L-2003-XXX
10 CFR 54

DRAFT -- RECEIVED 2/26/03

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

Re: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
License Renewal Safety Evaluation Report Open Item And Confirmatory Item
Responses And Revised License Renewal Application Appendix A

By letter dated February XX, 2003, the NRC issued the Safety Evaluation Report with Open Items Related to the License Renewal of St. Lucie Nuclear Plant, Units 1 and 2. Attachment 1 to this letter provides responses to the open items and confirmatory items identified in the Safety Evaluation Report. In order to address commitments related to open items, confirmatory items, and other items from previous RAI responses, FPL has prepared a revised Appendix A to the St. Lucie Units 1 and 2 License Renewal Application (LRA) entitled, "Updated Final Safety Analysis Report Supplement." This revised LRA Appendix A also incorporates changes as a result of the LRA annual update (FPL Letter L-2003-XXX dated ????????). Attachment 2 describes the changes to LRA Appendix A. Attachment 3 is the revised LRA Appendix A in its entirety.

Should you have any further questions, please contact S. T. Hale at (772) 467-7430.

Very truly yours,

D. E. Jernigan
Vice President
St. Lucie Plant

DEJ/STH/hlo
Attachments (3)

Enclosure 3

St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389

License Renewal Safety Evaluation Report Open Item And Confirmatory Item Responses And Revised License Renewal Application Appendix A St. Lucie Units 1 and 2

STATE OF FLORIDA)
) ss
COUNTY OF ST. LUCIE)

D. E. Jernigan being first duly sworn, deposes and says:

That he is Vice President – St. Lucie of Florida Power and Light Company, the Licensee herein;

That he has executed the foregoing document; that the statements made in this document are true and correct to the best of his knowledge, information and belief, and that he is authorized to execute the document on behalf of said Licensee.

_____
D. E. Jernigan

Subscribed and sworn to before me this

_____ day of _____, 2003.

_____

_____
Name of Notary Public (Type or Print)

D. E. Jernigan is personally known to me.

cc: U.S. Nuclear Regulatory Commission, Washington, D.C.
Program Director, License Renewal & Environmental Impacts
Project Manager, St. Lucie License Renewal
Project Manager, St. Lucie

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ST. LUCIE UNITS 1 AND 2
DOCKET NOS. 50-335 AND 50-389
ATTACHMENT 1
RESPONSE TO OPEN ITEMS AND CONFIRMATORY ITEMS IDENTIFIED IN SAFETY EVALUATION REPORT RELATED TO LICENSE RENEWAL OF ST. LUCIE UNITS 1 AND 2

Open Item 3.0.2.2-1:

The staff conducted an on-site AMR inspection, which included verification of the applicant's claim that some aging management programs are consistent with the GALL Report. The inspection also verified information concerning the scoping and screening results. The inspection was completed on January 31, 2003, and a report documenting the inspection findings is pending. The inspection findings are necessary to determine the acceptability of the aging management programs that are claimed to be consistent with the GALL report. The staff is in the process of reviewing the results of the AMR inspection findings and will complete its evaluations of these aging management programs and scoping and screening results when the inspection report is issued.

FPL Response:

At the AMR inspection exit meeting on January 31, 2003, no findings or open issues were identified by the NRC.

Conclusion

Based on the above, no further action has been identified for FPL, and pending issuance of the inspection report, FPL requests that Open Item 3.0.2.2-1 be closed.

Open Item 3.0.5.7-1:

This item concerns the detection of wall thinning of FP piping due to internal corrosion. The applicant stated that the internal loss of material can be detected by changes in flow or pressure, leakage, or by evidence of excessive corrosion products during flushing of the system. The applicant also stated that St. Lucie plant-specific operating experience has shown that the current methods of monitoring internal conditions are adequate and reliable. In accordance with Interim Staff Guidance (ISG)-4, "Aging Management of Fire Protection Systems for License Renewal," the applicant should perform a baseline pipe wall thickness evaluation of the FP piping using a nonintrusive means, such as a volumetric inspection, before the current license term expires. Alternatively, the applicant should provide assurance that adequate wall thickness evaluations on representative piping exist such that a baseline wall thickness evaluation is not necessary.

FPL Response:

The response below supercedes in its entirety the response to RAI B.3.2.8-3 transmitted in FPL letter L-2002-241 dated December 23, 2002.

The St. Lucie Fire Protection Program (LRA Appendix B Subsection 3.2.8, page B-39) is plant-specific. Fire Protection at St. Lucie is filled with water classified as "raw water – city water." As stated in LRA Appendix C, Section 4.1.2 (page C-7), this water is potable water. The water has been rough filtered to remove large particles. City water has been purified but conservatively classified as raw water for the purposes of aging management review. Internal conditions are monitored via leakage, flow, and pressure testing. Internal loss of material can be detected by changes in flow or pressure, leakage, or by evidence of excessive corrosion products during flushing of the system. The following fire protection procedures are credited for aging management of internal conditions of the Fire Water System:

TEST	FREQUENCY
• Wet pipe sprinkler test	semi-annual
• Fire system flush	yearly
• D/G fire sprinkler system visual integrity exam	yearly
• D/G fire sprinkler system obstruction inspection	yearly
• D/G fire sprinkler system automatic valve operation	yearly
• D/G fire sprinkler system functional test	yearly
• RAB fire sprinkler system functional test	yearly
• Yard fire hydrant flow check	yearly
• Main transformer water spray test	18 month
• Auxiliary transformer water spray test	18 month
• H_2 seal oil water spray test	18 month
• Turbine lube oil storage water spray test	18 month
• 3 year fire protection flow test	3 year
• Fire hose station flow check	3 year

- City Water Storage Tanks interior inspection 5 year

With regard to St. Lucie plant-specific operating experience, past inspections/overhauls of fire protection components normally exposed to water, such as fire water pumps, hydrants, post indicator and other valves, have not identified degraded conditions of the internal surfaces of adjoining piping requiring corrective action.

During the recent implementation of Fire Water System modifications, ultrasonic pipe wall thickness measurements were taken on stagnant portions of the system, which confirm the good internal condition of the fire main and its branches. These modifications were associated with enhancements identified prior to or during the 1998 NRC Fire Protection Functional Inspection, and included the addition of an automatic suppression system for Thermo-Lag walls and the addition of new hose stations in the Reactor Auxiliary Buildings. Pipe wall thickness measurements were taken on 4 and 6 inch normally stagnant lines prior to welding and confirmed that minimal internal loss of material due to corrosion has taken place (i.e., the pipe wall thicknesses were approximately nominal). Based upon the nominal pipe wall thickness and the measured values for the limiting case, the corrosion rate over 24 years of service is calculated to be approximately 0.3 mils/year. Additionally, if the original pipe wall thickness is conservatively assumed to be nominal plus the manufacturer's fabrication allowance (i.e., +12.5%), the worst case corrosion rate is calculated to be 1.5 mils/year. Based upon this worst case corrosion rate and the measured pipe wall thickness, the projected pipe wall thickness at the end of the extended operating period is 175 mils, well in excess of the ANSI B31.1 Code required minimum wall of 22 mils. Thus, additional pipe wall thickness measurements are not required and the current methods of monitoring internal conditions are adequate and reliable.

This position is consistent with that accepted by the NRC as part of the Turkey Point Units 3 and 4 LRA review.

Conclusion

Based on the above, FPL requests that Open Item 3.0.5.7-1 be closed.

Open Item 3.0.5.10-1:

Several components in the intake cooling water system credit the Systems and Structures Monitoring Program for managing loss of material in the raw water environment. In RAI B.2.10-2, the staff asked the applicant to justify the adequacy of this program for managing the aging effects on specific components in the intake cooling water system. The staff finds the applicant's response does not adequately address the aging management of the small valves, piping/tubing/fittings, thermowells, and orifices. The applicant, in a letter dated November 27, 2002, provided additional information concerning the materials, operating history, and repair history of the small valves, piping/tubing/fittings, thermowells, and orifices in the intake cooling water system. However, the applicant also relies on leakage detection for aging management of some components. It is the staff's position that leakage detection does not provide adequate aging management because leakage indicates a loss of component intended function.

FPL Response:

Later - To be discussed at meeting

Open Item 3.1.0.1-1:

A commitment is requested to implement any recommended inspection methods, inspection frequencies, and acceptance criteria that result from industry initiatives by the CEOG, NEI, or EPRI MRP Integrated Task Group on Inconel materials (including Alloy 600 and Alloy 182/82 materials) that are recommended for managing stress corrosion cracking (including PWSCC) of Inconel components, and are found acceptable by the NRC. A commitment is also requested to implement any further requirements that may result from the staff's resolution of the issue of PWSCC in nickel-based alloy components (including those that may result from the staff's resolution of the industry's responses to NRC Bulletin 2002-02, and/or resolution of the V.C. Summer issue).

FPL Response:

As discussed in the St. Lucie License Renewal Application (LRA) Appendix A1 Section 18.2.1, Appendix A2 Section 18.2.1, Appendix B, Subsection 3.2.1 and FPL response to RAI B.3.2.1-1, submitted to the NRC by FPL Letter L-2002-166, St. Lucie will implement the commitments made in response to NRC Bulletins 2001-01, 2002-01, 2002-02, and commitments made in response to any future NRC communications associated with primary water stress corrosion cracking (PWSCC) in nickel-based alloy components. In addition, the work performed under the Electric Power Research Institute (EPRI) Material Reliability Program (MRP) and the Nuclear Energy Institute (NEI) is an integral part of the St. Lucie Alloy 600 Inspection Program. Changes to the LRA Appendix A UFSAR Supplements are described in the response to Confirmatory Item 3.0.1.1-1.

Conclusion

Based on the above, FPL requests that Open Item 3.1.0.1-1 be closed.

Open Item 3.1.0.1-2:

In Florida Power and Light (FPL) Company's response to RAI 3.2.1-1, the applicant states that the Alloy 600 Inspection Program (A600IP) includes commitments made in the applicant's responses to NRC Bulletin 2002-01 (FPL letters L-2002-061 and L-2002-116 dated April 2, 2002, and June 27, 2002, respectively) and NRC Bulletin 2002-02 (FPL letter L-2002-185 dated September 11, 2002). The responses to these Bulletins are specific to degradation that may occur in the St. Lucie reactor vessel heads (RVHs) and associated penetration nozzles and attachment welds. The responses to these Bulletins do not address degradation that may occur in nickel-based alloy components of other Class 1 RCS subsystems (such as those in the St. Lucie pressurizers, steam generators, hot legs, and reactor vessel internals). The applicant should discuss and clarify the inspection programs for the remaining Class 1 nickel-based alloy base metal and weld components (other than RVH penetration nozzles and their attachment welds), taking into account the similarities and differences between susceptibility ranking and inspection methods proposed for the components when compared with those proposed for the RVH penetration nozzles and their associated attachment welds.

FPL Response:

As discussed in the St. Lucie License Renewal Application (LRA) Appendix A1 Section 18.2.1, Appendix A2 Section 18.2.1, Appendix B, Subsection 3.2.1, the St. Lucie Alloy 600 Inspection Program includes reactor vessel head penetration nozzles, reactor head vent pipe, pressurizer instrument nozzles and heater sleeves, Reactor Coolant System (RCS) piping instrument nozzles, steam generator primary side instrument nozzles, pressurizer spray piping fittings, and RCS dissimilar metal welds.

Conclusion

Based on the above, FPL requests that Open Item 3.1.0.1-2 be closed.

Open Item 3.1.0.3-1:

If the risk-informed methodologies for Small Bore Class 1 Piping Inspection AMP are part of a RI-ISI program that is required to be approved under the provisions of 10 CFR 50.55a(a)(3), the potential exists for methodologies to "screen out" the volumetric examinations of the small bore piping based on risk information and therefore eliminate the volumetric examinations proposed for the small bore Class 1 piping components. In LRA Section 18.1.5 of Appendix A1 for St. Lucie 1 and LRA Section 18.1.14 of Appendix A2 for St. Lucie 2, Florida Power and Light Company (FPL) commits to submitting the inspection plan for Class 1 small-bore piping prior to the end of the initial licensing periods for the units. When this inspection plan is submitted to the staff, the staff requests:

- The applicant confirm that the risk-informed methodologies for the Small Bore Class 1 Piping Inspection will be used only to establish the minimum number and locations of the small bore Class 1 piping full-penetration butt welds to be volumetrically examined and will not be used as a basis to eliminate the volumetric examinations for the welds.

- The applicant provide a discussion in the inspection plan describing the risk-informed methodology and addressing how the methodology has been applied to determine the locations and number of small bore piping components for inspection. Confirm that the inspection plan for the small bore piping will include this information when submitted to the staff as part of the FSAR supplements summary descriptions for the Small Bore Class 1 Piping Inspection AMP.

FPL Response:

As described in LRA Appendix B Section 3.1.5 (page B-16), Small Bore Piping Inspection, a one-time volumetric examination of a sample of Class 1 piping less than 4 inches in diameter will be performed. The sample (i.e., minimum number and locations) of welds to be examined will be selected by using a risk informed susceptibility approach. This selection method will not be part of the Risk Informed – Inservice Inspection (RI-ISI) program which is approved under the provisions of 10 CFR 50.55a (a)(3). As stated in LRA Appendix A1 Section 18.1.5 (page A1-34) for St. Lucie Unit 1 and LRA Appendix A2 Section 18.1.4 (page A2-31) for St. Lucie Unit 2, FPL will provide the NRC with a report describing the small bore inspection plan prior to implementation of the inspections.

This inspection plan will confirm that the risk informed methodologies for the Small Bore Class 1 Piping Inspection will only be used to establish the minimum number and locations of the small bore piping full penetration butt welds to be volumetrically examined. It will not be used as a basis to eliminate the volumetric examination of the welds. Additionally, this inspection plan will describe the risk-informed methodology and address how the methodology has been applied to determine the locations and number of small bore piping components for inspection. This information will be included as part of the FSAR supplement summary descriptions for the Small Bore Class 1 Piping Inspection Program as described in the FPL response to Confirmatory Item 3.1.0.3-1.

Conclusion

Based on the above, FPL requests that Open Item 3.1.0.3-1 be closed.

Open Item 3.1.0.5-1:

The applicant described the Reactor Vessel Surveillance Capsule Removal and Evaluation Subprogram. In accordance with ASTM E185, for current 40-year practice, it is recommended that the last capsule to be removed should receive the same or higher fluence than the peak EOL fluence. Therefore, the applicant should provide updated capsule removal schedules that reflect a capsule to be withdrawn with a predicted fluence equal to or greater than the peak EOL fluence for the extended period of operation for St. Lucie Units 1 and 2.

FPL Response:

The predicted 60 year end of life (EOL) peak fluence for St. Lucie Unit 1 is 4.24 X 10^{19} n/cm^2 and is based on 52 EFPY of operation. The predicted 60 year EOL peak fluence for St. Lucie Unit 2 is 4.56 X 10^{19} n/cm^2 and is based on 55 EFPY of operation. The St. Lucie LRA Updated Final Safety Analysis Report Supplements, Appendix A1 for Unit 1 (page A1-21) and Appendix A2 Unit 2 (page A2-19), contain the revised capsule removal schedules considering the period of extended operation. Capsule location 263^o for Unit 1 is to be removed at approximately 38 EFPY, and capsule location 277^o for Unit 2 is to be removed at approximately 44 EFPY. Based upon these capsule locations, accumulated fluences at 38 and 44 EFPY for Units 1 and 2 respectively, are consistent with the predicted 60 year end of life (EOL) peak values noted above. Note that there will be additional capsules available for removal even after removal of the capsules at 263^o for Unit 1 and 277^o for Unit 2.

The fluence values presented in LRA Tables 4.2-3 and 4.2-4 (pages 4.2-9 and 4.2-10) regarding St. Lucie Units 1 and 2 60 year end of life RT_{PTS} values are based on predicted fluences assuming 60 EFPY of operation. These bounding values of fluence were used for the RT_{PTS} analyses only and do not reflect the predicted 60 year EOL peak fluences based on 52 EFPY for Unit 1 and 55 EFPY for Unit 2.

Conclusion

Based on the above, FPL requests that Open Item 3.1.0.5-1 be closed.

Open Item 3.1.1.2-1:

The applicant has not identified in Table 3.1-1 and Section 3.1.1.2 of the LRA that loss of mechanical closure integrity is an applicable effect for the stainless steel or carbon steel non-Class 1 bolting materials as a result of stress relaxation. The applicant should provide the basis for not considering stress relaxation to be an applicable aging effect mechanism for the stainless steel and carbon steel non-Class 1 bolting materials. If loss of mechanical closure integrity due to stress relaxation is considered to be an applicable effect for the stainless steel and carbon steel non-Class 1 bolting materials, the applicant should provide revised AMRs for these bolting materials to reflect that loss of mechanical closure integrity is an applicable effect for these bolting materials and propose an applicable inspection-based AMP to manage loosening of the bolts during the extended periods of operation for the St. Lucie units.

FPL Response:

As discussed in LRA Appendix C Section 5.4 (page C-16), for Non-Class 1 components, Loss of Mechanical Closure Integrity is defined as an aging effect associated with mechanical closures that results in failure of the mechanical joint. Loss of pre-load due to stress relaxation was evaluated as a potential mechanism for its effects on mechanical closure and determined not to require management.

Loss of pre-load can occur due to various mechanisms including cyclic loading, gasket creep and loss of gasket compression due to differential thermal expansion. The effects of these mechanisms are the same as that of a degraded gasket; that is, the potential for external leakage of the internal fluid at the mechanical joint. Since the ASME code does not consider gaskets, packing, seals and O-rings to perform a pressure retaining function, these components are not considered to support an intended function and are not within the scope of license renewal.

As a result, Loss of Mechanical Closure Integrity due to loss of pre-load is not an aging effect requiring management for Non-Class 1 RCS piping.

This position is consistent with that accepted by the NRC as part of the Turkey Point Units 3 and 4 LRA review.

Note: FPL responses to RAIs 3.4-2 and 3.4-4 submitted by FPL letter L-2002-157 dated September 26, 2002, also address loss of pre-load in mechanical bolting and the Staff agreed that no additional aging management programs are required to address loss of pre-load. See SER Section 3.3.17.1, Aging Effects for Closure Bolting.

Conclusion

Based on the above, FPL requests that Open Item 3.1.1.2-1 be closed.

Open Item 3.1.2.2-1:

The pressurizer surge and spray nozzle thermal sleeves are fabricated from Alloy 600 materials and are welded to the low-alloy steel pressurizer surge and spray nozzles using Alloy 182/82 weld metals. Industry experience has demonstrated that these weld materials are susceptible to PWSCC. In its AMR provided October 3, 2002, the applicant concluded that there are no applicable aging effects for the pressurizer surge and spray nozzle thermal sleeves because the applied loads on the thermal sleeves are low. The attachment welds for the pressurizer surge and spray nozzle thermal sleeves may contain high residual stresses that result from solidification of the weld metal from the molten state. Therefore, the staff concludes that the attachment weld for the pressurizer surge and spray nozzle thermal sleeves may be susceptible to cracking as a result of PWSCC, and that the applicant's supplemental AMR for the pressurizer thermal sleeves needs to be revised to include cracking as an applicable effect for the components.

FPL Response:

The response below supercedes in its entirety the response to RAI 2.3.1-2 transmitted in FPL letter L-2002-144 dated October 3, 2002.

Thermal sleeves are included in the design of the pressurizer surge and spray nozzles and are designed to protect these nozzles from thermal shock. Since the thermal sleeves are not part of the nozzle pressure boundary, their failure would not affect the nozzles pressure boundary intended function. However, the thermal sleeves are included in the fatigue analyses of the pressurizer surge and spray nozzles and these analyses have been identified as a time-limited aging analysis (TLAA) and dispositioned in LRA Subsection 4.3.1 (page 4.3-2). Accordingly, the thermal sleeves are considered to be within the scope of license renewal, pursuant to 10 CFR 54.4(a)(2) and require an aging management review.

The pressurizer surge and spray nozzle thermal sleeves are fabricated from Alloy 600 and are exposed to an environment of treated water – primary. The only aging effect requiring evaluation for the thermal sleeves is cracking. Cracking due to stress corrosion or primary water stress corrosion was determined not to be an aging effect requiring management based on the design/fabrication of the sleeves. The thermal sleeves for Units 1 and 2 are constructed from either Alloy 600 pipe or rolled Alloy 600 plate material with a longitudinal seam weld. The sleeves are then machined, inserted into their respective nozzles, and expanded to secure them in place. There are no thermal sleeve attachment welds to the nozzles or any other pressurizer pressure boundary parts. Should cracking of a thermal sleeve longitudinal seam weld occur, the sleeve would spring open relieving the principal stresses and would remain captured by the nozzles. Therefore, the sleeve would continue to perform its intended function. Note that since there is no thermal sleeve weld to the nozzle or any other pressure boundary parts, there is no mechanism for the propagation of a crack to impact pressure boundary intended function. As mentioned above, cracking due to fatigue has been identified as a TLAA and is addressed analytically in LRA Subsection 4.3.1. Accordingly, there are no aging effects requiring management for the thermal sleeves.

Note that this conclusion is consistent with that included NUREG-1801, Generic Aging Lessons Learned (GALL) Report. Pressurizer thermal sleeves are included in Chapter IV of the GALL Report, Item C2.5.5. As indicated in the GALL Report table, the aging effect/mechanism identified for the thermal sleeves is cumulative fatigue damage/fatigue. The GALL Report further states that fatigue is a TLAA for the period of extended operation and further refers to NUREG-1800, Standard

Review Plan for Review of License Renewal Applications for Nuclear Power Plants, Section 4.3 “Metal Fatigue” for acceptable methods for meeting the requirements of 10 CFR 54.21(c)(1). No additional aging effects are identified in the GALL Report for pressurizer thermal sleeves.

Conclusion

Based on the above, FPL requests that Open Item 3.1.2.2-1 be closed.

Open Item 3.6.2.1-1:

Operating experience, as discussed in NUREG-1760, "Aging Assessment of Safety-Related Fuses Used in Low- and Medium-Voltage Applications in Nuclear Power Plants," identified that aging stressors such as vibration, thermal cycling, electrical transients, mechanical stress, fatigue, corrosion, chemical contamination, or oxidation of the connections surfaces can result in fuse holder failure. On this basis, fuse holders, including both the insulation material and the metallic clamps are subject to both an AMR and AMP for license renewal. Typical plant effects observed from fuse holder failure due to aging have resulted in challenges to safety systems, cable insulation failure due to over-temperature, failure of the containment spray pump to start, a reactor trip, etc. Therefore, managing age-related failure of fuse holders would have a positive effect on the safety performance of a plant. Information Notices 91-78, 87-42, and 86-87 are examples that underscore the safety significance of fuse holder and the potential problems that can arise from age-related fuse holder failure. The staff disagreed with the applicant that there were no aging effects requiring management for fuse holders.

FPL Response:

At the NRC public meeting on November 6, 2002, FPL was requested to provide details of the St Lucie Units 1 and 2 aging management review (AMR) of fuse holders, and to provide a commitment to address a revised interim staff guidance (ISG) document regarding fuse holders (note that this ISG has not been issued and is currently not available to FPL). The NRC indicated that the ISG is being revised to address information provided in NUREG-1760, "Aging Assessment of Safety-Related Fuses Used in Low- and Medium-Voltage Applications in Nuclear Power Plants." With regard to the AMR of fuse holders, as stated in FPL's response to RAI 2.5-1, fuse holders that were not part of a larger, active assembly were scoped, screened, and determined to be subject to an AMR. The only fuse holders determined to require an AMR were those installed to address the requirements of Regulatory Guides 1.63 and 1.75 to provide double isolation for non-safety related loads powered from safety related power supplies. These fuse holders are located in six isolation panels (one in Unit 1 and five in Unit 2). The isolation panels are located in the Electrical Equipment Rooms in the Reactor Auxiliary Buildings. The Electrical Equipment Rooms at St Lucie are classified as "mild environment" areas. The isolation panel enclosures (NEMA type) are addressed in the Systems and Structures Monitoring Program (LRA Appendix B Subsection 3.2.14 page B-57). As provided in LRA Section 3.6 (pages 3.6-1 through 3.6-16), the AMR for connections (including the fuse holders above) addressed the aging mechanisms of moisture, oxygen, vibration and tensile stress, voltage stress, radiation, and heat. The AMR also addressed adverse localized environments. As indicated above, the AMR concluded that there were no aging effects requiring management for electrical connections.

Based on FPL's review of NUREG-1760, the only aging mechanism not explicitly addressed in the LRA for fuse holders is wear/fatigue due to repeated insertion and removal of fuses. For St. Lucie, the fuse holders subject to an AMR are those associated with fuses that are not routinely removed for maintenance and/or surveillance. When these circuits need to be de-energized, power is removed at the safety related power supplies (motor control centers, power panels, etc.).

Additionally, two of the conclusions in NUREG-1760 are worth noting:

> "This study has found that fuses are susceptible to aging degradation that can lead to failure, however, the occurrence is infrequent."
>
> "The data indicate that the incidence of fuse failures is not increasing with age presently, indicating fuse aging is being managed."

Based on the information provided above, FPL concludes that there are no aging effects requiring management for fuse holders for St. Lucie Units 1 and 2. However, the NRC has requested that FPL make a commitment to address the ISG regarding fuse holders currently under revision by the NRC. Accordingly, FPL will address the revision to the ISG regarding fuse holders (when issued) as applicable to St. Lucie.

Conclusion

Based on the above, FPL requests that Open Item 3.6.2.1-1 be closed.

Open Item 4.6.4-1:

The staff is in the process of reviewing Topical Report WCAP-15973-P; Class 2 Proprietary Calculation CN-CI-02-60; and the applicant's January 8, 2003, relief request for the St. Lucie half nozzle designs. These documents represent the most up-to-date current licensing basis (CLB) for the TLAA on the St. Lucie alloy 600 half-nozzle repairs. The acceptability of TLAA 4.6.4 is pending acceptable approval of these documents. The FSAR Supplement summary descriptions for TLAA 4.6.4, "Alloy 600 Instrument Nozzle Repairs," as given in Sections 18.3.8 of LRA Appendix A1 and 18.3.7 of LRA Appendix A2, do not currently reflect that these documents are part of the CLB for the TLAA on the alloy 600 instrument nozzle repairs. In order to ensure that the FSAR Supplement summary descriptions for this TLAA are up to date, the applicant should supplement the FSAR Supplement summary descriptions, as given in Section 18.3.8 of Appendix A1 and Section 18.3.7 of Appendix A2 to the LRA, to include a reference to Topical Report WCAP-15973-P; Class 2 Proprietary Calculation CN-CI-02-60; and the January 8, 2003, relief request for St. Lucie half nozzle designs.

FPL Response:

As stated in FPL responses to RAI 4.6.4-1 and 4.6.4-2 (FPL letter L-2002-222 dated November 27,2002), due to issues identified in Combustion Engineering Owners Group (CEOG) Topical Report CE-NPSD-1198-P, St. Lucie Units 1 and 2 no longer credits this Topical Report or the revision WCAP-15973-P. A plant-specific analysis CN-CI-02-69 (submitted with FPL letter L-2002-222) of the small bore nozzles located in the hot leg piping and the pressurizers for St. Lucie Units 1 and 2 was completed using plant-specific data. This analysis bounds the Class 1 fatigue design requirements of St. Lucie Units 1 and 2.

St. Lucie LRA Appendix A, Updated Final Safety Analysis Report Supplement is revised as follows:

Unit 1 Appendix A1

Section 18.3.8 ALLOY 600 INSTRUMENT NOZZLE REPAIRS

The fourth paragraph in Section 18.3.8 (page A1-47) beginning "CEOG Topical Report …" is replaced in its entirety by the following paragraph:

> CEOG Topical Report CE NPSD-1198-P was submitted to the NRC February 15, 2001 to obtain generic approval of the Alloy 600/690 nozzle repair/replacement programs. The CEOG report provides a bounding flaw evaluation that covers all small diameter Alloy 600/690 nozzle repairs in accordance with ASME Section XI requirements. As a result of issues identified in this Topical Report, a plant-specific analysis CN-CI-02-69 of the small bore nozzles located in the hot leg piping and the pressurizers was completed using plant-specific data. These nozzle locations where half-nozzle or similar repairs would be utilized, thereby leaving flaws in the original weldment, which could potentially grow into adjacent ferritic material. Postulated flaws were assessed for the flaw growth and flaw stability as specified in the ASME Code Section XI. The flaw growth analysis included in the report assumes the total number of design cycles, consistent with the St. Lucie Unit 1 UFSAR. This analysis bounds the Class 1 fatigue design requirements of

St. Lucie
Unit 1. As discussed in Section 18.3.2.1, review of actual plant operation concludes that the existing design cycles and cycle frequencies are conservative and bounding for the period of extended operation. Note that Topical Report WCAP-15973 has been issued to revised CEOG Topical Report CE-NSPD-1198-P.

Unit 2 Appendix A2

Section 18.3.8 ALLOY 600 INSTRUMENT NOZZLE REPAIRS

The fifth paragraph in Section 18.3.7 (page A2-44) beginning "CEOG Topical Report …" is replaced in its entirety by the following paragraph:

CEOG Topical Report CE NPSD-1198-P was submitted to the NRC February 15, 2001 to obtain generic approval of the Alloy 600/690 nozzle repair/replacement programs. The CEOG report provides a bounding flaw evaluation that covers all small diameter Alloy 600/690 nozzle repairs in accordance with ASME Section XI requirements. As a result of issues identified in this Topical Report, a plant-specific analysis CN-CI-02-69 of the small bore nozzles located in the hot leg piping and the pressurizers was completed using plant-specific data. These nozzle locations where half-nozzle or similar repairs would be utilized, thereby leaving flaws in the original weldment, which could potentially grow into adjacent ferritic material. Postulated flaws were assessed for the flaw growth and flaw stability as specified in the ASME Code Section XI. The flaw growth analysis included in the report assumes the total number of design cycles, consistent with the St. Lucie Unit 2 UFSAR. This analysis bounds the Class 1 fatigue design requirements of St. Lucie
Unit 2. As discussed in Section 18.3.2.1, review of actual plant operation concludes that the existing design cycles and cycle frequencies are conservative and bounding for the period of extended operation. Note that Topical Report WCAP-15973 has been issued to revised CEOG Topical Report CE-NSPD-1198-P.

Conclusion

Based on the above, FPL requests that Open Item 4.6.4-1 be closed.

Confirmatory Item 2.3.3.7-1:

On October 3, 2002, the applicant provided a response to RAI 2.3.3-4 concerning the spent fuel pool makeup lines from the intake cooling water system. At the request of the staff, the applicant agreed to remove the paragraphs in its response that assessed the plant design for the spent fuel pool makeup lines from the intake cooling water system and to state that the makeup lines meet the scoping requirement of 10 CFR 54.4(a)(1).

FPL Response:

The response below supercedes the response to RAI 2.3.3-4 transmitted in FPL letter L-2002-144 dated October 3, 2002. This response is being revised to address Safety Evaluation Report (SER) Confirmatory Item 2.3.3.7-1.

Section 9.2.3 of the original SER for St. Lucie Unit 1 states that a fire hose can be connected to the seismic Category I Intake Cooling Water (ICW) at two points to provide makeup, and that the applicant would provide the results of an analysis of the potential for damage to the stored fuel by use of this salt water. The original NRC SER stated further that if NRC review indicated that unacceptable damage could be caused, the fuel exposed to salt water would not be reloaded into the reactor, and that, based on this requirement, the design was acceptable. The results of the further NRC review are discussed in Supplement 1 to the original SER. Section 9.2.3 of Supplement 1 to the original SER states that this evaluation was performed and that for the anticipated time that the salt water makeup would be in use, no unacceptable corrosion of fuel elements or support structures would occur. Based on additional information provided, the NRC also concluded that it would be unlikely that the sea water method of cooling would be needed since several other makeup sources are available.

Based on the above, the ICW makeup source to the Spent Fuel Pool meets the scoping requirements of 10 CFR 54.4 (a)(1) for spent fuel pool cooling, and FPL requests that Confirmatory Item 2.3.3.7-1 be closed.

Confirmatory Item 3.0.2.2-1:

The applicant claims that several of its aging management programs (AMPs) are consistent with specific AMPs in the Generic Aging Lessons Learned (GALL) Report. In Appendix B of the LRA, the applicant describes the AMPs that are consistent with the GALL Report and identifies the specific GALL Report AMPs. However, the information concerning the specific GALL Report AMPs is not included the FSAR supplements in Appendix A of the LRA. The applicant agreed to include a reference to specific GALL Report AMPs in the FSAR supplements concerning the AMPs that are consistent with the GALL Report.

FPL Response:

For the St. Lucie Aging Management Programs that are consistent with the NUREG 1801 Generic Aging Lessons Learned (GALL) Report, the St. Lucie FSAR Supplements, LRA Appendix A1 for Unit 1 and Appendix A2 for Unit 2 will be revised to include a reference to the GALL Report Aging Management Program. All other aging management programs at St. Lucie are plant-specific.

Appendix A1 will be revised as follows:

17.0.6 THERMAL AGING EMBRITTLEMENT OF CASS PROGRAM

This program is consistent with the ten attributes of aging management program X1.M12, “Thermal Aging Embrittlement of Cast Austenetic Stainless Steel (CASS)” specified in NUREG 1801 GALL Report, (April 2001).

17.1.1.1 ASME SECTION XI, SUBSECTIONS IWB, IWC, AND IWD INSERVICE INSPECTION PROGRAM

This program is consistent with the ten attributes of aging management program X1.M1, “ASME Section XI Inservice Inspections, Subsections IWB, IWC and IWD” specified in NUREG 1801, GALL Report (April 2001) with the following clarification. This program credits ASME Code Case N-509, which allows alternate examination categories for certain integrally welded attachments and has been approved for use at St. Lucie.

17.1.1.2 ASME SECTION XI, SUBSECTIONS IWE INSERVICE INSPECTION PROGRAM

This program is consistent with the ten attributes of aging management programs X1.S1, “ASME Section XI, Subsection IWE” and X1.S4, “10 CFR Part 50 Appendix J” specified in NUREG 1801, GALL Report (April 2001).

18.2.2.3 ASME SECTION XI, SUBSECTIONS IWF INSERVICE INSPECTION PROGRAM

This program is consistent with the ten attributes of aging management program X1.S3, “ASME Section XI, Subsection IWF” specified in NUREG 1801, GALL Report (April 2001).

18.2.3 BORAFLEX SURVEILLANCE PROGRAM

This program is consistent with the ten attributes of aging management programs

X1.M22, “Boraflex Monitoring” specified in NUREG 1801, GALL Report (April 2001).

18.2.4 BORIC ACID WASTAGE SURVEILLANCE PROGRAM

This program is consistent with the ten attributes of aging management programs X1.M10, “Boric Acid Corrosion” specified in NUREG 1801, GALL Report (April 2001).

18.2.5 CHEMISTRY CONTROL PROGRAM

The Chemistry Control Program – Water Chemistry Control Subprogram is consistent with ten attributes of aging management program X1.M2, “Water Chemistry” specified in NUREG 1801, GALL Report (April 2001) except that the GALL program credits inspection of select components to verify the effective ness of the chemistry control program and to ensure that significant degradation is not occurring and the component intended function will be maintained during the period of extended operation. No special one-time inspections are required to be performed at St. Lucie. The Chemistry Control Program – Closed-Cycle Cooling Water System Chemistry subprogram is consistent with the ten attributes of aging management program X1.M21 Closed-Cycle Cooling Water System” specified in NUREG 1801, GALL Report (April 2001) except that the program does not address surveillance testing and inspection. The Intake Cooling Water Inspection Program Section 18.2.10 implements the applicable surveillance testing and inspection aspects of NUREG 1801, GALL program. The Chemistry Control Program – Fuel Oil Chemistry Subprogram is plant-specific.

18.2.6 ENVIRONMENTAL QUALIFICATION PROGRAM

This program is consistent with the ten attributes of aging management programs X.E1, “Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements” specified in NUREG 1801, GALL Report (April 2001).

18.2.9 FLOW ACCELERATED CORROSION PROGRAM

This program is consistent with the ten attributes of aging management programs X1.M17, “Flow-Accelerated Corrosion” specified in NUREG 1801, GALL Report (April 2001).

18.2.13 STEAM GENERATOR INTEGRITY PROGRAM

This program is consistent with the ten attributes of aging management programs X1.M19, “Steam Generator Tube Integrity” specified in NUREG 1801, GALL Report (April 2001).

Appendix A2 will be revised as follows:

18.1.5 THERMAL AGING EMBRITTLEMENT OF CASS PROGRAM

This program is consistent with the ten attributes of aging management program X1.M12, “Thermal Aging Embrittlement of Cast Austenetic Stainless Steel (CASS)” specified in NUREG 1801, GALL Report (April 2001).

18.2.2.1 ASME SECTION XI, SUBSECTIONS IWB, IWC, AND IWD INSERVICE INSPECTION PROGRAM

This program is consistent with the ten attributes of aging management program X1.M1, “ASME Section XI Inservice Inspections, Subsections IWB, IWC and IWD” specified in NUREG 1801, GALL Report (April 2001) with the following clarification. This program credits ASME Code Case N-509, which allows alternate examination categories for certain integrally welded attachments and has been approved for use at St. Lucie.

17.1.1.2 ASME SECTION XI, SUBSECTIONS IWE INSERVICE INSPECTION PROGRAM

This program is consistent with the ten attributes of aging management programs X1.S1, “ASME Section XI, Subsection IWE” and X1.S4, “10 CFR Part 50 Appendix J” specified in NUREG 1801, GALL Report (April 2001).

18.2.2.3 ASME SECTION XI, SUBSECTIONS IWF INSERVICE INSPECTION PROGRAM

This program is consistent with the ten attributes of aging management program X1.S3, “ASME Section XI, Subsection IWF” specified in NUREG 1801, GALL Report (April 2001).

18.2.3 BORIC ACID WASTAGE SURVEILLANCE PROGRAM

This program is consistent with the ten attributes of aging management programs X1.M10, “Boric Acid Corrosion” specified in NUREG 1801, GALL Report (April 2001).

18.2.4 CHEMISTRY CONTROL PROGRAM

The Chemistry Control Program – Water Chemistry Control Subprogram is consistent with ten attributes of aging management program X1.M2, “Water Chemistry” specified in NUREG 1801, GALL Report (April 2001) except that the GALL program credits inspection of select components to verify the effective ness of the chemistry control program and to ensure that significant degradation is not occurring and the component intended function will be maintained during the period of extended operation. No special one-time inspections are required to be performed at St. Lucie. The Chemistry Control Program – Closed-Cycle Cooling Water System Chemistry subprogram is consistent with the ten attributes of aging management program X1.M21 Closed-Cycle Cooling Water System” specified in NUREG 1801, GALL Report (April 2001) except that the program does not address surveillance testing and inspection. The Intake Cooling Water Inspection Program Section 18.2.10 implements the applicable surveillance testing and inspection aspects of NUREG 1801, GALL program. The Chemistry Control Program – Fuel Oil Chemistry Subprogram is plant specific.

18.2.5 ENVIRONMENTAL QUALIFICATION PROGRAM

This program is consistent with the ten attributes of aging management programs X.E1, “Electrical Cables and Connections Not Subject to 10 CFR 50.49

Environmental Qualification Requirements" specified in NUREG 1801, GALL Report (April 2001).

18.2.8 FLOW ACCELERATED CORROSION PROGRAM

This program is consistent with the ten attributes of aging management programs X1.M17, "Flow-Accelerated Corrosion" specified in NUREG 1801, GALL Report (April 2001).

18.2.12 STEAM GENERATOR INTEGRITY PROGRAM

This program is consistent with the ten attributes of aging management programs X1.M19, "Steam Generator Tube Integrity" specified in NUREG 1801, GALL Report (April 2001).

Based on the above, FPL requests that Confirmatory Item 3.0.2.2-1 be closed.

Confirmatory Item 3.0.5.1-1:

Section 18.1.2 of Appendix A1 and Section 18.1.1 of Appendix A2 of the LRA provide the applicant's FSAR supplement for the Galvanic Corrosion Susceptibility Inspection Program at St. Lucie. The program descriptions are consistent with the material contained in Section 3.1.2 of Appendix B of the LRA, with the exception of the areas of Acceptance Criteria and Inspection Technique. The applicant needs to revise the FSAR supplements to describe these two attributes consistent with the SER.

FPL Response:

The St. Lucie Units 1 and 2 FSAR Supplements (LRA Appendix A1 and A2) will be revised to identify that the baseline examinations will be either visual inspections or volumetric examinations. In addition, the FSAR Supplements will be revised to state that the evaluation of the inspection results will consider the minimum required wall thickness consistent with the applicable design codes.

St. Lucie Unit 1 FSAR Supplement (LRA Appendix A1) Section 18.1.2 is replaced in its entirety by the following paragraph:

18.1.2 GALVANIC CORROSION SUSCEPTIBILITY INSPECTION PROGRAM

The Galvanic Corrosion Susceptibility Inspection Program manages the aging effect of loss of material due to galvanic corrosion on the surfaces of susceptible piping and components. The program involves selected, one-time inspections on the surfaces of piping and components with the greatest susceptibility to galvanic corrosion. Baseline examinations (visual inspection or volumetric examinations) in select systems will be performed and evaluated to establish if the corrosion mechanism is active. Evaluation of the inspection results will consider the minimum required wall thickness for the component consistent with the applicable design codes. Based on the results of these inspections, the need for follow-up examinations or programmatic corrective actions will be established. The program will be implemented prior to the end of the initial operating license term for St. Lucie Unit 1.

St. Lucie Unit 2 FSAR Supplement (LRA Appendix A2) Section 18.1.1 is replaced in its entirety by the following paragraph:

18.1.1 GALVANIC CORROSION SUSCEPTIBILITY INSPECTION PROGRAM

The Galvanic Corrosion Susceptibility Inspection Program manages the aging effect of loss of material due to galvanic corrosion on the surfaces of susceptible piping and components. The program involves selected, one-time inspections on the surfaces of piping and components with the greatest susceptibility to galvanic corrosion. Baseline examinations (visual inspection or volumetric examinations) in select systems will be performed and evaluated to establish if the corrosion mechanism is active. Evaluation of the inspection results will consider the minimum required wall thickness for the component consistent with the applicable design codes. Based on the results of these inspections, the need for follow-up examinations or programmatic corrective actions will be established. The program will be implemented prior to the end of the initial operating license term for St. Lucie Unit 2.

Based on the above, FPL requests that Confirmatory Item 3.0.5.1-1 be closed.

Confirmatory Item 3.0.5.4-1:

Section 18.2.4 of Appendix A1 and Section 18.2.3 of Appendix A2 of the LRA provide the applicant's FSAR supplement for the Boric Acid Wastage Surveillance Programs at St. Lucie. The staff reviewed the sections to verify that the information in the FSAR supplement provides an adequate summary of the program activities required by 10 CFR 54.21(d). The staff identified that the applicant needs to modify the FSAR supplement descriptions of the Boric Acid Wastage Surveillance Program to include portions of the waste management system within the scope of license renewal. The applicant needs to revise the FSAR supplements to describe these changes consistent with the SER.

FPL Response:

LRA Appendix A1 St. Lucie Unit 1 FSAR Supplement Section 18.2.4 and LRA Appendix A2 St. Lucie Unit 2 FSAR Supplement Section 18.2.3 contain the following paragraph:

> Portions of the Waste Management System within the scope of license renewal are not currently included in the Boric Acid Wastage Surveillance Program. As such, the scope of the program will be enhanced to include these components and to provide for the inspection and evaluation of adjacent structures and components when leakage is identified. This enhancement will be completed prior to the end of the initial operating license term for St. Lucie Unit 1(2).

This paragraph identifies the commitment to include Waste Management System components within the scope of license renewal in the Boric Acid Wastage Surveillance Program. Therefore, no change to the FSAR Supplements is required.

Based on the above, FPL requests that Confirmatory Item 3.0.5.4-1 be closed.

Confirmatory Item 3.1.0.1-1:

Sections 18.2.1 of Appendices A1 and A2 of the LRA provide the applicant's FSAR supplement for the A600IP. The program descriptions are consistent with the material contained in Section 3.2.1 of Appendix B to the LRA, with possible exceptions in the areas of Detection of Aging Effects, Monitoring and Trending, and Acceptance Criteria. These may be revised by the applicant's responses to Open Items 3.1.0.1-1 Parts 1 and 2. The applicant needs to revise the FSAR supplements to describe these attributes consistent with the SER.

FPL Response:

Note that Open Item 3.1.0.1-1 does not contain two parts. However, there are two Open Items 3.1.0.1-1 and 3.1.0.1-2 that address the Alloy 600 Inspection Program.

As a result of the responses to Open Items 3.1.0.1-1 and 3.1.0.1-2, LRA Appendix A1 Section 18.2.1 and LRA Appendix A2 Section 18.2.1 Updated FSAR Supplements will be revised to add the following paragraph:

> The Alloy 600 Inspection Program will implement FPL commitments in response to NRC communications associated with primary water stress corrosion cracking (PWSCC) of Inconel materials (including Alloy 600 and Alloy 182/82 materials). In addition, this program will be maintained consistent with the recommendations of the Combustion Engineering Owners Group (CEOG), Nuclear Energy Institute (NEI), and Electric Power Research Institute (EPRI) Material Reliability Program (MRP).

Based on the above, FPL requests that Confirmatory Item 3.1.0.1-1 be closed.

Confirmatory Item 3.1.0.3-1:

Section 18.1.5 of Appendix A1 and Section 18.1.4 of Appendix A2 of the LRA provide the applicant's FSAR supplement for the Small Bore Class 1 Piping Inspection AMP. The program descriptions are consistent with the material contained in Section 3.1.5 of the appendix to the LRA, with possible exceptions in the areas of Detection of Aging Management Effects and Monitoring and Trending. These program attributes may be revised by the applicant's responses to Open Item 3.1.0.3-1 and 3.1.0.3-2. The applicant needs to revise the FSAR supplements to describe these attributes consistent with the SER.

FPL Response:

Note that this Confirmatory Item references Open Items 3.1.0.3-1 and 3.1.0.3-2. Review of the SER did not identify any Open Item 3.1.0.3-2.

St. Lucie FSAR Supplements, LRA Appendix A1 Section 18.1.5 for Unit 1 and LRA Appendix A2 Section 18.1.4 for Unit 2 are replaced in their entirety by the following paragraphs:

Unit 1 Appendix A1

18.1.5 SMALL BORE CLASS I PIPING INSPECTION

A volumetric inspection of a sample of small bore Class 1 piping will be performed to determine if cracking is an aging effect requiring management during the period of extended operation. This one-time inspection will address Class 1 piping less than 4 inches in diameter. Based on the results of these inspections, the need for additional inspections or programmatic corrective actions will be established. FPL will provide a report describing this inspection plan prior to its implementation. The inspection plan will confirm that the risk-informed methodologies will only be used to establish the minimum number and locations of small bore piping full penetration butt welds to be volumetrically examined. It will not be used as a basis to eliminate the volumetric examination of the welds. Additionally, this inspection plan will describe the risk-informed methodology and address how the methodology has been applied to determine the locations and number of small bore piping components for inspection. The inspection will be performed prior to the end of the initial operating license term for St. Lucie Unit 1.

Unit 2 Appendix A2

18.1.4 SMALL BORE CLASS I PIPING INSPECTION

A volumetric inspection of a sample of small bore Class 1 piping will be performed to determine if cracking is an aging effect requiring management during the period of extended operation. This one-time inspection will address Class 1 piping less than 4 inches in diameter. Based on the results of these inspections, the need for additional inspections or programmatic corrective actions will be established. FPL will provide a report describing this inspection plan prior to its implementation. The inspection plan will confirm that the risk-informed methodologies will only be used to establish the minimum number and locations of small bore piping full penetration butt welds to be volumetrically examined. It

will not be used as a basis to eliminate the volumetric examination of the welds. Additionally, this inspection plan will describe the risk-informed methodology and address how the methodology has been applied to determine the locations and number of small bore piping components for inspection. The inspection will be performed prior to the end of the initial operating license term for St. Lucie Unit 2.

Based on the above, FPL requests that Confirmatory Item 3.1.0.3-1 be closed.

Confirmatory Item 3.6.2.1-1:

The applicant committed to provide a description of Non-EQ Cables and Connections AMP to be added in the FSAR supplements in Appendix A of the LRA.

FPL Response:

The FSAR Supplements for the St. Lucie Units 1 and 2 will be revised to incorporate the Containment Cable Inspection Program. For Unit 1, LRA Appendix A1, Subsection 18.1.7 and for Unit 2, LRA Appendix A2, Subsection 18.1.6 will be added as follows:

Unit 1 Appendix A1

18.1.7 CONTAINMENT CABLE INSPECTION PROGRAM

The Containment Cable Inspection Program manages the potential aging of non-EQ cables and connections. This program includes non-EQ cables and connections associated with sensitive low-level signal circuits. The only non-EQ cables and connections associated with sensitive low-level signal circuits within the scope of license renewal for St. Lucie are those associated with the neutron detectors. This aging management program consists of periodic visual inspection of accessible non-EQ cables and connections within the scope of license renewal located in the containment that may be installed in adverse localized environments, and review of calibration tests results for indication of age related degradation of cables associated with the neutron detectors. The inspections will be implemented prior to the end of the initial operating license term for St. Lucie Unit 1.

Unit 2 Appendix A2

18.1.6 CONTAINMENT CABLE INSPECTION PROGRAM

The Containment Cable Inspection Program manages the potential aging of non-EQ cables and connections. This program includes non-EQ cables and connections associated with sensitive low-level signal circuits. The only non-EQ cables and connections associated with sensitive low-level signal circuits within the scope of license renewal for St. Lucie are those associated with the neutron detectors. This aging management program consists of periodic visual inspection of accessible non-EQ cables and connections within the scope of license renewal located in the containment that may be installed in adverse localized environments, and review of calibration tests results for indication of age related degradation of cables associated with the neutron detectors. The inspections will be implemented prior to the end of the initial operating license term for St. Lucie Unit 2.

Based on the above, FPL requests that Confirmatory Item 3.6.2.1-1 be closed.

Confirmatory Item 4.3.1-1:

The applicant stated that the Inservice Inspection Program would be used to manage the aging of the pressurizer surge line during the period of extended operation. The applicant plans to use the results of the Inservice Inspection Program to develop an approach for addressing environmental assisted fatigue of the surge line. If the applicant selects the approach of using an inspection program, the inspection details including scope, qualification, method, and frequency shall be provided to the NRC for review prior to the period of extended operation. The staff finds that the applicant's proposed options are acceptable to address environmentally assisted fatigue of the pressurizer surge lines during the period of extended operation in accordance with 10 CFR 54.21(c)(1). However, in accordance with 10 CFR 54.21(d), these options need to be included in the FSAR supplements.

FPL Response:

The FSAR Supplements for the St. Lucie Units 1 and 2 will be revised to incorporate the options for monitoring environmentally assisted fatigue of the pressurizer surge lines, if required, identified in LRA Subsection 4.3.3 (page 4.3-7) Environmentally Assisted Fatigue. For Unit 1, LRA Appendix A1, Subsection 18.2.2.1 (page A1-35) and for Unit 2, LRA Appendix A2, Subsection 18.2.2.1 (page A2-32), the second paragraph will be replaced in its entirety with the following:

Unit 1 Appendix A1

The ASME Section XI, Subsections IWB, IWC, and IWD Inservice Inspection Program will be enhanced to require VT-1 inspections of the core stabilizing lugs and core support lugs and to require evaluation of surge line flaws (if identified) with regard to environmentally assisted fatigue. If inspections of pressurizer surge line welds identify indications, the results of the inspections will be utilized to assess the appropriate approach for addressing environmentally assisted fatigue of the surge lines. The approach developed could include one or more of the following:

- Further refinement of the fatigue analyses to lower the Cumulative Usage Factors (CUFs) to below 1.0, or
- Repair of the affected locations, or
- Replacement of the affected locations, or
- Management of the effects of fatigue by an inspection program that has been reviewed and approved by the NRC (e.g., periodic non-destructive examination of the affected locations at inspection intervals to be determined by a method accepted by the NRC.

This action will be implemented prior to the end of the initial operating license term for St. Lucie Unit 1.

Unit 2 Appendix A2

The ASME Section XI, Subsections IWB, IWC, and IWD Inservice Inspection Program will be enhanced to require VT-1 inspections of the core stabilizing lugs and core support lugs and to require evaluation of surge line flaws (if identified) with regard to environmentally assisted fatigue. If inspections of pressurizer surge line welds identify indications, the results of the inspections will be utilized to assess the appropriate approach for addressing environmentally assisted fatigue of the surge lines. The approach developed could include one or more of the following:

- Further refinement of the fatigue analyses to lower the Cumulative Usage Factors (CUFs) to below 1.0, or
- Repair of the affected locations, or
- Replacement of the affected locations, or
- Management of the effects of fatigue by an inspection program that has been reviewed and approved by the NRC (e.g., periodic non-destructive examination of the affected locations at inspection intervals to be determined by a method accepted by the NRC.

This action will be implemented prior to the end of the initial operating license term for St. Lucie Unit 2.

Based on the above, FPL requests that Confirmatory Item 4.3.1-1 be closed.