Florida Power & Light Company, 6501 S. Ocean Drive, Jensen Beach, FL 34957

October 19, 2006

L-2006-078
10 CFR 50.90

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

RE: St. Lucie Units 1 and 2
Docket Nos. 50-335 and 50-389
Proposed License Amendment
Containment Spray Nozzle Surveillance Change

Pursuant to 10 CFR 50.90, Florida Power and Light Company (FPL) requests to amend Facility Operating Licenses DPR-67 for St. Lucie Unit 1 and NPF-16 for St. Lucie Unit 2 by incorporating the attached Technical Specification (TS) revisions. The proposed amendments would revise Technical Specification 4.6.2.1.d to allow the frequency of air or smoke flow testing of the containment spray nozzles to be reduced. Technical Specification 4.6.2.1.d currently requires an air or smoke flow test through each containment spray header to verify that each spray nozzle is unobstructed at least once every ten years. The NRC has recognized that nozzle flow testing at this frequency is not necessary due to the passive nature of the containment spray system. This proposed change will revise the testing frequency of the spray nozzles from 10 years to an activity related frequency following maintenance that could cause a blockage. This proposed change is consistent with amendment requests previously approved for the Perry Nuclear Power Plant, H. B. Robinson Steam Electric Plant Unit 2, Surry Power Station Units 1 and 2, Calvert Cliffs Units 1 and 2, Byron Units 1 and 2, and Braidwood Units 1 and 2, Ginna, and others.

Attachment 1 is an evaluation of the proposed changes. Attachment 2 is the "Determination of No Significant Hazards Consideration." Attachment 3 contains the affected TS pages marked-up to show the proposed changes. Attachment 4 contains the word-processed TS changes.

The St. Lucie Facility Review Group and the FPL Company Nuclear Review Board have reviewed the proposed amendments. In accordance with 10 CFR 50.91(b)(1), copies of the proposed amendments are being forwarded to the State Designee for the State of Florida.

St. Lucie requests that the amendment be approved for the SL2-17 refueling outage, currently scheduled to begin on October 1, 2007. The amendment should be effective upon NRC approval, with implementation within 60 days of approval by the NRC.

A001

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

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

Executed on Oct. 19, 2006.

Very truly yours,

Christopher R Costanzo for SVP

Gordon L. Johnston
Site Vice President
St. Lucie Plant

GLJ/KWF

Attachments

cc: Mr. William A. Passetti, Florida Department of Health

Evaluation of Proposed Change

Description of Current Condition

Florida Power & Light Company (FPL) St. Lucie Plant Unit No. 1 and Unit No. 2 Technical Specifications (TS) Surveillance Requirement (SR) 4.6.2.1.d. requires verification that each containment spray nozzle is unobstructed. This verification is required to be performed at least once per 10 years by performing an air or smoke flow test through each containment spray header. Existing plant procedures accomplish this test by monitoring the flow of hot air through the nozzles utilizing thermographic infrared imaging equipment.

Description of the Proposed Change

FPL proposes to revise the St. Lucie Plant Unit No. 1 and Unit No. 2 TS SR 4.6.2.1.d. as follows:

Each containment spray system shall be demonstrated OPERABLE:

d. ~~At least once per 10 years~~ By ~~performing an air or smoke flow test through each spray header and~~ verifying each spray nozzle is unobstructed following maintenance which could result in nozzle blockage.

Evaluation of Change

The existing TS 4.6.2.1.d requires that the containment spray system be demonstrated operable at least once per 10 years by performing an air or smoke test through each spray header and verifying that each spray nozzle is unobstructed. Such testing provides no quantitative data on flow rates exiting the spray nozzles and only verifies that there is flow. The frequency of this testing was established in NUREG-1366, "Improvements to Technical Specifications Surveillance Requirements," December 1992 and NUREG-1432, the revised Standard Technical Specifications for Combustion Engineering Plants. In developing NUREG-1366, NRC staff studied industry experience regarding problems revealed by means of this testing and found that the only problems in pressurized water reactor containment spray systems were those that were construction related.

The requested revision would change the surveillance frequency to require verification that the nozzles are unobstructed only after a maintenance activity that could result in nozzle blockage. Nozzle blockage is considered unlikely during periods without maintenance since the nozzles are passive components, the spray header portion of the containment spray system is dry, and the materials of construction are corrosion resistant. The spray ring location at the top of the containment makes the introduction of foreign material from the exterior to the header unlikely.

The proposed change reduces the surveillance frequency. Reduced frequency of testing is justified where operating experience has shown that routinely passing a surveillance test performed at a specified interval has no apparent connection to overall component reliability. In this case, routine surveillance testing at the specified frequency is not connected to any activity and, therefore, has been of limited value in ensuring component reliability.

Surveillance air flow tests were performed at St. Lucie Unit 1 in 1980, 1985, 1990, 1991, 2001 and 2002. Infrared thermography was used for flow verification and all tests demonstrated that obstructions did not exist in any of the nozzles. Surveillance air flow tests were performed at St. Lucie Unit 2 in 1987 and 1997, also using infrared thermography. The 1987 test revealed an obstruction in one nozzle. The cause of this obstruction was determined to be a small piece of rubber from the temporary hose used to deliver air to the spray header for this specific test. The obstruction was, thereby, introduced into the system by the test itself.

St. Lucie Unit 1 experienced an inadvertent containment spray event in August 1995. The unit was shutdown in Mode 3 making preparations for startup following a precautionary shutdown for Hurricane Erin. While venting the low pressure safety injection (LPSI) system, approximately 10,000 gallons of borated water was inadvertently sprayed through the 'A' containment spray header with the 1A LPSI pump. This event is documented in a Licensee Event Report, Docket Number 50-335, LER number 95-007-0.

Following this incident, the containment spray header was drained through normal installed drains on the header. Subsequent, regularly scheduled TS surveillance testing in October 2002 using hot air and thermography showed no sign of nozzle blockage. This test demonstrated that dry boric acid buildup following a spray activation is not a concern. The system is constructed entirely of corrosion resistant materials.

The containment spray system upper headers, rings, and nozzles are maintained dry during standby operation. The large pipe lower portions of the system headers fill to an elevation of approximately 30 feet due to fluid leveling with the refueling water tank. This is normal operation and does not represent a concern relative to containment spray nozzle blockage or overall system operability. Each header is drained at least once every eighteen months as a precautionary measure during the conduct of procedures 1[2]-OSP-24.01, "RAB Fluids Systems Periodic Leak Test," which implement the TS 6.8.4.a programs to control primary coolant sources outside containment. There has been no evidence of debris blocking the drains, which would lead to the conclusion that the lower headers have debris of the nature found at D. C. Cook (Docket Number 315, LER number 98-027-02) that could be transported to and block the nozzles.

The St. Lucie Plant foreign material exclusion (FME) program will prevent debris from remaining in the containment spray system piping, headers and nozzles following maintenance, testing or inspections which result in opening the system. St. Lucie Plant

administrative procedure ADM-27.13, "Foreign Material Exclusion," provides the requirements for preventing the uncontrolled introduction of foreign materials into an open system, component, or specifically designated areas. The procedure establishes FME guidelines, work practices, the use of barrier devices, inspection requirements, and guidance for recovery from loss of integrity relevant to the control of foreign materials. Highlights of the FME program include:

- Mandatory pre-job briefing includes discussion of FME considerations.
- Direct Supervisory oversight is required on all open jobs.
- Dedicated FME Monitors are responsible for access control and material tracking.
- Positive control of personal items including hard hats, dosimetry, safety glasses, gloves, security badges, watches, etc.
- Pre-cleaning of tools and areas before breaching a system boundary.
- Clear plastic or transparent materials shall be conspicuously marked, and used only when absolutely necessary.
- Positive control of FME covers such that the covers themselves do not become intrusive.
- Containers, boxes, wrappers are not permitted in an FME area.
- Special precautions are taken when work activities could generate dust or debris.
- Work activities adjacent to the FME controlled area are considered when establishing the FME controls.
- Thorough inspection and reconciling of the FME log prior to reestablishing system integrity either for final closeout or when a system is secured for suspension of work (e.g., end of shift).
- Any loss of FME integrity requires identification in the plant Corrective Action Program.

These administrative controls are considered to be sufficient to assure foreign material is excluded from open systems and components during maintenance and maintenance activities. Therefore, the FME Program provides adequate assurance that debris or foreign material would not be left in the containment spray system that could significantly reduce the system's ability to perform its intended safety function. These FME controls are in place any time the spray system is opened for maintenance or testing.

During any maintenance activity on an open system, should a loss of FME integrity occur, the intrusions would be entered into the plant Corrective Action Program. Resolution of the intrusion would include a recovery plan to retrieve the foreign material and an Engineering evaluation of the impact on system integrity and acceptability for continued operation. The recovery plan considers among other things measures to mitigate further spread of the foreign material, evaluation of possible equipment damage already caused by the material, and a determination of the need for additional inspections or disassembly. This would apply equally to the containment spray system and the required Engineering evaluation would

determine the need to conduct a test or inspection to verify that the nozzles remain unobstructed.

As stated earlier, the probability of foreign material intrusion into the containment spray headers and nozzles is very low. System configuration is such that introduction of foreign material through the nozzles is highly unlikely. Any foreign material introduced into the system at low elevations would have to migrate through over 120 feet of large bore vertical piping before reaching the ring headers. A review of maintenance records reveals that there has been no maintenance or modifications on any of the spray headers or spray rings above the containment isolation check valves. The containment isolation check valves have been opened for inspection as an alternative to quarterly Inservice Testing in accordance with NRC Generic Letter 89-04. These inspections have revealed no unusual conditions. Other maintenance activities included rebuilding the flow control valves and valve stem replacement in the motor operated containment spray isolation valves. One manually operated containment spray isolation valve was replaced. FME controls were in place for all of these activities and air flow tests conducted subsequent to these maintenance activities have been satisfactory. Maintenance activities since the last air flow tests involved only valve disassembly for inspection.

Pursuant to the above information, the proposed PLA does not involve a significant reduction in the margin of safety.

No Significant Hazards Evaluation

Description of Amendment Request

Florida Power & Light Company (FPL) proposes to revise the St. Lucie Plant Unit No. 1 and Unit No. 2 Technical Specifications (TS) Surveillance Requirement 4.6.2.1.d.

The proposed license amendment (PLA) request seeks to change the testing frequency for the containment spray nozzles as specified in TS 4.6.2.1.d. Specifically, the testing frequency for the containment spray system nozzles is revised from "At least once per 10 years" to "following maintenance which could result in nozzle blockage."

Basis for No Significant Hazards Consideration Determination

Florida Power & Light Company (FPL) has evaluated the proposed changes to the St. Lucie TS described above against the significant hazards criteria of 10CFR50.92 and has determined that the changes do not involve any significant hazard. The following is provided in support of this conclusion:

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   No. The proposed change revises the surveillance frequency from once per 10 years to following activities that could result in nozzle blockage. The containment spray system nozzles are passive components and are not considered as an initiator of any analyzed event. The proposed change will not impact the ability of the containment spray system to mitigate the consequences of an accident. Industry experience indicates that containment spray systems of similar design are highly reliable and not susceptible to plugging due to the open design of the nozzles, the location of the nozzles high in the containment dome, and the corrosion resistant materials used for construction of the system. The alternative frequency of this surveillance has no impact on the probability of failure of associated active systems. Therefore, there is no significant increase in the probability or consequences of previously evaluated accidents due to the extended surveillance frequency.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   No. The proposed amendment provides an alternative frequency for performance of the spray nozzle surveillance test. The containment spray nozzles are used for accident mitigation only. Potential unidentified blockage of the containment spray nozzles will not result in the initiation of an accident. The change does not involve a physical alteration of the plant nor does it result in an operational condition different from that which has already been considered in the accident analyses. Therefore, the

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

3. Does this change involve a significant reduction in margin of safety?

No. The alternative frequency of spray nozzle testing has no significant impact on the consequences of any analyzed accident and does not significantly change the failure probability of any equipment that provides protection for the health and safety of the public. The containment spray system will continue to be capable of maintaining containment temperature and pressure below design values. Therefore, there is no significant reduction in the margin of safety.

Pursuant to 10 CFR 50.91, the preceding analyses provides a determination that the proposed Technical Specifications change poses no significant hazard as delineated by 10 CFR 50.92.

Environmental Assessment

These proposed Technical Specification changes have been evaluated against criteria for and identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21. It has been determined that the proposed change meets the criteria for categorical exclusion as provided for under 10 CFR 51.22(c)(9). The following is a discussion of how the proposed Technical Specification change meets the criteria for categorical exclusion.

10 CFR 51.22(c)(9): Although the proposed change involves a change to surveillance requirements with respect to containment spray nozzle flow testing,

(i) The proposed change involves no significance hazards consideration;

(ii) There are no significant changes in the types or significant increase in the amounts of any effluents that may be released offsite since the proposed change does not affect the generation of any radioactive effluents nor does it affect any of the permitted release paths; and

(iii) There is no significant increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Based on the aforementioned information and pursuant to 10 CFR 51.22(b), no environmental assessment or environmental impact statement need be prepared in connection with issuance of an amendment to the Technical Specifications incorporating the proposed change.

Conclusion

FPL concludes, based on the considerations discussed above, that: (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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

Technical Specification Markups

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U2 Page 3/4 6-16

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

c. At least once per 18 months, during shutdown, by:

1. Verifying that each automatic valve in the flow path actuates to its correct position on a CSAS test signal.

2. Verifying that each spray pump starts automatically on a CSAS test signal.

3. Verifying that upon a recirculation actuation signal, the containment sump isolation valves open and that a recirculation mode flow path via an OPERABLE shutdown cooling heat exchanger is established.

d. ~~At least once per 10 years~~ By ~~performing an air or smoke flow test through each spray header and~~ verifying each spray nozzle is unobstructed following maintenance which could result in nozzle blockage.

4.6.2.1.1 Each containment cooling train shall be demonstrated OPERABLE:

a. At least once per 31 days by:

1. Starting each cooling train fan unit from the control room and verifying that each unit operates for at least 15 minutes, and

2. Verifying a cooling water flow rate of greater than or equal to 1200 gpm to each cooling unit.

b. At least once per 18 months, during shutdown, by verifying that each containment cooling train starts automatically on an SIAS test signal.

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

3. Verifying that each spray pump starts automatically on a CSAS test signal.

d. ~~At least once per 10 years by performing an air or smoke flow test through each spray header and~~ verifying each spray nozzle is unobstructed following maintenance which could result in nozzle blockage.

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2. Verifying a cooling water flow rate of greater than or equal to 1200 gpm to each cooling unit.

b. At least once per 18 months, during shutdown, by verifying that each containment cooling train starts automatically on an SIAS test signal.

Word-Processed Technical Specification

U1 Page 3/4 6-16
U2 Page 3/4 6-16

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

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CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

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