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 SAGER, D.A.      Florida Power & Light Co.  
 RECIPIENT NAME      RECIPIENT AFFILIATION  
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SUBJECT: Application for amends to licenses DPR-67 & NPF-16, amending  
 TS 3/4.4.6.1 for RCS leakage detection instrumentation by  
 adapting STS for C-E plants (NUREG-1432), Spec 3.4.15 for  
 facilities.

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November 22, 1995

L-95-228  
10 CFR 50.90

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

RE: St. Lucie Unit 1 and Unit 2  
Docket Nos. 50-335 and 50-389  
Proposed License Amendments  
RCS LEAKAGE DETECTION SYSTEMS

Pursuant to 10 CFR 50.90, Florida Power & Light Company (FPL) requests to amend Facility Operating Licenses DPR-67 and NPF-16 for St. Lucie Unit 1 and Unit 2, respectively, by incorporating the attached Technical Specifications (TS) revisions. The proposed amendments will upgrade existing TS 3/4.4.6.1 for the Reactor Coolant System Leakage Detection Instrumentation by adapting the Standard Technical Specifications for Combustion Engineering Plants (NUREG-1432), Specification 3.4.15, to both St. Lucie units. The proposal is consistent with the NRC Final Policy Statement on Technical Specifications Improvements (58 FR 39132).

It is requested that the proposed amendments, if approved, be issued by June 30, 1996.

Attachment 1 is an evaluation of the proposed changes. Attachment 2 is the "Determination of No Significant Hazards Consideration." Attachments 3 and 4 contain copies of the appropriate technical specifications pages marked up to show the proposed changes.

The proposed amendments have been reviewed by the St. Lucie Facility Review Group and the FPL Company Nuclear Review Board. 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.

Please contact us if there are any questions about this submittal.

Very truly yours,

D. A. Sager  
Vice President  
St. Lucie Plant

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DAS/RLD

Attachments

cc: Stewart D. Ebnetter, Regional Administrator, Region II, USNRC.

Senior Resident Inspector, USNRC, St. Lucie Plant.

Mr. W.A. Passeti, Florida Department of Health and  
Rehabilitative Services.

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

D. A. Sager being first duly sworn, deposes and says:

That he is Vice President, St. Lucie Plant for the Nuclear Division of Florida Power & 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.A. Sager*  
D. A. Sager

STATE OF FLORIDA  
COUNTY OF ST. LUCIE

The foregoing instrument was acknowledged before me this 22 day of November, 19 95 by D.A. Sager, who is personally known to me and who did take an oath.

*Karen West*  
KAREN WEST  
Name of Notary Public

My Commission expires 4-18-98  
Commission No. CC 359926

 KAREN WEST  
MY COMMISSION # CC359926 EXPIRES  
April 18, 1998  
BONDED THRU TROY FAH INSURANCE, INC.

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ATTACHMENT 1

EVALUATION OF PROPOSED TS CHANGES



## EVALUATION OF PROPOSED TS CHANGES

### Introduction

Florida Power and Light Company (FPL) requests that Appendix A of Facility Operating License DPR-67 for St. Lucie Unit 1 (PSL1) and NPF-16 for St. Lucie Unit 2 (PSL2) be amended to revise Technical Specification (TS) 3/4.4.6.1, "Reactor Coolant System Leakage-Leakage Detection Systems." The revision will eliminate ambiguity from the PSL2 ACTION statement, and provide consistent requirements for the leakage detection systems at both PSL units by incorporating the technical substance of the corresponding Limiting Condition for Operation (LCO) accepted for the Standard Technical Specifications for Combustion Engineering Plants (NUREG-1432). The proposal is consistent with the NRC Final Policy Statement on Technical Specifications Improvements (58 FR 39132).

### PSL1 and PSL2 Proposed Technical Specification Changes

The existing TS 3/4.4.6.1 for each PSL unit will be replaced in its entirety with the technical substance of the corresponding Specification, "RCS Leakage Instrumentation," taken from NUREG-1432. Considering plant specific differences, the generic Specification is adapted to the present St. Lucie TS narrative format as shown in Attachments 3 and 4 of this submittal. A summary statement regarding the LCO is added to the associated Bases section.

### Background

Reactor Coolant System (RCS) pressure boundary leakage direct to the containment environment will be in the form of liquid draining to the containment floor and/or steam released to the containment atmosphere. The moisture from steam leakage is ultimately removed from the air by containment coolers and is in the form of condensate. The Containment Air Cooler condensate drains and reactor building floor drains are routed to and collected in the reactor cavity sump to ensure that fluid does not accumulate in other areas of the Containment. All drain paths are routed such that liquid entering the reactor cavity sump first flows into a





measurement tank. A triangular notch weir is machined in the side of this tank which facilitates the measurement of liquid flow rate into the reactor cavity.

Two diverse measurement instruments located within the Weir tank are used to measure the reactor cavity inlet flow rate. In addition to these dedicated flow rate instruments, a separate detector measures the level of sump inventory and controls operation of the cavity sump pumps. It should be noted that Containment Air Cooler condensate is part of the cavity sump inlet fluid, and a separate air cooler condensate monitor is not employed at St. Lucie. Readout displays for reactor cavity sump level (0-48" H<sub>2</sub>O) and flow rate (0-12 gpm), and alarms associated with each parameter are provided in the control room. The systems at both PSL units are similar.

Each PSL unit also employs airborne radioactivity monitors as instruments of diverse measurement principles for monitoring RCS leakage. These instrumentation systems provide continuous indications of particulate and gaseous radioactivity concentrations in the containment atmosphere. Data display and alarms to alert operators to changes in airborne radioactivity are provided by these monitors in each PSL control room.

USNRC Regulatory Guide (RG) 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems," describes effective methods for detecting and locating unidentified leakage. Although the PSL1 systems, in part, were designed prior to RG 1.45, the design was evaluated using that guidance and acceptability is documented in Section 5.4 of the "NRC Safety Evaluation of the St. Lucie Plant Unit 1," dated November 8, 1974. Evaluation of the PSL2 RCS Leakage Detection Systems and their consistency with RG 1.45 is documented in Section 5.2.5 of the "NRC Safety Evaluation Report related to the operation of St. Lucie Plant, Unit No. 2" (NUREG-0843), dated October, 1981. More recent documentation of review and acceptability of these systems pursuant to RG 1.45 is contained in the Safety Evaluation enclosed with the NRC letter to FPL, "St. Lucie Units 1 and 2 - Application of Leak-Before-Break Technology to Reactor Coolant System Piping - TAC Nos. M84560 and M84561," dated March 5, 1993.

The equipment operability and surveillance requirements (SR) for RCS Leakage Detection Systems are specified in LCO 3/4.4.6.1 for

each PSL unit. Additional specifications for the containment particulate and gaseous activity monitors are contained in LCO 3/4.3.3.1 for Radiation Monitoring Instrumentation, PSL1 SR 4.4.6.2.a (RCS Leakage), and PSL2 SR 4.4.6.2.1.a (Operational Leakage). Periodic RCS water inventory balances are specified in PSL1 SR 4.4.6.2.c and PSL2 SR 4.4.6.2.1.c.

Bases for the Proposed Changes

LCO 3.4.6.1: The proposed LCO requires the reactor cavity sump inlet flow monitoring system, in combination with a particulate or gaseous radioactivity monitor, to be OPERABLE in MODES 1, 2, 3, and 4. The required monitors are of diverse measurement principles and provide assurance that small leaks can be detected in time to allow actions to be taken to place the plant in a safe condition, in the event that such leakage is the result of pressure boundary degradation. Considering plant-specific differences, the proposed LCO provides a minimum functional capability and equipment availability for RCS leakage detection equivalent to that which was found acceptable and included as LCO 3.4.15 in NUREG-1432, "Standard Technical Specifications for Combustion Engineering Plants (STS)."

In MODE 5 or 6, the temperature is  $\leq 200^{\circ}\text{F}$ , pressure is maintained low or at atmospheric pressure, and the likelihood of leakage and crack propagation is significantly reduced. Therefore, the requirements of this LCO are not applicable in MODES 5 and 6.

ACTION-a requires a RCS water inventory balance to be performed at least once per 24 hours if the reactor cavity sump inlet flow monitoring system is inoperable. Performing this surveillance every 24 hours, in combination with an OPERABLE containment atmosphere radioactivity monitor capable of indicating changes in RCS leakage, will provide information that is considered adequate for leakage detection during the specified Action Completion Time. The reactor cavity sump inlet flow monitoring system is required to be restored to OPERABLE status within 30 days following discovery of system inoperability. The proposed action, surveillance frequency, and Action Completion Time are consistent with ACTION 3.4.15.A of the STS, NUREG-1432.

ACTION-b requires (a) grab samples of the containment atmosphere to be analyzed at least once per 24 hours or (b) a RCS water inventory balance to be performed at least once per 24 hours, if the required radioactivity monitor is inoperable. In this case, neither the gaseous nor the particulate containment atmosphere radioactivity monitor would be functional. With a grab sample obtained and analyzed or an inventory balance performed every 24 hours, in combination with an OPERABLE reactor cavity sump monitor capable of indicating changes in RCS leakage, the information provided is considered adequate for leakage detection during the specified Action Completion Time. At least one of the radioactivity monitors is required to be restored to OPERABLE status within 30 days following discovery of failure to satisfy the LCO. The proposed action, surveillance frequency, and Action Completion Time are consistent with ACTION 3.4.15.B of the STS, NUREG-1432.

If the required action and associated completion time specified in ACTION-a or ACTION-b are not met, the proposed LCO requires the plant to be placed in HOT STANDBY within the next 6 hours, and in COLD SHUTDOWN within the following 30 hours. The allowed completion times are reasonable, based on operating experience, to reach the required modes from full power conditions in an orderly manner. These compensatory actions will bring the plant to a mode in which the LCO does not apply; are consistent with NUREG-1432, ACTION 3.4.15.E; and represent no change to the existing Specifications approved for PSL1 or PSL2.

ACTION-c requires immediate implementation of LCO 3.0.3 in the event that all required monitors become inoperable. Since the automatic means of monitoring RCS leakage and providing timely indication of changes in leak rate would not be functional, continued operation of the unit beyond the limits of Specification 3.0.3 is not permitted. The proposed action is consistent with NUREG-1432, ACTION 3.4.15.F.

ACTION-d provides for an exclusion from the provisions of LCO 3.0.4 if at least one of the required leakage detection systems is OPERABLE. As a result, entry into an OPERATIONAL MODE is allowed in accordance with the ACTION requirements of the proposed LCO when one of the required diverse monitoring systems is not available. This allowance is provided because the remaining OPERABLE monitor, in combination with the surveillances required by ACTION-a or ACTION-b, will provide information considered adequate for leakage

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detection during the interval allowed for restoring the inoperable monitor to OPERABLE status. The proposed action is consistent with the modifying NOTE found in NUREG-1432, ACTION 3.4.15.A and B.

The proposed Surveillance Requirements are consistent with NUREG-1432 and represent no change to the surveillances presently approved for both St. Lucie units.

### Conclusion

The proposed LCO 3/4.4.6.1 is satisfied when leakage monitors of diverse measurement means are OPERABLE. Considering the plant specific equipment differences and narrative TS format, the proposed LCO is equivalent to NUREG-1432, LCO 3.4.15, and includes all the requirements related to RCS Leakage Detection Instrumentation. The generic Specification is designed for systems that have features consistent with RG 1.45, and therefore applies to the St. Lucie units. In addition, having the same LCO and associated ACTION requirements for both units will provide an improvement relative to human factors considerations. FPL considers the proposed amendments to be acceptable as line item improvements for PSL1 and PSL2 as provided for in the NRC Final Policy Statement on Technical Specifications Improvements (58 FR 39132).

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ATTACHMENT 2

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

#### DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

Pursuant to 10CFR50.92, a determination may be made that a proposed license amendment involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. Each standard is discussed as follows:

(1) Operation of the facility in accordance with the proposed amendment would not involve a significant increase in the probability or consequences of an accident previously evaluated.

The Reactor Coolant System (RCS) Leakage Detection Instrumentation Systems are not accident initiators, and their operational status is not a consideration in determining the probability of occurrence of accidents previously evaluated. The proposed revision to the related Limiting Condition for Operation (LCO) 3/4.4.6.1 does not involve a change to the configuration or method of operation of any equipment that is used to mitigate the consequences of an accident, nor do the changes alter any assumptions made involving initial plant conditions in the safety analyses. Therefore, operation of the facility in accordance with the proposed amendment would not involve a significant increase in the probability or consequences of an accident previously evaluated.

(2) Operation of the facility in accordance with the proposed amendment would not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed revision to LCO 3/4.4.6.1 is administrative in nature and will not result in a change to the physical plant or the modes of plant operation defined in the Facility License. The revision does not involve the addition or modification of equipment nor does it alter the design of plant systems. Therefore, operation of the

facility in accordance with the proposed amendment would not create the possibility of a new or different kind of accident from any accident previously evaluated.

(3) Operation of the facility in accordance with the proposed amendment would not involve a significant reduction in a margin of safety.

The RCS Leakage Detection Systems are designed to provide diverse methods to assist in the detection and location of unidentified leakage that may be associated with potential pressure boundary degradation. These systems provide no equipment control or accident mitigation functions, and are not associated with the safety margin established for protection from analyzed Loss of Coolant Accidents. The proposed revision to LCO 3/4.4.6.1 does not alter the basis for any technical specification that is related to the establishment of, or the maintenance of, a nuclear safety margin; and simply adapts the corresponding and previously reviewed specification from the Standard Technical Specifications for Combustion Engineering Plants, NUREG-1432, to the St. Lucie units. Therefore, operation of the facility in accordance with the proposed amendment would not involve a significant reduction in a margin of safety.

Based on the above discussions and the supporting Evaluation of Technical Specification changes, FPL has determined that the proposed license amendment involves no significant hazards consideration.