



**THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS**

NATIONAL BOARD INSPECTION CODE TASK GROUP INTERPRETATIONS

MINUTES

**Meeting of July 15th, 2024
Louisville, KY**

These minutes are subject to approval and are for committee use only. They are not to be duplicated or quoted for other than committee use.

The National Board of Boiler & Pressure
Vessel Inspectors 1055 Crupper Avenue
Columbus, Ohio 43229-
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1. Call to Order

Chair Seime called the meeting to order at 1:00 p.m. Central Time in Citation B room at the hotel.

2. Roll call of Members and introduction of Visitors

Secretary Hellman called roll of the Members and held introductions of visitors. ([Attachment 1](#))

3. Check for a Quorum

Secretary Hellman verified a quorum was reached.

4. Awards/Special Recognition: None

5. Announcements

- This meeting marks the end of Cycle D for the 2025 NBIC edition. This meeting marks the end of the 2025 NBIC development cycle and is the last opportunity for code revisions to be approved for the 2025 NBIC.
- The National Board will be hosting a reception on Wednesday evening from 5:30 p.m. to 7:30 p.m. at the Rooftop Garden on the 16th floor of the hotel.
- The National Board will be hosting breakfast and lunch on Thursday in Citation A/B for those attending the Main Committee meeting. Breakfast will be served from 7:00 a.m. to 8:00 a.m. and lunch will be served from 11:30 a.m. to 12:30 p.m.
- Meeting schedules, meeting room layouts, and other helpful information can be found on the National Board website under the **NBIC** tab → NBIC Meeting Information.
- Remember to add any attachments that you'd like to show during the meeting (proposals, reference documents, power points, etc.) to the NBIC file share site (nbfileshare.org) **prior to the meeting**.
 - Note that access to the NBIC file share site is limited to committee members only.
 - ALL power point attachments/presentations must be sent to the NBIC Secretary prior to the meeting for approval.
 - Contact Jonathan Ellis (nbicsecretary@nbbi.org) for any questions regarding NBIC file share access.
- When possible, please submit proposals in Word format showing “strike through/underline”. Project Managers: please ensure any proposals containing text from the 2021 NBIC are updated to contain text from the 2023 NBIC.
- If you'd like to request a new Interpretation or Action item, this should be done on the National Board Business Center.
 - Anyone, member or not, can request a new item.
- As a reminder, anyone who would like to become a member of a group or committee:
 - Should attend at least two meetings prior to being put on the agenda for membership consideration. The nominee will be on the agenda for voting during their third meeting.
 - The nominee must submit the formal request along with their resume to the NBIC Secretary **PRIOR TO** the meeting. nbicsecretary@nbbi.org
 - If needed, we can also create a ballot for voting on a new member between meetings.
- Thank you to everyone who registered online for this meeting. The online registration is very helpful for planning our reception, meals, room set up, etc. Please continue to use the online registration for each meeting. It is also a good way to make sure we have the most up-to-date contact information.

6. Adoption of the Agenda

The Agenda was revised to add/revise Items I24-70 and I24-39, and was UA.

7. Approval of the Minutes of the January 8, 2024, Meeting

The minutes from January 8, 2024 were UA.

8. Review of Rosters

a. Membership Nominations

b. Membership Reappointments

- i. The following memberships are set to end prior to that January 2025 meeting: Mr. Trevor Seime, Mr. Tim McBee, Mr. Brian Boseo, Ms. Kathy Moore, and Mr. Michael Quisenberry. **All members confirmed their willingness to continue to serve on the TG and were UA reappointed.**

c. Officer Nominations

- i. Mr. Seime's term as Chair is set to end on July 31, 2024. The Task Group will need to nominate a new Chair. Note that Mr. Seime is eligible for reappointment to the position. **Mr. Seime was UA to remain as the INTERP TG Chair.**
- ii. The following members would like to be considered for Vice Chair:
 - Phillip Gilston
 - **Matt Schaser** – was voted in as the **Interp TG Vice Chair.**

9. Interpretations

Item Number: I23-79	NBIC Location: Part 3, 2.5.3 d) and 2.5.3.6	Attachment 2
General Description: Alternative Welding Method 6 - Controlled Fill		
Subgroup: Repairs and Alterations		
Task Group: P. Gilston (PM), R. Derby		
Explanation of Need: There is a lack of clarity as to the current requirement, need, and definition of controlled fill technique for application to Welding Method 6.		
January 2024 Meeting Action: Approved via LB – to SC		

Item Number: I23-82	NBIC Location: Part 3, 3.3.2 e) 2)	Attachment 3
<p>General Description: Replacement of non-pressure retaining parts in Electrolyzer PEM Stack</p> <p>Subgroup: Repairs and Alterations</p> <p>Task Group: M. Toth (PM), M. Quisenberry, E. Creaser, R. Collins, P. Shanks</p> <p>Explanation of Need: Hydrogenics is a manufacturer of hydrogen electrolyzers which operate on PEM (Proton Exchange Membrane) technology. The PEM stack operates at 30 bar (435 PSIG) pressure and is rated for a MAWP of 40 bar (580 PSIG) and we perform pneumatic pressure tests to ensure structural integrity according to ASME Sec VIII-1. At times we see cell shortage faults occurring which is not a failure of the pressure-retaining components but of components within the pressure vessel failing due to normal wear and tear. Need to determine if our company requires the NB R Certificate holder status.</p> <p>January 2024 Meeting Action: New Item. Task group to be selected. This was a PR. Update at MC – Task Group selected - M. Toth (PM), E. Creaser, M. Quisenberry, R. Collins, P. Shanks.</p> <p>July 2024 Meeting Action: M. Toth presented the proposal was revised and UA.</p>		

New Interpretation Requests:

Item Number: I24-16	NBIC Location: Part 3, 2.5.3 e)	No Attachment
<p>General Description: Volumetric Examination when using alternative welding methods without PWHT</p> <p>Subgroup: Repairs and Alterations</p> <p>Task Group: M. Schaser (PM), T. McBee</p> <p>Explanation of Need: The existing language, in its current form, does not make it clear whether volumetric examination is required when using alternative welding methods. The last phrase in the sentence sends the user to paragraph 4.2 which in turn sends the user back to the original code of construction. If a weld greater than 3/8 in. did not require volumetric examination at construction, then what purpose does the last sentence serve? The phrase on the other side of “or” where volumetric examination was required at construction is self-explanatory, but 4.2 permits using alternative NDE methods, suggesting MT or PT. These two methods are currently mandated “shall be” requirements in the first sentence of 2.5.3 e). If the intent is to require volumetric examination for welds greater than 3/8 in., and welds that required volumetric examination at construction, then there should be a firm statement to this effect.</p> <p>July 2024 Meeting Action: M. Schaser presented a PR.</p>		

Item Number: I24-19	NBIC Location: Part 3, 4.2	No Attachment
<p>General Description: NB-23 2023 Part 3, section 4, article 4.2 - Volumetric NDE on weld</p> <p>Subgroup: Repairs and Alterations</p> <p>Task Group: L. Dutra (PM), M. Quisenberry</p> <p>Explanation of Need: The inquirer has a corroded zone of about 3 feet by 6 feet on a shell and head, and the depth does not exceed the corrosion allowance. The corrosion zone included a weld that was 100% RT. Is it ok with just MT NDE or need also Volumetric NDE of all the buildup area include base metal?</p> <p>July 2024 Meeting Action: L. Dutra presented a PR.</p>		

Item Number: I24-25	NBIC Location: Part 3, 4.4.1 e) and 4.4.2 c)	Attachment 4
<p>General Description: 4.4.1 (e) and 4.4.2 (c) NDE Methods</p> <p>Subgroup: Repairs and Alterations</p> <p>Task Group: R. Derby (PM), P. Gilston, J. Ferreira</p> <p>Explanation of Need: 4.4.1 (e) and 4.4.2 (c) permit the use of NDE to verify the integrity of the repair of alteration. NDE methods other than what is listed in the original code of construction are being used for repair and alterations in some locations throughout the US. For example, Acoustic Emission Testing (AE) in accordance with ASME Section V Article 12 has been used on power boiler (HRSG) repairs. Acoustic Emission Testing is not an NDE method that is addressed in ASME Section I or Section VIII Div.1, but it is an NDE method in the reference code ASME Section V. Some inspectors are questioning this as AE is not an NDE method used in the original code of construction.</p> <p>July 2024 Meeting Action: J. Ferreria presented a proposal which was revised. To go out as Rvw & Comment LB to INTERP TG.</p>		

Item Number: I24-29	NBIC Location: Part 3, 4.2 a)	Attachment 5
<p>General Description: Volumetric NDE requirements for welded repairs to pressure vessels</p> <p>Subgroup: Repairs and Alterations</p> <p>Task Group: M. Toth (PM), R. Derby, M. Quisenberry</p> <p>Explanation of Need: Specific vessel currently in question is a refinery Coke Drum (1.5" plate thickness with 0.100" corrosion resistant clad. Vessel has highly localized corrosion due to cladding damage. Once excavated for repair the corroded locations will exceed the 4.2a size restrictions. Original welds were RT inspected. Weld repairs will be completed via temperbead procedure with elevated preheat.</p> <p>July 2024 Meeting Action: M. Toth presented a proposal which was revised and UA.</p>		

Item Number: I24-33

NBIC Location: Part 3, 3.4.1 b)

[Attachment 6](#)

General Description: Proof Testing by a non-manufacturing R Certificate Holder

Subgroup: Repairs and Alterations

Task Group: G. Galanes (PM), A. Triplett

Explanation of Need: Wrightspec LLC is planning to apply for an 'R' Certificate in order to support field & shop Repairs & Alterations (Rerating) of cast iron paper machine dryers. We hold an AIA service agreement with Arise Boiler Inspection & Insurance Company and are hopeful to have an R-stamp by end of summer 2024.

July 2024 Meeting Action: Motion to Close w/ Letter to Inquirer this is consulting. - UA

Item Number: I24-34

NBIC Location: Part 3, 3.4.1

[Attachment 7](#)

General Description: Rerating using OEM's design data to waive proof testing

Subgroup: Repairs and Alterations

Task Group: K. Moore (PM), B. Hrubala

Explanation of Need: A PV built in 1990 contains heads made of Class 40 cast iron. The heads were proof tested by the OEM and determined to be suitable for 160 psi MAWP. However, the OEM certified the vessel for only 125 psi due to customer requirements. Fast forward to present day, and the vessel owner now wants to Rerate the vessel to a higher pressure. The OEM is no longer in business, but the 'R' Holder is able to obtain a copy of the original proof test report by the OEM. Can it be acceptable for the 'R' Holder to Rerate the head above 125 psi, based on OEM records stating the design is good for higher pressure, without the 'R' Holder having to perform their own separate proof test?

The 'R' Holder would not be using the OEM proof test record for any new manufacturing, only for the purposes of altering an existing vessel or part within the confines of the original design.

July 2024 Meeting Action: -Proposal was passed with 1 abstention (J. Ferreira)

Item Number: I24-36	NBIC Location: Part 3, 3.4	Attachment 8
<p>General Description: Alteration of Plate Heat Exchanger</p> <p>Subgroup: Repairs and Alterations</p> <p>Task Group: T. Seime (PM)</p> <p>Explanation of Need: This question is asked frequently by Repair firms that want to increase the number of heat transfer plates.</p> <p>July 2024 Meeting Action: Proposal was revised and accepted with 3 abstentions (G. Galanes, J. Ferreira, M. Toth)</p>		

Item Number: I24-39	NBIC Location: Part 3, 1.3.2 b)	No Attachment
<p>General Description: Certification of NR-1 without stamping (INTENT INTERP - TIED TO A24-43)</p> <p>Subgroup: Repairs and Alterations</p> <p>Task Group: M. Vogt (PM), R. Spuhl</p> <p>Explanation of Need: Clarity is needed for NR work where the lack of NR stamping due to a practical matter, not necessarily a jurisdictional reason, may preclude certifying an NR-1. This Intent Interpretation is tied to Action Item A24-43.</p> <p>July 2024 Meeting Action: R. Spuhl presented a PR, as this will be discussed at SG to deal with the A24-43 prior to acting on this Interp.</p>		

Item Number: I24-40	NBIC Location: Part 3, 3.3.2 e)	No Attachment
<p>General Description: Routine repair vs Alteration</p> <p>Subgroup: Repairs and Alterations</p> <p>Task Group: M. Carlson (PM), D. Kinney</p> <p>Explanation of Need: Some people use rules of thumb outside of the NBIC definition to make decision, these rules of thumb do not align with the written rules and cause project delays and extended outages.</p> <p>July 2024 Meeting Action: M. Carlson presented a PR.</p>		

Item Number: I24-41	NBIC Location: Part 3, 3.2.2 & 4.4.2 a)	Attachment 9
<p>General Description: 4.4.2 (a) Pressure testing Connection Welds</p> <p>Subgroup: Repairs and Alterations</p> <p>Task Group: L. Dutra (PM), M. Toth</p> <p>Explanation of Need: There seem to be some different opinions among inspectors and R certificate holders when 4.4.2 (a)(1&) refers to replacement parts. Some inspectors and R certificate holders have the opinion that those replacement parts referenced in 4.4.2 (a) are only welded replacement parts, while others have the opinion that the replacement parts are not limited to just welded parts, but apply to all replacement parts.</p> <p>July 2024 Meeting Action: M. Toth presented. The proposal was UA.</p>		

Item Number: I24-44	NBIC Location: Part 3, 2.5.3	No Attachment
<p>General Description: Alternative weld methods and special services</p> <p>Subgroup: Repairs and Alterations</p> <p>Task Group: R. Derby (PM), P. Gilston</p> <p>Explanation of Need: In section VIII Div.1 construction some special service conditions as described in UW-2 make mandatory PWHT when it is not otherwise required for the actual thickness of material and P-number. This subtlety leads some to believe that the use of the Alternative weld methods is either not allowed or that they can only be conducted as an alteration.</p> <p>July 2024 Meeting Action: P. Gilston presented a PR. To be LB to INTERP TG when ready.</p>		

Item Number: I24-45	NBIC Location: Part 3, 5.7.2 c)	Attachment 10
<p>General Description: Correct method for reporting Date Repaired on R form</p> <p>Subgroup: Repairs and Alterations</p> <p>Task Group: T. Seime (PM)</p> <p>Explanation of Need: Repair stampings are often encountered in the field with "Date Repaired" indicated by "month and year" as well as with "month, day and year." Repair Organizations and Inspectors occasionally disagree as to whether "month and year" is sufficient.</p> <p>July 2024 Meeting Action: - Ready for SC</p> <p>***Note that this item was approved by the TG on May 30, 2024. ***</p>		

Item Number: I24-50	NBIC Location: Part 3, 2.2.1 and 2.2.3	Attachment 11
<p>General Description: Post Qualification of Welders and WPS/PQR</p> <p>Subgroup: Repairs and Alterations</p> <p>Task Group: K. Moore (PM), B. Hrubala</p> <p>Explanation of Need: There are numerous instances in our organization where welders and WPS/PQR are being qualified after repairs have been done and the equipment were put back into service. The argument they give is that if the results pass then it's acceptable.</p> <p>July 2024 Meeting Action: Close w/Letter to Inquirer that this is outside the scope of the NBIC.</p>		

Item Number: I24-51	NBIC Location: Part 3, 3.3.4.6	Attachment 12
<p>General Description: NBIC Part 3, 3.3.4.6 Flush Patches that Intersect Existing Welds</p> <p>Subgroup: Repairs and Alterations</p> <p>Task Group: J. Ferreira (PM), B. Boseo, T. McBee, M. Schaser</p> <p>Explanation of Need: NBIC Part 3 paragraph 3.3.4.6 details controls for flush patches but does not appear to address controls for flush patches that intersect a new or existing weld.</p> <p>July 2024 Meeting Action: PR – Intent Interp tied to A23-41 – To be discussed at SG R&A</p>		

Item Number: I24-52	NBIC Location: Part 3, 3.3.2 e) 5)	Attachment 13
<p>General Description: Clarification of Routine Repair classification of welded in diaphragms.</p> <p>Subgroup: Repairs and Alterations</p> <p>Task Group: T. Seime (PM)</p> <p>Explanation of Need: Clarification of Routine Repair classification of welded in diaphragms. Because of the confusion regarding this repair vs routine repair classification, we have faced multiple delays at different power plants over the past three years.</p> <p>July 2024 Meeting Action: PR – Ready for SC</p> <p>***Note that this item was approved by TG Interpretations via letter ballot on June 26, 2024. ***</p>		

Item Number: I24-53	NBIC Location: Part 3, 3.3.4	Attachment 14
<p>General Description: NBIC Part 3, 3.3.4 in relation to ASME PCC-2 Article 212</p> <p>Subgroup: Repairs and Alterations</p> <p>Task Group: J. Ferreira (PM), M. Schaser, B. Boseo, T. McBee</p> <p>Explanation of Need: As this sort of configuration is compliant with the original Code Of Construction and guidance is supplied by an industry-recognized document on repair of pressure equipment, it isn't clear why it would be prohibited. When properly engineered and correctly installed, this sort of alteration could extend the life of damaged vessels.</p> <p>July 2024 Meeting Action: J. Ferreira presented a Proposal which was revised and UA.</p>		

Item Number: I24-70	NBIC Location: Part 3, 2.5.3.2 f)	No Attachment
<p>General Description: Waiving of hardness testing and carbon equivalency requirements</p> <p>Subgroup: Repairs and Alterations</p> <p>Task Group: G. Galanes (PM)</p> <p>Explanation of Need: Waiving of hardness and Carbon Equivalent check in steam service at design temperature of 480 C in superheater coils in boilers designed to temperature of 480 C</p> <p>July 2024 Meeting Action: T. Seime presented a PR. G. Galanes selected as PM.</p>		

10. Future Meetings

- January 13th-16th, 2025 – Charleston, SC
- July 2025 – TBD

11. Adjournment @ 3:44 PM by Chair Seime.

Respectfully submitted,

Terrence Hellman

Terrence Hellman, TG Interpretations Secretary



THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

PROPOSED INTERPRETATION

<p>Item No. I23-79 Rev 00</p>
<p>Subject/Title Alternative Welding Method 6 - Controlled Fill</p>
<p>Project Manager and Task Group P Gilston & R Derby</p>
<p>Source (Name/email) Mark Kincs / mark.r.kincs@xcelenergy.com</p>
<p>Statement of Need There is a lack of clarity as to the current requirement, need, and definition of controlled fill technique for application to Welding Method 6.</p>
<p>Background Information In 2015 NBIC Part 3, 2.5.3.6 specifically mentions "controlled fill", but 2.5.3 d) calls for "temper bead" for 2.3.5.6. In 2017 NBIC Part 3, "temper bead" was changed to "controlled fill" in 2.5.3 d) for 2.5.3.6, but "controlled fill" was removed from 2.5.3.6 itself. Supplement 8, with specific controlled fill requirement for CSEF material was added in the 2017 NBIC Part 3.</p>
<p>Proposed Question Does 2.5.3 d) require controlled fill bead placement for Welding Method 6 (2.3.5.6) similar to that described in S8.3?</p>
<p>Proposed Reply No</p>
<p>Committee's Question 1 Does Welding Method 6 described in 2.5.3.6 require the use of a "controlled fill"?</p>
<p>Committee's Reply 1 Yes</p>
<p>Rationale While 2.5.3.6 Welding Method 6 does not specifically call out a "controlled fill" technique, 2.5.3 d) states: 'Welding Method 6 as described in 2.5.3.6 requires use of a controlled fill technique.'</p>
<p>Committee's Question 2</p>
<p>Committee's Reply 1</p>
<p>Rationale</p>



PROPOSED INTERPRETATION

Item No. 23-82
Subject/Title Replacement of non-pressure retaining parts in Electrolyzer PEM Stack
Project Manager and Task Group
Source (Name/Email) Kevin Choi / kevin.choi@accelerazero.com
Statement of Need Need to determine if our company requires the NB R Certificate holder status.
Background Information Hydrogenics is a manufacturer of hydrogen electrolyzers which operate on PEM (Proton Exchange Membrane) technology. The PEM stack operates at 30 bar (435 PSIG) pressure and is rated for a MAWP of 40 bar (580 PSIG) and we perform pneumatic pressure tests to ensure structural integrity according to ASME Sec VIII-1. At times we see cell shortage faults occurring which is not a failure of the pressure-retaining components but of components within the pressure vessel failing due to normal wear and tear.
Proposed Question The engineers determine root cause and replace the damaged non-pressure bearing parts which requires disassembling the pressure vessel mechanically. Welding is not involved during the assembly process. Once the stack is assembled a combination of nuts and threaded rods are torqued to specification to "sandwich" the cells together and a 1.1x MAWP pneumatic test is performed. The non-pressure bearing parts are not described in the ASME U-1A form, but are part of the ITP package. Is this considered a Routine Repair? Is a R-1 form required to be filed for such activities?
Proposed Reply This (is/ is not) considered a Routine Repair. As a result the R-1 form (is/ is not) required.
Committee's Question 1 Is the replacement of mechanically installed non-pressure parts not listed on the MDR within a mechanically assembled ASME Section VIII pressure-retaining item that does not affect the pressure parts considered a repair or routine repair by the NBIC?
Committee's Reply 1 No, the NBIC does not address the requirements for mechanical repairs to these types of components.
Rationale Since the non-pressure parts are not attached to the PRI by welding, are not listed on the MDR, and do not affect the pressure parts of the PRI, it is not considered a repair or routine repair.
Committee's Question 2 Is the mechanical assembly of an ASME Section VIII pressure-retaining item after only mechanically installed non-pressure parts have been replaced required to be documented on Form R-1, Report of Repair.
Committee's Reply 2 No, this is beyond the scope of NBIC, Part 3, but it is not prohibited.
Rationale See rationale from Question 1.



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PROPOSED INTERPRETATION

<p>Item No.</p> <p>I24-xxx</p>
<p>Subject/Title</p> <p>4.4.1 (e) and 4.4.2 (c) NDE Methods</p>
<p>Project Manager and Task GroupTBD</p>
<p>Source (Name/email)</p> <p>Jon Ferreira / jonathan_ferreira@hsb.com</p>
<p>Statement of Need</p> <p>There seems to be some confusion by inspectors and R certificate holders of what NDE methods are acceptable when NDE is used in lieu of a pressure test. The proposed questions will provide clarity on this matter.</p>
<p>Background Information</p> <p>4.4.1 (e) and 4.4.2 (c) permit the use of NDE to verify the integrity of the repair of alteration. NDE methods other than what is listed in the original code of construction are being used for repair and alterations in some locations throughout the US. For example, Acoustic Emission Testing (AE) in accordance with ASME Section V Article 12 has been used on power boiler (HRSG) repairs. Acoustic Emission Testing is not an NDE method that is addressed in ASME Section I or Section VIII Div.1, but it is an NDE method in the reference code ASME Section V. Some inspectors are questioning this as AE is not an NDE method used in the original code of construction.</p>
<p>Proposed Question 1</p> <p>May NDE methods not addressed in the original code of construction be used to verify the integrity of the repair of alteration?</p>
<p>Proposed Reply</p> <p>Yes, provided the NDE method selected can provide meaningful results</p>
<p>Proposed Question 2</p> <p>If the answer to question 1 is yes, is it required for the NDE method that is selected to have a written procedure following ASME Section V or another recognized national or international standard for the NDE method in question?</p>
<p>Proposed Reply</p> <p>Yes</p>
<p>Proposed Question 3</p> <p>If an NDE method that is not addressed in the original code of construction is used, do the NDE personnel performing the NDE method need to be certified to a written practice?</p>
<p>Proposed Reply</p> <p>Yes</p>

Committee's Question 1

May NDE methods not addressed in the original code of construction be used to verify the integrity of the repair of alteration?

Committee's Reply 1

Yes, with acceptance of the Inspector and the jurisdiction, if applicable, provided the NDE method selected can provide meaningful results

Rationale

4.4.2 a)

Committee's Question 2

If the answer to question 1 is yes, is it required for the NDE method that is selected to have a written procedure following ASME Section V or another recognized national or international standard for the NDE method in question?

Committee's Reply 2

Yes.

Committee's Question 3

If an NDE method that is not addressed in the original code of construction is used, do the NDE personnel performing the NDE method need to be certified to a written practice?

Committee's Reply 3

Yes

PROPOSED INTERPRETATION



**THE NATIONAL BOARD
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Item No. 24-29
Subject/Title Volumetric NDE requirements for welded repairs to pressure vessels
Project Manager and Task Group Marty Toth (PM), Mike Quisenberry, Robert Derby
Source (Name/Email) Michael Schultz / michael.w.schultz@exxonmobil.com
Statement of Need Urgent - scheduled maintenance event upcoming
Background Information Specific vessel currently in question is a refinery Coke Drum (1.5" plate thickness with 0.100" corrosion resistant clad. Vessel has highly localized corrosion due to cladding damage. Once excavated for repair the corroded locations will exceed the 4.2a size restrictions. Original welds were RT inspected. Weld repairs will be completed via temperbead procedure with elevated preheat.
Proposed Question Part 3 Section 4 (4.2a) was amended in the 2023 edition including more restrictive NDE requirements than previous editions for vessels constructed with volumetric NDE. Please confirm the intent of this update. It is currently being interpreted to require volumetric NDE on all welds to a pressure vessel (original weld seam OR plate material away from weld seam) that do not meet the depth (<1/8") and length (<6") restrictions. Is this interpretation correct?
Proposed Reply Inspector discretion is allowed when volumetric testing is not possible/practicable
Committee's Question 1 Are repairs and alterations to base metal and corrosion-resistant cladding of pressure-retaining items originally examined utilizing volumetric NDE subject to the conditional requirements outlined in 4.2 for nondestructive examinations?
Committee's Reply 1 Yes
Rationale If the original code of construction calls for the volumetric NDE before or following corrosion-resistant cladding, then the repair and alteration must adhere to the requirement outlined in 4.2 – Nondestructive Examination.
Committee's Question 2
Committee's Reply 2 .
Rationale 4.2. – Nondestructive Examination specifically states this allowance.



PROPOSED INTERPRETATION

Item No. 24-33
Subject/Title Proof Testing by a non-manufacturing R Certificate Holder
Project Manager and Task Group
Source (Name/Email) Greg Francisco / greg.francisco@wrightspec.com
Statement of Need My company, Wrightspec LLC, is planning to apply for a 'R' Certificate in order to support field & shop Repairs & Alterations (Rerating) of cast iron paper machine dryers. We hold an AIA service agreement with Arise Boiler Inspection & Insurance Company and are hopeful to have an R-stamp by end of summer 2024.
Background Information Wrightspec LLC currently performs examination and installation activities of paper machine dryers and partial heads/shells, as hired mechanical contractors with extensive NDE expertise. Many of these vessels were made decades ago and in most cases the OEM is either no longer in existence, or the OEM has let their ASME 'U' & NBIC 'R' authorizations expire for North America in favor of overseas manufacturing. Thus, these OEM's can no longer perform Repair or Alteration activities on existing drying cylinders. Many paper mill clients already hire Wrightspec to examine existing dryers and/or install new heads. We would like to offer Repair and Alteration services to better support our clients' in-service equipment needs, due to the decline of authorized OEM's to perform these types of activities.
Proposed Question In the case of non-welded cast iron pressure vessel heads originally constructed and designed by proof testing per the rules of ASME Section VIII Division 1, can a 'R' Certificate holder perform a burst test per UCI-101 / UCD-101 in lieu of calculations to support the Rerate of an existing pressure vessel, when the 'R' Holder does not hold an ASME 'U' authorization?
Proposed Reply Yes, a 'R' Holder can perform proof testing in lieu of calculation in cases where the design is not able to be validated by calculation.
Committee's Question 1
Committee's Reply 1
Rationale
Committee's Question 2
Committee's Reply 2
Rationale



PROPOSED INTERPRETATION

Item No. 24-34
Subject/Title Rerating using OEM's design data to waive proof testing
Project Manager and Task Group
Source (Name/Email) Greg Francisco / greg.francisco@wrightspec.com
Statement of Need My company, Wrightspec LLC, is planning to apply for a 'R' Certificate in order to support field & shop Repairs & Alterations (Rerating) of cast iron paper machine dryers. We hold an AIA service agreement with Arise Boiler Inspection & Insurance Company and are hopeful to have an R-stamp by end of summer 2024.
Background Information A PV built in 1990 contains heads made of Class 40 cast iron. The heads were proof tested by the OEM and determined to be suitable for 160 psi MAWP. However, the OEM certified the vessel for only 125 psi due to customer requirements. Fast forward to present day, and the vessel owner now wants to Rerate the vessel to a higher pressure. The OEM is no longer in business, but the 'R' Holder is able to obtain a copy of the original proof test report by the OEM. Can it be acceptable for the 'R' Holder to Rerate the head above 125 psi, based on OEM records stating the design is good for higher pressure, without the 'R' Holder having to perform their own separate proof test? The 'R' Holder would not be using the OEM proof test record for any new manufacturing, only for the purposes of altering an existing vessel or part within the confines of the original design.
Proposed Question Can a 'R' Certificate Holder use an OEM's original design documents (drawings, calculations, U-1A form, proof test records) to support a Rerate of a pressure vessel in cases where the OEM is either no longer in business, but the 'R' Holder is able to obtain copies of the original design documents which support that Rerating is possible?
Proposed Reply Yes, a non-manufacturing 'R' Holder may utilize an OEM's design and test records for rerating existing in-service PV's so long as the physical condition of the vessel is suitable for increased MAWP, there are no physical changes to geometry, and the new/higher MAWP does not exceed that which is recorded on the OEM proof test report.
Committee's Question 1 Can a 'R' Certificate Holder use an OEM's original calculations when rerating a pressure vessel?
Committee's Reply 1 No
Rationale 3.4.1 a)
Committee's Question 2 Can a 'R' Certificate Holder use an OEM's original proof test records when rerating a pressure vessel?
Committee's Reply 2 No
Rationale 3.4.1 d)

Abstain-I24-34 and I24-36

Ferreira Jonathan - Hartford-Remote-HSB <Jonathan_Ferreira@hsb.com>

Mon 7/15/2024 3:20 PM

To:Terrence Hellman <THellman@nationalboard.org>

Terry,

I abstain from voting on I24-34 as the committee proposed question does not take into consideration that the R certificate holder and OEM can be one of the same. I believe this item needs more work.

I abstain from voting on I24-36 as I believe this item needs more work.

Best Regards,

Jon Ferreira

Technical Service Manager
Global Inspection and Engineering Services

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**THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS**

PROPOSED INTERPRETATION

Item No. 24-36
Subject/Title Alteration of Plate Heat Exchanger
Project Manager and Task Group
Source (Name/Email) Monte Bost / monte_bost@hsb.com
Statement of Need This question is asked frequently by Repair firms that want to increase the number of heat transfer plates.
Background Information An "UM" stamped vessel has no Authorized Inspector involvement. A "U" stamped vessel requires Authorized Inspector involvement.
Proposed Question A plate heat exchanger (PHE) is altered by increasing the number of heat transfer plates. The PHE was originally constructed to ASME Boiler and Pressure Vessel Code, Section VIII, Division 1 with the "UM" Designator. The increase in heat transfer plates causes the volume to exceed the 5 ft ³ (0.14 m ³) limit in ASME Code Section VIII, Division 1, paragraph U-1(j)(1). Is reclassification of the PHE from "UM" to "U" permitted?
Proposed Reply No
Committee's Question 1 May a pressure retaining item be altered to exceed the limitations of the original code of construction?
Committee's Reply 1 No
Rationale
Committee's Question 2
Committee's Reply 2
Rationale

Abstain-I24-34 and I24-36

Ferreira Jonathan - Hartford-Remote-HSB <Jonathan_Ferreira@hsb.com>

Mon 7/15/2024 3:20 PM

To:Terrence Hellman <THellman@nationalboard.org>

Terry,

I abstain from voting on I24-34 as the committee proposed question does not take into consideration that the R certificate holder and OEM can be one of the same. I believe this item needs more work.

I abstain from voting on I24-36 as I believe this item needs more work.

Best Regards,

Jon Ferreira

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Abstention for I24-36

George Galanes <ggalanes@diamondtechnicalservices.com>

Mon 7/15/2024 3:21 PM

To: Terrence Hellman <THellman@nationalboard.org>

I am voting abstention for item 24-36 because the proposed question needs more work.

G²

George Galanes, P.E.

Consulting Metallurgical Engineer

Diamond Technical Services

Cell 312-925-1341





PROPOSED INTERPRETATION

Item No. 24-41
Subject/Title 4.4.2 (a) Pressure testing Connection Welds
Project Manager and Task Group
Source (Name/Email) Steven Hoffmann / steven_hoffmann@hsb.com
Statement of Need There seem to be some different opinions among inspectors and R certificate holders when 4.4.2 (a)(1&) refers to replacement parts. Some inspectors and R certificate holders have the opinion that those replacement parts referenced in 4.4.2 (a) are only welded replacement parts, while others have the opinion that the replacement parts are not limited to just welded parts, but apply to all replacement parts.
Background Information Company A is performing an alteration where the only welding involved is attaching the new material directly to the pressure retaining item, there are no Code stamped parts. Company A is proposing to test the weld using a pressure test or NDE in accordance with paragraph 4.4.1 by referencing paragraph 4.4.2(a)(2).
Proposed Question Do replacement parts as referenced in 4.4.2(a)(1 & 2) include those parts as defined in 3.2.2(a) and 3.2.2(b)?
Proposed Reply Yes
Committee's Question 1 Do replacement parts as referenced in 4.4.2(a)(1 & 2) include those parts as defined in 3.2.2(a) and 3.2.2(b)?
Committee's Reply 1 Yes.
Rationale
Committee's Question 2
Committee's Reply 2
Rationale



PROPOSED INTERPRETATION

Item No. 24-45
Subject/Title Correct method for reporting Date Repaired on R form
Project Manager and Task Group
Source (Name/Email) Alexander Garbolevsky / alex_garbolevsky@hsb.com
Statement of Need Repair stampings are often encountered in the field with "Date Repaired" indicated by "month and year" as well as with "month, day and year." Repair Organizations and Inspectors occasionally disagree as to whether "month and year" is sufficient.
Background Information NBIC Part 3 [2023], 5.7.2(c) states: The date of each repair, corresponding with the date on associated Form R-1, shall be stamped on the nameplate. Since the subject of that subparagraph deals with multiple repairs, this is especially important. What if a firm does a repair on April 1, stamps the nameplate as "4/2024", and needs to come back for another repair on April 15? Although there are repair stampings encountered in the field that only indicate month / year, in my opinion, the instructions for the Form R-1 in Supplement 9, Table S9.2 suggest "date" means a specific "month, day, and year". See Circled Number (37): Indicate month, day, and year of final inspection by Inspector. For routine repairs this shall be the month, day, and year the Inspector reviews the completed routine repair package." also Circled Number (40): Indicate month, day, and year of Inspector signature.
Proposed Question When "Date Repaired" is required on a Repair nameplate or stamping, must it include month, day and year?
Proposed Reply Yes
Committee's Question 1 When "Date Repaired" is required on a Repair nameplate or stamping, must it include month, day and year?
Committee's Reply 1 Yes
Rationale NBIC Part 3, 5.7.2 states "The date of each repair, corresponding with the date on associated Form R-1, shall be stamped on the nameplate" and the supplement states the date includes Day, Month, and Year.
Committee's Question 2
Committee's Reply 2
Rationale



PROPOSED INTERPRETATION

Item No. 24-50
Subject/Title Post Qualification of Welders and WPS/PQR
Project Manager and Task Group
Source (Name/Email) Marthinus George / thinus.george@gmail.com
Statement of Need There are numerous instances in our organization where welders and WPS/PQR are being qualified after repairs have been done and the equipment were put back into service. The argument they give is that if the results pass then it's acceptable.
Background Information A high pressure heat exchanger needed critical repairs during a turnaround after inspections revealed cracks in the tubes. It was decided by the technical team to cut shorten the tubes to remove the cracks and then reweld them. The repair organization did not have a PQR, or welders qualified to weld the material combination as it was an Inconel 625 tube sheet and TP 321H tubes. The user refused to wait the 8 weeks for the repair organization to qualify this PQR and welders and opted to do the qualification after production welding and withhold certification of the repair until after PQR and welder's tests results have been accepted.
Proposed Question Does the Code allow for qualifying welder performance and welding procedures after production or even in parallel to production welding?
Proposed Reply The referencing sections 2.2.1 and 2.2.3 refers to the original code of construction / construction standard for welding procedure and welder performance qualifications. If those standards don't explicitly allow post qualification, then it is also subsequently prohibited by this Code.
Committee's Question 1
Committee's Reply 1
Rationale
Committee's Question 2
Committee's Reply 2
Rationale

PROPOSED INTERPRETATION

Item No.
24-51
Subject/Title
NBIC Part 3, 3.3.4.6 Flush Patches that Intersect Existing Welds
Project Manager and Task Group
Source (Name/Email)
Zach Bachstein / zbachstein@cimarron.com
Statement of Need
NBIC Part 3 paragraph 3.3.4.6 details controls for flush patches but does not appear to address controls for flush patches that intersect a new or existing weld.
Background Information
A flush patch repair is planned to replace the bottom portion of a pressure vessel. The corners of the flush patch shall be rounded to meet the requirements of NBIC Part 3, 3.3.4.6(a)(2), but we feel the rounded tie-in to the girth seams creates a greater stress riser than if the corners were squared. ASME PCC-2 paragraph 201-3 provides rules for this situation, but since the corners contradict the requirements of NBIC Part 3, and NBIC Part 3, 3.2.6 says the NBIC rule take precedence, it cannot be considered a NBIC repair.
Proposed Question
Question 1: Does NBIC Part 3, 3.3.4.6 address flush patches that intersect existing welds. Question 2: May a “doghouse patch” described in ASME PCC-2 (2022) paragraph 201-4.4.1 and shown in Figure 201-3.8-2 be used in flush patch repairs that intersect new and existing welds provided it is acceptable to the Inspector and Jurisdiction, when required
Proposed Reply
Question 1: No Question 2: Yes
Committee's Question 1
Is it the intent of NBIC Part 3, 3.3.4.6 that square corners in flush patches that intersect existing weld seams are prohibited?
Committee's Reply 1
No
Rationale
Committee's Question 2
Committee's Reply 2
Rationale

PROPOSED INTERPRETATION

Item No.
24-52
Subject/Title
Clarification of Routine Repair classification of welded in diaphragms.
Project Manager and Task Group
Source (Name/Email)
Certificate Administrator / victor.kidwell@lge-ku.com
Statement of Need
Clarification of Routine Repair classification of welded in diaphragms. Because of the confusion regarding this repair vs routine repair classification we have faced multiple delays at different power plants over the past three years.
Background Information
LGE KU (R9646) has installed many welded in diaphragms on feedwater heaters and classified each as routine repairs under the guidance of the Kentucky Jurisdiction. During our renewal review in October 2020 the Team Leader wrote a Deficiency - "Many of the repairs were characterized as Routine Repairs, but were not. These repairs consisted of welding in replacement diaphragms located under the bolted manway. The team leader closed this with a corrective action stating these types of repairs would not be treated as routine.
Proposed Question
Does paragraph 3.3.2 e) 5 "Seal welding of a mechanical connection for leak tightness where by- design, the pressure retaining capability is not dependent on the weld for strength and requires no postweld heat treatment" apply to welded in diaphragms installed in feedwater heaters where the diaphragm is not the pressure retaining item? (A head is bolted on to the flange outside the seal welded diaphragm.)
Proposed Reply
Interpretation confirming an email response to this question on 4/4/2024 from Gary L. Scribner, Assistant Executive Director, Technical - as follows - It is my opinion that this is a routine repair in accordance with the NBIC Part 3, 3.3.2, e), 5, Seal welding of a mechanical connection for leak tightness where by- design, the pressure retaining capability is not dependent on the weld for strength and requires no postweld heat treatment.
Committee's Question 1
Does paragraph 3.3.2 e) 5 "Seal welding of a mechanical connection for leak tightness where by- design, the pressure retaining capability is not dependent on the weld for strength and requires no postweld heat treatment" apply to welded in diaphragms installed in feedwater heaters where the diaphragm is not the pressure retaining item? (A head is bolted on to the flange outside the seal welded diaphragm.)
Committee's Reply 1
Yes
Rationale
Committee's Question 2
Committee's Reply 2
Rationale

PROPOSED INTERPRETATION

Item No. 24-53
Subject/Title NBIC Part 3, 3.3.4 in relation to ASME PCC-2 Article 212
Project Manager and Task Group
Source (Name/Email) Roy Darby / roy.darby@chevron.com
Statement of Need As this sort of configuration is compliant with the original Code Of Construction and guidance is supplied by an industry-recognized document on repair of pressure equipment, it isn't clear why it would be prohibited. When properly engineered and correctly installed, this sort of alteration could extend the life of damaged vessels.
Background Information Legacy NBIC interpretations 93-02 and 95-06 suggest that installation of patches using fillet welds would not be permitted. These interpretations pre-date the publication of ASME PCC-2, Article 212 though. Also, lap joints with only fillet welds are permitted by ASME Section VIII Division 1 for all categories of joints. As this sort of configuration is compliant with the original Code Of Construction and guidance is supplied by an industry-recognized document on repair of pressure equipment, it isn't clear why it would be prohibited.
Proposed Question May a wasted area on a vessel have a lap patch installed as an alteration provided that all rules and requirements of ASME PCC-2, Article 212 are met as well as rules and requirements of the original Code Of Construction are met including for the installation of lap joints and fillet welds (such as UW-36 of ASME Section VIII Division 1)?
Proposed Reply Yes.
Committee's Question 1 May a fillet welded lap patch be installed on a pressure retaining item?
Committee's Reply 1 No. The weld must be a full penetration weld per 3.3.4.6 a) 1).
Rationale
Committee's Question 2
Committee's Reply 2
Rationale