April 28, 1977

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Dockets Nos. 50-324/325

Carolina Power & Light Company
ATTN: Mr. J. A. Jones
Executive Vice President
336 Fayetteville Street
Raleigh, North Carolina 27602

Gentlemen:

The Commission has issued the enclosed Amendment Nos. 57 and 27 to Facility Operating Licenses Nos. DPR-71 and DPR-62 for the Brunswick Steam Electric Plant, Units Nos. 1 and 2. The amendments consist of changes to the Technical Specifications in response to your request dated August 4, 1976, as supplemented January 31, 1977.

The amendments remove operability and surveillance requirements for the High Pressure Coolant Injection (HPCI) turbine steam line isolation in the event of HPCI room inlet/outlet ventilation high differential temperature.

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

/s/

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

Enclosures:
1. Amendment No. 25 to DPR-71
2. Amendment No. 27 to DPR-62
3. Safety Evaluation
4. Notice

cc w/encl:
See next page

BHarless
DEisenhut
ACRS (16)
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CMiles, OPA
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JRBuchanan

Gen. 1
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OFFICE	DOR:ORB#1	OELD	DOR:ORB#1			
SURNAME	CMTrammell:lb		ASchwencer			
DATE	4/6/77	4/ /77	4/ /77			

NRC FORM 318 (9-76) NRCM 0240 ☆ U.S. GOVERNMENT PRINTING OFFICE: 1976 — 626-624

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

April 28, 1977

Dockets Nos. 50-324/325

Carolina Power & Light Company
ATTN: Mr. J. A. Jones
Executive Vice President
336 Fayetteville Street
Raleigh, North Carolina 27602

Gentlemen:

The Commission has issued the enclosed Amendment Nos. 5 and 27 to Facility Operating Licenses Nos. DPR-71 and DPR-62 for the Brunswick Steam Electric Plant, Units Nos. 1 and 2. The amendments consist of changes to the Technical Specifications in response to your request dated August 4, 1976, as supplemented January 31, 1977.

The amendments remove operability and surveillance requirements for the High Pressure Coolant Injection (HPCI) turbine steam line isolation in the event of HPCI room inlet/outlet ventilation high differential temperature.

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

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

Enclosures:
1. Amendment No. 5 to DPR-71
2. Amendment No. 27 to DPR-62
3. Safety Evaluation
4. Notice

cc w/encl:
See next page

cc: Richard E. Jones, Esquire
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Raleigh, North Carolina 27602

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Southport - Brunswick County Library
109 W. Moore Street
Southport, North Carolina 28461

Mr. Steve J. Varnam
Chairman, Board of County
Commissioners of Brunswick County
Southport, North Carolina 28461

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

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

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

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

CAROLINA POWER & LIGHT COMPANY

DOCKET NO. 50-325

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 5
License No. DPR-71

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

   A. The application for amendment by Carolina Power & Light Company (the licensee) dated August 4, 1976, as supplemented January 31, 1977, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-71 is hereby amended to read as follows:

"(2) Technical Specifications

The Technical Specifications contained in Appendices A, A-Prime, and B, as revised through Amendment No. 5 , are hereby incorporated in this license. Appendix A shall be effective from the date of issuance of the Unit 1 operating license until the Appendix A-Prime becomes effective on or before the initial criticality of Brunswick Unit 2 following its initial refueling outage. Carolina Power & Light Company shall operate the facility in accordance with the Technical Specifications as indicated above. The licensee shall inform the Office of Inspection and Enforcement, Region II, of the date that the Appendix A-Prime becomes effective."

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

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 28, 1977

ATTACHMENT TO LICENSE AMENDMENT NO. 5

FACILITY OPERATING LICENSE NO. DPR-71

DOCKET NO. 50-325

Revise Appendix A-Prime as follows:

Remove the following pages and replace with identically numbered revised pages:

3/4 3-11
3/4 3-14
3/4 3-17
3/4 3-19

Revise Appendix A as follows:

Remove the following pages and replace with identically numbered revised pages:

3.2-9/3.2-10
3.2-11/3.2-12

TABLE 3.3.2-1 (Continued)

ISOLATION INSTRUMENTATION

TRIP FUNCTION	VALVE GROUPS OPERATED BY SIGNAL(a)	MINIMUM NUMBER OPERABLE CHANNELS PER TRIP SYSTEM	APPLICABLE OPERATIONAL CONDITION	ACTION
8. Emergency Area Cooler Temperature - High	4	2	1, 2, 3	9
b. Reactor Core Isolation Cooling System				
1. RCIC Steam Line Flow High	5	2	1, 2, 3	9
2. RCIC Steam Supply Pressure - Low	5	2	1, 2, 3	9
3. RCIC Steam Line Tunnel Temperature - High	5	2	1, 2, 3	9
4. Power Bus Monitor	NA	1	1, 2, 3	9
5. RCIC Turbine Exhaust Diaphragm Pressure - High	5	2	1, 2, 3	9
6. Suppression Pool Ambient Temp - High	5	2	1, 2, 3	9
7. Suppression Pool Area Δ Temp - High	5	2	1, 2, 3	9
8. RCIC Equipment Room Ambient Temp - High	5	2	1, 2, 3	9
9. RCIC Equipment Room Δ Temp - High	5	2	1, 2, 3	9
5. SHUTDOWN COOLING ISOLATION				
a. Reactor Vessel Water Level #1	2, 6, 8	2	3, 4, 5	9
b. Reactor Steam Dome Pressure	8	1	1, 2, 3	11

TABLE 3.3.2-2 (Continued)

ISOLATION INSTRUMENTATION TRIP SETPOINTS

TRIP FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
3. REACTOR WATER CLEANUP SYSTEM		
a. Δ Flow - High	≤ 53 gal/min	≤ 53 gal/min
b. Area Temperature - High	≤ 150°F	≤ 150°F
c. Area Ventilation Temperature - ΔT - High	≤ 50°F	≤ 50°F
d. Water Temperature	≤ 140°F	≤ 140°F
e. SLCS Initiation	NA	NA
f. Reactor Vessel Water Level #2	≥ -38 inches	≥ -38 inches
4. CORE STANDBY COOLING SYSTEMS		
a. High Pressure Coolant Injection		
1. HPCI Steam Line Flow High	≤ 300%	≤ 300%
2. HPCI Steam Supply Pressure - Low	≥ 100 psig	≥ 100 psig
3. HPCI Steam Line Tunnel Temperature - High	≤ 200°F	≤ 200°F
4. Power Bus Monitor	NA	NA
5. HPCI Exhaust Diaphragm Pressure - High	≤ 10 psig	≤ 10 psig
6. Suppression Pool ambient Temp - High	≤ 200°F	≤ 200°F
7. Suppression Pool area Δ Temp - High	≤ 50°F	≤ 50°F
8. Emergency Area Cooler Temp - High	≤ 175°F	≤ 175°F

TABLE 3.3.2-3 (Continued)

ISOLATION INSTRUMENTATION RESPONSE TIME

TRIP FUNCTION	RESPONSE TIME (SECS)
3. REACTOR WATER CLEANUP SYSTEM	
a. Δ Flow - High	≤13
b. Area Temperature - High	≤13
c. Area Ventilation Temperature ΔT - High	≤13
d. Water temperature - High	NA
e. SLCS Initiation	NA
f. Reactor Vessel Water Level #2	≤1.0
4. CORE STANDBY COOLING SYSTEMS	
a. High Pressure Coolant Injection	
1. HPCI Steam Line Flow High	≤13
2. HPCI Steam Supply Pressure	≤13
3. HPCI Steam Line Tunnel Temperature - High	≤13
4. Power Bus Monitor	NA
5. HPCI Exhaust Diaphragm Pressure-High	NA
6. Suppression Pool ambient Temperature - High	NA
7. Suppression Pool area Δ Temperature - High	NA
8. Emergency area Cooler Temperature - High	NA
b. Reactor Core Isolation Cooling System	
1. RCIC Steam Line Flow - High	NA
2. RCIC Steam Supply Pressure - Low	NA
3. RCIC Steam Line Tunnel Temp - High	NA
4. Power Bus Monitor	NA

TABLE 4.3.2-1 (Continued)

ISOLATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
3. REACTOR WATER CLEANUP SYSTEM				
a. Δ Flow - High	D	M	R	1, 2, 3
b. Area Temperature - High	NA	M	R	1, 2, 3
c. Area Ventilation Temperature ΔT High	NA	M	R	1, 2, 3
d. Water Temperature - High	NA	M	R	1, 2, 3
e. SLCS Initiation	NA	R	NA	1, 2, 3
f. Reactor Vessel Water Level #2	D	M	Q	1, 2, 3
4. CORE STANDBY COOLING SYSTEMS				
a. High Pressure Coolant Injection				
1. HPCI Steamline Flow High	D	M	Q	1, 2, 3
2. HPCI Steam Supply Pressure	NA	M	R	1, 2, 3
3. HPCI Steamline Tunnel Temperature - High	NA	M	Q	1, 2, 3
4. Power Bus Monitor	NA	SA	NA	1, 2, 3
5. HPCI Turbine Exhaust Diaphragm Pressure - High	NA	M	Q	1, 2, 3
6. Suppression Pool Ambient Temp - High	NA	M	R	1, 2, 3
7. Suppression Pool Area Δ Temp - High	NA	M	R	1, 2, 3
8. Emergency area Cooler Temp - High	NA	M	Q	1, 2, 3

TABLE 3.2-2

PRIMARY CONTAINMENT ISOLATION INSTRUMENTATION
HIGH PRESSURE COOLANT INJECTION SYSTEM
GROUP IV ISOLATION (2)

Trip Function	Trip Setting	Minimum number of Operable Instrument Channels per Trip System	Required Action When Minimum Conditions for Operation are not Met	Remarks
1. Steamline high d/p (steamline break) E41-dPIS-N004 E41-dPIS-N005	≤300% rated flow	2	(1)	
2. HPCI turbine steamline low pressure E41-PSL-N001A,B,C,D	100 (± 3) psig	2	(1)	
3. HPCI turbine exhaust diaphragm high pressure E41-PSH-N012A,B,C,D	10 (± 0.7) psig	2	(1)	
4. Suppression pool high ambient temperature E51-TS-N603C,D	≤200F	2	(1)	
5. Suppression pool area vent inlet/outlet high differential temperature E51-dTS-N604C,D	≤50F	2	(1)	
6. Emergency area cooler high temperature E41-TS-N602A,B	≤175F	2	(1)	

Amendment #1

BSEP-1 & 2

Amendment No. 5

MARCH 1975

TABLE 3.2-2

PRIMARY CONTAINMENT ISOLATION INSTRUMENTATION
HIGH PRESSURE COOLANT INJECTION SYSTEM
GROUP IV ISOLATION (2) (Cont'd)

Trip Function	Trip Setting	Minimum Number of Operable Instrument Channels per Trip System	Required Action When Minimum Conditions for Operation are Not Met	Remarks
7. HPCI equipment room main steamline area high temperature E41-TS-3314 E41-TS-3315 E41-TS-3316 E41-TS-3317 E41-TS-3318 E41-TS-3354 E41-TS-3488 E41-TS-3489	≤ 175F	2	(1)	
8. Bus power monitor E41-K55 E41-K56	NA	1	(3)	Annunciate only

NOTES: (1) Close isolation valves in system and comply with Specification 3.5.

(2) Group IV isolation includes:

a. HPCI inboard steam isolation valve
b. HPCI outboard steam isolation valve
c. HPCI torus suction valve (does not close on HPCI equipment room main steam line area high temperature)

(3) Monitor bus power daily and comply with Specification 3.5 if power is lost.

BSEP-1 & 2

Amendment No. 5

TABLE 4.2-2

MINIMUM TEST & CALIBRATION FREQUENCIES
PRIMARY CONTAINMENT ISOLATION INSTRUMENTATION
HIGH PRESSURE COOLANT INJECTION SYSTEM
GROUP IV ISOLATION (2)

	Trip Function	Functional Test	Calibration	Instrument Check
1.	Steamline high d/p (steamline break) E41-dPIS-N004 E41-dPIS-N005	once/month	(1)	once/day
2.	HPCI turine steamline low pressure E41-PSL-N001A,B,C,D	once/month	(1)	N/A
3.	HPCI turbine exhaust diaphragm high pressure E41-PSH-N012A,B,C,D	once/month	(1)	N/A
4.	Suppression pool high ambient temperature E51-TS-N603C,D	once/month without setpoint verificaton	once/operating cycle	N/A
5.	Suppression pool area vent inlet/outlet high differential temperature E51-dTS-N604C,D	once/month without setpoint verification	once/operating cycle	N/A
6.	Emergency area cooler high temperature E41-TS-N602A,B	once/month without setpoint verification	once/3 months	N/A

BSEP-1 & 2

Amendment No. 5

TABLE 4.2-2

MINIMUM TEST & CALIBRATION FREQUENCIES
PRIMARY CONTAINMENT ISOLATION INSTRUMENTATION
HIGH PRESSURE COOLANT INJECTION SYSTEM
GROUP IV ISOLATION (2) (Cont'd)

	Trip Function	Functional Test	Calibration	Instrument Check
7.	HPCI equipment room main steamline area high temperature E41-TS-3314 E41-TS-3315 E41-TS-3316 E41-TS-3317 E41-TS-3313 E41-TS-3354 E41-TS-3488 E41-TS-3489	once/month without setpoint verification	once/3 months	N/A
8.	Bus power monitor E41-K55 E41-K56	once/month	N/A	N/A

HPCI subsystem auto isolation logic system functional test will be performed once/6 months.

NOTES: (1) When a functional test shows the setpoints are out of specified limits, a calibration will be performed immediately.

(2) Group IV isolation includes:

a. HPCI inboard steam isolation valve
b. HPCI outboard steam isolation valve
c. HPCI torus suction valve (does not close on HPCI equipment room main steam line area high temperature)

HSEP-1 & 2

Amendment No. 5

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

CAROLINA POWER & LIGHT COMPANY

DOCKET NO. 50-324

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 27
License No. DPR-62

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

   A. The application for amendment by Carolina Power & Light Company (the licensee) dated August 4, 1976, as supplemented January 31, 1977, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-62 is hereby amended to read as follows:

"(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No.27 , 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 the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 28, 1977

ATTACHMENT TO LICENSE AMENDMENT NO. 27

FACILITY OPERATING LICENSE NO. DPR-62

DOCKET NO. 50-324

Revise Appendix A as follows:

Remove the following pages and replace with identically numbered pages:

3.2-9/3.2-10
3.2-11/3.2-12

TABLE 3.2-2

PRIMARY CONTAINMENT ISOLATION INSTRUMENTATION
HIGH PRESSURE COOLANT INJECTION SYSTEM
GROUP IV ISOLATION (2)

Trip Function	Trip Setting	Minimum number of Operable Instrument Channels per Trip System	Required Action When Minimum Conditions for Operation are not Met	Remarks
1. Steamline high d/p (steamline break) E41-dPIS-N004 E41-dPIS-N005	≤300% rated flow	2	(1)	
2. HPCI turbine steamline low pressure E41-PSL-N001A,B,C,D	100 (± 3) psig	2	(1)	
3. HPCI turbine exhaust diaphragm high pressure E41-PSH-N012A,B,C,D	10 (± 0.7) psig	2	(1)	
4. Suppression pool high ambient temperature E51-TS-N603C,D	≤200F	2	(1)	
5. Suppression pool area vent inlet/outlet high differential temperature E51-dTS-N604C,D	≤50F	2	(1)	
6. Emergency area cooler high temperature E41-TS-N602A,B	≤175F	2	(1)	

Amendment #1

BSEP-1 & 2

Amendment No. 27

MARCH 1975

TABLE 3.2-2

PRIMARY CONTAINMENT ISOLATION INSTRUMENTATION
HIGH PRESSURE COOLANT INJECTION SYSTEM
GROUP IV ISOLATION (2) (Cont'd)

Trip Function	Trip Setting	Minimum Number of Operable Instrument Channels per Trip System	Required Action When Minimum Conditions for Operation are Not Met	Remarks
7. HPCI equipment room main steamline area high temperature E41-TS-3314 E41-TS-3315 E41-TS-3316 E41-TS-3317 E41-TS-3318 E41-TS-3354 E41-TS-3488 E41-TS-3489	≤ 175F	2	(1)	
8. Bus power monitor E41-K55 E41-K56	NA	1	(3)	Annunciate only

NOTES: (1) Close isolation valves in system and comply with Specification 3.5.

(2) Group IV isolation includes:

a. HPCI inboard steam isolation valve
b. HPCI outboard steam isolation valve
c. HPCI torus suction valve (does not close on HPCI equipment room main steam line area high temperature)

(3) Monitor bus power daily and comply with Specification 3.5 if power is lost.

Amendment No. 27

RSEP-1 & 2

TABLE 4.2-2

MINIMUM TEST & CALIBRATION FREQUENCIES
PRIMARY CONTAINMENT ISOLATION INSTRUMENTATION
HIGH PRESSURE COOLANT INJECTION SYSTEM
GROUP IV ISOLATION (2)

	Trip Function	Functional Test	Calibration	Instrument Check
1.	Steamline high d/p (steamline break) E41-dPIS-N004 E41-dPIS-N005	once/month	(1)	once/day
2.	HPCI turine steamline low pressure E41-PSL-N001A,B,C,D	once/month	(1)	N/A
3.	HPCI turbine exhaust diaphragm high pressure E41-PSH-N012A,B,C,D	once/month	(1)	N/A
4.	Suppression pool high ambient temperature E51-TS-N603C,D	once/month without setpoint verificaton	once/operating cycle	N/A
5.	Suppression pool area vent inlet/outlet high differential temperature E51-dTS-N604C,D	once/month without setpoint verification	once/operating cycle	N/A
6.	Emergency area cooler high temperature E41-TS-N602A,B	once/month without setpoint verification	once/3 months	N/A

Amendment No. 27

BSEP-1 & 2

TABLE 4.2-2

MINIMUM TEST & CALIBRATION FREQUENCIES
PRIMARY CONTAINMENT ISOLATION INSTRUMENTATION
HIGH PRESSURE COOLANT INJECTION SYSTEM
GROUP IV ISOLATION (2) (Cont'd)

	Trip Function	Functional Test	Calibration	Instrument Check
7.	HPCI equipment room main steamline area high temperature E41-TS-3314 E41-TS-3315 E41-TS-3316 E41-TS-3317 E41-TS-3318 E41-TS-3354 E41-TS-3488 E41-TS-3489	once/month without setpoint verification	once/3 months	N/A
8.	Bus power monitor E41-K55 E41-K56	once/month	N/A	N/A

HPCI subsystem auto isolation logic system functional test will be performed once/6 months.

NOTES: (1) When a functional test shows the setpoints are out of specified limits, a calibration will be performed immediately.

(2) Group IV isolation includes:

a. HPCI inboard steam isolation valve
b. HPCI outboard steam isolation valve
c. HPCI torus suction valve (does not close on HPCI equipment room main steam line area high temperature)

BSEP-1 & 2

Amendment No. 27

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 5 TO FACILITY OPERATING LICENSE NO. DPR-71

AMENDMENT NO.27 TO FACILITY OPERATING LICENSE NO. DPR-62

CAROLINA POWER & LIGHT COMPANY

BRUNSWICK STEAM ELECTRIC PLANT, UNITS NOS. 1 AND 2

DOCKETS NOS. 50-325 AND 50-324

Introduction

By letters dated August 4, 1976 and January 31, 1977, Carolina Power & Light Company (the licensee) requested a change to the Technical Specifications appended to Facility Operating Licenses Nos. DPR-71 and DPR-62 for operation of Brunswick Steam Electric Plant, Units 1 and 2. Present Technical Specifications establish operability and surveillance requirements for an instrumentation circuit which is designed to close the High Pressure Coolant Injection (HPCI) steam line isolation valves in the event that temperature instruments detect a high (50°F) differential temperature between the inlet and outlet ventilation air in the HPCI pump room. The proposed change would delete this isolation circuit from the Technical Specifications.

Discussion

The HPCI pump is part of the Emergency Core Cooling System (ECCS), and is used to deliver large volumes of water under high pressure into the reactor vessel in the event of a loss-of-coolant accident (LOCA) or low reactor water level. The HPCI pump is steam-driven. A steam line penetrates the containment from a main steam line inside containment (upstream of the main steam isolation valves (MSIV's)) to the HPCI pump room outside containment in the Reactor Building. Since this line is in effect connected directly to the reactor vessel, two normally-open containment isolation valves are installed in this line to provide for containment isolation in the event of a gross leak or rupture of the line. The isolation of this line is analagous to isolation of the main steam lines by the MSIV's.

The HPCI steam line isolation function is presently initiated by:

a. High room ambient temperature (8 detectors), 175°F.

b. Inlet/outlet room ventilation differential temperature, 50°F.

c. High steam flow, 300%.

d. High inlet air temperature to either of two standby room coolers, 175°F.

e. Low steam pressure, 100 psig.

The isolation on inlet/outlet differential temperature (Item b. above) has caused numerous spurious steam line isolations. The isolations appear to be most likely in colder weather, when the inlet air temperature is low. The licensee has reported that under such conditions, the operating temperature difference between inlet and outlet ventilation air can be as high as 47-48°F, which is so close to the isolation setpoint of 50°F that numerous spurious isolations have occurred. The isolations are reset by running the room coolers which lower the outlet air temperature, and therefore the temperature differential, to within the allowable range to permit the HPCI valves to be reopened.

The licensee proposes to delete this isolation circuit on the basis that it causes the HPCI pump to be unreliable, and that the remaining isolation circuits are adequate to cause a HPCI isolation in the event of a large steam leak or rupture in the HPCI steam supply line.

Evaluation

We have reviewed the request for the Technical Specification change to delete the isolation capability of the high differential temperature monitor in the HPCI pump room, and concur with the licensee that this monitor results in unacceptable reliability of the HPCI pump.

Our review included an evaluation of the isolation signals which would remain following the proposed deletion. On the basis of this review, we have concluded that these remaining isolation signals would be sufficiently redundant and diverse by themselves to cause isolation of the HPCI steam line for a spectrum of potential breaks. Since it is an ECCS subsystem, we view the restoration of the HPCI pump reliability to be a more important matter in terms of overall plant safety than the retention of the high differential temperature monitor which provides only marginal added steam break protection, considering the varied other protection remaining. In addition, the use of HPCI room differential temperature to indicate steam leakage can itself be unreliable and misleading, since the circuit is indirectly dependent on ventilation flow, which is not monitored by this instrumentation. Since room differential air temperature is inversely proportional to ventilation flow, a reduction in flow by one-half due to

for example, a shutdown of several ventilation fans, could reasonably be expected to approximately double the room differential temperature, which could result in a spurious HPCI isolation. The operation (or isolation) of the HPCI system should not be connected with operation of non-safety-related equipment or processes (e.g., HPCI room ventilation flow).

Small steam leaks occasionally occur in, for example, valve packing glands, flanges, or fittings. Such small leaks would not be expected to trigger the closure of the HPCI isolation valves since the isolation monitors are not designed for this level of sensitivity. Automatic isolation valve closure for small steam leaks would not be desirable, since the HPCI should remain available to perform its safety function in the presence of small leaks which have no significant consequences.

Nevertheless, other instrumentation exists which would allow the detection and repair of small leaks. All reactor building ventilation air, including that from the HPCI pump room, is exhausted through the reactor building ventilation system. This exhaust is monitored for radiation from particulates, iodine, noble gas, and gross gamma prior to release. The gross gamma monitor will initiate a reactor building isolation on high levels and cause all building effluent air to be processed by the standby gas treatment system.

Releases are continuously monitored by plant presonnel, and release levels are limited by the Technical Specifications.

In addition to the above, the HPCI room contains a sump (and associated sump high level alarm) for collection of leaks or drainage from the HPCI system, and room temperature detectors which are read periodically in the control room. We therefore conclude that adequate instrumentation exists independent from the high differential temperature monitor to detect leaks of any significance.

Based on the foregoing, we conclude that the elimination of the HPCI room temperature differential isolation signal is acceptable.

Environmental Consideration

We have determined that the amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendments involve an action which is insignificant from the standpoint of environmental impact and pursuant to 10 CFR §51.5(d)(4) that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the amendments do not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: April 28, 1977

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKETS NOS. 50-325 AND 50-324

CAROLINA POWER & LIGHT COMPANY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY OPERATING LICENSES

The U.S. Nuclear Regulatory Commission (the Commission) has issued Amendments Nos. 5 and 27 to Facility Operating Licenses Nos. DPR-71 and DPR-62, issued to Carolina Power & Light Company (the licensee), which revised Technical Specifications for operation of the Brunswick Steam Electric Plant, Units Nos. 1 and 2, located in Brunswick County, North Carolina. The amendments are effective as of the date of issuance.

The amendments remove operability and surveillance requirements for the High Pressure Coolant Injection (HPCI) turbine steam line isolation in the event of HPCI room inlet/outlet ventilation high differential temperature.

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. Prior public notice of these amendments was not required since the amendments do not involve a significant hazards consideration.

The Commission has determined that the issuance of these amendments will not result in any significant environmental impact and that pursuant

to 10 CFR §51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of these amendments.

For further details with respect to this action, see (1) the application for amendments dated August 4, 1976, as supplemented January 31, 1977, (2) Amendment No. 5 to License No. DPR-71, (3) Amendment No. 27 to License No. DPR-62, and (4) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, NW., Washington, D.C. and at the Southport-Brunswick County Library, 109 W. Moore Street, Southport, North Carolina 28461. A copy of items (2), (3) and (4) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 28th day of April 1977.

FOR THE NUCLEAR REGULATORY COMMISSION

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