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Our ref: LTR-NRC-09-42

August 13, 2009

Subject: Westinghouse Review of Draft Regulatory Guides DG-1191, DG -1192, DG-1193, DG -1221, DG-1222, DG -1223, and DG-1224

References:

1. Draft Regulatory Guide DG-1191, Design, Fabrication, and Materials Code Case Acceptability, ASME Section III (Proposed Revision 35 of Regulatory Guide 1.84, dated October 2007) *ADAMS Accession No. ML080910389*
2. Draft Regulatory Guide DG-1192, Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1 (Proposed Revision 16 of Regulatory Guide 1.147, dated October 2007) *ADAMS Accession No. ML080910245*
3. Draft Regulatory Guide DG-1193, ASME Code Cases Not Approved for Use (Proposed Revision 3 of Regulatory Guide 1.193, dated October 2007) *ADAMS Accession No. ML080920854*
4. Draft Regulatory Guide DG-1221, Control of Stainless Steel Weld Cladding of Low-Alloy Steel Components (Proposed Revision 1 of Regulatory Guide 1.43, dated May 1973) *ADAMS Accession No. ML090750044*
5. Draft Regulatory Guide DG-1222, Control of Preheat Temperature for Welding of Low-Alloy Steel (Proposed Revision 1 of Regulatory Guide 1.50, dated May 1973) *ADAMS Accession No. ML090750343*
6. Draft Regulatory Guide DG-1223, Control of Electroslag Weld Properties (Proposed Revision 1 of Regulatory Guide 1.34, dated May 1973) *ADAMS Accession No. ML090750626*
7. Draft Regulatory Guide DG-1224, Control of The Processing and Use of Stainless Steel (Proposed Revision 1 of Regulatory Guide 1.44, dated May 1973) *ADAMS Accession No. ML090750744*

Dear Sir or Madam:

Westinghouse Electric Company LLC appreciates the opportunity to review and comment on the Draft Regulatory Guides listed by reference above. Westinghouse comments and suggestions are provided in the attachment to this letter. Documents DG-1192 and DG-1193 have been reviewed but Westinghouse and has no specific comments to offer at this time.

SONSI Review Complete
Template = ADM-013

E-RIDS = ADM-03
Add = M. Baysie (mmb1)

If you have any questions, please contact me at 412-374-4643.

Very truly yours,

J.A. Gresham, Manager
Regulatory Compliance and Plant Licensing

Attachment

cc: G. C. Bacuta, Jr. (NRC)
M. Melton (NEI)
W. E. Norris (NRC)
J. H. Riley (NEI)
M. Schoppman (NEI)

Westinghouse Electric Company Review of U.S. NRC Draft Regulatory Guide DG-1191

Design, Fabrication, and Materials Code Case Acceptability

(Proposed Revision 35 of Regulatory Guide 1.84, dated October 2007)

Westinghouse has reviewed the Draft Regulatory Guide DG-1191 for application to the AP1000 Design Certification Amendment review. ASME Code Cases used in the AP1000 design that are not included in DG-1191 have been identified. These Code Cases are being reviewed for the AP1000 and should be included in the next revision of Regulatory Guide 1.84.

The Code Cases being used in the AP1000 that should be considered for inclusion in the next revision of Regulatory Guide 1.84 are as follows:

N-655-1 Use of SA-738, Grade B, for Metal Containment Vessels, Class MC, Section III, Division 1

N-757-1 Alternative Rules for Acceptability for Class 2 and 3 Valves, NPS 1 (DN25) and Smaller with Welded and Nonwelded End Connections other than Flanges, Section III, Division 1

N-759-2 Alternative Rules for Determining Allowable External Pressure and Compressive Stresses for Cylinders, Cones, Spheres, and Formed Heads, Section III, Division 1

N-782 Use of Code Editions, Addenda, and Cases Section III, Division 1

N-759 (Revision 0) is included DG-1191. Westinghouse has included the latest version of the Code Cases for N-655, N-757, and N-759 in the AP1000 Design Control Document at the request of the NRC in RAI-SRP5.2.1-EMB-04.

These Code Cases have been the subject of Westinghouse letters to the NRC (DCP/NRC2402 March 13, 2009, DCP/NRC2452 April 28, 2009, and DCP/NC2519 June 8, 2009) and an RAI response (DCP/NRC2412 April 1, 2009 revised in DCP_NRC_002550 July 2, 2009). These letters and the RAI response update Table 5.2-3 in the AP1000 Design Control Document. This table lists the Code Cases used in the design of the AP1000.

Westinghouse Electric Company Review of U.S. NRC Draft Regulatory Guide DG-1221

Control of Stainless Steel Weld Cladding of Low-Alloy Steel Components
(Proposed Revision 1 of Regulatory Guide 1.43, dated May 1973)

Comment 1:

The draft RG retains the same reference to SA-508, Class 2 material as the original RG. Since SA-508 has been updated, and the classifications have changed, the DG should be updated to reflect that SA-508, Class 2 is now SA-508, Grade 2, Class 1.

Comment 2:

A typographic (extra period) occurs in the 6th paragraph of the Discussion section: "ASME Boiler and. Pressure Vessel Code."

Comment 3:

Regulatory Position 3 states: "If production welding procedure does not conform to these limitations, and examination for cracking should be performed on the production part from which a section of cladding has been removed, or the cladding procedure should be requalified in accordance with Regulatory Position 2, above." If the production welding procedure does not comply with limitations on essential variables, it is already in violation of ASME Section IX. Therefore, more qualification should be required than is presently described in Position 2, or otherwise the cladding would have to be removed and re-applied within the essential variable limits. Alternatively, perhaps this position could be re-worded to clarify that the intent is not the limitations of essential variables from Section IX.

Comment 4:

The Discussion portion of the DG talks about hydrogen related cracking as well as re-heat cracking. Is the testing in the Regulatory positions intended to detect both? It does not seem to have any limitations on testing directed towards hydrogen related cracking. If not addressed, should the DG clarify that the "regulatory position" only addresses re-heat cracking?

Westinghouse Electric Company Review of U.S. NRC Draft Regulatory Guide DG-1222

Control of Preheat Temperature for Welding of Low-Alloy Steel
(Proposed Revision 1 of Regulatory Guide 1.50, dated May 1973)

Comment 1:

The second sentence of the third paragraph under Procedure Qualification states: "The level of hydrogen in weld filler metal is low enough to preclude adverse effects in the weld, ..." This is not true for all weld filler metals, and further depends on the type of steel being welded. It is suggested this sentence be changed to: "The level of hydrogen in weld filler metal can be low enough to preclude...."

Comment 2:

Regulatory Position 2 specifies maintaining preheat until PWHT or a hydrogen bakeout. It is suggested that the remainder of the document be made consistent with this. It is suggested that paragraph 3 of the last sentence under Procedure Qualification be changed to: " Therefore, the minimum preheat temperature should be established to ensure a desirable cooling rate for the weld, and this temperature should be maintained until a post weld heat treatment, or a hydrogen bakeout has been achieved." Also, it is suggested that the last sentence under Production Welds be changed to read: "To ensure that the welds will be acceptable, the metal temperature should be monitored during the welding process and through post weld heat treatment or hydrogen bakeout."

Westinghouse Electric Company Review of U.S. NRC Draft Regulatory Guide DG-1223

Control of Electroslag Weld Properties

(Proposed Revision 1 of Regulatory Guide 1.34, dated May 1973)

Comment 1:

This DG and the existing RG do not specifically say that the electroslag welding being addressed applies to joining, not cladding. While some of the information in this RG implies that it could only apply to joining (as understood by a welding or materials engineer), this point may not be clearly understood by all. It is suggested that the second sentence under Procedure Qualification be changed and another sentence be inserted, as follows: "Review of the requirements of the procedure qualification stated in Section IX indicates that the supplementary requirements are desirable to provide assurance of adequate weld metal properties when the electroslag welding process is used for joining. The qualification of electroslag welding process for purposes of cladding is not addressed."

Comment 2:

Regulatory Position 4 appears to have an error. It indicates that production welds need to comply with the variables specified on the "procedure qualification". The procedure qualification does not specify process variables for production welding but records what was used during the test. The limits for production process variables are listed on the "welding procedure". The last two words should change "procedure qualification" to "welding procedure."

Comment 3:

Regulatory Position 5 specifies: "If properties obtained from tests identified in Regulatory Positions 3 and 4 above are not acceptable..." However, Regulatory Position 4 does not have any tests, thus no properties would be obtained.

Comment 4:

Regulatory Position 5 says that if the properties obtained during testing are not acceptable "...additional procedure qualifications should be performed in accordance with Regulatory Position 1 above." This does not permit remedy of the production weld from which the tests were obtained. Options to rectify the production weld should be allowed, such as re-heat treatment (in the case of failed CVN tests); obviously, re-heat treatment will not change the angle of solidification. The DG does not list options applicable to welds that do not meet the macro-etch requirements. Since the concern stated in the Procedure qualification section is that "...cracks may develop because of the weaker centerline bond between dendrites", then performing additional NDT capable of detecting these cracks, additional CVN tests, or other possible remedies should be prescribed.

Westinghouse Electric Company Review of U.S. NRC Draft Regulatory Guide DG-1224

Control of The Processing and Use of Stainless Steel
(Proposed Revision 1 of Regulatory Guide 1.44, dated May 1973)

Comment 1:

The second paragraph under Discussion mentions detrimental materials and stress-corrosion cracking. It is recommended this paragraph be clarified since no guidance on the limits is provided.

Comment 2:

Paragraph 3 continues the discussion about detrimental materials and elevated temperature but provides no guidance on the limits or "reasonable care" that should be taken. It is recommended these statements be clarified. The statement regarding the pickling of sensitized stainless begs the question why a sensitized stainless steel would be used. Please explain or justify.

Comment 3:

Paragraph 7 provides guidance for intergranular corrosion testing for non-L and L grades. Westinghouse disagrees that intergranular corrosion testing for non-L and L grades should be performed because there is not enough carbon for sensistization to occur.

Comment 4:

Paragraph 9 and 10 discusses qualification but should be clarified as to what the "adequate documentation" should be.