CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9803120236 DOC.DATE: 98/03/06 NOTARIZED: YES DOCKET #
FACIL:50-261 H.B. Robinson Plant, Unit 2, Carolina Power & Light C 05000261
AUTH.NAME AUTHOR AFFILIATION
WILKERSON,T.M. Carolina Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
Document Control Branch (Document Control Desk)

SUBJECT: Application for amend to license DPR-23,requesting to allow use of PAM source range neutron flux detector as compensatory measure in event that one of two required BF3 neutron flux detectors become inoperable during mode 6.

DISTRIBUTION CODE: A001D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 8+14
TITLE: OR Submittal: General Distribution

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD2-1 LA	1	1	PD2-1 PD	1	1
	SHEA,J W	1	1			
INTERNAL:	FILE CENTER 01	1	1	NRR/DE/ECGB/A	1	1
	NRR/DE/EMCB	1	1	NRR/DRCH/HICB	1	1
	NRR/DSSA/SPLB	1	1	NRR/DSSA/SRXB	1	1
	NUDOCS-ABSTRACT	1	1	OGC/HDS3	1	0
EXTERNAL:	NOAC	1	1	NRC PDR	1	1

CATEGORY 1 DOCUMENT

NOTE TO ALL "RIDS" RECIPIENTS:
PLEASE HELP US TO REDUCE WASTE. TO HAVE YOUR NAME OR ORGANIZATION REMOVED FROM DISTRIBUTION LISTS OR REDUCE THE NUMBER OF COPIES RECEIVED BY YOU OR YOUR ORGANIZATION, CONTACT THE DOCUMENT CONTROL DESK (DCD) ON EXTENSION 415-2083

TOTAL NUMBER OF COPIES REQUIRED: LTTR 13 ENCL 12

10 CFR 50.90

CP&L

Carolina Power & Light Company
Robinson Nuclear Plant
3581 West Entrance Road
Hartsville SC 29550

RNP File No: 13510HA
Serial: RNP-RA/98-0041

MAR 0 6 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
REFUELING OPERATIONS - NUCLEAR INSTRUMENTATION

Sir or Madam:

Carolina Power & Light (CP&L) Company requests a change to the Technical Specifications (TSs) for the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2 in accordance with 10 CFR 50.90. The requested change is to allow use of a Post Accident Monitoring source range neutron flux detector as a compensatory measure in the event that one of the two required BF3 neutron flux detectors become inoperable during MODE 6.

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.

A001

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

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

The proposed change to TSs is similar to amendments approved for the South Texas Project, Units 1 and 2, by letter dated February 13, 1995, and for the Beaver Valley Station, Unit Nos. 1 & 2, by letter dated August 20, 1993.

CP&L requests that this proposed change be reviewed and approved by September 1, 1998.

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

Very truly yours,

for T. M. Wilkerson
Manager - Regulatory Affairs

ALG/alg
Attachments

I. Affidavit
II. Request For Technical Specifications Change, Refueling Operations - Nuclear Instrumentation
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, Regional Administrator, USNRC, Region II
Mr. J. W. Shea, USNRC Project Manager, HBRSEP
USNRC Resident Inspector, HBRSEP
Attorney General (SC) (w/out Enclosures)

Affidavit

State of South Carolina
County of Darlington

J. S. Keenan, having been first duly sworn, did depose and say that the information contained in letter RNP-RA/98-0041 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.

John S. Keenan

Sworn to and subscribed before me

this 6th day of March 1998

(Seal) Albert L Carroon
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
REFUELING OPERATIONS - NUCLEAR INSTRUMENTATION

Description of Current Condition

The source range (SR) neutron flux monitors are used during refueling operations to monitor the core reactivity condition. The installed SR neutron flux monitors are part of the Nuclear Instrumentation System (NIS) and are located external to the reactor vessel and detect neutrons leaking from the core. These SR neutron flux monitors are boron-trifluoride (BF3) detectors operating in the proportional region of the gas filled detector characteristic curve. This detector converts neutron flux to counts per second with a range that covers six decades (1E+00 counts per second (cps) to 1E+06 cps) with a 5% instrument accuracy. The detectors provide continuous visual indication in the control room and audible alarms to alert operators of a possible dilution accident. The NIS is designed in accordance with the criteria presented in the Updated Final Safety Analysis Report (UFSAR) Section 3.1[1].

In MODE 6, two BF3 SR neutron flux monitors are required to be operable. If one of the required BF3 SR neutron flux monitors is inoperable, the required actions are to immediately suspend CORE ALTERATIONS and positive reactivity additions. In the event two required BF3 SR neutron flux monitors are inoperable, the required actions are to immediately initiate action to restore one BF3 SR neutron flux monitor to operable status, and to perform a surveillance requirement to assess boron concentrations. These actions are in addition to suspending CORE ALTERATIONS and positive reactivity addition.

Description of the proposed change

The proposed change to Technical Specification (TS) Section 3.9.2 is to modify the actions to allow core alterations and positive reactivity changes to continue if one SR neutron flux monitor and one PAM SR neutron flux monitor with control room indication is available and count rates from this indication are logged once per 30 minutes.

Safety Assessment

The proposed change to TSs would allow core alterations and positive reactivity changes in MODE 6 with one BF3 SR neutron flux monitor inoperable if the PAM SR neutron flux monitor indication is available in the control room and the count rates from this indication are logged within 30 minutes and once per 30 minutes thereafter. Currently TSs require that two BF3 SR neutron flux monitors be available which does not allow credit for the PAM SR

[1] UFSAR Sections 3.1.2.12, "Instrumentation and Control Systems," 3.1.2.13, "Fission Process Monitoring and Controls," 3.1.2.14. "Core Protection Systems," 3.1.2.20, "Protection Systems Redundancy and Independence," 3.1.2.23, "Protection Against Multiple Disability for Protection Systems," 3.1.2.26, "Protection System Failure Analysis Design."

neutron flux monitors. This change allows a PAM SR neutron flux monitor to be credited as a compensatory measure by providing indication redundancy for monitoring core reactivity along with the second BF3 SR neutron flux monitor.

The PAM SR neutron flux monitors cover six decades of neutron flux indication with a 5% instrument accuracy. Therefore, the capability of the PAM SR neutron flux monitor to detect changes in neutron levels is comparable to that of the BF3 SR neutron flux monitors. The indicating range for the PAM SR neutron flux monitors is slightly different providing a range of 1E-01 cps to 1E+05 cps, whereas the BF3 SR neutron flux monitors provide a range of 1E+00 cps to 1E+06 cps. The decrease in the upper range limit from 1E+05 cps to 1E+06 cps is not considered significant since refueling activities do not occur at these elevated flux levels and monitoring concerns are primarily associated with changes in neutron levels. The BF3 SR neutron flux monitors also have the capability to provide audible count rate indication to the containment. The PAM neutron flux monitors currently do not have this capability. TSs currently require that one channel with audible count rate indication be available in containment. This requirement will continue to be satisfied by the remaining OPERABLE BF3 SR neutron flux monitor.

If neutron levels exceeded a preset level, the BF3 SR neutron flux monitors provide alarming capability via a local horn in containment and horn and light in the control room. This alarm capability is not provided by the PAM SR neutron flux monitor. The alarm feature is discussed in the design basis fuel handling accident[2] and the boron dilution accident[3]. The requirement for alarm capability in the event that one BF3 SR neutron flux monitor becomes inoperable would continue to be met by the remaining BF3 SR neutron flux monitor. This proposed change to TSs would however result in a reduction in the redundancy of alarming capabilities since the PAM SR neutron flux monitor does not have this capability. The proposed Required Actions would require compensatory measures in the form of logging the PAM SR indicated neutron flux every half hour.

Although the fuel handling accident describes alarming capability, and the proposed change to TSs would allow a reduction in redundancy for this feature, this loss of redundancy is not considered to result in a significant safety concern based on the following considerations.

1. The possibility of a fuel handling accident is remote because of the administrative controls and physical limitation imposed on fuel handling operations.
2. Refueling operations are conducted in accordance with procedures under the direct surveillance of a licensed Senior Reactor Operator (or Senior Reactor Operator limited to fuel handling) who has no other concurrent responsibilities.
3. Redundant monitoring capabilities for core reactivity are available. These include a minimum of two visual control room indicators and an audible indication in the containment from the remaining BF3 SR neutron flux monitor.

---

[2] UFSAR 15.7.4.1, "Identification of Causes and Accident Description"
[3] UFSAR Section 15.4.6.5, "Conclusions"

UFSAR Section 15.4.6.5 states that numerous alarms and indications are available to alert the operator in the event of a boron dilution accident. Although the BF3 SR neutron flux monitor alarm is not specifically identified, this alarm could alert the operator of a potential boron dilution accident. This reduction in alarming capability is not considered to result in a significant safety concern since a minimum of two separate operations are required for dilution. Due to procedure controls involved in the dilution process, an inadvertent dilution accident is not considered probable.

No Significant Hazards Consideration Determination

The H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2 Technical Specifications are proposed to be changed by adding a required action to Technical Specification Section 3.9.2 to allow core alterations and positive reactivity changes if one of the two required boron-trifluoride (BF3) source range (SR) neutron flux monitors becomes inoperable. The proposed change would maintain visual redundancy in the control room of SR neutron monitoring by requiring verification that one Post Accident Monitor (PAM) SR neutron flux monitor is providing indication in the control room and that the PAM SR neutron flux monitor count rate is logged once per 30 minutes. Audible SR indication in the containment would also be maintained since it is required for operability of the remaining BF3 SR neutron flux monitor. Carolina Power & Light (CP&L) Company has evaluated the proposed change to Technical Specifications 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 to Technical Specifications is only applicable during the refueling mode of operation (MODE 6). Neither the BF3 SR nor PAM neutron flux monitors provide an automatic initiation signal for the operation of plant systems or components but are only relied upon to provide indication of core reactivity. Since the proposed change to Technical Specifications does not alter the design or operation of plant equipment or systems, there is no change in the initiating mechanisms for any accidents previously analyzed. Therefore this change does not involve a significant increase in the probability for an accident previously analyzed.

   The UFSAR identifies two accidents that credit the SR monitoring capability in MODE 6, the boron dilution accident and the fuel handling accident. No other accidents were found to rely on SR monitoring in MODE 6. The proposed change will continue to require BF3 SR visual indication of core reactivity in the control room and a BF3 SR neutron flux monitor audible indication in containment. This change will not result in a significant reduction in operator capability to detect unexpected changes in core reactivity and perform actions credited with termination of those events, therefore

the proposed change does not involve a significant increase in the consequences of an accident previously analyzed.

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

   The proposed change to Technical Specifications does not involve any physical alteration of plant systems, structures or components or changes in parameters governing plant operations. The proposed change will not result in a significant reduction in monitoring capability since two BF3 SR channels of SR visual indication in the control room and audible SR indication in the containment are required during core alterations and positive reactivity changes. The use of the PAM SR neutron flux monitor as a compensatory measure does not introduce any new accident initiation scenarios since the SR instruments are for monitoring and criticality assessment only and are not relied upon to initiate automatic accident mitigation measures. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously analyzed.

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

   The proposed change will maintain two BF3 SR monitoring means for visually monitoring core reactivity as currently discussed in the bases for the affected Technical Specifications. Audible indication provided by one BF3 SR neutron flux monitor will still be required and fulfilled by the remaining BF3 SR neutron flux monitor. The PAM SR neutron flux monitors use fission chambers as detectors which have a sensitivity of 4 cps/neutron-volts (cps/nv) for thermal neutrons and 2 cps/nv for fast neutrons. The BF3 SR neutron flux monitors have a sensitivity of 9 cps/nv. The PAM SR neutron flux monitor has comparable range and accuracy (i.e., range of 1E-01 cps to 1E+05 cps with an accuracy of 2% of full scale) to that of BF3 SR neutron flux monitor (i.e., range of 1E-00 cps to 1E+06 cps with an accuracy of 3% of full scale) which meets the Technical Specifications Section 3.9.2 Bases requirements of 6 decades of indication and 5% accuracy. Therefore, this change does not involve a significant reduction in a 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 changes meet 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 proposed change to Technical Specifications Section 3.9.2 is to modify the actions to allow core alterations and positive reactivity changes to continue if the Post Accident Monitoring (PAM) source range (SR) neutron flux monitor control room indication is available and count rates from this indication are logged once per 30 minutes.

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 limited to SR neutron monitoring capability during refueling operations. This change does not allow for an increase in plant power level, does not increase the production, nor alter the flow path or method of disposal of radioactive waste or byproducts. Therefore the proposed change does the affect actual plant effluents.

3. The proposed change does not involve a physical change to the facility design, configuration, maintenance, or testing. The proposed change is limited to allowing refueling operations to continue in the event a single boron-trifluoride (BF3) SR neutron flux monitor becomes inoperable provided a PAM SR neutron flux monitor is available. SR neutron flux visual indication location will remain unchanged and audible count rate indication for the containment will continue to be provided by one channel of BF3 SR neutron flux monitoring. Therefore the proposed change does not affect individual or cumulative occupational radiation exposure.