



Serial: RNP-RA/02-0018

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United States Nuclear Regulatory Commission
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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23

REQUEST FOR TECHNICAL SPECIFICATIONS CHANGE
REGARDING CONTAINMENT VESSEL SPRAY NOZZLE TEST FREQUENCY

Ladies and Gentlemen:

In accordance with the provisions of the Code of Federal Regulations, Title 10 (10 CFR), Part 50.90, Carolina Power & Light (CP&L) Company is submitting a request for an amendment to the Technical Specifications (TS) for H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2. The proposed amendment would modify the TS requirements for containment vessel spray nozzle testing specified by Surveillance Requirement (SR) 3.6.6.8.

Specifically, the proposed change would revise the testing frequency for the containment spray nozzles from "10 years" to "Following activities which could result in nozzle blockage." This proposed change is similar to a change approved for the Perry Nuclear Power Plant, Unit 1, in a safety evaluation dated June 29, 2000 (ADAMS Accession Number ML003730258).

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 of the proposed change, a discussion of a finding of no significant hazards, and a discussion of the environmental impact consideration.

Attachment III provides a markup of the affected TS page.

Attachment IV provides the retyped page for the proposed TS.

Attachment V provides the annotated TS Bases page. Since the Bases are not a formal part of the TS, this page is included for information only.

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.

CP&L requests approval of the proposed license amendment by September 1, 2002, with the amendment being implemented within 30 days of approval. The approval date was selected to support activities in the upcoming Refueling Outage (RO)-21, currently scheduled to begin on October 12, 2002.

If you have any questions concerning this matter, please contact Mr. C. T. Baucom.

Sincerely,



B. L. Fletcher III

Manager - Regulatory Affairs

CWS/cws

Attachments

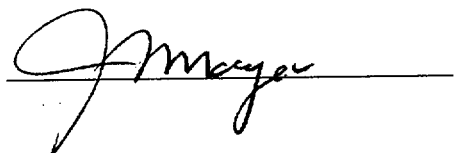
- I. Affidavit
- II. Request for Technical Specifications Change Regarding Containment Vessel Spray Nozzle Test Frequency
- III. Markup of Technical Specifications Page
- IV. Retyped Technical Specifications Page
- V. Annotated Technical Specifications Bases Page (For Information Only)

c: Mr. T. P. O'Kelley, Director, Bureau of Radiological Health (SC)
Mr. L. A. Reyes, NRC, Region II
Mr. A. G. Hansen, NRC, NRR
NRC Resident Inspector, HBRSEP
Attorney General (SC)

Affidavit

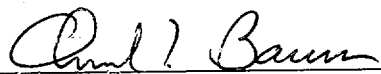
State of South Carolina
County of Darlington

J. W. Moyer, having been first duly sworn, did depose and say that the information contained in letter RNP-RA/02-0018 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.



Sworn to and subscribed before me

This 21st day of February 2002



Notary Public for South Carolina

My commission expires: 9/13/2009

**H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
REQUEST FOR TECHNICAL SPECIFICATIONS CHANGE
REGARDING CONTAINMENT VESSEL SPRAY NOZZLE TEST FREQUENCY**

Description of Current Condition

H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, Technical Specifications (TS) Surveillance Requirement (SR) 3.6.6.8 requires verification that each containment spray nozzle is unobstructed. This verification is required to be performed once per 10 years.

Description of the Proposed Change

The proposed change will revise the testing frequency for the containment spray nozzles as specified in TS Section 3.6.6, "Containment Spray and Cooling Systems," SR 3.6.6.8. Specifically, the testing frequency for the containment spray nozzles is revised from "10 years" to "Following activities which could result in nozzle blockage."

The changes to the Bases associated with SR 3.6.6.8 are included as Attachment V, for information only. The Bases are not part of the TS, and are not a formal part of this license amendment request. The Bases are revised in accordance with HBRSEP, Unit No. 2, TS 5.5.14, "Technical Specification (TS) Bases Control Program."

Safety Assessment

Background

The primary purpose of the Containment Spray System (CSS) is to spray cool water into the containment atmosphere when appropriate in the event of a loss-of-coolant accident (LOCA) or main steam line break (MSLB) and thereby ensure that containment pressure does not exceed its design value. A second purpose served by the CSS is to remove elemental iodine from the containment atmosphere should it be released in the event of a LOCA.

The principal components of the CSS are two pumps, one spray additive tank, spray ring headers and nozzles, and the necessary piping and valves. The spray nozzles are stainless steel and have a 3/8 inch diameter orifice. The spray nozzles, of the ramp bottom design, are not subject to clogging by particles less than 1/4 inch in maximum dimension. The nozzles are connected to six ring headers located within the dome of the containment building. There are 116 Spraco Model 1713 nozzles distributed on the six headers. The piping for the CSS is constructed of stainless steel. The CSS is described in the Updated Final Safety Analysis Report (UFSAR), Section 6.5.2. In addition, the UFSAR, Figure 6.2.2-1, provides a drawing of the system.

Initially, the containment spray nozzle availability was tested by blowing smoke through the nozzles and observing flow through the various nozzles in the containment. Currently,

testing is performed by monitoring the flow of hot air through the nozzles using infrared thermography.

SR 3.6.6.8 was last performed in January 1991. HBRSEP, Unit No. 2, is currently utilizing the 25% extension of the surveillance interval provided by SR 3.0.2. Although SR 3.6.6.8 was scheduled to be performed during Refueling Outage (RO)-20, in April/May 2001, the SR was deferred to RO-21 due to the maintenance workload scheduled for RO-20. RO-21 is currently scheduled for October 2002.

Need for Revision of Requirement

Performance of SR 3.6.6.8 tests for CSS line and nozzle blockage. The design of the CSS and cleanliness controls utilized during maintenance activities ensure that line or nozzle blockage is unlikely. Performance of SR 3.6.6.8 results in unwarranted occupational radiation exposure without a commensurate increase in system reliability or performance. Additionally, outage delays and the potential for personnel contamination events have occurred due to trapped moisture in the CSS spray lines being ejected into the containment vessel atmosphere during the surveillance.

Justification

Previous testing, the most recent completed in January 1991, has verified that the spray nozzles are not blocked. A review of maintenance history since January 1991, indicates that eleven maintenance work orders have been performed that required opening the system. A review of these work packages has determined that cleanliness controls were utilized for each of these activities. This review verified that there have been no losses of cleanliness controls on this system since January 1991.

Normal plant operation and maintenance activities at HBRSEP, Unit No. 2, are not expected to require performance of this SR. The current foreign material exclusion (FME) program requires that any breaches of system boundaries during maintenance activities be appropriately protected from the intrusion of foreign material. These controls normally include, but are not limited to, temporary covers for open pipes, in-progress and closeout inspections, and accounting for tools and materials during work performance. The FME program provides guidelines that establish cleanliness requirements and accounting of material, tools, and parts to preclude the introduction of foreign materials into systems or components during maintenance, modification, test, or inspection activities. The program requires management involvement in the event FME integrity is lost or cannot be assured.

In the event of some unanticipated occurrence, such as a loss of FME integrity when working within the CSS boundary, the FME program requires immediate notification of the responsible Carolina Power and Light (CP&L) Supervisor and requires the stoppage of all work in the FME Area (FMEA). The responsible CP&L Supervisor determines those actions required for work to resume. This program provides for the appropriate evaluations to

determine those remedial actions that would be necessary to ensure that the spray nozzles are operable prior to being returned to service.

In addition to the processes and controls described above, the current HBRSEP, Unit No. 2, post-maintenance testing procedure requires an air or smoke test to verify each spray nozzle is unobstructed following any maintenance that could introduce contaminants or objects into the spray header that could result in blockage of the spray nozzles.

The passive design of the nozzles, the materials of construction of the piping and nozzles, and the processes and programs currently in place at HBRSEP, Unit No. 2, provide assurance that the potential for nozzle obstruction is very low. The requirement to verify nozzles are not obstructed once per 10 years is therefore unnecessary. Verifying that the nozzles are not obstructed following activities that could result in nozzle blockage is the more appropriate frequency.

The NRC has previously reviewed and approved a similar change for Perry Nuclear Power Plant, Unit No. 1, in a safety evaluation dated June 29, 2000 (ADAMS Accession Number ML003730258).

No Significant Hazards Consideration Determination

Carolina Power & Light (CP&L) Company is proposing a change to the Appendix A, Technical Specifications (TS), of Facility Operating License No. DPR-23, for H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2. This change will revise the testing frequency for the containment spray nozzles as specified in TS Section 3.6.6, "Containment Spray and Cooling Systems," Surveillance Requirement (SR) 3.6.6.8. Specifically, the testing frequency for the Containment Spray System nozzles is revised from "10 years" to "following activities which could result in nozzle blockage."

An evaluation of the proposed change has been performed in accordance with 10 CFR 50.91(a)(1) regarding no significant hazards considerations using the standards in 10 CFR 50.92(c). A discussion of these standards as they relate to this amendment request follows:

1. The Proposed Change Does Not Involve a Significant Increase in the Probability or Consequences of an Accident Previously Evaluated.

The proposed change revises the Surveillance frequency from once per 10 years to following activities that could result in nozzle blockage. The Containment Spray System is not considered as an initiator of any analyzed accident. The proposed change does not have a detrimental impact on the integrity of any plant structure, system, or component that initiates an analyzed accident. The proposed change will not alter the operation of, or otherwise increase the failure probability of any plant equipment that initiates an analyzed accident. As a result, the probability of any accident previously evaluated is not significantly increased.

The proposed change revises the Surveillance frequency. Reduced testing is acceptable where operating experience has shown that components routinely pass the Surveillance when performed at the specified interval. The system design and construction materials provide assurance that the production of significant corrosion products is unlikely. Since activities that could introduce foreign material are the most likely cause for obstruction, testing or inspection following such an activity would verify that the nozzles are unobstructed and capable of performing their safety function. Such events would necessarily involve a substantive breakdown in foreign material controls during such activities. As a result, the consequences of any accident previously evaluated are not significantly affected.

Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. The Proposed Change Does Not Create the Possibility of a New or Different Kind of Accident From Any Previously Evaluated.

The proposed change to the test frequency for the Containment Spray System nozzles does not involve the use or installation of new equipment. Currently installed equipment is not operated in a new or different manner. No new or different system interactions are created, and no new processes are introduced.

Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The Proposed Change Does Not Involve a Significant Reduction in the Margin of Safety.

The margin between containment pressure response and containment design pressure will not be affected because the design and functioning of the Containment Spray System is unchanged. Since the system is not susceptible to corrosion induced obstruction, nor is the introduction of foreign material from the exterior likely, the proposed surveillance frequency is sufficient to provide high confidence that the Containment Spray System will be available to provide the flow necessary in the event that the safety function is required. Therefore, the capacity of the system will remain unchanged.

Therefore, this change does not involve a significant reduction in a margin of safety.

Based on the above discussion, CP&L has determined that the requested change does not involve a significant hazards consideration.

Environmental Impact Consideration

10 CFR 51.22(c)(9) provides criteria for identification of licensing and regulatory 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. Carolina Power & Light (CP&L) Company 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:

CP&L is proposing a change to the Appendix A, Technical Specifications (TS), of Facility Operating License No. DPR-23, for H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2. This change will revise the testing frequency for the Containment Spray System nozzles as specified in TS Section 3.6.6, "Containment Spray and Cooling Systems," Surveillance Requirement (SR) 3.6.6.8. Specifically, the testing frequency for the spray nozzles is revised from "10 years" to "following activities which could result in nozzle blockage."

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 revises the required frequency for containment spray nozzle testing. The change results in no physical modification of the plant. The change does not result in an increase in 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 will not affect the types or increase the amounts of any effluents released offsite.
3. The proposed change will not result in changes to the normal operation of the facility. The proposed change revises the frequency for containment spray nozzle testing. This change will not result in a change in the level of controls or methodology used for processing of radioactive effluents or handling solid radioactive waste, nor will the proposal result in any change in the normal radiation levels in the plant. Therefore,

there will be no increase in individual or cumulative occupational radiation exposure resulting from this change.

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Attachment III to Serial: RNP-RA/02-0018
2 Pages

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
REQUEST FOR TECHNICAL SPECIFICATIONS CHANGE
REGARDING CONTAINMENT VESSEL SPRAY NOZZLE TEST FREQUENCY

MARKUP OF TECHNICAL SPECIFICATIONS PAGE

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6.2	Operate each containment cooling train fan unit for ≥ 15 minutes.	31 days
SR 3.6.6.3	Verify cooling water flow rate to each cooling unit is ≥ 750 gpm.	31 days
SR 3.6.6.4	Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.6.6.5	Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	18 months
SR 3.6.6.6	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	18 months
SR 3.6.6.7	Verify each containment cooling train starts automatically on an actual or simulated actuation signal.	18 months
SR 3.6.6.8	Verify each spray nozzle is unobstructed.	10 years

Following activities which could result in nozzle blockage

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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
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RETYPE TECHNICAL SPECIFICATIONS PAGE

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.6.2	Operate each containment cooling train fan unit for ≥ 15 minutes.	31 days
SR 3.6.6.3	Verify cooling water flow rate to each cooling unit is ≥ 750 gpm.	31 days
SR 3.6.6.4	Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
SR 3.6.6.5	Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	18 months
SR 3.6.6.6	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	18 months
SR 3.6.6.7	Verify each containment cooling train starts automatically on an actual or simulated actuation signal.	18 months
SR 3.6.6.8	Verify each spray nozzle is unobstructed.	Following activities which could result in nozzle blockage

United States Nuclear Regulatory Commission
Attachment V to Serial: RNP-RA/02-0018
2 Pages

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
REQUEST FOR TECHNICAL SPECIFICATIONS CHANGE
REGARDING CONTAINMENT VESSEL SPRAY NOZZLE TEST FREQUENCY

ANNOTATED TECHNICAL SPECIFICATIONS BASES PAGE

(For Information Only)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.6.6.7

This SR requires verification that each containment cooling train actuates upon receipt of an actual or simulated safety injection signal. The 18 month Frequency is based on engineering judgment and has been shown to be acceptable through operating experience. See SR 3.6.6.5 and SR 3.6.6.6, above, for further discussion of the basis for the 18 month Frequency.

SR 3.6.6.8

With the containment spray inlet valves closed and the spray header drained of any solution, low pressure air or smoke can be blown through test connections. This SR ensures that each spray nozzle is unobstructed and provides assurance that spray coverage of the containment during an accident is not degraded. ~~Due to the passive design of the nozzle, a test at 10 year intervals is considered adequate to detect obstruction of the nozzles.~~

REFERENCES

1. UFSAR, Section 3.1.
2. 10 CFR 50, Appendix K.
3. UFSAR, Section 6.2.
4. UFSAR, Section 9.4.
5. ASME, Boiler and Pressure Vessel Code, Section XI.

Performance is required following activities which could result in nozzle blockage. Such activities may include: (1) a major configuration change; or (2) a loss of foreign material control such that the final condition of the system cannot be assured. The frequency is considered adequate due to the passive design of the nozzles, the stainless steel construction of the piping and nozzles, and the use of foreign material exclusion controls during system opening.