THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

NATIONAL BOARD INSPECTION CODE SUBCOMMITTEE REPAIRS & ALTERATIONS

Minutes

Meeting of January 15th, 2025
Charleston, SC

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-
1183
Phone: (614)888-8320
FAX: (614)847-1828

1. **Call to Order**
   Chair Moore called the meeting to order at 8:00 a.m. Eastern Time in Grand Magnolia B on the second floor of the hotel.

2. **Roll call of Members and introduction of Visitors**
   Secretary Hellman took roll and introduced visitors. (Attachment 1)

3. **Check for a Quorum**
   A quorum was established with 19/20 members present.

4. **Announcements**
   - This meeting marks the end of Cycle A for the 2027 NBIC edition.
   - The National Board will be hosting a reception on Wednesday evening from 5:30 p.m. to 7:30 p.m. at the Hyatt Place rooftop bar, the Pour Taproom.
   - The National Board will be hosting breakfast and lunch on Thursday for those attending the Main Committee meeting. Breakfast will be served from 7:00 a.m. to 8:00 a.m. in Grand Magnolia Foyer, and lunch will be served from 11:30 a.m. to 12:30 p.m. in Sterling Hall Foyer.
   - Meeting schedules, meeting room layouts, and other helpful information can be found on the National Board website under the **NBIC** tab → NBIC Meeting Information.
   - The NBIC Committee has transitioned from NB File Share to SharePoint. Remember to add any attachments that you'd like to show during the meeting (proposals, reference documents, powerpoints, etc.) to the NBIC SharePoint site (nationalboard.sharepoint.com/sites/NBIC) **prior to the meeting**.
     - Note that access to the NBIC SharePoint site is limited to committee members only.
     - ALL powerpoint attachments/presentations must be sent to the NBIC Secretary for approval prior to the meeting.
     - Contact Jonathan Ellis (*nbicsecretary@nbbi.org*) for any questions regarding NBIC SharePoint access.
   - When possible, please submit proposals in Word format showing "strike through/underline." Project Managers: please ensure any proposals containing text from previous NBIC editions are updated with text from the most current edition.
   - If you'd like to request a new Interpretation or Action item, do so 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 setup, etc. It is also a good way to make sure we have the most up-to-date contact information. Please continue to use the online registration for each meeting.

5. **Awards and Special Recognition**
   - Ms. Pat Becker – 5 years on SC R&A
   - Mr. Paul Shanks – 5 years on SC R&A
   - Mr. Tim McBee – 5 years on SC R&A

6. **Adoption of the Agenda:** The Agenda was UA as revised, adding the following:
   - Several editorial corrections made,
   - Raymond Spuhl was added for membership consideration
   - Item A24-05 and A24-82 added
   - Presentation on Quick Actuating Closures added to Agenda.

7. **Approval of the Minutes of the July 17, 2024, Meeting**
   The minutes from the January 2024 meeting were UA.

8. **Presentation –** Quick Actuating Closures @ 8:30 AM EST

9. **Review of Rosters**

   a. **Membership Nominations**

      Mr. Kiwi Derrick (Users), Stacey Marks (AIA), were UA as new members of **Task Group Interpretations**.

      Mr. Lane Baker (AIA) was UA as a new member of **Subgroup R&A**.

      Mr. Raymond Spuhl (AIA) was UA as a new member of **Subcommittee R&A.**

   b. **Membership Reappointments**

      i. The following **Subgroup R&A** memberships will expire prior to the July 2025 NBIC meetings: Mr. Eric Cutlip (NB Cert. Holder) and Mr. Raymond Spuhl (AIA). Neither membership was renewed.

      ii. The following **Subcommittee R&A** memberships will expire prior to the July 2025 NBIC meetings: Mr. Michael Carlson (Jurisdictional Authorities), Mr. Craig Hopkins (NB Cert. Holder), Mr. Benjamin Schaefer (NB Cert. Holder), and Mr. Linn Moedinger (User), All SC members were UA reappointed.

   c. **Officer Nominations - None**

   d. **Resignations – None**

10. Interpretations

Item Number: I24-16 **NBIC Location: Part 3, 2.5.3 e)** **Attachment 2**

General Description: Volumetric Examination when using alternative welding methods without PWHT

Subgroup: Repairs and Alterations

Task Group: M. Schaser (PM), T. McBee

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.

July 2024 Meeting Action: M. Schaser presented a PR.

Update: 12/20/24 - Passed INTERP TG LB (10-1-0). Ready for SC R&A.

SC R&A Jan. 2025 Meeting Action: T. Seime presented a proposal that was **UA.**

Item Number: I24-19 **NBIC Location: Part 3, 4.2** **Attachment 3**

General Description: NB-23 2023 Part 3, section 4, article 4.2 - Volumetric NDE on weld

Subgroup: Repairs and Alterations

Task Group: L. Dutra (PM), M. Quisenberry

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?

July 2024 Meeting Action: L. Dutra presented a PR.

INTERP TG Jan. 2025 Meeting Action: Dutra presented a proposal that was **revised and UA.**

SC R&A Jan. 2025 Meeting Action: T. Seime presented a proposal that was revised after discussion and ultimately was **UA.**

Item Number: I24-25 **NBIC Location: Part 3, 4.4.1 e) and 4.4.2 c)** **Attachment 4**

General Description: 4.4.1 (e) and 4.4.2 (c) NDE Methods

Subgroup: Repairs and Alterations

Task Group: R. Derby (PM), P. Gilston, J. Ferreira

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.

July 2024 Meeting Action: J. Ferreria presented a PR to SC, as this will go to INTERP TG for a Rvw & Comment LB.

INTERP TG Jan. 2025 Meeting Action: Derby presented a proposal that was revised and ultimately **UA**, however more discussion to be had as SG and/or SC.

SC R&A Jan. 2025 Meeting Action: T. Seime presented a proposal that was revised after discussion and ultimately was **UA.**

Item Number: I24-34 **NBIC Location: Part 3, 3.4.1** **Attachment 5**

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 negative vote (Stacy Marks standing in for P. Shanks) and 3 abstentions (B. Boseo, P. Gilston, B. Schaefer).

NOTE: This item was presented as a Progress Report during the July 2024 Main Committee meeting.

INTERP TG Jan. 2025 Meeting Action: K. Moore presented. M. Wadkinson discussed proof testing, and after discussion, the TG decided to send a **Letter to Inquirer that this is OUTSIDE THE SCOPE OF THE NBIC – UA.**

SC R&A Jan. 2025 Meeting Action: T. Seime presented to send a **Letter to Inquirer that this is OUTSIDE THE SCOPE OF THE NBIC – UA.**

Item Number: I24-36 **NBIC Location: Part 3, 3.4** **No Attachment**

General Description: Alteration of Plate Heat Exchanger

Subgroup: Repairs and Alterations

Task Group: T. Seime (PM) , M. Quisenberry, T. McBee, M. Wadkinson

Explanation of Need: This question is asked frequently by Repair firms that want to increase the number of heat transfer plates.

July 2024 Meeting Action: T. Seime presented a PR to revise based on INTERP TG comments.

INTERP TG Jan. 2025 Meeting Action: T. Seime presented. After much discussion and revisions regarding the limitations of the original code of construction, the pending vote on the proposal failed with only 5 approvals. M. Quisenberry, T. McBee, and M. Wadkinson were added to the TG. **This was a PR**.

SC R&A Jan. 2025 Meeting Action: T. Seime presented a **PR**.

Item Number: I24-40 **NBIC Location: Part 3, 3.3.2 e)** **Attachment 6**

General Description: Routine repair vs Alteration

Subgroup: Repairs and Alterations

Task Group: M. Carlson (PM), D. Kinney

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.

July 2024 Meeting Action: M. Carlson presented a PR.

Update: Passed INTERP TG LB 11/23/24 (10-3-1). Ready for SC.

Jan. 2025 Meeting Action: T. Seime presented a proposal that was **UA**.

Item Number: I24-44 **NBIC Location: Part 3, 2.5.3** **No Attachment**

General Description: Alternative weld methods and special services

Subgroup: Repairs and Alterations

Task Group: R. Derby (PM), P. Gilston

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.

July 2024 Meeting Action: P. Gilston presented a PR.

INTERP TG Jan. 2025 Meeting Action: R. Derby presented a **PR** with the intention to submit a proposal for a LB in the near future.

SC R&A Jan. 2025 Meeting Action: T. Seime presented a **PR**.

Item Number: I24-50 **NBIC Location: Part 3, 2.2.1 and 2.2.3** **Attachment 7**

General Description: Post Qualification of Welders and WPS/PQR

Subgroup: Repairs and Alterations

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

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.

July 2024 Meeting Action: K. Moore presented a PR, as this will be revised based on INTERP TG discussions.

INTERP TG Jan. 2025 Meeting Action: B. Hrubula presented multiple options and the ultimate decision was **UA** to send a **Letter to Inquirer that this is Consulting.**

SC R&A Jan. 2025 Meeting Action: T. Seime presented a UA proposal to send a **Letter to Inquirer that this is Consulting.**

New Interpretations Requests:

Item Number: I24-27	**NBIC Location: Part 3 (formerly Part 2, 5.2.1)**	**Attachment 8**

General Description: Replacement of Repair Nameplate

Subgroup: Repairs and Alterations

Task Group: None assigned.

Explanation of Need: There is a lack of clarity for replacing an Repair Nameplate that has become lost , illegible, or detached, and the stamping/markings required.

July 2024 Meeting Action: From Subcommittee Inspection's July 2024 meeting → The SG reviewed this Interpretation, and after a lot of discussion they believe this interpretation should be moved to be a Repairs & Alterations item. The information being questioned is not addressed in Part 2. After discussion, the SC agreed with the SG's decision to move this item to R&A.

INTERP TG January 2025 Meeting Action: Seime presented that this is not an issue and moved to **Close w/No Action**. The motion was **UA**.

SC R&A January 2025 Meeting Action: Seime presented that this is not an issue and moved to **Close w/No Action**. The motion was **UA**.

Item Number: I24-99	**NBIC Location: Part 3, 5.2..2 c)**	**Attachment 9**

General Description: Preparation of Form R-2 Construction Scope

Subgroup: Repairs and Alterations

Task Group: M. Schaser (PM), J. Ferreira

Explanation of Need: Disposition if NDE and pressure testing is considered construction activity and R-2 fields "7-b", Construction Certification, and Certificate for Inspection are required.

INTERP TG January 2025 Meeting Action: Seime presented. Discussion on the definition of "Construction' from ASME vs NBIC was discussed (includes NDE and Testing per ASME vs NOT included per NBIC). The INTERP TG **UA** decided to send a **Letter to Inquirer referencing Interps 01-38 & 01-39 and a statement that the 2025 Edition revisions will clarify the issue**.

SC R&A January 2025 Meeting Action: Seime presented. The SC R&A **UA** decided to send a **Letter to Inquirer referencing Interps 01-38 & 01-39 and a statement that the 2025 Edition revisions will clarify the issue**

Item Number: I24-107 **NBIC Location: Part 3, 3.3.3 j)** **Attachment 10**

General Description: Addition of a nozzle details

Subgroup: Repairs and Alterations

Task Group: Matt Schaser (PM)

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.

INTERP TG January 2025 Meeting Action: M. Schaser presented. After discussion regarding the original code of construction the TG **UA** a motion to send **a Letter to Inquirer that this is Consulting**.

SC R&A January 2025 Meeting Action: T. Seime presented a motion that was UA by the SC to send **a Letter to Inquirer that this is Consulting**.

11. Action Items

a. Task Group Graphite

Item Number: A24-67 **NBIC Location: Part 3, S3.3** **No Attachment**

General Description: Graphite plate replacement as Routine repair

Subgroup: Graphite

Task Group: A Viet, J. Wince, S. Mehrez

Explanation of Need: Clarifying requirements for use of graphite pressure vessel replacement parts for repairs or alterations.

July 2024 Meeting Action: A. Veit presented a PR.

SC R&A Jan. 2025 Meeting Action: A. Veit presented a PR

New Items:

Item Number: A24-86	**NBIC Location: Part 3, S3.3**	**Attachment 11**

General Description: Increase routine repair limit for graphite nozzles

Subgroup: Graphite

Task Group: A. Stupica (PM)

Explanation of Need: Nozzles of a 10-inch diameter or less are commonly used and easy to handle. There are no major differences in handling/installing nozzles of this sized compared to a 6-inch nozzle.

SC R&A Jan. 2025 Meeting Action: A. Veit presented a proposal that was **revised and UA.**

b. Task Group FRP

There are currently no open FRP items related to Part 3.

c. Task Group Historical

Item Number: A20-25	**NBIC Location: Part 3, S2.13**	**No Attachment**

General Description: Repair Procedure for Fire Boxes

Subgroup: SG Historical

Task Group: M. Wahl (PM), R. Forbes, T. Dillon, L. Moedinger, C. Jowett, & F. Johnson

Explanation of Need: In NBIC Part 3, S2.13.10.3, S2.13.11 do not define what to do at a riveted joint. On the tubesheet, or firedoor sheet, where it is flanged to rivet to the firebox, the repairs are silent on what to do at the riveted joint.

July 2024 Action: This was a **PR.**

SC R&A Jan. 2025 Meeting Action: T. Seime presented a **PR.**

d. Task Group Locomotive

Item Number: A24-82	**NBIC Location: Part 3,** S1.1.4	**Attachment 12**

General Description: Rewrite of Part 3, S1.1.4

Subgroup: SG Locomotive

Task Group: L. Moedinger

Explanation of Need: ASME Section I, Part PL superseded previous calculations such as the Calculation Compendium referenced in the current wording.

SC R&A Jan. 2025 Meeting Action: L. Moedinger presented a proposal that was revised and **Approved by the SC with 1 negative (P. Shanks)**

e. NR Task Group

Item Number: A23-60	**NBIC Location: Part 3, 1.6**	**No Attachment**

General Description: Endorsements required for Nuclear Inspectors based on Category of work

Subgroup: NR TG

Task Group: C. Dinic (PM)

Explanation of Need: Endorsements required for Nuclear Inspectors based on Category of work (1, 2, or 3)

July 2024 Meeting Action: Tom Roberts presented a PR**.**

NR TG Jan. 2025 Meeting Action: Caslav presented a **PR**. Discussion was held that the NB may need a new AIA-type certificate for NR activities that is not connected to ASME requirements and the definition of ANIA should be removed from the NBIC. Similar verbiage was considered and UA as revised in Item A24-92 for Inspector/Supervisor requirements in 1.3.

SC R&A Jan. 2025 Meeting Action: R. Spuhl presented a **PR**.

Item Number: A24-09	NBIC Location: Part 3, 1.6.1 – 1.6.5	No Attachment

General Description: Update and revise NR Scope in 1.6.1 - 1.6.5

Subgroup: NR TG

Task Group: R. Spuhl (PM)

Explanation of Need: Scope and update and revision to 1.6.1 - 1.6.5.

July 2024 Meeting Action: R. Spuhl presented a PR.

NR TG Jan. 2025 Meeting Action: R. Spuhl presented a **PR**. A proposal with revisions to 1.6 including the revision/removal of Table 1.6.2 was discussed. T. Roberts gave history on the affiliation of 10 CFR 50 to Category 1 activities, and revisions to the proposal based on discussion will be worked on.

SC R&A Jan. 2025 Meeting Action: R. Spuhl presented a **PR**

New Items:

Item Number: A24-83	NBIC Location: Part 3, 1.6.4 d)	Attachment 13

General Description: Change Part 3, 1.6.4 d) (or elsewhere) to require audits to be performed by Supervisor

Subgroup: NR TG

Task Group: None assigned.

Explanation of Need: Requiring audits to be performed by a supervisor.

NR TG January 2025 Meeting Action: B. Schaefer selected as PM. The initial proposal was **revised and UA**.

SC R&A Jan. 2025 Meeting Action: R. Spuhl presented a proposal that was **UA.**

Item Number: A24-92 **NBIC Location: Part 3, 1.3** **Attachment 14**

General Description: NR Inspector and Agency Qualification Reqs in 1.3 - TIED TO A23-60

Subgroup: NR TG

Task Group: R. Spuhl (PM)

Explanation of Need: The NR Program is being revised per A23-60, and this addition will clarify Inspector/Supervisor and Agency requirements for NR activities.

NR TG January 2025 Meeting Action: R. Spuhl presented. Discussion with D. Caslav redgarding the need for RCI-1 to formally come up with an (NR) Endorsement and move all NR Inspector and Supervisor qualifications to RCI-1. An avenue for Inspectors to obtain the N, I, and NS without ASME designations is needed for outside the USA. The proposal presented added reqs to 1.3 of the NBIC for NR activities. The proposal was **revised and UA**.

SC R&A Jan. 2025 Meeting Action: R. Spuhl presented a proposal that was **UA.**

Item Number: A24-95 **NBIC Location: Part 3, 5.5 a)** **Attachment 15**

General Description: Registration of NR Forms within 30 Days

Subgroup: Repairs and Alterations

Task Group: R. Spuhl (PM)

Explanation of Need: 5.5 a) states repairs and alterations requiring registration must be submitted within 30 days of certification. It is unclear if this requirement applies to repair/replacement activities under the "NR" or "NVR" programs.

NR TG January 2025 Meeting Action: J. Bates was selected as the PM. The initial proposal was **UA**.

SC R&A Jan. 2025 Meeting Action: R. Spuhl presented a proposal that was **UA.**

f. Subgroup Repairs & Alterations

Item Number: A21-45 **NBIC Location: Part 3, Supplements** **No Attachment**

General Description: Engineered Repairs and Alterations Supplement

Subgroup: Repairs and Alterations

Task Group: M. Schaser (PM), B. Boseo, B. Ray, D. Marek, R. Underwood, J. Siefert, P. Becker

Explanation of Need: In an effort to simplify the main body of NBIC Part 3, we are proposing a new Supplement called Engineered Repairs and Alterations which will import some existing, more complex activities from the main body and then eventually add new repair and alteration activities that are not currently addressed in the Part 3.

July 2024 Meeting Action: M. Schaser presented a PR and is on hold until the new engineered repairs scope is approved by BOT.

SG R&A Jan. 2025 Meeting Action: M Schaser presented a PR and is on hold until the new engineered repairs scope is approved by BOT.

SC R&A Jan. 2025 Meeting Action: M Schaser presented a PR

Item Number: A21-53 **NBIC Location: Part 3, S8.5 a)** **No Attachment**

General Description: Post Repair Inspection of weld repairs to CSEF steels

Subgroup: Repairs and Alterations

Task Group: P. Gilston (PM), E. Cutlip, A. Triplett

Explanation of Need: The requirement for Inspector involvement in post-repair inspections to CSEF weld repairs is to ensure future safe operation of the boiler. This is a function of the inservice Authorized Inspection Agency, not the Repair Inspector, whose duties end with completion of repair documentation.

July 2024 Meeting Action: P. Gilston presented a PR

SG R&A Jan. 2025 Meeting Action: P. Gilston presented Rev. 3 of his proposal to show changes from previous version. After discussion, Mr. Gilston decided to revise further and submit the proposal via LB to the SG. This was a **PR**.

SC R&A Jan. 2025 Meeting Action: P. Gilston presented a **PR**

Item Number: A22-18	NBIC Location: Part 3, Glossary	No Attachment

General Description: Definition of blowdown and blowoff

Subgroup: Repairs and Alterations

Task Group: K. Moore (PM). M. Quisenberry, G. Scribner, M. Wadkinson

Explanation of Need: These terms are not consistently used throughout the industry. This is to provide guidance to use the correct term when addressing the equipment or the action.

July 2024 Meeting Action: K. Moore presented a PR.

SG R&A Jan. 2025 Meeting Action: K. Moore presented that definitions are being worked on by G. Scribner and M. Wadkinson and motioned to **Close w/No Action**. The motion was **UA**.

SC R&A Jan. 2025 Meeting Action: K. Moore presented a motioned to **Close w/No Action**. The motion was **UA**.

Item Number: A23-09	NBIC Location: Part 3, New Supplement	No Attachment

General Description: Scope and Rules for use of Additive Manufacturing Pressure Parts

Subgroup: Repairs and Alterations

Task Group: G. Galanes (PM), J. Siefert, B. Schaefer, W. Sperko, J. Ferreira, J. Getter, T. Seime, M. Wadkinson

Explanation of Need: Developing rules for the use of additive manufacturing pressure parts in alterations.

July 2024 Meeting Action: G. Galanes presented a PR. This item was approved by the subgroup via letter ballot.

SG R&A Jan. 2025 Meeting Action: G. Galanes presented a status update. This proposal passed SG LB (18-0) and will be on SC R&A's agenda. **PR.**

SC R&A Jan. 2025 Meeting Action: G. Galanes presented a **PR**. This proposal passed SG LB (18-0) and will be Letter Balloted to SC R&A**.**

Item Number: A23-21 **NBIC Location: Part 3, 3.3.4.9** **No Attachment**

General Description: Boiler tube plug guidelines and inclusion or watertube boilers

Subgroup: Repairs and Alterations

Task Group: S. Lombardo (PM), P. Gilston, K. Moore, A. Triplett, T. White, J. Ferriera

Explanation of Need: Currently both firetube and watertube boilers require a boiler tube be plugged when replacement of a tube is not practicable at the time the defective tube is detected.

July 2024 Meeting Action: P. Gilston presented a proposal for a vote. The item failed (Negative Votes: M. Carlson, T. McBee, B. Boseo, P. Davis, P. Becker, S. Marks for P. Shanks, J. Siefert, C. Hopkins, M. Quisenberry, R. Miletti, T. Seime), (Abstentions: B. Schaefer) and only 2 approvals (K. Moore and P. Gilston). This was a PR. J. Ferriera added to the TG.

SG R&A Jan. 2025 Meeting Action: S. Lombardo was selected as the new PM to replace E. Cutlip. This was a **PR**.

SC R&A Jan. 2025 Meeting Action: T. Seime presented a **PR**.

Item Number: A23-24 **NBIC Location: Part 3** **Attachment 16**

General Description: Repairs to quick actuating closures

Subgroup: Repairs and Alterations

Task Group: T. McBee (PM), C. Becker, M. Schaser, A. Khssassi, R. Smith

Explanation of Need: Put safe guidelines for repairs to quick actuating closures.

July 2024 Meeting Action: T. McBee presented a proposal which was UA.

NOTE: This proposal is currently being balloted to Main Committee.

SG R&A Jan. 2025 Meeting Action: This proposal is currently being balloted to Main Committee – Status update

SC R&A Jan. 2025 Meeting Action: This failed MC LB due to lack of votes. 14/22 votes approved; however, 15 votes were needed to reach the 2/3 threshold. This will be on the SC R&A agenda in July or can be LB to the SC and the MC again.

Item Number: A23-35 **NBIC Location: All Parts, 9.1** **No Attachment**

General Description: Definition of "non-load bearing attachment" (All Parts)

Subgroup: Repairs and Alterations

Task Group: T. White (PM), A. Khssassi, P. Lentzer , J. Walker

Explanation of Need: The term "nonload bearing attachment" is used as a basis for determining a routine repair but is not defined in the NBIC.

July 2024 Meeting Action: T. White presented a PR.

SG R&A Jan. 2025 Meeting Action: T. White presented a PR.

SC R&A Jan. 2025 Meeting Action: T. White presented a PR.

Item Number: A23-39 **NBIC Location: Part 3, 3.3.1** **Attachment 17**

General Description: Strengthening Prevention of Defect Recurrence

Subgroup: Repairs and Alterations

Task Group: J. Ferreira (PM), J. Walker, F. Johnson, P. Gilston, A. Henson, G. Galanes, B. Hrubala

Explanation of Need: The existing text recommends, but does not require an investigation of the cause, extent, and likelihood of recurrence of defects. The existing text also has no requirement for anyone to act to prevent the recurrence of defects. Where root and/or proximate causes of defects are known, or could be determined, someone needs to act to prevent catastrophic failure of equipment.

July 2024 Meeting Action: J. Ferreira presented a proposal which was UA by both Subgroup and Subcommittee. During the Main Committee meeting, discussion was held on the applicability of the guidance given in the proposal and the overall wording of the proposal. The Committee asked that the proposal go back to subgroup and subcommittee for additional work.

SG R&A Jan. 2025 Meeting Action: J. Ferreira presented a revised proposal that was **UA**.

SC R&A Jan. 2025 Meeting Action: J. Ferreira presented a revised proposal that was **UA**.

Item Number: A23-40 **NBIC Location: Part 3, 3.3.4.1** **Attachment 18**

General Description: Strengthening Requirements to Ensure Defect Removal

Subgroup: Repairs and Alterations

Task Group: L. Dutra (PM), E. Cutlip, A. Renaldo, R. Valdez, T. McBee, A. Henson

Explanation of Need: The existing text alludes to the potential need for nondestructive examination (NDE) to ensure complete removal of defects but does not require it. The means to ensure defects have been removed must be understood by all to ensure safety. There is an interpretation of the 2021 NBIC that compounds this issue permitting repair organizations to not follow the requirements of NBIC Part 3, 3.3.4.8 even when the characteristics of the defect cannot be fully established.

July 2024 Meeting Action: L. Dutra presented a PR.

SG R&A Jan. 2025 Meeting Action: L. Dutra motioned to **Close w/No Action** based on A23-41 passing. The motion was **UA**.

SC R&A Jan. 2025 Meeting Action: L. Dutra motioned to **Close w/No Action** based on A23-41 passing. The motion was **UA**.

Item Number: A23-61 **NBIC Location: Part 3, S9.3** **No Attachment**

General Description: Revise NBIC R-2 Report and guide

Subgroup: Repairs and Alterations

Task Group: B. Schaefer (PM), T. LeBeau

Explanation of Need: Updates to the R-2 Report and the guide for completing R Report.

July 2024 Meeting Action: B. Schaefer presented a PR.

SG R&A Jan. 2025 Meeting Action: T. LeBeau presented a proposal, and discussions regarding de-coupling the “Pressure Testing” section of the form from the Construction portion led to this to be revised further. Stacey Marks was added to the TG. This was a **PR**.

SG R&A Jan. 2025 Meeting Action: B. Schaefer presented a **PR**.

Item Number: A23-68 **NBIC Location: Part 3, 3.4.4 c) and d)** **No Attachment**

General Description: Changes to Examples of Alterations

Subgroup: Repairs and Alterations

Task Group: M. Schaser (PM), T. McBee, P. Becker, L. Baker

Explanation of Need: The current wording of 3.4.4.d (2023) is open ended and may result in allowing significant design changes to a pressure vessel under the guise of a repair when an alteration is a more appropriate classification. Rewording is required to limit the scope of potential design changes.

July 2024 Meeting Action: M. Schaser presented a PR.

SG R&A Jan. 2025 Meeting Action: M. Schaser presented a **PR**. The proposal that led to discussions on the need to revise the definition of "Alteration". P. Davis was added to the TG to assist with revising the format/content of the examples of alterations further. Mr. Lane Baker requested to be removed from the TG.

SC R&A Jan. 2025 Meeting Action: M. Schaser presented a **PR**

Item Number: A23-77 **NBIC Location: Part 3, 4.2 a)** **No Attachment**

General Description: Performance of Original NDE During Repairs and Alterations

Subgroup: Repairs and Alterations

Task Group: A. Triplett (PM), S. Frazier, J. Walker, R. Collins, P. Becker

Explanation of Need: The existing language in Part 3, Section 4, Paragraph 4.2.a does not provide enough guidance or flexibility for Repair Organizations and owners to prescribe appropriate NDE for repairs/alterations to existing welds. Based on the limited, often non-specific documentation typically available to these entities during NBIC repairs and alterations, additional allowances and direction should be provided.

July 2024 Meeting Action: A. Triplett presented a PR. A Rvw & Comment LB was to go to SG R&A.

NOTE: No LB was issued.

SG R&A Jan. 2025 Meeting Action: T. White presented that a proposal based on the 2025 Ed. Will be worked on. This was a **PR**.

SC R&A Jan. 2025 Meeting Action: T. White presented a **PR**.

Item Number: A24-11 **NBIC Location: Part 3, S9** **No Attachment**

General Description: Addition of a section on the R-1 Form for "Unresolved Issues"

Subgroup: Repairs and Alterations

Task Group: M. Quisenberry (PM), T. Seime, T. McBee, L. Dutra, M. Toth, A. Khssassi, M. Vogt

Explanation of Need: There have been multiple instances discussed during NBIC meetings of Certificate Holders having to leave known defects unrepaired because of the owner/user not wanting to make the repair. This field would allow AIA and Jurisdictional Authorities to be made aware of known and identified issues with a pressure retaining item that were not corrected. Additionally, this provides cover for the Certificate Holder that they identified the defect, brought it to everyone's attention, and the owner/user decided to leave it.

July 2024 Meeting Action: No action was taken on this item, as it was in Rvw & Comment LB from 6/27/24 – 7/18/24.

SG R&A Jan. 2025 Meeting Action: M. Quisenberry presented. Discussions regarding liability led to this being pulled back as a **PR**. The following were added to the TG: L. Dutra, M. Toth, A. Khssassi, M. Vogt.

SC R&A Jan. 2025 Meeting Action: M. Quisenberry presented a **PR**

Item Number: A24-17 **NBIC Location: Part 3, 5.7.5 b)** **No Attachment**

General Description: Specific Requirements For Stamping And Nameplates

Subgroup: Repairs and Alterations

Task Group: E. Cutlip (PM), B. Schaefer, A. Khssassi

Explanation of Need: 2023 ASME Section VIII-Div 1 UG-119(c)(5) has been revised to allow for the use of mechanical etching or laser annealing on nameplates.

July 2024 Meeting Action: B. Schaefer presented a PR.

SG R&A Jan. 2025 Meeting Action: B. Schaefer presented a **PR**.

Item Number: A24-18 **NBIC Location: Part 3, 9.1** **No Attachment**

General Description: Definition of Controlled Fill

Subgroup: Repairs and Alterations

Task Group: P. Gilston (PM), A. Triplett, R. Collins, F. Johnson

Explanation of Need: Interpretation item I 23-79 addresses the use of the term 'controlled fill' in relation to welding method 6. The term is used in 2.5.3 d in relation to welding method 6 and more specifically in Supplement 8. Supplement 8 gives a lot of detail in schematics about a controlled fill in terms of weld bead placement, its use in controlling heat input etc., but in Welding Method 6 the term is not specifically used, but direction for welding is given, typically preheats are specified, electrode size for SMAW, and the use of stringer beads only.

July 2024 Meeting Action: P. Gilston presented a proposal which was UA by SG. This will need to be voted on by Parts 1, 2, and 4.

SG R&A Jan. 2025 Meeting Action: P. Gilston presented a proposal which has yet to be voted on by SG for Part 2. This was a **PR**.

SC R&A Jan. 2025 Meeting Action: P. Gilston presented a status update. This has passed the SC of all Parts and is ready for MC consideration. **Status Update.**

MC- 6 in favor, 8 opposed, 1 abstain

Item Number: A24-20 **NBIC Location: Part 3, 9.1** **No Attachment**

General Description: Define "Engineered Repairs" and "Engineered Alterations"

Subgroup: Repairs and Alterations

Task Group: M. Schaser (PM), B. Ray, R. Underwood, B. Boseo, D. Marek, J. Siefert, P. Becker

Explanation of Need: The new supplement dealing with "Engineered Repairs and Alterations" (A21-45) will impact Part 3 Section 1, the NB-415, QRRs, the application process for Certificate Holders, and other documents to be determined. Defining "Engineered Repairs" and "Engineered Alterations" clarify the intent for these new scopes.

July 2024 Meeting Action: M. Schaser presented a PR.

SG R&A Jan. 2025 Meeting Action: M. Schaser presented a **PR** until BOT allows for the revisions in NB-415 to be accepted.

SC R&A Jan. 2025 Meeting Action: M. Schaser presented a **PR**

Item Number: A24-21	NBIC Location: Part 3, 9.1	No Attachment

General Description: Engineered Repairs and Alterations - Section 1 Scope and Manual reqs

Subgroup: Repairs and Alterations

Task Group: M. Schaser (PM), B. Ray, R. Underwood, B. Boseo, D. Marek, J. Siefert, P. Becker

Explanation of Need: The scope of "Engineered Repairs and Alterations" (A21-45) needs to be clarified in 1.4.1 d) and reflected in the scope statement requirements for manuals in 1.5.1 a).

July 2024 Meeting Action: M. Schaser presented a PR.

SG R&A Jan. 2025 Meeting Action: M. Schaser presented a **PR**.

SC R&A Jan. 2025 Meeting Action: M. Schaser presented a **PR**

Item Number: A24-60	NBIC Location: Part 3, 3.3.5.2 a) and 3.4.5.1	Attachment 19

General Description: Revise the repair and alteration Sect VIII Div 2 and 3 paragraphs

Subgroup: Repairs and Alterations

Task Group: R. Collins (PM) T. LeBeau, A. Triplett

Explanation of Need: A revision of Part 3, 3.3.5.2 a) and 3.4.5.1 a), b), and c) are needed to reconcile the NBIC to Divisions 2 and 3 of ASME Section VIII. The attached proposal includes the complete revision draft.

July 2024 Meeting Action: R. Collins presented a PR.

Note: T. Le Beau and A. Triplett added to TG per email from B. Underwood dated 7/25/24.

SG R&A Jan. 2025 Meeting Action: R. Collins presented a proposal that was slightly revised and **UA**.

SC **R&A Jan. 2025 Meeting Action:** R. Collins presented a proposal that was **UA**.

Item Number: A24-61 **NBIC Location: Part 3, 2.5.3 e) and 4.2** **No Attachment (See I24-16)**

General Description: Relocate Volumetric NDE requirement for Weld Repair Greater than 3/8-inch

Subgroup: Repairs and Alterations

Task Group: M. Schaser (PM), M. Quisenberry, K. Derrik, and B. Schaefer

Explanation of Need: Relocate the volumetric NDE requirement for weld repairs of 3/8-inch depth or greater from paragraph 2.5.3.e to paragraph 4.2.

July 2024 Meeting Action: M. Schaser presented a PR. M. Quisenberry, K. Derrik, and B. Schaefer were added to the TG.

SG R&A Jan. 2025 Meeting Action: M. Schaser presented a motion to **Close w/No Action** due to the passing of I24-16. The motion was **UA**.

SC R&A Jan. 2025 Meeting Action: M. Schaser presented a motion to **Close w/No Action** due to the passing of I24-16. The motion was **UA**.

New Action Items:

Item Number: A24-85 **NBIC Location: Part 3, 3.4.4 m)** **Attachment 20**

General Description: Example of alterations to include requalification of cycle life

Subgroup: Repairs and Alterations

Task Group: B. Underwood

Explanation of Need: Currently vessels above 10,000 psi are being "requalified" without any code documentation. This puts a conflict between the ASME data report limitations and the actual installation. This practice is being completed without inspector involvement.

SG & SC R&A January 2025 Meeting Action: R. Underwood selected as PM. Discussion led to a **UA** motion to send a **Letter to Inquirer stating this is addressed by the following:**

- **NBIC Part 3, 3.4.5.1**
- **INTERP 23-16**
- **INTERP 19-15**

MC – Venus neg vote

Item Number: A24-93 **NBIC Location: Part 3, Supplement 8** **Attachment 21**

General Description: Changing Part 3 supplement 8's title for clarity

Subgroup: Repairs and Alterations

Task Group: P. Shanks (PM)

Explanation of Need: Use of pressure equipment is unusual within NB-23 and has cause confusion within the industry as to the applicability for Supplement 8.

SG R&A January 2025 Meeting Action: P. Shanks presented a proposal to update the title of Supplement 8 to replace "Pressure Vessels" with "Pressure Retaining Items". The proposal was **UA**.

SC R&A January 2025 Meeting Action: P. Shanks presented a proposal that was UA.

Item Number: A24-96 **NBIC Location: Part 3, 5.5 a)** **No Attachment**

General Description: Add examples of repairs and alterations specific to Electrochemical Stacks

Subgroup: Repairs and Alterations

Task Group: A. Triplett (PM), R. Collins, R. Miletti

Explanation of Need: With inclusion and initial deployments of electrochemical stacks as U Stamped pressure vessels under ASME BPVC Section VIII Division 1 and Code Case 3078, these stacks are starting to be shipped and registered with the National Board. Some basic examples of allowed repairs are needed to help guide an understanding of limitations for electrochemical stacks.

SG R&A January 2025 Meeting Action: A. Triplett presented, and discussion was held regarding that this proposal was predicated on the existing language dealing with PHE, however there is no definition of "active cell components" as used in the proposal. Mr. Triplett indicated he would work with Mr. Matt Sweetland (gave presentation on ECS and is originator of this Code revision) to address the concerns of the TG. Riley Collins and Ray Miletti were added to the TG. This was a **PR**.

SC R&A January 2025 Meeting Action: A. Triplett presented a **PR**.

Item Number: A24-98	NBIC Location: Part 3, 2.5.2	No Attachment

General Description: Review and revise the PWHT Requirements in 2.5.2

Subgroup: Repairs and Alterations

Task Group: P. Gilston (PM)

Explanation of Need: Simplify PWHT requirements in 2.5.2.

January 2025 Meeting Action: P. Gilston presented a **PR** - that he will be revising to simplify Heat Band and Soak Band dimensions and will be submitting a Rvw & Comment LB in the coming days. M. Schaser and W. Sperko were added to the SG.

SC R&A January 2025 Meeting Action: P. Gilston presented a **PR**.

Item Number: A25-04	NBIC Location: Part 3, 2.5.3	No Attachment

General Description: Part 3, 2.5.3 Special Service Equipment

Subgroup: Repairs and Alterations

Task Group: R. Derby (PM), P. Gilston

Explanation of Need: An interpretation request was received regarding the use of alternate welding methods for pressure equipment identified as Special Service. Comments received in the initial R&C indicated that the current words did not support the proposed Q&A. The proposal had been presented as an intent interpretation, and the comment was made if this was the desire, then to have a separate action item.

SG Jan. 2025 Meeting Action: P. Gilston presented a new proposal (added today) that was revised and **UA** by the SG.

SC R&A January 2025 Meeting Action: P. Gilston presented a **PR** - that this item will go to LB SC

12. Future Meetings

- July 7-10, 2025 – Cincinnati, OH
- January 12-15, 2026 – New Orleans, LA

13. Adjournment @ 2:12 EST by Chair Moore

Respectfully submitted,

Terrence Hellman

Terrence Hellman

SC R&A Secretary

Subcommittee Repairs and Alterations

	Full Name	Email Address	Company Name	Registration Type	Role
x	**Toth, Marty**	mtoth@boiscotraininggroup.com		Remote	Member - Vice Chair
x	**Moore, Kathy**	kathymoore@joemoorecompany.com	Joe Moore & Company, Inc	In-person	Member - Chair
x	**Becker, Pat**	pbecker@epri.com	EPRI	In-person	Member
x	**Boseo, Brian**	bmboseo@burnsmcd.com	Burns & McDonnell	In-person	Member
x	**Carlson, Mike**	camx235@lni.wa.gov	State of Washington	In-person	Member
x	**Davis, Paul**	paul.davis22@woodplc.com	Wood Group USA, Inc.	In-person	Member
x	**Gilston, Philip**	philip_gilston@hsb.com	Hartford Steam Boiler Inspection and Insurance Company	In-person	Member
x	**Hopkins, Craig**	CHOPKINS@SEATTLEBOILER.COM	Seattle Boiler Works, Inc.	In-person	Member
x	**McBee, Timothy**	Timothy.McBee@tuvsud.com	ARISE Boiler Inspection and Insurance Company RRG	In-person	Member
x	**Miletti, Ray**	rlmiletti@babcock.com	Babcock & Wilcox	In-person	Member
x	**Quisenberry, Michael**	michael@spartan-mech.com	Spartan Boiler	In-person	Member
x	**Schaefer, Ben**	bschaefer@aep.com	AEP	In-person	Member
x	**Seime, Trevor**	tsseime@nd.gov	State of North Dakota	In-person	Member
x	**Shanks, Paul**	paul.shanks@tuvsud.com	ARISE	In-person	Member
x	**Valdez, Richard**	rvaldez@prim.com	ARB, INC.	In-person	Member
x	**Frazier, Steve**	steve.frazier@seattle.gov	City of Seattle	Remote	Member
x	**Moedinger, Linn**	linnwm@supernet.com	Strasburg Rail Road	Remote	Member
x	**Sekely, Jim**	jsekely@comcast.net	Welding Services, Inc.	Remote	Member
	Morelock, Brian	morelock@eastman.com			Member
x	**Siefert, John**	jsiefert@epri.com		In-person	Member
x	Amato, Joel	jamato@nationalboard.org	NBBI	In-person	
x	Baker, Lane	LBaker@US.TUV.com	TUV Rheinland AIA Services LLC.	In-person	
x	Bates, Johnathon	bates@ibb026.org	Boilermakers	In-person	
x	Burpee, John	john.h.burpee@maine.gov	State of Maine	In-person	
x	Cheng, Alex	kinwai.cheng@dot.gov	US DOT PHMSA	In-person	
x	Collins, Riley	rileycollins@eastman.com	Eastman Chemical Company	In-person	
x	Derby, Bob	rderby@uanet.org	United Association	In-person	
x	Derrick, Kiwi	kiwi.derrick@chevron.com	Chevron	In-person	
x	Dinic, Caslav	cdinic@tssa.org	Technical Standards and Safety Authority - Ontario	In-person	
x	Dutra, Louis	Ldutra@baycityboiler.com	Bay City Boiler	In-person	
x	Ferreira, Jon	JONATHAN_FERREIRA@HSB.COM	Hartford Steam Boiler Inspection and Insurance Company	In-person	
x	Hrubala, Bernie	bhrubala@us.tuv.com	TUV Rheinland AIA Services	In-person	
x	Khssassi, Aziz	AKHSSASSI@HOTMAIL.COM	Régie du bâtiment du Québec	In-person	
x	LeBeau, Tim	tclebeau@southernco.com	Southern Company Services	In-person	
x	Melfi, Teresa	teresa_melfi@lincolnelectric.com	Lincoln Electric	In-person	
x	Misiewicz, Ken	kmisiewicz@pleuneservice.com	Pleune Service Company	In-person	
	Reamey, Raymond	rreamey@turner-industries.com	Turner Industries Group	In-person	

x	Schaser, Matt	mschaser@e2g.com	The Equity Engineering Group, Inc.	In-person	
x	Simmons, Timothy	tsimmons@boilermakers.org	International Brotherhood of Boilermakers	In-person	
x	Sperko, Walter	wsperko@bellsouth.net	Sperko Engineering	In-person	
x	Spuhl, Raymond	raymond_spuhl@hsb.com	Hartford Steam Boiler Inspection and Insurance Company	In-person	
	Stevens, Will	Wstevens@lmce.solutions	Liquidmetal	In-person	
x	Sweetland, Matthew	msweetland@plugpower.com	Plug Power, Inc.	In-person	
x	Underwood, Bob	robert_underwood@hsb.com	Hartford Steam Boiler	In-person	
x	Vogt, Mark	mark.vogt@vistracorp.com	VISTRA	In-person	
x	Wadkinson, Melissa	melissa.wadkinson@fulton.com	Fulton Thermal Corp	In-person	
x	White, Thomas	THOMAS.WHITE@NRG.COM	NRG Energy	In-person	
	Adeoti, Adenike	adenike.adeoti@tsask.ca	Technical Safety Authority of Saskatchewan	Remote	
	Alajrami, Hussein	hussein.alajrami@mts-jor.com	MTS Multi Task Services	Remote	
	Ali, Sajjad	sajjad.ali2592@gmail.com	Sinopec	Remote	
x	Barkdoll, Ken	ken.barkdoll@tuvsud.com		Remote	
x	Barr, Larry	lbarr@propanetank.com		Remote	
x	Beise, Kim	kbeise@dowcovalve.com		Remote	
x	Brantigan, Steven	steven.brantigan@labor.ny.gov		Remote	
x	Chruchill, Jeff	jeff_churchill@cargill.com		Remote	
x	Clark, James	james.clark@WTHG.com		Remote	
x	Dacanay, Julius	julius.j.dacanay@hawaii.gov	State of Hawaii	Remote	
x	Dexter, David	dexterde@dow.com		Remote	
x	Donaldson, Alfred	alfred.donaldson@BakerHughes.com		Remote	
	DuBon, Rob	robert.dubon@ladwp.com	LADWP	Remote	
	Gladden, Billy	gladdebj@oge.com	Oklahoma Gas and Electric Company	Remote	
x	Hadley, James			Remote	
x	Haney, Clifford	clifford.haney@tuvsud.com	Arise	Remote	
x	Henson, Adam	adam.henson@csb.gov	U.S. Chemical Safety and Hazard Investigation Board	Remote	
x	Jessick, Jerry	jjessick@fusion-etc.com		Remote	
x	Johnson, Zachary	zach.johnson@cenovus.com	Cenovus Energy / Toledo Refinery	Remote	
	Kamboj, Rajesh	Rajesh.Kamboj@technicalsafetybc.ca	Technical Safety BC	Remote	
	Kerr, James	jamesmarinakerr@gmail.com	Pro-Par inc	Remote	
x	Kleiss, Jeff	jkleiss@lochinvar.com		Remote	
x	Kopp, Gavin	gavin@stateboilerinspectors.com		Remote	
x	Lombardo, Steven	steven.lombardo@ge.com	GE Vernova	Remote	
x	Lynch, Daniel	danl@isbservices.com	Industrial Steel & Boiler Services, Inc.	Remote	
x	Lynn, Robert	robert.lynn@setpointis.com		Remote	
x	Maher, Thomas	Thomas.Maher@cityofchicago.org		Remote	
x	Marks, Stacey	stacey.marks@bureauveritas.com	Bureau Veritas	Remote	
x	McGuire, Robert	robert.b.mcguire@ge.com	GE Vernova	Remote	

x	Nutter, Brandon	Brandon.k.nutter-1@dupont.com		Remote	
x	Patel, Thakor	thakorpatel1@gmail.com		Remote	
	Patel, Tusharkumar	tusharpatel0914@gmail.com	Applus Certification Services	Remote	
x	Shumskiy, Jeremiah	jeremiahs@isbservices.com		Remote	
x	Speck-Kern, Edward	edward.speck-kern@fpl.com	Florida Power & Light Co.	Remote	
x	Triplett, Andrew	triplettal@ornl.gov	UT-Battelle, LLC	Remote	
x	Viet, Aaron	aaronv@cgthermal.com	CG THERMAL LLC	Remote	
x	Wagner, Thomas	thomas.wagner@fmglobal.com	FM	Remote	
x	Winters, Michael	michael@stateboilerinspectors.com	ABI	Remote	
x	Wolf, Jon	jon.wolf@zurichna.com		Remote	
x	Goossens, Greg	ggoossens@nbbi.org	National Board of Boiler and Pressure Vessel Inspectors	Staff	
x	Hellman, Terrence	thellman@nationalboard.org	National Board of Boiler and Pressure Vessel Inspectors	Staff	
x	Ponce, Luis	lponce@nationalboard.org	National Board of Boiler and Pressure Vessel Inspectors	Staff	
x	Rogers, Christa	crogers@nationalboard.org	NBBI	Staff	

Subcommittee Repairs and Alterations

Full Name	Email Address	Company Name	Registration Type	Role
Toth, Marty	mtoth@boiscotraininggroup.com			Member - Vice Chair
Moore, Kathy	kathymoore@joemoorecompany.com	Joe Moore & Company, Inc	In-person	Member - Chair
Becker, Pat	pbecker@epri.com	EPRI	In-person	Member
Boseo, Brian	bmboseo@burnsmcd.com	Burns & McDonnell	In-person	Member
Carlson, Mike	camx235@lni.wa.gov	State of Washington	In-person	Member
Davis, Paul	paul.davis22@woodplc.com	Wood Group USA, Inc.	In-person	Member
Gilston, Philip	philip_gilston@hsb.com	Hartford Steam Boiler Inspection and Insurance Company	In-person	Member
Hopkins, Craig	CHOPKINS@SEATTLEBOILER.COM	Seattle Boiler Works, Inc.	In-person	Member
McBee, Timothy	Timothy.McBee@tuvsud.com	ARISE Boiler Inspection and Insurance Company RRG	In-person	Member
Miletti, Ray	rlmiletti@babcock.com	Babcock & Wilcox	In-person	Member
Quisenberry, Michael	michael@spartan-mech.com	Spartan Boiler	In-person	Member
Schaefer, Ben	bschaefer@aep.com	AEP	In-person	Member
Seime, Trevor	tsseime@nd.gov	State of North Dakota	In-person	Member
Shanks, Paul	paul.shanks@tuvsud.com	ARISE	In-person	Member
Valdez, Richard	rvaldez@prim.com	ARB, INC.	In-person	Member
Frazier, Steve	steve.frazier@seattle.gov	City of Seattle	Remote	Member
Moedinger, Linn	linnwm@supernet.com	Strasburg Rail Road	Remote	Member
Sekely, Jim	jsekely@comcast.net	Welding Services, Inc.	Remote	Member
Morelock, Brian	morelock@eastman.com			Member
Siefert, John	jsiefert@epri.com	EPRI		Member
Amato, Joel	jamato@nationalboard.org	NBBI	In-person	
Baker, Lane	LBaker@US.TUV.com	TUV Rheinland AIA Services LLC.	In-person	
Bates, Johnathon	bates@ibb026.org	Boilermakers	In-person	
Burpee, John	john.h.burpee@maine.gov	State of Maine	In-person	
Cheng, Alex	kinwai.cheng@dot.gov	US DOT PHMSA	In-person	
Collins, Riley	rileycollins@eastman.com	Eastman Chemical Company	In-person	
Derby, Bob	rderby@uanet.org	United Association	In-person	
Derrick, Kiwi	kiwi.derrick@chevron.com	Chevron	In-person	
Dinic, Caslav	cdinic@tssa.org	Technical Standards and Safety Authority - Ontario	In-person	
Dutra, Louis	Ldutra@baycityboiler.com	Bay City Boiler	In-person	
Ferreira, Jon	JONATHAN_FERREIRA@HSB.COM	Hartford Steam Boiler Inspection and Insurance Company	In-person	
Hrubala, Bernie	bhrubala@us.tuv.com	TUV Rheinland AIA Services	In-person	Visitor
Khssassi, Aziz	~~AKHSSASSI@HOTMAIL.COM~~	Régie du bâtiment du Québec (aziz.khssassi@rbq.gouv.qc.ca)	In-person	Visitor
LeBeau, Tim	tclebeau@southernco.com	Southern Company Services	In-person	
Melfi, Teresa	teresa_melfi@lincolnelectric.com	Lincoln Electric	In-person	
Misiewicz, Ken	kmisiewicz@pleuneservice.com	Pleune Service Company	In-person	

Reamey, Raymond	rreamey@turner-industries.com	Turner Industries Group	In-person	
Schaser, Matt	mschaser@e2g.com	The Equity Engineering Group, Inc.	In-person	
Simmons, Timothy	tsimmons@boilermakers.org	International Brotherhood of Boilermakers	In-person	
Sperko, Walter	wsperko@bellsouth.net	Sperko Engineering	In-person	
Spuhl, Raymond	raymond_spuhl@hsb.com	Hartford Steam Boiler Inspection and Insurance Company	In-person	
Stevens, Will	Wstevens@lmce.solutions	Liquidmetal	In-person	
Sweetland, Matthew	msweetland@plugpower.com	Plug Power, Inc.	In-person	
Underwood, Bob	robert_underwood@hsb.com	Hartford Steam Boiler	In-person	
Vogt, Mark	mark.vogt@vistracorp.com	VISTRA	In-person	
Wadkinson, Melissa	melissa.wadkinson@fulton.com	Fulton Thermal Corp	In-person	
White, Thomas	THOMAS.WHITE@NRG.COM	NRG Energy	In-person	
Adeoti, Adenike	adenike.adeoti@tsask.ca	Technical Safety Authority of Saskatchewan	Remote	
Alajrami, Hussein	hussein.alajrami@mts-jor.com	MTS Multi Task Services	Remote	
Ali, Sajjad	sajjad.ali2592@gmail.com	Sinopec	Remote	
Dacanay, Julius	julius.j.dacanay@hawaii.gov	State of Hawaii	Remote	
DuBon, Rob	robert.dubon@ladwp.com	LADWP	Remote	
Gladden, Billy	gladdebj@oge.com	Oklahoma Gas and Electric Company	Remote	
Haney, Clifford	clifford.haney@tuvsud.com	Arise	Remote	
Henson, Adam	adam.henson@csb.gov	U.S. Chemical Safety and Hazard Investigation Board	Remote	
Johnson, Zachary	zach.johnson@cenovus.com	Cenovus Energy / Toledo Refinery	Remote	
Kamboj, Rajesh	Rajesh.Kamboj@technicalsafetybc.ca	Technical Safety BC	Remote	
Kerr, James	jamesmarinakerr@gmail.com	Pro-Par inc	Remote	
Lombardo, Steven	steven.lombardo@ge.com	GE Vernova	Remote	
Lynch, Daniel	danl@isbservices.com	Industrial Steel & Boiler Services, Inc.	Remote	
Marks, Stacey	stacey.marks@bureauveritas.com	Bureau Veritas	Remote	
Patel, Tusharkumar	tusharpatel0914@gmail.com	Applus Certification Services	Remote	
Speck-Kern, Edward	edward.speck-kern@fpl.com	Florida Power & Light Co.	Remote	
Triplett, Andrew	triplettal@ornl.gov	UT-Battelle, LLC	Remote	
Viet, Aaron	aaronv@cgthermal.com	CG THERMAL LLC	Remote	
Wagner, Thomas	thomas.wagner@fmglobal.com	FM	Remote	
Winters, Michael	michael@stateboilerinspectors.com	ABI	Remote	
Goossens, Greg	ggoossens@nbbi.org	National Board of Boiler and Pressure Vessel Inspectors	Staff	
Hellman, Terrence	thellman@nationalboard.org	National Board of Boiler and Pressure Vessel Inspectors	Staff	
Ponce, Luis	lponce@nationalboard.org	National Board of Boiler and Pressure Vessel Inspectors	Staff	
Rogers, Christa	crogers@nationalboard.org	NBBI	Staff	
Chatham, Everett	EChatham@bechtel.com	BECHTEL	in person	
Spuhl, Raymond	raymond_spuhl@HSB.com	HSB	(in person	

G. Galanes				

NBIC Interpretation Item I24-16
Submitted by Luis Ponce (LPonce@nbbi.org)
12/05/2024

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	Volumetric Examination when using alternative welding methods without PWHT
NBIC Location:	2023 NBIC Part 3, 2.5.3 e)
Statement 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.
Background Information:	A discussion arose during an NBBI examination question review, specifically whether welds greater than 3/8 in. (10 mm) deep or other welds in a pressure retaining item that were originally required to be volumetrically examined by the rules of the original code of construction are required to be volumetrically examined.
Proposed Question:	Is volumetric examination required when using Alternative Weld Methods for welds greater than 3/8 in. or welds that required volumetric examination at construction?
Proposed Reply:	Yes.
Committee's Question:	Are the requirements for volumetric examination of weld repairs/alterations of cavities with depths 3/8-inch or greater, associated with alternative weld methods without PWHT as described in Part 3 paragraph 2.5.3.e, limited to those listed in Part 3 paragraph 4.2?
Committee's Reply:	Yes.

NBIC Interpretation Item I24-16
Submitted by Luis Ponce (LPonce@nbbi.org)
12/05/2024

Rationale:	Paragraph 2.5.3.e indicates that weld repairs of cavities 3/8-inch or greater require additional examination in accordance with paragraph 4.2. No additional volumetric NDE requirements are listed in 2.5.3.e based on the current edition of NBIC (2025).

Interpretation I24-16 Synopsis

2.5.3 ALTERNATIVE WELDING METHODS WITHOUT POSTWELD HEAT TREATMENT

2015

e) Nondestructive Examination of Welds

Prior to welding, the area prepared for welding shall be examined using either the Magnetic Particle (MT) or the Liquid Penetrant (PT) examination method to determine that no defects exist. After the finished weld has reached ambient temperature, and, when required by the specific welding method, the surface temper bead reinforcement layer has been removed substantially flush with the surface of the base metal, the weld shall be examined again by either of the above methods to determine that no defects exist using acceptance standards acceptable to the Inspector or original code of construction. In addition, welds greater than 3/8 in. (9.6 mm) deep or welds in a boiler, pressure vessel, or piping system that were originally required to be radiographed by the rules of the original code of construction, shall be radiographically examined. In situations where it is not practical to perform radiography, the accessible surfaces of each non radiographed repair weld shall be fully examined using the MT or PT method to determine that no defects exist and the maximum allowable working pressure and/or allowable temperature shall be re-evaluated to the satisfaction of the jurisdiction at the location of installation.

4.2 NONDESTRUCTIVE EXAMINATION

a) The nondestructive examination (NDE) requirements, including technique, extent of coverage, procedures, personnel qualification, and acceptance criteria, shall be in accordance with the original code of construction for the pressure-retaining item. Weld repairs and alterations shall be subjected to the same nondestructive examination requirements as the original welds. Where this is not possible or practicable, alternative NDE methods acceptable to the Inspector and the Jurisdiction where the pressure-retaining item is installed, where required, may be used.

2017

e) Nondestructive Examination of Welds

Prior to welding, the area prepared for welding shall be examined using either the Magnetic Particle (MT) or the Liquid Penetrant (PT) examination method to determine that no defects exist. After the finished weld has reached ambient temperature, and, when required by the specific welding method, the surface temper bead reinforcement layer has been removed substantially flush with the surface of the base metal, the weld shall be examined again by either of the above methods to determine that no defects exist using acceptance standards acceptable to the Inspector or original code of construction. In addition, welds greater than 3/8 in. (9.6 mm) deep or welds in a boiler, pressure vessel, or piping system that were originally required to be radiographed by the rules of the original code of construction, shall be radiographically examined. In situations where it is not practical to perform radiography, the accessible surfaces of each non radiographed repair weld shall be fully examined using the MT or PT method to determine that no defects exist and the maximum allowable working pressure and/or allowable temperature shall be re-evaluated to the satisfaction of the jurisdiction at the location of installation.

4.2 NONDESTRUCTIVE EXAMINATION

a) The nondestructive examination (NDE) requirements, including technique, extent of coverage, procedures, personnel qualification, and acceptance criteria, shall be in accordance with the original code of construction for the pressure-retaining item. Weld repairs and alterations shall be subjected to the same nondestructive examination requirements as the original welds. Where this is not possible or practicable, alternative NDE methods acceptable to the Inspector and the Jurisdiction where the pressure-retaining item is installed, where required, may be used.

2019

e) Nondestructive Examination of Welds

Prior to welding, the area prepared for welding shall be examined using either the Magnetic Particle (MT) or the Liquid Penetrant (PT) examination method to determine that no defects exist. After the finished weld has reached ambient temperature, and, when required by the specific welding method, the surface temper bead reinforcement layer has been removed substantially flush with the surface of the base metal, the weld shall be examined again by either of the above methods to determine that no defects exist using acceptance standards acceptable to the Inspector or original code of construction. In addition, welds greater than 3/8 in. (10 mm) deep or welds in a pressure retaining item that were originally required to be volumetrically examined by the rules of the original code of construction, shall be examined in accordance with paragraph NBIC Part 3, 4.2.

4.2 NONDESTRUCTIVE EXAMINATION

a) The nondestructive examination (NDE) requirements, including technique, extent of coverage, procedures, personnel qualification, and acceptance criteria, shall be in accordance with the original code of construction for the pressure-retaining item. Weld repairs and alterations shall be subjected to the same nondestructive examination requirements as the original welds. Where this is not possible or practicable, alternative NDE methods acceptable to the Inspector and the Jurisdiction where the pressure-retaining item is installed, where required, may be used.

2021

e) Nondestructive Examination of Welds

Prior to welding, the area prepared for welding shall be examined using either the Magnetic Particle (MT) or the Liquid Penetrant (PT) examination method to determine that no defects exist. After the finished weld has reached ambient temperature, and, when required by the specific welding method, the surface temper bead reinforcement layer has been removed substantially flush with the surface of the base metal, the weld shall be examined again by either of the above methods to determine that no defects exist using acceptance standards acceptable to the Inspector or original code of construction. In addition, welds greater than 3/8 in. (10 mm) deep or welds in a pressure retaining item that were originally required to be volumetrically examined by the rules of the original code of construction, shall be examined in accordance with paragraph NBIC Part 3, 4.2.

4.2 NONDESTRUCTIVE EXAMINATION

a) The nondestructive examination (NDE) requirements, including technique, extent of coverage, procedures, personnel qualification, and acceptance criteria, shall be in accordance with the original code of construction for the pressure-retaining item. Weld repairs and alterations shall be subjected to the same nondestructive examination requirements as the original welds. Where this is not possible or practicable, alternative NDE methods acceptable to the Inspector and the Jurisdiction where the pressure-retaining item is installed, where required, may be used, provided that all other requirements of this section are met.

2023

e) Nondestructive Examination of Welds

Prior to welding, the area prepared for welding shall be examined using either the Magnetic Particle (MT) or the Liquid Penetrant (PT) examination method to determine that no defects exist. After the finished weld has reached ambient temperature, and, when required by the specific welding method, the surface temper bead reinforcement layer has been removed substantially flush with the surface of the base metal, the weld shall be examined again by either of the above methods to determine that no defects exist using acceptance standards acceptable to the Inspector or original code of construction. In addition, welds greater than 3/8 in. (10 mm) deep or welds in a pressure retaining item that were originally required to be volumetrically examined by the rules of the original code of construction, shall be examined in accordance with paragraph NBIC Part 3, 4.2.

4.2 NONDESTRUCTIVE EXAMINATION

a) Nondestructive examination (NDE) requirements, including technique, extent of coverage, procedures, personnel qualification, and acceptance criteria, shall be in accordance with the original code of construction, standard, or specification selected for the repair or alteration of the pressure-retaining item (see NBIC Part 3, 1.2). Weld repairs and alterations shall be subjected to the same nondestructive examination requirements as the original welds. Where this is not possible or practicable, alternative NDE methods acceptable to the Inspector and the Jurisdiction where the pressure-retaining item is installed, where required, may be used, provided that all other requirements of this section are met.

Where the welds were subject to volumetric NDE during construction, repairs may be made to the base material and weld joints without volumetric examination under the following conditions:

1) The repair depth does not exceed the lesser of 1/8 inch (3 mm) or 25% of the nominal base material thickness;

2) The aggregate repair length is no longer than 6 inches (150 mm);

3) The repair cavity and each layer of deposited weld, including the final weld surface, have been examined by MT or PT.

2025 Proposed Revision

e) Nondestructive Examination of Welds
Prior to welding, the area prepared for welding shall be examined using either the Magnetic Particle (MT) or the Liquid Penetrant (PT) examination method to determine that no defects exist. After the finished weld has reached ambient temperature, and, when required by the specific welding method, the surface temper bead reinforcement layer has been removed substantially flush with the surface of the base metal, the weld shall be examined again by either of the above methods to determine that no defects exist using acceptance standards acceptable to the Inspector or original code of construction. In addition, ~~welds greater than 3/8 in. (10 mm) deep or welds in a pressure retaining item that were originally required to be volumetrically examined by the rules of the original code of construction,~~ all welds shall be examined in accordance with paragraph NBIC Part 3, 4.2.

1998 **PART RD REPAIR METHODS**

RD-1000 WELDING METHODS AS ALTERNATIVES TO POSTWELD HEAT TREATMENT

RD-1010 SCOPE

a. Under certain conditions, postweld heat treatment in accordance with the original code of construction may be inadvisable or impractical. In such instances, the following alternative methods may be used.

b. Competent technical advice shall be obtained from the manufacturer of the pressure retaining item or from another qualified source, such advice being especially necessary if the alternative is to be used in highly stressed areas, if service conditions are conducive to stress corrosion cracking, if materials are subject to hydrogen embrittlement or are operating at temperatures in the creep range, or if the alternative is being considered for "on-stream" repairs or "hot tapping" on piping systems. Selection of the welding method used shall be based on the rules of the original code of construction together with the above mentioned advice concerning the adequacy of the weld in the as-welded condition at operating and pressure test conditions.

c. When reference is made in this part to materials by the ASME designation, P-Number and Group Number, the requirements of this part apply to the applicable materials of the original code of construction, either ASME or other, which conform by chemical composition and mechanical properties to the ASME P-Number and Group Number designations.

RD-1020 NONDESTRUCTIVE EXAMINATION OF WELDS

Prior to welding, the area prepared for welding shall be examined using either the magnetic particle (MT) or the liquid penetrant (PT) examination method to determine that no defects exist. After the finished repair weld has reached ambient temperature, the weld shall be examined again by either of the above methods to determine that no defects exist using acceptance standards acceptable to the Inspector or original code of construction. In addition, welded repairs greater than 3/8 in. (9.6 mm) deep or welds in a boiler, pressure vessel or piping systems that were originally required to be radiographed by the rules of the original code of construction, shall be radiographically examined. In situations where it is not practical to perform radiography the accessible surfaces of each nonradiographed repair weld shall be fully examined using the MT or PT method to determine that no defects exist, and the maximum allowable working pressure and/or allowable temperature shall be reevaluated to the satisfaction of the jurisdiction at the location of installation.

RD-1030 WELDING METHOD 1

a. This method may be used when the applicable rules of the original code of construction did not require notch toughness testing.

b. The materials shall be limited to P-No. 1, Group 1, 2, and 3, and to P-No. 5, Group 1 and 2 (excluding Mn-Mo steels in Group 2), as permitted for welded construction by the applicable rules of the original code of construction.

c. The welding shall be limited to the shielded metal-arc welding (SMAW), gas metal-arc welding (GMAW), fluxcored arc welding (FCAW) and gas tungsten-arc welding (GTAW) processes.

101

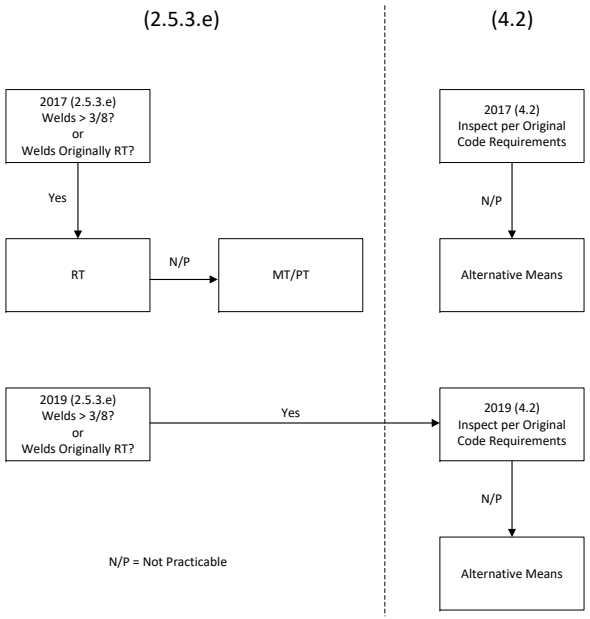
INTERPRETATION 17-13

Subject: Alternative NDE methods acceptable to the Inspector and the Jurisdiction

Edition: 2017

Question: With respect to the RT requirement in 2.5.3 e); is it the intent of the reference to alternative methods acceptable to the original code of construction in paragraph 4.2 a) that UT examination may be used in place of RT examination when the original code of construction allows such examination?

Reply: Yes. These provisions have already been approved and clarified in the upcoming release of the NBIC 2019 Edition.



THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

PROPOSED INTERPRETATION

Item No.

24-19

Subject/Title

NB-23 2023 Part 3, section 4, article 4.2 - Volumetric NDE on weld

Project Manager and Task Group

Louis Dutra, Michael Quisenberry

Source (Name/Email)

Guy Ouellet / Guy.Ouellet@valero.com

Statement of Need

Is it ok with just MT NDE or need also Volumetric NDE of all the build up area include base metal.

Background Information

We have a corroded zone of about 3 feet by 6 feet on the shell and head and the depth do not exceed the corrosion allowance. The corrosion zone included a weld that was 100% RT.

Proposed Question

Does weld buildup of an existing weld subject to volumetric NDT during construction require volumetric NDT if the repair depth is within the corrosion allowance?

Proposed Reply

No, provided all three conditions of 4.2 (a), 1,2 and 3 are met.

Committee's Question 1

If weld metal buildup is performed over an existing weld that originally required volumetric examination, is the weld required to meet all requirements of NBIC Part 3, 4.2 a), to be exempted from volumetric NDE?

Committee's Reply 1

Yes.

Rationale

Committee's Question 2

Committee's Reply 2

Rationale

THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

PROPOSED INTERPRETATION

Item No.

I24-25

Subject/Title

4.4.1 (e) and 4.4.2 (c) NDE Methods

Project Manager and Task Group: Robert Derby

Source (Name/email)

Jon Ferreira / jonathan_ferreira@hsb.com

Statement of Need

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.

Background Information

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.

Proposed Question 1

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

Proposed Reply

Yes, provided the NDE method selected can provide meaningful results

Proposed 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?

Proposed Reply

Yes

Proposed 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?

Proposed Reply

Yes

Committee's Question 1

When using NDE in lieu of pressure testing per NBIC Part 3, 4.4.1 e) and 4.4.2 c), may any NDE method regardless if addressed in the original code of construction be used to verify the integrity of a repair or alteration if the NDE method provides meaningful results and have the acceptance of the Inspector and, where required, the jurisdiction and the owner?

Committee's Reply 1

Yes

Rationale

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, and shall the NDE personnel performing the NDE method be certified to a written practice?

Committee's Reply 2

Yes.

Committee's Question 3

Committee's Reply 3

	VOTE						
COMMITTEE	Approved	Disapproved	Abstained	Not Voting	Passed	Failed	Date

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

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)

	VOTE:						
COMMITTEE	Approved	Disapproved	Abstained	Not Voting	Passed	Failed	Date

CODE INTERPRETATIONS

Requests for code Interpretations shall provide the following:

a) Inquiry
Provide a condensed and precise question, omitting superfluous background information and, when possible, composed in such a way that a "yes" or a "no" reply, with brief provisos if needed, is acceptable. The question should be technically and editorially correct.

b) Reply
Provide a proposed reply that clearly and concisely answer the inquiry question. Preferably the reply should be "yes" or "no" with brief provisos, if needed.

c) Background Information
Provide any background information that will assist the committee in understanding the proposed Inquiry and Reply Requests for Code Interpretations must be limited to an interpretation of the particular requirement in the code. The Committee cannot consider consulting type requests such as:

A review of calculations, design drawings, welding qualifications, or descriptions of equipment or Parts to determine compliance with code requirements;

A request for assistance in performing any code-prescribed functions relating to, but not limited to, material selection, designs, calculations, fabrication, inspection, pressure testing, or installation; or

A request seeking the rationale for code requirements.

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

PROPOSED INTERPRETATION

Item No.

24-40

Subject/Title

Routine repair vs Alteration

Project Manager and Task Group

Michael Carlson, Don Kinney, Craig Hopkins

Source (Name/Email)

Paul Shanks / paul.shanks@bureauveritas.com

Statement 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

Background Information

Interpretation 19-25 clarifies that the examples of repairs and alteration are not exhaustive, Section 9 of NBIC part 3 provides for definitions of terms- those used for alteration and repair do not always and obviously match the examples.

Proposed Question

When replacing 2" tubes in boiler that are attached by welding, provided that the MAWP, Heating surface area and steaming capacity do not change may this activity be considered a routine repair?

Proposed Reply

Yes

Committee's Question 1

When the replacement of a tube is not considered to be an alteration by definition or when referencing NBIC Part 3, 3.4, may this activity be considered a Routine Repair?

Committee's Reply 1

Yes, when the applicable requirements in NBIC Part 3, 3.3.2 are met.

Rationale

Committee's Question 2

Committee's Reply 2

Rationale

	VOTE:						
COMMITTEE	Approved	Disapproved	Abstained	Not Voting	Passed	Failed	Date

CODE INTERPRETATIONS

Requests for code Interpretations shall provide the following:

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Provide a condensed and precise question, omitting superfluous background information and, when possible, composed in such a way that a "yes" or a "no" reply, with brief provisos if needed, is acceptable. The question should be technically and editorially correct.

b) Reply
Provide a proposed reply that clearly and concisely answer the inquiry question. Preferably the reply should be "yes" or "no" with brief provisos, if needed.

c) Background Information
Provide any background information that will assist the committee in understanding the proposed Inquiry and Reply Requests for Code Interpretations must be limited to an interpretation of the particular requirement in the code. The Committee cannot consider consulting type requests such as:

A review of calculations, design drawings, welding qualifications, or descriptions of equipment or Parts to determine compliance with code requirements;

A request for assistance in performing any code-prescribed functions relating to, but not limited to, material selection, designs, calculations, fabrication, inspection, pressure testing, or installation; or

A request seeking the rationale for code requirements.

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

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

	VOTE:						
COMMITTEE	Approved	Disapproved	Abstained	Not Voting	Passed	Failed	Date

CODE INTERPRETATIONS

Requests for code Interpretations shall provide the following:

a) Inquiry
Provide a condensed and precise question, omitting superfluous background information and, when possible, composed in such a way that a "yes" or a "no" reply, with brief provisos if needed, is acceptable. The question should be technically and editorially correct.

b) Reply
Provide a proposed reply that clearly and concisely answer the inquiry question. Preferably the reply should be "yes" or "no" with brief provisos, if needed.

c) Background Information
Provide any background information that will assist the committee in understanding the proposed Inquiry and Reply Requests for Code Interpretations must be limited to an interpretation of the particular requirement in the code. The Committee cannot consider consulting type requests such as:

A review of calculations, design drawings, welding qualifications, or descriptions of equipment or Parts to determine compliance with code requirements;

A request for assistance in performing any code-prescribed functions relating to, but not limited to, material selection, designs, calculations, fabrication, inspection, pressure testing, or installation; or

A request seeking the rationale for code requirements.

Interpretation Item 24-27

3/1/2024

Subject: Replacement of Repair Nameplate

Location: Part: Inspection; Section: 5; Paragraph: 5.2.1

Statement of Need:
There is a lack of clarity for replacing a Repair Nameplate that has become lost, illegible, or detached, and the stamping/markings required.

Background:
There is a lack of clarity for replacing a Repair Nameplate that has become lost, illegible, or detached, and the stamping/markings required.

Proposed Question:
1. Q1- Does the replacement of a Repair Nameplate require the manufacturer of the pressure-retaining item be contacted per 5.2.1 a)?
2. Q2 - Is the "R" Stamp required to be on a "Replacement" Repair Nameplate?
3. Q3 - May an "R" Cert. Holder other than the original company whose repair nameplate is being replaced, stamp their own "R" Stamp on a "Replacement" repair nameplate?

Proposed Reply:
1. A1-No. The original manufacturer has no bearing on the repair nameplate.
2. A2-No. Only the original organization that made the "R" Stamp repair on the date indicated on the original repair nameplate may stamp the "R" Certificate symbol for a repair in accordance with the NBIC.
3. A3-No.

Committee's Question:

Committee's Reply:

Rationale: Replacement of repair nameplates are not addressed in Part 2.

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

PROPOSED INTERPRETATION

Item No.

24-99

Subject/Title

Preparation of Form R-2 Construction Scope

Project Manager and Task Group

Matt Schaser (mschaser@e2g.com)

Source (Name/Email)

Michael Lieb (mjlieb@nooter.com)

Statement of Need

Disposition if NDE and pressure testing is considered construction activity and R-2 fields "7-b", Construction Certification, and Certificate for Inspection are required.

Background Information

Re-rate performed on ASME Section VIII Division 1 pressure vessel where NDE (Ultrasonic and liquid penetrant) along with a liquid pressure test were performed. R certificate holder only performed design and no construction activities. Design Certification and Certification of Design Change Review sections are completed leaving the remaining sections blank.

Proposed Question

When the same R certificate holder performs a re-rate utilizing form R-2 and no physical changes are made only performing NDE and pressure testing, must the Construction Certification and Certificate for Inspection sections of form R-2 be completed when the Design Certification and Certification of Design Change Review sections are completed.

Proposed Reply

Yes, fields 7b, Construction Certification, and Certificate for Inspection are required or No, only Design Certification and Certification of Design Change Review sections are required.

Committee's Question 1

Letter to Inquirer referencing Interps 01-38 & 01-39 with note that the 2025 Edition will clarify this issue.

Committee's Reply 1

See below

Rationale

See Below

Committee's Question 2

Committee's Reply 2

Rationale

	VOTE:						
COMMITTEE	Approved	Disapproved	Abstained	Not Voting	Passed	Failed	Date

CODE INTERPRETATIONS

Requests for code Interpretations shall provide the following:

a) Inquiry
Provide a condensed and precise question, omitting superfluous background information and, when possible, composed in such a way that a "yes" or a "no" reply, with brief provisos if needed, is acceptable. The question should be technically and editorially correct.

b) Reply
Provide a proposed reply that clearly and concisely answer the inquiry question. Preferably the reply should be "yes" or "no" with brief provisos, if needed.

c) Background Information
Provide any background information that will assist the committee in understanding the proposed Inquiry and Reply Requests for Code Interpretations must be limited to an interpretation of the particular requirement in the code. The Committee cannot consider consulting type requests such as:

A review of calculations, design drawings, welding qualifications, or descriptions of equipment or Parts to determine compliance with code requirements;

A request for assistance in performing any code-prescribed functions relating to, but not limited to, material selection, designs, calculations, fabrication, inspection, pressure testing, or installation; or

A request seeking the rationale for code requirements.

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

PROPOSED INTERPRETATION

Item No.

24-107

Subject/Title

Addition of a nozzle details

Project Manager and Task Group

Matt Schaser (mschaser@e2g.com)

Source (Name/Email)

Michael Lieb (mjlieb@nooter.com)

Statement of Need

Further guidance on this section.

Background Information

Certificate holder would like to install a new nozzle into vessel head. Vessel has many different nozzle designs into top head, bottom head, and shell. Nozzles are installed with reinforcement, without reinforcement, set-on, set-in, and at different angles from the vessel. Seeking more definition on NBIC "located in a similar part of vessel" and "identical" to one of original design. Certificate holder would like to utilize a nozzle design on vessel head at a different arc on the head where the nozzle's axis will be different from the head. Vessel is vertically oriented and current nozzle is connected to head on a horizontal axis. New nozzle would be installed vertically.

Proposed Question

When installing a new nozzle when reinforcement is a consideration,
1) does the statement "located in a similar part of the vessel" mean it must be from the head or shell and utilized on the head or shell? If yes, must the design for the nozzle on the head be located on a similar arc of the head?
2) does the statement "identical" mean every aspect of the nozzle design must be copied? Would a current nozzle without reinforcement be utilized for installation with reinforcement?
3) does the orientation or angle of the nozzle from its axis limit its use for this intention?

Proposed Reply

Further guidance is requested on the above three items. Yes or no responses with some guidance would be expected proposed reply.

Committee's Question 1
Letter to Inquirer that this is “Consulting”.

Committee's Reply 1

Rationale

Committee's Question 2

Committee's Reply 2

Rationale

	VOTE:						
COMMITTEE	Approved	Disapproved	Abstained	Not Voting	Passed	Failed	Date

CODE INTERPRETATIONS

Requests for code Interpretations shall provide the following:

a) Inquiry
Provide a condensed and precise question, omitting superfluous background information and, when possible, composed in such a way that a "yes" or a "no" reply, with brief provisos if needed, is acceptable. The question should be technically and editorially correct.

b) Reply
Provide a proposed reply that clearly and concisely answer the inquiry question. Preferably the reply should be "yes" or "no" with brief provisos, if needed.

c) Background Information
Provide any background information that will assist the committee in understanding the proposed Inquiry and Reply Requests for Code Interpretations must be limited to an interpretation of the particular requirement in the code. The Committee cannot consider consulting type requests such as:

A review of calculations, design drawings, welding qualifications, or descriptions of equipment or Parts to determine compliance with code requirements;

A request for assistance in performing any code-prescribed functions relating to, but not limited to, material selection, designs, calculations, fabrication, inspection, pressure testing, or installation; or

A request seeking the rationale for code requirements.

S3.3 ROUTINE REPAIRS

a) The following repairs shall be considered routine, and shall comply with NBIC Part 3, 3.3.2 a), b), and c).

1) Machining — routine repair shall not include the machining of pressure-retaining parts with the exception of minor machining for cleaning and joint preparation not to exceed 1/32 in. (0.8 mm) of material thickness.

2) Repair of Gasket Surfaces — re-machining of gasket surfaces, re-serrating, or flattening is permitted if the design thickness is maintained.

3) Replacing Individual Tubes — drilling out and replacing tubes with new tubes or repaired tubes. Only certified materials shall be used for this repair.

4) Nozzle Replacement — complete or partial replacement of nozzles by removing all or a length of the existing nozzle and cementing a new piece in place. This is applicable for nozzles with inside diameters not exceeding 10 inches (254~~152~~ mm)~~6 inches (152 mm)6~~.

5) Plugging Tubes — plugging individual tubes using accepted procedures.

6) Surface Repair — surface repair by installation of plugs or inlay material shall not exceed 1 $in.^3$ (16 cm^3) of total volume.

7) Replacement or Addition of Non-Load Bearing Attachments to Pressure-Retaining Item — For attachment of non-load bearing attachments to pressure-retaining items, the cementing procedure specification need only be qualified for the pressure part and cement to be used.

NBIC Action Item A24-82
Submitted by Linn Moedinger
7/30/2024

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	Rewrite of Part 3, S1.1.4
NBIC Location:	2023 NBIC, Part 3, S1.1.4
Statement of Need:	ASME Section I, Part PL superseded previous calculations such as the Calculation Compendium referenced in the current wording.
Background Information:	The original wording referenced the ESC Calculation Compendium for locomotive boiler calculations. At the time, this was the only place where most locomotive boiler calculations were located. With the publication of Part PL in ASME Section I, Part PL, the Calculation Compendium is no longer needed.

Proposed Text:

S1.1.4 FORMULA AND CALCULATIONS FOR STEAM LOCOMOTIVE BOILERS

a) Most steam locomotive boilers were manufactured in the first half of the 20th century or before. The calculations, formula, and shop practices used are now distant history and quite difficult to obtain. The original rules for riveted construction were last published by ASME in Section I Code, 1971 Edition. Currently, ASME, Section I, Part PR and Part PL, govern riveted construction and steam locomotive boiler construction, and these Parts may be referenced for repairs and alterations if appropriate for the boiler under repair/alteration.

~~b) This supplement herein, is based in part on the ASME Code, Section III, 1952 Edition, which was the last published edition of the Steam Locomotive Code. The railroad industry has attempted to collect the old formula and some shop practices. These have been published by The Engineering Standards Committee for Steam Locomotives, Inc. (ESC) as Compendium, Volume 1, Compilation of Calculations, which may be obtained from the Strasburg Rail Road, P.O. Box 96, Strasburg, PA 17579 (717) 687-7421.~~
b) This supplement herein, is based in part on the ASME Code, Section III, 1952 Edition, ASME Section I, Part PL, and Established Railroad Standards.

c) When the original code of construction is not known or is not available, the current edition of ASME Section I may be referenced for the majority of locomotive calculations. The original codes of construction~~s~~ may not have some calculations needed, in which case the current edition of ASME Section I, or the nearest applicable code which postdates the construction, may be used to augment the original code of construction.

NBIC Action Item A24-82
Submitted by Linn Moedinger
7/30/2024

d) Allowable stress values for materials are given in or referenced by ASME Section I, all editions. Care shall be taken to ensure the design margin used by a specific edition of the code is the same as that of the original code of construction, or the same as required by the jurisdiction in which the boiler will operate. When in doubt, divide the ultimate tensile strength given in the ASME Code for the material used by the design margin required.

NBIC Action Item A24-83
Submitted by Terry Hellman (thellman@nbbi.org)
January 3, 2024

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	Change Part 3, 1.6.4 d) (or elsewhere) to require audits to be performed by Supervisor
NBIC Location:	2023 NBIC, Part 3, 1.6.4 d)
Statement of Need:	TBD
Background Information:	TBD

Proposed Text:

1.6.4 OBTAINING OR RENEWING A NATIONAL BOARD "NR" *CERTIFICATE OF AUTHORIZATION*

d) The "NR" *Certificate of Authorization* holder shall be subject to an audit annually by a Supervisor ~~n ANIS~~ employed by the Authorized ~~Nuclear~~ Inspection Agency to ensure compliance with ~~the~~ all aspects of the Quality Assurance Program. The triennial "NR" Survey will satisfy this requirement in the year performed~~.~~

A24-92- Spuhl - 250108

1.3 INSPECTOR

a) Inspection and certification shall be made by an Inspector holding a valid National Board commission with the "R" endorsement issued by the National Board and employed by an Authorized Inspection Agency in accordance with NB-263, Rules for Commissioned Inspectors (RCI-1) (see NBIC Part 3, Section 9, Glossary of Terms for definition of Authorized Inspection Agency).

b) An Inspector employed by an Owner-User Inspection Organization or a Federal Inspection Agency may authorize and accept work only on pressure-retaining items owned or used by the respective organization. Each accredited Owner-User Inspection Organization's quality program shall have specific approval of the Jurisdiction as required.

c) Inspection and certification of Repair and Replacement activities for Nuclear Items, the Inspector shall additionally:

1) For Category 1, Hold the "N" endorsement in accordance with NB-263, Rules for Commissioned Inspectors (RCI-1), and be employed by an Authorized Inspection Agency.

2) For Category 2, Hold the "I" endorsement in accordance with NB-263, Rules for Commissioned Inspectors (RCI-1), and be employed by an Authorized Inspection Agency.

3) For Category 3, Hold qualifications required by the Regulatory Authority. The Inspector shall be employed by an Authorized Inspection Agency or an inspection agency appointed or accepted by the Regulatory Authority having jurisdiction over the facility.

1.3.1 SUPERVISOR

a) Inspectors shall be supervised by an individual holding a valid National Board commission with the "R" endorsment as required above.

b) Supervisor of Inspectors performing inspection and certification of Repair and Replacement activities of Nuclear Items shall additionally:

1) For Category 1 - Hold a "NS" endorsement and be employed by an Authorized Inspection Agency in accordance with NB-263, Rules for Commissioned Inspectors (RCI-1).

2) For Category 2 - Hold a "NSI" endorsement and be employed by an Authorized Inspection Agency in accordance with NB-263, Rules for Commissioned Inspectors (RCI-1).

3) For Category 3 - Hold qualifications required by the Regulatory Authority. The Supervisor shall be employed by an Authorized Inspection Agency or an inspection agency appointed or accepted by the Regulatory Authority having jurisdiction over the facility.

1.3.2 AUTHORIZATION

a) The Inspector's authorization to perform a repair or alteration shall be obtained by the repair organization prior to initiation of a repair or alteration to a pressure-retaining item. The Inspector shall determine that the repair or alteration methods are acceptable.

b) Subject to acceptance of the Jurisdiction, the Inspector may give approval for routine repairs prior to the start of work, provided the Inspector ensures that the "R" Certificate Holder has adequately addressed routine repairs in the quality program.

A24-92- Spuhl - 250108

c) The Inspector's authorization shall be obtained by the "NR" Certificate Holder prior to initiation of repair and replacement activities to nuclear items. The Inspector shall determine that the repair and replacement methods are acceptable.

1.3.3 INSPECTIONS AND CERTIFICATIONS

a) Inspections and certification of NBIC Form R Reports shall be performed by the same Inspector who authorized the repair or alteration, or repair and replacement activity. Where this is not possible or practicable, another Inspector may perform these duties; however, in all cases, duties associated within the same scope of work shall be performed by Inspectors employed by the same Authorized Inspection Agency.

b) Before signing the appropriate NBIC Form R Report, the Inspector shall verify all applicable Inspector duties have been performed as required in NB-263, RCI-1.

NBIC Action Item A24-95
Submitted by Terry Hellman (thellman@nbbi.org)
November 1, 2024

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	Registration of NR Forms within 30 Days
NBIC Location:	2023 NBIC, Part 3, 5.5 a)
Statement of Need:	5.5 a) states repairs and alterations requiring registration must be submitted within 30 days of certification. It is unclear if this requirement applies to repair/replacement activities under the “NR” or “NVR” programs.
Background Information:	Removing the words, "performing a repair or alteration" from 5.5 a) would then include registration requirements for repair/replacement activities under the “NR” or “NVR” programs referenced in 5.5.4. 5.5.4 states, "Organizations performing repair/replacement activities under the “NR” or “NVR” stamp program shall register forms with the National Board."

Proposed Text:

5.5 REGISTRATION OF FORMS — GENERAL

a) When registration of the forms is required, the Certificate Holder ~~performing a repair or alteration~~ shall submit the completed form, meeting the requirements of the NBIC, to the National Board no more than 30 days following certification.

b) When registration of the forms is not required, the Certificate Holder may register the completed form, meeting the requirements of the NBIC, with the National Board.

c) The “R” or “NR” Certificate Holder should be aware that some Jurisdictions may require registration of repairs and alterations with the National Board.

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

PROPOSED REVISION OR ADDITION

Item No.

A23-24

Subject/Title

GENERAL REQUIREMENTS FOR REPAIRS TO QUICK-ACTUATING/QUICK-OPENING CLOSURES

NBIC Location

New SUPPLEMENT XX

Project Manager and Task Group

Tim McBee (PM), Chuck Becker, Matt Schaser, Robert Smith, Aziz Khssassi

Source (Name/Email)

Kathy Moore (kathymoore@joemoorecompany.com)

Statement of Need

There are many small stamp holders (which I am one of them) that do not understand the "uniqueness" of these repairs. I would like to see some engineering controls as part of this "section".

Background Information

The NBIC currently has no specific safe guidelines for Quick-Actuating/Quick-Opening repairs.

Existing Text	**Proposed**
None	**See attached**

A23-24
SUPPLEMENT XX
GENERAL REQUIREMENTS FOR REPAIRS TO QUICK-ACTUATING/QUICK-OPENING CLOSURES

SXX.1 SCOPE

This supplement provides additional requirements and guidelines above and beyond those cited in the main body of the NBIC code for repairs to quick-actuating/quick-opening closure pressure-retaining components referred throughout this supplement as "Quick Closures". Special consideration shall be given to meet the requirements set forth in NBIC Part 3, Section 2 through 5 as appropriate and inspection requirements identified in paragraph 2.3.6.5 in NBIC Part 2.

The components of quick closures include but are not limited to the following:
a) Cover (Head, Flat Plate, etc.)
b) Support Elements (Davit Hinge, Post Davit, Vertical/Slide Sides, etc.)
c) Locking Elements (Wedges, Latch, etc.)
d) Locking Mechanism (Rotating Locking Ring, Seal Flanges, Lugs etc.)
e) Holding Elements (Pins)
f) Interlock Device (Pressure Indicating Device)
g) Seal design

SXX.2 REPLACEMENT PARTS FOR QUICK CLOSURES

a) No components furnished or specified by the Manufacturer of the quick closure shall be removed unless Manufacturer's concurrence is received. In the event the original Manufacturer is no longer available, components shall not be removed.
b) Replacement pressure retaining parts shall be identical to the original equipment furnished. Substitutions may be allowed if they are approved by the Manufacturer.
c) Quick closure replacement pressure-retaining parts shall be fabricated in accordance with the Manufacturer's design and the original code of construction.
d) Replacement of the nonpressure-retaining load bearing parts, when different from the Manufacturer's design, shall be evaluated for any possible effect on the pressure-retaining parts.
e) Replacement materials, including welding materials, shall be consistent with the original materials of construction, including heat treatment.

SXX.3 REPAIR GUIDE FOR QUICK CLOSURES

a) The Manufacturer's Data Report or Manufacturer's drawings when available, shall be carefully reviewed to determine the material of construction of each quick closure. If material data is not available, positive material identification (PMI) to identify the material's chemistry and hardness testing shall be performed.

b) Weld repairs performed in accordance with NBIC Part 3 are permitted on quick closure pressure-retaining components that are manufactured from steel. Hinge pins or bolts shall not be welded. Special attention shall be paid to any requirements for the finished weld profile and PWHT.

c) Structural deterioration or damage caused by corrosion, thinning, or cracking shall not be repaired until its extent has been determined by suitable nondestructive examination.

d) The Certificate Holder shall have a plan covering the scope of the repair. The plan shall ensure that the work involved is compatible with the original design specification and good engineering practices.

e) Removing the quick closure mechanism components from one vessel for the installation on another vessel is STRICTLY PROHIBITED.

(f) When quick closures are repaired, the locking mechanism or locking device shall be operational per the quick closure Manufacturer's specifications.

SXX.4 ROUTINE REPAIRS

The following examples of repairs do not require stamping or nameplate attachment provided the repair procedure has been accepted by the Repair Inspector and the R-Certificate Holder has verified there will be no effect on the pressure-retaining capability of the quick closure.

a) Replacement of consumable parts, for example wedges.

b) Alignment adjustments

SXX.5 REPAIR OF DAMAGE

SXX.5.1 REPAIR OF QUICK CLOSURE WELDS

All welds associated with the quick closure pressure-retaining components should be repaired in accordance with the original manufacturer's design specifications. Special attention shall be paid to any requirements for the finished weld profile and PWHT.

SXX.5.2 REPAIR OF QUICK CLOSURE SURFACES

The repair of quick closure surfaces shall be limited to the restoration of wasted areas through weld build-up. The final surface shall be flush with nominal surface. Seating surfaces shall be machined back to original design specifications. External weld build-up is prohibited on closure components. Alternatively, Fitness-for Service (FFS) may be used to qualify local thin areas.

SXX.5.3 REPAIR OF QUICK CLOSURE MECHANISM

a) The designs of quick closure locking mechanisms are typically proprietary; therefore, all repairs shall be performed to restore the closure to the original design specifications. If design specifications, such as original quick closure configuration and nominal thicknesses are not available, then all repairs shall be performed by the original manufacturer. If this is not practicable, the Certificate Holder shall contact an organization competent in quick-actuating/quick-opening closure design and construction to approve or establish a repair plan prior to implementing any repairs.

b) Safety devices (sensors, interlocks, etc.) removed during maintenance or repair shall be reinstalled per the original manufacturer's specifications.

c) Repairs shall avoid damaging gasket materials. If damage occurs to gasket materials, the gaskets shall be replaced before returning system back into service.

SXX.6 EXAMINATIONS AND TEST METHODS

NBIC Part 3, Section 4 is applicable for all post construction activities pertaining to examination and testing.

SXX.7 CERTIFICATION/DOCUMENTATION AND STAMPING

NBIC Part 3, Section 5 is applicable for all post construction activities pertaining to certification/documentation and stamping.

Stamping may also be waived per SXX.4 of this Supplement.

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

PROPOSED REVISION OR ADDITION

Item No.

A 23-39

Subject/Title

Strengthening Prevention of Defect Recurrence

NBIC Location

Part: Repairs and Alterations; Section: 3; Paragraph: Paragraph 1 (3.3.1)

Project Manager and Task Group

Jon Ferreira (PM), Tom White, Jamie Walker and Adam Henson

Source (Name/Email)

Adam Henson / adam.henson@csb.gov

Statement of Need

The existing text recommends, but does not require an investigation of the cause, extent, and likelihood of recurrence of defects. The existing text also has no requirement for anyone to act to prevent the recurrence of defects. Where root and/or proximate causes of defects are known, or could be determined, someone needs to act to prevent catastrophic failure of equipment.

Background Information

On April 3, 2017, an explosion occurred at the Loy-Lange Box Company in St. Louis, Missouri. The incident occurred when the bottom head of a pressure vessel called a semi-closed receiver (SCR), which was used in the company's steam generation system, catastrophically failed. The SCR was launched in the air as the result of the explosion and landed on a neighboring business. One employee of the Loy Lange Box Company and three members of the public were fatally injured. The U.S. Chemical Safety and Hazard Investigation Board (CSB) investigated this incident and learned during the investigation that the SCR was repaired by an R stamp organization in 2012 five years prior to the incident. During the repair, a wasted area of the bottom head of the SCR was flush patched. The cause of the defect was determined to be oxygen pitting corrosion. Evidence gathered during the investigation suggests that the defects in the head were not fully removed during the repair activity. The R stamp organization stated during the investigation that Loy-Lange requested an "emergency repair" following the discovery of a leak from the SCR. The R stamp organization stated further that they interpreted this to mean the repair needed to be completed immediately, presumably so production could resume as normal. This was not the first time the SCR leaked. The vessel leaked previously in April 2004, August 2012, and November 2012. In addition to causing these leaks oxygen pitting corrosion was also discovered in other parts of Loy Lange's steam system. During the investigation, the CSB noted that no effort was made to determine the extent of the oxygen pitting corrosion in the steam generation system, including the SCR, and that Loy Lange's operating practices up to the date of the incident were such that oxygen levels within the steam generation system were not effectively managed. Had the level of oxygen within the steam generation system been effectively managed following any of the leaks repaired over the years the 2017 incident would not have happened. Full details of the Loy-Lange Box Company Pressure Vessel Explosion are available at this link:
https://www.csb.gov/loy-lange-box-company-pressure-vessel-explosion-/

Existing Text	Proposed Text
3.3.1 DEFECT REPAIRS Before a repair is made to a defect in a welded joint or base metal, care should be taken to investigate its cause and to determine its extent and likelihood of recurrence.	**3.3.1 DEFECT REPAIRS** Prior to repairing a defect in a welded joint or base metal, it is important to investigate the cause, assess the extent, and evaluate the likelihood of recurrence. A condition assessment may be part of this process and may be conducted by the owner or user, the equipment manufacturer, the repair organization, or another technically competent source. For repairs involving complex defects, a more comprehensive condition assessment method may be required, including an engineering evaluation performed by a competent technical source. Guidance for performing condition assessments is available in NBIC Part 2, Section 4.4. For repair methods that do not fully remove the defect, refer to NBIC Part 3, Supplement 11, S11.2.2.

	VOTE:						
COMMITTEE	Approved	Disapproved	Abstained	Not Voting	Passed	Failed	Date

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

PROPOSED REVISION OR ADDITION

Item No.

A 23-40

Subject/Title

Strengthening Requirements to Ensure Defect Removal

NBIC Location

Part: Repairs and Alterations; Section: 3; Paragraph: 4.1

Project Manager and Task Group

Source (Name/Email)

Adam Henson / adam.henson@csb.gov

Statement of Need

The existing text alludes to the potential need for nondestructive examination (NDE) to ensure complete removal of defects but does not require it. The means to ensure defects have been removed must be understood by all to ensure safety. There is an interpretation of the 2021 NBIC that compounds this issue permitting repair organizations to not follow the requirements of NBIC Part 3, 3.3.4.8 even when the characteristics of the defect cannot be fully established.

Background Information

On April 3, 2017, an explosion occurred at the Loy-Lange Box Company in St. Louis, Missouri. The incident occurred when the bottom head of a pressure vessel called a semi-closed receiver (SCR), which was used in the company's steam generation system, catastrophically failed. The SCR was launched in the air as the result of the explosion and landed on a neighboring business. One employee of the Loy Lange Box Company and three members of the public were fatally injured. The U.S. Chemical Safety and Hazard Investigation Board (CSB) investigated this incident and learned during the investigation that the SCR was repaired by an R stamp organization in 2012 five years prior to the incident. During the repair a wasted area of the bottom head of the SCR was flush patched. The cause of the defect was determined to be oxygen pitting corrosion. Evidence gathered during the investigation suggests that the defects in the head were not fully removed during the repair activity. The R stamp organization stated during the investigation that Loy-Lange requested an "emergency repair" following the discovery of a leak from the SCR. The R stamp organization stated further that they interpreted this to mean the repair needed to be completed immediately, presumably so production could resume as normal. To make the repair the R stamp organization cut the SCR shell from the bottom head, leaving the bottom head attached to the skirt. An employee who oversaw the repair stated that they observed pitting corrosion damage in the bottom head. They cut a hole in the center of the head where they believed the corrosion was isolated and applied a flush patch. They believed they removed all corrosion damage through this process. When asked what techniques they relied upon to determine the complete removal of defects the employee replied that they would have been able to see additional pitting and that with the hole cut in the head they were able to match up the patch with the existing metal to verify the thickness of the remaining metal of the head. Besides being able to see differences in the thickness of the patch and the remaining metal of the head, this employee also reported that they would have been able to feel the difference too. Another employee reported measuring the thicknesses of the two pieces with a tape measurer and verified the thickness of both pieces to be ¼ inch. The evidence the CSB gathered demonstrating the likeliness that repair did not remove all defective material from the SCR is discussed in Section 1.6 SCR Post-Failure Examination starting on page 26 of the report. Had all defective material been removed during this repair the incident may not have happened. Full details of the Loy-Lange Box Company Pressure Vessel Explosion are available at this link: https://www.csb.gov/loy-lange-box-company-pressure-vessel-explosion-/ INTERPRETATION 21-13 Subject: Repair of pressure-retaining items without complete removal of defect Edition: 2021 Question: If the characteristics of the defect cannot be fully established, would the provisions of NBIC Part 3, 3.3.4.8 be applicable? Reply: No.

Existing Text	Proposed Text
Except as provided in NBIC Part 3, 3.3.4.8, a repair of a defect in a welded joint or base material shall not be made until the defect has been removed. A suitable nondestructive examination (NDE) method, such as magnetic particle (MT) or liquid penetrant (PT), may be necessary to ensure complete removal of the defect. If the defect penetrates the full thickness of the material, the repair shall be made with a full penetration weld such as a double buttweld or single buttweld with or without backing. Where circumstances indicate that the defect is likely to recur, consideration should be given to removing the defective area and installing a flush patch or taking other corrective measures acceptable to the Inspector, and when required, by the Jurisdiction.	Except as provided in NBIC Part 3, 3.3.4.8, a repair of a defect in a welded joint or base material shall not be made until the defect has been removed. A suitable nondestructive examination (NDE) method, such as magnetic particle (MT) or liquid penetrant (PT), may be necessary to ensure complete removal of the defect. After defect has been removed, the thickness of the remaining base material shall be measured to confirm thickness complies with original Code of construction. Measurement results shall be documented. If the defect penetrates the full thickness of the material, the repair shall be made with a full penetration weld such as a double buttweld or single buttweld with or without backing. Where circumstances indicate that the defect is likely to recur, consideration should be given to removing the defective area and installing a flush patch or taking other corrective measures acceptable to the Inspector, and when required, by the Jurisdiction.

	VOTE:						
COMMITTEE	Approved	Disapproved	Abstained	Not Voting	Passed	Failed	Date

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

PROPOSED REVISION OR ADDITION

Item No.

A24-60

Subject/Title

Revise the repair and alteration Sect VIII Div 2 and 3 paragraphs

NBIC Location

[2025 Edition] Part 3, Supplement 11 - Engineered Repairs and Alterations, S11.2.3 & S11.3.2
[2023 Edition] Part 3, 3.3.5 & 3.4.5

Project Manager and Task Group

R. Collins (PM), T. LeBeau, A. Triplett

Source (Name/Email)

Luis Ponce / LPonce@nbbi.org

Statement of Need

A revision of Part 3, Supplement 11 - Engineered Repairs and Alterations, S11.2.3 & S11.3.2 is needed to reconcile the NBIC to Divisions 2 and 3 of ASME Section VIII.

Background Information

The requirements and terminology for vessel design personnel in ASME Section VIII Division 2 changed in the 2019 and later Editions, and there are different requirements in Divisions 2 and 3 for certifying the UDS and MDR. In addition, in discussion with Mark Lower (ASME BPV VIII Subgroup on Design), upcoming changes to Divisions 1, 2, and 3 will explicitly eliminate “responsible charge” from these codes, thus removing an existing pathway for Jurisdictions to mandate additional qualification requirements for such personnel based on the NCEES and NSPE documents defining this term. This Item also incorporates changes to reflect approved Interpretation 07-16.

Existing Text	**Proposed Text**
See next page	See next page

	VOTE:						
COMMITTEE	Approved	Disapproved	Abstained	Not Voting	Passed	Failed	Date

Existing Text (2025 Edition)

S11.2.3 REPAIR OF ASME SECTION VIII, DIVISION 2 OR DIVISION 3 PRESSURE VESSELS

a) Scope

The following requirements shall apply for the repair of pressure vessels constructed to the requirements of Section VIII, Division 2 or Division 3 of the ASME Code.

b) Repair Plan

The user shall prepare, or cause to have prepared, a detailed plan covering the scope of the repair.

1) Engineer Review and Certification

The repair plan shall be reviewed and certified by an engineer meeting the criteria of ASME Section VIII, Division 2 or Division 3, as applicable, for an engineer signing and certifying a Manufacturer's Design Report. The review and certification shall ensure the work involved in the repair is compatible with the User's Design Specification (UDS) and the Manufacturer's Design Report. The certifying requirement may be waived for ASME Section VIII, Division 2, Class 1 vessels that did not require the Manufacturer's Design Report to be certified during initial construction.

If the UDS is lost or destroyed, the ASME nameplate and the applicable ASME Section VIII, Division 2 or Division 3 Manufacturer's Data Report, Partial Data Reports, and/or Manufacturer's Design Report shall be used to reconstruct the UDS. The reconstructed UDS shall meet the requirements of and be certified in accordance with the latest edition of ASME Section VIII, Division 2 or Division 3.

2) Authorized Inspection Agency Acceptance

After the repair plan is reviewed and certified, it shall be submitted for acceptance to the Authorized Inspection Agency/Owner-User Inspection Organization employing the Inspector performing the acceptance inspection and signing the Form R-1.

S11.3.2 ALTERATION OF ASME SECTION VIII, DIVISION 2 OR DIVISION 3, PRESSURE VESSELS

a) Alteration Plan

1) Engineer Review and Certification

a. The alteration plan shall be reviewed and certified by an engineer meeting the criteria of ASME Section VIII, Division 2 or Division 3, as applicable, for an engineer signing and certifying a Manufacturer's Design Report. The review and certification shall ensure the work involved in the alteration is compatible with the UDS and the Manufacturer's Design Report.

b. Provided the alteration does not introduce a condition that would require an engineer to sign the Manufacturer's Design Report for ASME Section VIII, Division 2, Class 1 vessels, the certifying requirement may be waived for vessels that did not require the Manufacturer's Design Report to be certified during initial construction.

c. If the UDS is lost or destroyed, the ASME nameplate and the applicable ASME Section VIII, Division 2 or Division 3 Manufacturer's Data Report, Partial Data Reports, and/or Manufacturer's Design Report shall be used to reconstruct the UDS. The reconstructed UDS shall meet the requirements of and be certified in accordance with the latest edition of ASME Section VIII, Division 2 or Division 3.

Proposed Text

S11.2.3 REPAIR OF ASME SECTION VIII, DIVISION 2 OR DIVISION 3 PRESSURE VESSELS

a) Scope

The following requirements shall apply for the repair of pressure vessels constructed to the requirements of Section VIII, Division 2 or Division 3 of the ASME Code.

b) Repair Plan

Prior to the commencement of work, ~~T~~the user shall prepare, or cause to have prepared, a detailed plan covering the scope of the repair.

1) ~~Engineer~~ Review and Certification

The repair plan shall be reviewed and certified by a person or persons ~~an engineer~~ meeting the requirements ~~criteria~~ of the original code of construction ~~ASME Section VIII, Division 2 or Division 3, as applicable,~~ for a designer, engineer, or Certifying Engineer ~~an engineer~~ signing and certifying a Manufacturer's Design Report. The review and certification shall ensure the work involved in the repair is compatible with the User's Design Specification (UDS) and the Manufacturer's Design Report. ~~The certifying requirement may be waived for ASME Section VIII, Division 2, Class 1 vessels that did not require the Manufacturer's Design Report to be certified during initial construction.~~

If the UDS is lost or destroyed, the ASME nameplate and the applicable ASME Section VIII, Division 2 or Division 3 Manufacturer's Data Report, Partial Data Reports, and/or Manufacturer's Design Report shall be used to reconstruct the UDS. The reconstructed UDS shall meet the requirements of and be certified in accordance with the latest edition of ASME Section VIII, Division 2 or Division 3.

Note: Additional design personnel requirements or qualifications specified by the user or jurisdiction are outside of the scope of this Supplement.

2) Authorized Inspection Agency Acceptance

After the repair plan is reviewed and certified, it shall be submitted for acceptance to the Authorized Inspection Agency/Owner-User Inspection Organization employing the Inspector performing the acceptance inspection and signing the Form R-1.

S11.3.2 ALTERATION OF ASME SECTION VIII, DIVISION 2 OR DIVISION 3, PRESSURE VESSELS

a) Alteration Plan

1) ~~Engineer~~ Review and Certification

~~a.~~ Prior to the commencement of work, ~~T~~the alteration plan shall be reviewed and certified by a person or persons ~~an engineer~~ meeting the requirements ~~criteria~~ of the original code of construction ~~ASME Section VIII, Division 2 or Division 3, as applicable,~~ for a designer, engineer, or Certifying Engineer ~~an engineer~~ signing and certifying a Manufacturer's Design Report. The review and certification shall ensure the work involved in the alteration is compatible with the User's Design Specification (UDS) and the Manufacturer's Design Report.

~~b. Provided the alteration does not introduce a condition that would require an engineer to sign the Manufacturer's Design Report for ASME Section VIII, Division 2, Class 1 vessels, the certifying requirement may be waived for~~

2) UDS

If the alteration is such that the work is not compatible with, or changes one or more requirements of the original UDS, the UDS shall be revised by the user with the new parameters or changes. The revisions shall be certified by an engineer meeting the criteria of ASME Section VIII, Division 2 or Division 3, as applicable, for an engineer signing and certifying a Manufacturer's Design Report.

Note: The engineer qualification criteria of the jurisdiction where the pressure vessel is installed should be verified before selecting the certifying engineer.

3) Manufacturer's Design Report

a. The "R" Certificate Holder shall prepare, or cause to have prepared, a supplement to the Manufacturer's Design Report to reconcile the new parameters or changes with the UDS.

b. The supplement to the Manufacturer's Design Report shall be certified by an engineer meeting the criteria of ASME Section VIII, Division 2 or Division 3, as applicable, for an engineer signing and certifying a Manufacturer's Design Report.

Note: The engineer qualification criteria of the jurisdiction where the pressure vessel is installed should be verified before selecting the certifying engineer.

4) Authorized Inspection Agency Acceptance

Following review and certification, the alteration plan shall be submitted for acceptance to the Authorized Inspection Agency/Owner-User Inspection Organization whose inspector will perform the acceptance inspection and sign the Form R-2.

~~vessels that did not require the Manufacturer's Design Report to be certified during initial construction.~~

~~c.~~ If the UDS is lost or destroyed, the ASME nameplate and the applicable ASME Section VIII, Division 2 or Division 3 Manufacturer's Data Report, Partial Data Reports, and/or Manufacturer's Design Report shall be used to reconstruct the UDS. The reconstructed UDS shall meet the requirements of and be certified in accordance with the latest edition of ASME Section VIII, Division 2 or Division 3.

Note: Additional design personnel requirements or qualifications specified by the user or jurisdiction are outside of the scope of this Supplement.

2) ~~UDS~~User's Design Specification

If the alteration is such that the work is not compatible with, or changes one or more requirements of the original UDS, the UDS shall be revised by the user with the new parameters or changes. If the code of construction requires certification of the UDS, ~~T~~the revisions shall be certified by a person or persons ~~an engineer~~ meeting the requirements ~~criteria~~ of the original code of construction ~~ASME Section VIII, Division 2 or Division 3, as applicable,~~ for a designer, engineer, or Certifying Engineer ~~an engineer~~ signing and certifying a UDS~~Manufacturer's Design Report~~.

Note: Additional design personnel requirements or qualifications specified by the user or jurisdiction are outside the scope of this Supplement.~~The engineer qualification criteria of the jurisdiction where the pressure vessel is installed should be verified before selecting the certifying engineer.~~

3) Manufacturer's Design Report

a. The "R" Certificate Holder shall prepare, or cause to have prepared, a supplement to the Manufacturer's Design Report to reconcile the new parameters or changes with the UDS.

b. The supplement to the Manufacturer's Design Report shall be certified by a person or persons ~~an engineer~~ meeting the requirements ~~criteria~~ of the original code of construction ~~ASME Section VIII, Division 2 or Division 3, as applicable,~~ for a designer, engineer, or Certifying Engineer ~~an engineer~~ signing and certifying a Manufacturer's Design Report.

Note: Additional design personnel requirements or qualifications specified by the user or jurisdiction are outside the scope of this Supplement.~~The engineer qualification criteria of the jurisdiction where the pressure vessel is installed should be verified before selecting the certifying engineer.~~

4) Authorized Inspection Agency Acceptance

Following review and certification, the alteration plan shall be submitted for acceptance to the Authorized Inspection Agency/Owner-User Inspection Organization whose inspector will perform the acceptance inspection and sign the Form R-2.

NBIC Action Item A24-85
Submitted by Craig Bierl (cbierl@chubb.com)
January 6, 2025

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	Example of alterations to include requalification of cycle life
NBIC Location:	2023 NBIC, Part 3, 3.4.4
Statement of Need:	Currently vessels above 10,000 psi are being "requalified" without any code documentation. This puts a conflict between the ASME data report limitations and the actual installation. This practice is being completed without inspector involvement.
Background Information:	I have requested a change to the wording in Part 2 in conjunction with this request in order to clarify what the inspector involvement and process should be (conforming to the NB Alteration process).

Proposed Text:

3.4.4 Examples of Alterations

m) Any change in a vessels design cycle life or requalification of a vessel beyond the original designed cycle life.

NBIC Action Item A24-93
Submitted by Paul Shanks (paul.shanks@tuvsud.com)
November 1, 2024

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	Changing Part 3 supplement 8's title for clarity
NBIC Location:	2023 NBIC, Part 3, Supplement 8
Statement of Need:	Use of pressure equipment is unusual within NB-23 and has cause confusion within the industry as to the applicability for supplement 8.
Background Information:	The first sentence of s8.1 a) talks to PRI's and the final sentence talks about situations not covered under weld methods 6 or 7 which are limited to boiler only.

Proposed Text:

SUPPLEMENT 8
WELD AND POST REPAIR INSPECTION OF CREEP STRENGTH ENHANCED FERRITIC STEEL PRESSURE-RETAINING ITEMS ~~EQUIPMENT~~