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

Vogtle Electric Generating Plant – Unit 1 and 2
Relief Requests VEGP-ISI-RR-05 and VEGP-ISI-RR-06
SNC Response to NRC Request for Additional Information

Ladies and Gentlemen:

By letter dated May 24, 2018 (Agencywide Documents Access and Management System Accession Number ML18144B012), Southern Nuclear Operating Company (SNC) requested relief from certain requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI. These relief requests, VEGP-ISI-RR-05 and VEGP-ISI-RR-06, pertain to examination coverage of Class 2 and Risk Informed welds achieved during the third inservice inspection interval at the Vogtle Electric Generating Plant (VEGP), Units 1 and 2.

By email dated August 30, 2018, the U.S. Nuclear Regulatory Commission (NRC) staff notified SNC that additional information is needed for the staff to complete their review. Enclosure 1 to this letter provides the SNC response to the NRC request for additional information (RAI).

This letter contains no NRC commitments. If you have any questions, please contact Jamie Coleman at 205.992.6611.

Respectfully submitted,

Cheryl A. Gayheart
Director, Regulatory Affairs
Southern Nuclear Operating Company

CAG/kgj/sm

Enclosures:

1. SNC Response to NRC Request for Additional Information (RAI) - Relief Request
VEGP-ISI-RR-05
2. SNC Response to NRC Request for Additional Information (RAI) - Relief Request
VEGP-ISI-RR-06

cc: Regional Administrator, Region II
NRR Project Manager – Vogtle 1 & 2
Senior Resident Inspector – Vogtle 1 & 2
RType: CVC7000

**Vogtle Electric Generating Plant – Unit 1 and 2
Relief Requests VEGP-ISI-RR-05 and VEGP-ISI-RR-06
SNC Response to NRC Request for Additional Information**

Enclosure 1

**SNC Response to NRC Request for Additional Information (RAI)
Relief Request VEGP-ISI-RR-05**

NRC RAI 1

Table RR-5 lists an achieved coverage of 32.5 percent for the Vogtle, Unit 1, boron injection tank head-to-vessel shell weld. This lack of required coverage appears to be due primarily to ultrasonic examination from only one side of the weld. The reported coverage achieved during the second ISI interval (ADAMS Accession No. ML003762772) for the same component was 57 percent. Please provide a justification for the reduced inspection coverage for this component while all other components have the same or increased inspection coverage.

SNC Response to RAI 1

During the preparation of the initial submittal, the coverage for 11204-V6-001-W02 was reevaluated based upon the datasheets. This reevaluation conservatively determined the coverage to be 32.5% using a graphical method based upon a sketch provided in the datasheets. The reevaluation should have used the coverage percentage numbers listed in the datasheets from the 2014 inspection. A secondary review, performed during the RAI processes, determined the actual coverage to be 63.7%.

NRC RAI 2

Under Item 6, "Proposed Alternative and Basis for Use," the licensee states that an acceptable level of quality and safety will be maintained; however, no supporting argument was provided to justify that reasonable assurance of structural integrity or leak tightness continues to exist. Please provide the following:

- a. A confirmation that, for each affected component weld having less than 61 percent coverage, the peak stress in the ultrasonic testing (UT) missed region is likely to be similar to or less than the peak stress in the UT covered region. This confirmation should be based on stress reports for the affected components.
- b. Past plant-specific and fleet operating experience, if available, regarding leakage and UT indications detected from all affected component welds that required flaw evaluations or repairs.

SNC Response to RAI 2

- a. For the 32" Steam Generator Main Steam Nozzle, the design peak stress ratio is slightly higher above the area of limited scanning. However, the ratios are of similar magnitude and the representative of the entire component in the inspection region of interest. To give added confidence of structural integrity, a supplemental magnetic particle (MT) examination was performed on these welds. This examination attained 100% coverage. No recordable indications were found with this examination.

For the 6" Boron Injection Tank (BIT) Inlet and Outlet Nozzles, a review of the BIT design report (PJ-750154252) indicated the peak stress intensities on the inside surface of the nozzle are lower in the missed region than the covered region.

For the Residual Heat Removal Heat Exchanger, the Westinghouse Design Report 033001 was reviewed. No local stress evaluations were performed for these nozzles since they were within the Westinghouse Engineering Specification (G-679150) allowable values for loading on the nozzles. The actual peak stress on the nozzles is less than 50% of the allowable stress on the nozzles. To give added confidence of structural integrity, a supplemental surface examination (liquid penetrant) examination was performed on these welds. This examination attained 100% coverage. No recordable indications were found with this examination.

- b. In reviewing the SNC fleet operating experience, (VEGP - Units 1 and 2 and Farley Nuclear Plant - Units 1 and 2) no leakage or indications that require flaw evaluations or repairs have been found from the Category C-A, Item Nos. C1.20 and Category C-B, Item No. C2.21 for inspections performed during the previous interval.

**Vogtle Electric Generating Plant – Unit 1 and 2
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Enclosure 2

**SNC Response to NRC Request for Additional Information (RAI)
Relief Request VEGP-ISI-RR-06**

NRC RAI 1

Please specify the piping system (e.g., reactor coolant system, residual heat removal, safety injection) to which each weld listed in Table RR-6 belongs.

SNC Response to RAI 1

Weld Identification

Weld ID Number	Piping System
11208-007-1-RB	Chemical and Volume Control
11208-007-2-RB	Chemical and Volume Control
11201-030-38-RB	Reactor Coolant
11201-031-2-RB	Reactor Coolant
11201-042-2-RB	Reactor Coolant
11201-046-2-RB	Reactor Coolant
11201-051-2-RB	Reactor Coolant
11204-126-15-RB	Safety Injection
11204-024-13-RB	Safety Injection
11204-023-21-RB	Safety Injection
11204-076-42-RB	Safety Injection
11204-078-10-RB	Safety Injection
11204-021-26-RB	Safety Injection
11204-021-27-RB	Safety Injection
11204-021-28-RB	Safety Injection
11204-025-20-RB	Safety Injection
11208-012-5-RB	Chemical and Volume Control
11301-001-6-RB	Main Steam
21208-007-1-RB	Chemical and Volume Control
21208-007-2-RB	Chemical and Volume Control
21204-124-15-RB	Safety Injection
21204-024-15-RB	Safety Injection
21204-023-21-RB	Safety Injection
21201-030-19-RB	Safety Injection
21204-021-26-RB	Safety Injection
21204-021-17-RB	Safety Injection
21204-024-16-RB	Safety Injection
21204-025-22-RB	Safety Injection

NRC RAI 2

Given the susceptibility of Category R-A, Item No. R1.11, welds to thermal fatigue, the reduced coverage obtained, and for assurance of structural integrity of the unexamined volume of the weld, please provide the available cumulative fatigue usage factor for the Class 1 welds.

SNC Response to RAI 2

The Thermal Fatigue Program tracks cyclic and transient occurrences at key locations via Fatigue Pro to ensure that components are maintained within the design limits and projects fatigue usage to 60 years. The latest Fatigue Pro analysis is Calculation FP-VOG-321, which provides the fatigue usage at the nozzle locations for these lines. The tracked Fatigue Pro nozzle locations that are applicable to the reduced coverage welds are listed in the table below, which summarizes the current cumulative usage.

Cumulative Fatigue Usage Factor Table

Weld ID Number	Line Function	% of Allow Cumulative Usage
11208-007-1-RB	Alternate Charging Line	44.8%
11208-007-2-RB	Alternate Charging Line	44.8%
11201-030-38-RB	Pressurizer Spray Line	16.8%
11201-031-2-RB	High Head SI Loop 1	21.3%
11201-042-2-RB	High Head SI Loop 2	21.3%
11201-046-2-RB	High Head SI Loop 3	21.3%
11201-051-2-RB	High Head SI Loop 4	21.3%
21208-007-1-RB	Alternate Charging Line	53.6%
21208-007-2-RB	Alternate Charging Line	53.6%

NRC RAI 3

Has the system leakage test performed in accordance with IWB-5000 for Class 1 welds, or IWC-5000 for Class 2 welds, identified any through-wall leaks? If so, please discuss the root cause, the corrective actions, and the extent of condition evaluation.

SNC Response to RAI 3

A review was performed on the NIS-1 reports going back to the first refueling outages for Unit 1 and Unit 2. One through wall-through wall leak was identified during the Class 1 pressure test in 2R8 (Unit 2, Refueling Outage 8).

The leak was located on the leak-off line (3/8 inch diameter) of valve 2HV8701B. Design Change Package (DCP) 00-V2N0017 installed this piping during 2R8. During the pressure test performed for post maintenance testing, the leak was found on the modified piping. The rest of the piping affected by the DCP were inspected during the Class 1 pressure test with no leakage. In order to correct this leakage condition, the piping installed by the DCP was removed and capped.