

Vogle PEmails

From: Hoellman, Jordan
Sent: Wednesday, July 12, 2017 11:05 AM
To: Vogle PEmails
Subject: SNC Responses to NRC Comments on UINs and ICNs for Public Meeting Discussion
Attachments: SNC responses VOGTLE AND SUMMER ICN and UIN ISSUES 07.13.17 call.pdf; 676 IDB markup for NRC call.pdf

Attached is SNC's response to staff comments on ICN 676 U3 with a marked up IDB reflecting the changes. We will be able to discuss this on this Thursday's call (7/13).

No information is available for the ICN 89 discussion. Therefore, we will need to remove the 89 discussion from this Thursday's call.

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Subject: SNC Responses to NRC Comments on UINs and ICNs for Public Meeting
Discussion
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**VOGTLE AND SUMMER
ICN / UIN
ISSUES TRACKING SHEET**

Date	No.	ICN UIN	TOPIC	INDEX NUMBERS	Issue	Resolution
6/29	1	ICN	RCP electrical Power for 3 seconds following a Turbine Trip	Vogtle 3 676	<ol style="list-style-type: none"> 1. The second paragraph of the IDB does not reflect the condition when the loads are being powered by the RAT. For completeness you may wish to point out the RATs are powered from the Grid/offsite power and not directly from the output of the main generator as the UATs are. 2. Third paragraph second sentence please clarify this statement. Are all loads from Vogtle Units 1, 2, 3, and 4 being modeled on the UAT and RAT or just the Vogtle 3 loads? Also should “and “be “or” in the phrase “modeled on the UAT or RAT”? 3. For completeness the fourth paragraph first sentence should specify the maximum voltage drop “from the pre-trip steady state voltage” ---. 	<ol style="list-style-type: none"> 1. Agree with comment, wording from UFSAR 8.2.1.1 has been added to the IDB to address the conditions of the plant auxiliary loads being supplied by the RATs. 2. Agree with comment, wording has been added to the IDB to clarify the modeling used. 3. Agree with comment, wording has been added to the fourth paragraph of the IDB as identified in the comment.

Date	No.	ICN UIN	TOPIC	INDEX NUMBERS	Issue	Resolution
6/29	2	ICN	RV head pre-service inspection	Vogtle 3 Vogtle 4 89	Please explain why there is such a significant change between what was put forth in the earlier versions of the UIN and what is now specified in the ICN. The previously submitted UINs’ IDB included visual inspections of the entire head plus ultrasonic and eddy current examinations of the ID surface of each UNS N06690 penetration nozzle, as well as eddy current and liquid penetrant examination of the surface of the head penetration nozzle partial penetration welds. These inspections/examinations appeared to be consistent with the Code Case, Tier 2 section 5.3.4.7 and 50.55(a)(g)(6)(ii)(D). The preservice examinations required in Table 1 of Code Case N-729-1 approved March 28, 2006 include B.4.30 and B.4.40. We recognize that B4.10 was an improper reference. The scope of the ITAAC also affects the applicable AC from the code case i.e. 3142.1	

ITAAC Determination Basis

The subject inspection, test, and analyses requires an analysis of the as-built offsite power system to confirm that power will be available to the reactor coolant pumps (RCPs) for a minimum of 3 seconds following a turbine trip when the buses powering the reactor coolant pumps are aligned to either the unit auxiliary transformers (UATs) or the reserve auxiliary transformers (RATs).

During normal plant operation, the main generator supplies power via the generator bus through the UATs to the plant auxiliary systems (which includes the RCPs); the remainder of the power is supplied to the grid through the generator stepup transformer (GSU). If a turbine trip occurs, the generator slows but continues to supply voltage to the UATs and the grid for several seconds, while the grid undergoes a transient voltage drop as it backfeeds plant auxiliary system power through the GSU and UATs. Two overhead transmission lines connect the Units 3 and 4 RAT supply from the 230 kV switching station to the two RATs for Unit 3 and the two RATs for Unit 4. One overhead transmission line supplies RAT "A" for Units 3 and 4 and the other overhead transmission line supplies RAT "B" for Units 3 and 4. A portion of Unit 3 RAT "A" supply line is underground between Unit 4 and Unit 3. The RATs may be used to distribute power for plant auxiliaries when the GSUs or UATs are out of service.

The analyses of the as-built offsite power system utilized proprietary power transmission system planning software which used grid data from Plant Vogtle (1, 2, 3, 4) and nearby substations. The station service loads for each Vogtle unit were modeled explicitly with that unit's loads being supplied by the UATs and then by the RATs, respectively. To simulate the turbine trip, the mechanical power input to the generator model was decreased instantaneously to a value of -0.018 per unit (pu), of the generator rated values, for a 30 second simulation. The negative value of mechanical power represents the windage and friction losses of the generator acting as a motor.

The results of the analyses are documented in a turbine trip study (Reference 1) which shows that the maximum voltage drop, over the 30 second simulation, at the high-side of the GSU and the RATs is 0.0178 pu and 0.0182 pu from pre-trip steady state voltage, respectively. The report concludes that the voltage at the high-side of the GSU and the RATs does not drop more than 0.15 pu from the pre-trip steady-state voltage for a minimum of 3 seconds following a turbine trip, when the buses powering the RCPs are aligned to either the UATs or the RATs, which meets the ITAAC acceptance criteria.