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SUBJECT: Application for amend to license DPR-23, modifying acceptance
criterion for SR 3.4.14.2 from setpoint value to analytical
limit for overpressurization of RHRS.

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Carolina Power & Light Company

Robinson Nuclear Plant
3581 West Entrance Road
Hartsville SC 29550

RNP File No: 13510HA
Serial: RNP-RA/98-0082

OCT 14 1998

United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23

REQUEST FOR TECHNICAL SPECIFICATIONS CHANGE
RESIDUAL HEAT REMOVAL ISOLATION VALVE INTERLOCK

Gentlemen:

This letter requests a change to the Technical Specifications (TS) for the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2 in accordance with 10 CFR 50.90. The requested change modifies the acceptance criterion for Surveillance Requirement (SR) 3.4.14.2 from the setpoint value to the analytical limit for overpressurization of the Residual Heat Removal System. The requested acceptance criterion of 474 psig Reactor Coolant System (RCS) pressure is consistent with the Bases to the specification and the design basis of the Residual Heat Removal (RHR) System.

Attachment I provides an affidavit as required by 10 CFR 50.30(b).

Attachment II provides a description of the current condition, a description of the proposed change, a safety assessment, a basis for a conclusion that the proposed change does not involve a significant hazards consideration and an environmental impact consideration which demonstrates that the proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)((9) and (10)).

Attachment III provides a markup of the proposed revised TS.

Attachment IV provides retyped pages for the proposed TS and Bases.

In accordance with 10 CFR 50.91(b), Carolina Power & Light (CP&L) Company is providing the State of South Carolina with a copy of this letter with attachments.

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PDR ADDCK 05000261
P PDR

CP&L requests that this proposed change be reviewed and approved by March 31, 1999.

If you have any questions concerning this matter, please contact Mr. H. K. Chernoff of my staff.

Very truly yours,



T. M. Wilkerson
Manager - Regulatory Affairs

ALG/alg

Attachments

- I. Affidavit
 - II. Request for Technical Specifications Change, Residual Heat Removal Isolation Valve Interlock
 - III. Markup of Current Technical Specifications and Bases Pages
 - IV. Retyped Technical Specifications and Bases
- c: Mr. Max K. Batavia, Chief, Bureau of Radiological Health (SC)
Mr. L. A. Reyes, NRC, Region II
Mr. R. Subbaratnam, NRC NRR
NRC Resident Inspector, HBRSEP
Attorney General (SC)

Affidavit

State of South Carolina
County of Darlington

D. E. Young, having been first duly sworn, did depose and say that the information contained in letter RNP-RA/98-0082 is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, contractors, and agents of Carolina Power & Light Company.

Dale E Young

Sworn to and subscribed before me

this 14th day of October 1998

(Seal) Albert L. Gannon
Notary Public for South Carolina

My commission expires: March 22nd 2005

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
REQUEST FOR TECHNICAL SPECIFICATIONS CHANGE
RESIDUAL HEAT REMOVAL ISOLATION VALVE INTERLOCK

Description of Current Condition

10 CFR 50.2 and 10 CFR 50.55a(c) define Reactor Coolant System (RCS) Pressure Isolation Valves (PIVs) as any two normally closed valves in series within the reactor coolant pressure boundary (RCPB), which separate the high pressure RCS from an attached low pressure system. The purpose of PIVs is to prevent overpressure failure of the low pressure portions of systems connecting to the RCS.

The Residual Heat Removal (RHR) System is provided with PIVs (i.e., valves RHR-750 and RHR-751) to ensure that the RCS pressure will not pressurize the RHR System beyond its design pressure of 600 psig. The RHR System interlock setpoint prevents the valves from being remotely opened from the control room by the operators and is set so the actual RCS pressure must be less than the analytical limit for the RHR System pressure to open the valves. This setpoint ensures the RHR design pressure will not be exceeded and the RHR relief valves will not lift as a result of inadvertent operator action. The analytical limit for overpressurization of the RHR System of 474 psig is based upon the design pressure of the RHR System of 600 psig less head losses of 126 psi due to the shutoff head of the RHR pumps and the dynamic head associated with one Reactor Coolant Pump operating in the loop. The RHR System interlock only prevents manual operator action to open the RHR PIVs and does not have an actuation function to close the valves if the valves are open with RCS pressure above the setpoint value.

A single RCS narrow range pressure transmitter senses RCS pressure directly. The pressure transmitter sends a signal to a signal comparator which provides the permissive signal to allow the RHR PIVs to be opened. To allow for instrumentation uncertainties, statistical allowances are accounted for in the interlock setpoint. The interlock setpoint of 445 psig is based on the analytical limit for overpressurization of the RHR System of 474 psig.

Currently, the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2 Technical Specifications (TS) Surveillance Requirement (SR) 3.4.14.2 requires verification that the RHR System interlock prevents the valves from being opened with a simulated or actual pressure \geq 465 psig every 18 months. The current acceptance criterion is based upon a previous setpoint for the RHR System interlock. The interlock setpoint was reduced from 465 psig to 445 psig based upon completion of a setpoint calculation for this interlock using the Company Setpoint Methodology¹.

¹ Refer to CP&L letter to the NRC dated May 30, 1997, "Response to Request for Additional Information and Transmittal of Supplement 4 Regarding the Technical Specification Change Request to Convert to the Improved Standard Technical Specifications," which transmitted a copy of the Company Setpoint Methodology Procedure.

Description of the proposed change

The proposed change to TS SR 3.4.14.2 is to change the acceptance criterion value for the SR from 465 psig to 474 psig. The acceptance criterion of 465 psig is conservative but corresponds to a previous value for the RHR System interlock setpoint. The acceptance criterion for SR 3.4.14.2 should be based upon the analytical limit for overpressurization of the RHR System which is 474 psig. The analytical limit takes into account uncertainties and system conditions associated with operation of the RHR system that are associated with the setpoint value. The current setpoint for the RHR System interlock is 445 psig.

The effect of the proposed change to TS will be to relax the acceptance criterion for SR 3.4.14.2 by 9 psi. The current value is overly restrictive with respect to allowable RCS pressure since the RHR System can safely withstand RCS pressures at the pressure transmitter of up to 474 psig.

Safety Assessment

WASH-1400 (NUREG-75/014), Appendix V, October 1975, identified potential intersystem LOCAs as a significant contributor to the risk of core melt. The dominant accident sequence in the intersystem LOCA category is the failure of the low pressure portion of the RHR System outside of containment. The accident is the result of a postulated failure of the PIVs, which are part of the RCPB, and the subsequent pressurization of the RHR System downstream of the PIVs from the RCS. Because the low pressure portion of the RHR System is typically designed for 600 psig, overpressurization failure of the RHR System low pressure line would result in a LOCA outside containment and subsequent risk of core melt. The consequences of a failure of the PIVs could be a loss of coolant accident (LOCA) outside of containment.

The RHR System interlock functions as a permissive to prevent manual action by the operators to open the RHR PIVs when RCS pressures are above the setpoint, and allow the operators to open the RHR PIVs below the interlock setpoint. In the event that the RHR PIVs are open and the RCS pressure is increased from below the interlock setpoint to above the interlock setpoint, the interlock provides no automatic closure function. Hence, failure of the RHR System interlock would not result in overpressurization of the RHR System unless operators took additional action to open the valves with the RCS pressure above the analytical limit for the RHR System. Operating procedures do not allow operation with the RHR PIVs open above an indicated RCS pressure of 375 psig.

No Significant Hazards Consideration Determination

The HBRSEP, Unit No. 2 TS are proposed to be modified to increase the acceptance criterion for Surveillance Requirement (SR) 3.4.14.2 from a RCS pressure of 465 psig to 474 psig. Carolina Power & Light (CP&L) Company has evaluated the proposed Technical Specifications (TS) change and has concluded that it does not involve a significant hazards consideration. The conclusion is in accordance with the criteria set forth in 10 CFR 50.92. The bases for the

conclusion that the proposed change does not involve a significant hazards consideration is discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change increases the acceptance criterion for the Residual Heat Removal (RHR) System interlock from 465 psig to 474 psig. The new value of 474 psig is the analytical limit for the RHR System interlock setpoint that corresponds to the highest RCS pressure that is allowable in the RHR System without overpressurizing the RHR System above its design pressure. The RHR System interlock prohibits remote manual operation of the RHR Pressure Isolation Valves (PIVs) from the control room when Reactor Coolant System (RCS) pressure is greater than the RHR System interlock setpoint to avoid inadvertent overpressurization of the RHR System due to operator action. Operating procedures prohibit opening of the RHR PIVs when RCS pressure is greater than 375 psig. Therefore, the probability of overpressurization of the RHR System resulting in a Loss-of-Coolant Accident (LOCA) is not affected by the change. The RHR System interlock provides no actuation function to mitigate the consequences of a LOCA as a result of open RHR PIVs with RCS pressure greater than the RHR System interlock setpoint. Therefore, the consequences of overpressurization of the RHR System is not affected by the change. Therefore, the proposed change does not involve any increase in the probability or consequences of an accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change does not involve any physical alteration of plant systems, structures, or components. The proposed change increases the acceptance criterion for the RHR System interlock SR from 465 psig to the analytical limit of 474 psig. Performance of a SR at the new acceptance criterion does not introduce any new accident initiation scenarios since the SR is performed at acceptable RCS pressure conditions. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

The proposed change results in a new SR acceptance criterion that corresponds to the analytical limit for the RHR System interlock setpoint. The RHR System interlock is redundant to administrative controls which prohibit opening the RHR System PIVs under RCS pressure conditions which would overpressurize the RCS System. Therefore, the proposed change does not result in a significant reduction in the margin of safety.

Environmental Impact Consideration

10 CFR 51.22(c)(9) provides criteria for identification of licensing and regulator actions for categorical exclusion for performing an environmental assessment. A proposed change for an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed change would not (1) involve a significant hazards consideration; (2) result in a significant change in the types or significant increases in the amounts of any effluents that may be released offsite; (3) result in an increase in individual or cumulative occupational radiation exposure. CP&L has reviewed this request and determined that the proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22 (c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the issuance with the amendment. The basis for this determination follows.

Proposed Change

The HBRSEP, Unit No. 2 Technical Specifications are proposed to be modified to increase the acceptance criterion for Surveillance Requirement (SR) 3.4.14.2 from a Reactor Coolant System pressure of 465 psig to 474 psig.

Basis

The proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) for the following reasons.

1. As demonstrated in the No Significant Hazards Consideration Determination, the proposed change does not involve a significant hazards consideration.
2. The proposed change is being made to raise the acceptance criterion for surveillance testing of an interlock, and does not involve physical changes to the facility design, configuration, operation, or maintenance. The proposed change does not affect the methodology for performing the required surveillance test except for changing the acceptance criterion. Therefore the proposed change does not affect actual plant effluents.
3. The proposed change does not involve physical changes to the facility design, configuration, operation, or maintenance. The proposed change does not affect the methodology for performing the required surveillance test except for changing the acceptance criterion. Therefore the proposed change does not affect individual or cumulative occupational radiation exposures.