



October 6, 2015

L-2015-258
10 CFR 50.4

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

Re: St. Lucie Unit 1
Docket No. 50-335

RAI REPLY FOR LICENSE RENEWAL CONDENSATE STORAGE TANK
CROSS-CONNECT BURIED PIPING INSPECTION COMMITMENT

References:

1. FPL Letter L-2015-135 dated April 29, 2014, "License Renewal Condensate Storage Tank Cross-Connect Buried Piping Inspection (Unit 1 only) Revised Commitment", ADAMS Accession No. ML15146A055.
2. Request for Additional Information License Renewal Condensate Storage Tank Cross-Connect Buried Piping Inspection Commitment Florida Power and Light Company St. Lucie Unit No. 1 (MF6518), ADAMS Accession No. ML15237A418.

Florida Power & Light (FPL) submitted FPL Letter L-2015-135 dated May 12, 2015, "License Renewal Condensate Storage Tank Cross-Connect Buried Piping Inspection (Unit 1 only) Revised Commitment" in Reference 1. Reference 2 forwarded a NRC request for additional information (RAI) on the submittal. FPL's response to the RAIs is attached to this correspondence.

Please contact Lyle Berry at (772) 467-7680 should you have any questions regarding this submittal.

Very truly yours,

A handwritten signature in black ink that reads "Eric S. Katzman".

Eric S. Katzman
Licensing Manager
St. Lucie Plant

ESK/lrb

Attachment

cc: USNRC Regional Administrator, Region II
USNRC Project Manager, St. Lucie Nuclear Plant
USNRC Senior Resident Inspector, St. Lucie Nuclear Plant

A089
NRR

REQUEST FOR ADDITIONAL INFORMATION
LICENSE RENEWAL CONDENSATE STORAGE TANK
CROSS-CONNECT BURIED PIPING INSPECTION COMMITMENT
FLORIDA POWER AND LIGHT COMPANY
ST. LUCIE UNIT NO. 1
DOCKET NO. 50-335
TAC NO. MF6518

By letter dated May 12, 2015 (Agency wide Documents Access and Management System Accession No. ML 15146A055), Florida Power and Light Company provided information regarding the license renewal commitment for St. Lucie Plant, Unit No. 1 (St. Lucie) to perform a one-time inspection of the Condensate Storage Tank (CST) cross-connect buried piping, prior to the end of the initial operating license term.

The U.S. Nuclear Regulatory Commission (NRC) staff has determined that additional information is required to complete its review.

- RAI 1 For the concrete that encases the CST piping, state the extent (i.e., length and depth) of concrete that was exposed and the condition of the concrete.

- RAI 2 State the basis for why water intrusion is not expected through the concrete to the surface of the stainless steel CST cross-connect piping, or if the potential for water intrusion exists, why loss of material or cracking of the stainless steel piping is not expected.

NRC RAI # 1

For the concrete that encases the CST piping, state the extent (i.e., length and depth) of concrete that was exposed and the condition of the concrete.

FPL Response to RAI # 1

On March 29, 2015 excavation activities uncovered a concrete structure at the design location of the pipe (8-C-95 Condensate Storage Tank cross-connect). A section of concrete was exposed approximately 11 feet long. The width was 18 inches and the depth of the concrete was determined to be 18 inches by partial (semi-circle) excavation at two locations approximately 6 feet apart on the East side. The West side was not disturbed because design drawings indicated a fire protection pipe was in close proximity on the West side. The drawings identify the lowest section of the pipe run is at elevation 13 feet (the nominal site grade elevation is elevation 18 feet) and this is the approximate location where the concrete was exposed.

There were no indications of any degradation of the concrete such as cracking, spalling, scaling, pitting, leaching, erosion, settlement, cavitation or abrasion areas, voids, pop outs or exposed reinforcing steel. Debris observed on the concrete duct is from excavated soil and gravel. The concrete duct has rough edges and surface. It can be concluded that this roughness is due to concrete formwork removal during the original construction activities and the condition is in accordance with the original construction specification for concrete which states, "for surfaces against which backfill or concrete is to be placed no treatment is required except for repair of defective areas."

NRC RAI # 2

State the basis for why water intrusion is not expected through the concrete to the surface of the stainless steel CST cross-connect piping, or if the potential for water intrusion exists, why loss of material or cracking of the stainless steel piping is not expected.

FPL Response to RAI # 2

The As-Built isometric drawing for the pipe is dated August 7, 1973. Specific records associated with the concrete placement for the pipe were not located. Plant operating experience obtained from the buried piping program and the observed condition of the concrete which was exposed during the inspection will be used to support the conclusion that water intrusion does not exist and loss of material or cracking of the stainless steel piping is not expected.

The excavation site was dry which is consistent with the design. Unit 1 FSAR Figure 3-8.41 "Water Table at EL + 3' Loading" and Unit 2 FSAR Section 2.4.13.5 "Design Basis for Subsurface Hydrostatic Loading" identify "The water table is at elevation plus 3 feet MLW [sic] for normal conditions...". With the design location being approximately 10 feet above the normal water table, the concrete encased pipe is not likely to be submerged for extended periods of time.

Summary of Inspection Results from excavation of the pipe / concrete

As stated above, on March 29 2015 excavation activities uncovered a concrete structure at the design location of the pipe. This supported the conclusion that the pipe is encased in concrete and not directly buried.

No degradation of the concrete such as cracking, spalling, scaling, pitting, leaching, erosion, settlement, cavitation, abrasion, areas, voids, pop outs or exposed reinforcing steel were identified during the inspection. Debris observed on the concrete duct was from excavated soil and gravel. The concrete duct has rough edges and surface. It can be concluded that this roughness is due to concrete formwork removal during the original construction activities.

Based on the observed condition of the concrete, water intrusion is not expected through the concrete to the surface of the stainless steel crosstie piping.

Results of the inspection are located in the Corrective Action program under Action Request (AR) 02036344.

Buried Piping Program

St. Lucie has implemented a buried piping inspection program in accordance with NEI 09-14, "Guideline for the Management of Underground Piping and Tank Integrity", Rev. 3. Program review determined that St. Lucie Unit 2 design documents are very specific and require concrete encasement of buried piping that is stainless steel or contains licensed material. Since the Unit 1 design documents did not specifically require this encasement, exploratory digs were conducted. In each of the inspections, the piping was found to be encased in concrete and the concrete was solid with no delamination. This piping was then exempt from piping surface inspection as part of the buried piping inspection program, since it was determined to be encased in concrete.

In accordance with NEI 09-14 Rev. 3, the St. Lucie buried piping program scope includes safety-related, licensed material, or environmentally hazardous lines. The 8-C-95 line does not fall into this scoping condition, but was included and credited in the buried piping program due to the St. Lucie one-time license renewal commitment. St. Lucie's Buried Piping Asset Management Plan is a living document and is periodically updated with inspection results, risk ranking, and future inspection scope.

St. Lucie conducted soil sampling as part of the buried piping inspection program. In general, the soil pH was approximately 9.0, indicating the soil was alkaline. Based on the EPRI presentation, "What Constitutes Corrosive Soil", by Doug Munson, dated July 2013, a pH > 8.5 indicates dissolved salts, low resistivity, and corrosive to cast iron. The CST crosstie piping at St. Lucie is stainless steel and loss of material or cracking are not expected to occur with the tested soil condition, due to any migration of water through the concrete to the surface of the piping.

References:

1. St. Lucie Action Request Assignment 01681374-06, NEI 09-014 Revision 3, Asset Management Plan, St. Lucie Nuclear Station Underground Piping and Tank Integrity Program (UPTIP), Revision 0.
2. St. Lucie Action Request 02036344, License Renewal Inspection of Condensate Cross Tie C-8-95 (a.k.a, 8-C-95).
3. St. Lucie Work Order WO 40129353-01, Visual Exam of Buried U1/U2 COND. CROSSTIE 8"-C-95.