



DEC 11 2007

SERIAL: HNP-07-162
10 CFR 54

U. S. Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

Subject: SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400 / LICENSE NO. NPF-63

LICENSE RENEWAL APPLICATION AMENDMENT 5: ADDITIONAL
QUESTIONS REGARDING FIRE PROTECTION AND AGING
MANAGEMENT OF PRESSURIZER AND STEAM GENERATOR
COMPONENTS

- References:
1. Letter from Cornelius J. Gannon to the U. S. Nuclear Regulatory Commission (Serial: HNP-06-136), "Application for Renewal of Operating License," dated November 14, 2006
 2. Letter from Dave Corlett to the U. S. Nuclear Regulatory Commission (Serial: HNP-07-032), "Response to Request for Additional Information 2.3.3.31-1 and 2.3.3.31-2 for License Renewal," dated March 23, 2007
 3. Letter from Thomas J. Natale to the U. S. Nuclear Regulatory Commission (Serial: HNP-07-112), "License Renewal Application, Amendment 1: Changes Resulting from Responses to Requests for Additional Information, Site Audit Questions, and Applicant-Identified Changes," dated August 20, 2007
 4. Letter from Thomas J. Natale to the U. S. Nuclear Regulatory Commission (Serial: HNP-07-115), "Responses to Requests for Additional Information - License Renewal Application: Questions Related to Scoping of Fire Protection Components, Engineered Safety Features, and Civil Structures," dated September 5, 2007

Ladies and Gentlemen:

On November 14, 2006, Carolina Power & Light Company (CP&L), doing business as Progress Energy Carolinas, Inc., requested the renewal of the operating license for the Shearon Harris Nuclear Power Plant, Unit No. 1, also known as the Harris Nuclear Plant (HNP), to extend the term of its operating license an additional 20 years beyond the current expiration date.

Progress Energy Carolinas, Inc.
Harris Nuclear Plant
P. O. Box 165
New Hill, NC 27562

A126
A006
NRR

In recent discussions between CP&L and the Nuclear Regulatory Commission staff, CP&L was requested to provide additional information concerning: (1) fire protection issues previously addressed in CP&L letters dated March 23, 2007 and September 5, 2007, (2) managing the aging effects of pressurizer thermal sleeves, and (3) managing the aging effects of steam generator feedwater rings. Aging management of thermal sleeves had been addressed previously in a CP&L letter dated August 20, 2007. This letter provides the requested information. The enclosed information regarding fire barrier materials and managing the aging effects of pressurizer thermal sleeves involves changes to the information submitted in the HNP License Renewal Application (LRA).

Based on the above, this letter contains two enclosures. Enclosure 1 provides the additional information requested by the NRC staff. Enclosure 2 is a table that identifies changes to the LRA; these changes constitute Amendment 5 to the LRA. Neither this letter nor the enclosures contain any new or revised regulatory commitments.

Please refer any questions regarding this submittal to Mr. Roger Stewart, Supervisor - License Renewal, at (843) 857-5375.

I declare, under penalty of perjury, that the foregoing is true and correct
(Executed on **DEC 11 2007**).

Sincerely,



Thomas J. Natale
Manager - Support Services
Harris Nuclear Plant

TJN/mhf

Enclosures:

1. Responses to Additional Questions Regarding Fire Protection and Aging Management of Pressurizer and Steam Generator Components
2. Amendment 5 Changes to the License Renewal Application

cc:

Mr. P. B. O'Bryan (NRC Senior Resident Inspector, HNP)
Ms. B. O. Hall (Section Chief, N.C. DENR)
Mr. M. L. Heath (NRC License Renewal Project Manager, HNP)
Mr. V. M. McCree (NRC Acting Regional Administrator, Region II)
Ms. M. G. Vaaler (NRC Project Manager, HNP)

Responses to Additional Questions Regarding Fire Protection and Aging Management of Pressurizer and Steam Generator Components

Background

On November 14, 2006, Carolina Power & Light Company (CP&L), doing business as Progress Energy Carolinas, Inc., requested the renewal of the operating license for the Shearon Harris Nuclear Power Plant, Unit No. 1, also known as the Harris Nuclear Plant (HNP), to extend the term of its operating license an additional 20 years beyond the current expiration date.

In recent discussions between CP&L and the Nuclear Regulatory Commission (NRC) staff, CP&L was requested to provide additional information concerning: (1) fire protection issues previously addressed in CP&L letters dated March 23, 2007, and September 5, 2007, (2) managing the aging effects of pressurizer thermal sleeves, and (3) managing the aging effects of steam generator feedwater rings. Aging management of thermal sleeves had been addressed previously in a CP&L letter dated August 20, 2007. This letter provides the requested information.

Table of Contents	Page
NRC RAI 2.3.3.31-1 (Follow-up)	1
NRC RAI 2.3.3.31-3 (Follow-up) and RAI 2.3.3.31-5 (Follow-up)	2
NRC Audit Question 3.1-FS-50 (Follow-up)	3
NRC RAI 3.1.2.2.14-1	4

NRC RAI 2.3.3.31-1 (Follow-up)

The response to a Request for Additional Information (RAI) in CP&L letter dated March 23, 2007, discussed components/commodities related to fire protection. Fire-barrier assemblies were included in the discussion. It is not clear from the License Renewal Application (LRA), as augmented by the RAI response, how the fire barrier materials Hemyc™ and Promatec MT™ are addressed.

Response

Regarding fire barrier assemblies, LRA Plant-Specific Note 565 to Tables 3.5.2-2, 3.5.2-12, and 3.5.2-17 reads:

Fire Barrier component types include the following: Thermo Lag walls, Gypsum Board walls, Cable Fire Wraps, and Cable Tray Breaks.

The fire wraps referred to in this note include Hemyc™, Interam™ and Promatec MT™. Therefore, Plant-Specific Note 565 will be revised to specifically mention these materials. An LRA amendment is required to document this change.

NRC RAI 2.3.3.31-3 (Follow-up) and RAI 2.3.3.31-5 (Follow-up)

The responses to RAI 2.3.3.31-3 and RAI 2.3.3.31-5, in CP&L letter dated September 5, 2007, state the rationale for not including the Auxiliary Boiler Fuel Oil Storage Tank manual foam suppression system in the scope of license renewal although it is described in the discussion of NRC Branch Technical Position 9.5-1, item C.7.r in the HNP FSAR. Clarify these responses by providing the basis for the requirement to protect these fuel oil tanks with a manual foam suppression system.

Response

Regarding the Auxiliary Boiler Fuel Oil Storage Tank manual foam suppression system, a review of historical documentation was performed in concert with interviews with knowledgeable plant personnel. By letter to CP&L dated October 1978, the HNP Architect/Engineer recommended that a field-purchased and -installed, semi-fixed mechanical foam system be provided for the Auxiliary Boiler Fuel Oil Storage Tanks. CP&L approved the recommendation in December 1978 and requested that the Architect/Engineer provide the details of the installation. The details of the installation were transmitted in December 1982 with a recommendation that the foam system details be submitted to Nuclear Mutual Limited for review and approval. No additional requirements were identified at the time.

By letter from A. B. Cutter (CP&L) to H. R. Denton (NRC), Serial: NLS-86-188, dated June 4, 1986, CP&L incorporated the fire protection program into Chapter 9 of the FSAR. In addition, the fire protection technical specification requirements were removed from the HNP Technical Specifications. Technical Specification 3.7.10.4, Yard Fire Hydrant and Hydrant Hose Houses, stated that the yard fire hydrants and associated hydrant hose houses given in Technical Specification Table 3.7-5 shall be operable. Table 3.7-5 included the Emergency Service Water Intake Structure, Emergency Service Water Screening Structure, Diesel Generator Building, and the Diesel Fuel Oil Storage Tank Building. The Technical Specification Bases stated:

The OPERABILITY of the Fire Suppression Systems ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety-related equipment is located.

The Auxiliary Boiler Fuel Oil Storage Tank area was not included. This provides additional insight to the conclusion provided in the response to RAI 2.3.3.31-3 that the foam fire suppression system components do not support or perform any system intended function and are, therefore, not subject to AMR per 10 CFR 54.21(a)(1).

In the event of a fire in the Auxiliary Boiler Fuel Oil Storage Tank area, the Out Building Fire Pre-Plans procedure states that the primary access route is from hydrant 1FP-521 east of the fuel oil tanks with a fog nozzle; and, for fire extinguishment:

- A hose trailer is needed,

- Hydrant 1FP-521 east of tanks is equipped with a fog nozzle,
- The backup hydrant is south of 1FP-521, and
- Hydrant 1FP-523, north of gas storage, may also be used to attack the area from the west.

In addition, two 50 ft. sections of 2½ inch fire hose, a double female adapter, adjustable wrench and a pickup tube are required to connect the eductor for each tank to the hydrant in order to apply 150 gallons of foam concentrate to extinguish a fire in the diked area.

Based on the preceding discussion, the installation of the manual foam suppression system for the Auxiliary Boiler Fuel Oil Storage Tanks was based on commercial requirements and not related to compliance with the fire protection rule.

NRC Audit Question 3.1-FS-50 (Follow-up)

LRA Table 3.1.2-5 includes Aging Management Review (AMR) entries for the pressurizer spray nozzle and surge nozzle thermal sleeves under exposure to treated water. In the applicable AMR line items used to assure the M-6 intended function of the thermal sleeves (i.e., a thermal insulation function), the applicant concludes that there are not any aging effects requiring management. In these AMR items the applicant uses Footnote 113 to clarify that loss of material and cracking are applicable aging effects but that these aging effects do not need management because initiation of these aging effects will not impact the ability of the thermal sleeve to perform its M-6 thermal insulation function. Provide the technical basis for concluding that the presence of loss of material and cracking in these thermal sleeves are not capable of reducing or eliminating the ability of the thermal sleeves to insulate the pressurizer spray and surge nozzles from the impacts of thermal cycling.

Audit Question 3.1-FS-50 (Follow-Up) Response

In lieu of providing a technical basis for the AMR results in the LRA, the AMR line items applicable to both the Pressurizer Surge Nozzle Thermal Sleeve and the Pressurizer Spray Nozzle Thermal Sleeve will be revised to change the aging effects in Treated Water (Inside) and Treated Water (Outside) from "None" to Cracking due to Stress Corrosion Cracking (SCC) and Loss of Material due to Crevice and Pitting Corrosion. For these components, SCC will be managed by a combination of the Water Chemistry and One-Time Inspection Programs and Loss of Material will be managed by the Water Chemistry Program. An LRA amendment is required to document these changes.

NRC RAI 3.1.2.2.14-1

Section 3.1.2.2.14 of the LRA states:

Wall thinning due to flow-accelerated corrosion could occur in steam generator feedwater inlet rings and supports. HNP uses the One-Time Inspection Program to manage loss of material due to flow-accelerated corrosion of the steam generator feedwater distribution ring and related components.

Clarify how this one-time inspection will manage this aging effect.

RAI 3.1.2.2.14-1 Response

HNP inspected the interior of the feedwater inlet ring of the "B" and "C" steam generators during Refueling Outage 13 in 2006. This inspection was accomplished by employing remote visual equipment with recording capabilities. The interior inspection performed in 2006 will provide a basis for comparison with the results of a future inspection in accordance with the One-Time Inspection Program. Alternative techniques to remote visual may be utilized to inspect the feedwater distribution ring and related components for loss of material due to flow accelerated corrosion depending on industry operating experience with the Westinghouse Delta 75 steam generators and development of additional inspection techniques.

Amendment 5 Changes to the License Renewal Application

Source of Change	License Renewal Application Amendment 5 Changes																												
NRC Additional Question Regarding Fire Barrier Materials	Plant-Specific Note 565 on Page 3.5-203 of the LRA is amended to read: Fire Barrier component types include the following: Thermo Lag walls, Gypsum Board walls, Cable Fire Wraps (including Hemyc™, Interam™, and Promatec MT™), and Cable Tray Breaks.																												
NRC Additional Question Regarding Aging Management of Pressurizer Thermal Sleeves	On LRA Page 3.1-120, revise the AMR lines applicable to both the Pressurizer Surge Nozzle Thermal Sleeve and the Pressurizer Spray Nozzle Thermal Sleeve to change the aging effects in Treated Water (Inside) and Treated Water (Outside) from "None" to the following:																												
	<table border="1"> <tr> <td data-bbox="421 634 594 699">Treated Water (Inside)</td> <td data-bbox="602 634 867 699">Cracking due to SCC</td> <td data-bbox="875 634 1123 699">Water Chemistry and One-Time Inspection</td> <td data-bbox="1131 634 1230 699"></td> <td data-bbox="1239 634 1338 699"></td> <td data-bbox="1346 634 1437 699">J</td> </tr> <tr> <td data-bbox="421 703 594 819"></td> <td data-bbox="602 703 867 819">Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion</td> <td data-bbox="875 703 1123 819">Water Chemistry</td> <td data-bbox="1131 703 1230 819">IV.C2-15 (RP-23)</td> <td data-bbox="1239 703 1338 819">3.1.1-83</td> <td data-bbox="1346 703 1437 819">A</td> </tr> <tr> <td data-bbox="421 823 594 888">Treated Water (Outside)</td> <td data-bbox="602 823 867 888">Cracking due to SCC</td> <td data-bbox="875 823 1123 888">Water Chemistry and One-Time Inspection</td> <td data-bbox="1131 823 1230 888"></td> <td data-bbox="1239 823 1338 888"></td> <td data-bbox="1346 823 1437 888">J</td> </tr> <tr> <td data-bbox="421 892 594 1008"></td> <td data-bbox="602 892 867 1008">Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion</td> <td data-bbox="875 892 1123 1008">Water Chemistry</td> <td data-bbox="1131 892 1230 1008">IV.C2-15 (RP-23)</td> <td data-bbox="1239 892 1338 1008">3.1.1-83</td> <td data-bbox="1346 892 1437 1008">A</td> </tr> </table>	Treated Water (Inside)	Cracking due to SCC	Water Chemistry and One-Time Inspection			J		Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry	IV.C2-15 (RP-23)	3.1.1-83	A	Treated Water (Outside)	Cracking due to SCC	Water Chemistry and One-Time Inspection			J		Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry	IV.C2-15 (RP-23)	3.1.1-83	A				
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Also, replace the text of Plant-Specific Note 113 on Page 3.1-154 with the words "Not Used."																													