MAY 24 1979

Docket No. 50-261

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Mr. J. A. Jones
Senior Vice President
Carolina Power and Light Company
336 Fayetteville Street
Raleigh, North Carolina 27602

Dear Mr. Jones:

The Commission has issued the enclosed Amendment No. 38 to Facility Operating License No. DPR-23 for the H. B. Robinson Steam Electric Plant, Unit No. 2. This amendment consists of changes to the Technical Specifications in response to your application dated May 18, 1979.

The amendment deletes pressurizer level as an input to safety injection actuation, and requires actuation of safety injection based on two out of three channels of low pressurizer pressure.

The NRC Safety Evaluation and Notice of Issuance of this amendment are also enclosed.

Sincerely,

Original Signed By

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

Enclosures:
1. Amendment No. 38 to DPR-23
2. Safety Evaluation
3. Notice of Issuance

cc w/enclosures:
See next page

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DOR:PSB
G. Lainas
5/24/79

OFFICE	DOR:ORB-1	DOR:ORB-1	OELD	DOR:ORB-1	DOR:AD/S&P
SURNAME	CTrammell:esp	PKreutzer	KARMAN	ASchwencer	RVollmer
DATE	5/24/79	5/24/79	5/24/79	5/24/79	5/25/79

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

May 24, 1979

Docket No. 50-261

Mr. J. A. Jones
Senior Vice President
Carolina Power and Light Company
336 Fayetteville Street
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Sincerely,

A. Schwencer

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

Enclosures:
1. Amendment No. 38 to DPR-23
2. Safety Evaluation
3. Notice of Issuance

cc w/enclosures:
See next page

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Office of Radiation Programs (AW-459)
U. S. Environmental Protection Agency
Crystal Mall #2
Arlington, Virginia 20460

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

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

CAROLINA POWER AND LIGHT COMPANY

DOCKET NO. 50-261

H. B. ROBINSON STEAM ELECTRIC PLANT UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 38
License No. DPR-23

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

   A. The application for amendment by Carolina Power and Light Company (the licensee) dated May 18, 1979, 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.

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2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B. of Facility Operating License No. DPR-23 is hereby amended to read as follows:

   "B. Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 38, 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

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 24, 1979

ATTACHMENT TO LICENSE AMENDMENT NO. 38

FACILITY OPERATING LICENSE NO. DPR-23

DOCKET NO. 50-261

Revise Appendix A as follows:

Remove the following pages and insert identically numbered revised pages:

Pages

3.5-2
3.5-4
3.5-7
3.5-10

Safety Injection System Actuation

Protection against a Loss-of-Coolant or Steam Break accident is brought about by automatic actuation of the Safety Injection System which provides emergency cooling and reduction of reactivity.

The Loss-of-Coolant Accident is characterized by depressurization of the Reactor Coolant System and rapid loss of reactor coolant to the containment. The Engineered Safety Features have been designed to sense these effects of the Loss-of-Coolant Accident by detecting low pressurizer pressure and generates signals actuating the SIS active phase . The SIS active phase is also actuated by a high containment pressure signal (Hi-Level) brought about by loss of high enthalpy coolant to the containment. This actuation signal acts as a backup to the low pressurizer pressure signal actuation of the SIS and also adds diversity to protection against loss of coolant.

Signals are also provided to actuate the SIS upon sensing the effects of a steam line break accident. Therefore, SIS actuation following a steam line break is designed to occur upon sensing high differential steam pressure between the steam header and steam generator line or upon sensing high steam line flow in coincidence with low reactor coolant average temperature or low steam line pressure.

The increase in the extraction of RCS heat following a steam line break results in reactor coolant temperature and pressure reduction. For this reason protection against a steam line break accident is also provided by low pressurizer pressure signals actuating safety injection.

Protection is also provided for a steam line break in the containment by actuation of SIS upon sensing high containment pressure.

Feedwater Line Isolation

The feedwater lines are isolated upon actuation of the Safety Injection System in order to prevent excessive cooldown of the reactor coolant system. This mitigates the effect of an accident such as steam break which in itself causes excessive coolant temperature cooldown.

Feedwater line isolation also reduces the consequences of a steam line break inside the containment, by stopping the entry of feedwater.

Setting Limits

a. The Hi-Level containment pressure limit is set at about 10% of design containment pressure. Initiation of Safety Injection protects against Loss-of-Coolant[2] or steam line break[3] accidents as discussed in the safety analysis.

b. The Hi-Hi Level containment pressure limit is set at about 50% of design containment pressure. Initiation of Containment Spray and Steam Line Isolation protects against large Loss-of-Coolant[2] or steam line break accidents[3] as discussed in the safety analysis.

c. The pressurizer low pressure limit is set substantially below system operating pressure limits. However, it is sufficiently high to protect against a Loss-of-Coolant Accident as shown in the safety analysis.[2]

TABLE 3.5-1

ENGINEERED SAFETY FEATURE SYSTEM INITIATION INSTRUMENT SETTING LIMITS

NO.	FUNCTIONAL UNIT	CHANNEL ACTION	SETTING LIMIT
1	High Containment Pressure (Hi Level)	Safety Injection*	$\leq$ 5 psig
2	High Containment Pressure (Hi-Hi Level)	a. Containment Spray** b. Steam Line Isolation	$\leq$ 25 psig
3	Pressurizer Low Pressure	Safety Injection*	$\geq$1700 psig
4	High Differential Pressure Between any Steam Line and the Steam Line Header	Safety Injection*	$\leq$ 150 psi
5	High Steam Flow in 2/3 Steam Lines***	a. Safety Injection*	$\leq$ 40% (at zero load) of full steam flow
		b. Steam Line Isolation	$\leq$ 40% (at 20% load) of full steam flow $\leq$110% (at zero load) of full steam flow
	Coincident with Low T_{avg} or		$\geq$541°F T_{avg}
	Low Steam Line Pressure		$\geq$600 psig steam line pressure

*Initiates also containment isolation (Phase A), feedwater line isolation and starting of all containment fans.
**Initiates also containment isolation (Phase B).
***Derived from equivalent ΔP measurements.

TABLE 3.5-1

INSTRUMENTATION OPERATING CONDITIONS FOR ENGINEERED SAFETY FEATURES

NO.	FUNCTIONAL UNIT	1 MINIMUM OPERABLE CHANNELS	2 MINIMUM DEGREE OF REDUNDANCY	3 OPERATOR ACTION IF CONDITIONS OF COLUMN 1 OR 2 CANNOT BE MET
1.	SAFETY INJECTION			
	a. Manual	1	0	Cold shutdown
	b. High Containment Pressure (Hi Level)	2	1	Cold shutdown
	c. High Differential Pressure between any Steam Line and the Steam Line Header	2	1	Cold shutdown
	d. Pressurizer Low Pressure	2	1	Cold shutdown***
	e. High Steam Flow in 2/3 Steam Lines Coincident with Low T_{avg} or Low Steam Pressure	1/Steam line	*****	Cold shutdown****
		2 T_{avg} Signals	1	
		2 Pressure Signals	1	
2.	CONTAINMENT SPRAY			
	a. Manual	2	0**	Cold shutdown
	b. High Containment Pressure (Hi-Hi Level)	2/set	1/set	Cold shutdown

**Must actuate two switches simultaneously.
***When primary pressure is less than 2000 psig, channels may be blocked.
****When primary temperature is less than 547°F, channels may be blocked.
*****In this case the 2/3 high steam flow is already in the trip mode.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 38 TO FACILITY LICENSE NO. DPR-23

CAROLINA POWER AND LIGHT COMPANY

H. B. ROBINSON STEAM ELECTRIC PLANT UNIT NO. 2

DOCKET NO. 50-261

Introduction

As a result of our ongoing review of the events associated with the March 28, 1979 accident at Three Mile Island Unit 2, the NRC Office of Inspection and Enforcement issued a number of IE Bulletins describing actions to be taken by licensees. IE Bulletin 79-06 (April 11, 1979) called for licensees with Westinghouse PWRs to instruct operators to manually initiate safety injection whenever pressurizer pressure indication reaches the actuation setpoint whether or not the pressurizer level indication has dropped to the actuation setpoint. IE Bulletin 79-06A (April 14, 1979) further called for these licensees to trip the low pressurizer level bistables such that, when the pressurizer pressure reaches the low setpoint, safety injection would be initiated regardless of the pressurizer level. IE Bulletin 79-06A, Revision 1 (April 18, 1979) modified the action called for in 79-06A by allowing pressurizer level bistables to be temporarily returned to their normal (untripped) operating positions during the pressurizer pressure channel functional surveillance tests so that these tests can be conducted without causing a false safety injection actuation.

Tripping the pressurizer low level bistables, which are normally coincident with the pressurizer low pressure bistables, has the effect of reducing this safety injection actuation logic to a one out of three logic. A single instrument failure of one of the three low pressure bistable channels could therefore result in an unwanted safety injection. To prevent this, the licensee proposed, in a May 18, 1979 letter, a design modification which would align the existing pressurizer low pressure bistables in a two out of three logic, and delete low pressurizer level as a safety injection actuation signal.

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Discussion and Evaluation

The proposed modification to the safety injection actuation system entails removing the pressurizer level signal from each of the pressurizer level/pressure channel trips and converting the system to a two-out-of-three pressurizer low pressure trip. The instrumentation logic takes pressurizer pressure signals from three pressure transmitters and initiates a safety injection actuation whenever two of the three signals reach the low pressure setpoint of 1700 psig. This modification does not involve a change in the setpoint. These modifications will satisfy the requirements of IEEE 279-1971, and other applicable standards required during the plant construction stage. We find this modification acceptable.

We have reviewed the instrumentation power sources. There are four instrument buses. Two buses are supplied from inverters which in turn are energized from two independent battery banks for the plant. The two remaining instrument buses are supplied by constant voltage transformers connected to separate vital 480 volt motor control centers (MCC 5 and MCC 6). The three pressurizer pressure transmitter channels are energized from the two inverters and MCC 5. The system satisfies the single failure requirement of IEEE 279-1971. However, a single failure with loss of off-site power could trip two channels resulting in a spurious safety injection. This undesirable operational event has been brought to the attention of the licensee and will be resolved with the licensee as a separate issue in a followup letter. We find this acceptable.

The proposed Technical Specifications revise Tables 3.5-1 and 3.5-3 and associated bases to specify automatic safety injection actuation on a two-out-of-three pressurizer low pressure of 1700 psig. We find these changes to the Technical Specifications to be acceptable.

Based on our review of the licensee's submittal, we conclude that the modifications to the safety injection actuation system logic satisfy the requirements of IEEE 279-1971 and that the associated technical specifications are correct; and therefore, are acceptable.

Environmental Consideration

We have determined that the amendment does 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 amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR Section 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 this amendment.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the change does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the change does 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 this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: May 24, 1979

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-261

CAROLINA POWER AND LIGHT COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 38 to Facility Operating License No. DPR-23, to Carolina Power and Light Company (the licensee), which revised Technical Specifications for operation of the H. B. Robinson Steam Electric Plant Unit No. 2 (the facility) located in Darlington County, near Hartsville, South Carolina. The amendment is effective as of the date of its issuance.

The amendment deletes pressurizer level as an input to safety injection actuation, and requires actuation of safety injection based on two out of three channels of low pressurizer pressure.

The application for the amendment 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 amendment. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.

The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and 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 this amendment.

For further details with respect to this action, see (1) the licensee's submittal dated May 18, 1979, (2) Amendment No. 38 to License No. DPR-23, and (3) 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, N. W., Washington, D. C. and at the Hartsville Memorial Library, Home and Fifth Avenues, Hartsville, South Carolina. 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 Operating Reactors.

Dated at Bethesda, Maryland, this 24th day of May, 1979.

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer

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