

From: Orf, Tracy
Sent: Friday, April 22, 2011 1:14 PM
To: 'Wasik, Chris'
Subject: St. Lucie Unit 1 EPU - request for additional information (Containment and Ventilation)

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

Requests for Additional Information (RAIs) for Section 2.6 "Containment Review Considerations", for the Licensing Report (LR) (Attachment 5 to Florida Power and Light letter dated November 22, 2010)

- SCVB-1:** In reference to LR Section 2.6.3.1.2.2, what computer code was used and what assumptions were made for the short term mass and energy (M& E) release analysis for subcompartment analysis. If it is different from the current licensing basis, please justify.
- SCVB-2:** In reference to LR Section 2.6.6.2.1, editorial comment: clarify if Branch Technical Position (BTP) 6-2, Rev 3, was used instead of BTP 6-1. Please correct in references also.
- SCVB-3:** In reference to LR Section 2.6.6.2.1, specify which guidance of BTP 6-2, Rev 3, was not used in setting the containment model input parameters and provide justification for not using the conservative guidance.
- SCVB-4:** In reference to LR Section 2.6.5.2.4, under heading “Net Positive Suction Head (NPSH)”; list the conservative assumptions for the NPSH analysis that minimized the available pump NPSH during the injection and recirculation phases.
- SCVB-5:** Provide a discussion of how the post accident debris generation is impacted by the extended power uprate (EPU). What effect should it have on response to Generic Letter (GL) 2004-02, which relates to the resolution of Generic Safety Issue (GSI)-191? Also, provide the impact of the EPU on the sump strainer head loss and on the emergency core cooling system (ECCS) pump NPSH evaluations during post-loss-of-coolant accident (LOCA) operation of the ECCS pumps. Confirm that the GSI-191 resolution will assume plant condition after EPU implementation.
- SCVB-6:** Provide a summary of the NPSH analyses at the EPU conditions, including NPSH required (NPSHR), containment accident pressure (CAP) used, and the method of calculating NPSH available (NPSHA). What was the containment atmospheric pressure used in the analyses? Provide the basis for the NPSHR of the ECCS and containment spray pumps, including flow rates assumed, and a comparison with the flow rate for the LOCA peak cladding temperature (PCT) analyses. Does the NPSHR value used in the analysis correspond to the ‘3-percent pump head drop’ basis suggested in the hydraulic institute (HI) standard? Describe any uncertainty or sensitivity analysis performed for NPSHR margins.
- SCVB-7:** In reference to LR Section 2.6.6, “Pressure Analysis for ECCS Performance Capability.” How does the EPU affect the minimum containment pressure transient calculated during the reflood phase?
- SCVB-8:** In reference to LR Section 2.6.2.2.2, item 3, “Pressurizer Surge Line Guillotine Break;” explain how from the pre-EPU St. Lucie Unit 2 pressurizer surge line break M&E release data, the St. Lucie Unit 1 EPU M&E release rates were conservatively obtained and estimated to be 0.9-percent and 0.4-percent higher than pre-EPU M&E release rates for St. Lucie Unit 2.

SCVB-9: In reference to LR Section 2.6.1.2.1.3, fifth paragraph; please explain why the calculated containment vessel temperature (245 degrees F with a vapor temperature of 261.64 degrees F) for the double ended discharge leg slot (DEDLS) break case, is higher than the containment vessel temperature (229 degrees F with a vapor temperature of 265.57 degrees F) for the double ended hot leg slot (DEHLS) break case, even though the vapor temperature for the DEDLS break case is lower than for DEHLS case.

SCVB-10: In reference to LR Section 2.6.1.2.2, third paragraph, please describe in more detail how the computer code SGNIII and CONTRANS are used to simultaneously determine the time dependent containment pressure and temperature response with the M&E releases. What is meant by the last sentence: "The containment response in SGNIII is represented by the integration of the containment module from the NRC approved CONTRANS computer code?"

RAIs for Section 2.7 "Habitability, Filtration, and Ventilation", for the Licensing Report (LR) (Attachment 5 to Florida Power and Light letter dated November 22, 2010)

SCVB-11: During normal plant operation under EPU conditions, what is the effect of loss of spent fuel pool cooling on the fuel handling building ventilation system?

SCVB-12: In reference to LR Section 2.7.5.2.2, states that EPU modifications will results in less than 1-percent increase in load currents from the existing total nameplate motor ratings supplied by the switchgear and load centers in the turbine switchgear room. Explain why the increase does not significantly impact the heat load and the turbine switchgear room ventilation system.

SCVB-13: In reference to LR Section 2.7.6.2.2, first sentence states: "Changes in heat loads which affect the ventilation subsystems in areas served by the ESF ventilation systems were evaluated to ensure that the ventilation subsystems are capable of performing their intended functions and performance under EPU conditions." Specify which ventilations subsystems were evaluated for changes in the heat loads and what were the results?

SCVB-14: In reference to LR Section 2.7.7.2.4, under heading "Reactor Support Cooling System", what is the margin between the predicted post-EPU operating temperature and the containment design temperature

SCVB RAI on Use of Containment Accident Pressure

SCVB-15: Demonstrate that NPSH margin still exists after including the uncertainties in the required NPSH without crediting containment accident pressure. The NRC staff, in consultation with a pump expert, determined that a 21-percent margin on the '3%-required NPSH' would conservatively envelope the uncertainties discussed in the draft guidance document. It is acceptable to the NRC staff, if desired, to use this value in lieu of performing detailed plant specific uncertainty evaluation. The draft guidance document, which is publically accessible, was transmitted by

NRC to PWR Owners Group by letter dated March 24, 2010 (ADAMS No. ML100740516) with attachment (ADAMS No. ML100550869).