Charles R. Pierce
Regulatory Affairs Director

Southern Nuclear
Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, AL 35242

Tel 205.992.7872
Fax 205.992.7601

SOUTHERN NUCLEAR
A SOUTHERN COMPANY

AUG 0 2 2016

Docket Nos.: 50-424

NL-16-1134

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

Vogtle Electric Generating Plant, Unit 1
Proposed Alternative VEGP-ISI-ALT-12 in Accordance with 10 CFR 50.55a(z)(2)
to Extend B-N-2 and B-N-3 Inservice Inspection Examinations Schedule

Ladies and Gentlemen:

In accordance with the provisions of 10 CFR 50.55a(z)(2), Southern Nuclear Operating Company (SNC) hereby requests Nuclear Regulatory Commission (NRC) approval of Vogtle Electric Generating Plant (VEGP) Alternative VEGP-ISI-ALT-12. This Alternative requests deferral of the Unit 1, Category B-N-2 and B-N-3 examinations (visual examinations of the reactor vessel interior attachments beyond the beltline region and the core support structure) from the spring 2017 refueling outage (1R20) until the following fall 2018 refueling outage (1R21). The Third Inspection Interval for VEGP is scheduled to end on May 30, 2017. The last remaining refueling outage for Unit 1 within the Third Inspection Interval, including the one-year extension allowed by IWA-2430(d)(1), is 1R20. Precluding any unforeseen or extended shutdowns, this alternative would result in an approximate five-month interval extension. As part of this alternative, SNC will perform the category B-N-2 and B-N-3 visual examinations prior to 1R21 if, for any reason, the core barrel is removed from the reactor vessel.

To allow the finalization of the work activities and associated outage planning and preparation needed to prepare for 1R20, NRC approval is requested by November 1, 2016.

This letter contains no NRC commitments. If you have any questions, please contact Ken McElroy at (205) 992-7369.

Respectfully submitted,

C. R. Pierce

C. R. Pierce
Regulatory Affairs Director

CRP/RMJ

Enclosure: Alternative VEGP-ISI-ALT-12

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
Mr. G.W. Gunn, Regulatory Affairs Manager – Vogtle 1 & 2
RType: CVC7000

U. S. Nuclear Regulatory Commission
Ms. C. Haney, Regional Administrator
Mr. R. E. Martin, NRR Senior Project Manager – Vogtle 1 & 2
Ms. N. R. Childs, Senior Resident Inspector – Vogtle 1 & 2

Vogtle Electric Generating Plant, Unit 1
Proposed Alternative VEGP-ISI-ALT-12 in Accordance with 10 CFR 50.55a(z)(2)
to Extend B-N-2 and B-N-3 Weld Inservice Inspection Examinations Schedule

Enclosure

Alternative VEGP-ISI-ALT-12

Plant Site - Unit:

Vogtle Electric Generating Plant (VEGP) - Unit 1

Interval-Interval Dates:

Third Inspection Interval, May 31, 2007 through May 30, 2017

Requested Date for Approval and Basis:

Approval is requested by November 1, 2016 for an extension of the Third Inspection Interval for VEGP – Unit 1, Category B-N-2 and B-N-3 examinations (visual examinations of the reactor vessel interior attachments beyond the beltline region and the core support structure). The extension is requested to allow deferral of the examinations from the VEGP - Unit 1 20th Refueling Outage (1R20), which is scheduled to start in March of 2017, to the following Refueling Outage (1R21). The requested approval date of November 1, 2016 is needed to allow the finalization of the work activities and associated outage planning and preparation needed to prepare for Refueling Outage 1R20. The proposed alternative would allow these examinations to be performed during the VEGP – Unit 1 21st Refueling Outage (1R21), which is scheduled to start in September of 2018. As currently scheduled, this alternative would extend the Third Inspection Interval by approximately five months.

ASME Code Components Affected:

The affected components are the reactor vessel interior attachments beyond the beltline region and the core support structure at VEGP – Unit 1. The identified examinations are the ASME Code, Section XI, Examination Category B-N-2 and B-N-3, Item Numbers B13.60 and B13.70 examinations.

Examination Category	Item No.	Description
B-N-2	B13.60	Interior Attachments Beyond Beltline Region
B-N-3	B13.70	Removable Core Support Structures

VEGP - Unit 1 Components:

Component ID	Description
11201-V6-001-W41	Core Support Lug at 0 Degrees
11201-V6-001-W42	Core Support Lug at 60 Degrees
11201-V6-001-W43	Core Support Lug at 120 Degrees
11201-V6-001-W44	Core Support Lug at 180 Degrees
11201-V6-001-W45	Core Support Lug at 240 Degrees
11201-V6-001-W46	Core Support Lug at 300 Degrees
11201-V6-001-CSS-01	Core Support Structure

Applicable Code Edition and Addenda:

The applicable Code edition and addenda is ASME Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," 2001 Edition with

Addenda through 2003.

Applicable Code Requirements:

IWB-2412, Inspection Program B, requires visual examination of the reactor vessel interior attachments and core support structure (core barrel) identified in Table IWB-2500-1, Examination Categories B-N-2 and B-N-3, to be performed once each inspection interval. The VEGP - Unit 1 Third Inspection interval is currently scheduled to conclude on May 30, 2017.

IWA-2430(d)(1) allows the inspection interval to be reduced or extended by as much as one year. Therefore, the existing Code allows the inspection interval to be extended to May 30, 2018. Approval is requested to extend the Third Inspection Interval for Examination Categories B-N-2 and B-N-3, Item Numbers B13.60 and B13.70, visual examinations an additional interval duration to include Refueling Outage 1R21, which is scheduled to begin in September of 2018.

Background and Reason for Request:

IWB-2412, Inspection Program B, requires that the visual examinations of the reactor vessel interior attachments and the core support structure, required by Examination Categories B-N-2 and B-N-3, be performed once every inspection interval. These visual examinations are typically performed at the end of the interval with the core barrel removed with the reactor vessel volumetric examinations of Category B-A and B-D welds. However, Southern Nuclear Operating Company (SNC) has previously submitted and received approval to extend examination of the reactor vessel Category B-A and B-D welds from ten years to twenty years for VEGP - Units 1 and 2. As a result, VEGP has no other requirements or activities that require removing the core barrel prior to next Category B-A and B-D weld examinations except for the Category B-N-2 and B-N-3 visual examinations. Correspondence related to the extension of the Category B-A and B-D weld examinations is contained in SNC letters dated August 29, 2012, November 25, 2013, and January 31, 2014 (Agency Document Access and Management System (ADAMS) Accession Numbers ML12243A248, ML13329A494, and ML14031A429 respectively) and in Nuclear Regulatory Commission letter dated March 20, 2014 (ADAMS Accession Number ML14030A570).

The Third Inspection Interval for VEGP is scheduled to end on May 30, 2017. The last remaining refueling outage for VEGP - Unit 1 within the Third Inspection Interval, including the one-year extension allowed by IWA-2430(d)(1), is Refueling Outage 1R20, which is scheduled to begin in March of 2017. The proposed extension of the Third Inspection Interval would allow the category B-N-2 and B-N-3 visual examinations to be performed during Refueling Outage 1R21 scheduled to start in September of 2018. Precluding any unforeseen or extended shutdowns, this alternative would result in an approximate five-month interval extension.

The work scope for Refueling Outage 1R20 currently includes replacement of selected in-core flux thimble tubes and the performance of the category B-N-2 and B-N-3 visual examinations. The in-core flux thimble tubes are stainless steel

tubing which extend from the seal table, through the thimble guide tubes, into the reactor core and provide access for the movable detectors used to measure neutron flux. The existing in-core flux thimble tubes are being replaced due to excessive thimble wear as a result of flow induced vibration. Installation of the replacement in-core flux thimble tubes will ensure movable in-core instrumentation remains operable as required by the Technical Specifications. During the in-core flux thimble tube replacement activity, the existing in-core flux thimble tubes are removed from the reactor vessel, sectioned, and placed into debris canisters. These removal activities are performed with all fuel removed from the reactor vessel.

Examination Category B-N-2 and B-N-3 visual examinations require removal of the core barrel from the reactor vessel to gain access to the reactor vessel interior attachments and the core support structure. To remove and reinstall the core barrel requires implementation of detailed planning and precision lifts to ensure that the core barrel and/or reactor vessel aren't damaged. In addition, the core barrel is extremely radioactive which adds to the complexity when lifting the core barrel in and out of the reactor vessel. The removal and reinstallation of the core barrel and the performance of the category B-N-2 and B-N-3 visual examinations are performed with all fuel removed from the reactor vessel.

Splitting these two major project activities will provide a safety benefit by allowing the organization to focus on planning and executing these complex, in-vessel tasks in separate outages. Performing both of these activities during 1R20 induces a hardship without a commensurate level of safety benefit and also extends the time the reactor vessel is unavailable to be reloaded with fuel, which would likely extend the duration of Refueling Outage 1R20. Refueling Outage 1R21 does not include replacement of in-core flux thimble tubes and as such the performance of the Examination Category B-N-2 and B-N-3 examinations are expected to be less of an impact on outage scheduling. This allows increased focus on safely completing the work, while maintaining dose ALARA. Therefore, SNC proposes an extension of the Third Inspection Interval which would allow the category B-N-2 and B-N-3 visual examinations to be performed during Refueling Outage 1R21 scheduled to start in September of 2018.

Proposed Alternative and Basis for Use:

SNC proposes to extend the Third Inspection Interval for the category B-N-2 interior attachment welds beyond the reactor vessel beltline region and the category B-N-3 reactor vessel core support structure surfaces an additional interval duration to allow examination during Refueling Outage 1R21 which is scheduled to begin in September of 2018. The subject examinations would need to be performed before the end of the Refueling Outage 1R20 in March of 2017, pending approval of this proposed alternative.

The visual examinations of the reactor vessel interior attachments and the core support structure have been performed twice at VEGP – Unit 1. No relevant indications were noted during the First Inspection Interval category B-N-2 and B-N-3 examinations. Relevant indications were noted during the Second Inspection Interval category B-N-2 and B-N-3 examinations during VEGP - Unit 1 Refueling Outage 1R13 in 2006.

upper core plate clevis insert at the 90-degree location. The foreign object was dislodged in one piece and some slightly disrupted material was noticed on the outside bottom edge of the clevis insert. In addition, a similar indication was observed on the corresponding area on the left-hand side of the same clevis insert. Corresponding slightly disrupted material was observed on the core barrel on both sides of the clevis which matched the locations on the upper core plate clevis insert. These indications were clearly not service related, and were assessed and determined not to affect the structural integrity of the reactor internals.

SNC personnel actively participate in key industry groups such as Nuclear Energy Institute, PWR Materials Reliability Program (MRP), and the PWR Owner's Group (PWROG) Subcommittee associated with PWR reactor vessel internals to assess industry operating experience for applicability to VEGP – Units 1 and 2. Two aging management issues are currently a challenge for PWR reactor internals. These two issues are: (1) reactor internals lower support clevis cap screw degradation, and (2) baffle-to-former bolting degradation.

Reactor internals lower support clevis cap screw degradation was discovered at one United States Westinghouse NSSS plant. The industry sponsored evaluations and assessments show that the ability of the lower radial support system to perform its intended safety function is unrelated to the integrity of the cap screws used to hold the clevis insert in place.

Degradation of baffle-to-former bolting in the United Sates has been limited to downflow reactor designs with Type 347 bolts. VEGP – Units 1 and 2 are standard upflow reactor designs with Type 316 strain-hardened bolts which based on assessment of the operating experience are considered the least susceptible plant designs to have baffle-to-former bolting degradation. Although the susceptibility assessment clearly indicates a low potential for VEGP, detection of degradation similar to the recent operating experience does not require removal of the core barrel in the unlikely event of occurrence.

Therefore, in accordance with 10CFR50.55a(z)(2) "hardship without a compensating increase in the level of quality and safety", SNC requests approval to extend the Third Inspection Interval to include Refueling Outage 1R21 scheduled to start in September of 2018 for only category B-N-2 and B-N-3 visual examinations.

As part of this alternative, SNC will perform the category B-N-2 and B-N-3 visual examinations prior to Refueling Outage 1R21 if, for any reason, the core barrel is removed from the reactor vessel.

Duration of Proposed Alternative:

The proposed alternative would extend the duration of the Third Inspection Interval for Examination Categories B-N-2 and B-N-3, Item Numbers B13.60 and B13.70, visual examinations from May 30, 2017 up to and including Refueling Outage 1R21, currently scheduled to start in September of 2018.

This extension will not affect the start of the Fourth Inspection Interval so it will

Refueling Outage 1R21, currently scheduled to start in September of 2018.

This extension will not affect the start of the Fourth Inspection Interval so it will not impact the overall schedule of other VEGP's ISI examinations.

Precedents:

NRC Safety Evaluation dated December 10, 2014, for Wolf Creek Generation Station. Request for Relief Nos. 13R-08 and 13R-09 for the Third 10-Year Inservice Inspection Program Interval (TAC NOS. MF3321 and MF3322) (ML14321A864).

Status:

Pending NRC approval.