10 CFR 50.90



Carolina Power & Light Company Robinson Nuclear Plant PO Box 790 Hartsville SC 29551

RNP File No: 13510HA Serial: RNP/94-1870

DEC 1 2 1994

United States Nuclear Regulatory Commission ATTENTION: 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 - CONTAINMENT SPRAY SURVEILLANCE INTERVAL

Gentlemen:

In accordance with 10 CFR 50.90, Carolina Power & Light (CP&L) Company requests a change to the Technical Specifications (TS) for the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2.

CP&L proposes to change the HBRSEP TS by relaxing the surveillance interval for the containment spray (CS) nozzles as specified within HBRSEP TS Section 4.5.1.4. The current TS require the spray nozzles be checked for proper functioning at least every five years. Although the TS are not prescriptive regarding the nature of this testing, the practice at both HBRSEP and within industry has been to perform an air or smoke test to qualitatively verify unobstructed flow through each nozzle. The proposed amendment would extend the surveillance interval for performance of this unobstructed flow test from five years to 10 years. This requested change would also make minor wording changes to TS Section 4.5.1.4 to more closely model wording provided within the Standard TS for Westinghouse Plants (i.e., NUREG-1431). Information from NUREG-1431 is being be added to the TS Basis to more clearly describe and support the spray nozzle surveillance requirement.

The requested change is fully consistent with both Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation," and NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements." As such, the proposed amendment constitutes a line-item improvement to the HBRSEP Technical Specifications.

Highway 151 and SC 23 Hartsville SC

U. S. Nuclear Regulatory Commission

The requested revision of the spray nozzle surveillance interval will promote consistency between the TS and current industry standards. In addition, the reduced testing frequency will result in a direct economic benefit and will allow outage resources to focus upon maintenance and surveillance activities with a more direct safety benefit.

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Enclosure 1 provides an affidavit as required by 10 CFR 50.30(b).

Enclosure 2 provides a detailed description of the proposed changes and the basis for the changes.

Enclosure 3 details, in accordance with 10 CFR 50.91(a), the basis for the CP&L's conclusion that the proposed changes do not involve a significant hazards consideration.

Enclosure 4 provides an environmental evaluation which demonstrates that the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental assessment need not be prepared in connection with the issuance of the amendment.

Enclosure 5 provides page change instructions for incorporating the proposed change.

Enclosure 6 provides the proposed TS pages.

In accordance with 10 CFR 50.91(b), CP&L is providing the State of South Carolina with a copy of the proposed license amendment.

Approval of this change is requested in order to support Refueling Outage 17 currently scheduled for September 1996.

In order to allow time for procedure revisions and orderly incorporation into copies of the TS, CP&L requests that the proposed amendments, once approved by the NRC, be issued such that implementation will occur within 60 days of issuance of the amendment.

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Please refer any questions regarding this submittal to Mr. K. R. Jury at (803) 383-1363.

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Yours very truly,

Kuch R. M. Krich

Manager - Regulatory Affairs

Mr. Max K. Batavia, Chief, Bureau of Radiological Health (SC)
Mr. S. D. Ebneter, Regional Administrator, USNRC, Region II
Ms. B. L. Mozafari, USNRC Project Manager, HBRSEP
Mr. W. T. Orders, USNRC Senior Resident Inspector, HBRSEP
Attorney General (SC)

Enclosures:

- 1. Affidavit
- 2. Basis for Change Request
- 3. 10 CFR 50.92 Evaluation
- 4. Environmental Considerations
- 5. Page Change Instructions
- 6. Technical Specification Pages

Affidavit

C. S. Hinnant, having been first duly sworn, did depose and say that the information contained in letter RNP/94-1870 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.

Stinnant

C. S. Hinnant

Asing A Stepherd Notary (Seal)

My commission expires: Nov. 18, 1996

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2 NRC DOCKET NO. 50-261/LICENSE NO. DPR-23 REQUEST FOR TECHNICAL SPECIFICATIONS CHANGE CONTAINMENT SPRAY SURVEILLANCE INTERVAL

BASIS FOR CHANGE REQUEST

REQUESTED CHANGE

The requested change will revise the containment spray (CS) nozzle surveillance interval from five years to 10 years. This change represents a line-item improvement as described within NRC Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation." The underlying justification and safety significance of this relaxation are discussed within NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements," published December, 1992. Also, minor wording changes are proposed to more close and odel the wording provided within the Standard Technical Specifications for Westinghouse Plants (i.e., NUREG-1431).

The substantive aspect of the proposed change is a reduction in testing frequency for the CS nozzles. Existing Technical Specifications (TS) Section 4.5.1.4specifies that "The spray nozzles shall be checked for proper functioning at least every five years." NUREG-1431 Surveillance Requirement 3.6.6A.8, requires verification that each spray nozzle is unobstructed at the first refueling *and every 10 years thereafter*. This surveillance interval relaxation is discussed in more detail within NUREG-1366 and NRC Generic Letter 93-05. The proposed amendment would revise the CS nozzle surveillance from a five year frequency to a 10 year frequency in accordance with the referenced regulatory guidance.

In addition, minor wording changes are proposed to TS 4.5.1.4to more closely model the wording provided within NUREG-1431. A change to the associated Basis information is included. This Basis change is intended to improve the level of detail and quality of information provided by the TS, and is further intended to upgrade the TS with information available within the Standard TS.

BASIS

System Descript.

The HBRSEP CS system is designed to spray water into the containment atmosphere to mitigate the affects of a large loss-of-coolant or steam release accident. This function assures that containment pressure will not exceed its design value for analyzed accidentsinvolving a large energy release inside the containment. The CS system also

of introducing sodium hydroxide into the spray fluid to remove iodine from the containment atmosphere.

The system is composed of two redundant CS pumps and the necessary piping and valves to direct flow to spray ring headers secured to the inside of the containment dome. The CS pumps will initially take suction from the refueling water storage tank, with the capability to take suction from the residual heat removal system during long-term recirculation. A tank of sodium hydroxide is connected to the CS system through educators which provide a mixture of sodium hydroxide into the CS flow for iodine removal. In the event of a design basis accident, operation of one CS pump with sodium hydroxide addition will reduce airborne iodine activity sufficiently to limit offsite doses to within 10 CFR 100 limits.

Each CS pump provides flow to a piping header which in turn supplies flow to three concentric spray rings. Each train of three concentric spray rings contains 58 spray nozzles. The CS system components in contact with borated water, sodium hydroxide, or a mixture of the two, are constructed of stainless steel or equivalent corrosion-resistant material. The spray nozzles are constructed of stainless steel. No coatings are used inside CS system piping, nozzles, or components.

Justification

Withm NUREG-1366, the NRC discussed technical and operating experience issues associated with this surveillance relaxation. A qualitative risk analysis showed that the CS system is important to risk, especially for those plants in which the CS system performs the dual functions of removing iodine and cooling the containment.

The NRC searched for problems involving CS systems which had been identified through spray nozzle testing. Only three cases were found, and in all three cases the problem involved a construction error. These occurrences are summarized as follows:

Rancho Seco October, 1973

Painters in the reactor building covered spray system nozzles and subsequently failed to remove tape from 16 of 199 nozzles. Only four had tape over spray openings.

Turkey Point 4 August, 1978

> While preparing for a spray nozzle test, it was discovered that restricting orifices were not installed in branch connections from the spray headers to the emergency filter spray system. Unit 3's orifices were verified in place.

Farley 1 January, 1982

Certain spray nozzles were found to be oriented incorrectly or positioned on the header incorrectly. Also, two nozzles were not installed due to interference. Analysis showed that peak containment temperature would not have been affected.

These events have been reviewed for applicability to HBRSEP, and the results of this review are provided within the "Compatibility with Operating Experience" section below.

Another event was identified within NRC Generic Letter 93-05 in which San Onofre Unit 1 discovered several spray nozzles that were blocked during air flow testing in June, 1991. The investigation revealed that seven nozzles were clogged with sodium silicate, a coating material that had been applied to the inner diameter of carbon steel piping in 1977. The licensee had conducted air flow tests in 1980, 1983, and 1988 and had obtained acceptable results. As described within the "System Description" section above, no coatings are utilized within HBRSEP CS system piping, nozzles, or components.

As further stated within NUREG-1366, spray nozzle testing gives no quantitative data on flowrates exiting the nozzles; it only verifies that flow exists. Based upon operating data documented within NUREG-1366 and NRC Generic Letter 93-05, blockage has not been a significant or recurring problem, and three of the four events identified have been attributed to construction errors.

Based upon the information provided above, and the "Compatibility with Operating Experience" discussed below, the proposed relaxation of the spray nozzle surveillance interval will not reduce the level of assurance that the CS system will function as designed to mitigate applicable design basis accidents. Rather, this amendment will allow outage resources to better focus upon maintenance and surveillance activities that will provide a more direct safety benefit.

Compatibility with Operating Experience

A review of historical spray nozzle surveillance data was performed to establish the applicability to HBRSEP of experiences documented within NUREG-1366 and NRC

Generic Letter 93-05. This review encompassed five separate tests that were performed over the operating history of the plant. The first test was a pre-operational test completed in May, 1970. Two subsequent tests were performed under plant test procedures and were completed on November 28, 1975, and September 19, 1980. Two later tests were performed under an engineering surveillance test and were completed on March 6, 1986, and January 14, 1991.

CONCLUSIONS

Review of this surveillance data found that each test was completed satisfactorily with no discrepancies identified. All spray nozzles were found to operate properly with no evidence of blockage or clogging. Based upon this performance history, the proposed surveillance relaxation is fully consistent with, and bounded by, the operating experience and basis information provided within NUREG-1366 and NRC Generic Letter 93-05.

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10 CFR 50.92 EVALUATION

The NRC has provided standards in 10 CFR 50.92(c) for determining whether a significant hazards consideration exists. A proposed amendment to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated, (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in a margin of safety. Carolina Power & Light Company has reviewed this requested change and concluded that its adoption would not involve a significant hazards consideration. The bases for this conclusion are as follows.

Requested Change

The requested change will revise the containment spray (CS) nozzle surveillance interval from five years to 10 years. This change represents a line-item improvement as described within NRC Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation." The underlying justification and safety significance of this relaxation are discussed within NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements," published December, 1992. Also, minor wording changes are proposed to more closely model the wording provided within the Standard Technical Specifications for Westinghouse Plants (i.e., NUREG-1431).

Also, a change to the associated Basis information is included. This Basis change is intended to improve the level of detail and quality of information provided by the Technical Specifications (TS), and is further intended to upgrade the TS with information available within the Standard TS.

Basis

This change does not involve a significant hazards consideration for the following reasons.

1. The requested change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The requested change extends the surveillance interval for performance of qualitative flow testing of the CS nozzles. A revision to this surveillance interval can in no way increase the probability of any accident previously evaluated.

Containment spray nozzle testing is not intended to track degradation of equipment by monitoring or trending performance. Rather, this surveillance constitutes a test of the passive design of the spray nozzles, i.e., it merely demonstrates whether the nozzles are or are not blocked or clogged. Based upon industry and plant-specific operating experience, a single failure rendering a significant number of nozzles inoperable as a result of blockage is considered highly unlikely. Since the reliability or functioning of the spray nozzles will not be affected by the revised surveillance interval, the consequences of any accident previously evaluated will not be increased. The requested change does not affect the physical design or operation of the plant, does not alter assumptions contained within the Updated Final Safety Analysis Report, and will not affect other Technical Specifications that preserve safety analysis assumptions. Therefore, operation of the facility in accordance with the requested change will not involve a significant increase in the consequences of any accident previously evaluated.

 The requested change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

The requested change extends the surveillance interval for performance of qualitative flow testing of the CS nozzles. This change in the spray nozzle surveillance interval will not change or affect the physical plant or the modes of plant operation defined within the facility Operating License. This change does not involve the addition or modification of plant equipment, nor does it alter the design or operation of plant systems. Therefore, operation of the facility in accordance with the requested change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The requested change does not involve a significant reduction in the margin of safety.

The requested change extends the surveillance interval for performance of qualitative flow testing of the CS nozzles. This revised surveillance interval will not change or

otherwise influence the degree of operability assumed for the CS system within the plant safety analyses. As demonstrated by plant-specific and industry experience, an operational failure of the containment spray nozzles is considered highly unlikely. Since prior testing has demonstrated proper functioning of the CS spray nozzles, and operational single-failures are considered highly unlikely, a reduction in testing frequency should not affect the ability of the CS system to mitigate the affects of a large loss-of-coolant or steam release accident. Therefore, operation of the facility in accordance with the requested change will not result in a significant reduction in the margin or safety.

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ENVIRONMENTAL CONSIDERATIONS

10 CFR 51.22(c)(9) provides criteria for identification of licensing and regulatory actions eligible for categorical exclusion from performing an environmental assessment. A proposed amendment to an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant hazards consideration; (2) result in a significant change in the types or significant increase in the amounts of any effluent that may be released offsite; (3) result in an increase in individual or cumulative occupational radiation exposure. Carolina Power & Light Company has reviewed this request and determined that the requested 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 of the amendment. The basis for this determination follows.

Requested Change

The requested change will revise the containment spray (CS) nozzle surveillance interval from five years to 10 years. This change represents a line-item improvement as described within NRC Generic Letter 93-05, "Line-Item Technical Specifications Improvements to Reduce Surveillance Requirements for Testing During Power Operation." The underlying justification and safety significance of this relaxation are discussed within NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements," published December, 1992. Also, minor wording changes are proposed to more closely model the wording provided within the Standard Technical Specifications for Westinghouse Plants (i.e., NUREG-1431).

Also, a change to the associated Basis information is included. This Basis change is intended to improve the level of detail and quality of information provided by the Technical Specifications (TS), and is further intended to upgrade the TS with information available within the Standard TS.

Basis

The 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 Enclosure 3, the requested change does not involve a significant hazards consideration.
- 2. The requested change does not result in a significant change in the types or significant increase in the amounts of any effluent that may be released offsite.

The requested change extends the surveillance interval for performance of qualitative flow testing of the CS nozzles. The extended interval will reduce the frequency of testing, and the scope of testing will remain unchanged. Therefore, the requested change will not involve a significant change or increase in the types or amounts of any effluent that may be released offsite.

3. The requested change does not result in an increase in individual or cumulative occupational radiation exposure.

As described above, the requested change extends the surveillance interval for performance of qualitative flow testing of the CS nozzles.

The requested change will not alter postulated post-accident radiation exposures for either plant employees or members of the public. The requested change does not change the method of accomplishing this surveillance testing, nor does it introduce any new maintenance or testing requirements. This change relaxes the surveillance interval such that cumulative exposures due to test performance will actually be reduced. A further benefit of the requested change will be less frequent work activities on internally contaminated systems associated with the installation of test equipment and the actual performance of spray nozzle testing, hence total occupational dose from testing will be reduced.

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PAGE CHANGE INSTRUCTIONS

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| 4.5-2 | 4.5-2 |
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| 4.5-4 | 4.5-4 |