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L-2018-182
10 CFR 50.90

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

St. Lucie Plant Unit 2
Docket No. 50-389
Renewed Facility Operating Licenses No. NPF-16
License Amendment Request Iodine Removal System Elimination

In accordance with 10 CFR 50.90, Florida Power and Light Company (FPL) hereby requests a license amendment to Renewed Facility Operating Licenses No. NPF-16 for the St. Lucie Nuclear Plant Unit 2. Specifically, the proposed change involves eliminating the Technical Specification (TS) for the Iodine Removal System as well as simplifying maintenance associated with trisodium phosphate dodecahydrate (TSP) basket TS Surveillance Requirements.

The Enclosure to this letter provides FPL's evaluation of the proposed change. Attachment 1 to the enclosure provides a markup of the TS showing the proposed changes. Attachment 2 provides retyped TS pages containing the proposed changes. Attachment 3 provides the existing TS Bases page marked up to show the proposed change. The changes to the TS Bases are provided for information only and will be incorporated in accordance with the plant's TS Bases Control Program upon implementation of the approved amendment.

As presented in the evaluation, the proposed change does not involve a significant hazards consideration pursuant to 10 CFR 50.92, and there are no significant environmental impacts associated with the change. This change has been reviewed and concurred with by the St. Lucie Onsite Review Group.

In accordance with 10 CFR 50.91, a copy of this letter is being forwarded to the State of Florida designee.

This letter contains no new or revised regulatory commitments.

FPL requests NRC review and approval of this license amendment request following a one-year review and implementation within 90 days following approval.

Should you have any questions regarding this submittal, please contact Mr. Michael J. Snyder, Licensing Manager, at 772-467-7036.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on November 9, 2018

Sincerely,

Daniel DeBoer

Daniel DeBoer
Site Director
St. Lucie Plant

Enclosure

cc: USNRC Regional Administrator, Region II
USNRC Project Manager, St. Lucie Nuclear Plant, Units 1 and 2
USNRC Senior Resident Inspector, St. Lucie Nuclear Plant, Units 1 and 2
Ms. Cindy Becker, Florida Department of Health

Florida Power and Light Company
St. Lucie Nuclear Plant Unit 2

LICENSE AMENDMENT REQUEST

SUBJECT: Elimination of Iodine Removal System (IRS)

1 SUMMARY DESCRIPTION

This license amendment request (LAR) proposes to amend Operating License NPF-16 for St. Lucie Unit 2. The proposed license amendment will remove the Unit 2 Iodine Removal System (IRS) Technical Specification (TS) 3/4.6.2.2 and simplify maintenance associated with trisodium phosphate dodecahydrate (TSP) basket surveillances.

2 DETAILED DESCRIPTION

2.1 System Design and Operation

IRS

The Containment Spray System (CSS) is provided to perform the dual functions of removing heat and fission products from a post-accident containment atmosphere. The fission product removal function is carried out by the Iodine Removal System (IRS), operating in conjunction with the CSS.

Both the CSS and IRS consist of two independent and redundant loops. Each CSS loop is made up of a spray pump, shutdown cooling heat exchanger, piping, valves, headers, and nozzles. The nozzles are passive devices which produce constant spray patterns without moving parts. The spray nozzles are designed to produce small droplet sizes to enhance both heat transfer and maximize fission product removal characteristics.

Connected to each CSS loop is an independent train of the IRS consisting of a constant volume metering pump, solenoid-operated isolation valve, IRS tank and associated piping and valves. The IRS was originally provided to enhance the capture of radioiodines from the containment atmosphere following a LOCA by adding controlled amounts of hydrazine to the CS water. The design of the IRS is based on the addition of hydrazine to the containment spray water at a rate that ensures a minimum hydrazine concentration of 50 ppm at the spray nozzles for a minimum period of 120 minutes.

A constant volume hydrazine addition pump is selected for system simplification and ease of operation. Upon receipt of containment spray actuation signal (CSAS) the solenoid-operated isolation valves open and the hydrazine pumps start. Hydrazine is injected into the suction side of each containment spray pump until a low level switch in the hydrazine storage tank simultaneously stops the pumps and closes the solenoid valves. The system is designed to be fully automatic yet is capable of local-manual control.

TSP

A volume of 173 ft^3 of TSP, used for post-LOCA containment sump pH buffering, is stored in sixteen open baskets located in the vicinity of the containment sump. They are constructed of stainless steel with mesh screen sides, and the baskets are

designed such that an inadvertent containment spray will not dissolve the TSP. The TSP is dissolved by borated water from the containment spray resulting in increased sump pH. Mixing is achieved as the solution is continuously recirculated from the sump to the spray nozzles. Approximately one-third of the TSP dissolves during the injection mode with all remaining TSP being dissolved within three hours following CSAS. Analysis shows that Post-LOCA containment sump pH is stabilized above 7 by the use of TSP, assuring that the iodine removed from the containment atmosphere remains in solution in the containment sump.

2.2 Current TS Requirements

IRS

The IRS LCO and surveillance requirements are contained in TS 3/4.6.2.2.

Technical Specification 3.6.2.2 requires the following in modes 1, 2 and 3 when pressurizer pressure is greater than or equal to 1750 psia:

- A hydrazine storage tank containing a minimum of 675 gallons of greater than or equal to 25.4% by weight N2H2 (hydrazine) solution
- Two iodine removal pumps each capable of adding hydrazine solution from the hydrazine storage tank to a containment spray system pump flow.

Technical Specification 4.6.2.2 requires the following to demonstrate operability of the Iodine Removal System:

- Verifying each valve (manual, power operated or automatic) in the flow path that is not locked, sealed or otherwise secured in position, is in its correct position.
- Verifying flow rate of the iodine removal pumps is between 0.71 gpm and 0.82 gpm when tested pursuant to the Inservice Testing Program.
- Verifying the contained solution volume in the tank.
- Verifying the concentration of the hydrazine solution by chemical analysis.
- In accordance with the Surveillance Frequency Control Program, during shutdown, by verifying that each automatic valve in the flow path actuates to its correct position on a CSAS test signal.

TSP

TSP TS requirements are governed by the ECCS Subsystems - Operating surveillance requirements contained in TS 3/4.5.2.

- TS Surveillance Requirement 4.5.2.e.3 verifies that a minimum total of 173 cubic feet of solid granular TSP is contained within the TSP storage baskets.
- TS Surveillance Requirement 4.5.2.e.4 verifies that when a representative sample of 70.5 +/- 0.5 grams of TSP from a TSP storage basket is submerged, without agitation, in 10.0 +/- 0.1 gallons of 120 +/- 10°F borated water from the

refueling water tank (RWT), the pH of the mixed solution is raised to greater than or equal to 7 within 4 hours.

2.3 Description of Proposed Changes

TS 3/4.6.2.2 in its entirety is being removed from the TS. Conforming changes will also be made to the TS index.

TS Surveillance Requirement 4.5.2.e.4 is be modified as follows:

"*Verifying that when a representative sample of 70.5 +/- 0.5 grams of TSP from a TSP storage basket is submerged, without agitation, in 10.0 +/- 0.1 gallons of 120 +/- 10°F borated water ~~from~~ representative of the RWT, the pH of the mixed solution is raised to greater than or equal to 7 within 4 hours.*"

2.4 Reason for the Proposed Changes

The IRS is no longer relied upon for managing post-accident iodine. Removing the IRS TS requirements will reduce burden on the plant staff and eliminate unneeded maintenance.

The change to TS Surveillance Requirement 4.5.2.e.4 will allow the use of prepared solution equivalent to RWT water, thereby eliminating hazards associated with obtaining and transporting 10 gallons of contaminated fluid for the purposes of performing the surveillance.

3 TECHNICAL EVALUATION

St. Lucie Unit 2 was originally licensed with spray additives credited for post-Loss of Coolant Accident (LOCA) containment atmosphere radioiodine removal per revision 1 of the Standard Review Plan, Section 6.5.2. Industry operating experience and NRC research later confirmed that chemical additives in the spray solution have no significant effect on aerosol particle removal because this removal process is largely mechanical. The new methodology provided by later SRP 6.5.2 revisions resulted in higher iodine removal rates without any reference to, or credit taken for, spray additives. As part of the extended power uprate (EPU) license amendment (Reference 1), spray additives to the containment spray system (CSS) were not credited for radioiodine removal as allowed by Standard Review Plan, Section 6.5.2, Revision 4 (Reference 2). Additionally, the use of hydrazine was not credited for maintaining post-LOCA sump pH, nor was its use credited in the EPU radiological dose analyses. Although the need for the IRS system has been negated by the EPU analyses because the system is no longer relied upon for managing post-accident iodine, the TS have not been updated to remove the obsolete IRS requirements.

The following items were considered in the evaluation of TSP for managing post-accident iodine and for deletion of Technical Specification 3/4.6.2.2 and the removal of the IRS:

- Containment sump pH
- Dose

- Corrosion (Stress corrosion cracking)

3.1 Containment Sump pH

For EPU, PSL conducted an evaluation and has determined that the post-LOCA sump pH will be maintained at or above 7. The pH is controlled with baskets of TSP in the vicinity of the containment sump which dissolve as the post-LOCA water level increases. The boron concentrations for the RWT, Safety Injection Tanks (SITs) and Reactor Coolant System (RCS) were considered in the analyses. Hydrazine was not included in this analysis. Time histories of the minimum pH of the aqueous phase in the containment sump are shown on UFSAR Figures 6.5-8a and 6.5-8b.

The minimum and maximum cases were evaluated to determine the pH of the sump. Case 1 and Case 2 are parametric studies performed to determine the minimum pH in the sump up to 30 days (2592000 seconds). Case 1 (Figure 6.5-8a) incorporated the minimum water volume and minimum water level timing while Case 2 (Figure 6.5-8b) incorporated the maximum water volume and maximum water level timing. The recirculation actuation signal (RAS) mode occurred at 1338 seconds into the event based on a minimum RWT volume for Case 1. In case 2 the RAS mode occurred at 1662 seconds based on a maximum RWT volume. This time represented the minimum time before containment spray will take suction from the containment sump. In both cases the sump pH initially decreased due to hydrochloric and nitric acid generation then increased rapidly when the water level reached the bottom of the baskets and the TSP started to dissolve. At recirculation approximately one third of the available TSP is dissolved and the sump pH value was 6.971 and 7.073 for Case 1 and 2, respectively. Although the minimum recirculation pH for Case 1 was just under 7.0, this transient result is similar to that evaluated and approved by the NRC as part of the St. Lucie Unit 2 Alternative Source Term (AST) license amendment safety evaluation report (Reference 4). As the balance of TSP continued to dissolve during the RAS mode, the pH continued to increase and sump pH equalized above 7.0. The peak sump pH is reached when all of the TSP is dissolved and then began to decline due to continued acid generation. The maximum sump pH was also evaluated and was found to be 8.102. The CSS can function continuously in the recirculation mode.

3.2 Post-LOCA Dose

The time-dependent post-LOCA pH of the containment sump analyses results were used for the EPU dose assessment.

Reference 4 stated, "The licensee evaluated the radiological consequences resulting from the postulated LOCA and concluded that the radiological consequences at the EAB, LPZ and CR comply with the reference values and the CR dose criterion provided in 10 CFR 50.67 as well as the accident specific dose guidelines specified in SRP Section 15.0.1 and RG 1.18. The NRC staff finds, with reasonable assurance, that the licensee's estimates of the dose consequences of a DBLOCA will comply

with the requirements of 10 CFR 50.67 and the guidelines of RG 1.183, and are therefore acceptable."

RG 1.183, Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors, was followed in all aspects regarding the core inventory and the release fractions and timing for the evaluation of the LOCA. The LOCA analysis assumed the iodine will be removed from the containment atmosphere by both containment spray and natural deposition to the containment walls. As a result of these removal mechanisms, a large fraction of the released activity will be deposited in the containment sump. The sump water will retain soluble gaseous and soluble fission products, such as iodines and cesium. Therefore, consistent with SRP 6.5.2, the iodine deposited in the sump water can be assumed to remain in solution because the containment sump pH is maintained at or above 7.

3.3 Corrosion

Metallic materials for ASME Code Class 2 and 3 components are selected for their compatibility with the reactor coolant system and containment spray. Austenitic stainless steels are not subject to significant corrosion in borated water or borated water with hydrazine and TSP additives. The sources of water draining into the containment sump following a LOCA (RCS and RWT) are pH neutral or slightly acidic borated water which will immerse and dissolve the solid TSP located in the vicinity of the containment sump. Within two hours post-accident, the recirculating water mixture is stabilized at a neutral pH in accordance with Branch Technical Position MTEB 6-1, "pH for Emergency Coolant Water." As a result, the pH level of the post-accident water chemistry reduces the probability of stress corrosion cracking of austenitic stainless steel components. Other Emergency Safety Features such as pump and valve seals designed for the cooling solutions remain unaffected by neutral pH water.

Hydrazine is not credited as a corrosion inhibitor. With the sump maintained at a pH of 7 with the use of TSP, corrosion will not be affected by the elimination of hydrazine.

As shown above, hydrazine addition to the containment spray system is not needed for:

- post-LOCA sump pH control,
- RG 1.183 and 10 CFR 50.67 analyses success criteria, and
- corrosion control

Additionally, preparing solution representative of the RWT fluid for the purpose of surveilling TSP buffering capabilities has no effect on the surveillance results, and is considered technically equivalent to actual RWT water. This change eliminates the difficulties associated with the transport of contaminated water from the RWT to the chemistry labs.

4 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

The St. Lucie Unit 2 UFSAR discusses conformance with the NRC "General Design Criteria for Nuclear Power Plants" as specified in Appendix A to 10 CFR 50 effective May 21, 1971 and subsequently amended on July 7, 1971, and February 12, 1976. Based on the content herein, FPL concludes that St. Lucie Unit 2 fully satisfies and is in compliance with the General Design Criteria.

GDC 19, "Control Room", requires adequate radiation protection provided to permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 5 rem total effective dose equivalent for the duration of the accident.

GDC 41, "Containment Atmosphere Cleanup" requires systems to control fission products, hydrogen, oxygen and other substances which may be released into the reactor containment shall be provided as necessary to reduce the concentration and quantity of fission products released to the environment following postulated accidents, and to control the concentration of hydrogen and oxygen and other substances in the containment atmosphere following postulated accidents to ensure containment integrity is maintained.

NUREG-0800, Standard Review Plan 6.5.2, "Containment Spray as a Fission Product Cleanup System," no longer requires the use spray additives for post-LOCA sump pH buffering.

4.2 Precedent

Palisades, a Combustion Engineering plant, was licensed with spray additives credited for post-LOCA containment sump pH buffering. In the NRC SER dated May 19, 1995, for TS amendment 195 (Reference 5), only the use of TSP was credited to maintain post-LOCA containment sump pH.

4.3 Significant Hazards Consideration

The proposed amendment would permit deletion of TS 3/4.6.2.2, Limiting Condition of Operation for the Iodine Removal System and subsequent abandonment or removal of the system, as well as simplifying maintenance associated with TSP basket surveillances.

FPL has evaluated whether or not a significant hazards consideration is involved with the proposed changes by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment" as discussed below:

1) Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No

The IRS is used post-LOCA and is not an accident initiator. Therefore, there is no increase in the probability of an accident as a result of hydrazine removal. The Safety Evaluation for Unit 2 extended power uprate (TAC No. ME5843) states that PSL evaluated the radiological consequences resulting from the postulated LOCA at the exclusion area boundary, the low population zone and control room comply with the reference values and the control room dose criterion provided in 10 CFR 50.67 and the accident specific dose guidelines specified in SRP Section 15.0.1 and Regulatory Guide 1.183. The NRC review determined that this analysis, the assumptions and inputs are consistent with the applicable regulatory guidance. The NRC concluded that the estimates for dose consequences of a design basis LOCA will comply with the requirements of 10 CFR 50.67 and the guidelines of Regulatory Guide 1.183 and are therefore acceptable. Per the Unit 2 UFSAR, hydrazine addition is not credited for the EPU dose assessment.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2) Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The IRS is used post-LOCA and is not an accident initiator. Therefore, there is no new or different kind of accident from an accident previously evaluated. There is no equipment added by this change, only removal of iodine removal system equipment.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3) Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No

The Safety Evaluation for Unit 2 extended power uprate (TAC No. ME5843) states that PSL evaluated the radiological consequences resulting from the postulated LOCA at the exclusion area boundary, the low population zone and control room comply with the reference values and the control room dose criterion provided in 10 CFR 50.67 and the accident specific dose guidelines specified in SRP Section 15.0.1 and RG 1.183. The NRC review determined that this analysis, the assumptions and inputs are consistent with the applicable regulatory guidance. The NRC concluded that the estimates for dose consequences of a design basis LOCA will comply with the requirements of 10 CFR 50.67 and the guidelines of Regulatory Guide 1.183 and are therefore acceptable. Per the Unit 2 UFSAR, hydrazine addition is not credited for the EPU dose assessment. There is no reduction in a margin of safety as there is no credit taken for hydrazine to ensure containment spray iodine removal.

Per the guidance from SRP 6.5.2, iodine deposited in the containment sump water can be assumed to remain in solution as long as the containment sump pH is maintained at or above 7. The containment sump pH is maintained by TSP baskets which dissolve as the post-LOCA water level increases. For EPU, PSL conducted an evaluation and determined that the sump pH will be maintained at or above 7 without the use of hydrazine.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, FPL concludes that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92, and, accordingly, a finding of "no significant hazards consideration" is justified.

4.4 Conclusions

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

5 ENVIRONMENTAL CONSIDERATION

The proposed amendment modifies a regulatory requirement with respect to the installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or changes an inspection or surveillance requirement. However, the proposed change does not involve (i) a significant hazards consideration; (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite; or (iii) a significant increase in the individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the proposed amendment.

6 REFERENCES

1. FPL Letter L-2011-021 dated February 25, 2011, "License Amendment Request for Extended Power Uprate." ADAMS Accession ML110730116
2. NUREG-0800, Standard Review Plan 6.5.2, "Containment Spray as a Fission Product Cleanup System."
3. NRC SER dated September 24, 2012, "St. Lucie Plant, Unit 2 - Issuance of Amendment Regarding Extended Power Uprate (TAC NO. ME5843)." ADAMS Accession ML12235A463
4. NRC SER dated September 29, 2008, "St. Lucie, Unit 2 - Issuance of Amendment No. 152 Regarding Alternative Source Term." ADAMS Accession ML082060400
5. NRC SER dated May 19, 1995, "Palisades Plant – Issuance of Amendment RE: Iodine Removal System Technical Specifications (TAC No. M91222)." ADAMS Accession ML020840169

ATTACHMENT 1

Florida Power and Light Company
St. Lucie Unit 2

LICENSE AMENDMENT REQUEST

Technical Specification Markups

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Attachment 1

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LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

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Attachment 1

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (continued)

2. A visual inspection of the containment sump and verifying that the subsystem suction inlets are not restricted by debris and that the sump components (trash racks, screens, etc.) show no evidence of structural distress or corrosion.

3. Verifying that a minimum total of 173 cubic feet of solid granular trisodium phosphate dodecahydrate (TSP) is contained within the TSP storage baskets. representative of

4. Verifying that when a representative sample of 70.5 ± 0.5 grams of TSP from a TSP storage basket is submerged, without agitation, in 10.0 ± 0.1 gallons of 120 ± 10°F borated water ~~from~~ the RWT, the pH of the mixed solution is raised to greater than or equal to 7 within 4 hours.

f. In accordance with the Surveillance Frequency Control Program, during shutdown, by:

1. Verifying that each automatic valve in the flow paths actuates to its correct position on SIAS and/or RAS test signals.

2. Verifying that each of the following pumps start automatically upon receipt of a Safety Injection Actuation Test Signal:

a. High-Pressure Safety Injection pumps.

b. Low-Pressure Safety Injection pumps.

c. Charging Pumps

3. Verifying that upon receipt of an actual or simulated Recirculation Actuation Signal: each low-pressure safety injection pump stops, each containment sump isolation valve opens, each refueling water tank outlet valve closes, and each safety injection system recirculation valve to the refueling water tank closes.

g. By verifying that each of the following pumps develops the specified total developed head when tested pursuant to the INSERVICE TESTING PROGRAM:

1. High-Pressure Safety Injection pumps.

2. Low-Pressure Safety Injection pumps.

h. By verifying the correct position of each electrical and/or mechanical position stop for the following ECCS throttle valves:

1. During valve stroking operation or following maintenance on the valve and prior to declaring the valve OPERABLE when the ECCS subsystems are required to be OPERABLE.

Attachment 1

CONTAINMENT SYSTEMS

IODINE REMOVAL SYSTEM (IRS)

LIMITING CONDITION FOR OPERATION

3.6.2.2 The Iodine Removal System shall be OPERABLE with:

a. A hydrazine storage tank containing a minimum volume of 675 gallons of ≥ 25.4% by weight N_2H_4 (Hydrazine) solution, and

b. Two iodine removal pumps each capable of adding N_2H_4 solution from the hydrazine storage tank to a containment spray system pump flow.

APPLICABILITY: MODES 1, 2 and 3*.

ACTION:

With the Iodine Removal Spray inoperable restore the system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the Iodine Removal System to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.2 The Iodine Removal System shall be demonstrated OPERABLE:

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a. In accordance with the Surveillance Frequency Control Program by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. The above required iodine removal pumps shall be demonstrated OPERABLE by verifying a flow rate of between 0.71 gpm and 0.82 gpm when tested pursuant to the Inservice Testing Program.

c. In accordance with the Surveillance Frequency Control Program by:

1. Verifying the contained solution volume in the tank, and

2. Verifying the concentration of the N_2H_4 solution by chemical analysis.

d. In accordance with the Surveillance Frequency Control Program, during shutdown, by verifying that each automatic valve in the flow path actuates to its correct position on a CSAS test signal.

* Applicable only when pressurizer pressure is ≥ 1750 psia.

ATTACHMENT 2

Florida Power and Light Company
St. Lucie Unit 2

LICENSE AMENDMENT REQUEST

Word Processed Technical Specifications

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Attachment 2

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LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

Attachment 2

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (continued)

2. A visual inspection of the containment sump and verifying that the subsystem suction inlets are not restricted by debris and that the sump components (trash racks, screens, etc.) show no evidence of structural distress or corrosion.

3. Verifying that a minimum total of 173 cubic feet of solid granular trisodium phosphate dodecahydrate (TSP) is contained within the TSP storage baskets.

4. Verifying that when a representative sample of 70.5 ± 0.5 grams of TSP from a TSP storage basket is submerged, without agitation, in 10.0 ± 0.1 gallons of 120 ± 10°F borated water representative of the RWT, the pH of the mixed solution is raised to greater than or equal to 7 within 4 hours.

f. In accordance with the Surveillance Frequency Control Program, during shutdown, by:

1. Verifying that each automatic valve in the flow paths actuates to its correct position on SIAS and/or RAS test signals.

2. Verifying that each of the following pumps start automatically upon receipt of a Safety Injection Actuation Test Signal:

a. High-Pressure Safety Injection pumps.

b. Low-Pressure Safety Injection pumps.

c. Charging Pumps

3. Verifying that upon receipt of an actual or simulated Recirculation Actuation Signal: each low-pressure safety injection pump stops, each containment sump isolation valve opens, each refueling water tank outlet valve closes, and each safety injection system recirculation valve to the refueling water tank closes.

g. By verifying that each of the following pumps develops the specified total developed head when tested pursuant to the INSERVICE TESTING PROGRAM:

1. High-Pressure Safety Injection pumps.

2. Low-Pressure Safety Injection pumps.

h. By verifying the correct position of each electrical and/or mechanical position stop for the following ECCS throttle valves:

1. During valve stroking operation or following maintenance on the valve and prior to declaring the valve OPERABLE when the ECCS subsystems are required to be OPERABLE.

Attachment 2

DELETED

ATTACHMENT 3

Florida Power and Light Company
St. Lucie Unit 2

LICENSE AMENDMENT REQUEST

TS Bases Markup

Attachment 3

SECTION NO.: 3/4.6	TITLE: TECHNICAL SPECIFICATIONS BASES ATTACHMENT 8 OF ADM-25.04 CONTAINMENT SYSTEMS ST. LUCIE UNIT 2	PAGE: 12 of 18
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3/4.6 **CONTAINMENT SYSTEMS** (continued)

BASES (continued)

3/4.6.2 **DEPRESSURIZATION AND COOLING SYSTEMS** (continued)

3/4.6.2.2 **IODINE REMOVAL SYSTEM**

The OPERABILITY of the Iodine Removal System ensures that sufficient N_2H_4 is added to the containment spray in the event of a LOCA. The limits on N_2H_4 volume and concentration ensure a minimum of 50 ppm of N_2H_4 concentration available in the spray for a minimum of 6.5 hours per pump for a total of 13 hours to provide assumed iodine decontamination factors on the containment atmosphere du[Deleted]nd ensure a pH value of between 7.0 and 8.1 for the within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components. The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics. These assumptions are consistent with the iodine removal efficiency assumed in the safety analyses.

3/4.6.2.3 **DELETED**

3/4.6.3 **CONTAINMENT ISOLATION VALVES**

The OPERABILITY of the containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment and is consistent with the requirements of GDC 54 through GDC 57 of Appendix A to 10 CFR Part 50. Containment isolation within the time limits specified for those isolation valves designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA.