March 18, 2004

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: SAINT LUCIE PLANT, UNIT 1 - REQUEST FOR ADDITIONAL INFORMATION REGARDING RELIEF REQUEST NO. 22 (TAC NO. MC1177)

Dear Mr. Stall:

By letter dated October 15, 2003, Florida Power and Light Company submitted Relief Request No. 22 for Saint Lucie Unit 1 to utilize an external weld between small bore nozzles and Reactor Coolant System piping as an alternative to the welding requirements contained in the American Society of Mechanical Engineers code.

The U.S. Nuclear Regulatory Commission staff has reviewed your submittal and finds that a response to the enclosed request for additional information (RAI) is needed before we can complete the review. This request was discussed with your staff on March 9 and March 16, 2004.

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. 50-335

Enclosure: RAI

cc w/encl: See next page

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Dear Mr. Stall:

By letter dated October 15, 2003, Florida Power and Light Company submitted Relief Request No. 22 to utilize an external weld between small bore nozzles and Reactor Coolant System piping as an alternative to the welding requirements contained in the American Society of Mechanical Engineers code for Saint Lucie Unit 1.

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

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DATE	3/16/04	3/16/04	3/17/04	3/12/04	3/18/04

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REQUEST FOR ADDITIONAL INFORMATION

RELIEF REQUEST NO. 22

SAINT LUCIE PLANT, UNIT 1

DOCKET NO. 50-335

1. What nondestructive examinations (NDE) will be done prior to, during, and after the repair (including the base material of the pipe and nozzle)? How will the repair weld be inspected and determined to be acceptable?

2. According to the proposed repair, the nozzle will be replaced during the next refueling outage. Discuss why the plant is not replacing the nozzle(s) at the time the leakage is identified (during the current refueling outage).

3. Which nozzles are candidates for this repair? Use a diagram to show location of the subject nozzles.

4. Relief Request 23 discusses the hardship associated with performing the Code replacement, yet part of the alternative for Relief Request 22 states that "Any nozzle repaired due to leakage will be replaced at the subsequent outage." What replacement activities will be performed during the subsequent outage for the subject nozzles?

5. Discuss the effects on the nozzle, weld and piping associated with the proposed repair method leaving the nozzle fixed at both sides of the pipe. Discuss the effects on stresses, crack growth rates, and thermal expansion on the repair design verification and the flaw evaluation.

6. Without performing NDE to evaluate the flaw, provide justification for the initial flaw size being confined to the weld. How will any degradation of the carbon steel pipe be assessed? How will any cracking in the nozzle be assessed? What is the justification that the flaws will not extend into the ferritic base metal of the pipe or into the nozzle material?

7. Attachment 1, Pages 4 and 5 list the primary and secondary stress intensities and compares them to the value of 3Sm. The primary and secondary stress intensities are different than the values listed in the analysis, References 3 and 4. These values are also larger than 3Sm. An example of the values listed are as follows:

   RTD Nozzle, Inside Nozzle 41,364ksi < 3 Sm (69.9 ksi)

   The staff finds that 41,364 ksi is larger than 69.9 ksi. The value in the calculation documents show that the proper value is 41.364 ksi. It appears that the stress values contain a typographical error. The values need to be corrected and the significant figures need to be resolved.

8. What mockups have been done to verify the welding procedure? What requirements are being followed for this repair? Is a preheat and/or postweld heat treatment required? Please explain. What is the proposed weld material for the repair? Is it Inconel 52, SFA-5.14, Class ENiCrFe-7?

9. What effects does the leakage have on the proposed repair procedure? (Weld prep, cleanliness, weld impurities)

The following questions relate to Westinghouse calculation CN-CI-02-51.

10. In Section 6.2 “Input,” provide the corresponding number of transients associated with each of transients 1 through 16.

11. On the outside wall of a nozzle, the thermal expansion load causes an average shear stress between the weld and the nozzle surface. This shear stress was not included with the normal stress components. Per NB-3215 and NB-3216, stresses used in the fatigue calculations at a given location are the principal stresses determined from the normal and shear stresses at the location. Provide fatigue cumulative usage factors at the outside nozzle walls based on principal stresses calculated at the interface between the nozzle and the weld.

12. Provide the basis for the equation used to calculate the allowable number of cycles, N.

13. Provide the fatigue calculations for the hot leg at the location of the repair weld, and demonstrate that the cumulative usage factor will not exceed 1.0.

Mr. J. A. Stall
Florida Power and Light Company

ST. LUCIE PLANT

cc:

Senior Resident Inspector
St. Lucie Plant
U.S. Nuclear Regulatory Commission
P.O. Box 6090
Jensen Beach, Florida 34957

Craig Fugate, Director
Division of Emergency Preparedness
Department of Community Affairs
2740 Centerview Drive
Tallahassee, Florida 32399-2100

M. S. Ross, Attorney
Florida Power & Light Company
P.O. Box 14000
Juno Beach, FL 33408-0420

Mr. Douglas Anderson
County Administrator
St. Lucie County
2300 Virginia Avenue
Fort Pierce, Florida 34982

Mr. William A. Passetti, Chief
Department of Health
Bureau of Radiation Control
2020 Capital Circle, SE, Bin #C21
Tallahassee, Florida 32399-1741

Mr. William Jefferson, Jr.
Site Vice President
St. Lucie Nuclear Plant
6351 South Ocean Drive
Jensen Beach, Florida 34957-2000

Mr. G. L. Johnston
Plant General Manager
St. Lucie Nuclear Plant
6351 South Ocean Drive
Jensen Beach, Florida 34957

Mr. Terry Patterson
Licensing Manager
St. Lucie Nuclear Plant
6351 South Ocean Drive
Jensen Beach, Florida 34957

Vice President, Nuclear Operations Support
Florida Power & Light Company
P.O. Box 14000
Juno Beach, FL 33408-0420

Mr. Rajiv S. Kundalkar
Vice President - Nuclear Engineering
Florida Power & Light Company
P.O. Box 14000
Juno Beach, FL 33408-0420

Mr. J. Kammel
Radiological Emergency
Planning Administrator
Department of Public Safety
6000 SE. Tower Drive
Stuart, Florida 34997