

December 21, 2007

Mr. J. Randy Johnson  
Vice President - Farley  
Joseph M. Farley Nuclear Plant  
7388 North State Highway 95  
Columbia, AL 36319

SUBJECT:    GENERIC LETTER 2004-02, "POTENTIAL IMPACT OF DEBRIS  
              BLOCKAGE ON EMERGENCY RECIRCULATION DURING DESIGN  
              BASIS ACCIDENTS AT PRESSURIZED WATER REACTORS,"  
              EXTENSION REQUEST APPROVAL FOR JOSEPH M. FARLEY  
              NUCLEAR PLANT UNITS, 1 AND 2 (TAC NOS. MC4684 AND MC4685)

Dear Mr. Johnson:

The Nuclear Regulatory Commission Staff (NRC) has evaluated the information provided in a letter from Southern Nuclear Company dated December 7, 2007. This letter requested an extension of the Joseph M. Farley Nuclear Plant, Units 1 and 2 sump clogging corrective actions due date of December 31, 2007, stated in Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors." The NRC evaluation is enclosed.

The NRC has determined that for Joseph M. Farley Nuclear Plant, Units 1 and 2, it is acceptable to extend the due date for completion of corrective actions for GL 2004-02, as described in the enclosure, until April 30, 2008. The NRC's previous approval of the licensee's request to modify Unit 2 safety injection throttle valves during the Unit 2 refueling outage in fall 2008 remains in effect.

If you have any questions, please feel free to contact me.

Sincerely,

**/RA by EMarinos for/**

Karen Cotton, Project Manager  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-348 and 50-364

Enclosure:  
As stated

cc w/encl: See next page

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JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2

GS-191/GL 2004-02 EXTENSION REQUEST APPROVAL

(TAC NO. MC4684 AND 4685)

In a letter dated December 7, 2007, Southern Nuclear Operating Company (SNC) requested an extension to the corrective action due date of December 31, 2007, stated in the 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 the Joseph M. Farley Nuclear Plant (FNP), Units 1 and 2. By letter dated July 3, 2007, SNC had previously requested that completion of certain Unit 2 throttle valve modifications be extended until the completion of the Unit 2 fall 2008 refueling outage, scheduled to begin on October 11, 2008. By letter dated August 29, 2007, the NRC determined that it is acceptable to extend the completion date for the throttle valve modifications on Unit 2 until the completion of the Unit 2 fall 2008 refueling outage.

SNC has taken actions, as described in SNC's letters dated February 25, 2005, and August 31, 2005, toward accomplishing the corrective actions described in GL 2004-02, including replacing the sump screens with substantially larger sump strainers during the FNP Unit 2 spring 2007, refueling outage and Unit 1 fall 2007 refueling outage. FNP is continuing the evaluation of the adequacy of the replacement strainers.

However, in addition to the Unit 2 throttle valve modifications, the licensee stated that the FNP passive screen design still has open industry issues to be resolved. The outstanding items are:

1. Completion of the plant-specific evaluation of chemical plateout in the core per WCAP-16793-NP, "Evaluation of Long-Term Cooling Considering Particulate, Fibrous and Chemical Debris in the Recirculating Fluid."
2. Completion of screen head loss chemical effects testing and evaluation of test results.
3. Determination whether hardware and/or procedural modifications are needed as a result of the chemical effects testing/evaluation; and modification implementation schedule, if required.

The criteria for granting an extension to the due date of December 31, 2007, for completion of GL 2004-02 corrective actions are stated in SECY-06-0078. Specifically, an extension may be granted if:

- the licensee has a plant-specific technical/experimental plan with milestones and schedule to address outstanding technical issues with enough margin to account for uncertainties, and

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- 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.

With regard to the first extension criterion, FNP has a plant-specific technical/experimental plan, with milestones and schedules, to complete the GL 2004-02 corrective actions and modifications expeditiously. Specifically, the licensee has stated that it has completed the following actions:

1. Installation of General Electric Company sump strainers at Unit 1 and Unit 2.
2. Evaluation of downstream effects, which resulted in modifications to the safety injection flow orifices and throttle valves. These modifications have been completed on Unit 1 and are scheduled for completion on Unit 2 in the fall of 2008.

The licensee stated that the following actions are in progress or planned:

1. Evaluation of chemical plateout in the core per WCAP-16793-NP, "Evaluation of Long-Term Cooling Considering Particulate, Fibrous and Chemical Debris in the Recirculating Fluid."
2. Completion of chemical effects head loss testing and evaluation of the results.
2. Completion of Unit 2 throttle valve modifications by the end of the Unit 2 fall 2008, refueling outage.

With regard to the second extension criterion, the licensee stated that the following modifications, mitigative measures, compensatory measures, and/or favorable conditions are in effect at FNP Units 1 and 2, minimizing the risk of degraded ECCS and CSS functions during the extension period:

1. Installation of the new sump strainers on Units 1 and 2. These strainers have increased the available surface area to deal with debris in the recirculation water.
2. Implementation of procedural guidance regarding containment foreign material exclusion controls.
3. Implementation of mitigative measures in response to NRC Bulletin 2003-01.
4. Insulation inside containment that is affected during a loss-of-coolant accident (LOCA) event is mostly reflective metal insulation with very little fiber.

The licensee also noted several other favorable factors that are applicable to FNP Units 1 and 2. These include a compartmentalized containment that makes transport of debris difficult, a delay of 20-35 minutes after a LOCA occurs before recirculation begins (which would allow some debris to settle to the containment floor and not reach the strainer), the fact that FNP Units 1 and 2 net positive suction head analyses do not credit

containment overpressure although it would occur following a large-break LOCA, installation of debris interceptors in containment, and new flow orifices and throttle valves in the Unit 1 safety injection lines.

The NRC believes that SNC has a reasonable plan for FNP Units 1 and 2 that should result in the installation of final GSI-191 modifications that provide acceptable strainer function with adequate margin for uncertainties. Further, the NRC has concluded that SNC has put mitigation measures in place at FNP Units 1 and 2 to adequately reduce risk for the requested approximately four-month extension period.

Based on the licensee's having satisfactorily addressed the applicable NRC criteria as discussed above, it is acceptable to extend the completion date for certain corrective actions for the issues discussed in Generic Letter 2004-02 (specifically, the modifications and document changes listed above) until April 30, 2008, for FNP Units 1 and 2. While the NRC accepts this date as reasonable allowance for contingencies regarding completion of remaining activities to address GL 2004-02, the NRC expects FNP to place a high priority on completing remaining actions and updating the plants' licensing bases as soon as possible.

Approval of the requested extension to the GL 2004-02 corrective action due date shall not be construed as approval of any operating license amendment described in the licensee's extension request.

Joseph M. Farley Nuclear Plant, Units 1 & 2

cc:

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