DO NOT REMOVE

LICENSE AUTHORITY FILE COPY

May 29, 1986

Posted Base Change to DPR-62

Docket Nos. 50-325/324

Mr. E. E. Utley
Senior Executive Vice President
Power Supply and Engineering & Construction
Carolina Power & Light Company
Post Office Box 1551
Raleigh, North Carolina 27602

DISTRIBUTION

Docket File	RBernero
NRC PDR	N Thompson
Local PDR	EJordan
PD#2 File	JPartlow
SNorris	BGrimes
ESylvester	ACRS (10)
OPA	OELD
WJones	TBarnhart (8)
LFMB	DVassallo
	EButcher

Dear Mr. Utley:

SUBJECT: CHANGE TO BASES OF BRUNSWICK TECHNICAL SPECIFICATION 3/4.5.3.1, "CORE SPRAY SYSTEM (CSS)"

Re: Brunswick Steam Electric Plant, Units 1 and 2

By letter dated December 3, 1985, the Carolina Power & Light Company (CP&L) submitted proposed changes to the Bases to the Technical Specifications appended to Facility Operating License Nos. DPR-71 and DPR-62 for the Brunswick Steam Electric Plant (BSEP), Units 1 and 2. The proposed changes would modify the Bases for Technical Specification Section 3/4.5.3.1 related to the operability of the core spray system. The proposed change would clarify the Bases to indicate that 50,000 gallons of water is the minimum required in the condensate storage tank to assure operability of the core spray system during operational conditions 4 or 5.

We have reviewed your request and agree that the minimum volume of water required for core spray system operability in operational condition 4 or 5 is 50,000 gallons. This volume corresponds to a condensate storage tank (CST) level of 150,000 gallons where the lower 100,000 gallons is dedicated, by way of stand pipes, for use by the high pressure coolant injection system and reactor core isolation cooling system. We concur that the proposed change to the Bases is appropriate to clarify that it is not 150,000 gallons that is required for core spray system operability, but that the water in the CST must be at the 150,000 gallon level. A copy of our evaluation is enclosed.

Because the proposed change is to the Bases and not to the Technical Specifications, an amendment to the license is not required and is not being issued. We have, however, revised page B 3/4 5-2 for Brunswick Unit 1 and page B 3/4 5-2 for Unit 2. A copy of these revised pages is enclosed.

Sincerely,

Original signed by/

Daniel R. Muller, Director
BWR Project Directorate #2
Division of BWR Licensing

Enclosures: As stated

cc w/enclosures: See next page

DBL:PD#2	DBL:PD#2	DBL:PD#2
SNorris:rs	ESylvester	DMuller
5/21/86	5/29/86	5/27/86

Mr. E. E. Utley
Carolina Power & Light Company

cc:
Richard E. Jones, Esquire
Vice President and Senior Counsel
Carolina Power & Light Company
411 Fayetteville Street Mall
Raleigh, North Carolina 27602

Thomas A. Baxter, Esquire
Shaw, Pittman, Potts & Trowbridge
1800 M Street, N.W.
Washington, D.C. 20036

Mr. D. E. Hollar
Associate General Counsel
Carolina Power & Light Company
P. O. Box 1551
Raleigh, North Carolina 27602

Mrs. Chrys Baggett
State Clearinghouse
Budget and Management
116 West Jones Street
Raleigh, North Carolina 27603

Resident Inspector
U. S. Nuclear Regulatory Commission
Star Route 1
Post Office Box 208
Southport, North Carolina 28461

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

Mr. Dayne H. Brown, Chief
Radiation Protection Branch
Division of Facility Services
N.C. Department of Human Resources
Post Office Box 12200
Raleigh, North Carolina 27605

Mr. Christopher Chappell, Chairman
Board of Commissioners
Post Office Box 249
Bolivia, North Carolina 28422

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

BASES TO TECHNICAL SPECIFICATION 3/4.5.3.1, "CORE SPRAY SYSTEM (CSS)"

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2

DOCKET NOS. 50-325/324

1.0 INTRODUCTION

In a letter dated December 3, 1985, the Carolina Power and Light Company requested a change in Technical Specification (TS) bases relating to the core spray system for the Brunswick Steam Electric Plant, Unit Nos. 1 and 2. The proposed change to the bases for TS 3/4.5.3.1 serves to clarify the minimum condensate storage tank (CST) volume required for the operability of the core spray and the HPCI/RCIC system.

2.0 EVALUATION

During a recent review of TS 3/4.5.3.1, a question arose as to whether the 150,000 gallon core spray requirement coupled with the 100,000 gallon HPCI/RCIC requirement constituted a combined minimum requirement for the condensate storage tank of 250,000 gallons. After a review of the system's requirements, the licensee verified that 150,000 gallons was the total minimum requirement for the tank. Of this, 50,000 gallons were required for the core spray system (CSS) operability requirements and 100,000 gallons for the HPCI/RCIC requirements.

There is no ambiguity as to the 100,000 gallons for the HPCI/RCIC requirement since the CSS suction is at the 100,000 gallons level. The question is whether 50,000 gallons or 150,000 gallons is required for core spray system operability. The core spray system can take suction either from the suppression pool or the condensate storage tank, with the latter providing the CSS with a source of demineralized water for injection path testing in conditions 4 and 5 during a reactor shutdown. In conditions 1, 2 and 3 when the CSS is required to be operable the valves from the CST to the CSS pumps are locked shut and the CSS takes suction form the suppression pool. Assuming each of the two CSS Pumps has a capacity of 5000 gpm, the 50,000 gallons in the CST could last for about 5 minutes if both CSS pumps operate at full capacity. This duration is deemed adequate for the injection path testing in conditions 4 and 5 were there no accidental draining of vessel water. In the event of such an accidental draining when the CSS is not available for core cooling, adequate assurance of core flooding is provided by one low pressure coolant injection (LPCI) loop. Therefore, it is concluded that the risk posed to the public health and safety as a result of the postulated event

is very low. This change to the bases for TS 3/4.5.3.1 is deemed consistent with the requirements in the current Technical Specifications that involve the Reactor Protection System and is also consistent with the requirements for the ECCS in the Standard Technical Specifications for the BWR/4's.

3.0 CONCLUSION

Based on our review, we concur with the licensee that the proposed change to the Bases for Technical Specification 3/4.5.3.1 is appropriate and necessary to clarify the operability requirements for the core spray system in operational conditions 4 and 5.

Principal Contributor: D. Yue
Dated: May 29, 1986

AUTOMATIC DEPRESSURIZATION SYSTEM (Continued)

ADS automatically controls 7 safety-relief valves although the hazards analysis only takes credit for 6. It is therefore appropriate to permit one valve to be out-of-service indefinitely without materially reducing system reliability. Reactor operation is permitted to continue for up to 7 days with 2 safety-relief valves inoperable except that HPCI is required to be demonstrated to be OPERABLE.

The surveillance requirements provide adequate assurance that ADS will be OPERABLE when required. Although all active components are testable during reactor operation, a complete functional test results in reactor blowdown and therefore is scheduled around shutdowns.

3/4.5.3 LOW PRESSURE COOLING SYSTEMS

3/4.5.3.1 CORE SPRAY SYSTEM (CSS)

The CSS is provided to assure that the core is adequately cooled following a loss-of-coolant accident. Two redundant loops each provide adequate core cooling capacity for all break sizes from 0.2 ft^2 up to and including the double-ended reactor recirculation line break, and for smaller breaks following depressurization by the ADS.

The CSS specifications are applicable during CONDITIONS 1, 2, and 3 because CSS is a primary source of emergency core cooling after the reactor vessel is depressurized.

When in CONDITION 1, 2, or 3 with one CSS loop inoperable, the demonstrated OPERABILITY of the redundant full capacity CSS loop and the full capacity Low Pressure Coolant Injection System provides assurance of adequate core cooling and justifies the specified 7-day out-of-service period.

The CSS specifications are applicable in CONDITIONS 4 and 5 to provide a source for flooding of the core in case of accidental draining.

The specified volume of 150,000 gallons of water in the condensate storage tank will assure the availability of 50,000 gallons of water for the CSS since its suction is at the 100,000 gallons level. The 100,000 gallons is the minimum reserved for HPCI/RCIC operation.

AUTOMATIC DEPRESSURIZATION SYSTEM (Continued)

ADS automatically controls 7 safety-relief valves, although the hazards analysis only takes credit for 6. It is therefore appropriate to permit one valve to be out-of-service indefinitely without materially reducing system reliability. Reactor operation is permitted to continue for up to 7 days with 2 safety-relief valves inoperable except that HPCI is required to be demonstrated to be OPERABLE.

The surveillance requirements provide adequate assurance that ADS will be OPERABLE when required. Although all active components are testable during reactor operation, a complete functional test results in reactor blowdown and, therefore, is scheduled around shutdowns.

3/4.5.3 LOW PRESSURE COOLING SYSTEMS

3/4.5.3.1 CORE SPRAY SYSTEM (CSS)

The CSS is provided to assure that the core is adequately cooled following a loss-of-coolant accident. Two redundant loops each provide adequate core cooling capacity for all break sizes from 0.2 ft^2 up to and including the double-ended reactor recirculation line break, and for smaller breaks following depressurization by the ADS.

The CSS specifications are applicable during CONDITIONS 1, 2, and 3 because CSS is a primary source of emergency core cooling after the reactor vessel is depressurized.

When in CONDITIONS 1, 2, or 3 with one CSS loop inoperable, the demonstrated OPERABILITY of the redundant full capacity CSS loop and the full capacity Low Pressure Coolant Injection System provides assurance of adequate core cooling and justifies the specified 7 day out-of-service period.

The CSS specifications are applicable in CONDITIONS 4 and 5 to provide a source for flooding of the core in case of accidental draining.

The specified volume of 150,000 gallons of water in the condensate storage tank will assure the availability of 50,000 gallons of water for the CSS since its suction is at the 100,000 gallons level. The 100,000 gallons is the minimum reserved for HPCI/RCIC operation.