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SOUTHERN COMPANY

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

Joseph M. Farley Nuclear Plant Unit 1 & 2
Additional Information Regarding the Exigent Technical Specification Revision Request for TS 3.5.4
Refueling Water Storage Tank (RWST)

Ladies and Gentlemen:

On February 28, 2012, Southern Nuclear Operating Company (SNC) submitted a letter (NL-12-0403) to the Nuclear Regulatory Commission (NRC) requesting an exigent amendment to Farley Nuclear Plant (FNP) Unit 1 & 2 Technical Specifications (TS). The proposed change to the TS would allow the use of manual operator actions for TS 3.5.4, "Refueling Water Storage Tank." As a result of a subsequent communication with the NRC, further information regarding validation of the proposed manual operator action was requested. Enclosure 1 provides the summary and results of the validation scenarios used. In addition, the NRC requested usage data for the Boric Acid Recovery System. This information is provided in Enclosure 2.

Mr. M. J. Ajluni states he is the Nuclear Licensing Director of Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company, and to the best of his knowledge and belief, the facts set forth in this letter are true.

This letter contains no NRC commitments. If you have any questions, please contact Doug McKinney at (205) 992-5982.

Sincerely,

Mark J Ajluni

M. J. Ajluni
Nuclear Licensing Director

Sworn to and subscribed before me this 2nd *day of* March, *2012.*

Laura Crumpler
Notary Public
My commission expires: 11-02-2013

MJA/EMW/lac

Enclosure 1: Summary and Results of the Validation Scenarios
Enclosure 2: Boric Acid Recovery System Usage

cc: Southern Nuclear Operating Company
Mr. S. E. Kuczynski, Chairman, President & CEO
Mr. D. G. Bost, Executive Vice President & Chief Nuclear Officer
Mr. T. A. Lynch, Vice President – Farley
Mr. B. L. Ivey, Vice President – Regulatory Affairs
Mr. B. J. Adams, Vice President – Fleet Operations
RTYPE: CFA04.054

U. S. Nuclear Regulatory Commission
Mr. V. M. McCree, Regional Administrator
Mr. R. E. Martin, NRR Project Manager – Farley
Mr. E. L. Crowe, Senior Resident Inspector – Farley

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Enclosure 1

Summary and Results of the Validation Scenarios

Enclosure 1

Summary and Results of the Validation Scenarios

On February 28, 2012, Southern Nuclear Operating Company (SNC) submitted a letter to the NRC requesting an exigent amendment to Farley Nuclear Plant (FNP) Unit 1 & 2 Technical Specifications (TS). The proposed change to the TS would allow the use of manual operator actions for TS 3.5.4, "Refueling Water Storage Tank." The NRC requested additional information to validate the proposed manual action. The additional information requested was as follows:

1. Provide actual validation data for a system operator to isolate the boundary valve between the Refueling Water Storage Tank piping and non-safety related piping when directed.

2. Address one credible error during the manual action including validation of the time for the error to be corrected.

SNC developed validation scenarios to demonstrate the ability to isolate the boundary valve between the Refueling Water Storage Tank (RWST) and the non-safety related piping. Three qualified system and Control Room operators of varying experience levels were selected to participate in the validation.

Scenario 1:

In the first scenario, the designated operator was staged in the Unit 2 Lower Equipment Room (LER). The Unit 2 LER was deemed the furthest credible point in the seismically qualified Auxiliary Building from the valve required to be operated. A pre-job brief was performed with the designated operator as required by procedure. The brief explained the initial conditions: Unit 2 is in Mode 1, the RWST is re-circulating through the Spent Fuel Pool (SFP) Purification Loop on Unit 2, and administrative controls have been established per FNP-2-SOP-54.0 Appendix 7. Per procedure, the brief also covered the method of communication between the operator and the Control Room, the limitations of movement, the ingress and egress paths to the valve, and the conditions which will require securing the RWST from the SFP Purification Loop. After the brief was concluded, the Validation Supervisor told the system operator that an initiating event had occurred and the Control Room directed closure of Q2G31V010. The Validation Supervisor used a stop watch and recorded the time from when the designated operator was directed to close the valve until the valve was simulated to be closed.

The Unit 2 LER was chosen as the furthest credible point in the seismically qualified Auxiliary Building from where the manual action is required to be performed. Once notified to perform the manual action, the operator would exit the LER and transit up from the 100 foot elevation to the 155 foot elevation on the non-rad side of the Auxiliary Building. The operator would then enter the rad side of the Auxiliary Building and transit across to Unit 2 and down to the 130 foot elevation where the valve is located. Per procedure, the operator is briefed on limitations of movement and the requirement to respond within 10 minutes when an initiating event occurs. It is the operator's responsibility to remain in the seismically qualified Auxiliary Building with an ability to respond within 10 minutes to operate the valve.

In the three validation cases for this scenario, the operators were able to perform the task within the required 10 minutes from the LER. The average time to complete the isolation of

the RWST from the SFP Purification Loop was approximately 4 minutes and well within the required 10 minutes; thus validating the manual operator action.

Important time sensitive actions are captured in procedure guidance when necessary such as the 10 minute required action time to isolate the RWST piping from non-seismic piping or are identified as part of the Operations Training program. Operation of manual valves is part of routine operator tasks and in this case, because of the administrative controls described in FNP-2-SOP-54 Appendix 7 and the results of the validation described above, no additional action is needed to address time critical tasks.

Scenario 2:

The second scenario was developed to address the most limiting credible error. The error deemed most limiting was a wrong unit event. In this scenario, a Control Room operator was briefed on the initial conditions: Unit 2 is in Mode 1, the RWST is re-circulating through the Spent Fuel Pool (SFP) Purification Loop on Unit 2, and administrative controls have been established per FNP-2-SOP-54.0 Appendix 7. The Control Room operator was then told that an unexplained RWST level decrease was occurring (an initiating event requiring manual action). The Control Room operator then simulated directing the designated operator to isolate the RWST from the SFP Purification Loop. After time had passed, the Validation Supervisor told the Control Room operator that the designated operator has reported that the manual valve has been isolated. At this point, the Validation Supervisor recorded the time it took the Control Room operator to recognize and evaluate the continuing downward trend of the RWST after the system operator has reported the valve had been closed. The time was stopped when the Control Room operator sent the original operator or another operator to find and isolate the RWST leakage.

If the designated operator goes to the wrong unit to perform the action, the operator will find that the required action had already been completed. For this scenario, it is assumed that the operator believes someone else has already taken the action and simply reports to the Control Room that the action is complete. The Control Room operator monitoring RWST level would note the RWST level still trending down and investigate. In reality, SNC expects the designated operator to question why the action was already completed and relay this concern to the Control Room. It is likely that the designated operator would discover the error before the Control Room.

In the three validation cases for this scenario, the operators were able to promptly identify the need for further investigation of RWST leakage. The average time for the Control Room operator to realize that the isolation did not occur was approximately a minute and a half. Totaling the average time to isolate the RWST from the SFP Purification Loop in the first scenario with the time for the Control Room operator to discover an error was approximately five and a half minutes. Assuming it takes approximately another four minutes to isolate the RWST from the SFP Purification Loop when the Control Room operator sends another operator to the field, the total time to isolate is approximately nine and a half minutes. This is within the 10 minute procedural requirement and well within the maximum required operator response time determined by previous calculation of 35 minutes; thus validating the manual operator action with a credible error.

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Enclosure 2

Boric Acid Recovery System Usage

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Boric Acid Recovery System Usage

The information below is the Boric Acid Recovery System (BARS) run data from the last five cycles for each unit. The run time for BARS varies depending on the initial concentration of silica in the RWST as well as the flow rate through BARS. The length of time required to reduce silica concentration below 1 ppm depends on how often the membranes and filters are changed. The membranes have higher silica removal efficiency at the beginning of life. Based on the data below, 30 days of allowable run time each cycle would allow silica concentration to be reduced within specifications in all anticipated cases. During discussions with the NRC staff, it was suggested that 21 days might be acceptable. After studying the issue, SNC realized that 21 days would not support a 1 ppm limit. The 30 days of allowable run time will allow a 10% margin above the longest historical run time.

Farley Unit 1

1R19 RWST initial silica concentration of 4.3 ppm was reduced to 0.9 ppm in 20 days of BARS operation.

1R20 RWST initial silica concentration of 6.3 ppm was reduced to 0.6 ppm in 19 days of BARS operation.

1R21 RWST initial silica concentration of 4.0 ppm was reduced to 0.86 ppm in 20 days of BARS operation.

1R22 RWST initial silica concentration of 7.2 ppm was reduced to 0.96 ppm in 26 days of BARS operation.

1R23 RWST initial silica concentration of 7.9 ppm was reduced to 0.81 ppm in 27 days of BARS operation.

1R24 RWST initial silica concentration of 7.8 ppm has been reduced to 2.45 ppm in 10 days of BARS operation.*

*Chemistry estimates 7 additional days of BARS is necessary to reduce the silica to < 1 ppm.

Farley Unit 2

2R17 RWST initial silica concentration of 6.8 ppm was reduced to 0.90 ppm in 24 days of BARS operation.

2R18 RWST initial silica concentration of 6.4 ppm was reduced to 0.83 ppm in 21 days of BARS operation.

2R19 RWST initial silica concentration of 5.2 ppm was reduced to 0.83 ppm in 27 days of BARS operation.

2R20 RWST initial silica concentration of 7.9 ppm was reduced to 0.99 ppm in 19 days of BARS operation.

2R21 RWST initial silica concentration of 11.4 ppm was reduced to 0.96 ppm in 22 days of BARS operation.