

December 28, 2007

Mr. J. A. Stall  
Senior Vice President, Nuclear and  
Chief Nuclear Officer  
Florida Power and Light Company  
P.O. Box 14000  
Juno Beach, Florida 33408-0420

SUBJECT: ST. LUCIE NUCLEAR PLANT, UNITS 1 AND 2, AND TURKEY POINT  
NUCLEAR PLANT, UNIT 3 - GENERIC LETTER 2004-02, "POTENTIAL  
IMPACT OF DEBRIS BLOCKAGE ON EMERGENCY RECIRCULATION  
DURING DESIGN-BASIS ACCIDENTS AT PRESSURIZED WATER  
REACTORS," EXTENSION REQUEST EVALUATION (TAC NOS. MC4710,  
MC4711, AND MC4725)

Dear Mr. Stall:

By letter dated December 7, 2007, supplemented by letter dated December 20, 2007, Florida Power and Light Company (the licensee) submitted a request for an extension of the corrective action due date for Generic Letter 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors," at the St. Lucie Nuclear Plant, Units 1 and 2, and the Turkey Point Nuclear Plant, Unit 3.

The Nuclear Regulatory Commission (NRC) staff has reviewed the licensee's request and concludes that it is acceptable to extend the due date for completion of chemical effects testing and analysis activities to June 30, 2008, and in-vessel and ex-vessel downstream effects evaluations to March 31, 2008.

Further details on the bases for the NRC staff's conclusions are contained in the enclosed evaluations. If you have any questions regarding this issue, please feel free to contact Brenda Mozafari, at (301) 415-2020.

Sincerely,

***/RA by S Bailey acting for/***

Thomas H. Boyce, Chief  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-250, 50-335, and 50-389

Enclosures: 1. Evaluation for Saint Lucie Unit 1  
2. Evaluation for Saint Lucie Unit 2  
3. Evaluation for Turkey Point Unit 3

cc w/enclosures: See next page

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By letter dated December 7, 2007, supplemented by letter dated December 20, 2007, Florida Power and Light Company (the licensee) submitted a request for an extension of the corrective action due date for Generic Letter 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors," at the St. Lucie Nuclear Plant, Units 1 and 2, and the Turkey Point Nuclear Plant, Unit 3.

The Nuclear Regulatory Commission (NRC) staff has reviewed the licensee's request and concludes that it is acceptable to extend the due date for completion of chemical effects testing and analysis activities to June 30, 2008, and in-vessel and ex-vessel downstream effects evaluations to March 31, 2008.

Further details on the bases for the NRC staff's conclusions are contained in the enclosed evaluations. If you have any questions regarding this issue, please feel free to contact Brenda Mozafari, at (301) 415-2020.

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\* by memo

EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

GS1-191/GL 2004-02 EXTENSION REQUEST

FLORIDA POWER AND LIGHT COMPANY

ST. LUCIE NUCLEAR PLANT, UNIT 1

DOCKET NO. 50-335

1.0 INTRODUCTION

In a letter dated December 7, 2007, Florida Power and Light Company (FPL) requested an extension to the corrective action due date of December 31, 2007, stated in Nuclear Regulatory Commission (NRC) Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors," for St. Lucie Unit 1 (STL1). In its letter, FPL stated that it has taken actions toward bringing STL1 into compliance with GL 2004-02, including replacing the sump screens with substantially larger sump strainers during the spring 2007 refueling outage. However, chemical effects testing activities, in-vessel downstream effects evaluations, and ex-vessel downstream effects evaluations have not been completed. Therefore, an extension to the compliance due date of December 31, 2007, was requested to allow time for completion of these activities.

In a letter dated December 20, 2007, FPL augmented the information in its December 7, 2007, letter to more completely describe how the planned chemical effects tests will be used to determine the total replacement screen debris head loss during a loss-of-coolant accident (LOCA). The December 20, 2007, letter also described how the chemical effects test results will be used by June, 2008, to update affected calculations and the design documents affected by the total debris head loss value for the replacement screen.

2.0 REGULATORY EVALUATION

As stated in SECY-06-0078, proposed extensions to permit changes at the next outage of opportunity after December 2007 may be granted if, based on the licensee's request, the staff determines that:

- the licensee has a plant-specific technical/experimental plan with milestones and schedules to address outstanding technical issues with enough margin to account for uncertainties, and
- the licensee identifies mitigative measures to be put in place prior to December 31, 2007, and adequately describes how these mitigative measures will minimize the risk of degraded emergency core cooling system (ECCS) and containment spray system (CSS) functions during the extension period.

The SECY also states that for proposed extensions beyond several months, a licensee's request will more likely be accepted if the proposed mitigative measures include temporary physical improvements to the ECCS sump or materials inside containment to better ensure a high level of ECCS sump performance.

### 3.0 TECHNICAL EVALUATION

In regard to the first criterion for approving an extension, FPL has a plant-specific plan, with milestones and schedules, to complete the STL1 GL 2004-02 required corrective actions and modifications by June 2008. Specifically, FPL plans to complete chemical effects testing, analysis and documentation by June 30, 2008, and to complete in-vessel and ex-vessel downstream effects evaluations by March 31, 2008.

In regard to the second criterion for approving an extension, FPL has stated that various modifications, mitigating measures, compensatory measures, and/or favorable conditions are in effect at STL1, minimizing the risk of degraded ECCS and CSS functions during the extension period, including a replacement sump strainer system with a total of 8100 sq ft of surface area, installation of new high-pressure safety injection (HPSI) pump seal system that does not rely on cyclone separators or HPSI pumped water for flushing and cooling the HPSI pump mechanical seals, and banding of selected calcium silicate insulation in containment to reduce that insulation's LOCA zone of influence from 5.45 pipe diameters (D) to 3D.

In regards to the third criterion for approving an extension, installation of large sump strainers is viewed as adequate to satisfy the criterion.

FPL provided a risk discussion that concluded that the added core damage frequency for STL1 due to clogging of the containment sump for the proposed extension period (driven by the large break LOCA frequency) was characterized as representing a "very small change" according to the criteria of Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," and, therefore, did not pose a significant increase in risk.

### 4.0 CONCLUSION

The NRC has confidence that FPL's plan, as described in the December 7, 2007, letter, will result in the installation of final STL1 Generic Safety Issue-191 modifications that provide acceptable strainer function with adequate margin for uncertainties. Further, the NRC has concluded that FPL has put mitigation measures in place to adequately reduce risk for an approximate 6-month extension period. Therefore, it is acceptable for FPL to complete STL1 chemical effects testing and analysis activities by June 30, 2008, and in-vessel and ex-vessel downstream effects evaluations, by March 31, 2008.

EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

GS1-191/GL 2004-02 EXTENSION REQUEST

FLORIDA POWER AND LIGHT COMPANY

ST. LUCIE NUCLEAR PLANT, UNIT 2

DOCKET NO. 50-389

1.0 INTRODUCTION

In a letter dated December 7, 2007, Florida Power and Light Company (FPL) requested an extension to the corrective action due date of December 31, 2007, stated in Nuclear Regulatory Commission (NRC) Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors," for St. Lucie Unit 2 (STL2). In its letter, FPL stated that it has taken actions toward bringing STL2 into compliance with GL 2004-02, including replacing the sump screens with substantially larger sump strainers during the fall 2007 refueling outage. However, chemical effects testing activities, in-vessel downstream effects evaluations, and ex-vessel downstream effects evaluations have not been completed. Therefore, an extension to the compliance due date of December 31, 2007, was requested to allow time for completion of these activities.

In a letter dated December 20, 2007, FPL augmented the information in its December 7, 2007, letter to more completely describe how the planned chemical effects tests will be used to determine the total replacement screen debris head loss during a loss-of-coolant accident (LOCA). The December 20, 2007, letter also described how the chemical effects test results will be used by June, 2008, to update affected calculations and the design documents affected by the total debris head loss value for the replacement screen.

2.0 REGULATORY EVALUATION

As stated in SECY-06-0078, proposed extensions to permit changes at the next outage of opportunity after December 2007 may be granted if, based on the licensee's request, the staff determines that:

1. the licensee has a plant-specific technical/experimental plan with milestones and schedules to address outstanding technical issues with enough margin to account for uncertainties, and
2. the licensee identifies mitigative measures to be put in place prior to December 31, 2007, and adequately describes how these mitigative measures will minimize the risk of degraded emergency core cooling system (ECCS) and containment spray system (CSS) functions during the extension period.

The SECY also states that for proposed extensions beyond several months, a licensee's request will more likely be accepted if the proposed mitigative measures include temporary physical improvements to the ECCS sump or materials inside containment to better ensure a high level of ECCS sump performance.

### 3.0 TECHNICAL EVALUATION

In regard to the first criterion for approving an extension, FPL has a plant-specific plan, with milestones and schedules, to complete the STL2 GL 2004-02 required corrective actions and modifications by June 2008. Specifically, FPL plans to complete chemical effects testing and analysis by June 30, 2008, and to complete in-vessel and ex-vessel downstream effects evaluations by March 31, 2008.

In regard to the second criterion for approving an extension, FPL has stated that various modifications, mitigating measures, compensatory measures, and/or favorable conditions are in effect at STL2, minimizing the risk of degraded ECCS and CSS functions during the extension period, including a replacement sump strainer system with a total of 5607 sq ft of surface area, installation of new high-pressure safety injection (HPSI) pump and CS pump seal systems that do not rely on cyclone separators or HPSI or CS pumped water for flushing and cooling the HPSI pump and CS pump mechanical seals, and replacement of the STL2 steam generators with reflective metal insulation rather than the previous Nukon fibrous insulation (reducing the amount of fiber in the containment).

In regards to the third criterion for approving an extension, installation of large sump strainers is viewed as adequate to satisfy the criterion.

FPL provided a risk discussion concluding that the added core damage frequency for STL2 due to clogging of the containment sump for the proposed extension period (driven by the large break LOCA frequency) was characterized as representing a "very small change" according to the criteria of Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," and, therefore, did not pose a significant increase in risk.

### 4.0 CONCLUSION

The NRC has confidence that FPL's plan, as described in the December 7, 2007, letter, will result in the installation of final STL2 Generic Safety Issue-191 modifications that provide acceptable strainer function with adequate margin for uncertainties. Further, the NRC has concluded that FPL has put mitigation measures in place to adequately reduce risk for an approximate 6-month extension period. Therefore, it is acceptable for FPL to complete STL2 chemical effects testing and analysis activities by June 30, 2008, and in-vessel and ex-vessel downstream effects evaluations, by March 31, 2008.

EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

GS1-191/GL 2004-02 EXTENSION REQUEST

FLORIDA POWER AND LIGHT COMPANY

TURKEY POINT NUCLEAR PLANT, UNIT 3

DOCKET NO. 50-250

1.0 INTRODUCTION

In a letter dated December 7, 2007, Florida Power and Light Company (FPL) requested an extension to the corrective action due date of December 31, 2007, stated in Nuclear Regulatory Commission (NRC) Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors," for Turkey Point Unit 3 (TP3). In its letter, FPL stated that it has taken actions toward bringing TP3 into compliance with GL 2004-02, including replacing the sump screens with substantially larger sump strainers during the fall 2007 refueling outage. However, chemical effects testing activities, in-vessel downstream effects evaluations, and ex-vessel downstream effects evaluations have not been completed. Therefore, an extension to the compliance due date of December 31, 2007, was requested to allow time for completion of these activities.

In a letter dated December 20, 2007, FPL augmented the information in its December 7, 2007, letter to more completely describe how the planned chemical effects tests will be used to determine the total replacement screen debris head loss during a loss-of-coolant accident (LOCA). The December 20, 2007, letter also described how the chemical effects test results will be used by June, 2008, to update affected calculations and the design documents affected by the total debris head loss value for the replacement screen.

2.0 REGULATORY EVALUATION

As stated in SECY-06-0078, proposed extensions to permit changes at the next outage of opportunity after December 2007 may be granted if, based on the licensee's request, the staff determines that:

- the licensee has a plant-specific technical/experimental plan with milestones and schedules to address outstanding technical issues with enough margin to account for uncertainties, and
- the licensee identifies mitigative measures to be put in place prior to December 31, 2007, and adequately describes how these mitigative measures will minimize the risk of degraded emergency core cooling system (ECCS) and containment spray system (CSS) functions during the extension period.

The SECY also states that for proposed extensions beyond several months, a licensee's request will more likely be accepted if the proposed mitigative measures include temporary physical improvements to the ECCS sump or materials inside containment to better ensure a high level of ECCS sump performance.

### 3.0 TECHNICAL EVALUATION

In regard to the first criterion for approving an extension, FPL has a plant-specific plan, with milestones and schedules, to complete the TP3 GL 2004-02 required corrective actions and modifications by June 2008. Specifically, FPL plans to complete chemical effects testing and analysis by June 30, 2008, and to complete in-vessel and ex-vessel downstream effects evaluations by March 31, 2008.

In regards to the second criterion for approving an extension, FPL has stated that various modifications, mitigating measures, compensatory measures, and/or favorable conditions are in effect at TP3, minimizing the risk of degraded ECCS and CSS functions during the extension period, including a replacement sump strainer system with a total of 5500 sq ft of surface area, removal of calcium silicate and reflective metal insulation from the pressure relief tank, replacement of existing reactor coolant pump insulation with reflective metal insulation, and removal of existing pressurizer surge line Nukon and calcium silicate insulation with reflective metal insulation.

In regards to the third criterion for approving an extension, installation of large sump strainers is viewed as adequate to satisfy the criterion.

FPL provided a risk discussion that concluded that the added core damage frequency for TP3 due to clogging of the containment sump for the proposed extension period (driven by the large break LOCA frequency) was characterized as representing a "very small change" according to the criteria of Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," and, therefore, did not pose a significant increase in risk.

### 4.0 CONCLUSION

The NRC has confidence that FPL's plan, as described in the December 7, 2007, letter, will result in the installation of final TP3 Generic Safety Issue-191 modifications that provide acceptable strainer function with adequate margin for uncertainties. Further, the NRC has concluded that FPL has put mitigation measures in place to adequately reduce risk for an approximate 6-month extension period. Therefore, it is acceptable for FPL to complete TP3 chemical effects testing and analysis activities by June 30, 2008, and in-vessel downstream effects and ex-vessel downstream effects evaluations by March 31, 2008.



Florida Power and Light Company

**SAINT LUCIE PLANT  
TURKEY POINT PLANT**

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**SAINT LUCIE PLANT  
TURKEY POINT PLANT**

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