THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

NATIONAL BOARD TASK GROUP ON INTERPRETATIONS

AGENDA

Meeting of January 11th, 2021
San Antonio, TX

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

The National Board of Boiler & Pressure Vessel Inspectors
1055 Crupper Avenue
Columbus, Ohio 43229-1183
Phone: (614)888-8320
FAX: (614)847-1828

1. **Call to Order**

   Mr. Troutt called the meeting to order at 2:06 PM

2. **Introduction of Members and Visitors**
   Introductions took place amongst all members and visitors, and an attendance sheet was completed by the Secretary. (**Attachment 1**).

3. **Announcements**
   Secretary Hellman announced the National Board will be hosting a reception for all committee members and visitors on Wednesday evening at 5:30pm.

4. **Adoption of the Agenda**
   - **a.** The Agenda was revised with the addition of new Items and the call for a vote for a Vice Chair of the Interpretation Task Group.
     - **i.** Revised Item 20-3 (Update – Item 20-10 approved at July 2020 mtg)
     - **ii.** Revised Item 20-81 (Update – Combined with Item 20-89 – Close w/No Action)
     - **iii.** Revised Item 20-89 (Update – Revised to include Item 20-81)
     - **iv.** Discussion and vote on Vice Chair for Interp. Task Group
   - **b.** A motion was made and seconded to adopt the Agenda as revised and was unanimously approved.

5. **Review of Proposal Workflows**
   Secretary Hellman reviewed the process for submitting New Interpretation and Action Items using the Business Center and the overall way Items should be presented.

6. **Approval of the Minutes of the July 13th, 2020 Meeting**
   There was a motion to approve the Minutes of July 13th, 2020 as published. The motion was seconded and approved.

7. **Review of Rosters**
   - **a. Membership Nominations**
     - **i.** Mr. Don Kinney (Jurisdictional Authorities) is interested in becoming a member of Interp TG. Mr. Kinney was unanimously approved by the TG for membership and will be placed on the SC R&A Agenda.
     - **ii.** Nomination and vote on Vice Chair for Interp. Task Group was held with a single nomination of Mr. Trevor Sieme. Mr. Sieme was unanimously approved by the TG as the Vice Chair and will be placed on the SC R&A Agenda.

8. Interpretations

Item Number: 20-3	**NBIC Location: Part 3, 3.3.4.8**	**Attachment 2**

General Description: Inspector involvement in Fitness-for-Service Assessments

Subgroup: Repairs and Alterations

Task Group: J. Siefert (PM)

Explanation of Need:
The below questions are intended to gain clarity as to first which Inspector (i.e. "IS" Commissioned or "R" Endorsement) signs the FFSA Form NB-403 when an "R" Certificate Holder is involved with a repair in that region as well as determine what level of review of the Fitness-for-Service the Inspector is expected to complete. If it is an Inspector holding a "R" Endorsement with an AI Commission (not tested on NBIC Part 2), shouldn't the relevant pages in NBIC Part 2 concerning Fitness for Service be included in their tested body of knowledge, so they are aware of the detailed rules?

The Body-Of-Knowledge for National Board Inspectors holding either an "IS" Commission or "R" Endorsement does not reference ASME FFS-1/API 579 Fitness-For-Service Standard or have any expectation that the Inspector be capable of determining if the correct Fitness for Service methodology was used or that the assumptions taken by the Engineer in the analysis were the most appropriate or accurate. Clarification is also requested due to the Form NB-403 signature block stating "Verified by" for the Inspector without any other disclaimers as typically found on other Forms signed by Inspectors such as ASME MDRs and NBIC Form R-1/R-2.

July 2020 Meeting Action: J. Siefert presented that Action Item 20-10 may address this inquire and submitted a **Progress Report** to await the outcome of Item 20-10.

UPDATE: Item 20-10 was approved at July 2020 NBIC Meeting. – This Item will be Closed with a response to the inquirer referencing 20-10

Meeting Action: Discussion took place that this interp should have gone over to Part 2 due to the FFS content, and Part 3 should not answer interps for Part 2. Also, Question #2 implies that an Engineer has to perform the FFS, this is not true, Part 2, 4.4 states it is the responsibility of the owner/operator. Since this Item 20-10 was approved at July 2020 NBIC Meeting. – This Item will be **Closed with a response to the inquirer referencing 20-10.**

Item Number: 20-11	**NBIC Location: Part 3, 3.3.3**	**Attachment 3**

General Description: Scope of Repairs

Subgroup: Repairs and Alterations

Task Group: Kathy Moore

Explanation of Need:
NBIC Part 3 lists several examples of repair but nowhere limits the scope or amount of these examples that can be utilized when performing repairs. This creates some uncertainty when performing some types of repairs, such as replacing the tubesheets of a fixed tubesheet type heat exchanger as listed in 3.3.3 e). According to ASME BPV Code Section VIII Division 1 Part UHX, Section 13, the length of the tubes is a design parameter and therefore replacing the tubesheet in accordance with its original design might require the replacement of the tubes as well to maintain the original design length.

July 2020 Meeting Action: K. Moore presented. Discussion took place on if tubesheet replacement activities may qualify as a Repair or Alteration. Interpretation 17-11 was referenced, and P. Becker indicated that she would be opening a new Action Item to revise the definition of an alteration in 3.4.4 d) for clarification. It was decided that the proposal needs additional work at the TG Interpretation level, and the proposal can be submitted to SC R&A via Letter Ballot once ready. This was a **Progress Report**.

Meeting Action: This Item has passed SG LB and will be addressed at the SC R&A meeting.

New Interpretation Requests:

Item Number: 20-66	**NBIC Location: Part 3, 3.3.2 e)**	**Attachment 4**

General Description: Possible contradictory interpretations of Part 3, 3.3.2 e) 2)

Subgroup: Repairs and Alterations

Task Group: R. Underwood (PM)

Explanation of Need:
Two previously issued interpretations, 95-14 and 95-21, seem to be contradictory with the NBIC itself. The reason for the interpretation request is that two previously published NBIC Interpretations and the NBIC itself seem to be contradictory. Interpretations 95-14 and 95-21 lead the reader to conclude that if the original vessel was postweld heat treated, then the addition of refractory clips by welding, regardless of size, without postweld heat treatment is an alteration. However, NBIC Part 3 [2019 Edition], 3.3.3 b)1) and 2) list addition of welded attachments to pressure parts, such as: Studs for insulation or refractory lining and hex steel or expanded metal for refractory lining as “Examples of Repairs”. Furthermore, NBIC Part 3 [2019 Edition], 3.3.2 e) 2) states: “The following repairs may be considered as routine repairs and shall be limited to these categories:

2) The addition or repair of nonload bearing attachments to pressure-retaining items where postweld heat treatment is not required;

Meeting Action: Mr. Underwood presented and discussions were held referencing old interpretations (e.g. 17-01). The proposal was ultimately revised and **Unanimously Approved.**

Item Number: 20-77	NBIC Location: Part 3, 1.3.2	Attachment 5

General Description: Authorization of repair/alteration activities

Subgroup: Repairs and Alterations

Task Group: Don Kinney

Explanation of Need:
Many R-certificate holders also have U or S stamps and as such have a regular AI (with R endorsement) to whom they tend to have review repair and alteration packages. However, when the physical work will be conducted 'out of state' travel limitations and or jurisdictional authorization requirement prevent the local AI from making the final acceptance inspection thus another AI must do that work, para 1.3.2 a) makes clear that both Inspectors have to be employed by the same agency. Form R-2 has 2 Inspector sign off locations but does not make clear if the two Inspectors must be from the same AIA or not.

Meeting Action: Mr. Kinney presented. The proposal was motioned, seconded and **Unanimously Approved.**

Item Number: 20-78	NBIC Location: Part 3, 3.3.3 s) & 3.4.4 d)	Attachment 6

General Description: Repairs and Alterations of Tube Bundles

Subgroup: Repairs and Alterations

Task Group: Paul Shanks

Explanation of Need:
Submission is for R Certificate Holders we provide Repair Inspection services for. NBIC Part 3, 3.3.3 s) seems to allow to be a repair, but under 3.4.4 d) where the dimensions change it might be classified as an alteration.)

Meeting Action: Mr. Shanks presented. Ms. Pat Becker referenced Item 20-54 was revising paragraph 3.4.4 d) and a new Item (21-12) was opened to update the examples of alterations and repairs and the definitions of each. This was a **Progress Report.**

Item Number: 20-81	NBIC Location: Part 3, 4.4.2 a) 1)	Attachment 7

General Description: Minimum Required Test Pressure for Alteration Activities

Subgroup: Repairs and Alterations

Task Group: R. Underwood (PM)

Explanation of Need:
To provide clarity that the minimum test pressure for alterations shall be in accordance with the original code of construction.

UPDATE: Item 20-81 and 20-89 ask very similar questions. The "Question" from this Interpretation Request (20-81) was used as the "Committee's Question 1" for INT 20-89 with the intent to close this item (20-81) with no action.

Meeting Action: Closed w/No Action

Item Number: 20-89 **NBIC Location: Part 3, 4.4.2** **Attachment 8**

General Description: LIQUID PRESSURE TEST EXAMINATION METHODS APPLICABLE TO ALTERATIONS

Subgroup: Repairs and Alterations

Task Group: R. Troutt

Explanation of Need:
For Alteration can Minimum Test Pressure Shall be Design Pressure or MAWP considering same Condition as Clause 4.4.1 of Pressure Test for Repairs.

UPDATE: The question from INT 20-81 was used as the "Committee's Question 1" on this Interpretation Request. INT 20-81 is to be closed with no action.

Meeting Action: R. Troutt presented. The proposal was revised, motioned, seconded and was **Unanimously Approved.**

Item Number: 20-90 **NBIC Location: Part 3, 1.4.1** **Attachment 9**

General Description: 1.4.1 ACCREDITATION PROCESS / NB-415- Certification of Scope

Subgroup: Repairs and Alterations

Task Group: None assigned.

Explanation of Need:
The NBIC Certification scope Does not Restrict the Repair Organization to Perform Based on their ASME Certification of scope, as long as Manual Controls are addressed for the Design and Repair/ Fabrication Scope they can perform Repair and Alteration.

Meeting Action: R. Troutt presented. The proposal was motioned, seconded, and **Unanimously Approved.**

Item Number: 20-91 **NBIC Location: Part 3, 1.5.1 h)** **Attachment 10**

General Description: Mechanical Repair Procedures

Subgroup: Repairs and Alterations

Task Group: R. Underwood (PM), R. Valdez

Explanation of Need:
Part 3, paragraph 1.5.1(h) requires that control of mechanical assembly/repair procedures be addressed in the R Certificate Holder's Quality Manual. Over the last year or so, there have been National Board Team Leaders requesting these procedures (during joint reviews) for work such as rolling tubes in a boiler and replacing a bolted fitting on a pressure retaining item. This has resulted in questions from certificate holders and Inspectors about why an "R" certificate holder is required to have procedures for mechanical work that doesn't even require an "R" Stamp.

Meeting Action: R. Underwood presented. The proposal was motioned, seconded, and **Unanimously Approved.**

9. Future Meetings

July 12th-15th, 2021 – Cincinnati, OH
January 10th-13th, 2022 – TBD

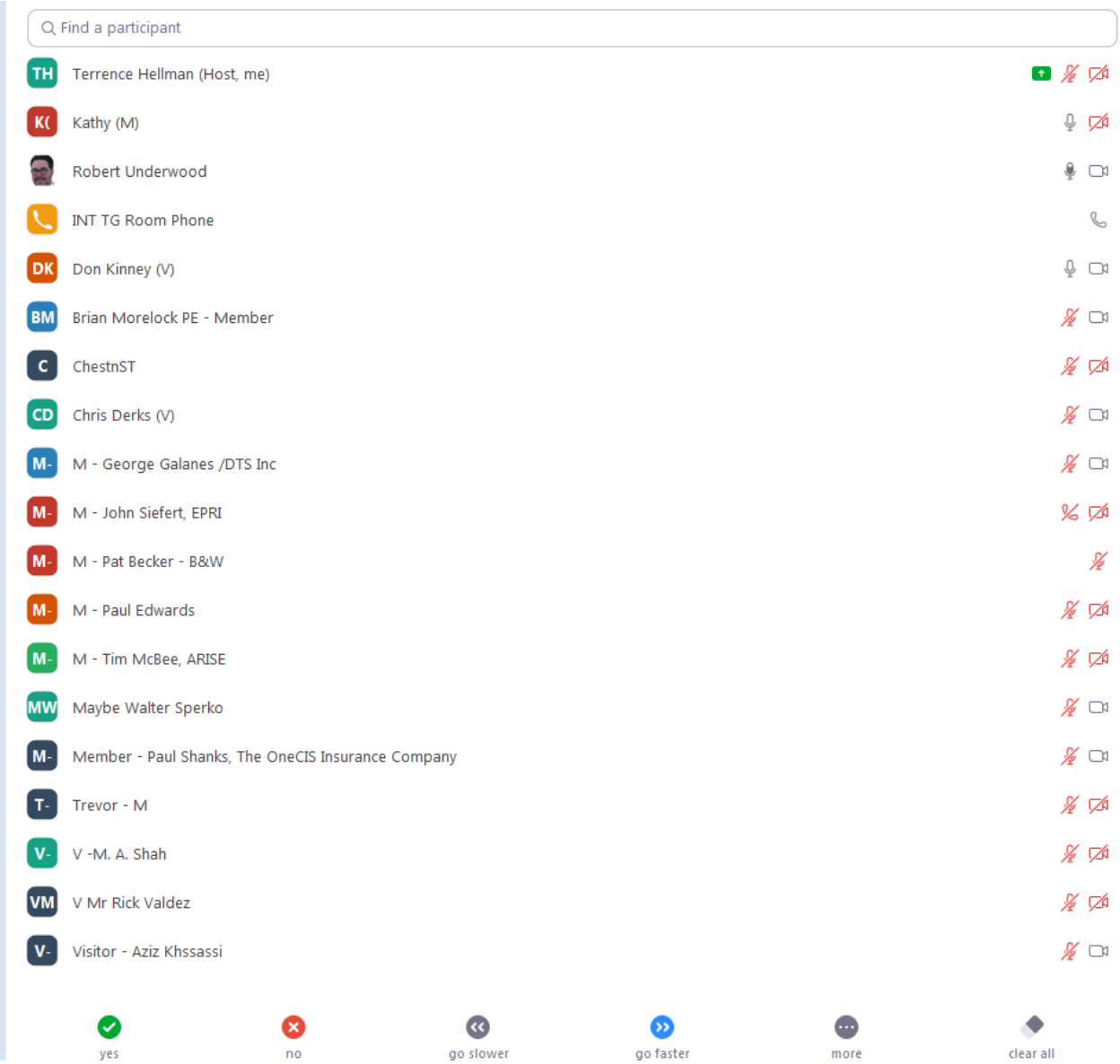
10. **Adjournment**
There being no further business before the Task Group, the meeting was adjourned at 3:40 PM without objection.

Respectfully submitted,

Terrence Hellman

Terrence Hellman
TG Interpretations Secretary

TG INT - Attendance



PROPOSED INTERPRETATION

Inquiry No.	**20-3**
Source	Nathan Carter, HSB nathan_carter@hsb.org
Subject	Inspector involvement in Fitness-for-Service Assessments **Background:** The below questions are intended to gain clarity as to first which Inspector (i.e. "IS" Commissioned or "R" Endorsement) signs the FFSA Form NB-403 when an "R" Certificate Holder is involved with a repair in that region as well as determine what level of review of the Fitness-for-Service the Inspector is expected to complete. If it is an Inspector holding a "R" Endorsement with an AI Commission (not tested on NBIC Part 2), shouldn't the relevant pages in NBIC Part 2 concerning Fitness for Service be included in their tested body of knowledge, so they are aware of the detailed rules? The Body-Of-Knowledge for National Board Inspectors holding either an "IS" Commission or "R" Endorsement does not reference ASME FFS-1/API 579 Fitness-For-Service Standard or have any expectation that the Inspector be capable of determining if the correct Fitness for Service methodology was used or that the assumptions taken by the Engineer in the analysis were the most appropriate or accurate. Clarification is also requested due to the Form NB-403 signature block stating "Verified by" for the Inspector without any other disclaimers as typically found on other Forms signed by Inspectors such as ASME MDRs and NBIC Form R-1/R-2. An example is a R-Certificate holder was hired to repair a weld seam. It was discovered during a repair that multiple base metal laminations existed adjacent to the repair location. A Fitness for Services Evaluation was subsequently performed. The first question is whether or not it is the responsibility of the Repair Inspector to sign the FFSA form once everything has been properly vetted, since the defect being left in place is not necessarily within the scope of the initial repair being performed by the "R" Certificate Holder, or should this be signed off by a Commissioned Inservice Inspector, since they are examined on the rules of NBIC Part 2? Also, Form NB-403 is vague in the signature block region for the scope of what the Inspector is signed for. It could be alluded that without a statement, such as those found on the R-1 and R-2 forms, the Inspector is signing off on the appropriateness and adequacy of the Fitness-For-Service methodology performed by the Engineer.
Edition	2019; Part: Repairs and Alterations; Section: 3; Paragraph: 3.3.4.8 2019; Part: Inspection; Section: 4; Paragraph: 4.4
Question	Question 1: In accordance with NBIC Part 3, 3.3.4.8, a fitness-for-service condition assessment as described in NBIC Part 2, 4.4 shall be completed and adequately documented on the FFSA Form NB-403. Once Form NB-403 is completed, is it required that the Inspector signing this Form hold a National Board "R" Endorsement as described in RCI-1/NB-263? Question 2: NBIC Part 2 4.4.1 d) states that the Inspector shall indicate acceptance of the Report of FFSA by signing. Paragraph 4.4.3 b) states that the Inspector shall review the condition assessment methodology and ensure that the inspection data and documentation are in accordance with Part 2. Is the Inspector's signature on Form NB-403 an indication that the condition assessment and recommendations completed by the Engineer have been fully reviewed for appropriateness and accuracy by the Inspector?

	Question 3: If the answer to Question 2 is No, is the Inspector's signature on Form NB-403 an indication of acceptance solely on the basis of review of the Form for completeness and verification that the requirements outlined in 4.4 were addressed?
Reply	Proposed Reply 1: Yes Proposed Reply 2: No Proposed Reply 3: Yes
Committee's Question	
Committee's Reply	
Rationale	

PROPOSED INTERPRETATION

Inquiry No.	**20-11**
Source	Hugh-Jean Nel, Sasol Hugh-Jean.Nel@sasol.com
Subject	Scope of Repairs **Background:** Historically NBIC has not defined limitations on the scope of repair provided the entire item is being rebuilt, see Question & Reply 2 & 3 in Interpretation 98-28. NBIC Part 3 lists several examples of repair but nowhere limits the scope or amount of these examples that can be utilized when performing repairs. This creates some uncertainty when performing some types of repairs, such as replacing the tubesheets of a fixed tubesheet type heat exchanger as listed in 3.3.3 e). According to ASME BPV Code Section VIII Division 1 Part UHX, Section 13, the length of the tubes is a design parameter and therefore replacing the tubesheet in accordance with its original design might require the replacement of the tubes as well to maintain the original design length.
Edition	2019; Part: Repairs and Alterations; Section: 3; Paragraph: 3.3.3 Examples of Repairs
Question	Question: Is it permissible for repair activities performed on pressure retaining item to have more than one activity listed in 3.3.3 with the scope of repair?
Reply	Proposed Reply: Yes, ~~provided that the scope of repairs has been approved by the Inspector, and when required, by the Jurisdiction.~~
Committee's Question 1	~~Can~~ May multiple repair activities referenced in 3.3.3 of Part 3 be listed on a single Form R-1 Report when performing a repair on a pressure retaining item?
Committee's Reply	Yes
Rationale	There is nothing in the NBIC that restrict the repair work performed on one vessel at the same time.
Committee's Question 2	Other than tube plugging, ~~I~~is it considered an alteration when the heat transfer surface(s)~~tube length~~ of a heat exchanger is ~~changed~~ changed from its original design~~while replacing tube sheets~~ on a ~~ASME~~ ~~Section VIII, Div 1~~ pressure vessel?
Committee's Reply	Yes~~.~~ Reference NBIC Part 3,. 3.4.4 d)
Rationale:	~~The tube length is a dimension as mentioned in 3.4.4. d~~

Interp 20-11

3.4.4 EXAMPLES OF ALTERATIONS

d) A change in the dimensions or contour of a pressure-retaining item;

3.3.3 EXAMPLES OF REPAIRS

e) Replacement of heat exchanger tubesheets in accordance with the original design;

INTERPRETATION 98-28

Subject: RC-1050(c) Replacement Parts Fabricated by an "R" Certificate Holder
Appendix 6 Pressure Retaining Replacement Items
RC-1050 Definition of New Replacement Parts

1998 Edition

Question 1: Does RC-1050(c) of the NBIC permit the holder of an "R" Certificate to fabricate by welding new and exact pressure retaining replacement parts for an ASME stamped item that the "R" stamp holder is repairing?

Reply 1: No. ASME replacement parts fabricated by welding that require shop inspection by an Authorized Inspector shall be fabricated by an organization having an appropriate ASME Certificate of Authorization.
Question 2: An ASME stamped item is determined to be corroded beyond repair and the only salvageable part is the ASME Code stamping or nameplate. Is it the intent of the NBIC to permit a holder of an "R" Certificate only to build a complete new and exact pressure retaining replacement item using the original ASME construction Code, Section, Edition and Addenda and same materials, transfer and document the transfer of the ASME stamping or nameplate on an R-1 Form to the new pressure-retaining item and stamp the repair with the "R" stamp?
Reply 2: No.
Question 3: Does the NBIC define the point at which a repair becomes new construction?
Reply 3: No.

PROPOSED INTERPRETATION

Inquiry No.	**20-66** **NBIC Location: Part 3, 3.3.2 e) (Addition of non-load bearing attachments)**
Source	Alex Garbolevsky – Hartford Steam Boiler
Subject	The reason for the interpretation request is that two previously published NBIC Interpretations and the NBIC itself seem to be contradictory. Interpretations 95-14 and 95-21 lead the reader to conclude that if the original vessel was postweld heat treated, then the addition of refractory clips by welding, regardless of size, without postweld heat treatment is an alteration. However, NBIC Part 3 [2019 Edition], 3.3.3 b)1) and 2) list addition of welded attachments to pressure parts, such as: Studs for insulation or refractory lining and hex steel or expanded metal for refractory lining as “Examples of Repairs”. Furthermore, NBIC Part 3 [2019 Edition], 3.3.2 e) 2) states: “The following repairs may be considered as routine repairs and shall be limited to these categories: 2) The addition or repair of non-load bearing attachments to pressure-retaining items *where postweld heat treatment is not required*;
Edition	2019
Question	An ASME BPV Code Section VIII, Div. 1 pressure vessel (P-No. 1, 2-1/4 in thick), fabricated in 1971, was completely postweld heat treated (PWHT) in an oven. The vessel nameplate is marked “HT”. No special service applies. In 2020, refractory clips are added by welding. The attachment welds are of such size that they are exempted from PWHT per ASME BPV Section VIII, Div. 1, 2019 Edition, Table UCS-56-1 General Note (b)(3)(c). May the welding of the refractory clips be considered as a “routine repair” under NBIC (2019) Part 3, 3.3.2 e) 2)?
Reply	Yes
Committee’s Question	May non-load bearing attachments welded directly to an ASME Section VIII, Div. 1 pressure vessel that has full postweld heat treatment reported on the ASME Manufacturer’s Data Report be considered a routine repair without subsequent postweld heat treatment or post weld heat treatment alternatives?
Committee’s Reply	Yes, provided the attachment welds ~~is~~are exempted from post weld heat treatment by the original construction Code and service related conditions.
Rationale	After discussion, it was determined that 3.3.2(e)(2) permits addition of non-load bearing attachments when the repair weld is exempted from post weld heat treatment by the original construction code.
SC Vote	

NBIC Vote	
Negative Vote Comments	

(f) See below.

(1) The letters HT shall be applied under the Designators when the complete vessel has been postweld heat treated as provided in UW-10.

(2) The letters PHT shall be applied under the Designators when only part of the complete vessel has been postweld heat treated as provided in UW-10.

The extent of the postweld heat treatment shall be noted on the Manufacturer's Data Report.

Interpretation: (NBIC) 95-14

Subject: R-202 Alteration, 1992 Edition with the 1994 Addenda

Date Issued: N/A

File: N/A

Question: May a welded repair to a pressure vessel be performed without postweld heat treatment or acceptable alternative to postweld heat treatment, when the pressure vessel as reported on the data report was postweld heat treated during construction?

Reply: No.

INTERPRETATION 95-21

Subject: Appendix 4, Definition of Alteration, 1995 Edition

Question: May an ASME Section VIII, Division 1 pressure vessel that has postweld heat treatment reported on an ASME Manufacturer's Data Report, be repaired by welding without subsequent postweld heat treatment or postweld heat treatment alternatives?

Reply: No. This is an alteration.

INTERPRETATION 20-77
Authorization of repair/alteration activities

Inquiry No.	20-77
Source	Paul Shanks Email: paul.shanks@onecis.com Phone: +1 (832) 316.4249
Subject	Many R-certificate holders also have U or S stamps and as such have a regular AI (with R endorsement) to whom they tend to have review repair and alteration packages. However when the physical work will be conducted 'out of state' travel limitations and or jurisdictional authorization requirement prevent the local AI from making the final acceptance inspection thus another AI must do that work, para 1.3.2 a) makes clear that both Inspectors have to be employed by the same agency. Form R-2 has 2 Inspector sign off locations but does not make clear if the two Inspectors must be from the same AIA or not. Background Information: Paragraph 1.3.2 a) situates that the inspectors that authorizes the repair/alteration and the inspector that performs the acceptance inspection be employed by the same AIA. However the activity of authorizing the repair/alteration is not defined and it is not clear what constitutes authorization. Given that form R-2 has sign off locations for design and constructions, if two different Inspectors sign, should they be employed by the same agency?
Edition	Part 3 1.3.2
Question	Q1: Given the restriction of employment in paragraph 1.3.2 a) if two inspectors are signing an R-2 may they be employed by different AIA's?; Q2: if the answer to the above is yes, does this mean the Inspector making the final acceptance inspection is the only Inspector that is suitable to authorize the inspection?
Reply	A1: No A2: Yes
Committee's Question	Q1: May inspectors employed by two different AIA's complete the inspector certifications on the Form R-2? Q2: Must the inspector signing the Certificate of Inspection on the Form R-2 be the same inspector, or employed by the same AIA as the inspector, who authorized the construction work for the alteration?
Committee's Reply	A1: Yes. A2: Yes.
Rationale	Q1: NBIC Part 3, 5.2.2(a) and (c). Q2: NBIC Part 3, 1.3.2(a) and 5.2.2(c).

SC Vote	
NBIC Vote	
Negative Vote Comments	

INTERPRETATION 20-78

Repairs and Alterations of Tube Bundles

Inquiry No.	20-78
Source	Micah Davidian Email: mdavidian@dir.ca.gov Phone: +1 (559) 4456817
Subject	Submission is for R Certificate Holders we provide Repair Inspection services for Background Information: For questions 1-4, NBIC Part 3, 3.3.3 s) seems to allow to be a repair, but under 3.4.4 d) where the dimensions change it might be classified as an alteration.
Edition	2019 Part 3 3.3.3 s) and 3.4.4 d)
Question	Question 1: When a tube bundle is replaced where the new tubesheet material is the same as the original bundle but has a thicker tubesheet due to adding corrosion allowance where the original design did not include corrosion allowance, is this considered a repair or alteration? Question 2: When a tube bundle is replaced where the new tubesheet material is the same as the original bundle but has a thicker tubesheet due to adding additional corrosion allowance to the original design, is this considered a repair or alteration? Question 3: When a tube bundle is replaced where the new tubesheet material is the same as the original bundle but has a thicker tubesheet due to adding thickness for future machining allowance, is this considered a repair or alteration? Question 4: For a tube bundle, does NBIC Part 3, 3.4.4 d) mean that any physical changes e.g. tubesheet thickness, tube wall thickness or length of tubes from the original design will be an alteration? Question 5: If a tube bundle is replaced where the new tubesheet material is the same as the original bundle but has a thicker tubesheet due to ASME Sec VIII, Div. 1, Part UHX tubesheet formulas, is this considered a repair or alteration. Proposed Reply: Question 1: Alteration (calculations required) Question 2: Alteration (calculations required) Question 3: Repair Question 4: Some may be repairs others alterations. Question 5: Alteration (calculations required)
Reply	

Committee's Question	Q1: When a tubesheet in a replacement tube bundle has the same material as the original design but is thicker due to adding corrosion allowance where the original design did not include corrosion allowance or adding additional corrosion allowance or adding a machining allowance, is this considered a repair or alteration? Q2: In the case of a tube bundle, does NBIC Part 3, 3.4.4 d) mean that any physical changes e.g. tubesheet thickness, tube wall thickness or length of tubes from the original design will be an alteration? Q3: When a replacement tube bundle has the same tubesheet material as the original design but is thicker due to a change in the analytic method, is this considered a repair or alteration.
Committee's Reply	A1: Alteration A2: Yes A3, Alteration
Rationale	Original questions 1,2 &3 have all be rolled up into Q&A1. All, per para 3.4.4 d) a change in dimension or contour of a PRI is an example of an alteration, the tube sheet getting thicker is a change in dimension. The glossary definition of PRI includes material so is not limited to the overall vessel/boiler Q3- I believe this is in reference to a heat exchanger built before Part UHX was adopted into Section VIII Div.1 so would have been built to TEMA rules which aren't 100 % the same as Part UHX. I do not think we should explain how to get around this in the answer to an interpretation.
SC Vote	
NBIC Vote	
Negative Vote Comments	

PROPOSED INTERPRETATION

Inquiry No.	**20-81**
Source	Robert Underwood – Hartford Steam Boiler
Subject	Recently received some inquiries from repair firms and Repair Inspectors who argue there are no minimum test pressure requirements when performing liquid pressure tests of alterations since it is not specifically stated in paragraph 4.4.2(a)(1). This interpretation, combined with a new proposal to revise 4.4.2(a)(1) will make it clear that minimum test pressures for alteration activities shall comply with the original code of construction, which I believe is the intent.
Edition	2019; Part 3: Repairs and Alterations; Section: 4; Paragraph: 4.4.2(a)(1) Test or Examination Methods Applicable to Alterations
Question	Question: When conducting a liquid pressure test of an alteration activity as described in 4.4.2(a)(1), shall the minimum required test pressure be as specified in the original code of construction?
Reply	Proposed Reply: Yes
Committee's Question 1	When conducting a liquid pressure test of an alteration activity as described in 4.4.2(a)(1), shall the minimum required test pressure be as specified in the original code of construction?
Committee's Reply	Yes, unless Nondestructive Examination as allowed by Part 3, 4.4.2 c) is permitted.
Rationale	

2021 Edition Part 3, 4.4.2(a)(1)

1) A pressure test as required by the original code of construction shall be conducted. The test pressure shall not exceed the maximum hydrostatic test pressure of the original code of construction. When the original test pressure included consideration of corrosion allowance, the test pressure may be further adjusted based on the remaining corrosion allowance. The pressure test for replacement parts may be performed at the point of manufacture or point of installation.

Some argue that “as required” only means that a liquid pressure test is required, but does not specifically state anything about the minimum test pressure.

INTERPRETATION 20-89

LIQUID PRESSURE TEST EXAMINATION METHODS APPLICABLE TO ALTERATIONS -

Inquiry No.	20-89
Source	Jagadheesan Vellingiri Muthukumaraswamy Email: jaga4021@hotmail.com Phone: +1 (91) 9944208398
Subject	For an ASME SEC VIII Div 2, Class 1 or Class 2 / ASME SEC I / ASME B 31.1 Equipment is Subjected to Alteration due to Increase in MAWP.
Edition	2019 Edition Part 3: 4.4.1 & 4.4.2 Examination and testing
Question	1. Is it the Intent of the Code that the Minimum Pressure for Liquid Pressure Test for Alteration Shall be as per Original Code of Construction? 2. Can Pressure Test Be Conducted at Design Pressure or MAWP for Alteration Considering Remaining Thickness or Corrosion Condition considering Integrity of the Equipment?
Reply	1. Yes 2. No
Committee's Question	Q1: When conducting a liquid pressure test of an alteration activity as described in 4.4.2(a)(1), shall the minimum required test pressure be as specified in the original code of construction? Q2: When conducting a liquid pressure test of an alteration activity as described in 4.4.2(a)(1), may the minimum required test pressure be as adjusted based on the remaining corrosion allowance.
Committee's Reply	A1:Yes, A2: Yes, provided the minimum test pressure is in compliance with the original code of construction.
Rationale	
SC Vote	
NBIC Vote	
Negative Vote Comments	

INTERPRETATION 20-90
1.4.1 ACCREDITATION PROCESS / NB-415- Certification of Scope

Inquiry No.	20-90
Source	Jagadheesan Vellingiri Muthukumaraswamy Email: jaga4021@hotmail.com Phone: +1 (91) 9944208398
Subject	The NBIC Certification scope Does not Restrict the Repair Organization to Perform Based on their ASME Certification of scope, as long as Manual Controls are addressed for the Design and Repair/ Fabrication Scope they can perform Repair and Alteration. A Repair Organization is Holding an valid R certification under NBIC, and Holds Valid ASME- U Authorization. The Certifcation Scope Under NBIC is issued for Metallic Repair and Alteration, Can the Repair Organization Perform Repair and Alteration on ASME Sec VIII Div 2 / 3 and Section 1 Components
Edition	Part 3 1.4.1
Question	1. Is it the Intent of Code that based on the Initial Certification under 1.4.1 / NB-415 Process and Quality manual Restriction that if the Repair Organization is Authorized for Repair and Alteration on Sec VIII Div 1 Vessels only they are entitled to Perform Repair and alteration of Sec VIII Div 1 Vessels? 2. If the Answer to above Question is No then can the Repair Organization Perform Repair and Alteration on Sec VIII Div 2/Div 3 and Section 1 Components if the controls are addressed in Manual?
Reply	1. No 2. Yes
Committee's Question	Is it required for an "R" Certificate of Authorization holder to also hold a Certificate of Authorization issued by the ~~PRI's~~ pressure retaining item's original Code of Construction for which a repair or alteration is to be completed?
Committee's Reply	No
Rationale	The NBIC does not restrict the "R" Certificate of Authorization holder to making repairs and/or alterations to specific Codes of Construction. It does require that the "R" Certificate of Authorization holder have the capabilities to make the repairs and/or alterations in accordance with the original code of construction.
SC Vote	
NBIC Vote	
Negative Vote Comments	

PROPOSED INTERPRETATION

Inquiry No.	**20-91**
Source	Robert Underwood – Hartford Steam Boiler
Subject/Background	To determine if procedures are required for mechanical repairs/assemblies as referenced in Part 3, paragraph 1.5.1(h). Part 3, para. 1.5.1(h), requires that control of mechanical assembly/repair procedures be addressed in the R Certificate Holder's Quality Manual. Over the last year or so, there have been National Board Team Leaders requesting these procedures (during joint reviews) for work such as rolling tubes in a boiler and replacing a bolted fitting on a pressure retaining item. This has resulted in confusion and several questions from certificate holders and Inspectors about why an "R" certificate holder is required to have procedures for mechanical work that doesn't even require an "R" Stamp.
Edition	2019; Part 3: Repairs and Alterations; Section 1, paragraph 1.5.1(h)
Question	Are mechanical repair/assembly procedures that are referenced in Part 3, paragraph 1.5.1(h), required for work that does not require an “R” Form?
Reply	Proposed Reply: No
Committee’s Question 1	Is a mechanical repair/assembly procedure mandatory for work that does not require an R Form?
Committee’s Reply	No
Rationale	There are many interpretations addressing mechanical work, replacing boiler tubes “non welded”, repairing studded outlet threads “no welding” the NBIC does not address non welded repairs (mechanical), nor requires a written procedure or a repair plan when this work does not require an R Form.
SC Vote	
NBIC Vote	
Negative Vote Comments	

Part 3, 1.5.1(h)

h) Repair and Alteration Methods

The manual shall include controls for repairs and alterations, including mechanical assembly procedures, materials, nondestructive examination methods, pre-heat, and postweld heat treatment, as applicable. Special requirements such as nonmetallic repairs and alterations to graphite and fiber-reinforced thermosetting plastic pressure-retaining items including bonding or mechanical assembly procedures shall be addressed, if applicable.

Part 3, Supplement 9 - Glossary

Mechanical Assembly — The work necessary to establish or restore a pressure retaining boundary, under supplementary materials, whereby pressure-retaining capability is established through a mechanical, chemical, or physical interface, as defined under the rules of the NBIC.

Mechanical Repair Method — A method of repair, which restores a pressure retaining boundary to a safe and satisfactory operating condition, where the pressure retaining boundary is established by a method other than welding or brazing, as defined under the rules of the NBIC.