

Thomas, Fabian

From: Singal, Balwant
Sent: Wednesday, November 02, 2016 3:44 PM
To: Taylor, Nick; Drake, James
Cc: Proulx, David; Collins, Jay; Werner, Greg; Pascarelli, Robert; Thomas, Fabian; Dodson, Douglas
Subject: FW: Draft RAI questions for the Region to Review
Attachments: Wolf Creek RAI .docx

All,

Please see the e-mail from Jay Collins. We are in the process of issuing RAIs to the licensee and would like to receive Region IV input, especially for RAI No. 2. Our goal is to issue the RAIs sometimes tomorrow. Hence, your expedited input will be highly appreciated.

Thanks.

From: Collins, Jay
Sent: Wednesday, November 02, 2016 4:32 PM
To: Singal, Balwant <Balwant.Singal@nrc.gov>
Cc: Alley, David <David.Alley@nrc.gov>; Cumblidge, Stephen <Stephen.Cumblidge@nrc.gov>
Subject: Draft RAI questions for the Region to Review

Greetings,

Balwant can you please forward this to the right folks. EPNB staff would request that the Regional staff take a look at the RAI questions, in particular #2 and provide their input on the acceptability of the language. The focus is on the term "corrosion beyond light surface rust (e.g. metal loss)" as a trigger for a surface examination of the nozzle penetration weld for the nozzle in question. Is that language clear enough from an inspection point of view to address the concerns raised by the Region on the head condition from your previous inspections?

Thoughts or comments are very welcome,

Jay

From: [Taylor, Nick](#)
To: [Anchondo, Isaac](#); [Drake, James](#)
Cc: [Werner, Greg](#); [Kopriva, Ron](#); [Thomas, Fabian](#); [Dodson, Douglas](#)
Subject: RE: N-733
Date: Friday, September 09, 2016 8:04:18 AM

Good discussion thread...if you all determine that this is an inappropriate repair method, when do you plan to share that with the licensee? They are probably preparing to do it again, and have at least 10 of these on the head already...

Thanks,
Nick

From: Anchondo, Isaac
Sent: Thursday, September 08, 2016 3:31 PM
To: Drake, James <James.Drake@nrc.gov>
Cc: Werner, Greg <Greg.Werner@nrc.gov>; Kopriva, Ron <Ron.Kopriva@nrc.gov>; Taylor, Nick <Nick.Taylor@nrc.gov>; Thomas, Fabian <Fabian.Thomas@nrc.gov>; Dodson, Douglas <Douglas.Dodson@nrc.gov>
Subject: RE: N-733

All,

I think before we can say that the CC is not applicable, we need to get an understanding on how the licensee is classifying this connection in terms of the ASME Code. Subsequently, we need an agency position on the applicability of Section XI for this particular joint. Given that this is not a weld, none of the weld "Examination Categories" are applicable other than B-P, "Pressure Retaining" components which requires a VT-2. Remember that a CC is an alternative to Section XI, and therefore, the licensee should be able to tell us the requirement needing an alternative.

With that said, the following is provided under the general IWA requirements for mechanical joints (2001 Edition),

IWA-4321, "Class 1 Mechanical Joints"

(c) Threaded joints in which the threads provide the only seal shall not be used in Class 1 piping systems. If a seal weld is employed as the sealing medium, the stress analysis of the joint shall include the stresses in the weld resulting from the relative deflections of the mated parts.

This is identical to the construction requirements for Class 1 threaded connections in piping (2001 Edition).

NB-3671.3 Threaded Joints. Threaded joints in which the threads provide the only seal shall not be used. If a seal weld is employed as the sealing medium, the stress analysis of the joint must include the stresses in the weld resulting from the relative deflections of the mated parts.

So the licensee should have a stress analysis for the seal welds to meet Section XI

requirements, and in my opinion, CC N-733 is not an applicable alternative to this requirement. I think there needs to be further discussions with the licensee and HQ in regards to the applicability of the Code Case. Attached are a couple of relief request submitted to the NRC in regards to canopy seal weld leakage that used an actual weld overlay because repairs of the canopy seal weld are required by the Code.

P.S.

An additional concern would be that the seal weld provides the seal function while the treated connection provides the structural integrity of the joint. It appears that the licensee is assuming that the seal weld failed but what if the threaded connection is degraded. The clamp does not provide a structural integrity function as stated in the CC.

Mechanical connection assemblies are permitted only for nozzles on which there are substantially no piping reactions, such as pressurizer heater penetrations and openings for instrumentation. **The mechanical connection assembly and the vessel or piping location where the mechanical connection assembly is installed shall be designed taking no structural credit for the existing Category D or branch connection partial penetration weld and shall be based on the stress and fatigue requirements of NB-3200.**

Let me know if anybody has any questions.

Thanks,

Isaac

From: Drake, James

Sent: Thursday, September 08, 2016 1:54 PM

To: Anchondo, Isaac <Isaac.Anchondo@nrc.gov>

Cc: Werner, Greg <Greg.Werner@nrc.gov>; Kopriva, Ron <Ron.Kopriva@nrc.gov>; Taylor, Nick <Nick.Taylor@nrc.gov>; Thomas, Fabian <Fabian.Thomas@nrc.gov>; Dodson, Douglas <Douglas.Dodson@nrc.gov>

Subject: N-733

Isaac,

I reread the Code case. I think you are correct, Code Case N-733 may not be applicable.

In the reply it states:

*a mechanical connection modification that **replaces the Category D or branch connection partial penetration weld** and provides the primary pressure sealing function of the existing nozzle may be used to mitigate flaws in NPS 2 (DN 50) and smaller nozzles and nozzle partial penetration welds in vessels and piping originally constructed in Section III, Class 1 or Class A or B31.7 Class 1, provided the following requirements are met:*

- a) *Mechanical connection assemblies are permitted **only for nozzles** on which there are substantially no piping reactions, such as pressurizer heater penetrations and openings for instrumentation. The mechanical connection assembly and the vessel*

or piping location where the mechanical connection assembly is installed shall be designed taking no structural credit for the existing **Category D or branch connection partial penetration weld** and shall be based on the stress and fatigue requirements of NB-3200.

Another concern:

Per MANDATORY APPENDIX IX, MECHANICAL CLAMPING DEVICES FOR CLASS 2 AND 3 PIPING PRESSURE BOUNDARY
ARTICLE IX-1000
GENERAL

(a) Mechanical clamping devices used as piping pressure boundary may remain in service only until the next refueling outage, at which time the defect shall be removed or reduced to an acceptable size.

(b) These clamping devices may be used on piping and tubing, and their associated fittings and flanges, and the welding ends of pumps, valves, and pressure vessels, except as prohibited by (c) below.

(c) Clamping devices shall not be used on the following:

(1) **Class 1 piping;**

(2) portions of a piping system that forms the containment boundary;

(3) piping larger than NPS 2 (DN 50) when the nominal operating temperature or pressure exceeds 200°F (95°C) or 275 psig (1 900 kPa);

(4) piping larger than NPS 6 (DN 150).

(d) A Repair/Replacement plan shall be developed in accordance with IWA-4150, and shall identify the defect characterization method, design requirements, and monitoring requirements.

(e) Welding performed as part of the fabrication and installation of the clamping device shall be in accordance with the requirements of IWA-4400. Welding shall be documented on an NIS-2 Form.

(f) The records required by IWA-6000 shall be maintained by the Owner until the clamping device is removed.

I do not know what authorization the licensee used to install these other clamps. This may be another case like the "seal weld enclosures" at STP.

I have asked for any OE on RVH penetration canopy seal weld leaks of this magnitude.

Jim

James F. Drake

James F. Drake

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