From: Orf, Tracy
Sent: Wednesday, April 27, 2011 9:47 AM
To: 'Wasik, Chris'
Cc: 'Frehafer, Ken'
Subject: St. Lucie Unit 1 EPU - request for additional information (SG Tube Integrity and Chem. Eng.)

Dear Mr. Wasik,

By letter dated November 22, 2010 (Agencywide Documents Access and Management System Accession No. ML103560415) Florida Power & Light Company (the licensee) submitted a license amendment request for St. Lucie Unit 1.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the licensee's submittal and has concluded that additional information is required from the licensee in order for the NRC staff to complete their review. The questions below describe these requests for additional information (RAIs).

The NRC requests that the licensee respond to these RAIs within 30 days of the date of this e-mail. If the licensee concludes that more than 30 days are required to respond to the RAIs, the licensee should request additional time, including a basis for why the extension is needed.

Please contact me at the number below or by e-mail if you have any questions on this issue or if you require additional time to submit your responses.

Sincerely,

Tracy J. Orf, Project Manager
St. Lucie
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation
Phone: (301) 415-2788

REQUEST FOR ADDITIONAL INFORMATION (RAI)

REGARDING LICENSE AMENDMENT REQUEST FOR

EXTENDED POWER UPRATE

ST. LUCIE PLANT, UNIT NO.1

DOCKET NO. 50-335

CSGB-1: Service level I protective coatings are laboratory tested to withstand the worst case Design Basis Accident (DBA) conditions of temperature, pressure, radiation, and pH, in order to demonstrate that coating failure and the subsequent build-up of coatings materials at the containment sump strainers does not occur. The Updated Final Safety Analysis Report (UFSAR),

Amendment 24, Section 3.8.3.6.1, states that the worst case DBA environment service condition inside containment pertains to a loss-of-coolant accident (LOCA) and the values given in Table 3.11-1 for temperature, pressure, humidity and radiation are applicable. The license amendment request (LAR) Table 2.1.7-1 compares DBA test conditions with the expected conditions inside containment for a DBLOCA at extended power uprate (EPU) conditions. The NRC staff requests clarification on the following item:

The following table has been compiled from data contained in UFSAR Table 3.11-1 and LAR Table 2.1.7-1:

Time (Hours)	DBA Test Conditions Max Temp at LOCA (°F)	LAR EPU Conditions Max Temp at LOCA (°F)	UFSAR Conditions Expected Temp at LOCA (°F)
2.8 – 23.9	219	~215	N/A
2 – 24	N/A	N/A	240

Please confirm that the Service Level I protective coating DBA test temperature bounds the postulated post-LOCA temperature for the initial 24 hours following a LOCA.

CSGB-2: The regenerative heat exchanger (HX) cools the normal letdown flow from the reactor coolant system (RCS), which is at RCS T_{cold} temperature. The LAR states that the design inlet temperature of the regenerative HX is 550 degrees F. The LAR further states that the full-load EPU T_{cold} temperature is 551 degrees F, one degree over the design inlet temperature for the regenerative HX, and that the regenerative HX materials were evaluated and determined to be acceptable for a range of temperature that bound the maximum EPU operating temperatures. Please provide additional details concerning the analysis performed to reach this conclusion.

CSGB-3: The LAR stated that the flow-accelerated corrosion (FAC) program manages the aging effects of loss of material due to FAC by predicting, detecting, monitoring and mitigating FAC in high energy carbon steel piping associated with main steam, extraction steam, main feedwater, heater drains and blowdown systems. Table 2.1.8-2 of the LAR was used to compare predicted wall thickness with measured wall thickness to ensure that CHECWORKS™ SFA predictions bound the actual FAC conditions of the plant. However, 14 of the 24 selected lines have no nondestructive evaluation (NDE) data reported. The staff requests additional information to ensure that the CHECWORKS™ SFA predictions bound actual conditions in the plant.

a. Please explain why NDE data is not available for the 14 lines described above. Provide a description of your plans, and a schedule, for obtaining the NDE data at those locations, including a discussion of how the predicted wear rate will inform future NDE examinations.

b. Given that the majority of the high risk components provided in Table 2.1.8-2 do not have NDE data to confirm the predictive code, justify how you can validate the effectiveness of the code for all susceptible components.

c. Accuracy of the CHECWORKS™ SFA code is highly dependent on field NDE measurements to tune the code for plant-specific conditions. Please describe your operating experience with CHECWORKS™ SFA. How long has the program been used at St. Lucie Unit 1? How many NDE measurements have been entered into the CHECWORKS™ SFA program? What confidence do you have in the maturity of the CHECWORKS™ SFA program at St. Lucie Unit 1?