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Supplement 3
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Subject: **Response to NRC Request for Additional Information Letter No. 36 Related to ESBWR Design Certification Application - TMSS & Feedwater Systems - RAI Numbers 10.3-4 S02 and 10.3-6 S02**

Enclosure 1 contains GEH's response to the subject NRC RAIs transmitted via Reference 1.

If you have any questions or require additional information, please contact me.

Sincerely,

Kathy Sedney for

James C. Kinsey
Project Manager, ESBWR Licensing

D068
NRO

Reference:

1. Email from M. Vaaler to GEH, dated 7/20/07
2. MFN 06-219 S02, Letter from James C. Kinsey to Nuclear Regulatory Commission, *Response to Portion of NRC Request for Additional Information Letter No. 36 – Steam and Power Conversion System – RAI Numbers 10.3-4 S01 and 10.3-6 S01 – Supplement 2*, dated May 18, 2007
3. MFN 06-219, Letter from David Hinds to the U.S. Nuclear Regulatory Commission, *Partial Response to NRC Request for Additional Information Letter No. 36 Related to ESBWR Design Certification Application – Steam and Power Conversion System and Radioactive Waste Management - RAI Numbers 10.3-1 through 10.2-9 and 11.1-1 through 11.1-3,* July 19, 2006.
4. MFN 06-200, Letter from U.S. Nuclear Regulatory Commission to David Hinds, *Request for Additional Information Letter No. 36 Related to the ESBWR Design Certification Application*, June 22, 2006.

Enclosure:

1. Enclosure 1 - Response to Portion of NRC Request for Additional Information Letter No. 36 Related to ESBWR Design Certification Application TMSS & Feedwater Systems - RAI Numbers 10.3-4 S02 and 10.3-6 S02

cc: AE Cubbage USNRC (with enclosures)
RE Brown GE-H/Wilmington (with enclosures)
GB Stramback GE-H/San Jose (with enclosures)
eDRF 0000-0073-3679

Enclosure 1

MFN 06-219
Supplement 3

Response to Portion of NRC Request for

Additional Information Letter No. 36

Related to ESBWR Design Certification Application

TMSS & Feedwater Systems

RAI Numbers 10.3-4 S02 and 10.3-6 S02

For historical purposes, the original texts and the GE responses of RAI 10.3-4, RAI 10.3-4 S01, RAI 10.3-6 and RAI 10.3-6 S01 are included. The original attachments and DCD mark-ups are not included to prevent confusion.

NRC RAI 10.3-4

Section 10.3.6 indicates that the steam and feedwater component materials that are within the reactor coolant boundary (RCPB) are addressed in Section 5.2 but the material specifications and grades for the steam and feedwater system components that are outside of the RCPB are not listed in 10.3.6 nor 10.4.7. Please provide a complete list of all material specifications and grades that are used in steam, feedwater and condensate systems by component types including weld filler metal. Specify the Code Class for all portions of both systems.

GE Response

Please refer to DCD Chapter 1, Table 1.7-1 for the material types used in the steam, feedwater and condensate system. Code classifications, if applicable, are listed in Table 3.2-1. Weld filler material, as agreed during our telephone conversation, will not be specified in the DCD/COLA but will be identified in the site construction contractors welding program.

No Tier 2 change will be made in response to this RAI.

NRC RAI 10.3-4 Supplement 1

Received from an email dated March 6, 2007 from Marlayna Vaaler (NRC):
Reference: GE response Letter MFN-06-219, dated July 19, 2006, which addressed NRC RAI Letter No. 36, dated June 22, 2006. [ACN: ML070670050]

Section 10.3.6 of the DCD indicates that the steam and feedwater component materials that are within the reactor coolant pressure boundary (RCPB) are addressed in Section 5.2. The staff noted that the material specifications and grades for steam and feedwater system components that are outside of the RCPB are not listed in Section 10.3.6 nor Section 10.4.7. In RAI 10.3-4, the staff requested that the applicant list material specifications and grades, including weld filler material, for steam and feedwater components outside of the RCPB.

The applicant's response to RAI 10.3-4, in GE letter MFN 06-219, dated July 19, 2006, is incomplete for the following reasons:

1. The response refers the staff to DCD Chapter 1, Table 1.7-1 for material types used in the aforementioned systems. However, Table 1.7-1 does not list material specifications and grades for Class 2 feedwater and main steam components.

2. In response to RAI 10.3-6, the applicant references Section 5.2 and Table 5.2-4. Neither Section 5.2 or Section 10.3.6 state that Class 2 main steam and feedwater specifications are listed in Table 5.2-4.

The staff requests that the applicant clarify whether the material specifications and grades for Class 2 components are the same as for Class 1 components. If so, modify DCD Section 10.3.6 to provide clarification.

Additionally, clearly identify in Section 10.3.6 the material specifications and grades for Class 2 and Class 3 (if applicable) piping and components (including weld filler material) of steam and feedwater piping systems, rather than making references to other sections of the DCD.

Although the piping and components referred to in Section 10.4.7 of the DCD are non-ASME Code Class 1, 2 or 3, the staff requires that the material specifications be discussed in Section 10.4.7 as part of the applicant's explanation of the steps taken in the ESBWR design to mitigate the effects of material degradation due to erosion/corrosion. See supplemental RAI 10.3-6.

GE Response

Feedwater system materials classified as ASME Section III Class 2 are the same as those specified for Class 1 components. These materials are listed in Table 5.2-4. However, in order to address this specific request, the material specifications and grades for Class 1 and Class 2 piping and components of steam and feedwater piping are to be identified in DCD Tier 2, Revision 4, Subsection 10.3.6 and Table 10.3-2. There is no ASME Section III Class 3/Quality Group C piping in ESBWR steam, feedwater, or condensate system piping.

Refer to the original response in RAI 10.3-4 for the previously agreed upon position on weld filler materials. See the response to RAI 10.3-6 Supplement 1 for information on non-ASME Code Class piping.

DCD Impact

DCD Tier 2 Subsection 10.3.6 and Table 10.3-2 are to be revised in DCD Revision 4 as noted in the attached markup.

NRC RAI 10.3-4 S02

(a) DCD Tier 2, Section 10.3.6, Revision 3 does not list weld filler material specifications and classifications, and the applicant did not provide this information in its responses to RAIs 10.3-4 and 10.3-4 S01. In order for the staff to complete its review and evaluate the applicant's compliance with 10 CFR 50.55a and General Design Criterion 1, the applicant must provide the staff with a list of the weld filler material specifications and classifications used in Class 2 Main Steam (MS) and Feedwater (FW) Systems.

(b) In a teleconference between the staff and GE on June 7, 2007, to discuss the applicant's response to RAI 10.3-4 S01, the staff informed GE that its reference to fracture toughness requirements in Section 10.3.6 must include all Class 2 MS and FW piping and components. Revision 3 of DCD Tier 2, Section 10.3.6 lists fracture toughness for the TMSS but not for the Class 2 FW System. In order for the staff to complete its review, the staff requests that the applicant modify the DCD to include the fracture toughness requirements for all ASME Code Class 2 piping and components in the MS and FW Systems.

(c) In response to RAI 10.3-4 S01, the applicant indicated that low alloy steel will be used in the Class 2 portion of the FW System. Accordingly, the staff requests that the applicant modify the DCD to indicate if the ESBWR design follows NRC guidance provided in Regulatory Guide (RG) 1.50. The staff notes that the applicant provided a description of its alternative to RG 1.50 for RCPB and ESF materials in responses to RAI 5.2-44 (GE letter MFN 06-260, August 7, 2006 (ML062260103) and RAI 6.1-4 (GE letter MFN 06-365, October 4, 2006 (ML062890039).

In order for the staff to complete its review of the DCD, the staff requests that the applicant modify the DCD to include any alternatives to RG 1.50 as it relates to all Class 1, 2, and 3 piping and components. In addition, the staff requests that the applicant modify the DCD to include its response to RAI 6.1-4, in which it states that the ASME Boiler and Pressure Vessel (B&PV) Code, Section III, Appendix D, Article D-1000, minimum preheat recommendations will be applied to all ASME Code, Section III, Class 1, 2, and 3 carbon steel and low alloy steel components in the ESBWR design. The two aforementioned requested DCD modifications should be included in DCD Subsections 5.2.3, 6.1.1, and 10.3.6. Alternatively, the applicant could modify one of the subsections and provide references in the remaining two subsections which provide a pointer to the subsection that contains the information.

GEH Response

RAI 10.3-4 S02 (a) GEH agrees that the weld filler material should be specified. Revision 4 to Section 10.3.6 proposes, "Weld filler materials for the Class 2 portions of the TMSS and Feedwater Systems are the same as those specified in Table 6.1-1 for Engineered Safety Features component materials." The rows for weld filler material for SA-335 P22 pipe are in the Table 6.1-1 revision discussed in RAI 6.1-4 S01 as transmitted under MFN 06-365 Supplement 1. The revised Table 6.1-1 will be included in revision 4 to the DCD.

RAI 10.3-4 S02 (b) GEH agrees the fracture toughness for the Class 2 portions of the Feedwater System need to be referenced in Section 10.3.6. The feedwater system piping is proposed to be included in 10.3.6.1 as shown in the attached markup. This change will be incorporated in Revision 5 of the DCD.

RAI 10.3-4 S02 (c) GEH does not propose using any alternative to Regulatory Guide 1.50 in the Main Steam or Feedwater systems. Wording is proposed to be added to Subsection 10.3.6.2 to point to Subsection 5.2.3.3.2 for discussion on compliance with Regulatory Guide 1.50 as shown in the attached markup of 10.3.6. This change will be included in revision 4 to the DCD.

To implement the RAI 6.1-4 statement referred to in RAI 10.3-4 S02 (c), the revision to Subsection 5.2.3.3.2 includes ASME Boiler and Pressure Vessel (B&PV) Code, Section III, Appendix D, Article D-1000 as supplemented by Regulatory Guide 1.50. See the attached markup. This change will be incorporated in Revision 5 of the DCD.

DCD Impact

DCD Tier 2, Section 10.3.6, 10.3.6.1, 10.3.6.2, and 5.2.3.3.2 will be revised as noted in the attached markups.

RAI 10.3-6

Describe the mitigation steps taken in the ESBWR design related to: 1) Utilization of erosion/corrosion resistant materials, 2) specification of an adequate corrosion allowance and 3) consideration on minimizing the effects of erosion/corrosion in the design of all ESBWR feedwater, steam and condensate system piping from effects such as fluid velocity, bend locations and flash points.

GE Response:

The TMSS piping is designed to consider the effects of erosion/corrosion for a 60 year life expectancy. Piping containing dry, single phase steam is constructed of carbon steel. Piping exposed to wet, two-phase steam is constructed of erosion/corrosion resistant low alloy steel. Velocities in the TMSS piping to the high pressure turbine are limited to reduce the potential for pipe erosion. Low point drains are provided for collecting and draining moisture and to help reduce the potential for water carryover to the high and low pressure turbines. In addition to material selection, pipe size and layout may also be used to minimize the potential for erosion/corrosion in systems containing water or two-phase flow.

Section 10.3.6 Steam and Feedwater System Material, references Section 5.2 which contains Table 5.2-4. This table shows that Carbon Steel, SA-333, GR 6 will be used for the main steam piping and Low Allow, SA-335, Grade P22 will be used for the feedwater piping.

No Tier 2 change will be made in response to this RAI. DCD Table 5.2-4, Rev. 01 will be included for ease of review.

NRC RAI 10.3-6 Supplement 1

Reference: GE response Letter MFN-06-219, dated July 19, 2006, which addressed NRC RAI
Letter No. 36, dated June 22, 2006

In RAI 10.3-6, the staff requested that the applicant describe the mitigation steps taken in the ESBWR design related to: 1) utilization of erosion/corrosion resistant materials, 2) specification of an adequate corrosion allowance, and 3) consideration on minimizing the effects of erosion/corrosion in the design of all ESBWR feedwater, steam and condensate system piping from effects such as fluid velocity, bend locations and flash points.

In GE letter MFN-06-219, dated July 19, 2006, the applicant stated the following:

The TMSS piping is designed to consider the effects of erosion/corrosion for a 60 year life expectancy. Piping containing dry, single phase steam is constructed of carbon steel. Piping exposed to wet, two-phase steam is constructed of erosion/corrosion resistant low alloy steel. Velocities in the TMSS piping to the high pressure turbine are

limited to reduce the potential for pipe erosion. Low point drains are provided for collecting and draining moisture and to help reduce the potential for water carryover to the high and low pressure turbines. In addition to material selection, pipe size and layout may also be used to minimize the potential for erosion/corrosion in systems containing water or two-phase flow.

The applicant's response to RAI 10.3-6 only referenced the TMSS system and does not address main steam, feedwater and condensate piping, as requested in the RAI. Please provide a response that addresses RAI 10.3-6 for ALL main steam, feedwater and condensate system piping (ASME Code Class and non-Code piping) in the ESBWR design.

GE Response

The ESBWR standard plant has a 60-year design life. As part of the design of the condensate, feedwater and main steam piping, an erosion-corrosion evaluation is performed. The evaluation is used to determine the expected erosion-corrosion rate, i.e. yearly reduction in wall thickness, based on the system geometry, system configuration, and chemical properties of the process fluid and piping. With the erosion rate known, the results are compared against the 60-year design life. Areas that do not meet the design life are addressed by piping configuration changes, material substitutions, or a combination of both.

These evaluations are considered useful; however, an inspection program is ultimately required to evaluate the actual loss of wall thickness in piping that is sensitive to erosion-corrosion in an operating plant. Therefore, systems identified in NRC Generic Letter 89-08 are subject to an Augmented Inservice Inspection Program. The Erosion–Corrosion portion of the Augmented Inservice Inspection program is described in Subsection 6.6.7 of DCD Tier 2, Rev. 3.

NRC regulatory guidance on the Condensate and Feedwater System Safety Analysis Report is provided in NUREG-0800, Standard Review Plan, Section 10.4.7, Revision 4. This document states that evaluation of feedwater system materials is performed under section 10.3.6 of the Standard Review Plan. However, NUREG-0800, Section 10.3.6, only applies to ASME Section III Class 2 and 3 pressure boundary components of the steam and feedwater systems. Therefore, specific material selection for non-ASME Section III Code Class 1, 2, or 3 feedwater piping is not addressed in the DCD.

The remainder of the non-ASME Code Class 1, 2, or 3 Condensate and Feedwater System piping is designed and fabricated with consideration given to the deleterious effects of erosion-corrosion. As stated above, an evaluation of the initial system design is performed and changes are made as needed in order to meet the 60-year design life. Further, an inspection program is developed in accordance with industry and regulatory guidance.

DCD Impact
In order to specifically address this request, DCD Subsection 10.4.7 is to be revised as noted in the attached markup

NRC RAI 10.3-6 S02
In RAI 10.3-6 Supplement 1, the staff requested that the applicant provide the material specifications and grades for all main steam, feedwater and condensate system piping (ASME Code Class and non-Code piping). In the applicant's response (MFN 06-219 Supplement 2) dated May 18, 2007, GE stated the SRP Section 10.4.7 indicates that the evaluation of feedwater materials is performed under SRP Section 10.3.6. The applicant further stated that because SRP Section 10.3.6 only applies to ASME Code Section III Class 2 and 3 piping, non-ASME Code, Section III, Code Class 1, 2, and 3 feedwater piping is not addressed in the DCD.

During a teleconference between the NRC staff and GE on June 7, 2007, GE indicated that the design of non-ASME Code Section III systems is not yet complete. In order for the staff to determine the ESBWR's conformance with General Design Criterion 4, the staff requests that the applicant modify the DCD to include a COL Applicant Action Item to include materials specifications and grades for non-ASME Code Section III main steam, feedwater and condensate piping and components that could potentially be susceptible to FAC and discuss a basis for the materials that have been selected.

GEH Response
During a teleconference between the NRC staff and GEH on August 1, 2007, the NRC reviewer indicated that GEH could describe the methodology for material selection used rather than the specific materials in Section 10.3.6.

The TMSS, Feedwater and Condensate Systems are potentially subject to the effects of Flow Accelerated Corrosion (FAC). Applicable operating experience and recommendations provided in NRC Generic Letter 89-08 and NUREG-1344 are applied to their design and operation. The Non-ASME Section III portions of the TMSS, Feedwater and Condensate Systems are designed in accordance with ASME Code B31.1 with pipe wall thicknesses that incorporate a conservative corrosion allowance commensurate with a 60-year design life. Where required by analysis to meet the design life, FAC-resistant materials are utilized.

10 CFR 50 Appendix A, General Design Criterion 4, states that, "Structures, systems, and components important to safety shall be designed to accommodate the effects of and to be compatible with the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents, including loss-of-coolant accidents." The ESBWR Turbine Main Steam System and Condensate and Feedwater System have no safety design basis. General Design Criterion 4 is only applicable to SSCs that are "important to safety." Therefore, GEH considers that GDC 4 is not applicable to the ESBWR TMSS or Condensate and Feedwater System. Non-ASME

Code Section III TMSS, Feedwater, and Condensate piping in particular are not safety-related.

The safety related components in the nonsafety-related Turbine Building are to be designed in accordance with GDC 4. These components are certain safety-related instruments and, at one time, the Main Feedwater Pump Breakers. RAI 14.3-99 S01 explains how the safety-related instruments mounted on, or near, nonsafety-related piping in the turbine building meet GDC 4. The Main Feedwater Pump Breakers are described as 1E safety-related components in DCD Subsection 8.1.5.2.1 Revision 3. The 1E and safety-related status of these breakers will be downgraded to nonsafety-related in Revision 4 of DCD Subsection 8.1.5.2.1. This change is based on the addition of the backup feedwater isolation valves described in DCD Subsection 6.2.4.3.1.1 Revision 3. Therefore, the requirements of GDC 4 are being complied with in the design of the TMSS, Feedwater, and Condensate systems.

Based on the above, GE elects not to modify the DCD to include a COL Applicant Action Item to include materials specifications and grades for non-ASME Code Section III main steam, feedwater and condensate piping and components that could potentially be susceptible to FAC.

DCD Impact

DCD Tier 2, Section 10.3.6 will be revised as noted in the attached markup.

5.2.3.3.2 Control of Welding

Regulatory Guide 1.50: Control of Preheat Temperature Employed for Welding of Low-Alloy Steel

Regulatory Guide 1.50 delineates preheat temperature control requirements and welding procedure qualifications supplementing those in ASME Sections III and IX.

Low-alloy steel is used only in reactor pressure vessel and feedwater piping. Other ferritic components in the reactor coolant pressure boundary are fabricated from carbon steel materials.

Preheat temperatures employed for welding of low alloy steel meet or exceed the recommendations of ASME Code Section III, Subsection NB and Appendix D, Article D-1000 as supplemented by Regulatory Guide 1.50. Components are either held for an extended time at preheat temperature to assure removal of hydrogen, or preheat is maintained until post-weld heat treatment. The minimum preheat and maximum interpass temperatures are specified and monitored.

All full penetration pressure-retaining welds are volumetrically examined.

Regulatory Guide 1.34: Control of Electroslag Weld Properties

Electroslag welding is not allowed on structural weld joints of low alloy steel.

Regulatory Guide 1.71: Welder Qualification for Areas of Limited Accessibility

Welder qualification for areas of limited accessibility is discussed under Regulatory Guide 1.71 in Subsection 5.2.3.4.2 of this report.

Moisture Control for Low Hydrogen, Covered Arc Welding Electrodes

Suitable identification, storage, and handling of electrodes, flux, and other welding material will be maintained. Precautions shall be taken to minimize absorption of moisture by electrodes and flux.

5.2.3.3.3 Nondestructive Examination of Tubular Products

Wrought tubular products that are used for pressure-retaining components of the RCPB are subject to the examination requirements of ASME Code Section III, Subsection NB. Seamless tubular products shall be examined according to NB-2550, welded tubular products according to NB-2560, and cast tubular products according to NB-2570.

These RCPB components meet 10 CFR 50 Appendix B requirements and the ASME Code requirements, thus assuring adequate control of quality for the products.

10.3.3 Evaluation

All components and piping for the TMSS are designed in accordance with the codes and standards listed in Section 3.2. This ensures that the TMSS accommodates operational stresses resulting from static and dynamic loads, including steam hammer and relief valve discharge loads, normal and abnormal environmental conditions, and includes provisions to limit water entrainment. Operating and maintenance procedures include adequate precautions to avoid steam hammer.

The break of a main steam line or any branch line does not result in offsite radiation exposures in excess of the limits of 10 CFR 100 because of the safety features designed into the plant. The main steamline pipe break accident outside containment is addressed in Chapter 15, and high energy pipe failure is discussed in Section 3.6.

10.3.4 Inspection and Testing Requirements

Inspection and testing are in accordance with the requirements of Section 6.6. The main steam line is hydrostatically tested to confirm leak tightness.

10.3.5 Water Chemistry (PWR)

This section applies to a Pressurized Water Reactor (PWR), and is therefore not applicable.

10.3.6 Steam and Feedwater System Materials

Steam and feedwater component materials that are within the Reactor Coolant Pressure Boundary are addressed in Section 5.2. There are no austenitic stainless steel or nickel-based materials in ASME Code Section III Class 2 portions of the TMSS or Feedwater System piping.

Material specifications for the ASME Code Section III Class 2 portions of the TMSS and Feedwater Systems are listed in Table 10.3-2. Material properties associated with both ASME Code and non-ASME Code components are consistent with ASTM/ASME specifications for the listed materials. Weld filler materials for the Class 2 portions of the TMSS and Feedwater Systems are the same as those specified in Table 6.1-1 for Engineered Safety Features component materials.

The TMSS and Feedwater Systems are potentially subject to the effects of Flow Accelerated Corrosion (FAC). Applicable operating experience and recommendations provided in NRC Generic Letter 89-08 and NUREG-1344 are applied to their design and operation. The TMSS and Feedwater Systems are designed with pipe wall thicknesses that incorporate a conservative corrosion allowance commensurate with a 60-year design life. Where required by analysis to meet the design life, FAC-resistant materials are utilized.

TMSS piping is routed to allow for thermal growth and flexibility with a minimum bend radius of twice the pipe's nominal diameter (2 x D). Downstream of the seismic restraint interface, the TMSS piping transitions to a larger nominal pipe size. This increase in pipe size limits the steam velocity during normal operation to less than 45.7 meters per second (150 feet per second) to minimize the effects of FAC.

A FAC monitoring and inspection program is required to evaluate the actual loss of wall thickness in piping that is sensitive to FAC in an operating plant. Therefore, systems identified in NRC Generic Letter 89-08 are subject to an Augmented Inservice Inspection Program. The FAC (erosion–corrosion) portion of the Augmented Inservice Inspection program is based on EPRI guidelines provided in NSAC-202L-R2 and is described in Subsection 6.6.7.

10.3.6.1 Fracture Toughness of Class 2 Components

The materials in the ASME Code Section III, Class 2, portions of the TMSS and Feedwater systems meet the fracture toughness requirements of NC-2300, "Fracture Toughness Requirements for Material". The Class 2 portions of the TMSS and Feedwater systems are defined in Figure 3.2-1, Figure 3.2-2, and Table 3.2-3.

10.3.6.2 Materials Selection and Fabrication

The materials specified for use in Class 2 components conform to Appendix I to ASME Code Section III, and to Parts A, B, and C of Section II of the Code.

Material specifications for the ASME Code Section III Class 2 portions of the TMSS and Feedwater Systems are listed in Table 10.3-2.

Conformance with the applicable regulatory guides is described in Subsection 1.9.2.

Regulatory Guide 1.50, "Control of Preheat Temperature Employed for Welding of Low Alloy Steel," applies to low-alloy materials, including those that are part of the Feedwater System. Conformance with this Regulatory Guide is addressed in Subsection 5.2.3.3.2.

Regulatory Guide 1.84, "Design and Fabrication and Material, Code Case Acceptability, ASME Section III," describes acceptable code cases that are used in conjunction with the above specifications.

The following criteria are applicable to all components.

- Regulatory Guide 1.71, "Welder Qualification for Areas of Limited Accessibility," provides the following criteria for assuring the integrity of welds in locations of restricted direct physical and visual accessibility:
  - The performance qualification should require testing of the welds when conditions of accessibility to production welds are less than 30 to 35 cm in any direction from the joint.
  - Re-qualification is required for different accessibility conditions or when other essential variables listed in the Code, Section IX, are changed.
  - The qualification and re-qualification tests required by (a) and (b) above may be waived, provided that the joint is to be 100% radio-graphed or ultrasonically examined after completion of all weld passes. Examination procedures and acceptance standards should meet the requirements of ASME Code Section III. Records of the examination reports and radiographs should be retained and made part of the Quality Assurance documentation of the completed weld.

As alternative method, positions documented in Reference 10.3-1 could be used (see Subsection 5.2.3.4.2).

- Regulatory Guide 1.37, "Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants" describes acceptable procedures for cleaning and handling Class 2 components of the steam and feedwater systems. Vented tanks with de-ionized or de-mineralized water are an acceptable source of water for final cleaning or flushing of finished surfaces. The oxygen content of the water in these vented tanks need not be controlled.
- Acceptance criteria for nondestructive examination of tubular products are given in ASME Code Section III, Paragraphs NC 2550 through 2570.