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Subject: Comments on Draft Regulatory Guide DG -1192

References: 1. Draft Regulatory Guide DG-1192, (Proposed Revision 16 of Regulatory Guide 1.147, dated October 2007), Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1, June 2009, Division 1, (ADAMS Accession No. ML090900445)

Dear Sir or Madam:

I am pleased to have the opportunity to provide comments and suggestions on the Nuclear Code Cases listed in Draft Regulatory Guide DG-1192, contained in Reference 1.

I work in the nuclear industry and I am a member of the American Society of Mechanical Engineering (ASME) Section XI Standards Committee. As such, I support the NRC's endorsement of ASME Nuclear Code Cases and the NRC's continued effort in this area to complete these updates and rulemakings on a regular basis. However, I request that the conditions placed on the Code Cases identified below be reconsidered based on the information provided this letter.

Section XI Code Cases in DG-1192, Reference 1, including the regulatory discussion contained in the Proposed Rule, Reference 2, - comments on the conditions placed on Code Cases N-619 and N-648-1.

- **Code Case N-619**, "Alternative Requirements for Nozzle Inner Radius Inspections for Class 1 Pressurizer and Steam Generator Nozzles, Section XI, Division 1," April 08, 2002

NRC Proposed Condition – In lieu of a UT examination, licensees may perform a visual examination with enhanced magnification that has a resolution sensitivity to detect a 1-mil width wire or crack, utilizing the flaw length criteria of Table IWB-3512-1 with limiting assumptions on the flaw aspect ratio. The provisions of Table IWB-2500-1, Examination Category B-D, continue to apply except that, in place of examination volumes, the surfaces to be examined are the external surfaces shown in the figures applicable to this table (the external surface is from point M to point N in the figure).

Comments – At the time when the conditions for use of this Case and Code Case N-648-1 were first established, the standard industry practice for demonstrating the resolution capability of remote visual examination systems used for in-vessel inspections was to detect a 1-mil width wire. Note that at that time, most plants

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were working to the 1989 Edition or earlier editions of Section XI and the resolution standard for VT-1 examinations was only a 1/32" black line on an 18% neutral gray card. In the 1990 Addenda of Section XI, the resolution requirements for VT-1 were changed to 0.044" lower case characters without ascenders or descenders through the addition of Table IWA-2210. Industry materials degradation programs, such as the Boiling Water Reactor Vessel and Internals Project (BWRVIP), that rely on remote visual examinations have also changed from using wire standards for resolution checks to the ASME XI VT-1 0.044" characters. Reference BWRVIP report "TR-105696-R11 (BWRVIP-03) Revision 11: BWR Vessel and Internals Project, Reactor Pressure Vessel and Internals Examination Guidelines," December 2008. The change from wire (or line) standards to characters was made because the characters were recognized to be a better resolution standard. This is supported by the NRC's own research as documented in NUREG/CR-6860, "An Assessment of Visual Testing," November 2004. Within the Executive Summary of the NUREG it states, "Line detection is not a reliable standard, and does not provide the level of accuracy that a combination resolution target test and a reading chart test can provide." Thus it is recommended that within the conditions, "...detect a 1-mil wire or crack" be replaced by, "...resolve the standard test chart characters as described for VT-1 in IWA-2210." Furthermore, the conditions state, "utilizing the allowable flaw length criteria of Table IWB-3512-1 with limiting assumptions on the flaw aspect ratio." Table IWB-3512-1 does not specifically provide allowable flaw length criteria. Thus, it is unclear how allowable flaw lengths would be determined from Table IWB-3512-1. Instead, it is recommended that the same acceptance criteria given in Code Case N-648-1 be used. Therein, it states, "Crack-like surface flaws exceeding the acceptance criteria of Table IWB-3510-3 in the 1998 Edition are unacceptable for continued service unless the reactor vessel meets the requirements of IWB-2142.2, IWB-3142.3, or IWB-3142.4. The component thickness, t , to be applied in calculating the allowable surface flaw, l , in Table IWB-3510-3 shall be selected as specified in Table IWB-3512-2." The only change for incorporating the N-648-1 acceptance criteria into this Case would be to delete the word "reactor."

- **Code Case N-648-1**, "Alternative Requirements for Inner Radius Examination of Class 1 Reactor Pressure Vessel Nozzles, Section XI, Division 1," September 18, 2001

NRC Proposed Condition - In place of a UT examination, licensees may perform a visual examination with enhanced magnification that has a resolution sensitivity to detect a 1-mil width wire or crack, utilizing the allowable flaw length criteria of Table IWB-3512-1 with limiting assumptions on the flaw aspect ratio. The provisions of Table IWB-2500-1, Examination Category B-D, continue to apply except that, in place of examination volumes, the surfaces to be examined are the external surfaces shown in the figures applicable to this table (the external surface is from point M to point N in the figure).

Comments – Same comments as N-619 for the 1-mil wire condition. For the acceptance criteria condition, as stated above, use of Table IWB-3512-1 does not appear to be appropriate, whereas the acceptance criteria already stated in N-648-1 are appropriate. Finally, the condition describing the surfaces to be examined is unnecessary as N-648-1 describes the same examination surfaces.

If you have any questions, please contact me by telephone at (440) 346-7124 or by e-mail (aussie-dog@sbcglobal.net) and thank you for consideration of my comments.

Very Truly Yours,

A handwritten signature in black ink, appearing to read "Charles J. Wirtz", with a long horizontal flourish extending to the right.

Charles J. Wirtz
ASME Section XI Standards Committee Member

cc: W.E Norris, USNRC Research Wallace.Norris@nrc.gov