THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

NATIONAL BOARD INSPECTION CODE SUBCOMMITTEE REPAIRS & ALTERATIONS

Minutes

Meeting of July 9, 2025
Cincinnati, OH

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.

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1. **Call to Order**
   The meeting was called to order by Chair, K. Moore at 8:00 a.m. Eastern Time in Madisonville B on the 4th floor of the hotel.

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

3. **Check for a Quorum**
   With 20/21 members present, a quorum was established.

4. **Announcements**
   - This meeting marks the end of Cycle B 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 Ault Park, on the 4th floor of the hotel.
   - 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 Madisonville A/B, and lunch will be served from 11:30 a.m. to 12:30 p.m. in Madisonville A/B.
   - 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 be considered for membership of a group or committee:
     - Should attend at least two meetings prior to being put on the agenda for membership consideration. The nominee may be placed on the agenda for voting during their third meeting, pending the Chair's approval.
     - The nominee must submit the formal request along with their resume to the NBIC Secretary **PRIOR TO** the meeting. *nbicsecretary@nbbi.org*
     - If elected by the membership, the member will serve a term of three years.
   - 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.
   - With the release of the new 2025 Edition of the NBIC the National Board has a gift for all NBIC Committee Members to show our appreciation for all your hard work. Please see Jonathan or Luis in the NB office (Mt. Washington Room), located here on the 4th Floor to receive yours.

5. **Awards and Special Recognition**
   - Ms. Kathy Moore – 10 years on SC R&A

6. **Adoption of the Agenda**
   The Agenda was UA as revised, with updated status and notes to capture all action taken this week on all items Added

A25-42 and A24-28.

7. **Approval of the Minutes of the January 2025 Meeting**
The minutes from the January 2025 meeting were UA by the membership.

8. **Review of Rosters**

a. Membership Nominations

i. The following individuals were UA for membership to the TG Historical:
Geroge Galanes (General Interest)

ii. The following individuals were UA for membership to the SC R&A:
Mr. Robert Derby (Labor)
Mr. Aziz Khssassi (Jurisdictional Authority)

b. Membership Reappointments

i. The following **TG Interpretations** memberships were UA for reappointment:

- Mr. Robert Derby.

ii. The following **TG NR** memberships were considered for reappointment:

- Mr. Eben Creaser – was UA
- Mr. Caslav Dinic – Will LB reappointment to membership once Mr. Dinic has replied to Secretary Hellman's email asking if he is willing to continue to serve on the TG.

iii. The following **TG Historical** membership was UA for reappointment:

- Mr. M. Carlson.

iv. The following **Subcommittee R&A** memberships were UA for reappointment:

- Mr. Phil Gilston,
- Mr. Tim McBee,
- Mr. Ray Miletti,
- Mr. Michael Quisenberry,
- Mr. Paul Shanks,
- Mr. John Siefert

c. Officer Nominations - None

d. Resignations - None

9. Interpretations

Item Number: I24-36 **NBIC Location: Part 3, 3.4** **Attachment 2**

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.

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**.

Update: Passed INTERP TG LB 3/14/25 (11-3-0) - Ready for SC

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

Item Number: I24-44 **NBIC Location: Part 3, 2.5.3** **Attachment 3**

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.

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**.

INTERP TG July 2025 Meeting Action: R. Derby presented a proposal that was **revised and UA**.

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

New Interpretations Requests:

Item Number: I25-09	**NBIC Location: Part 3, 4.4.1 e) and 4.4.2 c)**	**Attachment 4**

General Description: NDE in lieu of hydrotest

Subgroup: Repairs and Alterations

Task Group: B. Hrubala (PM)

Explanation of Need: Performing a hydrotest of these "Parts" presents a contamination risk as mentioned in Part 3, paragraph 4.4.2.c. During the installation phase, the authorized inspection agency (AIA) performing the installation inspection determined that the Part was required to have been hydrotested. Despite the clear allowance of NDE per Part 3, paragraphs 4.4.1.e and 4.4.2.c, the AIA stated that the only means to allow NDE is if hydrotest is not practicable. The installation AIA refused to allow the equipment to be installed without a hydrotest prior to installation so the fabricator incurred significant costs performing a hydrotest to meet the demands by the installation AIA. This is a typical repair scenario and clarity as to the requirements is necessary to avoid future instances of this issue.

INTERP TG July 2025 Meeting Action: B. Hrubala presented a summary of the proposed question, and the group determined this question was Consulting. The NBIC has provisions to allow for non-pressure tested parts to be installed already per 3.2.2 e). **A proposal to send a Letter to the Inquirer this is Consulting was Approved with 1 Non-Voting**: (Stacey Marks)

SC & MC R&A July 2025 Meeting Action: T. Seime presented **A proposal to send a Letter to the Inquirer this is Consulting was UA.**

Item Number: I25-35	**NBIC Location: Part 3, 3.3.4.3 e) 3) m.**	**Attachment 5**

General Description: External Weld Metal Buildup - Proximity to Major Structural Discontinuities

Subgroup: Repairs and Alterations

Task Group: J. Ferreira (PM), K. Derrick

Explanation of Need: NBIC Part 3 Section 3.3.4.3 e) 3) m provides clarity on the spacing between adjacent buildups but does not provide clarity on the required spacing between a buildup and other major structural discontinuities which could also interact with the stress concentration created by the buildup.

INERPT TG July 2025 Meeting Action: J. Ferreira presented a **proposal that was revised and UA**.

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

Item Number: I25-40 **NBIC Location: Part 3, 2.5.3.2** **No Attachment**

General Description: Fillet welds using alternative welding method #2

Subgroup: Repairs and Alterations

Task Group: P Becker (PM), J. Siefert

Explanation of Need: Welding on non-pressure parts (P11B Pads) to the outside of a VIII Div 1 P11B Pressure Vessel. Welding method #4 speaks specifically about fillet welds, when welding method #2 does not specifically reference fillet welds. Is this a potential oversight and it can be done, or is it written this way to exclude fillet welds using welding method #2?

INTERP TG July 2025 Meeting Action: P Becker (PM) and J. Siefert added to Taskgroup. – **PR.**

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

Item Number: I25-41 **NBIC Location: Part 3, 3.4.1** **Attachment 6**

General Description: Pressure testing for re-rating: waiving requirements

Subgroup: Repairs and Alterations

Task Group: None assigned.

Explanation of Need: Composing an Alteration Plan for future service work. Owner/user would like to increase a drying cylinder MAWP from 150 psi steam pressure to 160 psi.

INTERP TG July 2025 Meeting Action: G. Scribner/T. Seime presented the issue and the TG determined that a **Letter to go to Inquirer that this is Consulting was UA**. A separate letter from NBIC (G. Scribner) will go to the Inquirer to address pneumatic safety hazards.

SC & MC R&A July 2025 Meeting Action: T. Seime presented a **Letter to go to Inquirer that this is Consulting was UA**. A separate letter from NBIC (G. Scribner) will go to the Inquirer to address pneumatic safety hazards.

10. Action Items

a. Task Group Graphite

Item Number: A24-67	NBIC Location: Part 3, S3.2 and S3.4,	Attachment 7

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.

SC R&A July 2025 Meeting Action: A. Viet presented a **PR**. The proposal was revised by the SC, and A. Viet will take these changes to the Graphite TG for consideration.

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.

Historical July 2025 Action: This was a **PR.**

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

Item Number: 25-13	NBIC Location: Part 3, S2.7.1	Attachment 8

General Description: Update list to add acceptable materials for rivets and bronze castings and

Subgroup: SG Historical
Task Group: M. Wahl (PM)

Explanation of Need: Update list to add acceptable materials for rivets and bronze castings and clarify the difference between flange bolts and boiler casting bolts.

Historical July 2025 Meeting Action: Proposal approved. Ready for SC.
SC R&A July 2025 Meeting Action: T. Seime presented a proposal that was revised by the SC and **UA.**
MC July 2025 Meeting Action: T. Seime presented a proposal that was **UA.**

d. Task Group Locomotive

Item Number: 24-77	NBIC Location: Part 3, S1.2.3k)	Attachment 9

General Description: Clarify Alteration for transition from rigid to flexible bolts.

Subgroup: TG Locomotive
Task Group: M. Ray (PM), W. Fengler, T. Botti, J. Churchill

Explanation of Need: This is omission from the code.

February 2025 TG Locomotive Meeting Action:
Mr. Ray discussed this item and stated he had not made a lot of progress with the proposal. The group reviewed section S1.2.3 of Part 3. Mr. Ray then presented a proposal he created to the TG. The TG made changes to the proposal, and a motion was made to accept the revised proposal. The motion was seconded and **unanimously approved**.
SC R&A July 2025 Meeting Action: T. Seime presented a **PR**, as there was no one from TG Locomotive to speak on this item. This may be LB to SC if requested.

Item Number: 24-79	NBIC Location: Part 3, S1.1.1 b)	Attachment 10

General Description: Value of Default Tensile Strength

Subgroup: TG Locomotive
Task Group: M. Ray (PM)

Explanation of Need: FRA mandates default of 50,000 psi but boilers built after 1921 have better than 55,000 psi steel.

February 2025 TG Locomotive Meeting Action:
Mr. Ray presented a proposal to the TG. After a short discussion, a motion was made to accept the proposal as presented. The motion was seconded, and then the TG had further discussion on whether the language in the proposal was contradictory to the language in Title 49, Part 230. After further discussion the proposal was revised. The motion and second was revised to accept the revised proposal. The chair called for the vote, and the revised proposal was unanimously approved.

SC R&A July 2025 Meeting Action: T. Seime presented a **PR**, as there was no one from TG Locomotive to speak on this item. This may be LB to SC if requested.

Item Number: 24-80	NBIC Location: Part 3, S1.2.2	No Attachment

General Description: adding a paragraph l) to Part 3, S1.2.2

Subgroup: TG Locomotive
Task Group: S. Butler (PM), Dervin Lambert

Explanation of Need: It is a past practice used in locomotive boiler repair for stay bolts that could not be accessed from both sides.

February 2025 TG Locomotive Meeting Action:
The TG stated there has not been a lot of movement on this item. After discussion, and review of Part 3, S1.2.2, Mr. Butler will get a proposal together and the TG will come back to this item later in the meeting. The TG came back to this item and Mr. Bulter presented a proposal. The TG had a lot of discussion on the wording and weather or not the wording would be passed through Part 3 Repairs and Alterations since this goes against almost everything Part 3 says about staybolts. A motion was made to **close this item with no action**. The motion was seconded and unanimously approved.

SC & MC R&A July 2025 Meeting Action: T. Seime presented a motion to **Close w/No action,** which was **UA**.

Item Number: 24-81	NBIC Location: Part 3, Table S1.1.3.1	Attachment 11

General Description: Revise Table S1.1.3.1, Part 3, Section 6

Subgroup: TG Locomotive
Task Group: R. Franzen (PM), T. Botti

Explanation of Need:
Need alternate material for Hollow Cylindrical Pressure Retaining Parts. Propose SA-106-B which is hollow seamless pipe to be used for super heater ball end parts. The new line-item title in the table would be "SH Unit Ball Ends", material options would be SA-106-B, SA-675, SA-696.
Change first line item from Boiler Tubes & Flues, Arch Tubes, Superheater Units, change to Boiler Tubes & Flues, Arch Tubes, Superheater Units & Tubing.
See other changes in table in RED.

February 2025 TG Locomotive Meeting Action:
Ms. Metzmaier reported that this item was omitted from the SC R& A January 2025 agenda. The proposal was not sent to letter ballot to the SC R&A for vote. No action was taken by the TG.

SC R&A July 2025 Meeting Action: T. Seime presented a **PR**. This may be LB to SC if requested.

Item Number: 24-106	NBIC Location: Part 3, S1.2.2	Attachment 12

General Description: S1.2.2 Threaded Staybolts, change wording concerning reduced body staybolts

Subgroup: TG Locomotive
Task Group: None Assigned
Submitted by: R. Franzen

Explanation of Need: Clarification on staybolts over 8" long is needed whether they need telltale holes or not in rigid, flexible, radial and crown bolts.

February 2025 TG Locomotive Meeting Action:
Mr. Franzen stated he has not created a proposal for this item. The TG had a lot of discussion over Part 3, S1.2.2. The TG is considering changing the layout of Part 3, S1.2.2 b) so it is more easily understood and easier to follow. Mr. Botti will work on the layout of this section with his restructure of telltale holes & flexible staybolts. The TG put together a proposal for changes to this section. A motion was made to accept the proposal as presented. The motion was seconded and unanimously approved.

SC R&A July 2025 Meeting Action: T. Seime presented a **PR**, as there was no one from TG Locomotive to speak on this item. This may be LB to SC if requested.

Item Number: I25-06	NBIC Location: Part 3, S1.2.3	Attachment 13

General Description: Reinforcing ring under a flexible sleeve to eliminate angularity

Subgroup: TG Locomotive

Task Group: None Assigned

Submitted by: Linn Moedinger

Explanation of Need: Inspector questioning this method because it is not specifically addressed in the NBIC.

February 2025 TG Locomotive Meeting Action:
Mr. Moedinger presented the interpretation to the TG. The TG revised the question, and the subject of the interpretation. A proposal was made to accept the interpretation. The motion was seconded and unanimously approved.

SC R&A July 2025 Meeting Action: T. Seime presented a **PR**. If requested, this proposal can be sent for **a vote** via SC LB.

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)

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.

NR TG July 2025 Meeting Action: This was a **PR**. G. Scribner announced a new ANIA document for non-ASME Category 3 activities will be presented to the BoT in August, and that may solve the problems this item is attempting to solve. A. Khssassi and A. Triplett added to the TG. The new ANIA document will be forwarded to the NR TG if approved at the BoT next month.

SC July 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.

NR TG July 2025 Meeting Action: R. Spuhl presented a **PR**. A revised proposal was presented. After discussion, B. Schafer proposed to open a new Action Item to dissolve the Acronym table and put the needed abbreviations into the text of the book (e. g CFR, NQA, etc.). A revision to the NBIC text and the NB-417 was proposed to remove from the NBIC and put into the NB-417 the timeframe for an NR Cert Holder to receive a Cert if they have an active N-type ASME certificate (similar to the change in NB-415). The NBIC currently states 12 months; the proposed revision would delete the NBIC reference and add to the NB-417 the time frame to match ASME Cert. periods based solely on a Manual Review.

SC July 2025 Meeting Action: R. Spuhl presented a **PR.**

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.

SG R&A July 2025 Meeting Action: M. Schaser presented a motion to **Close w/No Action**, which was seconded and **UA**.

SC R&A July 2025 Meeting Action: M. Schaser presented a motion to **Close w/No Action**, which was seconded and **UA**.

MC July 2025 Meeting Action: Close w/No Action, which was seconded and **UA**.

Item Number: A21-53 **NBIC Location: Part 3, S8.5 a)** **Attachment 14**

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.

SG R&A July 2025 Meeting Action: P. Gilston presented Rev. 4 of the proposal. Slight revisions were made and the proposal was **UA as revised**.

SC R&A July 2025 Meeting Action: P. Gilston presented a proposal that was revised by the SC. This is to be sent to **SC LB for a vote.** UA.

Item Number: A23-09	NBIC Location: Part 3, New Supplement	Attachment 15

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.

NOTE: This item was approved by SC letter ballot on April 19, 2025. It is ready to be presented to the Main Committee.

SG R&A July 2025 Meeting Action: - G. Galanes presented an update that this will be discussed as SC and is ready for MC.

SC R&A July 2025 Meeting Action: T. Melfi presented an overview of changes and this will go to MC LB.

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, 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.

SG R&A July 2025 Meeting Action: P. Gilston presented a **PR**.

SC R&A July 2025 Meeting Action: P. Gilston presented a **PR**. K. Moore was removed from the TG.

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.

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.

NOTE: This item is currently out for an SC R&A ballot, which is scheduled to close on July 2, 2025.
Update: Passed SC LB - 7/2/25 (18-2-1) - Ready for MC

July 2025 Meeting Action: To be LB to MC

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.

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

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

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, S. Marks

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

SG R&A July 2025 Meeting Action: B. Schaefer presented a **PR**. A proposal that was revised based on discussion. Additional revisions will be made with the intention of sending them to SG LB.

SC R&A July 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, P. Davis

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.

SG R&A July 2025 Meeting Action: M. Schaser presented a motion to **Close w/No Action** that was UA, based on discussion to revise the definition of "Alteration" rather than revise the list of examples.

SC R&A July 2025 Meeting Action: M. Schaser presented a motion to **Close w/No Action** that was UA

July 2025 Meeting Action: Close w/No Action that was UA

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.

SG R&A July 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 July 2025 Meeting Action: A. Triplett 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.

SG R&A July 2025 Meeting Action: M. Quisenberry made a motion to **Close w/No Action**, which was UA.

SC R&A July 2025 Meeting Action: M. Quisenberry made a motion to **Close w/No Action**, which was UA.

MC July 2025 Meeting Action: Close w/No Action that was UA

Item Number: A24-17 **NBIC Location: Part 3, 5.7.5 b)** **Attachment 17**

General Description: Specific Requirements For Stamping And Nameplates

Subgroup: Repairs and Alterations
Task Group: B. Schaefer (PM), B. Schaefer, A. Khssassi, J. Ferreira and T. LeBeau

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.

SG R&A July 2025 Meeting Action: B. Schaefer presented a proposal that was **revised and UA** by the SG.

SC R&A July 2025 Meeting Action: B. Schaefer presented a proposal that was revised and **Approved w/1 Neg (K. Moore)** (Attachment 17a).

MC July 2025 Meeting Action: To be **LB to MC.**

Item Number: A24-18 **NBIC Location: Part 3, 9.1** **Attachment 18**

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.

SG R&A July 2025 Meeting Action: P. Gilston presented a previous proposal that was revised based on discussion and was **UA** by the SG. This is a definition (all Parts), so **a LB will go to Parts 1, 2, and 4.**

SC R&A July 2025 Meeting Action: P. Gilston presented a PR, as the proposal that was **UA** by the SG, and will go to **a LB to Parts SG 1, 2, and 4.**

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.

SG R&A July 2025 Meeting Action: M. Schaser presented a **PR,** new “Advanced Repairs” items can now move forward.

SC R&A July 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).

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

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

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 July 2025 Meeting Action: A. Triplett presented, and this will be sent to SG LB once the proposal can be reviewed by an ECS subject matter expert. This was a **PR**.

SC R&A July 2025 Meeting Action: A. Triplett presented, and this will be sent to SG LB once the proposal can be revised to remove Code Case references and review by an ECS expert. This was 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), M. Schaser, W. Sperko

Explanation of Need: Simplify PWHT requirements in 2.5.2.

SG R&A July 2025 Meeting Action: P. Gilston presented a **PR**.

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

Item Number: A25-04 **NBIC Location: Part 3, 2.5.3** **Attachment 19**

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 R&A July 2025 Meeting Action: P. Gilston presented an update that this is ready for SC.

SC R&A July 2025 Meeting Action: P. Gilston presented a proposal that was revised based on discussion and was **Approved w/1 Neg (P. Shanks)** (Attachment 19a)

MC July 2025 Meeting Action: UA

New Action Items:

Item Number: A25-18 **NBIC Location: Part 3, 5.7.5** **Attachment 20**

General Description: Requirements for Stamping and Nameplates

Subgroup: Repairs and Alterations

Task Group: B. McGuire (PM), Lane Baker

Explanation of Need: which contains critical identification information. However, HRSG boilers differ in that they have multiple master nameplates for different sections (e.g., HP, LP, economizer), all located on the outer casing of the boiler. Currently, NBIC repair nameplates do not provide a way to indicate which specific section was repaired. This limitation creates confusion for future inspections and maintenance, as there is no clear indication of which section underwent repairs. Adding a requirement for repair nameplates to include the specific HRSG boiler section being repaired will enhance clarity and traceability.

SG R&A July 2025 Meeting Action: B. McGuire presented a proposal that was revised based on discussion. The proposal was **Approved w/1 Negative** (L. Baker).

SC R&A July 2025 Meeting Action: B. McGuire presented a proposal that was revised based on discussion, however the proposal **Failed the SC vote** (20 members present – only 12 approvals obtained – 14 needed). Added Lane Bake to the taskgroup.

Item Number: A25-20	NBIC Location: Part 3, 3.3.4.6	No Attachment

General Description: Adoption of reinforcement/fillet welded patches from PCC-2

Subgroup: Repairs and Alterations

Task Group: M. Schaser (PM)

Explanation of Need: Oil refineries are scant on shutdown opportunities and vital to the fuel needs of the community. At times inspection departments will detect corrosion on an in-service piece of equipment and be unable to clean it up for internal entry without a planned outage. Fillet welded patches are a safer alternative to external weld metal build up, or fitness for service.

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

SC R&A July 2025 Meeting Action: M. Schaser presented a **PR.** Brent Ray and Stacy Marks (on ASME Committees) both offered to supply PCC and other ASME references if the SC needs to review the material proposals will be referencing.

Item Number: A25-21	NBIC Location: Part 3, S11.2.3 and S11.3.2	No Attachment

General Description: Synchronize/Revise Repairs & Alterations of VIII-2, VIII-3 PRIs

Subgroup: Repairs and Alterations

Task Group: R. Collins (PM)

Explanation of Need: Mr. Tim Gardner, NBBI Senior Staff Engineer/Training Instructor, plans to create an online course for repairs of ASME Sect VIII-2 and VIII-3 PRIs but the current requirements in S11.2.3 and S11.3.2 (formerly 3.3.5 and 3.4.5) do not seem to be in agreement.

SG R&A July 2025 Meeting Action: R. Collins presented a **PR**, as he will reach out to NBBI staff to verify if "Plan" is preferred/acceptable rather than "Specification". This will be sent to SG LB in the future.

July 2025 Meeting Action: : R. Collins presented a **PR**

Item Number: A25-22 **NBIC Location: Part 3, Table 2.5.1** **No Attachment**

General Description: Revise Part 3, Table 2.5.1

Subgroup: Repairs and Alterations

Task Group: L. Dutra (PM), G. Galanes

Explanation of Need: There have been changes to materials in the ASME Code that have made a review/revision of Table 2.5.1 necessary. If anything, the obsolete group numbers should be deleted. It will be up to the committee to decide whether to add the missing P/group numbers and the associated temperatures.

SG R&A July 2025 Meeting Action: L. Dutra presented a **PR**. G. Galanes was added to the taskgroup.

SC R&A July 2025 Meeting Action: L. Dutra presented a **PR**.

Item Number: A25-25 **NBIC Location: Part 3, S11.2.2** **No Attachment**

General Description: Repair of PRIs Without Complete Removal of Defect

Subgroup: Repairs and Alterations

Task Group: T. LeBeau (PM), M. Schaser, R. Collins, J. Hayes, K. Derrick

Explanation of Need: To clarify this repair activity can be used for welded or non-welded repairs. This proposal will remove reference to welded repairs in S11.2.2 and only refer to "repair."

SG R&A July 2025 Meeting Action: T. LeBeau presented a **PR**. The revision to the proposal to remove the word “welded repairs” and “replace with Engineered Repairs” was discussed at length, and additional revisions are needed.

SC R&A July 2025 Meeting Action: T. LeBeau presented a **PR;** M. Schaser, R. Collins, J. Hayes, K. Derrick were added to the TG.

Item Number: A25-26 **NBIC Location: Part 3, 3.2.2 and 5.7.4** **Attachment 21**

General Description: Stamping of non-ASME Parts and Distribution of Form R-3

Subgroup: Repairs and Alterations
Task Group: P. Gilston (PM)

Explanation of Need: Part 3 does not address the distribution of the R-3 and provides no specific details on how to stamp non-ASME parts fabricated by the R Certificate Holder.

SG R&A July 2025 Meeting Action: P. Gilston presented. This failed LB (15-6-1), however the proposal presented was revised and **Approved w/1 Abstention** (M. Toth).

July 2025 Meeting Action: : P. Gilston presented a proposal that was **UA**.

MC July 2025 Meeting Action: To be **LB to MC.**

Item Number: A25-28 **NBIC Location: Part 3, 1.3 b) and 9.1** **Attachment 22**

General Description: Remove references to FIA's throughout - This is now a scope under OUIO

Subgroup: Repairs and Alterations

Task Group: A. Khssassi (PM)

Explanation of Need: FIA's are to be a scope under OUIO. Definitions have been removed from RCI-1. This will remove references in the: Introduction; 1.3 b); and in the definition of an Inservice AIA.

SG R&A July 2025 Meeting Action: A. Khssassi presented a proposal that was **UA**.

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

MC July 2025 Meeting Action: A. Khssassi presented a proposal that was **UA**

Item Number: A25-29 **NBIC Location: Part 3, 2.5.3 and 3.3** **No Attachment**

General Description: Referencing for Weld Metal, Filler Metal etc.

Subgroup: Repairs and Alterations

Task Group: P. Gilston (PM) , T. Melfi, J. Siefert, W. Sperko,

Explanation of Need: Within Part 3, welding consumables are referred to in several different ways e.g., filler metal, weld metal etc. This item is to review these references and identify if a single reference description is beneficial for users of the Code.

SG R&A July 2025 Meeting Action: P. Gilston presented a **PR**.

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

Item Number: A25-42	NBIC Location: Part 3, Supplement 11	Attachment 23

General Description: Renaming Supplement 11

Subgroup: Repairs and Alterations

Task Group: M. Schaser (PM)

Explanation of Need: Removing "Engineered" from the title so as not to suggest that the work would require direct involvement from an engineer or engineering certification. The purpose of the supplement is to provide repairs activities that have been developed with sound engineering judgment backed up with technical references. In some cases, an engineering evaluation will be recommended.

SG R&A July 2025 Meeting Action: M. Schaser presented a proposal that was **UA**.

SC R&A July 2025 Meeting Action: M. Schaser presented a proposal that was **UA**.

MC July 2025 Meeting Action: M. Schaser presented a proposal that was **UA**.

11. 2/3 TG Items

Item Number: 24-28	NBIC Location: Part 2, S9.9 b) 4)	Attachment 24

General Description: Applying PWHT to previously "as welded" item

Subgroup: Inspection
Task Group: Brent Ray, Paul Davis, Phil Gilston
Submitted by: J. Swezy

Explanation of Need: The NBIC clearly lists the application of PWHT to a PRI that was not previously PWHT by the original Manufacturer as an example of an alteration. I agree with that statement and believe it is appropriate to consider this to be an alteration. I do not under why the NBIC considers this as an acceptable alteration but does not provide its users with any guidance as to how they should address its implementation. It seems very clear to me that applying PWHT to such welds is rarely detrimental when properly applied and should not reduce their strength or toughness. If anything, it should prove helpful rather than harmful under properly considered application. Good engineering practice mandates that a carbon steel vessel undergoing a change to wet H2S service should receive PWHT to provide an improved resistance to hydrogen cracking corrosion. Failing to do so would be irresponsible. The NBIC rules for a change of service even mention this as a factor to consider in Part 2, Table S-9.4.

January 2025 Meeting Action:
A task group was formed to work on this item. Note: on 1.14.25 at SG RA, George Galanes has pulled this item out of STG PT 2 / PT 3. George will interface with Part 2 once the wording has been finalized. This item to be removed prior to next meeting.

Part 2 SG July Meeting Action: G. Galanes presented a proposal that was UA. To be presented to Part 2 and Part 3 SC

SC R&A July 2025 Meeting Action: G. Galanes presented a proposal that was revised slightly and **UA**. Discussion took place indicating the verbiage in Part 2 may need to be added to, but is outside of the scope of this Committee.

MC July 2025 Meeting Action: G. Galanes presented a proposal that was **UA**

12. **Future Meetings**
    - January 12-15, 2026 – New Orleans, LA

13. **Adjournment @ 1:30 PM**

Respectfully submitted,

Terrence Hellman

Terrence Hellman

SC R&A Secretary

SC R&A - Cincinnati, OH - July 9, 2025

Present	Full Name	Email Address	Company Name	Registration Type	Role
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x	Toth, Marty	mtoth@boiscotraininggroup.com	ECS Consulting & The Boisco Training Group	In-person	Chair, Vice
x	Becker, Patricia	pbecker3135@gmail.com	EPRI	In-person	Member
x	Boseo, Brian	bmboseo@burnsmcd.com	Burns & McDonnell Construction	In-person	Member
x	Carlson, Michael	camx235@lni.wa.gov	State of Washington	In-person	Member
x	Davis, Paul	paul.davis22@woodplc.com	Wood Group USA, Inc.	In-person	Member
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x	Gilston, Philip	philip_gilston@hsb.com	Hartford Steam Boiler	Remote	Member
x	Hopkins, Craig	chopkins@seattleboiler.com			Member
x	McBee, Timothy	Timothy.McBee@tuvsud.com	ARISE Boiler Inspection and Insurance Company RRG	In-person	Member
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	Moedinger, Linn	linnwm@supernet.com	Strasburg RR	Remote	Member
x	Morelock, Brian - Riley Collins Substitute	morelock@eastman.com			Member
x	Quisenberry, Michael	michael@spartan-mech.com			Member
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x	Spuhl, Raymond	raymond_spuhl@hsb.com	Hartford Steam Boiler Inspection and Insurance Company	In-person	Member
x	Valdez, Rick	rvaldez@prim.com			Member
x	Barr, Larry	lbarr@propanetank.com	Quality Steel Corporation	Remote	
x	Bates, Johnathon	bates@ibb026.org	Boilermakers	In-person	
x	Burpee, John	john.h.burpee@maine.gov	State of Maine	In-person	
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x	Hellman, Terrence	thellman@nationalboard.org	National Board	Staff	
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	Simmons, Douglas	heatsolutionsllc@aol.com	1st Heating Solutions LLC	Remote	
x	Simmons, Timothy	simmonssoilfarm@gmail.com	IBB	In-person	
	Simmons, Timothy	tsimmons@boilermakers.org	IBB	In-person	
x	Speck-Kern, Edward	edward.speck-kern@fpl.com	Florida Power & Light Co.	In-person	
x	Sperko, Walter	wsperko@bellsouth.net	Sperko Engineering	In-person	
x	Thompson, Alex	Alex.thompson@iconboiler.com	Icon Boiler, Inc.	In-person	
x	Triplett, Andrew	triplettal@ornl.gov	UT-Battelle, LLC	In-person	
	Troutt, Robby	rob.troutt@tdlr.texas.gov	Texas Department of Licensing and Regulation	In-person	
x	Underwood, Bob	robert_underwood@hsb.com	HSB	In-person	
	Verderose, Ed	ed@exithomepros.com	TBD	In-person	
	Wadkinson, Melissa	mwadkinson@icloud.com	Fulton	In-person	
x	Wagner, Tom	thomas.wagner@fm.com	FM	In-person	
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x	White, Thomas	thomas.white@nrg.com	NRG Energy	In-person	
	Hayes, John	john.pc.hayes02@gmail.com			
	Baker, Lane				
	McGuire, Bob				
	Hamaker, Landon				

THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

PROPOSED INTERPRETATION

Item No.

24-36

Subject/Title

Alteration of Plate Heat Exchanger

Project Manager and Task Group

Trevor Seime

Source (Name/Email)

Monte Bost / monte_bost@hsb.com

Statement of Need

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

Background Information

An "UM" stamped vessel has no Authorized Inspector involvement. A "U" stamped vessel requires Authorized Inspector involvement.

Proposed Question

A plate heat exchanger (PHE) is altered by increasing the number of heat transfer plates. The PHE was originally constructed to ASME Boiler and Pressure Vessel Code, Section VIII, Division 1 with the “UM” Designator. The increase in heat transfer plates causes the volume to exceed the 5 ft3 (0.14 m3) limit in ASME Code Section VIII, Division 1, paragraph U-1(j)(1). Is reclassification of the PHE from “UM” to “U” permitted?

Proposed Reply

No

Committee's Question 1

Per NBIC Part 3, Section 3, may a pressure retaining item be altered beyond the scope of the original code of construction?

Committee's Reply 1

No

Rationale

If a jurisdiction chooses to allow this, then the pri becomes a “state special” and is outside the NBIC.

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.

I24-44 Rev 03~~2~~

Subject/Title

Part 3, Section 2, 2.5.3

Project Manager and Task Group

Robert Derby (PM), Phil Gilston

Source (Name/email)

Paul Shanks / paul.shanks@bureauveritas.com (now with Arise Boiler Inspection & Insurance Company)

Statement of Need

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Background Information

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.

Proposed Question

Does NBIC Part 3 prohibit the use of the alternative welding methods in lieu of conventional PWHT for a repair activity conducted on an ASME pressure vessel that per UG-118 is marked with a Special Service letter?

Proposed Reply

No

Committee's Question 1

May ~~alternate~~ alternative welding methods be used for the repair of lethal service vessels, provided competent technical advice has been obtained in accordance with 2.5.3 (b)?

Committee's Reply 1

Yes.

Rationale

There are no words in the NBIC Code that prohibit the use of ~~alternate~~ alternative welding methods for the repair of special service vessels.

	VOTE						
COMMITTEE	**Approved**	**Disapproved**	**Abstained**	**Not Voting**	**Passed**	**Failed**	**Date**

NBIC Interpretation Item I25-09
Submitted by Chuck Becker (hggbecker@yahoo.com)
3/25/2025

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	NDE in lieu of hydrotest
NBIC Location:	2023 NBIC Part 3, 4.4.1 e) and 4.4.2 c)
Statement of Need:	Performing a hydrotest of these "Parts" presents a contamination risk as mentioned in Part 3, paragraph 4.4.2.c. During the installation phase, the authorized inspection agency (AIA) performing the installation inspection determined that the Part was required to have been hydrotested. Despite the clear allowance of NDE per Part 3, paragraphs 4.4.1.e and 4.4.2.c, the AIA stated that the only means to allow NDE is if hydrotest is not practicable. The installation AIA refused to allow the equipment to be installed without a hydrotest prior to installation so the fabricator incurred significant costs performing a hydrotest to meet the demands by the installation AIA. This is a typical repair scenario and clarity as to the requirements is necessary to avoid future instances of this issue.
Background Information:	Economizers (and Boiler Banks) are fabricated in a manner that allows for shipping by truck, train, boat, etc. These economizers are modularized into portions that are sized properly and are composed of a stack of platens and a portion of the main header that will be welded together at the mill during installation. Historically, fabricators have performed hydro testing on the individual platens before they are assembled into the finished module and before the main header segment is welded in place. This means that feeder tube connections to the main header are subject to RT (volumetric NDE) and are not hydro tested. This is done for several reasons: • Draining the water completely and drying the interior is not possible when the complete module is assembled. Drying is necessary as a precursor to blowing in the desiccant for corrosion prevention during shipping and storage prior to installation. 1. Shops do not have the crane capacity to lift the module that is half-full of water to an adequate height for complete draining. 2. The nature of these economizers does not allow for safely maneuvering, or manipulating the module to allow the hydro water to access a tube for gravity draining. • If a hydro is performed on a completed module and a leak is detected on an internal platen, repair is not possible without serious amounts of work to remove welds and disassemble the module (lifting lugs, air seal, stitch welds, main header).

NBIC Interpretation Item I25-09
Submitted by Chuck Becker (hggbecker@yahoo.com)
3/25/2025

	• The main header segment is not hydro tested either due to the large number of plugs that are required to be welded into place and removed. Properly beveling the feeder tubes for buttweld is difficult/impossible when installed to the main header segment.
Proposed Question:	In the scenario where a Part is fabricated under the “S” certificate of authorization and not hydro tested (indicated on the P-4 as “hydro test by others”) and that same company has the “R” certificate of authorization and is signing the Design portion of the R-2, could the Part then be NDE tested in the shop under the provisions of the NBIC by that company prior to the Part being sent to the client for “Field Construction” by another “R” certificate holder? Further, in the event of a disagreement between AIA's as to what testing is required and permitted, who determines what is and is not "practicable" per Part 3, paragraph 4.4.2.c?
Proposed Reply:	Yes, per the requirements of Section 4, regardless of if it is a Repair or an alteration, NDE is permissible in lieu of a hydrostatic test. The determination of what is "practicable" is not in the purview of the installation AIA to determine if a signed and certified data report has been supplied with the equipment.
Committee’s Question:	<Question(s) the committee will interpret. Can be the same wording as the proposed question>
Committee’s Reply:	Letter to Inquirer - This is Consulting – See NBIC Part 3, 3.2.2 e).
Rationale:	<Additional clarification for response>

NBIC Interpretation Item 25-35
Submitted by Hugh-Jean Nel (hugh-jean.nel@sasol.com)
June 12, 2025

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	External Weld Metal Buildup - Proximity to Major Structural Discontinuities
NBIC Location:	2025 NBIC Part 3, 3.3.4.3 e) 3) m.
Statement of Need:	NBIC Part 3 Section 3.3.4.3 e) 3) m provides clarity on the spacing between adjacent buildups but does not provide clarity on the required spacing between a buildup and other major structural discontinuities which could also interact with the stress concentration created by the buildup.
Background Information:	NBIC Part 3 Section 3.3.4.3 e) 3) m limits the proximity between adjacent external buildup sites as a repair. This makes sense as the buildups introduces a change in the normal hoop stress profile and if they are too close to each other then these stress concentrations will interact. However, there is no restriction between the spacing of a buildup and other major discontinuities such as nozzles or integral tubesheets, which also have significant stress concentrations associated with them and which could interact with the buildup if spaced too close. If the spacing proximity is too close then it should be treated as an alteration and not a repair.
Proposed Question:	Does the minimum distance between the weld toes of external weld metal buildup in 3.3.4.3 e) 3) m also apply to the distance between the toe of the weld buildup and other major structural discontinuities?
Proposed Reply:	Yes.
Committee's Question:	Does the required minimum distance between the weld toes of external weld metal buildup, as specified in 3.3.4.3 e) 3) m, also apply to the distance between the weld buildup toe and adjacent components, such as nozzles or structural attachments?
Committee's Reply:	No
Rationale:	3.3.4.3 e) 3) m is only applicable to multiple areas of external weld metal build up. Structural components or nozzles are not identified in 3.3.4.3 e) 3) m

NBIC Interpretation Item 25-35
Submitted by Hugh-Jean Nel (hugh-jean.nel@sasol.com)
June 12, 2025

NBIC Interpretation Item I25-41
Submitted by Greg Francisco
6/30/2025

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	Pressure testing for re-rating: waiving requirements
NBIC Location:	2023 NBIC, Part 3, 3.4.1
Statement of Need:	Composing an Alteration Plan for future service work.
Background Information:	Owner/user would like to increase a drying cylinder MAWP from 150 psi steam pressure to 160 psi.
Proposed Question:	I have a scenario with a cast iron paper machine dryer certified to 150 psi and hydrotested by the manufacturer to 300 psi. The owner/user would like this dryer re-rated for 160 psi. Due to the in-service environment conditions, a pneumatic pressure test is to be performed to 1.1x desired MAWP, or 176 psi, per ASME VIII Div 1 UG-100. Since the required re-rate air pressure test is less than the original water pressure test, could this be grounds for waiving pressure testing so long as vessel physical condition, NDE results and engineering data are deemed favorable?
Proposed Reply:	Yes.
Committee's Question:	<Question(s) the committee will interpret. Can be the same wording as the proposed question>
Committee's Reply:	This is consulting letter to formally go to Inquirer. A separate letter to also go to Inquirer regarding the inherent safety hazards of pneumatic testing from NBIC.
Rationale:	<Additional clarification for response>

S3.2 REPAIRS

c) The material used in making repairs or alterations shall conform to the requirements of the original code of construction except as provided in NBIC Part 3, S3.2 j). The "R" Certificate Holder is responsible for verifying identification of existing materials from original data, drawings, or unit records and identification of the materials to be installed. Where material strength properties are used in supporting calculations, material strength properties of replacement parts shall meet or exceed the original material strength values~~; otherwise, recalculation and alteration is required.~~.

S3.4 ALTERATIONS

a) The requirements provided in this section shall apply, insofar as they are applicable to the materials discussed herein. Completed alterations shall be subjected to a pressure test not less than operating pressure or more than maximum allowable working pressure. The test pressure shall be ~~maintained~~ held for a minimum of 30 minutes~~ minimum.~~ ~~subjected to a pressure test not less than that required by the code of construction. The test pressure shall be maintained for a minimum of 30 minutes. The pressure shall be reduced to MAWP and maintained for inspection.~~

b) All re-ratings shall be pressure tested in accordance with the original code of construction. Hold-time for the pressure test shall be a minimum of ~~10~~30 minutes prior to examination by the Inspector. Where the test pressure exceeds the MAWP of the item, the test pressure shall be reduced to the MAWP for close examination by the Inspector. Hold-time for close examination shall be as necessary for the Inspector to conduct the examination~~, but not less than 30 minutes~~.

~~b~~c) Alteration of the spring design (e.g., change in stiffness or the initial compression) of a graphite shell-and-tube heat exchanger shall be done only after revised calculations have been prepared in accordance with the "R" Certificate Holder's Quality Management~~Control~~ System and accepted by the Inspector.

NBIC Action Item 25-13
Submitted by Mike Wahl (mikew.steam@gmail.com)
Submitted on 1/16/25

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	**Update Table S2.7.1**
NBIC Location:	Part 3, Supplement 2
Statement of Need:	Update the table to add acceptable materials for bronze casting and washout plugs, rivets and clarify the difference between flange bolts and boiler casting studs.
Background Information:	1. NBIC Supplement 1, Table S1.1.3.1 currently allows or the use of SB-148 for the same application of bronze castings and washout plugs. 2. ASME added SA-36 as an acceptable rivet material in the 2004 addition. ASME Section 1, PG-14 calls out the material and requirements when being used. The test requirements are the same as the test requirements for SA-31 rivets. 3. The current table doesn't include any materials for studs that attach components to the boiler.
Changes	1. Add SB-148 to Bronze Casting and Washout Plugs 2. Add A-36 to Rivets 3. Add * behind A-36 Rivets 4. Add * note at bottom of table. "SA-36 Rivets must comply with the requirements ASME Section 1, PG-14" 5. Add "Boiler Studs for Component Attachment" to Application List with SA-675 Grade 70 and SA-36 for the Specification.

NBIC Action Item 25-13
Submitted by Mike Wahl (mikew.steam@gmail.com)
Submitted on 1/16/25

TABLE S2.7.1
MATERIALS LIST FOR HISTORIC BOILERS

Application	Specification
Boiler Tubes & Flues	SA-178 Grade A, SA-192, SA-210
Boiler & Firebox	Plate SA-285 Grade C, SA-515, SA-516
Staybolts & Patch Bolts	SA-675, SA-36, ASTM A-31
Boiler Braces	SA-675, SA-36
Rivets	SA-675, SA-31, SA-36*
Forged Parts & Fittings	SA-105, SA-217
Hollow Cylindrical Pressure Retaining Parts	SA-105 Forgings SA-675 Bar Stock
Pipe Flanges	SA-181, SA-105
Flange Bolts, Studs & Nuts	SA-193-B7, SA-194-2H
Bronze Castings & Washout Plugs	SB-61, SB-62, SB-148
Boiler Studs for Component Attachment	SA-675 Grade 70, SA-36

* SA-36 Rivets must comply with the requirements ASME Section I, PG-14

NBIC Action Item A24-17
Submitted by <NAME> (Email)
Submitted on

THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	**Clarify Alteration for transition from rigid to flexible bolts.**
NBIC Location:	Part 3, S1.2.3 k)
Statement of Need:	
Background Information:	This is omission from the code.

Proposed Text:

S1.2.3 BALL SOCKET-TYPE FLEXIBLE STAYBOLTS, SLEEVES, AND CAPS

i) Substitution of one type of flexible staybolt sleeve by another type shall be considered a repair, provided it does not affect the pressure retaining capability in accordance with Part 3, 3.4.4.

j) Where necessary for boiler expansion, ball socket-type flexible staybolts shall be positioned in such a manner as to not interfere with boiler expansion. Where individual bolts are replaced, care should be taken to ensure that the stress load of the new bolt is compatible to the loading on adjacent bolts.

Note: Some locomotive boiler designs positioned the bolts by backing the bolt head away from the sleeve socket bottom a certain amount.

k) When the installation of a flexible staybolt and/or sleeve affects the pressure retaining capability, in accordance with Part 3, 3.4.4, the change shall be considered an alteration.

NBIC Action Item 24-79
Submitted by <NAME> (Email)
Submitted on

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	Value of Default Tensile Strength
NBIC Location:	Part 3, S1.1.1 b)
Statement of Need:	FRA mandates default of 50,000 psi but boilers built after 1921 have better than 55,000 psi steel.
Background Information:	

Proposed Text:

S1.1.1 FEDERAL RAILROAD ADMINISTRATION (FRA)

a) The Federal Railroad Administration (FRA) rules for steam locomotive boilers are published in the *Code of Federal Regulations* (CFR) 49CFR Part 230, dated November 17,1999, which may be obtained on the FRA website. All locomotives under FRA jurisdiction are documented on FRA Form 4 as defined in 49CFR Part 230. This document is the formal documentation of the steam locomotive boiler and is required to be completed prior to the boiler being placed in service. This document shall be used as the data report for the boiler, applicable to all repairs and alterations performed. National Board "R" Certificate Holders shall document their repairs and/or alterations on National Board Forms R-1 or R-2. These reports shall be distributed to the owner-user of the boiler, who is required to incorporate them into an FRA Form 19, which becomes an attachment to the FRA Form 4. The design margin for all such repairs or alterations shall not be less than four, based on ultimate tensile strength of the material.

b) The use of Tensile Strength of 55,000 psi is acceptable for boilers built after 1921. For locomotives prior to 1921, validation of the material specification or material physical properties is required to use a tensile strength value greater than 50,000 psi.

Item Number 24-81
R. Franzen
7/30/24

Part 3
S1.1.3.1 MATERIAL LIST FOR STEAM LOCOMOTIVE BOILERS

Table S1.1.3.1 is intended as a basic guideline only and covers basic carbon steel and some alloy steel material specifications. Other alloy materials may be available for these applications if necessary.

a) SA-516 steel is recommended for firebox repairs. It is a fine grain steel that accepts flanging and bending with less tendency to crack than coarse grain steels such as SA-515 or SA-285 Grade C. Coarse grain steels have, on occasion, been found to crack or split after complicated flanging, bending, and forming.

b) SA-36 shall not be used to make any pressure-retaining part such as shells, staybolt sleeves, or caps.

c) When rivets are made from SA-675, the finished rivets must meet the physical requirements of the original rivet specification or SA-31 Grade A or B.

d) When staybolt material tensile strength is greater than that of the firebox sheets, the firebox sheets deflect instead of the staybolts, which can result in the sheets developing cracks and leaking staybolts. In addition, high tensile strength steels are difficult to drive. Maximum allowable tensile stress shall be 7,500 psi (51.71 MPa).

TABLE S1.1.3.1

Application	**Specification**
Boiler Tubes & Flues~~,~~, Arch Tubes ~~Superheater Units~~	SA-178 Grade A, SA-192, SA-210, SA-106-B
Boiler & Firebox Plate, Pressure Retaining Plate	SA-285 Grade C, SA-515, SA-516, SA-203, SA-204
Exterior & Internal Firebox Plate, Front Flue Sheet Corners & Flanges	SA-285 Grade C, SA-515, SA-516, SA-203, SA-204, SA-106-B
Welded Staybolts	SA-675, SA-36, SA-31
Threaded Staybolts and Patch Bolts	SA-31 Grade A, SA-675 ~~g~~Grade 45, 50, 55
Staybolt Sleeves and Caps	SA-105 ~~Forging~~, SA-675, SA-696, SA-216 WCA, SA-217 WC1
Boiler Braces	SA-675, SA-36
Rivets	SA-675, SA-31
Forged Parts & Fittings	SA-105, SA-181
Pressure-Retaining Steel Castings	SA-216, A-217
Hollow Cylindrical Pressure-Retaining Parts	SA-216, A-217, SA-178 Grade A, SA-192, SA-210, SA-106-B, SA-105 ~~Forgings~~, SA-675 ~~Bar Stock~~, SA-696
Superheater Units: ~~Bolts & Nuts~~	~~Bolts - SA-193, Nuts - SA-194~~
Bolts & Nuts	Bolts - SA-193, Nuts - SA-194
Pressure Retaining Parts & Tubing	SA-216, A-217, SA-178 Grade A, SA-192, SA-210, SA-106-B, SA-105, SA-675, SA-696
Pipe Flanges	SA-181, SA-105
Bolts & Studs	SA-307 Grades A&B, SA-675 ~~g~~Grade 60, 65, 70
Pipe	SA-106, SA-53 S~~s~~eamless
Bronze Castings~~,~~ ~~&~~ Washout Plugs	SB-61, SB-62, B-148. SA-696

NBIC Action Item 24-106
Submitted by R. Franzen
Submitted on

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	S1.2.2 Threaded Staybolts, change wording concerning reduced body staybolts
NBIC Location:	Part 3, S1.2.2
Statement of Need:	Clarification on staybolts over 8" long is needed whether they need telltale holes or not in ridgid, flexible, radial and crown bolts
Background Information:	

Proposed Text:

S1.2.2 THREADED STAYBOLTS

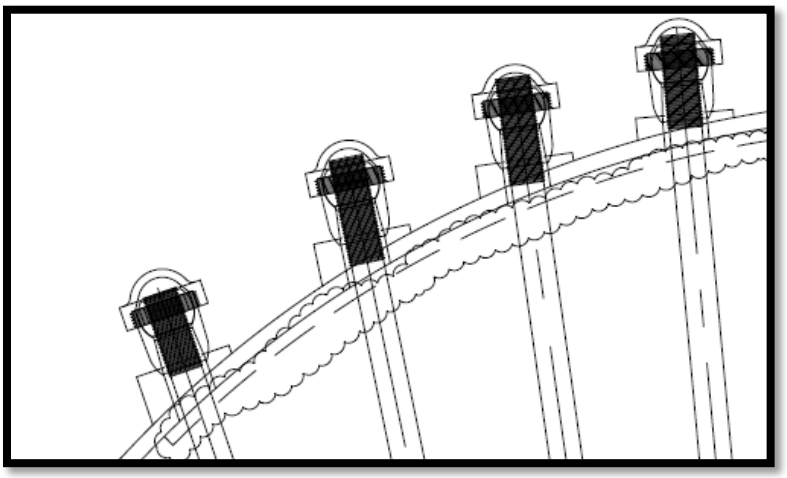
b) All staybolts shorter than 8 in. (200 mm) in length shall have telltale holes. Staybolt telltale holes in existing staybolts shall be 3/16 in. (5 mm) to 7/32 in. (5.5 mm) in diameter and at least 1-1/4 in. (3 2 mm) deep in the outer end. When staybolts shorter than 8 in. (200 mm) ~~or less~~ in length are replaced, they shall be replaced with staybolts that have a telltale hole 3/16 in. (5 mm) to 7/32 in. (5.5 mm) in diameter their entire length, or with ones that have a 3/16 in. (5 mm) to 7/32 in. (5.5 mm) diameter hole in each end, drilled a minimum of 1-1/4 in. (32 mm) deep. On reduced body staybolts, shorter than 8 in. (200 mm) in length, the telltale hole shall extend beyond the fillet and into the reduced section of the staybolt. ~~Ball socket-type flexible staybolts may have telltale holes that extend from the threaded end of the bolt into the bolt head for a distance of onethird the spherical bolt head diameter.~~

g) Ball socket-type flexible staybolts may have telltale holes that extend from the threaded end of the bolt into the bolt head for a distance of one third the spherical bolt head diameter. Ball socket-type flexible staybolts shall not be braced for driving the staybolt by inserting a spacer under the cap.

NBIC Interpretation Item I25-06
Submitted by Linn Moedinger (linnwm@supernet.com)
Submitted on February 24, 2025

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	Spacers under flexible sleeves.
NBIC Location:	Part 3, S1.2.3
Statement of Need:	Inspector questioning this method because it is not specifically addressed in the NBIC.
Background Information:	Because an inspector has never seen this type of application before, the inspector is questioning its validity.
Proposed Question:	Is the installation of a tapered washer fillet welded between the shell and a flexible staybolt sleeve to eliminate angularity prohibited in the NBIC.
Proposed Reply:	No
Committee's Question:	Is the installation of a spacer, tapered or otherwise, fillet welded between the shell and a flexible staybolt sleeve prohibited in the NBIC?
Committee's Reply:	No.
Rationale:	None.



THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

NBBI SINCE 1919

PROPOSED REVISION OR ADDITION

Item No.

A21-53 Rev 05

Subject/Title

Supplement 8 Weld and Post Repair Inspection of Creep Strength Enhanced Ferritic Steel Pressure Equipment

NBIC Location

NBIC Part 3 Repairs and Alterations Supplement 8 S8.5 a)

Project Manager and Task Group

Philip Gilston, Mark Horbaczewski

Source (Name/email)

Mark Kincs / mark.r.kincs@xcelenergy.com

Statement 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 in service Authorized Inspection Agency, not the Repair Inspector, whose duties end with completion of repair documentation.

As part of the Inservice Inspector pre-inspection activities is a requirement to review repairs/alterations (Part 2, 4.5.2 a) 7) to ascertain the history of the equipment being inspected. In the report of inspection forms NB-6 and NB-7 in section 10 comments to be addressed include verification of repairs.

Background Information

The post-repair inspection requirements specified in S8.5 are unique. There is no other mention of such inspections elsewhere in NBIC–Part 3. Presumably, Welding Method 6 repairs don't require post-repair inspection due to the perceived low-level of associated risk (inside the boiler setting).

Related SG Inspection item 22-06.

This proposed revision is to ensure that there is correct and sufficient information for the "Inservice Inspector" to review and validate that the inspection plan is being followed.

Based on discussions in SG and SC meetings in July 2025 the following notes are provided for additional explanation of the intent of the proposal:

1. The post repair inspection plan can be prepared at any time during the repair process, but before the R-Report is signed.
2. The repair is agreed with the Repair Inspector, and if required the Jurisdiction. The repair plan shall be referenced in the remarks section of the R-Report.
3. The post repair inspection plan will remain in place while the pressure part is in service. Inspection intervals can be revised based on gathered inspection data.
4. The repair is defect free at its completion. The inspection plan is to ensure no new defects occur in the repair area, e.g., in the weld , HAZ etc..
5. Once the pressure part is returned to service, the Inservice Inspector will review the R report, as part of their normal duties and verify the plan is being enacted. There is no requirement on the Inservice Inspector to observe any of the inspections, only to verify they are being performed.

Rev 04 (Based on comments from SG Letter ballot)

S8.5 a), Revised opening of sentence eliminating specifically when the plan is prepared per Mr. Schaser.

S8.5 a), Revised the middle part of the first sentence from '…to ensure safe operation and margin to locate and monitor defect growth in the weld repair area based…' to '…to ensure safe operation by ensuring no new defects form in the weld repair area based…'.

S8.5 b), 're-inspection' has been revised to 'inspection' per Mr. Collins comment.

S8.5 b) iii, removed end of life requirement per Mr. Siefert.

S8.5 c), revised 'Post Inspection Repair Plan' to 'Post Repair Inspection Plan' per Mr. Khssassi.

S8.5 c), removed the words requiring the inspection plan to be attached to the R Report for submittal. The plan is still to be referenced in the 'Remarks'.

Rev 05

Notes added to the background to provide further clarity on timing of actions and roles of Inspectors.

S8.5 POST REPAIR INSPECTION	**S8.5 POST REPAIR INSPECTION**
a) After the completion of weld repairs to CSEF steels, post inspection requirements shall be developed and implemented based on acceptance from the Inspector, and if applicable, the Jurisdiction. b) Post-repair inspection intervals and methods of examination shall be implemented to ensure safe operation and margin to locate and monitor defect growth in the weld repair area. The selected non-destructive examination method shall provide meaningful results and shall follow NBIC Part 3, Section 4. c) Post repair inspection shall be on-going until the component reaches end of life or is replaced. The Owner/User may revise the re-inspection interval based on inspection results from previous inspections.	a) A post repair inspection plan shall be developed by the User or Owner and implemented ~~a~~Afterprior to the completion of weld repairs to CSEF steels~~, post inspection requirements shall be developed and implemented based~~ to ensure safe operation by ~~ensuring~~confirming no new defects form in the weld repair area based on acceptance from the Inspector-, and if applicable, the Jurisdiction. Post repair inspection shall be on-going until the ~~remaining service of the~~ component is removed or replaced. ~~reaches end of life or is replaced.~~ b) The post repair inspection plan shall include but not be limited to: i. Method of examination, the selected non-destructive examination method shall provide meaningful results and shall follow NBIC Part 3, Section 4. ii. Examination intervals The User or Owner may revise the ~~re-~~inspection interval based on inspection results from previous inspections. c) The post repair inspection plan shall be referenced in the Remarks section of the R report. ~~A copy of the~~The R report shall be registered with the National Board. ~~b) Post-repair inspection intervals and methods of examination shall be implemented to ensure safe operation and margin to locate and monitor defect growth in the weld repair area. The selected non-destructive examination method shall provide meaningful results and shall follow NBIC Part 3, Section 4.~~ ~~c) Post repair inspection shall be on-going until the component reaches end of life or is replaced. The Owner/User may revise the re-inspection interval based on inspection results from previous inspections.~~

	VOTE						
Committee	**Approved**	**Disapproved**	**Abstained**	**Not Voting**	**Passed**	**Failed**	**Date**

NB23-09 Rev 14a

SUPPLEMENT XX

PRESSURE RETAINING PARTS FABRICATED FROM ADDITIVELY MANUFACTURED (AM) MATERIAL

SXX.1 SCOPE

Additively Manufactured pressure parts (AM parts) addressed in this supplement are those that have been fabricated from weld metal deposited by direct energy deposition (DED) using the automatic gas metal arc welding (GMAW) process. The AM part shall conform to the rules most applicable to the original code of construction for the pressure retaining part. The requirements listed under Section XX.2 for installation of AM parts are based on references to existing rules for AM fabrication in other known international Codes and Standards. AM pressure parts that are installed shall be limited to service temperatures below the creep range (i.e., where time independent properties govern).

SXX.2 INSTALLATION AND DOCUMENTATION OF AM PRESSURE RETAINING PARTS

The use of AM parts that are being installed by a National Board R-Certificate Holder shall be considered an alteration and be documented on a Form R-2. If production of AM parts is performed by a National Board R-Certificate Holder or if it is subcontracted by the R-Certificate holder, the activity shall be documented on a Form R-3.

In addition to the requirements for an alteration, the following information shall be provided for the AM part and attached to the applicable NBIC Form(s) referenced above:

a) A copy of the Additive Manufacturing Specification (AMS) shall be provided by the Additive Manufacturer to the R-Certificate Holder and Inspector for review and acceptance. As a minimum, the following information shall be included in the AMS:

    1) The original code of construction for the part being replaced by an AM part.

    2) File names with current revision for all model data describing the geometry and build strategy needed to fabricate the AM part.

    3) The applicable Material Specification listed in the original code of construction for the AM part.

    4) The applicable Filler Metal Specification and AWS Classification.

    5) A list of all welding procedures and qualification records used to produce the AM part. Welding procedures shall be qualified in accordance with ASME Section IX or other international welding standard with allowable ranges of process variables from Section IX Article VI “Material Manufacturing using Wire Additive Welding.”

    6) The nondestructive evaluation and testing requirements being applied to the AM part from the original code of construction and from the Material Specification requirements for the original part being replaced.

7) Supplemental examination requirements identified by the Additive Manufacturer, the R-Certificate holder, User or in contract specification requirements.

8) Post-processing requirements identified by the Additive Manufacturer, the R-Certificate holder, User or in contract specification requirements.

9) Thermal treatment requirements for the AM pressure part identified by the Additive Manufacturer, the R-Certificate holder, User or in contract specification requirements.

10) Supplemental requirements identified by the Additive Manufacturer, the User, or R-Certificate holder or in contract specification requirements (e.g., corrosion testing).

11) Documentation that shows the AMS has been reviewed and accepted by the Additive Manufacturer, the R-Certificate Holder, Inspector, AIA, and the Jurisdiction, if required.

b) A copy of the design calculations for the AM pressure part which shall be based on the applicable original code of construction requirements. If the original code of construction required a specific product form for design, the replacement AM pressure part shall be shown to have met the minimum mechanical properties and be similar in chemical composition to the original pressure part product form.

c) Welding Operator qualification record(s).

d) A copy of the Material Test Report. The data recorded on the Material Test Report shall reflect the test results from the witness specimen(s). The following criteria are applicable to, and shall be addressed in, the Material Test Report:

1) At least one witness specimen shall be manufactured and tested from each AM production build. When a production component requires the use of multiple heats of filler metal, AM product witness specimens for chemical composition, tension and other required testing shall be manufactured and tested from each heat of filler metal.

2) The witness specimen(s) shall be manufactured either immediately before, during, or immediately after each production build. The witness specimen may be a prolongation of the production build.

3) The witness specimens shall be produced using bounding heat inputs and interpass temperature per Article VI, QW-600 that provide limiting values for tensile and toughness properties as determined by the Additive Manufacturer.

4) All mechanical testing shall be performed on specimens in the thermal-treated condition identified in the AMS.

5) At least one tension test specimen shall be manufactured and tested from each witness specimen.

6) At least one chemical composition test specimen shall be extracted and tested from each witness specimen.

7) When toughness testing is required by the original code of construction, at least one set of toughness test specimens shall be extracted and tested from each witness specimen.

8) All chemical composition, hardness, tension and toughness testing shall be performed in accordance with the requirements of Sections e), f), g), h) and i) below.

9) Following any production test non-compliance, components fabricated during the build shall be dispositioned using the Additive Manufacturer's Quality Control Program.

10) The results of the required witness specimen testing shall be documented in a Material Test Report certified by the Additive Manufacturer.

11) The Material Test Report shall be included in the Additive Manufacturer's construction records.

e) Chemical Composition Testing Requirements

1) The analytical method for chemical composition testing shall be in accordance with the applicable Material Specification listed in the original code of construction for the AM part.

2) The chemical composition of the specimens shall conform to the ASME filler metal specification identified in the AMS.

f) Mechanical Property Test Locations

1) The build x, y, and z axes are defined in Figure 1.

2) The z axis is defined as normal to deposition layers (parallel to build direction) as shown in Figure 1.

g) Tension Testing Requirements

1) Tension test specimens shall be constructed with their long direction parallel to the z-axis as shown in Figure 1.

2) All room temperature tension testing shall be in accordance with ASTM E8.

3) All elevated temperature tension testing shall be in accordance with ASTM E21. Elevated temperature testing may be done at a temperature at or above the design temperature.

4) Tension test acceptance (the allowable minimum yield and tensile strength values) shall be calculated as described in Figure 2, Table 1 and Examples 1 and 2.

h) Hardness Testing Requirements

1) Hardness testing shall be performed on the witness specimen when required by the Material Specification, the original code of construction, or the AMS.

2) Hardness testing shall comply with ASTM E10, ASTM E18 or ASTM E92.

i) Toughness Testing Requirements

1) Toughness testing shall be performed when required by the Material Specification, by the original product form in the original code of construction, or the AMS.

2) Toughness testing shall be in the orientation as shown in Figure 1.

3) The acceptance criteria for toughness testing shall be as specified by Material Specification, by the original product form in the original code of construction, or the AMS.

j) A copy of nondestructive test reports as required by the original code of construction by the R-Certificate holder or by the Owner/User contract specification requirements, if applicable.

k) Results of the hydrostatic test, as performed in accordance with the rules of the original code of construction, if applicable.

Figure 1 - Material Manufacturing Coordinate System and Material Test Specimen Orientation

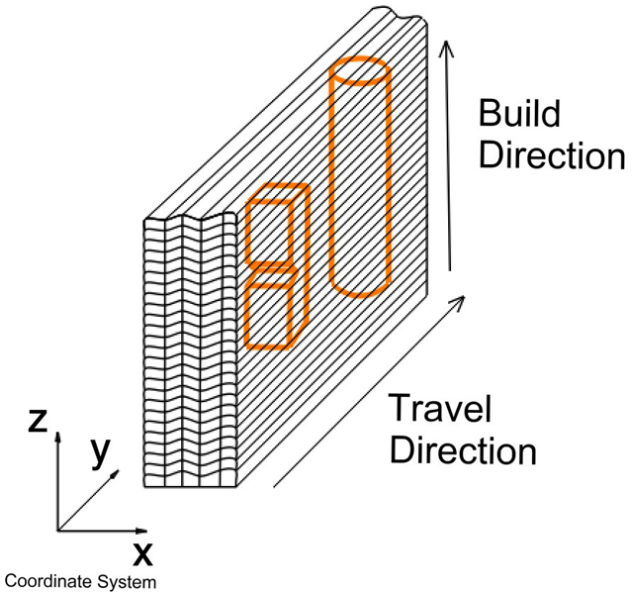


Figure 2 – Bracketed Weld Qualification Material Testing

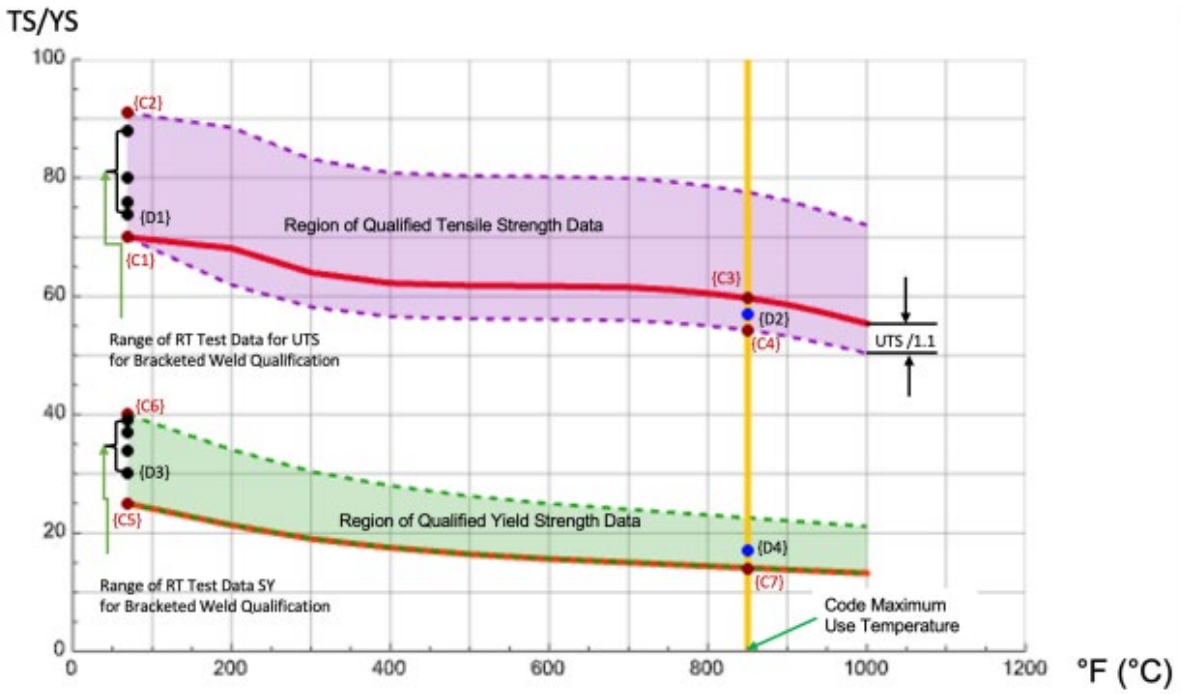


Table 1 - Control Points and Data Point Definitions and Nomenclature

Point	Temperature	Strength	Description	Criteria
C1	Room	Tensile Strength	Specified Minimum Tensile Strength	Specified Minimum Tensile Strength from the Material Specification.
C2	Room	Tensile Strength	The measured elongation from the tensile specimen is equal to the specified minimum elongation value in the Material Specification.	Specified Minimum Elongation from the Material Specification. Note: If the elongation in all the tensile specimens exceeds the specified minimum elongation it is not required that Control Point C2 be determined.
C3	Design	Tensile Strength	Value at Design Temperature	Tensile Strength from ASME BPVC Section II, Part D, Table U at Design Temperature.
C4	Design	Tensile Strength	Minimum Acceptable Value of Tensile Strength for High Temperature Test	Point C3/1.1 Value from Table U at Design Temperature Divided by 1.1
C5	Room	Yield Strength	Specified Minimum Yield Strength	Specified Minimum Yield Strength from the Material Specification.
C6	Room	Yield Strength	The measured elongation from the tensile specimen is equal to the specified minimum elongation value in the Material Specification.	Specified Minimum Elongation from the Material Specification. Note: If the elongation in all the tensile specimens exceeds the specified minimum elongation it is not required that Control Point C6 be determined.
C7	Design	Yield Strength	Minimum Acceptable Value of Yield Strength for High Temperature Test	Yield Strength from ASME BPVC Section II Part D Table Y-1 at Design Temperature.
D1	Room	Tensile Strength	Minimum value of tensile strength from ASME BPVC Section IX, Part QW, Article VI tension test data	Tensile strength and elongation from the ASME BPVC Section IX, Part QW, Article VI tension tests shall equal or exceed the specified minimum values in the Material Specification (Point C1). The elongation from the tension tests shall exceed the specified minimum elongation in the Material Specification.
D2	Design	Tensile Strength	Tensile strength value from elevated temperature tension test.	Tensile strength value from ASME BPVC Section IX, Part QW, Article VI tension test shall equal or exceed value calculated for Point C4.
D3	Room	Yield Strength	Minimum value of yield strength from ASME BPVC Section IX, Part QW, Article VI tension test data	Yield strength and elongation from the ASME BPVC Section IX, Part QW, Article VI tension tests shall equal or exceed the specified minimum values in the Material Specification (Point C5). The elongation from the tension tests shall exceed the specified minimum elongation in the Material Specification.
D4	Design	Yield Strength	Yield strength value from high temperature tension test	Yield strength value from ASME BPVC Section IX, Part QW, Article VI tension test shall equal or exceed value for Point C7.

EXAMPLES SHOWING CALCULATION OF ACCEPTANCE VALUES

Given the test data shown below determined from an ASME IX Article VI (QW-600 series) bracketed weld qualification testing, calculate the allowable minimum yield and tensile strength values to be used for acceptance of the tensile test specimens for qualification and production witness specimens.

Target Material Specification - ASME SA-403 Grade 316L
Filler Material Specification - ER316LSi

Control Points - Example Data SA 403 Grade 316L (ksi)

C1	C2	C3	C4	C5	C6	C7
70	Elongation Controlled	59.7	59.7/1.1=54.3	25	Elongation Controlled	14.1

Example 1 - Example Section IX, Part QW, Article VI Data Analysis

Data Point D1 = 74 ksi
Data Point D2 = Control Point C4 = 54.3 ksi
Data Point D3 = 30 ksi
Data Point D4 = Control Point C7= 14.1 ksi

Calculate the Minimum Allowable Tensile Strength and Yield Strength for the Production Witness Specimens using Equation 1 and 2.

$$AMTS_{Minimum} = Max\ [C1, D1 \times C4/D2] = Max\ [70, 74 \times 54.3/54.3] = 74\ ksi$$

$$AMYS_{Minimum} = Max\ [C5, D3 \times C7/D4] = Max\ [25, 30 \times 14.1/14.1] = 30\ ksi$$

Example 2 - Example Section IX, Part QW, Article VI Data Analysis

Data Point D1 = 74 ksi
Data Point D2 = Control Point C3 = 59.7 ksi
Data Point D3 = 30 ksi
Data Point D4 = 17 ksi

Calculate the Minimum Allowable Tensile Strength and Yield Strength for the Qualification Build Specimen and the Production Witness Specimens using Equation 1 and 2.

$$AMTS_{Minimum} = Max\ [C1, D1 \times C4/D2] = Max\ [70, 74 \times 54.3/59.7] = 70\ ksi$$

$$AMYS_{Minimum} = Max\ [C5, D3 \times C7/D4] = Max\ [25, 30 \times 14.1/17] = 25\ ksi$$

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.

This supplement applies to the general component terminology and does not include all quick-~~actuating/quick-opening~~ closure designs. For details refer to the quick-~~actuating/quick-opening~~ closure manufacturer's partial data report, manufacturing drawings, service and maintenance ~~guidance~~documentation. ~~This list of manufacturer records should be consistent with ASME UG-35 required records~~Additional documents required by the original code of construction may be available for reference. No components furnished or specified by the Manufacturer of the quick closure shall be omitted~~removed~~ unless the Manufacturer's concurrence is received or good engineering judgement is obtained.

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 or if the substitution has been determined acceptable through an engineering evaluation. The engineering evaluation shall be documented, ~~and~~ reviewed and accepted by a~~n~~ Repair Inspector and Jurisdiction, where required.
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.

PROPOSED REVISION OR ADDITION

Item No.	A24-17
Subject/Title	Specific Requirements For Stamping and Nameplates
NBIC Location	NBIC Part 3, 5.7.5 a) and b)
Project Manager and TaskGroup	B. Schaefer (PM), TG - S. Marks, T. LeBeau, J. Ferreira, A. Khssassi
Source (Name/Email)	Certificate Administrator
Statement of Need	Allow alternative stamping method within the NBIC Part 3, Section 5, Paragraph 5.7.5 a) and b). Currently ASME Section VIII Div 1 (23), ASME Section I (23) - PG-106.6 and Mandatory Appendix VIII and ASME CA-1 (22) all allow other methods of stamping nameplates.
Background Information	I feel that the pressure vessel nameplates would look more professional with the use of mechanical etching. There wouldn't be anymore stampings that are upside-down, cock-eyed, wrong location on the plate, or uneven striking pressure that results in the edges not showing up clearly. When the above happens, I need to find someone capable of destroying the "said" nameplate (especially hand stamped symbols and marks) and then verify that the plate is destroyed.
Existing Text	5.7.5 Specific Requirements For Stamping and Nameplates a) Required data shall be in characters of at least 5/32 in. (4 mm) high, except that characters for pressure relief valve repair nameplates may be smaller. Markings may be produced by casting, etching, embossing, debossing, stamping, or engraving. The selected method shall not result in any harmful contamination, or sharp discontinuities to, the pressure-retaining item. See NBIC Part 3, Figures 5.7.5-a through 5.7.5-e. b) The National Board Code Symbols ("R", "VR", and "NR") are to be stamped; do not emboss.
Proposed Text	a) Required data shall be in characters of at least 5/32 in. (4 mm) high, except that characters for pressure relief valve repair nameplates may be smaller. Markings may be produced by casting, etching, embossing, debossing, stamping, ~~or~~ engraving, or laser. Any marking by laser is permitted only on stainless steel and aluminum. No coating that obscures the marking shall be allowed. The selected method shall not result in any harmful contamination, or sharp discontinuities to the pressure-retaining item. See NBIC Part 3, Figures 5.7.5–a through 5.7.5-e. b) The National Board Code Symbols (“R”, “VR”, and “NR”) ~~are to be stamped; do not emboss.~~ shall be made by direct application of the National Board Code Symbol Stamp. As an alternative: 1) The Code Symbol may be made by casting, embossing, engraving, etching, dot peening, laser, or any other process that will leave a legible and permanent image. 2) The applied Code Symbol shall be the same shape and configuration as the National Board Code Symbol Stamp.

Commented [LB1]: Cannot be hand engraving

	3) The process controls for the custody and method of marking shall be described in the Quality Management System.

	VOTE:						
COMMITTEE	Approved	Disapproved	Abstained	Not Voting	Passed	Failed	Date
SG R&A							
SC R&A							

CODE REVISIONS OR ADDITIONS

Request for code revisions or additions shall provide the following:

a) Proposed Revisions or Additions

For revisions, identify the rules of the code that require revision and submit a copy of the appropriate rules as they appear in the code, marked up with the proposed revision. For additions, provide the recommended wording referenced to the existing code rules.

b) Statement of Need

Provide a brief explanation of the need for the revision or addition.

c) Background Information

Provide background information to support the revision or addition, including any data or changes in technology that form the basis for the request that will allow the Committee to adequately evaluate the proposed revision or addition. Sketches, tables, figures, and graphs should be submitted as appropriate. When applicable, identify any pertinent paragraph in the code that would be affected by the revision or addition and identify paragraphs in the code that reference the paragraphs that are to be revised or

Outlook

Dissenting Votes

From Kathy Moore <kathymoore@joemoorecompany.com>
Date Wed 7/9/2025 3:03 PM
To Terrence Hellman <THellman@nationalboard.org>

Terry,

A24-17 - I disapproved of the item 24-17 as proposed. I feel that the Code symbol should be physically stamped on each repair plate. I think the existing words are adequate for the time

A25-18 I disapproved of this item as proposed as I believe it does not add value to the book. The R1 or R2 give the appropriate details concerning the areas and extent of repairs made to any specific section of the vessel

Sincerely,

Kathy Moore
Joe Moore & Company, Inc.
PH: (919) 832-1665

THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

PROPOSED REVISION OR ADDITION

Item No.

A 24-18 Rev 01

Subject/Title

Controlled Fill Definition

NBIC Location

All Parts, Section 9, Glossary of Terms

Project Manager and Task Group

Philip Gilston (PM), A. Triplett

Source (Name/email)

Philip Gilston (philip_gilston@hsb.com)

Statement of Need

There is no definition of the term 'controlled fill'.

Background Information

Interpretation item I 23-79 addresses the use of the term 'controlled fill' in NBIC Part 3, 2.5.3 d in relation to Welding Method 6 for Grade 91 material.

While the term 'controlled fill' is not specifically used in the text of Welding Method 6 (2.5.3.6), directions are given for such variables as typical preheats, electrode size for SMAW, and the use of stringer beads only. The term is used explicitly in Supplement 8 for CSEF repairs, where S8.3.b says that "To control heat input the weld repair shall be performed using a "controlled fill" technique"; details are also given on such items as preheats, electrode size, required fill pass overlap, etc., and a lot of detail is provided in schematics including specifics on weld bead placement.

Existing Text	Proposed Text	Clean Copy
None	**Changes form Rev 00 shown** **Controlled Fill** – ~~requirements specified~~~~control of~~ A weld technique for a ~~permitted weld~~ repair process ~~in order to manage heat input~~ to ensure satisfactory weld properties by ~~controlling distortion, promoting~~ tempering and minimizing the risk of cracking by addressing variables including but not limited to heat input, ~~such as~~ preheat and interpass temperature, weld consumable type and ~~diameter~~size, weld technique (stringer or weave~~),~~) and bead placement ~~etc~~.	**Controlled Fill** – ~~control~~ A ~~of~~ weld technique for a repair process to ensure satisfactory weld properties by ~~controlling distortion, promoting~~ tempering and minimizing the risk of cracking by addressing variables including but not limited to heat input, preheat and interpass temperature, weld consumable type and size, weld technique (stringer or weave) and bead placement.

	VOTE						
Committee	**Approved**	**Disapproved**	**Abstained**	**Not Voting**	**Passed**	**Failed**	**Date**

THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

PROPOSED INTERPRETATION

Item No. A25-04 Rev 01
Subject/Title Part 3, 2.5.3 Special Service Equipment
Project Manager and Task Group Robert Derby (PM), Phil Gilston
Source (Name/email) Paul Shanks / paul.shanks@bureauveritas.com (now with Arise Boiler Inspection & Insurance Company)
Statement 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.
Background Information 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.

Proposed Revision

Current Wording (Approved for 2025)	Proposed Wording for 2027
2.5.3 b) Competent technical advice should 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.	2.5.3 b) Evaluation for Use of Alternative Weld Methods Competent technical advice should be obtained from the manufacturer of the pressure-retaining item or from another qualified source, for repair of pressure parts subject to ~~any~~one or more of the following conditions: 1) Items identified as special services per the original code of construction where PWHT was not exempted for new construction; 2) Repairs in highly stressed areas where the stress concentration cannot be reduced by weld repair alone; 3) Parts subject to high-cycle operation or fatigue service; 4) Where any one of the following service conditions are conducive to:

	a. stress corrosion cracking b. hydrogen embrittlement c. creep damage 5) The alternative welding method 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.

	VOTE						
COMMITTEE	**Approved**	**Disapproved**	**Abstained**	**Not Voting**	**Passed**	**Failed**	**Date**

Outlook

25-04

From Shanks, Paul <Paul.Shanks@tuvsud.com>
Date Wed 7/9/2025 11:42 AM
To Terrence Hellman <THellman@nationalboard.org>

Terry,

With respect to item 25-04 I am voting in opposition as the this change in combination with the changes made for 2025 make the need to seek technical advice too weak.

Best regards,

Paul Shanks
Senior Technical Specialist
Email address: Paul.Shanks@tuvsud.com
Phone: (330) 662-9303

ARISE
Boiler Inspection and Insurance Company RRG

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Brecksville, Ohio 44141

Follow ARISE on social media

https://www.linkedin.com/company/arise-boiler-inspection-&-insurance-company/

NBIC Action Item A25-18
Submitted by TEI Construction Services, Inc. (efeeney@teiservices.com)
June 12, 2025

THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	Requirements for Stamping and Nameplates
NBIC Location:	2025 Part 3, 5.7.5
Statement of Need:	When performing repairs or alterations on boilers and pressure vessels, the industry standard is to affix a repair nameplate near the master nameplate, which contains critical identification information. However, HRSG boilers differ in that they have multiple master nameplates for different sections (e.g., HP, LP, economizer), all located on the outer casing of the boiler. Currently, NBIC repair nameplates do not provide a way to indicate which specific section was repaired. This limitation creates confusion for future inspections and maintenance, as there is no clear indication of which section underwent repairs. Adding a requirement for repair nameplates to include the specific HRSG boiler section being repaired will enhance clarity and traceability.
Background Information:	Our company specializes in repairs and alterations on boilers, including HRSG boilers. The current NBIC nameplate requirements are designed for traditional boilers, where a single master nameplate exists. However, in HRSG units, multiple nameplates exist for different sections, leading to challenges in documenting repairs effectively. This proposal ensures alignment with industry needs and prevents ambiguity in identifying repaired sections.

Proposed Text:

5.7.5 SPECIFIC REQUIREMENTS FOR STAMPING AND NAMEPLATES

a) Required data shall be in characters of at least 5/32 in. (4 mm) high, except that characters for pressure relief valve repair nameplates may be smaller. Markings may be produced by casting, etching, embossing, debossing, stamping, or engraving. The selected method shall not result in any harmful contamination, or sharp discontinuities to, the pressure-retaining item. See NBIC Part 3, Figures 5.7.5–a through 5.7.5-e.

b) The National Board Code Symbols (“R”, “VR”, and “NR”) are to be stamped; do not emboss.

c) Stamping directly on items, when used, shall be done with blunt-nose continuous or blunt-nose interrupted dot die stamps. If direct stamping would be detrimental to the item, required markings may appear on a nameplate affixed to the item.

d) The certificate holder shall use its full name as shown on the *Certificate of Authorization* or an abbreviation acceptable to the National Board.

e) The letters "RP" shall be stamped below the "R" Symbol Stamp to indicate organizations accredited for performing repairs or alterations to fiber-reinforced plastic items.

f) The letter "G" shall be stamped below the "R" Symbol Stamp to indicate organizations accredited for performing repairs or alterations to graphite pressure equipment.

g) When a repair or alteration is performed on a Heat Recovery Steam Generator (HRSG), where multiple master nameplates exist for different sections of the unit (e.g., HP, LP, economizer), the repair or alteration nameplate ~~shall~~ should include an additional marking to specify the section where the work was performed. This information ~~shall~~ should be clearly marked on the nameplate to ensure proper traceability for future inspections and maintenance.

h) The subject nameplate shall be securely attached using a method compatible with the structure or stand-off bracket supporting the nameplate, in a manner that will impede easy removal. The method of attaching this nameplate, as permitted by the original code of construction, may include, but is not limited to:

1) Welding
2) Adhesive, bonding or cementing
3) Tamper-resistant mechanical fasteners of suitable metal construction

Outlook

Negative Vote for 25-18

From Boseo, Brian M <bmboseo@burnsmcd.com>
Date Wed 7/9/2025 12:49 PM
To Terrence Hellman <THellman@nationalboard.org>

Terry, there is nothing to prohibit adding this to the nameplate. This provides no value to the end user. That said, I voted negative.

Brian Boseo \ Burns & McDonnell
Quality Assurance Department Manager \ Construction
O (816) 601-0209 \ **M** (708) 941-3016
bmboseo@burnsmcd.com \ burnsmcd.com
9400 Ward Parkway, Kansas City, MO 64114

Outlook

Dissenting Votes

From Kathy Moore <kathymoore@joemoorecompany.com>
Date Wed 7/9/2025 3:03 PM
To Terrence Hellman <THellman@nationalboard.org>

Terry,

A24-17 - I disapproved of the item 24-17 as proposed. I feel that the Code symbol should be physically stamped on each repair plate. I think the existing words are adequate for the time

A25-18 I disapproved of this item as proposed as I believe it does not add value to the book. The R1 or R2 give the appropriate details concerning the areas and extent of repairs made to any specific section of the vessel

Sincerely,

Kathy Moore
Joe Moore & Company, Inc.
PH: (919) 832-1665

Outlook

FW: 25-18 dissent

From Lane Baker <lbaker@us.tuv.com>
Date Wed 7/9/2025 12:48 PM
To Terrence Hellman <THellman@nationalboard.org>

Lane Baker
Manager, Codes and Standards International

lbaker@us.tuv.com

TUV Rheinland AIA Services, LLC

From: Lane Baker
Sent: Tuesday, July 8, 2025 4:04 PM
To: Underwood Robert - Hartford-Remote-HSB <robert_underwood@hsb.com>
Cc: Stephen Norris <snorris@us.tuv.com>; Keith Gilmore <Keith.Gilmore@us.tuv.com>
Subject: 25-18 dissent

I voted negative on 25-18 asking for additional information to be stamped on nameplates. I understand the approved text does not "require" the additional information.

The purpose of a Repair or Alteration nameplate is to indicate to the Inservice Inspector something was repaired or altered in between inservice inspection. It is the responsibility of the Inservice Inspector to obtain a copy of the R1/2 report to determine what the task included. Determination of the activities performed must be provided by the operating concern by accessing the R-1/2 which should clearly discuss the scope of activities performed. The proposal 25-18 requests additional information on the nameplate to indicate what sub system of the boiler has been worked on. The end goal of this action item is to assist owners in file procedures for the R report and should not be a part of Code.

1. The conversation is limited to HRSG units with multiple sub systems only which constitutes a very small portion of boilers. (very limited applicability)
2. Inservice inspectors view and inspect the boiler as a single unit regardless of how many sub systems are present. Identification of which subsection the stamping applies too is of no value.
3. Does this imply multiple R reports are necessary when the work involves more than 1 system?
    a. How would you identify work across 2 or more systems
4. A single nameplate with multiple dates performed by a single stamp holder would not easily support multiple repair locations
5. Use of the word "should" implies it's a good idea for all users enter this information on the stamping whether it's necessary or not.
6. Nameplate modification requires the R stamp holder to modify the Plate layout real estate to include a field for boiler system

Lane Baker
Manager, Codes and Standards International

lbaker@us.tuv.com

TUV Rheinland AIA Services, LLC

Outlook

25-18

From Shanks, Paul <Paul.Shanks@tuvsud.com>
Date Wed 7/9/2025 12:47 PM
To Terrence Hellman <THellman@nationalboard.org>

Terry,

With respect to item 25-18 I oppose this change as we already have code rules addressing the placement of nameplates so adding word to indicate location is not needed. As per the case in point this item should go to NBBI staff to audit code compliance of these nameplates in the wrong place.

Best regards,

Paul Shanks
Senior Technical Specialist
Email address: Paul.Shanks@tuvsud.com
Phone: (330) 662-9303

ARISE
Boiler Inspection and Insurance Company RRG

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Follow ARISE on social media

https://www.linkedin.com/company/arise-boiler-inspection-&-insurance-company/

Outlook

A25-18 - Negative Vote

From Miletti, Ray L <rlmiletti@babcock.com>
Date Wed 7/9/2025 12:55 PM
To Terrence Hellman <THellman@nationalboard.org>

Reason for negative vote:
I do not see where it is necessary to add the suggested words. I feel that the words currently in the book are sufficient. The proposal may even initiate unnecessary activity.
Thanks,
Ray

Ray Miletti
Director, Global Quality
Email: rlmiletti@babcock.com
Desk: 330-860-2589
Mobile: 330-801-6996
www.babcock.com • NYSE BW
Follow Us on Social Media

TARGET ZERO - *To finish each and every day injury- and incident-free*

Outlook

RE: A25-18

From Rick Valdez <rvaldez@prim.com>
Date Thu 7/17/2025 4:15 PM
To Terrence Hellman <THellman@nationalboard.org>

Terry,

Rational: I do not think this is needed, nor necessary to add additional stamping requirements in the book related to A25-18, especially since there are no restrictions to adding any other information currently,
(Each R stamp holder can add, Job numbers, Boiler Unit number/system IP, LP, HP……)

Rick Valdez
Quality Director
ARB, INC.
3500 Pegasus Drive
Bakersfield, CA 93308
661-396-4312 Office
661-331-6024 Cell
www.prim.com

Primoris

"Primoris, building America's future, today."

From: Terrence Hellman <THellman@nationalboard.org>
Sent: Thursday, July 17, 2025 12:50 PM
To: Rick Valdez <rvaldez@prim.com>
Subject: Re: A25-18

Good Afternoon Rick,

Can you provide a rationale for your negative vote on A25-18?

I think you didn't feel it was needed, but allowed already by the existing text, but I don't have that in writing.

I've attached the proposal that failed SC.

Here are the Agenda details if you need them:

Item Number: A25-18 **NBIC Location: Part 3, 5.7.5** **Attachment 20**

General Description: Requirements for Stamping and Nameplates

Subgroup: Repairs and Alterations

Task Group: B. McGuire (PM), Lane Baker

Explanation of Need: which contains critical identification information. However, HRSG boilers differ in that they have multiple master nameplates for different sections (e.g., HP, LP, economizer), all located on the outer casing of the boiler. Currently, NBIC repair nameplates do not provide a way to indicate which specific section was repaired. This limitation creates confusion for future inspections and maintenance, as there is no clear indication of which section underwent repairs. Adding a requirement for repair nameplates to include the specific HRSG boiler section being repaired will enhance clarity and traceability.

SG R&A July 2025 Meeting Action: B. McGuire presented a proposal that was revised based on discussion. The proposal was **Approved w/1 Negative** (L. Baker).

SC R&A July 2025 Meeting Action: B. McGuire presented a proposal that was revised based on discussion, however the proposal **Failed the SC vote** (20 members present – only 12 approvals obtained – 14 needed). Added Lane Bake to the taskgroup.

Thanks!

Best Regards,

Terrence Hellman
Senior Staff Engineer
Email: thellman@nbbi.org
Phone: 614-431-3234

****

The National Board of Boiler & Pressure Vessel Inspectors
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From: Rick Valdez <rvaldez@prim.com>
Sent: Wednesday, July 9, 2025 12:50 PM
To: Terrence Hellman <THellman@nationalboard.org>
Subject: A25-18

I voted Negative for Item A25-18.

Regards,

Rick Valdez
Quality Director
ARB, INC.
3500 Pegasus Drive
Bakersfield, CA 93308
661-396-4312 Office
661-331-6024 Cell
www.prim.com

“Primoris, building America’s future, today.”

Outlook

Disapproval

From Seime, Trevor S. <tsseime@nd.gov>
Date Wed 7/9/2025 1:14 PM
To Terrence Hellman <THellman@nationalboard.org>

The reason for my negative vote for Item A25-18 is I do not feel it is necessary.

Trevor Seime
Office of the Director • Boiler Inspection Program • Chief Boiler Inspector

701-220-4723 • 701-328-5200 (fax) • tsseime@nd.gov • https://deq.nd.gov/

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THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

PROPOSED REVISION OR ADDITION

Item No.

A 25-26 Rev ~~00~~01

Subject/Title

Stamping of Parts and Distribution of Form R-3

NBIC Location

Part 3, Section 5, para. 5.7.4

Project Manager and Task Group

P Gilston & R Underwood

Source (Name/email)

D Kaehn (douglas_kaehn@hsb.com)

Statement of Need

No requirements are given for distribution of Form R-3 unlike those given for Forms R-1 and R-2.

While 3.2.2 c) and d) providing stamping requirements when the Code of construction is ASME or some other Code where stamping requirements are addressed, no instruction are given where this is not provided or the part is fabricated by an R certificate holder who is not using that part themselves in a repair or alteration as addressed in 3.2.2 c)..

Background Information

Revision Notes

Rev 01

5.7.4 b), The word 'marking' changed to 'stamping' per Mr. Collins.

5.7.4 b) f., 'year manufactured' changed to 'year built' per Mr. Khssassi and Mr. Ferreira.

Existing Text	**Proposed Text**
3.2.2 REPLACEMENT PARTS d) When the original code of construction is other than ASME Code, replacement parts subject to internal or external pressure, fabricated by welding, shall be manufactured by an organization certified as required by the original code of construction. The item shall be inspected and stamped as required by the original code of construction. Certification to the original code of construction, as required by the original code of construction or equivalent, shall be supplied with the item. When this is not possible or practicable, the organization fabricating the part shall have a National Board "R" Certificate of Authorization; replacement parts shall be documented on Form R-3 and the "R" Symbol Stamp applied as described in NBIC Part 3, Section 5. **DISTRIBUTION F FORM R-3**	**3.2.2 REPLACEMENT PARTS** d) When the original code of construction is other than ASME Code, replacement parts subject to internal or external pressure, fabricated by welding, shall be manufactured by an organization certified as required by the original code of construction. The item shall be inspected and stamped as required by the original code of construction. Certification to the original code of construction, as required by the original code of construction or equivalent, shall be supplied with the item. 1) When ~~this is not~~the above requirements are not possible ~~or practicable~~, the organization fabricating the part shall have a National Board "R" Certificate of Authorization; replacement parts shall be documented on Form R-3 and the "R" Symbol Stamp applied as

No existing text. **5.7.4 STAMPING REQUIREMENTS FOR PARTS** Stamping or nameplate shall be applied in a conspicuous location on the part.	described in NBIC Part 3, Section 5 paragraphs 5.2.3 and 5.7.4 b) respectively. **5.X DISTRIBUTION OF FORM R-3** a) Legible copies of completed Form R-3, together with attachments, shall be distributed to the owner or user and Jurisdiction, if required, and shall be provided to the Inspector and the inservice Authorized Inspection Agency of the pressure retaining item upon request. b) Distribution of Form R-3 and attachments shall be the responsibility of the organization manufacturing the part. **5.7.4 STAMPING REQUIREMENTS FOR PARTS** a) For replacement parts subject to internal or external pressure fabricated by welding, stamping shall be as required per paragraph 3.2.2 c) or d). b) For parts fabricated in accordance with 3.2.2 d) 1), the organization who fabricated the part having a National Board "R" Certificate of Authorization, shall stamp the part or attach a nameplate (see Figure 5.7.5-d) in a conspicuous location on the part. The stamping shall include: a. The Certificate Holders name. b. The Manufacturers National Board 'R' Certificate Number c. The "R" symbol stamp. d. The M.A.W.P. at temperature. e. The manufacturers serial number. f. The year built. ~~Stamping or nameplate shall be applied in a conspicuous location on the part.~~

	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 25-28

Subject/Title

Remove reference to FIAs (Federal Inspection Agency).

NBIC Location

Part3; Section 3; Repairs and Alterations – General and Administrative Requirements - 1.3 b) and AIA definition

Project Manager and Task Group

PM - Aziz Khssassi

Source (Name/Email)

Terry Hellman / THellman@nbbi.org & Robert Underwood / robert_underwood@hsb.com

Statement of Need

FIA's are to be a scope under OUIO. Definitions have been removed from RCI-1. This will remove references in the: Introduction; 1.3 b); and in the definition of an Inservice AIA.

Background Information

FIA's are to be a scope under OUIO. Definitions have been removed from RCI-1. This will remove references in the: Introduction; 1.3 b); and in the definition of an Inservice AIA.

Existing Text (2025 Edition)	Proposed Text (08 July 2025)
1.3 INSPECTOR a) Inspection and certification shall be performed by an Inspector holding a National Board Commission with the National Board "R" Endorsement who is employed by an Authorized Inspection Agency in accordance with NB-263, RCI-1, Rules for Commissioned Inspectors. (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 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 Management System (QMS) shall have specific approval of the jurisdiction as required. **9.1 DEFINITIONS** **Authorized Inspection Agency (AIA)** **Inservice:** An Authorized Inspection Agency is either: a) a Jurisdictional authority as defined in the National Board Constitution; or b) an entity that is accredited by the National Board meeting NB-369, Accreditation of Authorized Inspection Agencies Performing Inservice Inspection Activities; or NB-371, Accreditation of Owner-User Inspection Organizations (OUIO).; or NB-390, Accreditation of Federal Inspection Agencies (FIA).	**1.3 INSPECTOR** a) Inspection and certification shall be performed by an Inspector holding a National Board Commission with the National Board "R" Endorsement who is employed by an Authorized Inspection Agency in accordance with NB-263, RCI-1, Rules for Commissioned Inspectors. (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 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 Management System (QMS) shall have specific approval of the jurisdiction as required. **9.1 DEFINITIONS** **Authorized Inspection Agency (AIA)** **Inservice:** An Authorized Inspection Agency is either: a) a Jurisdictional authority as defined in the National Board Constitution; or b) an entity that is accredited by the National Board meeting NB-369, Accreditation of Authorized Inspection Agencies Performing Inservice Inspection Activities; or NB-371, Accreditation of Owner-User Inspection Organizations (OUIO).~~; or NB-390, Accreditation of Federal Inspection Agencies (FIA).~~

NBIC Action Item A25-42
Submitted by <NAME> (Email)
Submitted on

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	**Renaming Supplement 11**
NBIC Location:	Part 3, Supplement 11
Statement of Need:	Renaming Supplement 11 to "Advanced Repairs and Alterations"
Background Information:	Removing "Engineered" from the title so as not to suggest that the work would require direct involvement from an engineer or engineering certification. The purpose of the supplement is to provide repairs activities that have been developed with sound engineering judgment backed up with technical references. In some cases, an engineering evaluation will be recommended.

Proposed Text:

SUPPLEMENT 11
~~ENGINEERED~~ ADVANCED REPAIRS AND ALTERATIONS

Item 24-28
Submitted by G. Galanes

Background

The intent of this code revision is to address concerns related to the application of PWHT when no PWHT was originally performed/required. We identified it as an alteration with no guidance on how to address post construction application of PWHT.:

Proposed Revisions: Add text (red underlined is new text) to Part 2, Supplement 9, paragraph S9.3(b), as a new subparagraph S9.3(b)(4) to Supplement 9 Change of Service;

S9.3 FACTORS TO CONSIDER

b) Material Consideration:

1) Chemical and mechanical properties of existing material or any new material to be added or replaced to ensure it has the required strength and toughness to withstand the pressure and temperature effects of the new environment.

2) Effects of erosion or corrosion.

3) Time-dependent effects on service life: Creep, fatigue, or both effects combined.

4) prior to application of post weld heat treatment (PWHT) to a pressure retaining item when no PWHT had been performed based on the original code of construction, both conditions shall be met:

   a. determine that the application of PWHT will not adversely affect the performance of the pressure retaining item for the intended service conditions.

   b. determine the PWHT holding temperature and holding time.

REFERENCE: Add a statement in Part 3, paragraph 3.4.4(k) referring the user to this new subparagraph, by revising it to read:

k) Performing post weld heat treatment (PWHT) where no PWHT was originally performed on the pressure retaining item. [See NBIC Part 2, Supplement 9, paragraph S9.3(b)(4)].

Submitted By: George Galanes, P.E.