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SOUTHERN NUCLEAR
A SOUTHERN COMPANY

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

Vogtle Electric Generating Plant
Response to Request for Additional Information on License Amendment Request
to Permit the use of Risk Informed Completion Times

Ladies and Gentlemen:

By letter dated September 13, 2012, Southern Nuclear Operating Company (SNC) submitted a license amendment request to permit the use of Risk Informed Technical Specification (TS) Completion Times in accordance with Nuclear Energy Institute (NEI) Report 06-09, Revision 0, *Risk Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines,* at the Vogtle Electric Generating Station. The SNC submittal was supplemented by letters dated August 2, 2013, July 17, 2014, November 11, 2014, December 12, 2014, March 16, 2015, and May 5, 2015. By letter dated December 17, 2015, the Nuclear Regulatory Commission (NRC) issued a request for additional information (RAI) regarding the SNC TS amendment request.

By letter dated February 17, 2016, SNC provided a partial response to NRC's December 17, 2015 RAI questions. SNC's letter answered questions #1 and #2, leaving the response to question #3 for a future date. Accordingly, the response to question #3 is provided in Enclosure 1 to this letter. Changes from the previous marked-up Technical Specifications resulted from the response. Accordingly, Enclosures 2 and 3 provide the marked-up and the clean typed pages, respectively, to the revised LCO section, 3.8.1.

Additionally, on March 23, 2016, a teleconference was held between SNC and NRC staff to provide clarification, to NRC, on some of SNC's February 17 responses to the NRC's RAI of December 17, 2015. Accordingly, Enclosure 1 contains SNC's responses to the NRC's questions, which were provided to SNC prior to the call via electronic correspondence. The NRC's questions precede the SNC responses.

Finally, an oversight was recently discovered in the mark-up of LCO 3.7.14, "Engineered Safety Features (ESF) Room Cooler and Safety Related Chiller System", for the Risk Informed Completion Time Program. A Loss of Function

Condition should have been applied to this LCO but was not. Consequently, a mark-up and clean typed page is also included for this LCO.

This letter contains no NRC commitments.

If you have any questions, please contact Ken McElroy at (205) 992-7369.

Mr. C.R. Pierce states he is Regulatory Affairs 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.

Respectfully submitted,

C. R. Pierce

C. R. Pierce
Regulatory Affairs Director

CRP/OCV

Sworn to and subscribed before me this 18th *day of* APRIL, *2016.*

Notary Public

My commission expires: 10-8-2017

Enclosures: 1) Responses to Request for Additional Information
2) Marked up Technical Specifications Pages
3) Clean Typed Technical Specifications Pages

cc: Southern Nuclear Operating Company
Mr. S. E. Kuczynski, Chairman, President & CEO
Mr. D. G. Bost, Executive Vice President & Chief Nuclear Officer
Mr. D. R. Madison, Vice President – Fleet Operations
Mr. M. D. Meier, Vice President – Regulatory Affairs
Mr. B. K. Taber, Vice President – Vogtle 1 & 2
Mr. B. J. Adams, Vice President – Engineering
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U. S. Nuclear Regulatory Commission
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Mr. R. E. Martin, NRR Senior Project Manager – Vogtle 1 & 2
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Mr. A. M. Alen, Resident Inspector – Vogtle 1 & 2

State of Georgia
Mr. J. H. Turner, Director- Environmental Protection Division

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Enclosure 1

Responses to Request for Additional Information

Request for Additional Information Regarding Emergency Diesel Completion Times

The Current Vogtle Technical Specification 3.8.1 contains the following requirements:

Vogtle TS Limiting Condition for Operation 3.8.1 specifies operability requirements for AC electrical sources. With one Diesel Generator (DG) inoperable, Condition B is applicable. Condition B requires, in part:

- Verify the Standby Auxiliary Transformer (SAT) is operable within 1 hour and once per 12 hours thereafter (Required Action B.2); and, either
    - Verify an enhanced black-start Combustion Turbine Generator (CTG) is functional by verifying the CTG and the black-start diesel generator starts and achieves steady state voltage and frequency within 72 hours or within 72 hours prior to entry into Condition B (Required Action B.5.1)
        - OR -
    - Start and run at least one CTG while in Condition B within 72 hours or within 72 hours prior to entry into Condition B for preplanned maintenance (Required Action B.5.2).

Additionally Condition B requires:

- Restore DG to operable status within 14 days from discovery of failure to meet LCO (Required Action B.6).

LCO 3.8.1 Condition C applies when Required Actions B.2, B.5.1 or B.5.2 and associated Completion Times are not met. Required Action C.1 requires:

- Restore DG to Operable Status within 72 hours.

If Required Action C.1 and its Completion Time are not met, the unit must be placed in Mode 3 within 6 hours and in Mode 5 within 36 hours.

Request for Additional Information:

The LAR proposes to add the option of either applying the existing front stop Completion Time or applying a Risk Informed Completion Time for Required Action C.1. The proposed change to the Completion Time for Required Action C.1 could permit operation for an extended period of time with one DG inoperable without verifying the availability of SAT or of the CTG. Please provide technical justification, including a discussion of defense-in-depth and safety margin considerations, for the addition of a risk-informed completion time for the Required Actions associated with LCO 3.8.1 Condition C, or propose a modification to the license amendment request that retains the existing CTs for verifying availability of SAT and functionality of a CTG.

SNC Response

SNC has modified the license amendment request (LAR) to eliminate the current risk-informed Condition B and to apply a Risk-Informed Completion Time only to the Condition with the 72 hour front stop (current VEGP LCO 3.8.1, Condition C). The new Condition B in the VEGP mark-up, Enclosure 2, matches Condition B in the NUREG-1431 mark-up for TSTF-505.

Enclosure 2 provides the marked-up Technical Specifications pages, including the change discussed above. For continuity, the entire RICT program mark-up is provided for LCO 3.8.1. Enclosure 3 provides the clean typed Technical Specifications pages; again for continuity, all RICT Program revised pages to date are included for LCO 3.8.1.

NRC Questions and SNC Responses from March 23, 2016 Teleconference

NRC Question

The response to RAI 1.b.ii states,

The PRA Functional room cooling function is accomplished by opening doors instead of the room cooling system SSCs.

How is this consistent with the 1a response that, "*SSCs credited in the PRA Functionality determination are the same SSCs relied on to perform the specified safety function...*"?

Is SNC specifically requesting NRC approval of alternate SSCs for use in establishing PRA functionality in this example? If so, are there any other similar instances in this LAR?

SNC Response

Yes, SNC is specifically asking for approval for the use of manual action for opening ESF room doors for a TS Loss of Function (LOF) Condition inoperability related to "Engineered Safety Features (ESF) Room Cooler and Safety Related Chiller System".

There are no similar instances in the LAR.

NRC Question

Concerning the SNC response to RAI 2.a,

The RAI requested, "*Please confirm that the acceptable PRA Functional modelled in the PRA is also available and sufficient...*"

The response states that SSCs will remain "available" but does not appear to address "sufficient." Was this an oversight or has sufficient capability to accomplish design basis functions not in the PRA not been evaluated or assured?

SNC Response

Not addressing "sufficient" was an oversight.

The PRA Functionality evaluation performed following a TS LOF Condition will ensure that SSCs not supporting CDF/LERF will remain available, and will sufficiently perform their safety function with respect to the credited design basis scenario.

NRC Question

The SNC Response to RAI 2.c states in part,

For design basis initiators modeled in the internal events PRA, PRA Functionality determination performed subsequent to a TS LOF Condition entry will ensure design basis success criteria for parameters (e.g., flow rates, temperature limits) are met.

Are the "design basis success criteria for parameters" identical to "the existing PRA success criteria"? If not, does this response to RAI 2.c supersede the August 2, 2013, SNC Response to NRC Question #4 quoted below?

Nevertheless, SNC will voluntarily include a summary of the Risk Informed Completion Time (RICT) program in Chapter 16 of the FSAR, "Technical Specifications". This will include a section on PRA Functionality which will list those conditions which must be satisfied before declaring a component as "PRA Functional" per the NEI 06-09 Guidelines. The section will explicitly state that for a TS component to be considered PRA Functional, its PRA success criteria, among other things, must be satisfied. For example, ECCS flow rates satisfying the PRA criteria are determined by the existing PRA success criteria for that system. Therefore, should an ECCS become inoperable due to failing to meet its required TS SR Flow rate, its Functionality status would depend on whether or not the actual measured flow rate met the PRA success criteria.

SNC Response

The response to RAI 2.c provided in the February 17, 2016 letter is valid for a TS LOF Condition inoperabilites. The response from the August 2, 2013 letter remains valid for non-LOF Condition inoperabilites.

Additional SNC Discovery Regarding LCO 3.7.14

An oversight was recently discovered in the mark-up of LCO 3.7.14, "Engineered Safety Features (ESF) Room Cooler and Safety Related Chiller System", for the Risk Informed Completion Time Program. A Loss of Function (LOF) Condition should have been applied to this LCO but was not. Accordingly, Technical Specifications pages are included in this letter that add the LOF Condition. This LOF Condition (new Condition B) is consistent with proposed EXAMPLE 1.3-8 Condition B from the September 13, 2012 submittal and is consistent with other LOF Conditions added by the LAR.

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Enclosure 2

Marked-up Technical Specifications Pages

3.7 PLANT SYSTEMS

3.7.14 Engineered Safety Features (ESF) Room Cooler and Safety Related Chiller System

LCO 3.7.14 Two ESF Room Cooler and Safety-Related Chiller trains shall be OPERABLE.

----------NOTE----------
One Safety-Related Chiller train may be removed from service for ≤ 2 hours under administrative controls for surveillance testing of the other Safety-Related Chiller train.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ESF room cooler and safety-related chiller train inoperable. Insert 1	A.1 Restore the ESF room cooler and safety-related chiller train to OPERABLE status. C.1	72 hours* Insert 2
C B. Required Action and Associated Completion Time not met.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Be in MODE 5. C.2	36 hours

*For the VEGP Unit 2 August 16, 2010 entry into Technical Specifications 3.7.14 Condition A, one ESF room cooler and safety-related chiller train may be inoperable for a period not to exceed 14 days.

~~Amendment No. 96 (Unit 1)~~
~~Amendment No. 139 (Unit 2)~~

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2	Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.	24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s)
	AND		
	A.3	Restore required offsite circuit to OPERABLE status.	72 hours

(continued)

Insert 2

~~Amendment No. 169 (Unit 1)~~
~~Amendment No. 151 (Unit 2)~~

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One DG inoperable.	B.1 Perform SR 3.8.1.1 for the required offsite circuit(s).	1 hour AND Once per 8 hours thereafter
	~~AND~~	
	~~B.2 Verify SAT available.~~	~~1 hour~~ ~~AND~~ ~~Once per 12 hours thereafter~~
	AND	
	B.3 Declare required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)
	AND	
	B.4.1 Determine OPERABLE DG is not inoperable due to common cause failure.	24 hours
	OR	
	B.4.2 Perform SR 3.8.1.2 for OPERABLE DG.	24 hours
	AND	

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	NOTE Required Action B.5.1 is only applicable if the combined reliability of the enhanced black-start combustion turbine generators (CTG) and the black-start diesel generator is ≥ 95%. Otherwise, Required Action B.5.2 applies.	
	B.5.1 Verify an enhanced black-start CTG is functional by verifying the CTG and the black-start diesel generator starts and achieves steady state voltage and frequency.	72 hours OR Within 72 hours prior to entry into Condition B
	OR	
	B.5.2 Start and run at least one CTG while in Condition B.	72 hours OR Prior to entry into Condition B for preplanned maintenance
	AND	

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.6 Restore DG to OPERABLE status.	72 hours
~~C. Required Actions B.2, B.5.1, or B.5.2 and associated Completion Times not met.~~	~~C.1 Restore DG to OPERABLE status.~~	~~72 hours~~
D. Two required offsite circuits inoperable.	D.1 Declare required feature(s) inoperable when its redundant feature(s) is inoperable. AND D.2 Restore one required offsite circuit to OPERABLE status	12 hours from discovery of Condition D concurrent with inoperability of redundant required features 24 hours
E. One required offsite circuit inoperable. AND One DG inoperable.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when Condition E is entered with no AC power source to one or more trains. ----------	(continued)

~~Amendment No. 169 (Unit 1)~~
~~Amendment No. 151 (Unit 2)~~

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
E. (continued)	E.1	Restore required offsite circuit to OPERABLE status.	12 hours
	OR		
	E.2	Restore DG to OPERABLE status.	12 hours
F. Two DGs inoperable.	F.1	Restore one DG to OPERABLE status.	2 hours
G. One automatic load sequencer inoperable.	G.1	Restore automatic load sequencer to OPERABLE status.	12 hours
H. Required Action and associated Completion Time of Condition A, C, D, E, F, or G not met.	H.1	Be in MODE 3.	6 hours
	AND		
	H.2	Be in MODE 5.	36 hours
~~I. Three or more required AC sources inoperable.~~	~~I.1~~	~~Enter LCO 3.0.3.~~	~~Immediately~~

Insert 2a

Insert 9

Insert 2

INSERT 1

----------NOTE---------- Not applicable when two ESF room cooler and safety-related trains intentionally made inoperable. ----------		
B. Two ESF room cooler and safety-related chiller trains inoperable	B.1 Restore one ESF room cooler and safety-related chiller train to OPERABLE status	1 hour OR In accordance with the Risk Informed Completion Time Program

Insert 2

OR

In accordance with the Risk Informed Completion Time Program

Insert 2a

---NOTE---

Not applicable when second DG intentionally made inoperable

Insert 9

G.	--------NOTE---------- Not applicable when three or more required AC sources intentionally made inoperable. ---------- Three or more required AC sources inoperable.	G.1	Restore required inoperable AC sources to OPERABLE status.	1 hour OR In accordance with the Risk Informed Completion Time Program

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Enclosure 3

Clean Typed Technical Specifications Pages

3.7 PLANT SYSTEMS

3.7.14 Engineered Safety Features (ESF) Room Cooler and Safety Related Chiller System

LCO 3.7.14 Two ESF Room Cooler and Safety-Related Chiller trains shall be OPERABLE.

----------NOTE----------
One Safety-Related Chiller train may be removed from service for ≤ 2 hours under administrative controls for surveillance testing of the other Safety-Related Chiller train.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One ESF room cooler and safety-related chiller train inoperable.	A.1	Restore the ESF room cooler and safety-related chiller train to OPERABLE status.	72 hours* OR In accordance with the Risk Informed Completion Time Program
----------NOTE---------- Not applicable when two ESF room cooler and safety-related trains intentionally made inoperable. --- B. Two ESF room cooler and safety-related chiller trains inoperable.	B.1	Restore one ESF room cooler and safety-related chiller train to OPERABLE status.	1 hour OR In accordance with the Risk Informed Completion Time Program

*For the VEGP Unit 2 August 16, 2010 entry into Technical Specifications 3.7.14 Condition A, one ESF room cooler and safety-related chiller train may be inoperable for a period not to exceed 14 days.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and Associated Completion Time not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.14.1	Verify each ESF room cooler and safety-related chiller system manual, power-operated and automatic valve servicing safety-related equipment that is not locked, sealed, or otherwise secured in position, is in the correct position.	In accordance with the Surveillance Frequency Control Program
SR 3.7.14.2	Verify each ESF room cooler and safety-related chiller system automatic valve servicing safety-related equipment that is not locked, sealed, or otherwise secured in position actuates to the correct position on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program
SR 3.7.14.3	Verify each ESF room cooler fan and safety-related chiller system (pump and chiller) start automatically on an actual or simulated actuation signal.	In accordance with the Surveillance Frequency Control Program

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.2	Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.	24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s)
	AND		
	A.3	Restore required offsite circuit to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. One DG inoperable.	B.1	Perform SR 3.8.1.1 for the required offsite circuit(s).	1 hour AND Once per 8 hours thereafter
	AND		
	B.2	Declare required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)
	AND		
	B.3.1	Determine OPERABLE DG is not inoperable due to common cause failure.	24 hours
	OR		
	B.3.2	Perform SR 3.8.1.2 for OPERABLE DG.	24 hours
	AND		

(continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.4 Restore DG to OPERABLE status.	72 hours OR In accordance with the Risk Informed Completion Time Program
C. Two required offsite circuits inoperable.	C.1 Declare required feature(s) inoperable when its redundant feature(s) is inoperable. AND C.2 Restore one required offsite circuit to OPERABLE status	12 hours from discovery of Condition C concurrent with inoperability of redundant required features 24 hours OR In accordance with the Risk Informed Completion Time Program
D. One required offsite circuit inoperable. AND One DG inoperable.	----------NOTE---------- Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating," when Condition D is entered with no AC power source to one or more trains. ----------	

(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. (continued)	D.1	Restore required offsite circuit to OPERABLE status.	12 hours OR In accordance with the Risk Informed Completion Time Program
	OR		
	D.2	Restore DG to OPERABLE status.	12 hours OR In accordance with the Risk Informed Completion Time Program
----------NOTE---------- Not applicable when second DG intentionally made inoperable. ----------			
E. Two DGs inoperable.	E.1	Restore one DG to OPERABLE status.	2 hours OR In accordance with the Risk Informed Completion Time Program
F. One automatic load sequencer inoperable.	F.1	Restore automatic load sequencer to OPERABLE status.	12 hours OR In accordance with the Risk Informed Completion Time Program

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. ---------NOTE---------- Not applicable when three or more required AC sources intentionally made inoperable. ---------- Three or more required AC sources inoperable.	G.1 Restore required inoperable AC sources to OPERABLE status.	1 hour OR In accordance with the Risk Informed Completion Time Program
H. Required Action and associated Completion Time of Condition A, B, C, D, E, F, or G not met.	H.1 Be in MODE 3. AND H.2 Be in MODE 5.	6 hours 36 hours