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SOUTHERN COMPANY

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

Edwin I. Hatch Nuclear Plant – Unit 2
Response to Request for Information Regarding Proposed Inservice Inspection
Alternative HNP-ISI-ALT-HDPE-01, Version 2.0

Ladies and Gentlemen:

By letter dated September 19, 2014, Southern Nuclear Operating Company (SNC) submitted proposed Inservice Inspection (ISI) Alternative HNP-ISI-ALT-HDPE-01, Version 2.0 for Nuclear Regulatory Commission (NRC) staff review and approval (SNC letter NL-14-1250). This Alternative requests authorization to replace buried steel Plant Service Water piping with High Density Polyethylene (HDPE) piping for the duration of the license at Edwin I. Hatch Nuclear Plant (HNP), Unit 2.

By letter dated January 13, 2015, the NRC sent SNC a Request for Additional Information (RAI) letter. Enclosure 1 provides the SNC response to the RAI questions. In addition, the RAI proposes that SNC incorporate additional clarification into the Alternative Technical Requirements (ATR) provided in Enclosure 2 of NL-14-1250. Enclosure 2 of this letter provides revised pages for the ATR, and is a direct replacement for pages E2-28 and E2-31 sent in NL-14-1250. As such, the "header" and "footer" of Enclosure 2 of this letter are consistent with pages E2-28 and E2-31 of the NL-14-1250.

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

Respectfully submitted,

C. R. Pierce
Regulatory Affairs Director

CRP/RMJ

Enclosures:
1. SNC Response to NRC RAIs
2. Revised Pages E2-28 and E2-31 of Alternative Technical Requirements

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. Vineyard, Vice President – Hatch
Mr. M. D. Meier, Vice President – Regulatory Affairs
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U. S. Nuclear Regulatory Commission
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Mr. R. E. Martin, NRR Senior Project Manager - Hatch
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Edwin I. Hatch Nuclear Plant – Unit 2
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Enclosure 1

SNC Response to NRC RAIs

NRC RAI Question 1

Describe the quality control process for embedding flaws for the proposed Ultrasonic Testing qualification program. How will you determine location of flaws, etc?

SNC Response to NRC RAI Question 1

SNC is engaged with EPRI in plans to produce flawed specimens specifically for the Hatch Project. These specimens will be used for qualification / demonstration of both the ultrasonic testing (UT) procedures and for the non-destructive examination (NDE) personnel. Surface-connected flaws required for the demonstration joint will be produced using very thin cutting tools after the joint is fused. Various methods currently exist for producing internal flaws, primarily by trial and error as was the case with Callaway. EPRI plans to refine techniques for producing internally-flawed specimens during an HDPE Mechanical Test Comparison Project, expected to commence in early 2015. Successful development of any techniques and quality control practices learned from developing and verifying flawed specimens for that project should be available prior to preparation of the Hatch specimens. Otherwise the Hatch specimens will be produced using existing trial-and-error methods, and verified using volumetric NDE (e.g. double-angle radiography).

NRC RAI Question 2

For the High Speed Tensile Test and the Side Bend Test, you state that four test specimens will be removed at intervals approximately 90 degrees apart for each test. Will these be at random locations or at cardinal locations?

SNC Response to NRC RAI Question 2

Orientation of mechanical test specimens will typically commence at random locations. During the heating process, however, localized areas of surfaces to be fused sometimes experience wave-like conditions. SNC therefore retains the option to align tests with areas of such anomalous surface conditions to verify the conditions are not deleterious to the finished fused joint.

NRC RAI Question 3

Paragraph 4231(c) states for items with different DRs, the item with the smaller DR will be counter bored and tapered to equal the wall thickness, or its outside diameter will be machined and tapered to equal the wall thickness of the item with the larger DR. Please specify NDE techniques and measurements that will be incorporated to assure the required DRs are met and that machined surface is free of indication and possible porosity.

SNC Response to NRC RAI Question 3

4231(c) has been revised in part to read (without the underline): "...with Fig. 4230-1 (a) or (b). Machined surfaces will be visually examined to verify absence of porosity or other deleterious surface conditions, and required wall thicknesses will be verified by direct measurement." Direct measurement will typically be by

tape or rule, but may also be by calibrated ultrasonic thickness measurement. Enclosure 2 of this letter contains the revised page E2-28 of the ATR.

NRC RAI Question 4

Paragraph 4412(a)(1) should include that the joint in addition to the surface heaters used for fusing will be free of scale, rust, oil, grease, dust, fine particulates and other deleterious material. In addition, cleaners that form a film (acetone) shall not be used on the joint preparation.

SNC Response to NRC RAI Question 4

4412(a) has been clarified in part to read (without the underline): "(2) The joint will be protected from the above and all other deleterious contamination..." In addition, the following subparagraph will be added to 4412(a):

"(3) 70% (minimum) isopropyl alcohol solutions will be used for cleaning all film, oil or other foreign material from machined fusion surfaces."

Enclosure 2 of this letter contains the revised page E2-31 of the ATR.

NRC RAI Question 5

Paragraph 5114 (Qualification of Volumetric Examination Procedures) – should state that the qualification test should be blind.

SNC Response to NRC RAI Question 5

NDE procedures are required to be qualified / demonstrated as capable of detecting 100% of rejectable indications from the smallest rejectable surface-connected flaw to the maximum postulated flaw. In order to validate this detection capability to the satisfaction of the Inspector and Owner (SNC), identification of the approximate locations of some minor flaws may be necessary during the procedure demonstration. However, the NDE procedure may only be applied for inspection of the actual product by trained personnel who have demonstrated their ability to adequately detect flaws in a purely blind fashion. Reference paragraph 5422(b)(3): "The demonstration will be performed in a blind fashion."

NRC RAI Question 6

Table 3-254 – Paragraph 3-403.4 Cross Sectional Area is an essential variable. The cross sectional area = (π) diameter x thickness and both of these are essential variables.

SNC Response to NRC RAI Question 6

This is correct. Table 3-254(a) depicts the requirements of Section IX. Table 3-254(b) reflects the additional requirements for this project. Nominal diameter, nominal thickness and nominal cross-sectional area are all considered essential parameters for procedures, even though the latter is a product of the first two.

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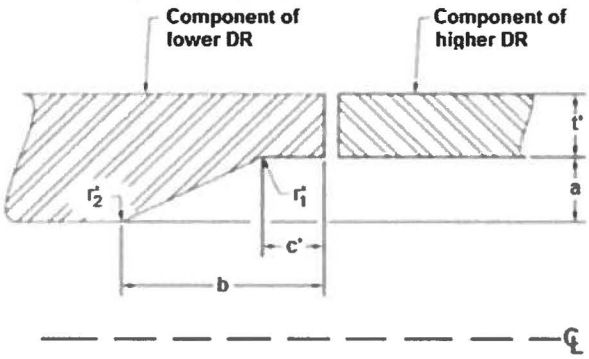
Enclosure 2

Revised Pages E2-28 and E2-31 of Alternative Technical Requirements

(c) For items with different DRs, the item with the smaller DR will be counterbored and tapered to equal the wall thickness, or its outside diameter will be machined and tapered to equal the wall thickness of the item with the larger DR and will comply with Fig. 4230-1 (a) or (b). Machined surfaces will be visually examined to verify absence of porosity or other deleterious surface conditions, and required wall thickness will be verified by direct measurement.

Fig.4230-1 Tapered Tranition Joint

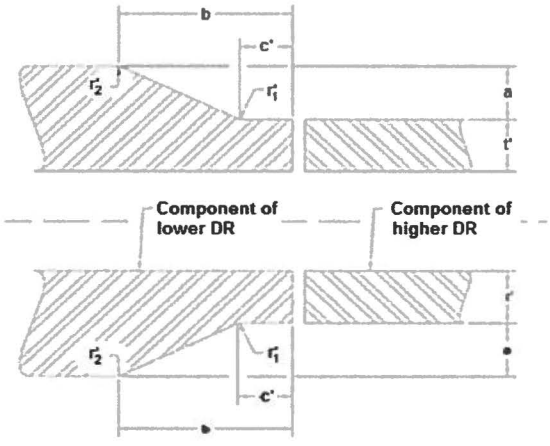


$t' = t_{sb\ min}$ of thinner component
$c'_{min} = 2.5t'$
c'values are after facing

$$0.35 < \left[\frac{a}{(b-c')}\right] < 0.60$$

$r_1'_{min} = 0.05t'$
$r_2'_{min} = 0.05t'$

(a) Reinforcement on Inside Diameter



$t' = t_{sb\ min}$ of thinner component
$c'_{min} = 2.5t'$
c'values are after facing

$$0.35 < \left[\frac{a}{(b-c')}\right] < 0.60$$

$r_1'_{min} = 0.05t'$
$r_2'_{min} = 0.05t'$

(b) Reinforcement on Outside Diameter

4400 RULES GOVERNING MAKING, EXAMINING, AND REPAIRING FUSED JOINTS

4410 PRECAUTIONS TO BE TAKEN BEFORE FUSING

4411 Identification, Storage and Handling of Materials

SNC (or its approved Certificate Holder) will be responsible for control of the materials that are used in the fabrication and installation of components. Suitable identification, storage, and handling of material will be maintained.

4412 Cleanliness and Protection of Fusing Surfaces

(a) Precautions will be taken to prevent contamination of the joint during the fusing process.

(1) The surfaces of the heaters used for fusing will be free of scale, rust, oil, grease, dust, fine particulate and other deleterious material.

(2) The joint will be protected from the above and all other deleterious contamination including rain, snow, dust, fine particulate and wind during fusing operations. Fusing may not be performed on wet surfaces or surfaces containing dust or fine particulate.

(3) 70% (minimum) isopropyl alcohol solutions will be used for cleaning all film, oil or other foreign material from machined fusion surfaces.

(b) Fusing will not be performed at ambient temperatures less than 50°F or greater than 125°F, unless an environmental enclosure is used to control work area temperature between 50°F and 125 °F. For ambient fusing temperatures between 100°F and 125°F, minimum cooling time shall be 13 minutes per in. of thickness.

4420 RULES FOR MAKING FUSED JOINTS

4421 Heating Cycle

(a) Immediately prior to inserting the heater plate between the faced ends to be joined, the temperature will be verified to be within the required range by measuring at four locations approximately 90 degrees apart in the fusing zone, on both sides of the heater plate.

(b) Care will be taken upon heater removal to ensure uniform flat heated surfaces on both pipe ends of the joint prior to fusing together.

4422 Surfaces of Fused Joints

Fused beads will usually remain intact after completion of fusing.

(a) When required, fused beads may be removed, but only after the visual inspection required by 5210(b) is completed and documented. The entire surface at the removed bead locations must be inspected and must meet the acceptance criteria of 5322 after bead removal.

(b) The finished joint must be suitable for required visual and volumetric examinations.