Docket Nos.: 50-413
and 50-414

September 29, 1988

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 NO. 53 TO FACILITY OPERATING LICENSE NPF-35 AND AMENDMENT NO. 46 TO FACILITY OPERATING LICENSE NPF-52 - CATAWBA NUCLEAR STATION, UNITS 1 AND 2 (TACS 66403/66404)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 53 to Facility Operating License NPF-35 and Amendment No. 46 to Facility Operating License NPF-52 for the Catawba Nuclear Station, Units 1 and 2. These amendments consist of changes to the Technical Specifications (TS) in response to your application dated October 16, 1987, as supplemented February 18, May 12, and July 12, 1988.

The amendments modify the TS for the nuclear service water system and its associated Bases.

A copy of the related safety evaluation supporting Amendment No. 53 to Facility Operating License NPF-35 and Amendment No. 46 to Facility Operating License NPF-52 is enclosed.

Also enclosed is a copy of a Notice of Issuance of Amendments to Facility Operating Licenses which has been forwarded to the Office of the Federal Register for publication.

Sincerely,

Original Signed By:

Kahtan N. Jabbour, Project Manager
Project Directorate II-3
Division of Reactor Projects I/II

Enclosures:
1. Amendment No. 53 to NPF-35
2. Amendment No. 46 to NPF-52
3. Safety Evaluation
4. F. R. Notice

cc w/enclosures:
See next page

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DATED: September 29, 1988

AMENDMENT NO. 53 TO FACILITY OPERATING LICENSE NPF-35 - Catawba Nuclear Station, Unit 1
AMENDMENT NO. 46 TO FACILITY OPERATING LICENSE NPF-52 - Catawba Nuclear Station, Unit 2

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

DUKE POWER COMPANY

NORTH CAROLINA ELECTRIC MEMBERSHIP CORPORATION

SALUDA RIVER ELECTRIC COOPERATIVE, INC.

DOCKET NO. 50-413

CATAWBA NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 53
License No. NPF-35

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment to the Catawba Nuclear Station, Unit 1 (the facility) Facility Operating License No. NPF-35 filed by the Duke Power Company acting for itself, North Carolina Electric Membership Corporation and Saluda River Electric Cooperative, Inc., (licensees) dated October 16, 1987, as supplemented February 18, May 12, and July 12, 1988, 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 attachments to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-35 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 53 , are hereby incorporated into the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed By:

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

Attachment:
Technical Specification Changes

Date of Issuance: September 29, 1988

OGC APH 9/14/88 No Objection 9/1/88

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

DUKE POWER COMPANY

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. 46
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 Power Company acting for itself, North Carolina Municipal Power Agency No. 1 and Piedmont Municipal Power Agency, (licensees) dated October 16, 1987, as supplemented February 18, May 12, and July 12, 1988, 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 attachments 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. 46 , are hereby incorporated into the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed BY:

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

Attachment:
Technical Specification Changes

Date of Issuance: September 29, 1988

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ATTACHMENT TO LICENSE AMENDMENT NO. 53

FACILITY OPERATING LICENSE NO. NPF-35

DOCKET NO. 50-413

AND

TO LICENSE AMENDMENT NO. 46

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. The corresponding overleaf pages are also provided to maintain document completeness.

Amended Page	Overleaf Page
3/4 3-23	
3/4 3-26	
3/4 3-48	3/4 3-47
3/4 3-50	
3/4 7-12	3/4 7-11
3/4 7-12a (new page)	
3/4 7-13	
B 3/4 7-3	
B 3/4 7-3a (new page)	

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
14. Nuclear Service Water Operation (Continued)					
c. Loss-of-Offsite Power	3	2	2	1,2,3	15
d. Containment Spray	See Item 2. above for all Containment Spray initiating functions and requirements.				
e. Phase "B" Isolation	See Item 3.b. above for all Phase "B" Isolation initiating functions and requirements.				
f. Safety Injection	See Item 1. above for all Safety Injection initiating functions and requirements.				
g. Suction Transfer-Low Pit Level (Units 1 and 2)	2/pit	1(either pit)	1/pit	1,2,3,4	28
15. Emergency Diesel Generator Operation (Diesel Building Ventilation Operation, Nuclear Service Water Operation)					
a. Manual Initiation	2	1	2	1,2,3,4	18
b. Automatic Actuation Logic and Actuation Relays	2	1	2	1,2,3,4	21
c. Loss-of-Offsite Power	3	2	2	1,2,3,4	15
d. Safety Injection	See Item 1. above for all Safety Injection initiating functions and requirements.				
16. Auxiliary Building Filtered Exhaust Operation					
a. Manual Initiation	2	1	2	1,2,3,4	18
b. Automatic Actuation Logic and Actuation Relays	2	1	2	1,2,3,4	21

Amendment No. 53 (Unit 1)
Amendment No. 46 (Unit 2)

TABLE 3.3-3 (Continued)

ACTION STATEMENTS (Continued)

ACTION 20 - With less than the Minimum Channels OPERABLE, within 1 hour determine by observation of the associated permissive status light(s) that the interlock is in its required state for the existing plant condition, or apply Specification 3.0.3.

ACTION 21 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, be in at least HOT STANDBY within 6 hours and in at least HOT SHUTDOWN within the following 6 hours; however, one channel may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.2.1 provided the other channel is OPERABLE.

ACTION 22 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within 6 hours and in at least HOT SHUTDOWN within the following 6 hours.

ACTION 23 - With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or declare the associated valve inoperable and take the ACTION required by Specification 3.7.1.4.

ACTION 24 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE, restore the inoperable channel to OPERABLE status within 48 hours, or initiate and maintain operation of the Control Room Area Ventilation System with flow through the HEPA filters and activated carbon adsorbers.

ACTION 25 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, be in at least HOT STANDBY within 6 hours.

ACTION 26 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, be in at least HOT STANDBY within 6 hours and in at least HOT SHUTDOWN within the following 6 hours.

ACTION 27 - With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, be in at least HOT STANDBY within 6 hours; however, one channel may be bypassed for up to 2 hours for surveillance testing per Specification 4.3.2.1 provided the other channel is OPERABLE.

ACTION 28 - a. With the number of OPERABLE channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 7 days or align the Nuclear Service Water System for Standby Nuclear Service Water Pond recirculation, or be in HOT STANDBY within the next 6 hours and in at least COLD SHUTDOWN within the following 30 hours.

b. With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, within 1 hour align the Nuclear Service Water System for Standby Nuclear Service Water Pond recirculation, or be in HOT STANDBY within the next 6 hours and in at least COLD SHUTDOWN within the following 30 hours.

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

CHANNEL FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	ACTUATION LOGIC TEST	MASTER RELAY TEST	SLAVE RELAY TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
10. Loss of Power								
a. 4 kV Bus Undervoltage-Loss of Voltage	N.A.	R	N.A.	M (2)	N.A.	N.A.	N.A.	1, 2, 3, 4
b. 4 kV Bus Undervoltage-Grid Degraded Voltage	N.A.	R	N.A.	M (2)	N.A.	N.A.	N.A.	1, 2, 3, 4
11. Control Room Area Ventilation Operation								
a. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	All
b. Loss-of-Offsite Power	N.A.	R	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3
c. Safety Injection	See Item 1. above for all Safety Injection Surveillance Requirements.							
12. Containment Air Return and Hydrogen Skimmer Operation								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
c. Containment Pressure-High-High	S	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
13. Annulus Ventilation Operation								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

CHANNEL FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	ACTUATION LOGIC TEST	MASTER RELAY TEST	SLAVE RELAY TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
13. Annulus Ventilation Operation (Continued)								
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
c. Safety Injection	See Item 1. above for all Safety Injection Surveillance Requirements.							
14. Nuclear Service Water Operation								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
c. Loss-of-Offsite Power	N.A.	R	N.A.	M(3)	N.A.	N.A.	N.A.	1, 2, 3
d. Containment Spray	See Item 2. above for all Containment Spray Surveillance Requirements.							
e. Phase "B" Isolation	See Item 3.b. above for all Phase "B" Isolation Surveillance Requirements.							
f. Safety Injection	See Item 1. above for all Safety Injection Surveillance Requirements.							
g. Suction Transfer-Low Pit Level	S(S)	R(S)	R(S)	N.A.	N.A.	N.A.	N.A.	1, 2, 3, 4
15. Emergency Diesel Generator Operation (Diesel Building Ventilation Operation, Nuclear Service Water Operation)								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4

TABLE 4.3-2 (Continued)
ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

CHANNEL FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG CHANNEL OPERATIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	ACTUATION LOGIC TEST	MASTER RELAY TEST	SLAVE RELAY TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
17. Diesel Building Ventilation Operation								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
c. Emergency Diesel Generator Operation	See Item 15. above for all Emergency Diesel Generator Operation Surveillance Requirements.							
18. Engineered Safety Features Actuation System Interlocks								
a. Pressurizer Pressure P-11	N.A.	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
b. Pressurizer Pressure, not P-11	N.A.	R	M	N.A.	N.A.	N.A.	N.A	1, 2, 3
c. Low-Low T_{avg}, P-12	N.A.	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
d. Reactor Trip, P-4	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3
e. Steam Generator Water Level, P-14	S	R	M	N.A.	M(1)	M(1)	Q	1, 2, 3

TABLE NOTATIONS

(1) Each train shall be tested at least every 62 days on a STAGGERED TEST BASIS.
(2) Monthly testing shall consist of voltage sensor relay testing excluding actuation of load shedding diesel start, and time - delay timers.
(3) Monthly testing shall consist of relay testing excluding final actuation of the pumps or valves.
(4) This surveillance need not be performed on Unit 2 until prior to entering STARTUP or HOT STANDBY (as applicable) following the Unit 2 first refueling.
(5) Surveillance Requirements must be met on common (shared) portions of the Nuclear Service Water System when either unit is in MODE 1, 2, 3, or 4. Surveillance Requirements must be met on unit-specific portions of the Nuclear Service Water System only when the unit is in MODE 1, 2, 3, or 4.

Amendment No. 53 (Unit 1)
Amendment No. 46 (Unit 2)

3/4.7.3 COMPONENT COOLING WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.3 At least two independent component cooling water loops shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With only one component cooling water loop OPERABLE, restore at least two loops to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.3 At least two component cooling water loops shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is not locked, sealed, or otherwise secured in position is in its correct position; and

b. At least once per 18 months during shutdown,** by verifying that:

1) Each automatic valve servicing safety-related equipment actuates to its correct position on a Safety Injection, Phase "A" Isolation, or Phase "B" Isolation test signal, and

2) Each Component Cooling Water System pump starts automatically on a Safety Injection test signal.

**This surveillance need not be performed until prior to entering HOT SHUTDOWN following the Unit 1 first refueling.

3/4.7.4 NUCLEAR SERVICE WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.4 At least two independent Nuclear Service Water (RN) loops shall be OPERABLE.

a. With both units in MODE 1, 2, 3 or 4, each loop shall contain two OPERABLE nuclear service water pumps and associated emergency diesel generators, two essential equipment supply and return headers, and a supply and discharge flow path capable of being aligned to the Standby Nuclear Service Water Pond (SNSWP).

b. With only one unit in MODE 1, 2, 3 or 4, each loop shall contain at least one OPERABLE nuclear service water pump, associated emergency diesel generator, and the essential equipment supply and return header associated with the unit in MODE 1, 2, 3 or 4, and a supply and discharge flow path capable of being aligned to the SNSWP.

APPLICABILITY: Modes 1, 2, 3 and 4

ACTION: (Units 1 and 2)

Both units in MODES 1, 2, 3 or 4

With only two or three RN pumps and their associated emergency diesel generators OPERABLE, restore four RN pumps and their associated emergency diesel generators to OPERABLE status within 72 hours or place at least one unit in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours, in order to restore two loops to OPERABLE status for any unit which remains in MODES 1, 2, 3 or 4.

One unit in MODES 1, 2, 3 or 4

With only one RN pump and its emergency diesel generator OPERABLE, restore two loops to OPERABLE status within 72 hours or be in at least HOT STANDBY in the next 6 hours and COLD SHUTDOWN within the following 30 hours.

One or Both units in MODES 1, 2, 3 or 4

a. With RN unavailable to any essential equipment declare the affected equipment inoperable and apply the applicable ACTION Statement. The provisions of Specification 3.0.4 are not applicable.

b. With only one RN loop OPERABLE due to the inoperability of a shared valve, flow path or component (other than an RN pump or its uniquely associated equipment) return two loops to OPERABLE status within 72 hours or place both units in HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.4 At least two nuclear service water loops shall be demonstrated OPERABLE:*

a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is not locked, sealed, or otherwise secured in position is in its correct position; and

b. At least once per 18 months during shutdown,** by verifying that:

1) Each automatic valve servicing safety-related equipment actuates to its correct position on a Safety Injection, or Phase "B" Isolation test signal, and

2) Each Nuclear Service Water System pump starts automatically on a Safety Injection, or Loss-of-Offsite Power test signal.

*Surveillance Requirements must be met on common (shared) portions of the RN System when either unit is in MODE 1, 2, 3, or 4. Surveillance Requirements must be met on unit-specific portions of the RN System only when that unit is in MODE 1, 2, 3, or 4.

**This surveillance need not be performed until prior to entering HOT SHUTDOWN following the Unit 1 first refueling.

3/4.7.5 STANDBY NUCLEAR SERVICE WATER POND

LIMITING CONDITION FOR OPERATION

3.7.5 The standby nuclear service water pond (SNSWP) shall be OPERABLE with:

a. A minimum water level at or above elevation 570 feet Mean Sea Level, USGS datum, and

b. An average water temperature of less than or equal to 86.5°F at elevation 540 feet in the SNSWP intake structure.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION: (Units 1 and 2)

With the requirements of the above specification not satisfied, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.5 The SNSWP shall be determined OPERABLE:

a. At least once per 24 hours by verifying the water level to be within its limit,

b. At least once per 24 hours during the months of July, August, and September by verifying the water temperature to be within its limit,

c. At least once per 12 months by visually inspecting the SNSWP dam and verifying no abnormal degradation, erosion, or excessive seepage, and

d. At least once per 24 hours during the months of July, August and September while the Nuclear Service Water System is aligned to Lake Wylie by recording the water temperature of Lake Wylie, as measured in the discharge path of an operating Nuclear Service Water pump.

3/4.7.3 COMPONENT COOLING WATER SYSTEM

The OPERABILITY of the Component Cooling Water System ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses.

3/4.7.4 NUCLEAR SERVICE WATER SYSTEM

The Nuclear Service Water (RN) System consists of two independent loops (A and B) of essential equipment, each of which is shared between units 1 and 2. Each loop contains two RN pumps, each of which is supplied from a separate emergency diesel generator. Each set of two pumps supplies two trains (1A and 2A, or 1B and 2B) of essential equipment through common discharge piping. While the pumps are unit designated, i.e., 1A, 1B, 2A, 2B, all pumps receive auto-start signals from a safety signal on either unit. Therefore, a pump designated to one unit will supply post accident cooling to equipment in that loop on both units, provided its associated emergency diesel generator is available. For example 2A RN pump (supplied by emergency diesel generator 2A) will supply post-accident cooling to RN train 1A and 2A.

Two RN pumps have sufficient capacity to supply post-LOCA loads on one unit and shutdown and cooldown loads on the other unit. Thus the operability of four RN pumps and their associated emergency diesel generators assures that no single failure will keep the system from performing this safety function. Additionally, one RN pump has sufficient capacity to maintain a unit indefinitely in COLD SHUTDOWN (commencing 36 hours following a trip from full power) while supplying the post-LOCA loads on the other unit. Thus, after a unit has been placed in COLD SHUTDOWN only one RN pump and its associated emergency diesel generator are required to be operable on each loop in order for the system to be capable of performing its safety function, including single failure considerations.

The requirement that two independent RN loops (each consisting of an OPERABLE RN pump and its associated emergency diesel generator for each unit in MODE 1-4) ensures that sufficient cooling capacity is available for continued operation of safety related equipment during normal and accident conditions. If both units are in MODES 1-4, and less than four, but at least two, RN pumps and/or their associated emergency diesel generators are OPERABLE, or if only one unit is in MODE 1-4 and only one RN pump and its associated emergency diesel generator is OPERABLE, the ACTION Statement provides time to return the affected equipment to OPERABLE status, during continued operation and subsequent unit shutdown, without the redundancy to support a further postulated single failure. The operability requirements for a single unit in MODES 1, 2, 3 or 4 are sufficient to assure that the assumptions in the safety analysis for the unit in MODE 5 or 6 are met.

3/4.7.5 STANDBY NUCLEAR SERVICE WATER POND

The limitations on the standby nuclear service water pond (SNSWP) level and temperature ensure that sufficient cooling capacity is available to either: (1) provide normal cooldown of the facility, or (2) mitigate the effects of accident conditions within acceptable limits.

The limitations on minimum water level and maximum temperature are based on providing a 30-day cooling water supply to safety-related equipment without exceeding its design basis temperature and is consistent with the recommendations of Regulatory Guide 1.27, "Ultimate Heat Sink for Nuclear Plants," March 1974.

The peak containment pressure analysis assumes that the Nuclear Service Water (RN) flow to the Containment Spray and Component Cooling heat exchangers has a temperature of 86.5°F. This temperature is important in that it, in part, determines the capacity for energy removal from containment. The peak containment pressure occurs when energy addition to containment (core decay heat) is balanced by energy removal from these heat exchangers. This balance is reached far out in time, after the transition from injection to cold leg recirculation and after ice melt. Because of the effectiveness of the ice bed in condensing the steam which passes through it, containment pressure is insensitive to small variations in containment spray temperature prior to ice meltout.

To ensure that the RN temperature assumptions are met, Lake Wylie temperature is monitored. During periods of time while Lake Wylie temperature is greater than 86.5°F, the emergency procedure for transfer of ECCS flow paths to cold leg recirculation directs the operator to align at least one train of containment spray to be cooled by a loop of Nuclear Service Water which is aligned to the SNSWP.

3/4.7.6 CONTROL ROOM AREA VENTILATION SYSTEM

The OPERABILITY of the Control Room Area Ventilation System ensures that: (1) the ambient air temperature does not exceed the allowable temperature for continuous-duty rating for the equipment and instrumentation cooled by this system, and (2) the control room will remain habitable for operations personnel during and following all credible accident conditions. Operation of the system with the heaters operating to maintain low humidity using automatic control for at least 10 continuous hours in a 31-day period is sufficient to reduce the buildup of moisture on the adsorbers and HEPA filters. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rems or less whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criterion 19 of Appendix A, 10 CFR Part 50. ANSI N510-1980 will be used as a procedural guide for surveillance testing.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 53 TO FACILITY OPERATING LICENSE NPF-35

AND AMENDMENT NO. 46 TO FACILITY OPERATING LICENSE NPF-52

DUKE POWER COMPANY, ET AL.

CATAWBA NUCLEAR STATION, UNITS 1 AND 2

DOCKET NOS. 50-413 AND 50-414

1.0 INTRODUCTION

By letter dated October 16, 1987, Duke Power Company, et al., (the licensee) proposed changes to the Catawba Units 1 and 2 nuclear service water (RN) system Technical Specifications (TSs) and Section 9.2.1 of the Final Safety Analysis Report (FSAR). The proposed changes to the TSs are necessary to more specifically reflect the shared aspects of the RN system and identify in the TSs Bases Section that one RN pump can handle the heat loads from a LOCA in one unit and the shutdown heat loads from the other unit after it has been shut down for 36 hours.

The proposed TS changes are in response to the NRC staff's safety evaluation transmitted by letter dated September 30, 1987, related to a potential single failure in the RN system. In that evaluation, the staff concluded that the previous specifications for the RN system were inadequate with respect to action statements when a shared component was out of service during different modes of operation for each unit. The proposed changes to the FSAR also reflect, but are not limited to, design changes previously approved in the staff's September 30, 1987, safety evaluation. In addition to the previously approved design changes, the licensee also eliminated a simultaneous LOCA and seismic event which was identified as an original design basis. Although the basic design has not changed (i.e., all equipment necessary to be operable following a LOCA is designed to seismic Category I requirements), the reference to a simultaneous LOCA and seismic event has been deleted from the FSAR.

By letter dated January 22, 1988, the NRC staff requested additional information. The licensee's responses were provided by letter dated February 18, 1988. Further clarifications were also provided by letter dated May 12, and July 12, 1988. The substance of the changes noticed in the Federal Register was not affected by the July 12 letter.

2.0 EVALUATION

The proposed RN system TS change (TS 3/4.7.4) requires that at least two independent RN loops be operable, with both units or only one unit in Mode 1, 2, 3 or 4. For two unit operation, each loop is required to contain two operable pumps and associated emergency diesel generators, two essential equipment supply and return headers, and a supply and discharge flow path capable of being aligned to the standby nuclear service water pond (SNSWP). With only one unit in Mode 1, 2, 3 or 4, each loop is required to contain at least one (in lieu of two) of the components/equipment identified for two unit operation.

For two unit operation, if the TS operability requirements cannot be met within 72 hours, at least one unit must be placed in at least hot shutdown within the next 6 hours and in cold shutdown within the following 30 hours. This action will restore two loops to operable status for any unit that remains in Modes 1, 2, 3 or 4. If the TS for single unit operation cannot be met within 72 hours, then the operating unit must take the same action identified for two units (i.e., hot standby in 6 hours, cold shutdown following 30 hours). The action statement must be taken after 72 hours for both units if only one RN loop is operable due to the inoperability of a shared valve, flow path or component (other than RN pump or its associated equipment). This action is necessary because the shared component flow path affects both units at the same time and is in accordance with the requirements of General Design Criterion 5 concerning sharing of systems. The revised specification also identifies that with RN unavailable to any essential equipment, the affected equipment will be declared inoperable and the applicable action statement for that equipment will be followed. This will prevent an incorrect interpretation of the RN specification by allowing the rest of the RN loop to remain operable.

The proposed TS change also revises the SNSWP specification (TS 3/4.7.5) to include a surveillance requirement to monitor the water temperature of Lake Wylie (the normal heat sink source for the RN system) during the months of July, August and September. This change is necessary because the automatic switchover to the SNSWP on a LOCA (high containment pressure) signal has been eliminated. During those periods of time when the Lake Wylie temperature is greater than 86.5 degrees Fahrenheit, the emergency procedure for transfer of ECCS flow paths to cold leg recirculation directs the operator to align at least one train of containment spray to be cooled by a loop of the RN system that is aligned to the SNSWP. This action will ensure adequate post-accident heat removal in accordance with the design basis accident analysis.

The Bases Section of the TSs has also been revised to reflect the above changes and to more clearly describe the shared aspects of the RN system. The Bases for TS 3/4.7.4 also identify that a single RN pump has sufficient capacity to maintain a unit indefinitely in cold shutdown commencing 36 hours following a trip from full power while supplying the post-LOCA loads of the other unit.

The proposed changes to the RN system TSs specifically address the shared aspects of the system and the as-built conditions of the plant, i.e., some of the changes were necessary because of the recent design changes. The proposed changes are also responsive to the staff's concerns identified in the September 30, 1987 safety evaluation. Specifically, the existing RN TSs do not specify when an action statement applies to one or both units and do not clearly identify what is considered an independent loop or train. The action statements requiring hot standby in 6 hours and cold shutdown in the following 30 hours after a 72 hour time period are consistent with the existing TSs and with the Westinghouse Standard TSs.

The proposed changes to the SNSWP specifications were necessary to reflect a previously approved design change which eliminated the automatic switchover to the SNSWP on high containment pressure. The automatic switchover will continue to occur on low pump pit level indicative of a loss of Lake Wylie.

The proposed FSAR changes will revise Section 6.2 to reflect reduced RN flow rates to the containment spray heat exchanger and component cooling water (CCW) heat exchanger and Section 7.4 to reflect the fact that the automatic switchover to the SNSWP will not take place on high containment pressure. Section 9.2.1 will be revised to be consistent with the design changes regarding switchover, to indicate the capability of one pump to handle accident heat loads in one unit and the shutdown heat loads from another unit already in cold shutdown, and to decouple consideration of a simultaneous LOCA and seismic event.

The basis for the reduced flow rates to the containment spray and CCW heat exchanger is a reanalysis of post-LOCA containment performance utilizing reduced mass and energy release rates as stated in WCAP-10325 issued in 1979. The WCAP-10325 methodology was previously approved by the staff. The reanalysis showed that the present FSAR Section 6.2 analysis is bounding when the reduced RN flows are considered. This reanalysis was done under 10 CFR 50.59 and will be documented in a future FSAR revision. Because the reanalysis was performed using approved methodology, the staff finds the proposed revision to FSAR Section 6.2 to be acceptable. The same basis for acceptance is also applicable to a portion of the proposed revision to Section 9.2.1 of the FSAR, related to the reduced RN flowrates with one pump operation for a LOCA unit and a unit in cold shutdown. The staff also finds the proposed revision to FSAR Section 7.4 to be acceptable because it basically revises the FSAR to be consistent with the RN system supply automatic switchover design changes previously approved in the staff's September 30, 1987, safety evaluation.

As a result of its review of FSAR Section 9.2.1, the licensee also determined that the FSAR contained an unnecessarily conservative commitment for the RN system which required the postulation of a simultaneous LOCA and seismic event. Such an assumption is beyond the current licensing basis requirements. The licensee, therefore, deleted this commitment in the proposed FSAR revision for the RN system. The deletion of this commitment for the RN system is consistent with the deletion of the RN system supply automatic switchover from Lake Wylie

to the SNSWP on high containment pressure which is indicative of a LOCA. The staff agrees that a commitment to consider LOCA and seismic event consequences simultaneously is unnecessary. The design of the RN system continues to meet the design basis requirements (10 CFR Part 100 and General Design Criterion 2) for mitigation of a LOCA using seismically qualified equipment by retaining the automatic switchover to the seismically qualified SNSWP from the nonseismic Lake Wylie on low pump pit level. The SNSWP has been previously reviewed and approved by the staff as a suitable post-LOCA ultimate heat sink during initial plant licensing. Thus, the staff finds deletion of the commitment for consideration of simultaneous LOCA and seismic events to be acceptable for the RN system.

In addition to the above, it should be noted that the licensee proposed a revision to FSAR Section 9.2.1.3 for the RN system which deleted reference to the loss of Lake Wylie simultaneously with the design basis LOCA although no design changes were made to require this revision. As indicated above, while postulation of simultaneous LOCA and seismic events is beyond the current licensing design basis for the RN system, LOCA mitigating systems must be seismically qualified in accordance with the requirements of 10 CFR Part 100 and General Design Criterion 2. The staff and licensee recognize that adequate seismically qualified post-LOCA decay heat removal capability is available by use of the seismic SNSWP. Therefore, the staff requested that this reference not be deleted because seismic qualification for LOCA mitigating systems is a design basis applicable to the RN system which does not change because of the deletion of the commitment for consideration of a simultaneous LOCA and seismic event. By letter dated May 12, 1988, the licensee committed not to make the above proposed revision to FSAR Section 9.2.1.3 which would delete reference to the loss of Lake Wylie and thereby make it clear that appropriate seismically qualified post-LOCA decay heat removal capability is available.

Based on its review of the licensee's proposed TS changes related to the RN system, the staff concludes that they adequately address the sharing aspects of the RN system in accordance with the requirements of GDC 5, reflect the as-built system conditions, and address the staff's concerns identified in the September 30, 1987, safety evaluation. The staff also concludes that the proposed revisions to the FSAR are acceptable because they are consistent with or based on previously approved design changes and analysis methodology and are in accordance with the requirements of 10 CFR Part 100 and GDC 2 for ensuring a seismically qualified post-LOCA decay heat removal capability. The staff, therefore, finds the proposed RN system TS and FSAR changes to be acceptable.

3.0 EVALUATION

The Commission prepared an Environmental Assessment on the proposed Amendments and pursuant to 10 CFR 51.32 the Commission has determined that issuing these amendments will have no significant impact on the environment (53 FR 35394)

4.0 CONCLUSION

The Commission issued a Notice of Consideration of Issuance of Amendments to Facility Operating Licenses and Opportunity for Hearing which was published in the Federal Register (53 FR 22061) on June 13, 1988. 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 consideration 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 Contributors: K. Jabbour, PDII-3/DRP-I/II
W. LeFave, DEST/SPLB

Dated: September 29, 1988

7590-01

UNITED STATES NUCLEAR REGULATORY COMMISSION

DUKE POWER COMPANY, ET AL.

DOCKET NOS. 50-413 AND 50-414

NOTICE OF ISSUANCE OF AMENDMENTS TO

FACILITY OPERATING LICENSES

The U.S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 53 to Facility Operating License No. NPF-35, and Amendment No. 46 to Facility Operating License No. NPF-52 issued to Duke Power Company, et al., (the licensee) which revised the Technical Specifications (TS) for operation of the Catawba Nuclear Station, Units 1 and 2, (the facility) located in York County, South Carolina. The amendments were effective as of the date of issuance.

The amendments modified the TS for the nuclear service water system and its associated bases.

The application for the 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.

Notice of Consideration of Issuance of Amendments and Opportunity for Hearing in connection with this action was published in the FEDERAL REGISTER on June 13, 1988 (53 FR 22061). No request for a hearing or petition for leave to intervene was filed following this notice.

The Commission has prepared an Environmental Assessment related to the action and has determined not to prepare an environmental impact statement. Based upon the environmental assessment, the Commission has concluded that the issuance of these amendments will not have a significant effect on the quality of the human environment. (53 FR 35394)

For further details with respect to the action see (1) the application for amendments dated October 16, 1987, as supplemented February 18, May 12, and July 12, 1988, (2) Amendment No. 53 to License No. NPF-35 and Amendment No. 46 to License No. NPF-52 and (3) the Commission's related Safety Evaluation and Environmental Assessment. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., and at the York County Library, 138 East Black Street, Rock Hill, South Carolina 29730. 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 Projects I/II.

Dated at Rockville, Maryland this 29th day of September 1988.

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed By:

Kahtan N. Jabbour, Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II

LA:PDII-3	PM:PDII-3	OGC-WF	D:PDII-3
MRood	~~DHood~~:sw		DMatthews
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