Progress Energy

Serial: HNP-07-128

SEP 27 2007

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

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/LICENSE NO. NPF-63
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION (RAI)
REGARDING THE SPRING 2006 REFUELING OUTAGE 13 STEAM GENERATOR
TUBE INSPECTIONS

References:
1. Letter from D. H. Corlett to the Nuclear Regulatory Commission (Serial: HNP-06-073), "15-Day Special Report Steam Generator Tube Plugging During RFO-13," dated May 05, 2006
2. Letter from D. H. Corlett to the Nuclear Regulatory Commission (Serial: HNP-06-081), "90-Day Inservice Inspection (ISI) Summary Report," dated August 10, 2006
3. Letter from D. H. Corlett to the Nuclear Regulatory Commission (Serial: HNP-07-039), "One-Year Special Report Steam Generator Tube Inservice Inspection Results," dated April 20, 2007

Ladies and Gentlemen:

By letter dated September 5, 2007, the Nuclear Regulatory Commission requested additional information to facilitate the review of the above referenced Refueling Outage (RFO) 13 steam generator (SG) tube inspection reports.

The Attachment provides the requested additional information.

This document contains no new regulatory commitment.

Please refer any question regarding this submittal to me at (919) 362-3137.

Sincerely,

D. H. Corlett
Supervisor – Licensing/Regulatory Programs
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NRR

DHC/kms

Attachment: Response To The Request For Additional Information (RAI) Regarding The Spring 2006 Refueling Outage 13 Steam Generator Tube Inspections

cc: Mr. P. B. O'Bryan, NRC Sr. Resident Inspector
Ms. B. O. Hall, N.C. DENR Section Chief
Ms. M. G. Vaaler, NRC Project Manager
Dr. W. D. Travers, NRC Regional Administrator

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(RAI) REGARDING THE SPRING 2006 REFUELING OUTAGE 13 STEAM
GENERATOR TUBE INSPECTIONS

Request 1:

On Page A1-2 of the letter dated April 20, 2007, you indicated that 10 tubes with loose part signals at the top of the tubesheet region on the hot-leg side of SG B were examined with a rotating coil. Please discuss the results of these rotating coil exams (i.e., were loose parts present, what were the loose parts, and were the loose parts removed), and discuss the results of any visual examinations in this area.

In addition, were all known foreign objects (other than the foreign object wedged between Tube Row 60 Column 45 (R60C45) and Tube R59C46 in SG A) in all three SGs removed? If not, please discuss what foreign objects were left inservice and the criteria used to determine which foreign objects are acceptable to leave inservice.

Response 1:

The tubes identified by eddy current with the Loose Part Signal calls were presented to the steam generator (SG) secondary inspection personnel. The SG secondary team visually inspected the region around the tubes noted with potential loose parts and observed a few small objects of minimal substance. The foreign matter that could be collected (i.e., that substance that had some mass) reported by eddy current was retrieved.

While various items were retrieved from within the SGs, there were some very small objects with minimal mass that were not retrieved. The decision to leave these objects was based on a retrieval of several objects from the steam generators which allowed a comparison of the relative size of the object being observed in the remote visual inspection probe versus the significance of the objects that were being retrieved. As an example, during the in-bundle visual inspection which used a small diameter probe head, one of the larger items retrieved was approximately 3/8" in length, 1/16" in width, and less than 1/32" in height and had virtually no mass. This item was used as an aid in determining the significance of other small items identified by visual inspection in the in-bundle inspection.

NRC Request 2:

Please confirm that the four tubes inspected with a rotating coil in SG A to bound the wedged foreign object were adjacent/nearby to Tubes R60C45 and R59C46 which were plugged.

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Response 2:

The foreign object was wedged between the tubes R60C45 and R59C46. The object did not appear to extend beyond the diameter of the two tubes. These two tubes and two tubes adjacent to these tubes were inspected with a rotating coil exam. The four tubes examined completely surround the object.

NRC Request 3:

In the letter dated April 20, 2007, you indicated that one tube with a distorted dent signal around the 9th support plate on the cold-leg side of SG B was examined with a rotating coil. Please discuss whether the signal at this location has changed since the baseline inspection. If so, discuss the reason for the change and the basis for concluding no tube-wall degradation existed at this location.

Response 3:

A bobbin inspection reported there was a Distorted Dent Indication near the 9th support plate for one tube. The region around the reported location then received a rotating coil examination. The results of this examination indicated a "No Defect Found" condition. A review of bobbin data from the baseline inspection showed no change in the signal amplitude or phase in the region where the Distorted Dent Indication was reported.

NRC Request 4:

Please discuss whether the signal of the one tube examined by rotating coil in a slightly restricted area of the tube within the tubesheet in SG B has changed since the baseline inspection. If so, please discuss the reason for the change. In addition, what was the nature of the signal?

Response 4:

The tube had been inspected in past inspections with a 0.560 bobbin probe. During this inspection (April 2006), the bobbin probe would not pass a point approximately 22 inches up from the cold leg tube end. The bobbin probe was inserted from both the cold and hot leg sides of the tube and would not past this point. A 0.520 single +PT coil was inserted from the cold leg tube end and successfully examined the restricted area. The analysis of the +PT coil data does not indicate any type of restriction at 22 inches above the tube end. The results of the bobbin inspection and the rotating coil inspection were "No Detectable Degradation" for this tube. A review of the bobbin data from the preservice inspection

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(June 2001) and the first inspection following SG replacement (April 2003) did not indicate an abnormal transition, dent, or blockage, in the area of the restricted region.

NRC Request 5:

In the letter dated April 20, 2007, you indicated that two tubes on the hot-leg side and three tubes on the cold-leg with dent signals, located by the 8th and 9th tube support plates of SG C, were examined with a rotating coil. Please discuss whether the signals at these locations have changed since the baseline inspection. If so, discuss the reason for the changes and the basis for concluding no tube-wall degradation existed at these locations.

Response 5:

The dents were new small dents that appeared in the same relative location in the outer region of the upper tube support plates as dents identified during previous inspections. A few of the new dents were selected for examination with a rotating coil. Dents are sampled with a rotating coil exam to ensure tube integrity. There was "No Defect Found" as a result of these examinations. The reason for these new dents is not definitive. A survey was sent to the SG industry and one of the suggestions was the new dents could be potentially due to thermal transients. HNP does perform startup operations with auxiliary feedwater (AFW) fluid, which is colder than feedwater at normal plant operations. Although the plant did operate with AFW in service slightly longer than is typical while exiting the November 2004 refueling outage due to problems experienced with a feedwater valve, it is not possible to state with certainty that extended operation of AFW caused the new dents.