

August 12, 2005

Mr. J. A. Stall
Senior Vice President, Nuclear and
Chief Nuclear Officer
Florida Power and Light Company
P.O. Box 14000
Juno Beach, Florida 33408-0420

SUBJECT: ST. LUCIE UNIT 2 - REQUEST FOR ADDITIONAL INFORMATION
REGARDING PROPOSED STEAM GENERATOR REPAIR USING
WESTINGHOUSE ALLOY 800 LEAK LIMITING SLEEVES (TAC NO. MC5633)

Dear Mr. Stall:

By letter dated January 6, 2005, Florida Power and Light Company submitted a request to revise the St. Lucie Unit 2 Technical Specifications to allow use of Westinghouse Alloy 800 leak limiting sleeves as a steam generator repair method.

The NRC staff has reviewed your submittal and finds that the additional information contained in the enclosed Request for Additional Information is needed before we can complete the review. This was discussed with members of your staff and, on August 8, 2005, Mr. George Madden indicated that a response would be provided by October 31, 2005.

If you have any questions, please feel free to contact me at 301-415-3974.

Sincerely,

/RA/

Brendan T. Moroney, Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-389

Enclosure: As stated

cc w/encl: See next page

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REQUEST FOR ADDITIONAL INFORMATION

FLORIDA POWER AND LIGHT COMPANY

ST. LUCIE NUCLEAR POWER PLANT, UNIT 2

DOCKET NO. 50-389

Questions Regarding the Proposed Technical Specifications (TSs)

1. Proposed TS Section 4.4.5.2.b.4 states that these inspections will include both the tube end and the sleeve. Please clarify why the “tube end” is referenced in this specific section.
2. Proposed TS 4.4.5.4.a.10 states that the Westinghouse Alloy 800 sleeve design as described in WCAP-15918-P, Revision 2 is acceptable for tube repair. As written, it may be interpreted that other tube repair methods are also acceptable and may be used. Please modify this proposed TS to clearly state that Westinghouse Alloy 800 leak limiting sleeves are the only authorized sleeves to be installed at St. Lucie Unit 2.
3. In the proposed TSs, the repair sleeves are variously referred to as “Alloy 800 leak limiting sleeves, Alloy 800 sleeves, and sleeves.” Modify the TSs to provide consistent terminology of the referenced sleeves (e.g., Alloy 800 leak limiting sleeves).
4. In your C* license amendment request dated November 8, 2004 (L-2004-245, ML043150403), you proposed to revise TS Section 4.4.5.4 to define the depth of the required tube inspections and to clarify the plugging criteria within the tubesheet region. The final result of WCAP-16208-P for St. Lucie Unit 2 was a C* value of 10.1 inches. Your application states that any degradation below C* is shown by empirical test results and analyses to be acceptable, thereby, precluding an event with consequences similar to a postulated tube rupture event. Given that Alloy 800 leak limiting sleeves may be installed at locations below the top 10 inches of the tubesheet and may be part of the reactor coolant pressure boundary, discuss your plans for modifying your TSs to require an inspection of the portion of the sleeve/tube below the C* distance.
5. The proposed footnote, “Applies to original steam generators only,” is used in several TSs. It should be clarified, if necessary, to state that the Alloy 800 leak limiting sleeves will be plugged after one cycle of operation.
6. Proposed TS Section 4.4.5.3.4 states that all inservice Alloy 800 sleeves shall be inspected over the full length using a +Point™ coil or equivalent qualified technique during each refueling outage, and that the inspections will include both the tube end and the sleeve.
 - a. Historically, the U.S. Nuclear Regulatory Commission (NRC) staff has not specified a specific qualified technique for performing steam generator (SG) tube inspections. However, NRC staff interprets the SG tube inspection requirements

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in the TSs in conjunction with Appendix B to require that SG tube inspections be performed with qualified techniques capable of detecting all potential flaw types which may be present at inspection locations. Given that your submittal specifically referenced the +Point™ coil as the qualified technique that will be used to perform the sleeve inspections, discuss the +Point™ coil's ability to detect all forms of potential degradation in the sleeve/tube assembly. For example, discuss the +Point™ coil's effectiveness to detect circumferential cracks oriented at 45E relative to the tube's axis, etc. Alternatively, please remove reference to the +Point™ coil in your proposed TSs.

- b. Discuss your intent to perform eddy current inspections with qualified equipment and techniques that are capable of detecting all flaw types which may potentially be present in the pressure boundary of the sleeve/tube assembly.

Questions and Observations Regarding Westinghouse Report WCAP-15918-P, Rev. 2, July 2004 (3/4 - inch sleeves)

1. On Page 5 of Attachment 1, under "Sleeve Installation Requirements," there are references to WCAP-15918-NP, Revision 2, while other references to the WCAP are made according to WCAP-15918-P, Revision 2. Since the proprietary version of WCAP-15918 may contain additional information or requirements, please discuss the validity of the reference made to the non-proprietary version.
2. On Page 11 of Attachment 1, it was stated that the Westinghouse WCAP-15918-P, Revision 2 was updated to incorporate comments, add operating experience, and modify the definition of pressure boundary. There is no indication in the list of changes to the WCAP of a change to the definition of pressure boundary. Discuss how Revision 2 modified the pressure boundary definition when compared to the pressure boundary definitions in Revision 0 and Revision 1. If the pressure boundary was redefined, provide the technical analysis and testing supporting this redefinition.
3. On Page 5-2, Section 5.1, Background, it is stated that flaw detection capability was demonstrated for flaws \$60-percent throughwall for the parent tube and \$45-percent for the sleeve, based on cracking, in order to provide an operational margin between the detection limit and the structural limit for defect growth.

Given that wall thinning or other volumetric forms of degradation may affect the sleeve, discuss the structural limits for these degradation mechanisms (including the assumptions on the axial/circumferential extent and the basis for these assumptions). Confirm that the techniques employed during the inspection will be capable to detect sleeve degradation at or below these structural limits. In addition, discuss the possibility that the flaw could grow beyond these limits in the period of time between inspections.

4. Figure 8-2, System Schematic for "Worst" Case CE Plant with Effective Length Between Lower Joint and Last Upper Joint, is repeated on page 8-57 in place of Figure 8-3. Please provide a copy of Figure 8-3 or confirm that Figure 8-3 is not applicable to St. Lucie Unit 2.

Mr. J. A. Stall
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