radiation is within the guidelines of 10 CFR 20.

3.1.6.7 If reactor shutdown is required per Specification 3.1.6.1, 3.1.6.2, 3.1.6.3 or 3.1.6.4, the reactor shall not be restarted until the leak is repaired or until the problem is otherwise corrected.

3.1.6.8 When the reactor is critical and above 2% power, two reactor coolant leak detection systems of different operating principles shall be operable, with one of the two systems sensitive to radioactivity. The systems sensitive to radioactivity may be out-of-service for 48 hours provided two other means to detect leakage are operable.

3.1.6.9 Loss of reactor coolant through reactor coolant pump seals and system valves to connecting systems which vent to the gas vent header and from which coolant can be returned to the reactor coolant system shall not be considered as reactor coolant leakage and shall not be subject to the consideration of Specifications 3.1.6.1, 3.1.6.2, 3.1.6.3, 3.1.6.4, 3.1.6.5, 3.1.6.6 or 3.1.6.7 except that such losses when added to leakage shall not exceed 30 gpm.

3.1.6.10

a. The maximum allowable leakage for valves CF-12, CF-14, LP-47 and LP-48 shall be as follows:

d. Total reactor coolant system leakage rate is periodically determined by comparing indications of reactor power, coolant temperature, pressurizer water level and letdown storage tank level over a time interval. All of these indications are recorded. Since the pressurizer level is maintained essentially constant by the pressurizer level controller, any coolant leakage is replaced by coolant from the letdown storage tank resulting in a tank level decrease. The letdown storage tank capacity is 31 gallons per inch of height and each graduation on the level recorder represents 1 inch of tank height. This inventory monitoring method is capable of detecting changes on the order of 31 gallons. A 1 gpm leak would therefore be detectable within approximately one half hour.

   As described above, in addition to direct observation, the means of detecting reactor coolant leakage are based on 2 different principles, i.e., activity, sump level and reactor constant inventory measurement. Two systems of different principles provide, therefore, diversified ways of detecting leakage to the reactor building.

The upper limit of 30 gpm is based on the contingency of a complete loss of station power. A 30 gpm loss of water in conjunction with a complete loss of station power and subsequent cooldown of the reactor coolant system by the turbine bypass system (set at 1,040 psia) and steam driven emergency feedwater pump would require more than 60 minutes to empty the pressurizer from the combined effect of system leakage and contraction. This will be ample time to restore electrical power to the station and makeup flow to the reactor coolant system.

The steam generator tube leakage limit (i.e., primary to secondary leakage limit) in Specification 3.1.6.4 is intended to provide assurance that steam generator tube integrity is maintained in the event of a main steam line rupture or under LOCA conditions. The limit also serves to provide added assurance that the dosage contribution from tube leakage will be limited to a small fraction of 10CFR Part 100 limits during a steam generator tube rupture or a main steam line break or feedwater line break events.

<u>REFERENCES</u>

FSAR Sections 11.5.1, and 5.2.3.10.3

d. <u>% Degradation</u> means the percentage of the tube or sleeve wall thickness affected or removed by degradation.

e. <u>Defect</u> means an imperfection of such severity that it exceeds the repair limit. A tube or sleeve containing a defect is defective.

f. <u>Repair Limit</u> means the imperfection depth beyond which the tube shall be either removed from service by plugging or repaired by sleeving because it may become unserviceable prior to the next inspection; it is equal to 40% of the nominal tube or sleeve wall thickness.

The Babcock and Wilcox process (or method) equivalent to the method described in report, BAW-1823P, Revision 1 will be used.

g. <u>Unserviceable</u> describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of an Operating Basis Earthquake, a loss-of-coolant accident, or a steam line or feedwater line break as specified in Specification 4.17.4.

h. <u>Tube Inspection</u> means an inspection of the steam generator tube from the point of entry completely to the point of exit.

4.17.6 Reports

a. The number of tubes plugged or repaired in each steam generator shall be reported to the NRC within 30 days following the completion of the plugging or repair procedure.

b. The results of the steam generator tube inservice inspection shall be reported to the NRC within 3 months following completion of the inspection. This report shall include:

1. Number and extent of tubes inspected.

2. Location and percent of wall-thickness penetration for each indication of a degraded tube.

3. Identification of tubes plugged or repaired.

c. Results of steam generator tube inspections which fall into Category C-3 and require prompt notification of the NRC shall be reported pursuant to Specification 6.6.2.1.a prior to resumption of plant operation. The written followup of this report shall provide a description of investigations conducted to determine cause of the tube degradation and corrective measures taken to prevent recurrence.

<u>Bases</u>

The program of periodic inservice inspection of steam generators provides the means to monitor the integrity of the tubing and to maintain surveillance in the event there is evidence of mechanical damage or progressive deterioration due to design, manufacturing errors, or operating conditions. Inservice inspection of the steam generator tubing also provides a means of characterizing the nature and cause of any tube degradation so that corrective measures may be taken.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 185 TO FACILITY OPERATING LICENSE DPR-38

AMENDMENT NO. 185 TO FACILITY OPERATING LICENSE DPR-47

AMENDMENT NO. 182 TO FACILITY OPERATING LICENSE DPR-55

DUKE POWER COMPANY

OCONEE NUCLEAR STATION, UNITS 1, 2 AND 3

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

1.0 INTRODUCTION

By letter dated May 31, 1988, as revised and supplemented April 26, June 5 and August 1, 1990, Duke Power Company (the licensee) proposed amendments to the Technical Specifications (TSs) for the Oconee Nuclear Station, Units 1, 2 and 3. The proposed amendments would revise the TSs concerning allowable limits on primary-to-secondary leakage.

2.0 EVALUATION

Specification 3.1.6.4 of the current Oconee TSs requires that if the leakage through the Oconee Unit 1 steam generator tubes equals or exceeds 0.3 gallons per minute (gpm), a reactor shutdown shall be initiated within 4 hours and the reactor shall be in cold shutdown within the next 36 hours. Specification 3.1.6.4 further requires that if leakage at Unit 1 is less than 0.3 gpm, an assessment shall be made whether operations may be continued safely or the plant should be shut down. In either case, the Specification requires the NRC to be notified in accordance with 10 CFR 50.73. Specification 3.1.6.4 for Oconee Unit 1 dates back to the 1970's when Unit 1 was experiencing frequent leakage problems.

Under the current Oconee TSs, Specification 3.1.6.4 is not applicable to Oconee Units 2 and 3. Apart from Specification 3.1.6.1 which limits total reactor coolant leakage to 10 gpm, Oconee Units 2 and 3 do not have specific limits on allowable primary-to-secondary leakage in the Oconee TSs.

The licensee is proposing a change to Specification 3.1.6.4 to make it applicable to Oconee Units 1, 2 and 3, rather than to just Unit 1. Under the proposed change, leakage through the tubes of any one steam generator would be limited to 0.35 gpm in lieu of the present limit of 0.3 gpm for total leakage from both steam generators for Oconee Unit 1.

The proposed 0.35 gpm limit is consistent with the NRC staff's recommendation in NRC Generic Letter 85-02 that all PWRs adopt leakage limits which are at least as restrictive as the Standard Technical Specification limits. The proposed limit is essentially identical with the 500 gallon-per-day (gpd) limit in the Standard Technical Specifications for Babcock & Wilcox (B&W) plants (NUREG-0103). The proposed limit is intended to provide assurance that steam generator tube integrity is maintained for the full spectrum of normal and postulated accident conditions (NUREG-0844). This limit also serves to provide added assurance that the dosage contribution for tube leakage will be limited to a small fraction of 10 CFR Part 100 limits for design basis accidents (e.g., main steam line break and steam generator tube rupture). This limit is within the 1.0 gpm total tube leakage (from both steam generators) assumed in the Oconee Final Safety Analysis Report (FSAR) Chapter 15, safety analyses.

The licensee also proposes to delete the sentence of Specification 3.1.6.4 which requires performance of an assessment for continued operation if leakage is less than the limit. This requirement is not included in either the Standard Technical Specifications or other plant TSs. Furthermore, the consequence of leaks less than 0.35 gpm are bounded by the results of the FSAR Chapter 15 safety analyses. In addition, the licensee notes that plant operating procedures require a reduction of power for steam generator tube leaks exceeding 0.2 gpm to reduce the leakage and its potential impact. The licensee states that these procedures are based on operating considerations, including practical limits to minimize secondary side contamination, and serve to restrict operation when significant primary-to-secondary leakage exists.

The licensee is proposing to delete the last sentence of Specification 3.1.6.4 which requires NRC notification pursuant to 10 CFR 50.73. However, notification of the NRC pursuant to 10 CFR 50.73 would remain a requirement in Specification 6.6.2.1 in the event that the leakage limits of Specification 3.1.6.4 are exceeded. Since the deleted sentence is redundant, this change is acceptable.

Finally, this licensee is proposing an administrative change to correct outdated NRC organizational addresses in TS 4.17.6.a. No changes in requirements result from this change, and this is acceptable.

The proposed amendments to the Oconee TSs incorporate limits on allowable primary-to-secondary leakage which are consistent with limits in the Standard Technical Specifications for B&W plants. As reported in NUREG-0844, the NRC staff considers these limits to be an effective instrument for ensuring steam generator tube integrity for the full range of normal, transient, and postulated accidents and for ensuring this leakage is within values assumed in the FSAR safety analyses. The NRC staff, therefore, finds the proposed amendments acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

These amendments involve changes in requirements with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20. The amendments also relate to changes in recordkeeping, reporting, or administrative procedures or requirements. We have determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that these amendments involve no significant hazards consideration, and there has been no public comment on such finding. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and (10). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

4.0 CONCLUSION

The Commission's proposed determination that the amendments involve no significant hazards consideration was published in the Federal Register (55 FR 36340) on September 5, 1990. The Commission consulted with the State of South Carolina. No public comments were received, and the State of South Carolina did not have any comments.

We have concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) 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.

Principal Contributor: E. Murphy, EMCB

Dated: November 13, 1990