

November 13, 1997

Mr. G. R. Peterson
Site Vice President
Catawba Nuclear Station
Duke Power Company
4800 Concord Road
York, South Carolina 29745-9635

Distribution C Ogle, RII
Docket File ACRS T-2 E26
PUBLIC OGC
PDII-2 RF G.Hill(2)
B. Boger e-mail TLH3 SE only
JJohnson,RII TSB, O-11 F23
A. Keim, O-7 D4

SUBJECT: ISSUANCE OF AMENDMENT - CATAWBA NUCLEAR STATION, UNIT 2
(TAC NO. M98863)

Dear Mr. Peterson:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 154 to Facility Operating License NPF-52 for the Catawba Nuclear Station, Unit 2. The amendment consists of changes to the Technical Specifications in response to your application dated May 27, 1997.

This amendment deletes references to steam generator tube sleeving and repair criteria that were mistakenly introduced by previous amendments..

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

Sincerely,

ORIGINAL SIGNED BY:

Peter S. Tam, Senior Project Manager
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-414

Enclosures:

- 1. Amendment No. 154 to NPF-52
- 2. Safety Evaluation

NO COPY SENT TO [unclear]

cc w/encls: See next page

DOCUMENT NAME: G:\CATAWBA\CAT98863.AMD

OFFICE	PDII-2/PM	PDII-2/LA	OGC	PDII-2/D	
NAME	P.TAM:cn	L.BERRY	[Signature]	H.BERKOV	
DATE	10/14/97	10/18/97	11/10/97	11/12/97	
COPY	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY

DFO 11/13/97



9711240014 971113
PDR ADOCK 05000414
PDR

CP-1



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

November 13, 1997

Mr. G. R. Peterson
Site Vice President
Catawba Nuclear Station
Duke Energy Corporation
4800 Concord Road
York, South Carolina 29745-9635

SUBJECT: ISSUANCE OF AMENDMENT - CATAWBA NUCLEAR STATION, UNIT 2
(TAC NO. M98863)

Dear Mr. Peterson:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 154 to Facility Operating License NPF-52 for the Catawba Nuclear Station, Unit 2. The amendment consists of changes to the Technical Specifications in response to your application dated May 27, 1997.

This amendment deletes references to steam generator tube sleeving and repair criteria that were mistakenly introduced by previous amendments..

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

Sincerely,

A handwritten signature in black ink that reads "Peter S. Tam".

Peter S. Tam, Senior Project Manager
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-414

Enclosures:

1. Amendment No. 154 to NPF-52
2. Safety Evaluation

cc w/encls: See next page

Catawba Nuclear Station

cc:

Mr. M. S. Kitlan
Regulatory Compliance Manager
Duke Energy Corporation
4800 Concord Road
York, South Carolina 29745

Mr. Paul R. Newton
Legal Department (PB05E)
Duke Energy Corporation
422 South Church Street
Charlotte, North Carolina 28242

J. Michael McGarry, III, Esquire
Winston and Strawn
1400 L Street, NW
Washington, DC 20005

North Carolina Municipal Power
Agency Number 1
1427 Meadowwood Boulevard
P. O. Box 29513
Raleigh, North Carolina 27626

Mr. Peter R. Harden, IV
Account Sales Manager
Westinghouse Electric Corporation
Power Systems Field Sales
P. O. Box 7288
Charlotte, North Carolina 28241

County Manager of York County
York County Courthouse
York, South Carolina 29745

Richard P. Wilson, Esquire
Assistant Attorney General
South Carolina Attorney General's
Office
P. O. Box 11549
Columbia, South Carolina 29211

Piedmont Municipal Power Agency
121 Village Drive
Greer, South Carolina 29651

North Carolina Electric Membership
Corporation
P. O. Box 27306
Raleigh, North Carolina 27611

Senior Resident Inspector
U.S. Nuclear Regulatory Commission
4830 Concord Road
York, South Carolina 29745

Regional Administrator, Region II
U. S. Nuclear Regulatory Commission
Atlanta Federal Center
61 Forsyth Street, S.W., Suite 23T85
Atlanta, Georgia 30303

Max Batavia, Chief
Bureau of Radiological Health
South Carolina Department of
Health and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Mr. G. A. Copp
Licensing - EC050
Duke Energy Corporation
526 South Church Street
Charlotte, North Carolina 28242-0001

Saluda River Electric
P. O. Box 929
Laurens, South Carolina 29360

Ms. Karen E. Long
Assistant Attorney General
North Carolina Department of Justice
P. O. Box 629
Raleigh, North Carolina 27602

Elaine Wathen, Lead REP Planner
Division of Emergency Management
116 West Jones Street
Raleigh, North Carolina 27603-1335

Catawba Nuclear Station

cc:

Mr. T. Richard Puryear
Owners Group (NCEMC)
Duke Energy Corporation
4800 Concord Road
York, South Carolina 29745

Richard M. Fry, Director
Division of Radiation Protection
North Carolina Department of
Environment, Health, and
Natural Resources
3825 Barrett Drive
Raleigh, North Carolina 27609-7721



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

DUKE ENERGY CORPORATION

NORTH CAROLINA MUNICIPAL POWER AGENCY NO. 1

PIEDMONT MUNICIPAL POWER AGENCY

DOCKET NO. 50-414

CATAWBA NUCLEAR STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 154
License No. NPF-52

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment to the Catawba Nuclear Station, Unit 2 (the facility) Facility Operating License No. NPF-52 filed by the Duke Energy Corporation, acting for itself, North Carolina Municipal Power Agency No. 1 and Piedmont Municipal Power Agency (licensees), dated May 27, 1997, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as 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 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 2.C.(2) of Facility Operating License No. NPF-52 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 154, which are attached hereto, are hereby incorporated into this license. Duke Energy Corporation shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Herbert N. Berkow, Director
Project Directorate II-2
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Technical Specification Changes

Date of Issuance: November 13, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 154

FACILITY OPERATING LICENSE NO. NPF-52

DOCKET NO. 50-414

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

3/4 4-13
3/4 4-15
3/4 4-16
3/4 4-17
3/4 4-19
B 3/4 4-3
B 3/4 4-4

Insert

3/4 4-13
3/4 4-15
3/4 4-16
3/4 4-17
3/4 4-19
B 3/4 4-3
B 3/4 4-4

REACTOR COOLANT SYSTEM

SURVEILLANCE REQUIREMENTS (Continued)

- 1) All nonplugged tubes that previously had detectable wall penetrations (greater than 20%),
 - 2) Tubes in those areas where experience has indicated potential problems, and
 - 3) A tube inspection (pursuant to Specification 4.4.5.4a.8) shall be performed on each selected tube. If any selected tube does not permit the passage of the eddy current probe for a tube inspection, this shall be recorded and an adjacent tube shall be selected and subjected to a tube inspection.
- c. The tubes selected as the second and third samples (if required by Table 4.4-2) during each inservice inspection may be subjected to a partial tube inspection provided:
- 1) The tubes selected for these samples include the tubes from those areas of the tube sheet array where tubes with imperfections were previously found, and
 - 2) The inspections include those portions of the tubes where imperfections were previously found.

The results of each sample inspection shall be classified into one of the following three categories:

<u>Category</u>	<u>Inspection Results</u>
C-1	Less than 5% of the total tubes inspected are degraded tubes and none of the inspected tubes are defective.
C-2	One or more tubes, but not more than 1% of the total tubes inspected are defective, or between 5% and 10% of the total tubes inspected are degraded tubes.
C-3	More than 10% of the total tubes inspected are degraded tubes or more than 1% of the inspected tubes are defective.
Note:	In all inspections, previously degraded tubes must exhibit significant (greater than 10%) further wall penetrations to be included in the above percentage calculations.

REACTOR COOLANT SYSTEM

SURVEILLANCE REQUIREMENTS (Continued)

4.4.5.4 Acceptance Criteria

a. As used in this specification:

- 1) Imperfection means an exception to the dimensions, finish or contour of a tube from that required by fabrication drawings or specifications. Eddy-current testing indications below 20% of the nominal tube wall thickness, if detectable, may be considered as imperfections;
- 2) Degradation means a service-induced cracking, wastage, wear or general corrosion occurring on either inside or outside of a tube;
- 3) Degraded Tube means a tube containing imperfections greater than or equal to 20% of the nominal tube wall thickness caused by degradation;
- 4) % Degradation means the percentage of the tube wall thickness affected or removed by degradation;
- 5) Defect means an imperfection of such severity that it exceeds the plugging limit. A tube containing a defect is defective;
- 6) Plugging Limit means the imperfection depth at or beyond which the tube shall be removed from service by plugging. The plugging limit is equal to 40% of the nominal tube wall thickness.
- 7) Unserviceable 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 4.4.5.3c., above;
- 8) Tube Inspection means an inspection of the steam generator tube from the point of entry (hot leg side) completely around the U-bend to the top support of the cold leg;

REACTOR COOLANT SYSTEM

SURVEILLANCE REQUIREMENTS (Continued)

9) Preservice Inspection means an inspection of the full length of each tube in each steam generator performed by eddy current techniques prior to service to establish a baseline condition of the tubing. This inspection shall be performed prior to initial POWER OPERATION using the equipment and techniques expected to be used during subsequent inservice inspections.

- b. The steam generator shall be determined OPERABLE after completing the corresponding actions (plug all tubes exceeding the plugging limit and all tubes containing through-wall cracks) required by Table 4.4-2.

4.4.5.5 Reports

- a. Within 15 days following the completion of each inservice inspection of steam generator tubes, the number of tubes plugged in each steam generator shall be reported to the Commission in a Special Report pursuant to Specification 6.9.2;
- b. The complete results of the steam generator tube inservice inspection shall be submitted to the Commission in a Special Report pursuant to Specification 6.9.2 within 12 months following the completion of the inspection. This Special Report shall include:

REACTOR COOLANT SYSTEM

SURVEILLANCE REQUIREMENTS (Continued)

- 1) Number and extent of tubes inspected,
 - 2) Location and percent of wall-thickness penetration for each indication of an imperfection, and
 - 3) Identification of tubes plugged.
- c. Results of steam generator tube inspections, which fall into Category C-3, shall be reported in a Special Report to the Commission pursuant to Specification 6.9.2 within 30 days and prior to resumption of plant operation. This report shall provide a description of investigations conducted to determine cause of the tube degradation and corrective measures taken to prevent recurrence.

TABLE 4.4-2

STEAM GENERATOR TUBE INSPECTION

1ST SAMPLE INSPECTION			2ND SAMPLE INSPECTION		3RD SAMPLE INSPECTION	
Sample Size	Result	Action Required	Result	Action Required	Result	Action Required
A minimum of S Tubes per S.G.	C-1	None	N.A.	N.A.	N.A.	N.A.
	C-2	Plug defective tubes and inspect additional 2S tubes in this S.G.	C-1	None	N.A.	N.A.
			C-2	Plug defective tubes and inspect additional 4S tubes in this S.G.	C-1	None
			C-2	Plug defective tubes and inspect additional 4S tubes in this S.G.	C-2	Plug defective tubes
			C-3	Perform action for C-3 result of first sample	C-3	Perform action for C-3 result of first sample
	C-3	Perform action for C-3 result of first sample	N.A.	N.A.	N.A.	N.A.
	C-3	Inspect all tubes in this S.G., plug defective tubes and inspect 2S tubes in each other S.G. Notification to NRC pursuant to §50.72(b)(2) of 10 CFR Part 50.	All other S.G.s are C-1	None	N.A.	N.A.
			Some S.G.s C-2 but no additional S.G. are C-3	Perform action for C-2 result of second sample	N.A.	N.A.
			Additional S.G.s C-3	Inspect all tubes in each S.G. and plug defective tubes. Notification to NRC pursuant to §50.72 (b)(2) of 10 CFR 50.	N.A.	N.A.

S = 3 (N/n)% Where N is the number of steam generators in the unit, and n is the number of steam generators inspected during an inspection.

REACTOR COOLANT SYSTEM

BASES

RELIEF VALVES (Continued)

of PORVs to control reactor coolant system pressure except for limited periods where the PORV has been isolated due to excessive seat leakage and except for limited periods where the PORV and/or block valve is closed because of testing and is fully capable of being returned to its normal alignment at any time, provided that this evolution is covered by an approved procedure. This is a function that reduces challenges to the code safety valves for overpressurization events. 5) Manual control of a block valve to isolate a stuck-open PORV. Testing of the PORVs includes the emergency N₂ supply from the Cold Leg Accumulators. This test demonstrates that the valves in the supply line operate satisfactorily and that the nonsafety portion of the instrument air system is not necessary for proper PORV operation.

3/4.4.5 STEAM GENERATORS

The Surveillance Requirements for inspection of the steam generator tubes ensure that the structural integrity of this portion of the Reactor Coolant System will be maintained. The program for inservice inspection of steam generator tubes is based on a modification of Regulatory Guide 1.83, Revision 1. Inservice inspection of steam generator tubing is essential in order to maintain surveillance of the conditions of the tubes in the event that there is evidence of mechanical damage or progressive degradation due to design, manufacturing errors, or inservice conditions that lead to corrosion. Inservice inspection of steam generator tubing also provides a means of characterizing the nature and cause of any tube degradation so that corrective measures can be taken.

The plant is expected to be operated in a manner such that the secondary coolant will be maintained within those chemistry limits found to result in negligible corrosion of the steam generator tubes. If the secondary coolant chemistry is not maintained within these limits, localized corrosion may likely result in stress corrosion cracking. The extent of cracking during plant operation would be limited by the limitation of steam generator tube leakage between the Reactor Coolant System and the Secondary Coolant System (reactor-to-secondary leakage = 150 gallons per day per steam generator).

REACTOR COOLANT SYSTEM

BASES

STEAM GENERATORS (Continued)

Cracks having a reactor-to-secondary leakage less than this limit during operation will have an adequate margin of safety to withstand the loads imposed during normal operation and by postulated accidents. Operating plants have demonstrated that reactor-to-secondary leakage of 150 gallons per day per steam generator can readily be detected. Leakage in excess of this limit will require plant shutdown and an unscheduled inspection, during which the leaking tubes will be located and repaired.

Wastage-type defects are unlikely with proper chemistry treatment of the secondary coolant. However, even if a defect should develop in service, it will be found during scheduled inservice steam generator tube examinations. Plugging will be required for all tubes with imperfections exceeding the plugging limit of 40% of the tube nominal wall thickness. Steam generator tube inspections of operating plants have demonstrated the capability to reliably detect wastage type degradation that has penetrated 20% of the original tube wall thickness.

Whenever the results of any steam generator tubing inservice inspection fall into Category C-3, these results will be reported to the Commission pursuant to Specification 6.9.2 prior to resumption of plant operation. Such cases will be considered by the Commission on a case-by-case basis and may result in a requirement for analysis, laboratory examinations, tests, additional eddy-current inspection, and revision of the Technical Specifications, if necessary.

3/4.4.6 REACTOR COOLANT SYSTEM LEAKAGE

3/4.4.6.1 LEAKAGE DETECTION SYSTEMS

The Leakage Detection Systems required by this specification are provided to monitor and detect leakage from the reactor coolant pressure boundary. These Detection Systems are consistent with the recommendations of Regulatory Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems," May 1973.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 154 TO FACILITY OPERATING LICENSE NPF-52

DUKE ENERGY CORPORATION, ET AL.

CATAWBA NUCLEAR STATION, UNIT 2

DOCKET NO. 50-414

1.0 INTRODUCTION

By letter dated May 27, 1997, Duke Energy Corporation (licensee, formerly Duke Power Company) proposed a change to the Technical Specifications (TS) for the Catawba Nuclear Station, Unit 2. The proposed changes would revise TS section 4.4.5, Steam Generator Surveillance Requirements, to delete references to repair criteria (F* and alternate tube plugging) and repair methods (sleeving) that are not applicable to the Catawba Unit 2 steam generators. Also, unused paragraph numbers will be removed and one typographical error will be corrected.

Prior to 1996, Catawba Unit 1 and Unit 2 had a combined TS document. Several TS amendments described below were approved by the staff that permitted the use of steam generator tube sleeves and interim steam generator tube plugging criteria for the tube support plate elevations for Unit 1. These repair methods were contained in the combined TS document. By letter dated July 18, 1994, the licensee proposed to split the Catawba Technical Specification document into separate documents for Unit 1 and Unit 2. As a result, the staff issued Amendments 148 for Unit 1 and 142 for Unit 2 on June 12, 1996, splitting the joined TS document into two separate documents. Both the staff and the licensee did not recognize then that the steam generator tube repair methods were applicable to Unit 1 only and were not applicable to the Unit 2 steam generators, which are different from the design of Unit 1.

2.0 EVALUATION

The following were previous amendments to the TS that were involved with steam generator tube repair and sleeving.

By application dated December 19, 1990, the licensee proposed a revision to the Catawba TS to allow the option of using the B&W (Babcock & Wilcox) Kinetic Sleeving Process for 3/4-inch OD Tube Repair as described in Topical Report BAW-2045(P)-A. This proposed amendment was approved as Amendment 84 for Unit 1 and Amendment 78 for Unit 2 on March 4, 1991. On May 19, 1992, the licensee submitted a proposed amendment to the Catawba TS. This proposed revision would allow the use of B&W Kinetic Sleeving Process, as described in

9711240017 971113
PDR ADOCK 05000414
P PDR

Topical Report BAW-2045P, Rev. 1 "Recirculating Steam Generator Kinetic Sleeve Qualifications for 3/4 inch OD Tubes," to repair steam generator tubes. As a result, the staff issued Amendment 99 for Unit 1 and Amendment 93 for Unit 2 on August 14, 1992.

By application dated August 24, 1992, the licensee proposed a revision to the Catawba TS to allow the implementation of interim steam generator tube plugging criteria for the tube support plate elevations for Unit 1, Cycle 7. The application was approved as Amendment 102 for Unit 1 and 96 for Unit 2 on September 25, 1992, to permit the use of the interim plugging criteria for Unit 1. The licensee later submitted an application dated October 5, 1993, which requested changes to the TS that would allow the continuance of voltage-based steam generator tube plugging criteria for defects located at the tube support elevations. The application also proposed administrative changes to preserve the current combined TS applicable to Unit 2. As a result, the staff issued Amendment 111 for Unit 1, and Amendment 105 for Unit 2, on December 16, 1993.

The proposed changes to the Catawba Unit 2 TS delete repair criteria (F* and Alternate Tube Plugging) and repair methods (sleeving) that are not applicable to the Catawba Unit 2 steam generators. These criteria have not been used and are not applicable to the Westinghouse Model D5 steam generators in use at Catawba Unit 2. The repair methods were applicable to Catawba Unit 1, Westinghouse D3 steam generators, which were in use prior to their replacement in 1996 with B&W-designed steam generators. By Amendment No. 151 to Unit 1, the staff approved use of the new steam generators and deleted similar repair criteria and repair methods from the Unit 1 TS.

The licensee proposes to revise Catawba Unit 2 TS Section 3/4.4.5 as follows:

Section 4.4.5.2, Steam Generator Tube Sample Selection and Inspection - Delete unused paragraph number "c" and "e" and renumber "d" to "c." This change is editorial and is acceptable.

Section 4.4.5.4, Acceptance Criteria - All references to sleeves, repair process, F* distance, alternate tube plugging criteria, tube roll expansion, and an unused paragraph number will be deleted. "Repair" limit will be replaced with "plugging" limit. These changes delete references to a repair method that is not applicable to Unit 2.

Section 4.4.5.5, Reports - In paragraphs a and b.3, replace tubes "repaired" with tubes "plugged." These changes are consistent with the removal of the inapplicable repair method and are, thus, acceptable. Also, the deletion of unused paragraph numbers d and e is an editorial change and is acceptable.

Table 4.4-2, Steam Generator Tube Inspection - Correction of a typographical error, "deflective" to "defective."

Bases Section 3/4.4.5, STEAM GENERATORS - The second paragraph referring to the sleeving process will be deleted. Also, references to repairing and alternate tube plugging criteria will be deleted, replaced with references to plugging criteria. These changes delete references to a repair method that is not applicable to Unit 2.

These proposed changes will make the Unit 2 steam generator surveillance requirements consistent with the Standard Technical Specifications, NUREG-0452, Rev. 4. The staff finds the proposed changes acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the South Carolina State official was notified of the proposed issuance of the amendments. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes requirements with respect to installation or use of a facility component located within the restricted area, and makes changes to surveillance requirements. The NRC staff has determined that the amendment involves 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 the amendment involves no significant hazards consideration, and there has been no public comment on such finding (62 FR 33122 dated June 18, 1997). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The staff has 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, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Andrea T. Keim

Date: November 13, 1997