THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

NATIONAL BOARD TASK GROUP INTERPRETATIONS

(REPAIRS AND ALTERATIONS)

MINUTES

Meeting of January 13th, 2020
San Diego, CA

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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**

The meeting was called to order at 1:07 PM by Chair Mr. Rick Sturm.

2. **Announcements**

Secretary Hellman announced the reception for all committee members and visitors on Wednesday evening at 5:30pm at The Smoking Gun.

3. **Introduction of Members and Visitors**

Introductions took place amongst all members and visitors, and an attendance sheet was circulated (**Attachment 1).**

4. **Adoption of the Agenda**

Secretary Hellman announced the addition of Interpretation Items 20-1, 20-2, and 20-3. A motion was made to adopt the Agenda as amended and was approved.

5. **Approval of the Minutes of the July 15th, 2019 Meeting**

There was a motion to approve the Minutes of July 15, 2019 as published. The motion was seconded and approved with one abstention (P. Shanks).

6. **Interpretations**

Item Number: 19-5	**NBIC Location: Part 3, 3.2.6**	**Attachment 2**
General Description: Reference to Other Codes and Standards **Subgroup:** Repairs and Alterations **Task Group:** Brian Morelock (PM) **Explanation of Need:** Repair Methodology proposed by user is rejected by AI as there are no codes, standards, and practices available to support repair method. **Meeting Action:** Mr. Morelock presented. Paul Edwards commented that the LB response regarding "Consulting" should be under the line on the response to the inquirer. **A motion to accept the response as amended was made and unanimously approved.**		

Item Number: 19-10	NBIC Location: Part 3, Introduction, paragraph on Interpretations	Attachment 3

General Description: Allow interpretations to be used in any edition, provide the same wording

Subgroup: Repairs and Alterations

Task Group: Kathy Moore (PM)

Explanation of Need: NBIC currently limits each interpretation to the edition it was issued for. However often time the words in question do not change from one edition to another. At present a new interpretation would be needed for each edition of the NBIC to address the same issues, this is a delay to field work and a drain on NBIC committee time.

Meeting Action: Kathy Moore presented that the inquirer (P. Shanks) would withdraw this inquiry and Kathy Moore will open a new Action Item to address this elsewhere (in Section 8 of the NBIC). **A motion to close this Item with no action was made, seconded, and unanimously approved.**

Item Number: 19-25	NBIC Location: Part 3, 4.4.2 c)	Attachment 4

General Description: NDE methods to do in lieu of Hydro test

Subgroup: Repairs and Alterations

Task Group: John Siefert (PM)

Explanation of Need: For ASME BPV Section VIII Division 2 Vessel is under Alteration with Re-rate of lowering MAWP & increasing of Design Temperature & there is no physical alteration in the Vessel but only change is in the Alteration design report because of different design stress intensity value at higher design temperature.

Meeting Action: Mr. J. Siefert presented, and after discussion**, the proposal was motioned, seconded, and unanimously approved as amended.**

Item Number: 19-26	NBIC Location: Part 3, 3.3.2	Attachment 5

General Description: Clarification on welding repairs on appendages

Subgroup: Repairs and Alterations

Task Group: Paul Shanks (PM)

Explanation of Need: The original submitter of this item will sometimes need to perform a welding repair on an appendage (not on the tank itself) in order for the complete process of refurbishment to be done for their customers' expectations. There appears to be no direct reference to these types of minor welding repairs for the refurbishment process in the NBIC code.

Meeting Action: Mr. P. Shanks presented, and the proposal was revised after comments from Mr. G. Galanes to add Question 3 and Reply 3. **A motion was made, seconded and unanimously approved to accept the proposal as amended.**

Item Number: 19-34	NBIC Location: Part 3, 3.2.2 e)	Attachment 6

General Description: Is it the intent of Part 3, 3.2.2 e) that the reference to the original code of construction is for determining the hydrostatic test pressure?

Subgroup: Repairs and Alterations

Task Group: Paul Edwards (PM)

Explanation of Need: NBIC Part 3 Section 3 paragraph 3.2.2 e) (shown below) states that replacement parts shall receive a pressure test as required by the original code of construction. The original submitter is concerned that this clause is not being interpreted consistently by all users of the NBIC. The words in question are "…as required by the original code of construction." ASME issued interpretation I-16-1 (shown below) and revised PW-54 to clarify that Section I does not contain requirements for the hydrostatic testing of replacement parts provided for an existing unit. Based on this, the words "… as required by the original code of construction." Could be interpreted to mean that pressure testing of the parts is not required because Section I does not require testing of replacement parts. The submitter does not think that was the Committee's intent when clause e) was added to 3.2.2. Linking the words "original code of construction" to the test pressure would eliminate the potential interpretation that testing is only required when the original code of construction specifically requires testing of replacement parts.

Meeting Action: Mr. P. Edwards presented this interpretation was an "intent interpretation" used to address the revision to the NBIC handled under Action Item 19-59. **A motion was made, seconded, and unanimously approved.**

Item Number: 19-36	NBIC Location: Part 3, 3.3.2 & 3.3.5	Attachment 7

General Description: Routine Repairs of VIII Div 2 and Div 3 PV

Subgroup: Repairs and Alterations

Task Group: Paul Edwards (PM)

Explanation of Need: Para 3.3.2 talks about requirements for and examples of routine repairs. It does not specify any restrictions on pressure retaining items construction Code. It states that Routine repairs are repairs for which the requirements for in-process involvement by the Inspector and stamping by the "R" Certificate Holder may be waived as determined appropriate by the Jurisdiction and the Inspector. It states that all other applicable requirements of this code (NBIC) shall be met. Para 3.3.5.1 of NBIC states that the following requirements shall apply for the repair of pressure vessels constructed to the requirements of Section VIII, Division 2 or 3, of the ASME Code. This calls for properly Certified repair plan to be submitted to the Inspector who will make acceptance inspection and sign R-1 Form.

Meeting Action: Mr. P. Edwards presented that this item did not receive enough votes to pass Letter Ballot. The single negative vote and the single comment on the LB were considered and responded to. **A motion to reaffirm the proposal was made, seconded, and unanimously approved.**

Item Number: 19-42	NBIC Location: Part 3, 3.3.3 s) & 3.4.4 g)	Attachment 8

General Description: 3.3.3 s design intent clarification vs 3.4.3 g

Subgroup: Repairs and Alterations

Task Group: Paul Shanks (PM)

Explanation of Need: The design requirement in 3.3.3 s) is not well defined and is allowing potentially unsafe material changes to be conducted as repairs without adequate assessment.

Meeting Action: Mr. P. Shanks presented a **Progress Report**.

New Interpretation Requests:

Item Number: 19-62	NBIC Location: Part 3, 2.5.3.6	Attachment 9

General Description: Interpretation for using NBIC Part 3, 2.5.3.6 Welding Method 6 on Grade 92

Subgroup: Repairs and Alterations

Task Group: John Siefert (PM)

Explanation of Need: End-users are experience failures in SA-213 T92 Code Case 2179 material and would like the option to invoke Welding Method 6 for repairs internal to the boiler setting.

Meeting Action: Mr. J. Siefert presented the proposal. **The proposal was revised after discussion and a motion was made, seconded, and unanimously approved.**

Item Number: 19-66	NBIC Location: Part 3, 3.4	Attachment 10

General Description: Shell Side Heat Exchanger PWHT

Subgroup: Repairs and Alterations

Task Group: Kathy Moore (PM)

Explanation of Need: An R Certificate Holder is Doing Repair Work on the Shell Side of Heat Exchanger, which was not PWHT Earlier. As per Client Request, Welded Joints are Post weld Heat Treated and Consider as Alteration, Client wants Shell Side to Under Go Full Post weld Heat Treatment Including areas not repaired. NDE is being Carried out for Complete Equipment and Client wants PWHT for Welds which are in Services and without any repairs.

Meeting Action: Ms. K. Moore presented that this inquiry was answered in Interpretation 13-06. **A motion to respond to the inquirer with Interp. 13-06 and close this Item was made, seconded, and unanimously approved.**

Item Number: 19-67	**NBIC Location: Part 3, 3.4**	**Attachment 11**

General Description: Clarification of Part 3, 1.5.1 d) 1)

Subgroup: Repairs and Alterations

Task Group: Kathy Moore (PM)

Explanation of Need: The original submitter interprets the above statement to mean a stamp holder must do repairs or alterations to the NBIC. Clarification is requested as the statement "as applicable" is ambiguous.

Meeting Action: Ms. K. Moore presented a **Progress Report**.

Item Number: 19-86	**NBIC Location: Part 3, 2.2 & 2.2.1**	**Attachment 12**

General Description: National Certified Pipe Welding Bureau (NCPWB) welding procedure specs

Subgroup: Repairs and Alterations

Task Group: Kathy Moore (PM)

Explanation of Need: Some ASME and National Board Certificate Holders have presented NCPWB procedures to Team Leaders (designees) at joint reviews as part of their welding demonstrations, and those companies may not understand the limited scope in which the procedures may be used.

Meeting Action: Mr. Boseo presented, and after discussion, **a motion to accepted the proposal as amended was made, seconded, and unanimously approved**

Item Number: 19-87	**NBIC Location: Part 3, 5.6**	**Attachment 13**

General Description: Form Registration Log

Subgroup: Repairs and Alterations

Task Group: Robert Underwood (PM)

Explanation of Need: Many "R" Certificate Holders now use the National Board EDT System to register "R" Forms. All of the required log information in paragraph 5.6 of Part 3 is available in EDT, therefore it is unnecessary and redundant for "R" Certificate Holders to maintain a separate log outside the EDT system.

Meeting Action: Mr. Tim McBee presented, and after discussion, **the proposal was motioned, seconded, and approved as amended** (Abstained – P. Becker).

Item Number: 20-1	**NBIC Location: Part 3, 3.3.2**	**Attachment 14**

General Description: ASME B31.3 Normal Fluid Service and Severe Cyclic have madatory requirements for radiography.

Subgroup: Repairs and Alterations

Task Group: George Galanes (PM)

Explanation of Need:
Are “Routine Repairs” permitted for ASME B31.3 Normal Fluid Service and Severe Cyclic piping?
Proposed Answer: No

Are “Routine Repairs” permitted for ASME B31.3 Category D Service piping?
Proposed Answer: Yes

Meeting Action: Mr. G. Galanes presented a **Progress Report**.

Item Number: 20-2	**NBIC Location: Part 3, Table 2.3**	**Attachment 15**

General Description: Use of 2018 AWS SWPS’s in accordance with the 2019 NBIC

Subgroup: Repairs and Alterations

Task Group: Jim Sekely (PM)

Explanation of Need:
Since Item 18-102 (updating the SWPS Table 2.3 in Part 3 to the current 2018 AWS standards) was not passed by MC until after the 2019 NBIC was published, a number of SWPS's as listed in the 2019 Edition of the NBIC, Table 2.3 are not current. This Interpretation would allow Certificate Holders to utilize the 2018 SWPS’s that have been approved for the 2021 Edition of the NBIC

Meeting Action: Mr. J. Sekely presented and the **proposal was motioned, seconded, and unanimously approved.**

Item Number: 20-3	NBIC Location: Part 3, Section 3 &4 Paragraph: 3.3, 4.4, 4.8, and Form 4.4	Attachment 16

General Description: Inspector involvement in Fitness-for Service assessments

Subgroup: Repairs and Alterations

Task Group: John Siefert (PM)

Explanation of Need:
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?

Meeting Action: Mr. G. Galanes presented and Mr. Siefert discussed the proposal. This was a **Progress Report**

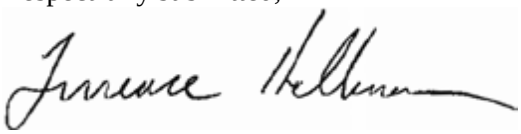
7. Future Meetings

- July 13th-16th, 2020 – Louisville, KY
- January 11th -14th, 2021 – TBD

8. Adjournment

There being no further business before the Task Group, the Chair adjourned the meeting at 4:22 PM, without objection.

Respectfully submitted,



Terrence Hellman
Repairs and Alterations Secretary

NBIC Interpretations Task Group - 1/13/2020

First Last	Email	Company	Phone #	Signature	Attending Reception?
Terrence Hellman	thellman@nationalboard.org	NBBI	(405) 512-4210		✓
Rick Sturm	rsturm@utah.gov	State of Utah	801-326 7266		✓
Michael Queenberry	michael@allcatri.com	ATS Mechanical	(801) 566-7174		✓
Paul Shanks	Paul.Shanks@onecis.ca	OneCIS	832 716 6249		✓
Robert McGuire	robert.b.mcguire@ge.com	GE	860 719-2916		✓
Luis Ponce	lponce@nationalboard.org	NBBI	915 478 7685		✓
Tim Marken	Timothy.Marken@tnusa.com	ARISE	217 412-9300		✓
Jerry Jessick	jerry.jessick@gapac.com	GP	920 819 8570		
Robert Wielgoszinski	ROBERT_WIELGOSZINSKI@HSB.COM	HSB	860 670 0779		✓
Nathan Carter	nathan_carter@hsb.com	HSB	843-407-0384		✓
Kathy Moore	kathy.moore@jemorecompanies.com	Joe Moore Company	919 606 7422		✓
George Grimes	ggrimes@diamondtribal.com	DTS	815-634-2727		✓

Interpretation IN19-5

Proposed Interpretation

Inquiry:	IN19-5
Source:	
Subject:	NBIC Part 3 Section Part 3, 3.2.6
Edition:	2017
General Description:	
Question 1:	Can user's opinion, categorization and proposed Repair methods be considered under NBIC Part 3, 3.2.6?
Reply 1:	No
Committee's Question 1:	~~Can~~ May a bolt hole in a SA350-LF2 flange be considered a repair~~ed~~ using SA-105 material that is welded using a Welding Procedure Specification (WPS) that was qualified without postweld heat treatment (PWHT) and without impact testing?
Committee's Reply 1:	~~This is consulting~~No. This cannot be completed as a Repair.
Question 2:	Does AI have final authority to take decision under Part 3, 3.2.6 when jurisdiction does not exist?
Reply 2:	Yes
Committee's Question 2:	Does the Inspector have final authority for review and acceptance of a repair by a repair organization that has an "R" Certificate of Authorization under Part 3, 3.2.6 when jurisdiction does not exist?
Committee's Reply 2:	Yes.
Rationale:	NBIC Part 3, Section 3.2.6
SC Vote	
NBIC Vote	

Rationale:

3.2.6 REFERENCE TO OTHER CODES AND STANDARDS

Other codes, standards, and practices pertaining to the repair and alteration of pressure retaining items can provide useful guidance. Use of these codes, standards and practices is subject to review and acceptance by the Inspector, and when required, by the Jurisdiction. The user is cautioned that the referenced codes, standards and practices may address methods categorized as repairs; however, some of these methods are considered alterations by the NBIC.

In the event of a conflict with the requirements of the NBIC, the requirements of the NBIC take precedence.

Some examples are as follows:
a) National Board *BULLETIN* - National Board Classic Articles Series;
b) ASME PCC-1, Guidelines for Pressure Boundary Bolted Flange Joint Assembly;
c) ASME PCC-2, Repair of Pressure Equipment and Piping.

ASME Section IIA, SA-350/SA-350M, 2017 ED, SPECIFICATION FOR CARBON AND LOW-ALLOY STEEL FORGINGS, REQUIRING NOTCH TOUGHNESS TESTING FOR PIPING COMPONENTS

4. General Requirements

4.1 Product furnished to this specification shall conform to the requirements of Specification A 961, including any supplementary requirements that are indicated in the purchase order. Failure to comply with the general requirements of Specification A 961 constitutes nonconformance with this specification. In case of conflict between the requirements of this specification and Specification A 961, this specification shall prevail.

7.2 Impact Test:

7.2.1 Requirements — The material shall conform to the requirements for impact properties in Table 3 when tested at the applicable standard temperature in Table 4 within the limits of 7.2.4.2 and 7.2.4.3.

11. Rework and Retreatment

11.3.1 Repair by welding shall be made using welding procedures and welders qualified in accordance with ASME Section IX of the Code. The weld procedure qualification test shall also include impact tests of the weld metal and heat-affected zone. All impact test specimens shall have the longitudinal axis transverse to the weld and the base of the notch normal to the weld surface.

ASTM A 961: Standard Specification for Common Requirements for Steel Flanges, Forged Fittings, Valves, and Parts for Piping Applications

12. Impact Requirements

12.1 The part shall conform to the impact requirements prescribed in the product specification.

Background Information IN19-5 from the Inquirer:

Saudi Aramco Hawiyah Gas Plant (User) requested Repair to one of their Floating tube sheet Heat Exchanger (UHX-14.1(a)). The user requested repair organization to plug all bolt holes of floating tube sheet using Plug material SA-105 and close by welding. New holes were drilled at center of the ligament of previously drilled bolt holes as required by original drawing of the heat exchanger. No design has been performed and method classified as "Repair".

It is informed that the floating tube sheet has shrunk during service and due to which after dismantling it was difficult to reassemble the Floating tube sheet.

Tube Sheet Material is SA350 LF2 Class-1. WPS used to close holes is without PWHT and without impact.

National Board Inspector rejected the repair method with the following understanding:

1. Welding on SA-350 forging shall meet requirement for Repair of Base Material in accordance with SA 350 and Section 11.8.
2. Integrity of this Flange is compromised as it is Plugged with SA 105 Material and welded for 5 mm with Groove on both Side. This methodology of Repairing Base material is not approved as per Code

AIS Concurred and provided his Opinion to AI question as follows:

1. Welding on SA-350 forging shall meet requirement for Repair of Base Material in accordance with SA-350 and Section 11.8

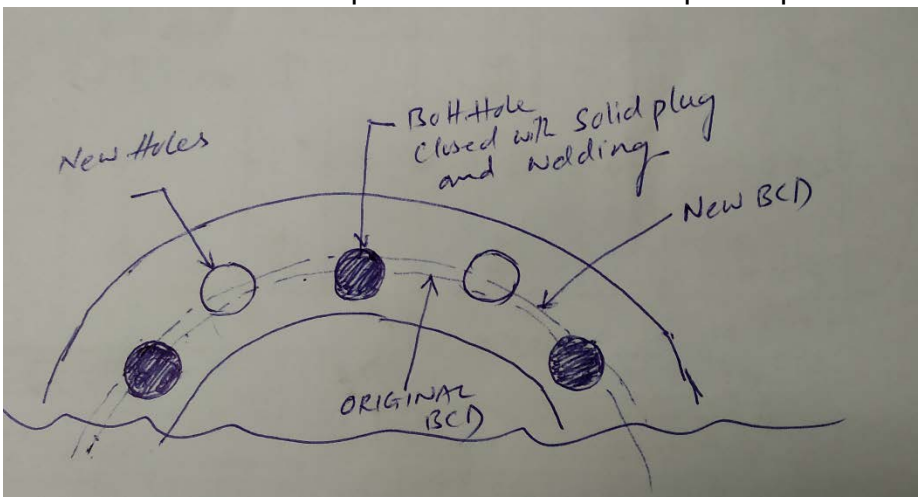
AIS Opinion: All types of repairs are not addressed in NBIC however para 3.2.6 shall be applicable and to be complied.

2. Integrity of this Flange is now compromised as it is Plugged with SA 105 Material and welded for 5 mm with Groove on both Side. This methodology of Repairing Base material is not approved as per Code

AIS Opinion: Refer my comments above, the user is cautioned in para 3.2.6 that the referenced codes, standards and practices may address methods categorized as repairs. These methods/Practices must be accepted by AI.

Questions:

1. Can user opinion, categorization and acceptance of Repair methods be considered under NBIC Para 3.2.6, Part 3?
2. Does NB consider this repair method as an acceptable practice?



PROPOSED INTERPRETATION

Inquiry No.	19-10
Source	Paul Shanks
Subject	Interpretations
Edition	2017
Question	May an interpretation issued to a past NBIC edition be used in any other NBIC edition when the words in the NBIC paragraph are the same? (See Part 3, Introduction, Interpretations for text reference)
Reply	Yes if the NBIC has not changed the requirements pertaining to the interpretation
Committee's Question	May an interpretation issued to ~~a~~an ~~past~~ earlier NBIC Edition be used for any other NBIC Edition when the requirements of the NBIC are the same?
Committee's Reply	Yes.
Rationale	NBIC currently limits each interpretation to the edition it was issued for. However, often time the words in question do not change from one edition to another. At present a new interpretation would be needed for each edition of the NBIC to address the same issues, this is a delay to field work and a drain on NBIC committee time. **Background Information:** Understandably each request for interpretation does not require a change to the words in the NBIC, but given the same NBIC words and consistent committee approach to resolving interpretations the same answer should be provided from one edition to the next. But this would cause a delay in working to a standard accepted practice and would consume time for the committee answering the same base question each year. Further the proposed approach is that which ASME currently employs and whilst NBIC and ASME are different they do operate within the same industrial sphere so the proposed interpretation is not unusual.
SC Vote	
NBIC Vote	

Negative Vote Comments	

PROPOSED INTERPRETATION

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Inquiry No.	Item 19-25
Source	M.A. Shah abmindustrialservices@gmail.com
Subject	This inquiry seeks an interpretation of NBIC Part 3, 4.4.2 c), which states the following: c) Nondestructive Examination NDE may be conducted when contamination of the pressure-retaining item by liquids is possible or when pressure testing is not practicable. Concurrence of the owner shall be obtained in addition to the Inspector, and where required, the Jurisdiction. Exclusive use of Visual Examination (VT) shall not be permitted. In all cases NDE methods or combination of methods used shall be suitable for providing meaningful results to verify the integrity of the alteration.
Edition	2017
Explanation of Need	For ASME BPV Section VIII Division 2 Vessel is under Alteration with Re-rate of lowering MAWP & increasing of Design Temperature & there is no physical alteration in the Vessel but only change is in the Alteration design report because of different design stress intensity value at higher design temperature.
Question	In lieu of a liquid pressure test, what kind of NDE methods or combination of methods used shall be suitable for providing meaningful results to verify the integrity of the alteration?
Reply	No further NDE shall be required as there is no Physical Alteration for the Vessel.
Committee's Question 1	An alteration to a Section VIII Div. 2 and Div. 3 vessel is performed by lowering the MAWP and increasing the design temperature. No physical work was performed on the vessel. Calculations confirm that the hydrostatic test pressure for the new MAWP and design temperature would be higher than that of the original hydrostatic test pressure. Is a new hydrostatic test required after the alteration is completed?
Committee's Reply 1	Yes, except as provided in Part 3, 4.4.2.c.
Committee's Question 2	The NBIC Part 3, 4.4.2.c provides rules for performing NDE in lieu of a hydrostatic test of an alteration. Is it required that concurrence of the owner, the Inspector, the Certifying Engineer if applicable, and when required, the Jurisdiction be obtained regarding the NDE methods, or combination of methods, to be used to verify the integrity of the alteration?
Committee's Reply 2	Yes, in accordance with Part 3, 3.4.5.
Rationale	NBIC Part 3, Section 3.3.4, Section 4.4.2. and Section 9.1
SC Vote	
NBIC Vote	

Negative Vote Comments	

Relevant Background

NBIC Section 3.4.4 clearly states that an example of an alteration is an increase in the design temperature for the pressure retaining item. Furthermore, the definitions section 9.1 states that nonphysical changes such as an increase in the design temperature shall be considered an alteration. Thus, in the background information provided by the requestor, it is clear that this scenario describes a vessel which has been altered.

Page 68, Section 3, Part 3

3.4.4 EXAMPLES OF ALTERATIONS (17)

a) An increase in the maximum allowable working pressure (internal or external) or temperature of a pressure-retaining item regardless of whether or not a physical change was made to the pressure-retaining item;

Page 237, Section 9, Part 3

Alteration — A change in the item described on the original Manufacturer's Data Report which affects the pressure containing capability of the pressure-retaining item. (See NBIC Part 3, 3.4.3, *Examples of Alteration*) Nonphysical changes such as an increase in the maximum allowable working pressure (internal or external), increase in design temperature, or a reduction in minimum temperature of a pressure-retaining item shall be considered an alteration.

The 'explanation of need' now links to the relevant Section 4.4.2 which requires that one of the following shall be applied to an activity considered to be an alteration: liquid pressure test; pneumatic test; or nondestructive examination. The NBIC does not describe which NDE methods are acceptable, merely that: *concurrence of the owner and inspector and possibly the jurisdiction shall be obtained; that visual examination is not sufficient; and the selected method shall be suitable to provide meaningful results verifying the integrity of the vessel*.

Page 73, Section 4, Part 3

4.4.2 TEST OR EXAMINATION METHODS APPLICABLE TO ALTERATIONS

Based on the nature and scope of the alterations activity, one or a combination of the following examination and test methods shall be applied to alterations and replacement parts used in alterations.

a) Liquid Pressure Test

b) Pneumatic Test

c) Nondestructive Examination

Relevant Interpretations

INTERPRETATION 93-5

Subject: Chapter III, R-503(d)

1992 edition

Question: If a pressure test required for a re-rated vessel is less than or equal to the hydrostatic test performed during construction, is a new pressure test required after the re-rating is completed?

Reply: No, provided no physical work is performed.

INTERPRETATION 98-15

Subject: RC-3022 & RC-3030(h) Pressure Testing Requirements Related to Re-rating Activities

1995 Edition with the 1996 Addendum

Question 1: If calculations and current thickness measurements indicate that a pressure retaining item may be altered by re-rating only (no physical work being done), may the original pressure test as recorded on the Manufacturer's Data Report be used to satisfy RC-3022(d), if the pressure test is at least equal to the calculated test pressure required to verify the integrity of said alteration, subject to the approval of the Inspector and the requirements of the jurisdiction?

Reply 1: Yes.

Question 2: If the maximum allowable working pressure (MAWP) of a pressure-retaining item must be reduced, due to wall thinning below the minimum wall thickness required to contain the MAWP stated on the manufacturer's data report and on the ASME stamped nameplate, but the maximum allowable temperature is increased, is it the intent of the NBIC that this be considered a re-rate?

Reply 2: Yes. Any increase in pressure or temperature is considered a re-rate in accordance with RC-3022.

Question 3: If the maximum allowable working pressure (MAWP) of a pressure-retaining item must be reduced, due to wall thinning below the minimum wall thickness required to contain the MAWP stated on the manufacturer's data report and on the ASME stamped nameplate, but the maximum allowable temperature is increased, is it the intent of the NBIC that this is, in effect, a derate and outside the scope of the NBIC?

Reply 3: No. Any increase in pressure or temperature is considered a re-rate in accordance with RC-3022.

INTERPRETATION 98-34

Subject: RC-3030 Examination and Testing

1995 Edition with the 1996 Addendum

Question: When the design rated capacity of a boiler is increased without physical work such that the design pressure and temperature are unaffected, is it required to perform a pressure test in accordance with the NBIC?

Reply: No.

Interpretation IN19-26

Proposed Interpretation

Inquiry:	IN19-26
Source:	Doug Biggar
Subject:	NBIC Part 3 Section Part 3, 3.3.2
Edition:	[Current/all]
General Description:	Repair of none pressure boundary parts
Question 1:	If a welding repair is done to an appendage of a horizontal ASME LPG pressure vessel such as a faulty leg or the raised data plate holder, is this considered routine and are we exempt to have an inspector present to witness it and/or fill out a specialized form?
Reply 1:	No inspector needs to be present as the welding is not performed on any part of the pressure vessel directly related to its performance under pressure.
Question 2:	What is the minimum length of an appendage we can weld onto without being an ASME/NBIC certified welder (only a standard welding ticket)?
Reply 2:	1/4”
Committee’s Question 1:	Are refurbishment activities such as shot blasting, thread cleaning and painting considered within the scope of the NBIC?
Committee’s Reply 1:	No
Rationale 1:	These activities should not affect the pressure retaining integrity of the item, per the introduction to the NBIC that (maintenance) is the function of the NBIC. Reasonably these activities fall outside the scope of the NBIC
Committee’s Question 2:	Are welding operations within the scope of the NBIC when conducted on a part of a PRI which is not required to retain pressure and/or some external loading as per the code of construction scope?
Committee’s Reply 2:	No.
Rationale:2	These welds are such that typical ASME BPV construction codes would not dictate the qualification of the welders or welding operators.
	Q&R2 or Q&R 3 we don’t need both
Committee’s Question 3:	Is the NBIC concerned with welding activities which take place on PRI which have neither a pressure retaining nor load bearing function?

Committee's Reply 3:	No.
Rationale:3	These welds are such that typical ASME BPV construction codes would not dictate the qualification of the welders or welding operators.
NBIC Vote	

Include in response letter: NA

Rationale:

Having emailed the enquirer to determine the scope of their typical operations it was clear that there was a general misunderstanding about the purpose of the NBIC, the proposed questions are overly specific and as sure fail to grasp the crux of the issue hence the question re-write. Q3 was added to ensure that no misunderstand occurs. With the exception of a very hardline reading on Section 3.3.2 a) the NBIC addresses in the main body and the introduction the pressure retaining capability of the item and not work conducted elsewhere.

Sections 3.3.2 e), 3.3.3 & 3.4.4 address working (welding / replacing) on components which have a pressure retaining function. Pipes, tubes, heads, shell, and tube sheet are mentioned, integral parts without pressure retaining function such as legs and davit arms are not addressed.

Section 3.3.3 a) can be read as "Weld repairs ~~or replacement of pressure parts or~~ of (sic) attachments that have failed in a weld or in the base material;"

19-34 – Edwards – 12-23-19

Background – This Item is a proposed Intent Interpretation to Part 3, 3.2.2 e). The original request and supporting information by the Inquirer are attached. The proposed interpretation was unanimously approved by SC-R/A in July 2019 but withdrawn at Main Committee pending action on a corresponding code revision.

Proposed Action – Reaffirm the attached Interpretation to Part 3, 3.2.2 e), without change, in conjunction with the proposed revision under Item 19-59.

PROPOSED INTERPRETATION

Inquiry No.	**19-34**
Source	GE Power
Subject	NBIC Part 3, paragraph 3.2.2 e), Pressure Testing of Replacement Parts
Edition	2017
Question	NBIC Part 3 paragraph 3.2.2 e) states that the replacement part shall receive a pressure test as required by the original code of construction. ASME has issued an interpretation (I-16-6) clarifying that Section I does not provide rules for hydrostatic testing of parts supplied for repair or alteration of existing boilers. Is it the intent of 3.2.2 e) that the reference to the original code of construction is for determining the hydrostatic test pressure?
Reply	Yes
Committee's Question	NBIC Part 3 paragraph 3.2.2 e) states that the replacement part shall receive a pressure test as required by the original code of construction. Is it the intent of 3.2.2 e) that the reference to the original code of construction is for determining the pressure used for the hydrostatic test?
Committee's Reply	Yes
Rationale	ASME has issued interpretation I-16-1 and revised PW-54 to clarify that Section I does not contain requirements for the hydrostatic testing of replacement parts. Based on this, the language in 3-3.2.2 e) "*... as required by the original code of construction*" could be interpreted to mean that pressure testing of parts is not required because Section I does not require testing of replacement parts. On review, this was not the Committee's intent when clause e) was added to 3.2.2. The proposed intent interpretation and a supporting text revision is provided to clarify this issue. By linking the words "*original code of construction*" to the test pressure, it eliminates the potential interpretation that testing is only required when the original code of construction specifically requires testing of replacement parts.
SC Vote	
NBIC Vote	
Negative Vote Comments	

INFORMATION ONLY

Background Materials Submi

NBIC Part 3 Section 3 paragrap
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consistently by all users of the
construction." ASME issued int
not contain requirements for the
this, the words "*... as required*
testing of the parts is not requir
think that was the Committee's
interpretation and proposed rev
"original code of construction" t
required when the original code

Proposed Intent Interpretation:
Question: NBIC Part 3 paragra
required by the original code of
does not provide rules for hydr
intent of 3.2.2 e) that the refere
pressure?
Reply: Yes.

Associated Revision:
e) Replacement parts addresse
pressure determined for the co
original code of construction. If
~~the original code of constructio~~
~~construction~~ pressure test provi
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or 4.4.2 (for alterations). The R
section of the R Form the exam
tested at the pressure determin
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Background Information:

NBIC Part 3 Section 3 paragrap

e) Replacement parts addresse
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ASME Interpretation I-16-6

Standard Designation:	BPV I
Edition/Addenda:	2015
Para./Fig./Table No:	PW-54
Subject Description:	Section I Intent Interpre
Date Issued:	08/16/2016
Record Number:	13-942
Interpretation Number :	BPV I-16-6
Question(s) and Reply(ies):	Question: Is it the inten regarding hydrostatic t or alteration of existing Reply: No. Section I d to Existing Boilers.

INFORMATION ONLY

PW-54.4 Refer to A-64 as guidance for welded pressure parts supplied to the user of an existing boiler as replacement or repair parts. (17)

A-64

A-64 REPAIRS TO EXISTING BOILERS

Where repairs are necessary that in any way affect the working pressure or safety of a boiler, a state inspector, municipal inspector, or an inspector employed regularly by an insurance company, which is authorized to do a boiler insurance business in the state in which the boiler is used, shall be called for consultation and advice as to the best method of making such repairs; after such repairs are made they shall be subject to the approval of a state inspector, municipal inspector, or an inspector regularly employed by an insurance company that is authorized to do a boiler insurance business in the state in which the boiler is used.

19-36, Edwards, 12-23-19

Background – This item is an inquiry on Part 3, 3.3.2 and 3.3.5, regarding the application of routine repairs on ASME VIII-2 and ASME VIII-3 vessels. The proposed Interpretation (see attached) was voted unanimously by SC-R/A and submitted for Main Committee letter ballot. The MC ballot failed with 1 negative and 1 approved with comment.

Committee Member:	Donald Cook	Vote Date:	2019-09-27	Vote:	Disapproved	Uploads:
Member Comment:	Wouldn't it be clearer to answer the inquirers question #1 with a "No". Everything else becomes unnecessary with a simple question and response.					
PM Reply:	Because I am familiar with the NBIC requirements relating to routine repairs I am personally willing to make the suggested changes if the Committee prefers. My reason for adding the other questions and replies is because the rational explaining why a particular answer is given is for use by the Committee and is not published with the interpretation for use by the public. I thought it prudent to walk the inquirer through the "rational" via additional questions and replies.					

Committee Member:	Robby Troutt	Vote Date:	2019-09-27	Vote:	Approved	Uploads:
Member Comment:	I approve this interpretation; however recommend a change to the first sentence of the rationale to say the same as the first sentence of NBIC Part 3, 3.3.2.a). Recommend the following for the rationale: Routine repairs are repairs for which the requirements for in-process involvement by the inspector and stamping by the "R" Certificate Holder may be waived as determined appropriate by the Jurisdiction and the Inspector. The rules described in Part 3, 3.3.5.2(b) are clear that the Inspector must make an acceptance inspection of the repair.					
PM Reply:	Thank you for approving the item and for the comment. Providing the rational is for the benefit of the Committee when considering the proposed interpretation. Because of the Committee members' general familiarity with the NBIC rules, I think the rational provided is sufficient and prefer not to make the suggested changes.					

Proposed Action – On review, the ballot comments are noted as suggested clarifications of the proposed action, rather than objection to the basis of the questions and replies. In consideration of the PM responses, the proposed action is to reaffirm the previous proposal, without change, for reconsideration by the Main Committee.

PROPOSED INTERPRETATION

Inquiry No. **19-36**	Part 3, Section 3, 3.3.2 and 3.3.5, Routine Repairs of Section VIII Div.2 and Div.3 Pressure Vessels
Source	Inquirer: Narayanan Murugappan NBIC Committee PM: Jim Pillow
Subject	Part 3, Section 3, 3.3.2 Routine Repairs and 3.3.5 Repair of Section VIII Div.2 and Div.3 Pressure Vessels
Edition	2017
Question	**Inquirer's Proposed Q and R** **Question 1:** Is Routine Repairs defined para 3.3.2 applicable to pressure vessels constructed to ASME Section VIII Division-2 and 3? **Proposed Reply 1:** Yes. **Question 2:** If the answer to the above question is Yes, are requirements specified in Para 3.3.5 to be followed for routine repairs to pressure vessels constructed to ASME Section VIII Division-2 and 3? **Proposed Reply 2:** Yes.
Reply	
Committee's Question	Q1; Is a repair plan required for all repairs of an ASME Section VIII Div. 2 or Div. 3 pressure vessel? Q2: May the repair plan for an ASME Section VIII Div.2 or Div.3 pressure vessel be accepted by the Inspector in lieu of the Authorized Inspection Agency or the Owner-User Inspection Organization? Q3: Must the Authorized Inspection Agency's or the Owner-User Inspection Organization's Inspector make an acceptance inspection of the repair of an ASME Section VIII Div.2 or Div.3 pressure vessel? Q4: Are routine repairs defined in Part 3, Section 3, 3.3.2, applicable to pressure vessels constructed to ASME Section VIII Div.2 or Div.3?

Committee's Reply	R1: Yes. See Part 3, 3.3.5.2. R2: No. See Part 3, 3.3.5.2(b). R3: Yes. See Part 3, 3.3.5.2(b). R4: No. Inspection of the repair by the Inspector is required.
Rationale	The rules for routine repairs do not require in process involvement by the Inspector to inspect and accept the repair. The rules described in Part 3, 3.3.5.2(b) are clear that the Inspector must make an acceptance inspection of the repair.
SC Vote	
NBIC Vote	
Negative Vote Comments	

BACKGROUND/INQUIRER'S REQUEST

Explanation of Need: Para 3.3.2 talks about requirements for and examples of routine repairs. It does not specify any restrictions on pressure retaining items construction Code. It states that Routine repairs are repairs for which the requirements for in-process involvement by the Inspector and stamping by the "R" Certificate Holder may be waived as determined appropriate by the Jurisdiction and the Inspector. It states that all other applicable requirements of this code (NBIC) shall be met. Para 3.3.5.1 of NBIC states that the following requirements shall apply for the repair of pressure vessels constructed to the requirements of Section VIII, Division 2 or 3, of the ASME Code. This calls for properly certified repair plan to be submitted to the Inspector who will make acceptance inspection and sign R-1 Form.

Background Information: The recent interpretations issued by NBIC are reproduced below.

INTERPRETATION 17-17

Subject: Repair and alteration of Section VIII Division 2 items

Edition: 2017

Question: Is it permissible to perform a repair or alteration on an ASME Section VIII, Division 2 pressure vessel in accordance with the NBIC when the original User's Design Specification (UDS) and/or the Manufacturer's Design Report (MDR) is not available?

Reply: No. The Repair/Alteration Plan is required to be compatible with the UDS and MDR per the NBIC Part 3, Sections 3.3.5 and 3.4.5.

Item 19-42 – Interpretation Request
Submitted by: Paul Shanks paul.shanks@onecis.com

NBIC Location: Part 3, 3.3.3 s) and 3.4.4 g)

Explanation of Need: The design requirement in 3.3.3 s) is not well defined and is allowing potentially unsafe material changes to be conducted as repairs without adequate assessment.

Background Information: Most pressure vessel parts are design in isolation from those around them or connected to them, heads and shell for example. There are however some components which take strength from or are subject to stresses imposed form adjacent components. For example, body flanges and bolting or tube sheets and the tubes. 3.3.3 s) allows materials of high strength than originally used to be implemented in a repair, under the condition that they "satisfy the material and design requirements of the original code" it is intuitively obvious what is meant by the material requirements but the design requirements are unclear and a great many people thing stronger is more better. But in the case of tubes in a fixed tube sheet heat exchanger or bolting on a custom body flange this is not necessarily the case, upgrading the bolts or tubes could introduce an unsafe overstressed condition in the adjacent materials unless calculations are conducted this will not be known. 3.4.4 g) could be used to indicate that the some material 'upgrades' need to be an alteration but as it refers back to 3.3.3 s) and the design requirement is not well defined it becomes hard to justify a material 'upgrade' as an alteration.

Question 1: 3.3.3 s) includes the following "provided the replacement material satisfies the material and design requirements of the original code of construction" it is clear that the material must be one permitted by the original code of construction but in referring to the "design requirements" is it the intent of the NBIC that when higher strength material are use the new material must not introduce an overstress situation?

Reply 1: Yes.

Question 2: If the above answer is no please remove 3.4.4 g) as it is superfluous or reword it to address changing to materials with lower allowable stresses specifically.

PROPOSED INTERPRETATION

Inquiry No.	**19-62**
Source	John Siefert, EPRI
Subject	Interpretation for using NBIC Part 3, 2.5.3.6 Welding Method 6 on Grade 92 **Background:** Most creep strength enhanced ferritic (CSEF) steels exist as Code Case materials. One such example is Grade 92 steel. This material still exists as a Code Case (2179), and it appears in some SA-specs, for example: SA-213 T92, SA-335 P92, SA-336 F92, and so forth. ASME B&PV Code does not yet have a strategy or plan for the formal adoption of Code Case materials into the main body of the Code. In Code Case 2179-8 it states: "(c) For the purposes of procedure and performance qualifications, the material shall be considered P-No. 15E Group 1. The procedure and performance qualifications shall be conducted in accordance with Section IX." There exist applications of Code Case 2179 in boiler tubing where the alternative weld repair methodology would be identical to that which is described in Welding Method 6. However, because of its Code Case status, it is not clear how to handle repairs for Code Case 2179 although the material is recognized as having similar welding characteristics and qualification rules in ASME Section IX. **Explanation of Need:** End-users are experience failures in SA-213 T92 Code Case 2179 material and would like the option to invoke Welding Method 6 for repairs internal to the boiler setting.
Edition	2019
Question	May Welding Method 6 also be used on CSEF steel which has been manufactured to the requirements in Code Case 2179, and otherwise classified as P No 15E Group 1?
Reply	~~Yes~~No.
Committee's Question	
Committee's Reply	
Rationale	

Background for Requested Interpretation (Item 19-62) – ASME Code Case

Approval Date: June 28, 2012

Code Cases will remain available for use until annulled by the applicable Standards Committee.

Case 2179-8
9Cr-2W, UNS K92460 Material
Section I; Section VIII, Division 1

Inquiry: May 9Cr-2W, UNS K92460 material conforming to one of the specifications listed in Table 1 be used for Section I and Section VIII, Division 1 construction?

Reply: It is the opinion of the Committee that 9Cr-2W, UNS K92460 material conforming to one of the specifications listed in Table 1 may be used for Section I and Section VIII, Division 1 construction, provided the following additional requirements are met:

(a) SA-369, FP92 material shall not exceed Brinell Hardness of 250 HBW/265 HV (25 HRC).

(b) The maximum allowable stress values, the tensile strength values, and the yield strength values for the material shall be those given in Tables 2 and 2M, 3 and 3M, 4 and 4M, respectively. The maximum use temperature for the material shall be 1,200°F (649°C).

(c) For the purposes of procedure and performance qualifications, the material shall be considered P-No. 15E Group 1. The procedure and performance qualifications shall be conducted in accordance with Section IX. Postweld heat treatment for this material is mandatory, and the following rules shall apply:

(1) The time requirements shall be those given for

calculated rather than measured, the formula used shall be reported. If requested, data supporting the validity of the formula shall be provided to the Manufacturer. All repair welds to base material shall be normalized and tempered according to the requirements of the applicable material product specification.

(f) Except as provided in (e), if during the manufacturing any portion of the component is heated to a temperature greater than 1,470°F (800°C), then the component must be reaustenitized and retempered in its entirety in accordance with the applicable material specification, or that portion of the component heated above 1,470°F (800°C), including the Heat-Affected Zone created by the local heating, must be replaced, or must be removed, reaustenitized, and retempered, and then replaced in the component.

(g) If the allowable stress values to be used are less than or equal to those provided in Table 1A of Section II, Part D for Grade 9 (SA-213 T9, SA-335 P9, or equivalent product specifications) at the design temperature, then the requirements of para. (e) may be waived, provided that the portion of the component heated to a temperature greater than 1,470°F (800°C) is reheat-treated within the temperature range 1,350°F to 1,425°F (730°C to 775°C). If this provision is exercised, it shall be noted on the Manufacturer's Data Report.

Background for Requested Interpretation (Item 19-62) – ASME Section IX

Table QW/QB-422
Ferrous and Nonferrous P-Numbers
Grouping of Base Metals for Qualification (Cont'd)

Spec. No.	Type or Grade	UNS No.	Minimum Specified Tensile, ksi (MPa)	Welding P-No.	Welding Group No.	Brazing P-No.	Brazing ISO 15608 Group	Nominal Composition	Typical Product Form
				Ferrous (Cont'd)					
A/SA–209	T1b	K11422	53 (365)	3	1	101	1.1	C–0.5Mo	Smls. tube
A/SA–209	T1	K11522	55 (380)	3	1	101	1.1	C–0.5Mo	Smls. tube
A/SA–209	T1a	K12023	60 (415)	3	1	101	1.1	C–0.5Mo	Smls. tube
A/SA–210	A–1	K02707	60 (415)	1	1	101	11.1	C–Si	Smls. tube
A/SA–210	C	K03501	70 (485)	1	2	101	11.1	C–Mn–Si	Smls. tube
A211	A570–30	K02502	49 (340)	1	1	101	1.1	C	Welded pipe
A211	A570–33	K02502	52 (360)	1	1	101	1.1	C	Welded pipe
A211	A570–40	K02502	55 (380)	1	1	101	1.1	C	Welded pipe
A/SA–213	T2	K11547	60 (415)	3	1	101	4.2	0.5Cr–0.5Mo	Smls. tube
A/SA–213	T12	K11562	60 (415)	4	1	102	5.1	1Cr–0.5Mo	Smls. tube
A/SA–213	T11	K11597	60 (415)	4	1	102	5.1	1.25Cr–0.5Mo–Si	Smls. tube
A/SA–213	T17	K12047	60 (415)	10B	1	102	4.1	1Cr–V	Smls. tube
A/SA–213	T22	K21590	60 (415)	5A	1	102	5.2	2.25Cr–1Mo	Smls. tube
A/SA–213	T21	K31545	60 (415)	5A	1	102	5.2	3Cr–1Mo	Smls. tube
A/SA–213	T5c	K41245	60 (415)	5B	1	102	5.3	5Cr–0.5Mo–Ti	Smls. tube
A/SA–213	T5	K41545	60 (415)	5B	1	102	5.3	5Cr–0.5Mo	Smls. tube
A/SA–213	T5b	K51545	60 (415)	5B	1	102	5.3	5Cr–0.5Mo–Si	Smls. tube
A/SA–213	T91	K90901	85 (585)	15E	1	102	6.4	9Cr–1Mo–V	Smls. tube
A/SA–213	T9	K90941	60 (415)	5B	1	102	5.4	9Cr–1Mo	Smls. tube
A/SA–213	T92	K92460	90 (620)	15E	1	102	6.4	9Cr–2W	Smls. tube
A/SA–213	TP201	S20100	95 (655)	8	3	102	8.3	17Cr–4Ni–6Mn	Smls. tube
A/SA–213	TP202	S20200	90 (620)	8	3	102	8.3	18Cr–5Ni–9Mn	Smls. tube
A/SA–213	XM–19	S20910	100 (690)	8	3	102	8.3	22Cr–13Ni–5Mn	Smls. tube
A/SA–213	TP304	S30400	75 (515)	8	1	102	8.1	18Cr–8Ni	Smls. tube
A/SA–213	TP304L	S30403	70 (485)	8	1	102	8.1	18Cr–8Ni	Smls. tube
A/SA–213	TP304H	S30409	75 (515)	8	1	102	8.1	18Cr–8Ni	Smls. tube
A/SA–213	...	S30432	86 (595)	8	1	102	8.1	18Cr–9Ni–3Cu–Cb–N	Smls. tube
A/SA–213	TP304N	S30451	80 (550)	8	1	102	8.1	18Cr–8Ni–N	Smls. tube
A/SA–213	TP304LN	S30453	75 (515)	8	1	102	8.1	18Cr–8Ni–N	Smls. tube
A/SA–213	S30815	S30815	87 (600)	8	2	102	8.2	21Cr–11Ni–N	Smls. tube
A/SA–213	TP309S	S30908	75 (515)	8	2	102	8.2	23Cr–12Ni	Smls. tube
A/SA–213	TP309H	S30909	75 (515)	8	2	102	8.2	23Cr–12Ni	Smls. tube
A/SA–213	TP309Cb	S30940	75 (515)	8	2	102	8.2	23Cr–12Ni–Cb	Smls. tube
A/SA–213	TP309HCb	S30941	75 (515)	8	2	102	8.2	23Cr–12Ni–Cb	Smls. tube

Background for Requested Interpretation (Item 19-62) – NBIC Part 3, Welding Method 6

(19) **2.5.3.6 WELDING METHOD 6**

This welding method provides requirements for welding only Grade 91 tube material within the steam boiler setting. When using this welding method, the following applies:

a) This method is limited to butt welds in tubing NPS 5 (DN 125) or less in diameter and ½ in. (13 mm) or less in wall thickness for which the applicable rules of the original code of construction did not require notch toughness testing;

b) Application shall be limited to only boiler tube repairs at a location internal to the boiler setting;

c) Upon the completion of weld repair, the repair area shall be kept above the dew point temperature so that condensation does not form on the repair surface before returned to service or a moisture-barrier coating shall be applied to the surface.

1) The material shall be limited to P-No 15E, Group 1, Grade 91, creep strength enhanced ferritic steel (CSEF).

PROPOSED INTERPRETATION

Inquiry No.	**19-66**
Source	Jagadheesan Vellingiri Muthukumaraswamy, ABS Consulting
Subject	Shell Side Heat Exchanger PWHT **Background:** An R Certificate Holder is Doing Repair Work on the Shell Side of Heat Exchanger, which was not PWHT Earlier. As per Client Request, Welded Joints are Post weld Heat Treated and Consider as Alteration, Client wants Shell Side to Under Go Full Post weld Heat Treatment Including areas not repaired. NDE is being Carried out for Complete Equipment and Client wants PWHT for Welds which are in Services and without any repairs.
Edition	2019; Part 3, 3.4 & 2.5.2
Question	1. An R Certificate Holder is Doing Repair Work on the Shell Side of Heat Exchanger, which was not Post Welded Heat treated Earlier. As per Client Request, Repair Welded Joints are Post weld Heat Treated and Consider as Alteration as per 3.4, For Welded Joints not repaired Can Post weld Heat treatment be done and Responsibility can be Taken by R Certification and Considered Alteration? ~~2. If R Stamp Holder Holds WPS for The Vessel with PWHT can that Post Weld Heat Treatment be carried out as per as per Approved WPS in order to meet Alteration requirement?~~
Reply	1. ~~No.~~ This has been addressed in Interpretation 13-06. ~~2. Yes~~
Committee's Question	
Committee's Reply	
Rationale	

INTERPRETATION 13-06

Subject: Part 3, 2.5.2

Edition: 2013

Question 1: An R-Certificate holder decides to perform post weld heat treatment (PWHT) of a vessel at the request of a client, where no PWHT was performed in the original construction. Is the performance of PWHT of the vessel considered an alteration and subject to documentation using a Form R2?

Reply: Yes.

Question 2: For the vessel described above, must the weld procedures used for construction of the vessel be qualified with PWHT?

Reply: Yes.

Question 3: Must the PWHT described above be performed by the R-Certificate holder?

Reply: No, the PWHT may be subcontracted; however the R certificate holder retains the responsibility for the performance of the PWHT.

PROPOSED INTERPRETATION – 19-67

Inquiry No.	**19-67**
Source	Doug Fowler, TUV AIA Services
Subject	Clarification of Part 3, 1.5.1 d) 1) **Background:** Manufacturers in non-jurisdictional states are making API-510 repairs or "non" code repairs to Code vessels when an NBIC rule is not convenient to an owner/customer. This should stop in my opinion. I interpret the statement in Part 3, 1.5.1 d) 1) to mean a stamp holder must do repairs or alterations to the NBIC. Clarification would be appreciated as the statement "as applicable" is ambiguous. .
Edition	2019; Part: Repairs and Alterations; Section: 1; Paragraph: 1.5.1 (d) (1)
Question	In Part 3 Section 1 Paragraph 1.5.1 (d) (1) it states: A statement that all repairs or alterations carried out by the organization shall meet the requirements of the NBIC and the Jurisdiction, as applicable. Does the statement mean an organization holding an "R" stamp must do all repairs and organizations to the NBIC?
Reply	Yes
Committee's Question	1. If a R-Certificate holder makes repairs to a pressure retaining item in a location where there is no jurisdiction, are the repairs required to made in accordance with the NBIC? 2. If an R-Report is completed and/or a Repair Data Plate affixed/stamped for a repair to a pressure retaining item located where there is no Jurisdiction, is the R-Certificate holder required to make the repairs in accordance with the NBIC?
Committee's Reply	1. No. 2. Yes.

Rationale	Question 1: d) Statement of Authority and Responsibility A dated *Statement of Authority and Responsibility*, signed by a senior management official of the organization, shall be included in the manual. Further, the *Statement* shall include: 1) A statement that all repairs or alterations carried out by the organization shall meet the requirements of the NBIC and the Jurisdiction, as applicable; The NBIC states “the NBIC and Jurisdiction, as applicable. Since there are no Jurisdictional requirements, therefore, there are no NBIC requirements Question 2: The R Certificate Holder sign the R Form attesting that the repairs conform to the NBIC ,_____ certify that to the best of my knowledge and belief the statements made in this report are correct and that all material, construction, and workmanship on this Repair conforms to the *National Board Inspection Code*. National Board

PROPOSED INTERPRETATION

Inquiry No.	**19-86**
Source	Luis Ponce, National Board
Subject	National Certified Pipe Welding Bureau (NCPWB) welding procedure specs **Background:** Some ASME and National Board Certificate Holders have presented NCPWB procedures to Team Leaders (designees) at joint reviews as part of their welding demonstrations, and those companies may not understand the limited scope in which the procedures may be used. ASME Sect I, PW-28.5 used to read like B31.1, para 127.5.3. which states, "Each employer shall be responsible for qualifying any WPS that he/she intends to have used by personnel of his/her organization. However, to avoid duplication of effort, and subject to approval of the owner, a WPS qualified by a technically competent group or agency may be used if: (A.1) the group or agency qualifying the WPS meets all of the procedure qualification requirements of this Code, (A.2) the fabricator accepts the WPS thus qualified, (A.3) the user of the WPS has qualified at least one welder using the WPS, and (A.4) the user of the WPS assumes specific responsibility for the procedure qualification work done for him/her by signing the records required by para. 127.6. However, PW-38.5 was removed in the 2009 Addenda to Section I and no longer exists in the Code, therefore the interpretation is no longer valid. Section VIII Div. 1 is silent on procedures "qualified by a technically competent group or agency." Both Section I and VIII Div 1 require welding procedures to be qualified in accordance with Section IX. In conclusion, NCPWB WPSs may only be used for Code work on ASME B31.1 power piping and under no other ASME construction Code.
Edition	2019; Part: Repairs and Alterations; Section: 2; Paragraph: 2.2 & 2.2.1
Question	1. May an "R" certificate holder use a National Certified Pipe Welding Bureau (NCPWB) welding procedure for repairs and alterations of pressure retaining items consisting of pipe where ASME B31.1 is the construction Code? 2. May an "R" certificate holder use a National Certified Pipe Welding Bureau (NCPWB) welding procedure for repairs and alterations of pressure retaining items consisting of pipe (as the shell or nozzles) where ASME Section I or Section VIII Div 1 is the construction Code?
Reply	1. Yes. 2. No, because the NCPWB itself states the bureau operates exclusively under the scope of the ASME B31 Code for Pressure Piping, including B31.1 power piping.
Committee's Question	1. May an R Certificate Holder use "pre-qualified" WPS's that are not specified in the Original Code of Construction?
Committee's Reply	1. Yes, if the WPS is qualified by the R-Certificate Holder.

NATIONAL CERTIFIED PIPE WELDING BUREAU

A Subsidiary of the Mechanical Contractors Association of America, Inc.

1385 Piccard Drive, Rockville, MD 20850-4340 Telephone (301) 869-5800: FAX (301) 990-9690

Address the writer in care of:
Sperko Engineering Services
4803 Archwood Drive
Greensboro, NC 27406
336-674-0600
sperko@asme.org
www.sperkoengineering.com

December 1, 2019

Mr. Luis Ponce
Manager of Technical Services
National Board of Boiler and Pressure Vessel Inspectors
1055 Crupper Avenue
Columbus, Ohio 43229

Subject: NCPWB Welding Procedure Specifications

Dear Mr. Ponce

The following is in response to your letter of November 18 to the MSCA of Eastern PA.

The NCPWB is a membership organization founded in 1944 "to engage in research and educational work in the development of certified welding for the piping industry; to disseminate to its members, information and data relative to certified welding and to establish and qualify uniform procedures for pipe welding by appropriate methods; to provide for the interchange of records of qualified operators and to promote and develop the use and to maintain the quality of welding generally in the pipe fitting industry." The NCPWB has largely achieved these goals with over 100 WPSs and thousands of welders across the country available for member contractors to put to work without having to qualify them themselves.

NCPWB operates exclusively under the scope of the ASME B31 Code for Pressure Piping. While the B31 Code Sections require qualification of WPSs and welders by each contractor in accordance with ASME Section IX, ASME B31.1 paragraph 127.5.3(a) takes exception to that requirement; it allows members of a technically competent group or agency to use WPSs qualified by that group or agency under specific conditions without qualifying themselves. Paragraph 127.5.3(b) also allows contractors to interchange welders without each contractor qualifying them.

With that background, NCPWB is a membership organization; contractors must be members to be permitted to use our WPSs. Access to our WPSs come with membership. These WPSs are not "prequalified" but are in full compliance with ASME Section IX, and supporting PQRs come with them. In order to adopt them, B31 specifies that contractors have to enter their company name on the WPS and PQRs and sign them, and they have to qualify one welder following each WPS. There is no need for contractors to requalify them when doing work under B31.1 or any other B31 Code Section.

As I'm sure you have gathered, NCPWB WPSs are only permitted for piping work in which one of the B31 code sections is applicable; they are not permitted to be used for ASME BPV Code or NBIC work except for Section I Boiler External Piping under PG-58.2 which says:

> The materials, design, fabrication, installation, and testing shall be in accordance with ASME B31.1, Power Piping.

PG-109.1 also says:

> When boiler external piping is installed by welding, the welding, including the qualification of welding procedures, welders, and welding operators, shall be done in accordance with the applicable rules of ASME B31.1.

Please contact me if you would like to discuss this further.

Regards,

Walter J. Sperko, P.E.
NCPWB Technical Consultant

PROPOSED INTERPRETATION

Inquiry No.	**19-87** **NBIC Location: Part 3, 5.6**
Source	Robert Underwood
Subject	Form Registration Log • Background: Many "R" (or "NR"?) Certificate Holders now use the National Board EDT system to register "R" Forms. All of the required log information in Paragraph 5.6 of Part 3 is available in EDT, therefore it is unnecessary and redundant for "R" Certificate Holders to maintain a separate log outside the EDT system.
Edition	2019
Question	1. If an "R" Certificate Holder uses the EDT system to register repairs and alterations may the Form Registration Log requirement be waived?
Reply	1. Yes.
Committee's Question	1. May the "R" Certificate Holder using EDT exclusively for registration of Repair Forms waive the Form Registration Log requirements of the NBIC? 2. Must the Certificate Holder address the method of Form Registration Log documentation in their Quality Control Manual?
Committee's Reply	1. Yes. 2. Yes.
	The National Board EDT system has all of the NBIC Part 3, 5.6 Form Registration Log requirement's and can be accessed for review by all users. The EDT Home page states: the capability to meet the log requirements of NB-264, *Criteria for Registration* for manufacturing organizations, and the requirements of the NBIC for Form Registration Logs for **R** Certificate Holders.
SC Vote	
NBIC Vote	
Negative Vote Comments	

PROPOSED INTERPRETATION

Inquiry No.	**20-1**
Source	**Michael Coggan,** Boiler Inspector, Technical Inspection Services , *Justice and Public Safety,* Phone: 506-343-0327, E-mail: michael.coggan@gnb.ca
Subject	NBIC Part 3, paragraph 3.3.2 **Backgound:** ASME B31.3 Normal Fluid Service and Severe Cyclic have mandatory requirements for radiography.
Edition	2019
Question 1	Are "Routine Repairs" permitted for ASME B31.3 Normal Fluid Service and Severe Cyclic piping?
Proposed Reply 1	No.
Committee's Question 1	For process piping classified as Normal Fluid Service and under Severe Cycling service in accordance with ASME B31.3, may routine weld repairs be performed in accordance with Part 3 of the NBIC?
Committee's Reply 1	Yes, provided routine weld repairs have been described in the R-Certificate holders Quality System program and routine weld repairs have been accepted by the Inspector, and when required, by the Jurisdiction.
Rationale 1	
Question 2	Are "Routine Repairs" permitted for ASME B31.3 Category D Service piping?
Proposed Reply 2	Yes.
Committee's Question 2	
Committee's Reply 2	
Rationale 2	
SC Vote	
NBIC Vote	
Negative Vote Comments	

PROPOSED INTERPRETATION

Inquiry No.	**20-2**
Source	**Michael Ferry,** Curran International, Field Project Supervisor (Re-tube & Liners), +1 281 339 9993 Phone, "Mike Ferry" <mferry@curranintl.com>
Subject	NBIC Part 3, Table 2.3 – Latest 2018 AWS SWPS to be used in accordance with the 2019 NBIC for Repairs/Alterations **Background**: Since Item 18-102 (updating the SWPS Table 2.3 in Part 3 to the current 2018 AWS standards – **Attachment 1**) was not passed by MC until after the 2019 was published, a number of SWPS's as listed in the 2019 Edition of the NBIC, Table 2.3 are not current.
Edition	2019
Question	Is it the intent of the NBIC to accept the use of the following Standard Welding Procedure Specifications for repairs and/or alterations in accordance with the 2019 NBIC? B2.1-1-016: 2018 B2.1-1-017: 2018 B2.1-1-019: 2018 B2.1-1-020: 2018 B2.1-1-021: 2018 B2.1-1-022: 2018 B2.1-8-023: 2018 B2.1-2-026: 2018 B2.1-1-027: 2018
Proposed Reply	Yes.
Committee's Question	
Committee's Reply	
Rationale	**Item 18-102 was approved by Main Committee for use of these 2018 SWPS's in the 2021 Edition of the NBIC. This Intent Interpretation Item would allow use of these SWPS's once approved.**
SC Vote	
NBIC Vote	
Negative Vote Comments	

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ATTACHMENT 1 – Item 18-102 approved by Main Committee – To be published in 2021 Edition of the NBIC

NB Item # 18-102 Update NBIC Part 3, Table 2.3 (01-16-2019)

Revise Table 2.3 adding the listed SWPSs that were revised by the AWS B2 Committee in 2018.

PROPOSED REVISION

TABLE 2.3

Standard Welding Procedure Specification (SWPS) for Shielded Metal Arc Welding of Carbon Steel (M-1/P-1, Group 1 or 2) 1/8 inch [3 mm] through 1-1/2 inch [38 mm] Thick, E7018, in the As-Welded or PWHT Condition, Primarily Plate and Structural Applications.	B2.1-1-016: 2018
Standard Welding Procedure Specification (SWPS) for Shielded Metal Arc Welding of Carbon Steel (M-1/P-1, Group 1 or 2) 1/8 inch [3 mm] through 1-1/2 inch [38 mm] Thick, E6010, in the As-Welded or PWHT Condition, Primarily Plate and Structural Applications.	B2.1-1-017: 2018
Standard Welding Procedure Specification (SWPS) for CO_2 Shielded Flux Cored Arc Welding of Carbon Steel (M-1/P-1, Group 1 or 2) 1/8 inch [3 mm] through 1-1/2 inch [38 mm] Thick, E70T-1C and E71T-1C, in the As- Welded, Primarily Plate and Structural Applications.	B2.1-1-019: 2018
Standard Welding Procedure Specification (SWPS) for 75% Ar/25%CO_2 Shielded Flux Cored Arc Welding of Carbon Steel (M-1/P-1, Group 1 or 2) 1/8 inch [3 mm] through 1-1/2 inch [38 mm] Thick, E70T-1M and E71T-1M, in the As-Welded or PWHT Condition, Primarily Plate and Structural Applications.	B2.1-1-020: 2018
Standard Welding Procedure Specification (SWPS) for Gas Tungsten Followed by Shielded Metal Arc Welding of Carbon Steel (M-1/P-1, Group 1 or 2) 1/8 inch [3 mm] through 1-1/2 inch [38 mm] Thick, ER70S-2 and E7018, in the As-Welded or PWHT Condition, Primarily Plate and Structural Applications.	B2.1-1-021: 2018
Standard Welding Procedure Specification (SWPS) for Shielded Metal Arc Welding of Carbon Steel (M-1/P-1, Group 1 or 2) 1/8 inch [3 mm] through 1-1/2 inch [38 mm] Thick, E6010 (Vertical Uphill) Followed by E7018, in the As-Welded or PWHT Condition, Primarily Plate and Structural Applications.	B2.1-1-022: 2018
Standard Welding Procedure Specification (SWPS) for Shielded Metal Arc Welding of Austenitic Stainless Steel (M-8/P-8, Group 1) 1/8 inch [3 mm] through 1-1/2 inch [38 mm] Thick, in the As-Welded Condition, Primarily Plate and Structural Applications.	B2.1-8-023: 2018
Standard Welding Procedure Specification (SWPS) for Shielded Metal Arc Welding of Carbon Steel (M-1/P-1, Group 1 or 2) 1/8 inch [3 mm] through 1-1/2 inch [38 mm] Thick, E6010 (Vertical Downhill) Followed by E7018, in the As-Welded or PWHT Condition, Primarily Plate and Structural Applications.	B2.1-2-026: 2018
Standard Welding Procedure Specification (SWPS) for Self-Shielded Flux Cored Arc Welding of Carbon Steel (M-1 or P-1, Groups 1 and 2), 1/8 inch [3 mm] through 1/2 inch [13 mm] Thick, E71T-11, in the As-Welded Condition, Primarily Plate and Structural Applications	B2.1-1-027:2018

PROPOSED INTERPRETATION

Inquiry No.	**20-3**
Source	Nathan Carter, Hartford Steam Boiler
Subject	Inspector Involvement for Fitness-for-Service Assessments **Background:** 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: Inspection & Repairs and Alterations; Section: 4 & 3; Paragraph: 4.4; Form NB-403; & 3.3.4.8
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	Question 1: Question 2: Question 3:
Rationale	