Southern Nuclear

B. H. Whitley
Director
Regulatory Affairs

Southern Nuclear
Operating Company, Inc.
42 Inverness Center Parkway
Birmingham, AL 35242
Tel 205.992.7079
Fax 205.992.5296

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ND-18-0090
10 CFR 50.55a

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

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Units 3 and 4
Response to Request for Additional Information Regarding Counterboring of Class 1 Piping, Components, and Fittings with Weld End Transitions
(VEGP 3&4-PSI-ALT-08S1)

Ladies and Gentlemen:

By letter ND-17-1698 dated October 20, 2017, Southern Nuclear Operating Company (SNC) submitted a request for an alternative in accordance with 10 CFR 50.55a for alternate counterbore configurations on weld joints [ML17293A352]. On January 9, 2018, the Nuclear Regulatory Commission (NRC) Staff issued a draft request for additional information (RAI) [ML18009A270]. The responses to the RAI questions are included in Enclosure 2.

The supplemental information provided in this letter does not impact the scope or conclusions of the original alternative.

This letter contains no regulatory commitments. This letter has been reviewed and determined not to contain security related information.

Should you have any questions, please contact Mr. Corey Thomas at (205) 992-5221.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 1st of February 2018.

Respectfully submitted,

Brian H. Whitley
Director, Regulatory Affairs
Southern Nuclear Operating Company

Enclosures: 1) (previously submitted with the original proposed code alternative, VEGP 3&4-PSI-ALT-08, in SNC letter ND-17-1698)

2) Response to Request for Additional Information Regarding Counterboring of Class 1 Piping, Components, and Fittings with Weld End Transitions (VEGP 3&4-PSI-ALT-08S1)

cc:

Southern Nuclear Operating Company / Georgia Power Company
Mr. S. E. Kuczynski (w/o enclosure)
Mr. M. D. Rauckhorst
Mr. D. G. Bost (w/o enclosure)
Mr. M. D. Meier (w/o enclosure)
Mr. D. H. Jones (w/o enclosure)
Mr. D. L. McKinney (w/o enclosure)
Mr. T. W. Yelverton (w/o enclosure)
Mr. B. H. Whitley
Mr. J. J. Hutto
Mr. C. R. Pierce
Ms. A. G. Aughtman
Mr. D. L. Fulton
Mr. M. J. Yox
Mr. J. Tupik
Mr. W. A. Sparkman
Ms. A. C. Chamberlain
Ms. A. L. Pugh
Mr. J. D. Williams
Mr. F. J. Redwanz
Document Services RTYPE: VND.LI.L00
File AR.01.02.06

Nuclear Regulatory Commission
Mr. W. Jones (w/o enclosure)
Ms. J. Dixon-Herrity
Mr. C. Patel
Ms. J. M. Heisserer
Mr. B. Kemker
Mr. G. Khouri
Ms. S. Temple
Ms. V. Ordaz
Mr. T.E. Chandler
Ms. P. Braxton
Mr. T. Brimfield
Mr. C. J. Even
Mr. A. Lerch

State of Georgia
Mr. R. Dunn

Oglethorpe Power Corporation
Mr. M. W. Price
Mr. K. T. Haynes
Ms. A. Whaley

Municipal Electric Authority of Georgia
Mr. J. E. Fuller
Mr. S. M. Jackson

Dalton Utilities
Mr. T. Bundros

Westinghouse Electric Company, LLC
Mr. L. Oriani (w/o enclosure)
Mr. G. Koucheravy (w/o enclosure)
Mr. M. Corletti
Mr. M. L. Clyde
Ms. L. Iller
Mr. D. Hawkins
Mr. J. Coward

Other
Mr. S. W. Kline, Bechtel Power Corporation
Ms. L. A. Matis, Tetra Tech NUS, Inc.
Dr. W. R. Jacobs, Jr., Ph.D., GDS Associates, Inc.
Mr. S. Roetger, Georgia Public Service Commission
Ms. S. W. Kernizan, Georgia Public Service Commission
Mr. K. C. Greene, Troutman Sanders
Mr. S. Blanton, Balch Bingham
Mr. R. Grumbir, APOG
NDDocumentinBox@duke-energy.com, Duke Energy
Mr. S. Franzone, Florida Power & Light

Southern Nuclear Operating Company

ND-18-0090

Enclosure 2

Vogtle Electric Generating Plant (VEGP) Units 3 and 4

Response to Request for Additional Information Regarding Counterboring of Class 1 Piping, Components, and Fittings with Weld End Transitions (VEGP 3&4-PSI-ALT-08S1)

(This Enclosure consists of 5 pages, including this cover page)

The following are clarifications and discussions requested by the NRC Staff regarding the review of Southern Nuclear Operating Company (SNC) Proposed Alternative VEGP 3&4-PSI-ALT-08 in Accordance with 10 CFR 50.55a(z)(1) - Counterboring of Class 1 Piping, Components, and Fittings with Weld End Transitions (ADAMS Accession Number ML18009A270) on January 9, 2018. Responses are provided below each Request for Additional Information (RAI).

RAI 1:

The request states that the alternative would apply to, "ASME Class 1 piping, components, and fittings with weld end transitions." Clarify whether this alternative applies to all ASME Class 1 piping, components, and fittings with weld end transitions, or a subset of ASME Class 1 piping, components, and fittings. If it applies only to a subset, then provide information regarding which ASME Class 1 piping, components, and fittings with weld end transitions the alternative would be applicable.

SNC Response to RAI 1:

This alternative applies to all ASME Class 1 piping, components, and fittings with weld end transitions. It is important to note that this is a contingency alternative. At this time, no specific locations on VEGP 3 or 4 have been identified where the alternative will be used.

RAI 2a:

Clarify whether the request is to use alternative counterbore configurations on weld joints or to use alternative weld joint configurations.

SNC Response to RAI 2a:

The alternative request is for alternate counterbore configurations on weld joints.

RAI 2b:

Provide examples of the alternative counterbore configurations on weld joints (i.e., shorter counterbore with dimensions, no counterbore, counterbore following radius of fittings, etc.) or alternative weld joint configurations that will be used, and how they provide an acceptable level of quality and safety.

SNC Response to RAI 2b:

As previously stated, this is a contingency alternative request. At this time, there are no specific locations at VEGP 3 or 4 where this alternative is needed. The specific case that initiated this request was at another domestic plant under construction. Due to the configuration of a weld at an elbow, it was determined that an alternate counterbore configuration on the weld joint should be used for the pipe to weld to elbow transition. A counterbore in accordance with ASME Section III NB-4250(c) as shown in Figures NB-4250-2 and NB-4250-3 was required for this configuration because the alignment requirements for ASME Section III NB-4233 could not be met. A counterbore in this area in accordance with ASME Section III NB-4250(c) would result in unnecessarily challenging minimum wall thickness at the elbow transition, whereas a shorter counterbore at the elbow transition would eliminate this challenge. Alternate counterbore configurations include counterbores shorter than the required length. It is important to note that a counterbore is not required if the alignment requirements can be met in accordance with ASME Section III NB-4233.

The ASME Section III minimum wall thickness will be met for the length of alternate counterbore configurations used. Alternate counterbore configurations used on weld joints will ensure that applicable preservice and inservice examinations can be performed. Therefore, the proposal provides an acceptable level of quality and safety.

RAI 2c:

Discuss what requirements in ASME Code, Section III, Subparagraph NB-4520(c), will not be met and the justification of equivalent quality and safety for not complying with the ASME Code.

SNC Response to RAI 2c:

When deemed necessary, the requirement to have a counterbore with a length of at least t_{min} for components and fittings and $2t_{min}$ for straight pipe sections will not be met. The purpose of the counterbore requirement in ASME Section III NB-4250(c) is to ensure preservice and subsequent inservice inspections can be performed. Alternate configurations can be used that are not as limiting as required by ASME Section III NB-4250 (c), as shown in Figures NB-4250-2 or NB-4250-3, while still providing a surface that allows performance of ASME Section XI preservice and inservice examinations. Alternate configurations include counterbores shorter than the required length.

The ASME Section III minimum wall thickness will be met for the length of alternate counterbore configurations used. Additionally, any alternate counterbore configurations used on weld joints will ensure that applicable preservice and inservice examinations can be performed. Therefore, the proposal provides an acceptable level of quality and safety.

RAI 3:

Discuss what evaluations have been performed to determine the effect the alternative counterbore configurations or alternative weld joint configurations have on the stress analysis; and how the alternative counterbore configurations or alternative weld joint configurations will meet the ASME Code, Section III, SubArticle NB-3200, requirements.

SNC Response to RAI 3:

No evaluations have been performed to support this alternative submittal, since the length of the required counterbore in NB-4250(c) does not impact the structural integrity piping evaluation. Stress analyses for the AP1000 piping and components are based on satisfying minimum wall thickness required by Code. Any alternate counterbore configurations on weld joints will result in being at or above the minimum wall thickness as required by ASME Section III. Therefore, alternate counterbore configurations on weld joints will not result in any impact to piping stress analysis.

RAI 4:

The request states that the licensee will verify that the required preservice inspection can be performed in accordance with applicable inspection requirements for the alternative weld joint configurations. However, the request also states that it applies to inservice inspection. Please explain why inservice inspection is not addressed in this condition, and discuss what evaluations have been performed to demonstrate that the performance-based preservice and inservice inspections, as specified by ASME Code and required by Section 50.55a of Title 10 of the Code of Federal Regulations (10 CFR), can be performed on the alternative counterbore configurations or alternative weld joint configurations. This discussion should also address whether 100 percent of the weld volume will be inspectable using the alternative counterbore configurations or alternative weld joint configurations.

SNC Response to RAI 4:

The counterbore configuration requirements are defined in ASME Section III, and are applicable to welds requiring Preservice Examination. Per the Alternative request, this alternative shall apply after SNC has verified that the required preservice inspection can be performed using the alternate counterbore configuration (meaning essentially 100% of the required inspection volume is obtainable). Section XI preservice and inservice examinations are not impacted since alternate counterbore configurations on weld joints used will support ASME Section XI preservice and inservice examinations. As required by 10 CFR 50.55a and ASME Section XI, any alternate counterbore configurations on weld joints will result in achieving essentially 100% inspection of the ASME Section XI required inspection volume.

RAI 5:

The request states that the SNC's design specification will describe the alternative weld joint configurations and the use of the alternative will be documented in the appropriate Data Report Form. Discuss what information (i.e., weld location and alternative counterbore configuration or alternative weld joint configuration) will be provided in the design specification and the data report. In addition, clarify which Data Report Form will document the use of the alternative counterbore configurations or alternative weld joint configurations.

SNC Response to RAI 5:

The design specification will describe the weld joint in which any alternate counterbore configurations on weld joints are used. Additionally, the alternate weld configuration will be supported by an inspection evaluation that will include the as-built configuration and evaluation concluding that the alternative counterbore configuration is inspectable. Use of the code alternative will be documented in the N-5 data report.

RAI 6:

The request states, "Provided that weld joints will remain inspectable and that the weld history is appropriately documented, this proposed alternative provides an acceptable level of quality and safety in accordance with 10 CFR 50.55a(z)(1)." However, this statement is unclear to the NRC staff because it is the owner's responsibility to ensure inspectability and to meet applicable regulatory requirements concerning record retention. Therefore, the NRC staff requests a discussion of how the alternative counterbore configurations or alternative weld joint configurations will meet 10 CFR 50.55a(z)(1) by providing an acceptable level of quality and safety.

SNC Response to RAI 6:

The counterbore requirements listed in ASME Section III NB-4250 (c) as shown in Figures NB-4250-2 and NB-4250-3 are there to ensure future Section XI preservice and inservice examinations are achievable.

The ASME Section III minimum wall thickness will be met for the length of alternate counterbore configurations used on weld joints. Additionally, any alternate counterbore configurations used will ensure that applicable preservice and inservice examinations can be performed. Therefore, the proposal provides an acceptable level of quality and safety.