

Tom Tynan
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May 22, 2008



Docket Nos.: 50-424
50-425

NL-08-0769

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

**Vogtle Electric Generating Plant
Response to NRC Request for Additional Information Regarding
License Amendment Request to Revise Technical Specification (TS) 3.3.2,
"ESFAS Instrumentation," and TS 3.5.4, "Refueling Water Storage Tank (RWST)"**

Ladies and Gentlemen:

On January 9, 2008, Southern Nuclear Operating Company (SNC) submitted a License Amendment Request (LAR) to the NRC to revise the Vogtle Electric Generating Plant (VEGP) Technical Specifications (TS) 3.3.2, "ESFAS Instrumentation," and TS 3.5.4, "Refueling Water Storage Tank (RWST)" (NL-07-2168). The proposed TS changes are required to meet commitments related to the resolution of issues identified in NRC Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors," dated September 13, 2004.

By SNC letter (NL-07-1969) to the NRC, dated December 7, 2007, SNC requested an extension to the completion schedule to extend the completion of the corrective actions required by Generic Letter 2004-02 for VEGP Units 1 and 2 from December 31, 2007 to June 30, 2008. This would allow SNC to complete downstream effects modifications for Unit 1 (which were completed during the spring 2008 refueling outage), complete the downstream effects evaluation for both units, receive and process the screen vendors' test reports for chemical effects testing, and allow sufficient time for the NRC review and approval of this TS amendment request. As stated in the letter, the TS amendment is needed to ensure that the new RHR sump screens would be fully submerged in the worst case accident scenario at the initiation of cold-leg recirculation. This extension request was subsequently approved by the NRC in a letter dated December 19, 2007 to May 31, 2008.

On January 28, 2008, SNC received a Request for Additional Information (RAI) from the NRC regarding the January 9, 2008 submittal. SNC responded to the subject RAI by letter dated February 6, 2008.

On February 25, 2008, a teleconference held between SNC, the NRC, and Westinghouse Electric Company LLC (Westinghouse), regarding the LAR, resulted in a request from the NRC for additional information. SNC responded to the request by letter dated March 5, 2008.

On May 8, 2008, a teleconference held between SNC and the NRC, regarding the LAR, resulted in a third request from the NRC for additional information. Enclosure 1 contains the SNC response to the NRC's request.

Based on a May 20, 2008 phone conversation between SNC and NRC staff, SNC determined that a new footnote to VEGP TS Table 3.3.2-1, Function 7.b regarding the implementation of the proposed new RWST Level-Low Low Nominal Trip Setpoint and Allowable Values, will be added. Enclosure 2 contains the marked-up TS page 3.3.2-14, which supersedes the TS page 3.3.2-14 contained in the original LAR submittal, dated January 9, 2008 (NL-07-2168). In addition, Enclosure 3 contains the clean typed TS page, which supersedes the clean typed TS page 3.3.2-14 contained in the original LAR submittal (NL-07-2168).

SNC has requested an extension for the implementation of the LAR from May 31, 2008 to 30 days from receipt of the NRC's approval of the LAR in letter NL-08-0811, dated May 21, 2008.

Mr. T. E. Tynan states he is a Vice President 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 advise.

Sincerely,



T. E. Tynan
Vice President - Vogtle

Sworn to and subscribed before me this 22 day of May, 2008.



Henry D. Chandler
Notary Public

Notary Public, Burke County, Georgia
My Commission Expires January 13, 2012

My commission expires: _____

TET/LPH/daj

Enclosures: 1. Response to NRC's Request for Additional Information

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2. Marked-up Technical Specification Page
3. Clean Typed Technical Specification Page

cc: Southern Nuclear Operating Company

Mr. J. T. Gasser, Executive Vice President

Mr. L. M. Stinson, Vice President – Fleet Operations Support

Mr. D. H. Jones, Vice President – Engineering

RType: CVC7000

U. S. Nuclear Regulatory Commission

Mr. L. A. Reyes, Regional Administrator

Mr. R. A. Jervy, NRR Project Manager – Vogtle

Mr. G. J. McCoy, Senior Resident Inspector – Vogtle

State of Georgia

Mr. N. Holcomb, Commissioner – Department of Natural Resources

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Enclosure 1

Response to NRC's Request for Additional Information

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NRC Request

Please discuss the impact of the proposed change in the RWST Low Low level setpoint on the time available for operator manual actions during ECCS switchover to recirculation mode. Please provide the basis and assumptions (including, as applicable, conservatism and margins) for conclusions regarding adequacy of the time available.

SNC Response

ECCS Injection Phase

(Initiated at Low Level Alarm with RWST Level at Technical Specification Minimum)

The minimum calculated duration time for the ECCS injection phase will increase from 21.6 minutes to 27.9 minutes. This results from a combination of a higher Tech Spec minimum RWST level and a lower RWST low-low level alarm setpoint. The increase will allow operators more time to assess the accident situation and prepare for subsequent procedural actions. In calculating the minimum time for the ECCS injection phase, all ECCS pumps and containment spray pumps are assumed to be in operation to maximize the outflow from the RWST.

ECCS Switchover Phase

(Initiated at Low-Low RWST Level)

The minimum calculated duration time for the ECCS switchover phase between the RWST low-low level alarm and the RWST empty level alarm decreases from 14.0 minutes to 11.1 minutes. The existing RWST sizing calculation criterion is that a minimum total time of at least 10 minutes must be provided for this phase of ECCS operation.

In calculating the minimum duration time for ECCS switchover, all ECCS and containment spray pumps are assumed to initially be in operation and drawing from the RWST, which results in maximum RWST outflow. As time progresses, plant operators are assumed to complete manual actions, which include closure of valves that isolate the RWST from the suction of the RHR pumps. In the event that an RWST suction valve fails to close, it will be necessary for plant operators to stop the associated RHR pump. The RWST sizing calculation assumes that RWST flow to both RHR trains is stopped within six minutes following the low-low level alarm. No credit is taken for any other reduction in RWST outflow during the switchover phase.

Plant operators must perform various manual actions during the ECCS switchover phase, in accordance with the emergency operating procedure and as described in FSAR subsection 6.3.2. In addition to the manual actions described in the previous paragraph, these actions include isolating minimum flow paths to the RWST and realignment of the suction paths of the Centrifugal Charging

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Pumps (CCPs) and Safety Injection Pumps (SIPs) to the discharge of the RHR pumps.

Simulator testing has been performed to demonstrate that required plant operator actions can be accomplished within completion times that are consistent with the RWST sizing calculation. Simulator testing indicates that manual actions required to isolate RWST flow from the RHR pumps (or stop an RHR pump if necessary) can be performed within the calculation assumptions. The testing indicates that all manual actions needed to complete the ECCS switchover phase can be completed within the minimum calculated total time of 11.1 minutes. Typical completion times are on the order of 8 to 9 minutes.

Containment Spray Switchover Phase (Initiated at Empty RWST Level)

The minimum calculated duration time for the containment spray switchover phase, between the RWST empty level alarm and the minimum usable RWST level, increases from 6.7 minutes to 9.6 minutes. The existing calculation criterion is that a minimum total time of at least two minutes must be provided for plant operators to complete all actions. Operators will have more time to prepare for and perform procedural actions. The increase in minimum duration time results from a revision to the emergency operating procedure for the ECCS switchover phase. As previously described, the revised procedure directs plant operators to stop an RHR pump if the pump cannot be isolated from the RWST. This reduces outflow from the RWST during the containment spray switchover phase in the event of a failure of an RHR RWST suction valve to close. In calculating the minimum time, both containment spray pumps are conservatively assumed to be in operation to maximize the outflow from the RWST.

Conservatism

All time intervals have been calculated based on constant pump rates, with no reduction in flow rates due to a decrease in available suction head as RWST level decreases.

Both the containment and the RCS pressures are assumed to be 0 psig; i.e. no credit is taken for any reduction in RWST outflow due to the increase in containment pressure following a large break.

Available RWST volumes between set point levels are calculated utilizing maximum instrument error in the most limiting direction.

The RHR sump isolation valves open automatically upon receipt of a Low-Low level alarm. At that time, combined flow from the RWST and RHR sumps to the RHR pumps may start at a flow rate which is dependent on containment pressure and sump head, versus RWST head. Since we assume containment pressure is 0 psig, we also conservatively take no credit for a reduction of outflow from the RWST due to a potential combined flow to the RHR pumps from the containment sump and RWST.

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Implementation of the Channel Setpoint Changes

Upon receipt of the NRC's approval of the TS changes, implementation of the RWST channel setpoint changes will be effective on the day implementation of the physical set point changes occurs. There are four (4) channels per unit that will undergo setpoint changes. The implementation will be performed one channel at a time for Unit 1 and then one channel at a time for Unit 2. At the time of implementation, all of the affected Calibration procedures will be modified. Operations will issue all affected procedures on the day the modification installation begins on the first channel. In addition, Operations will use a Standing Order to ensure crews remain focused on the Containment Sump Semi-automatic Switchover setpoint changes over the course of the channel calibrations. Applicable procedures will reference the revised Semi-automatic Switchover Level, but actual automatic opening of the containment emergency sump suction valves will still occur at the current (old) level until 3 of the 4 channels are changed to the revised (new) setpoint. The procedure for the manual transfer of the ECCS and containment spray system to cold leg recirculation will not be performed until RWST levels are at the revised (new) level on two (2) of the four (4) channels, even though the containment emergency sump suction valves may have opened; actions concerning the RWST empty level will not be taken until the new level is reached.

Only one unit's setpoint changes will be implemented at a time. It is estimated that one full day is needed for modification of each channel (four per unit) to ensure the modification is performed accurately and safely. The setpoints use a two-out-of-four logic. With the first channel placed in bypass for the purpose of modifying the setpoint, a TS 72-hour Completion Time will be in effect. When implementation of the first channel is complete, the channel will be returned to service, but the channel will still be considered inoperable until a second channel can be modified so that the actuation logic for two-out-of-four channels at the new setpoint will be available. During and after the setpoint change modification for the first channel and until modification of the third channel begins, if an event occurred which would require the automatic opening of the containment emergency sump suction valves to occur, the current (old) setpoint would make up the two-out-of-four logic. The manual transfer of the ECCS and containment spray system to cold leg recirculation would use the revised (new) setpoint.

When the second channel is modified, it is placed in bypass and the 72-hour Completion Time continues from the time that the first channel was taken out of service. Since the TS do not provide for two channels to be inoperable at the same time, a new footnote in TS Table 3.3.2-1 is provided which allows two channels to be inoperable during the limited period of time required for implementation of this amendment. When implementation of the second channel is complete, the 72-hour Completion Time is exited. At this time, the two channels which have been adjusted to the new setpoint will be considered operable, and the remaining two channels will now be considered inoperable, and the new note will then apply to those channels. A 72-hour Completion Time will be entered for these two channels, and they will be modified as the first two

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channels were. During and after the setpoint change modification for the second channel and until modification of the third channel begins, if an event occurred which would require the automatic opening of the containment emergency sump suction valves to occur, the current (old) setpoint would make up the two-out-of-four logic. The manual transfer of the ECCS and containment spray system to cold leg recirculation would use the revised (new) setpoint.

When the third channel is modified, it is placed in bypass and, when it is modified and returned to service it will be operable in accordance with the amendment, and the new footnote will no longer apply. If, during and after the implementation, an event occurred which would require the switchover process to occur, the revised (new) setpoint would make up the two-out-of-four logic.

When implementation of the fourth channel is complete, the 72-hour Completion Time is exited. If, during and after the implementation, an event occurred which would require the switchover process to occur, the revised (new) setpoint would make up the two-out-of-four logic.

Once implementation is completed for Unit 1, the required (new) Unit 1 RWST level would be implemented.

This implementation process would be repeated for Unit 2.

The implementation of the new channel setpoint will be controlled under the 10 CFR 50.65a(4) (Maintenance Rule) work control process.

To facilitate the implementation process described above, the following footnote will be added to TS Table 3.3.2-1, Functional Unit 7b, Nominal Trip Setpoint and Allowable Value:

“Two channels may be inoperable for a limited period of time during implementation of Amendments ____ and ____ until four Required Channels have been adjusted for each unit.”

The addition of the proposed footnote does not alter the conclusions of the Significant Hazards Consideration Evaluation provided with SNC's original submittal (NL-07-2168) to the NRC, dated January 9, 2008. Revised marked-up pages and clean typed pages are provided as part of this enclosure, reflecting the addition of the above note.

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Enclosure 2

Marked-up Technical Specification Page

Table 3.3.2-1 (page 6 of 7)
 Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL TRIP SETPOINT ⁽ⁱ⁾
6. Auxiliary Feedwater (continued)						
c. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
d. Trip of all Main Feedwater Pumps	1,2(g)	1 per pump	J	SR 3.3.2.6	NA	NA
7. Semi-automatic Switchover to Containment Sump						
a. Automatic Actuation Logic and Actuation Relays	1,2,3,4(h)	2	C	SR 3.3.2.2 SR 3.3.2.3 SR 3.3.2.5	NA	NA
b. Refueling Water Storage Tank (RWST) Level-Low Low	1,2,3,4	4	K	SR 3.3.2.1 SR 3.3.2.4 SR 3.3.2.7 SR 3.3.2.8		
Coincident with Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					

(continued)

(g) When the Main Feedwater System is operating to supply the SGs.

(j)

(h) In MODE 4, only 1 train is required to be OPERABLE to support semi-automatic switchover for the RHR pump that is required to be OPERABLE in accordance with Specification 3.5.3, ECCS-shutdown.

(i) A channel is OPERABLE with an actual Trip Setpoint value outside its calibration tolerance band provided the Trip Setpoint value is conservative with respect to its associated Allowable Value and the channel is readjusted to within the established calibration tolerance band of the Nominal Trip Setpoint. A Trip Setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions.

≤ 216.6 in.
and
≥ 210.4 in.

213.5 in.

(j) Two channels may be inoperable for a limited period of time during implementation of Amendments ____ and ____ until four Required Channels have been adjusted for each unit.

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Enclosure 3

Clean Typed Technical Specification Page

Table 3.3.2-1 (page 6 of 7)
Engineered Safety Feature Actuation System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	CONDITIONS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE	NOMINAL TRIP SETPOINT ⁽ⁱ⁾
6. Auxiliary Feedwater (continued)						
c. Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					
d. Trip of all Main Feedwater Pumps	1,2(g)	1 per pump	J	SR 3.3.2.6	NA	NA
7. Semi-automatic Switchover to Containment Sump						
a. Automatic Actuation Logic and Actuation Relays	1,2,3,4(h)	2	C	SR 3.3.2.2 SR 3.3.2.3 SR 3.3.2.5	NA	NA
b. Refueling Water Storage Tank (RWST) Level-Low Low ^(j)	1,2,3,4	4	K	SR 3.3.2.1 SR 3.3.2.4 SR 3.3.2.7 SR 3.3.2.8	≤ 216.6 in. and ≥ 210.4 in.	213.5 in.
Coincident with Safety Injection	Refer to Function 1 (Safety Injection) for all initiation functions and requirements.					

(continued)

- (g) When the Main Feedwater System is operating to supply the SGs.
- (h) In MODE 4, only 1 train is required to be OPERABLE to support semi-automatic switchover for the RHR pump that is required to be OPERABLE in accordance with Specification 3.5.3, ECCS-shutdown.
- (i) A channel is OPERABLE with an actual Trip Setpoint value outside its calibration tolerance band provided the Trip Setpoint value is conservative with respect to its associated Allowable Value and the channel is readjusted to within the established calibration tolerance band of the Nominal Trip Setpoint. A Trip Setpoint may be set more conservative than the Nominal Trip Setpoint as necessary in response to plant conditions.
- (j) Two channels may be inoperable for a limited period of time during implementation of Amendments ____ and ____ until four Required Channels have been adjusted for each unit.