



July 3, 2013

L-2013-212
10 CFR 50.4
10 CFR 50.55a

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

Re: St. Lucie Unit 2
Docket No. 50-389
Inservice Inspection Plan
Response to Request for Additional Information
Third Ten-Year Interval Unit 2 Relief Request No. 9, Revision 0

References:

1. FPL letter L-2013-066 dated February 13, 2013, "Third Ten-Year Interval Unit 2 Relief Request No. 9, Revision 0," ADAMS Accession Number ML13056A203
2. NRC Letter dated June 3, 2013, "St. Lucie Plant, Unit No. 2 – Request for Additional Information Regarding Relief Request No. 9, Revision 0 (TAC NO. MF0711), ADAMS Accession Number ML13150A313

In Reference 1, in accordance with 10 CFR 50.55a(a)(3)(ii), Florida Power & Light (FPL) requested relief from the extended pressure test boundaries of IWB-5222(b) imposed during the System Leakage Test conducted at or near the end of the inspection interval.

In Reference 2, the NRC Staff requested additional information to support review of the application. This letter provides the response to the RAIs in this letter's enclosure.

Please contact Ken Frehafer at (772) 467-7748 if there are any questions about this submittal.

Sincerely,

Eric S. Katzman
Licensing Manager
St. Lucie Plant

Enclosure
ESK/KWF

A047
NRR

NRC Question 1

“Provide an estimate of the person-rem (roentgen equivalent man) exposure. RFA 9 contains discussions about personnel safety in regard to radiation exposure as a basis for hardship but does not have total estimated person-rem exposure such as:

- Page 2 of 9, “These valves are located in close proximity to the RCS (Reactor Coolant System) loop piping and thus would require personnel entry into high radiation areas within the containment and a consequent increase in radiation exposure.”
- Page 3 of 9, Establishing and restoring such temporary configurations could also result in an unwarranted increase in worker radiation exposure.”
- Page 4 of 9, “This process would lead to the occupational dose associated with leak testing these lines.”

“These lines are located in areas involving occupational radiation exposure, and leakage testing of these lines would increase occupational radiation dose. Restoration of temporary configurations to normal operating conditions would be hazardous to personnel and lead to excess occupational dose without a commensurate increase in the quality and safety of the system.”

Submit a total estimated person-rem exposure involved in the test or examination of the subject components after as low as reasonably achievable aspects are factored into the planning of the test.”

FPL Response:

Dose estimates were performed with input from the site health physics ALARA coordinator. The estimates were prepared by identifying tasks, personnel resources, and times based on existing site processes and then utilizing survey maps to quantify the estimated dose.

The subject ≤ 2 " nominal piping is located in high radiation areas of the plant. Performing these tests involves cycling open normally closed valves and then restoring to normal configuration. Pressure trapped between the primary isolation valve and blind flange during each test must be discharged upon completion of tests. Maintenance support would be necessary to remove blind flange and reinstall with new gaskets at each location. Dose estimates for opening, (normally closed) small bore valves located on ≤ 2 " nominal piping and performing additional tests and then restoring the system following the tests is approximately 3.872 person-rem.

Dose estimates for performing additional testing for Class 1 Safety Injection piping is approximately 0.513 person-rem. These tests involve connecting an external pump at four

locations and pressurizing these segments to 2250 psia. Such pressurization may over-pressure the adjoining system. This activity represents a significant personnel safety hazard. This piping can be tested concurrently with ASME Section XI pressure tests of Class 2 and 3 piping performed at the highest pressure the system is exposed to during normal operating conditions.

NRC Question 2:

“Are there any welded connections (e.g., butt or socket) in the piping or components listed in Tables 1 and 2? Has there been any industry or plant specific operating experience regarding potential degradation of the welded connections in the subject components by mechanism such as fatigue or stress corrosion cracking? If the answer is yes, then discuss how the structural integrity or leak tightness of the subject components will be reasonably ensured without required extension of the pressure retaining boundary during system leakage test.”

FPL Response:

A review was performed for site and external OE pertaining to the subject piping using the site ISI repair & replacement records and the fleet condition reporting system.

Plant Specific OE

As shown below, St Lucie Units 1 and 2 have not experienced any issues with stress corrosion cracking or fatigue in socket or butt welds in piping associated with Tables 1 and 2 of Reference 1.

Table 1, RCS Vent and Drain Piping (Ref Code Case N-978)

St Lucie Units 1 and 2 have not experienced any issues with stress corrosion cracking or fatigue in socket or butt welds in piping associated with Table 1 of Reference 1. Facilities contacted for operating experience indicated they had not experienced any significant issues from similar piping configurations. These piping configurations are relatively short segments of piping. The highest stress levels associated with these piping configurations are located on the upstream side of the valves on the pressurized portion of the piping system. The failure of welded connections located on the downstream (non-pressurized) side of these valves is highly unlikely. This piping would be leak tested as stated in Code Case 798.

Table 2, A/B Hot Leg Shutdown Cooling Suction & A/B Hot Leg injection (Ref Code Case N-800)

St Lucie Units 1 and 2 have not experienced any issues with stress corrosion cracking or fatigue in socket or butt welds in piping associated with Table 2 of Reference 1. Facilities contacted for operating experience indicated they had not experienced any significant issues from similar

piping configurations. This piping would be leak tested as stated in Code Case 800.

Industry/Fleet OE

The fleet material expert was consulted for information on fleet and industry issues of this nature. Several sites were queried for any issues they may have encountered. The following are facilities which responded;

Turkey Point 3 & 4
Point Beach Unit 1 & 2
Millstone Unit 2
Watts Bar Unit 1
Sequoyah Unit 1 & 2
DC Cook Unit 1 & 2

These facilities indicated they had not experienced such issues on the subject piping.

Reference:

1. FPL letter L-2013-066 dated February 13, 2013, "Third Ten-Year Interval Unit 2 Relief Request No. 9, Revision 0," ADAMS Accession Number ML13056A203