THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

Date Distributed: July 26, 2024

NATIONAL BOARD INSPECTION CODE SUBGROUP INSPECTION

MINUTES

Meeting of July 16, 2024
Louisville, KY

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The National Board of Boiler & Pressure Vessel Inspectors
1055 Crupper Avenue
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1. **Call to Order**
   Mr. Darrel Graf, Subgroup Inspection (SG) Chair, called the SG Inspection meeting to order at 8:04 am EST.

2. **Introduction of Members and Visitors**
   Secretary, Ms. Jodi Metzmaier did a roll call of all SG members in person and online. All visitors in person and online stated their name and their company. All members and visitors are noted on the attendance sheets. (**Attachment Pages 1-2**)

3. **Check for a Quorum** (51% - 27 Members, need at least 14 for Quorum)
   With 26 of 27 members in attendance, both in person and online, a quorum was established.

4. **Awards/Special Recognition - None**

5. **Announcements**
   Ms. Metzmaier gave announcements to the SG. (**Attachment Pages 3-4**)

6. **Adoption of the Agenda**
   - Choose a representative for the SG to be on the TG to review Table 7.4-i PRESSURE/EQUIVALENTS.
   - Add Change of Employment nomination for Chuck Becker.
   - Add Item 24-69: *CO2 is heavier than air; Part 2, S12.4 c) should say "above" not "below"*
   - Add Item 24-71: Changes to NB-136
   - Add discussion item of Edits to Items for the 2025 Edition.

   A motion was made to adopt the agenda with the above listed items added. The motion was seconded and **unanimously adopted**.

7. **Approval of the Minutes of the January 9, 2024, Meeting**
   A motion was made to approve the minutes of the January 9, 2024, meeting. The motion was seconded and **unanimously approved**.

8. **Review of Rosters**
   a. **Membership Nominations -** Mr. Chuck Becker has had a change of employment. Due to this change of employment his interest category will be changing from Manufacturers to Authorized Inspection Agencies.

      Mr. Becker spoke to the group regarding his change of Employment/Interest Category. He will be changing from Manufactures to Authorized Inspection Agencies. A motion was made to accept his nomination. The motion was seconded and **unanimously approved**.

   b. **Membership Reappointments -** The following Subgroup members are up for reappointment: Mr. Darrell Graf, Mr. James Clark, Mr. James Calvert, Mr. William Hackworth, Mr. Mark Horbaczewski, Mr. Jerry Jessick, and Mr. John Mangas.

      Mr. Graf, Mr. Clark, Mr. Hackwork, Mr. Horbaczewski, and Mr. Mangas all stated they would like to be reappointed. A motion was made to reappoint these members. The motion was seconded and **unanimously approved**.

      Mr. Calvert and Mr. Jessick were not present to confirm they would like to be reappointed. The NBIC Secretary will send an email to the two committee members to verify they would like to be reappointed. Once they have confirmed, a letter ballot (LB) will be sent out to reappoint the two members, as applicable.

c. **Officer Appointments -** Mr. Graf's and Mr. Clark's terms as Chair and Vice Chair are set to expire on August 31, 2024. Mr. Graf is not eligible for reappointment since this is his second consecutive Term. Mr. Clark is eligible for reappointment.

Mr. Clark stated he would like to remain the Vice Chair for the SG Inspection. A motion was made to reappoint Mr. Clark as the Vice Chair. The motion was seconded and **unanimously approved**.

Mr. James Roberts and Mr. Joseph Beauregard have both been nominated/volunteered for the new Chair of the SG Inspection. Each nominee spoke on why they would like to be the Chair of the SG Inspection and shared their background in the industry and with the NBIC Committee.

The two nominees left the room while the SG discussed the nominees. After discussion, and through a secret ballot, Mr. Roberts was unanimously chosen by the SG to become the new Chair of the SG.

9. Choose a representative from the SG to be on the Tak Group (TG) to review Table 7.4-i PRESSURE/EQUIVALENTS.

Mr. Graf explained the reasoning behind the new TG that is being created, and **Mr. Brent Ray** has volunteered to represent the SG Inspection.

10. Open Items Related to Inspection

a. PRD

i. **Item 24-63** – Change the note on tables regarding replacement of T&P valves (new item)
The SG reviewed the proposal from PRD SG that passed unanimously. SG Inspection has agreed with the changes made by PRD SG.

b. R&A

i. **Item 21-53** – Post repair inspection of weld repairs to CSEF steels. (P. Gilston as PM)
Mr. Horbaczewski explained to the SG that this item will be discussed during the new Part 2/Part 3 standing TG. He also explained to the SG how the new Standing Task Group will work. Mr. Ray and Mr. Bolden both expressed that they believe this will be a really good TG to get Part 2 and Part 3 more aligned.

11. Interpretations

Item Number: 23-70	**NBIC Location: Part 2, 2.3.6.11**	**Attachment Page 5**
General Description: Inspection of vessels at and above 10,000 PSI (c) & (d) "requalification" **Subgroup:** Inspection **Task Group:** None assigned. **Submitted by:** C. Bierl **Explanation of Need:** Isostatic Pressure Vessel manufacturers are currently "requalifying" pressure vessels through an engineering evaluation without the involvement of the NB Alteration process and therefore an Inspector. This leaves control of this process of a code vessel in the hands of the manufacturer and impairs the code integrity of the vessel.		
July 2024 Meeting Action: This item was presented to the SG, and it was stated that the item was passed through SG and SC in January 2024; however, the item did not pass through MC. MC asked that the item be brought back to the SG for further review. The SG had a lot of discussion over the wording in the proposed question. After discussion the SG chose to keep the proposed question as is and modify the reply. A motion was made to accept the Interpretation as modified. The motion was seconded and **unanimously approved**.		

Item Number: 24-04	NBIC Location: Part 2, 4.4.7. h) and i)	Attachment Page 6

General Description: Thickness for determining corrosion rates for circumferential stress

Subgroup: Inspection
Task Group: None assigned.
Submitted by: L. Ponce

Explanation of Need: It is unclear if the statement made in the NBIC Part 2, 4.4.7.2 i) also applies to 4.4.7.2 h). The statement reads, "The thicknesses used for determining corrosion rates at the respective locations shall be the most critical value of average thickness." Mr. Dominguez believes the statement applies to both paragraphs.

July 2024 Meeting Action:
Mr. Graf presented this item to the SG. After review, the SG prepared a proposal. A motion was made to accept the proposal as created. The motion was seconded and **unanimously approved**.

Item Number: 24-27	NBIC Location: Part 2, 5.2.1	No Attachment

General Description: Replacement of Repair Nameplate

Subgroup: Inspection
Task Group: None assigned.
Submitted by: T. Hellman

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

July 2024 Meeting Action:
The SG reviewed this Interpretation, and after a lot of discussion they believe this interpretation should be sent to SG Repairs & Alteration. The information being questioned is not addressed in Part 2.

12. Action Items

Item Number: 21-47	NBIC Location: Part 2, 2.2.4 & 2.2.5	No Attachment

General Description: To provide better guidance as it relates to carbon monoxide

Subgroup: Inspection
Task Group: W. Hackworth (PM), J. Smith, D. Buechel, T. Barker, T. Bolden, M. Sansone, H. Henry, J. Castle, J. Morgan, & J. Clark
Submitted by: V. Scarcella

Explanation of Need: Need to provide more comprehensive items to be reviewed to guide the inspector on carbon monoxide and combustion air.

July 2024 Meeting Action:
Ms. Metzmaier gave an update on this item stating, per Mr. Ellis, this item went out to MC LB for vote, and Mr. Galanes pulled it back because he wanted to discuss the comments from the previous ballot in person to ensure everyone's comments were addressed before voting. He also noted he had some minor editorial suggestions he will bring up during the MC meeting. He plans to do a voice vote during the MC meeting. No action was taken during the SG Inspection meeting.

Item Number: 22-06	NBIC Location: Part 2, 3.4.9 e)	No Attachment

General Description: Part 2 task group to review Part 3 Item 21-53

Subgroup: Inspection
Task Group: M. Horbaczewski (PM), J. Clark, B. Wilson, J. Mangas, P. Polick
Submitted by: D. Graf

Explanation of Need: Part 2 task group to investigate further changes to Part 2/Part 3 that could be needed because of action item 21-53.

July 2024 Meeting Action:
Mr. Horbaczewski stated this item will be removed from the SG Inspection agenda to the Part 2/Part 3 standing task group agenda. No action was taken by the SG Inspection.

Item Number: 22-26	NBIC Location: Part 2, 2.3.6.8	No Attachment

General Description: Addition of cast acrylic as a pressure vessel material

Subgroup: Inspection
Task Group: J. Calvert (PM), V. Newton, D. Buechel, D. Rose
Submitted by: J. Calvert

Explanation of Need: Provide inspectors with the criteria necessary to competently inspect vessels like acrylic chromatography columns.

January 2024 Meeting Action: Progress Report: Mr. Calvert discussed this item with the SG. He had a few questions for the SG and asked some further guidance on how he should proceed with this item.

July 2024 Meeting Action:
PM was not present – no progress report given.

Task Group Change: Add Jim Bell.

Item Number: 22-39	NBIC Location: Part 2, 4.4.8.7 g)	Attachment Page 7

General Description: Recommended clarification of requirements for Evaluating Local Thin Areas

Subgroup: Inspection
Task Group: V. Newton (PM), T. Barker, J. Morgan, B. Wilson
Submitted by: L. Ponce

Explanation of Need: The existing text may lead to confusion due to a misplaced comma after 'specified' in the first sentence and no reference to what is being specified in the paragraph. The proposed text is a way to tie in the specified requirement in paragraph (f).

July 2024 Meeting Action:
Mr. Newton presented a proposal to the SG. The SG made slight changes to the proposal and a motion was made to approve the revised proposal. The motion was seconded and **unanimously approved**.

Item Number: 23-08	NBIC Location: Part 2	No Attachment

General Description: Part 2 task group to review Part 3 Item 21-67

Subgroup: Inspection
Task Group: M. Horbaczewski (PM), J. Clark, B. Wilson, J. Mangas, P. Polick, H. Henry, P. Gilston, B. Ray, T. Bolden, T. Lebeau, & A. Triplett
Submitted by: D. Graf

Explanation of Need: Part 2 task group to investigate further changes to Part 2/Part 3 that could be needed because of action item 21-67.

July 2024 Meeting Action:
Mr. Horbaczewski stated this item will be removed from the SG Inspection agenda to the Part 2/Part 3 standing task group agenda. No action was taken by the SG Inspection.

Item Number: 23-17	NBIC Location: Part 2, 2.3.6.4 and 4.4.8.7	No Attachment

General Description: Steel-loss acceptance criteria for pressure-retaining items

Subgroup: Inspection
Task Group: D. Graf (PM), B. Ray, J. Roberts, T. Vandini, C. Becker, J. Sowinski, & J. Hadley
Submitted by: J. Hadley

Explanation of Need: (1) Resolve inconsistencies between the 2021 NBIC's air, ammonia, LPG, and general acceptance criteria.

(2) Provide screening criteria that, if met, would ensure that a pressure-retaining item also meets the conservative criteria in API 579-1/ASME FFS-1, Fitness-For-Service, 2021 edition, "ASME FFS-1", Part 3 Level 1 (brittle fracture) and either Part 4 Level 2 or Part 5 Level 1 (wall thinning). If not met, an owner/user could fall back on more complex, less conservative, ASME FFS-1 assessments.

(3) Describe steel-loss screening criteria in one location within NBIC, and reference this location when needed, to facilitate future revisions.

(4) Coordinate NBIC with ASME FFS-1. They have been referencing each other for some years, so coordinating them seems worthwhile.

July 2024 Meeting Action:
Mr. Graf presented a proposal to the SG. This proposal was to provide clarity & consistency. After discussion, the SG decided the proposal needed to be sent back to the TG for further work.

Item Number: 23-27	NBIC Location: Part 2, 1.5.1	No Attachment

General Description: Addition of requirement for Inspector to be present for inspections.

Subgroup: Inspection
Task Group: V. Newton (PM), V. Scarcella, T. Bolden, J. Morgan, J. Smith, T. Barker, C. Becker, C. Hartford
Submitted by: D. Kinney

Explanation of Need: While it has always been standard industry practice for inspections to be performed in-person, and there are requirements for remote inspection, currently there is no language in Part 2 or RCI-1 requiring the Inspector to be present at the location of installation while performing an inspection. This requirement is implied, but not stated.

July 2024 Meeting Action:
Progress Report: Mr. Newton presented a proposal to the SG. After discussion, the SG decided the proposal needed to be sent back to the TG for further work.

Item Number: 23-81	NBIC Location: Part 2, 4.4.3 b)	No Attachment

General Description: Evaluate Inspector responsibilities relating to 4.4.3 FFS

Subgroup: Inspection
Task Group: V. Scarcella (PM), M. Horbaczewski, J. Clark, B. Ray, J. Ferreira, J. Sowinski
Submitted by: R. Underwood

Explanation of Need: Currently, 4.4.3-b states the Inspector shall review the condition assessment methodology and ensure the inspection data and documentation are in accordance with Section 4. This proposal would redefine the role and responsibility of the Inspector.

January 2024 Meeting Action: After review of this item a task group was created.

July 2024 Meeting Action:
Mr Horbaczewski presented a proposal to the SG. The SG began making many changes to the proposal, and then chose to pull the item back to the TG. The TG will work with the TG from item 23-17 to create a new proposal.

Task Group: Change PM to M. Horbaczewski

Item Number: 24-03	NBIC Location: Part 2, Supplement 6	No Attachment

General Description: Revise "Inspector" terminology and requirements in Supplement 6

Subgroup: Inspection
Task Group: B. Wilson (PM), R. Kennedy, and J. Smith
Submitted by: L. Ponce

Explanation of Need: Part 2 Supplement 6 should be revised to align with Part 3, Suppl 6 and the DOT. A few references are S6.4.2 a), S6.4.2 c), S6.4.4, S6.4.5, S6.4.6, and S6.4.6.1. However, this may not be an all-inclusive list.

July 2024 Meeting Action:
Progress Report: Mr. Wilson stated the TG is still working on this item.

13. New Items

Item Number: 24-28	NBIC Location: Part 2, S9.9 b) 4)	No Attachment

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

Subgroup: Inspection
Task Group: None assigned.
Submitted by: J. Swezy

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

July 2024 Meeting Action:
Mr. Swezy presented this item to TG along with a proposal. After discussion, the TG believes this wording may belong in Part 3 instead of in Part 2 with a reference in Part 3. The TG would like this item to be removed from the SG Inspection agenda and be added to the Part 2/Part 3 standing task group.

Item Number: 24-37	NBIC Location: Part 2, 2.2.10	No Attachment

General Description: Add language in the event boiler can't be secured at the time of inspection

Subgroup: Inspection
Task Group: None assigned.
Submitted by: V. Scarcella

Explanation of Need: In some circumstances boilers cannot be shut down and a dead man switch is not allowed.

July 2024 Meeting Action:
Mr. Scarcella presented this item to the SG and a TG was created.

Task Group: T. Bolden (PM), J. Smith, J. Peterson, W. Hackworth, T. Barker, B. Ross

Item Number: 24-42	NBIC Location: Part 2, 2.4.1 and 2.4.4	No Attachment

General Description: Add language to NBIC Part 2 in regard to piping inspections

Subgroup: Inspection
Task Group: None assigned.
Submitted by: V. Scarcella

Explanation of Need: Two fatal incidents resultant from radiator failure prompted an ask for these changes.

July 2024 Meeting Action:
Mr. Scarcella presented this item to the SG and a TG was created.

Task Group: D. Graf (PM), K. Barkdoll, R. Kennedy, B. Wilson, J. Beauregard, W. Griffith, G. Kopp

Item Number: 24-48	NBIC Location: Part 2, Table S9.4	Attachment Page 8

General Description: Part 2, Table S9.4 - clarify service condition changes

Subgroup: Inspection
Task Group: None assigned.
Submitted by: M. Vance

Explanation of Need: For Column 1, Row 7, please explain what gas services are being described. For Column 1, Row 10, please spell out what ICC is because the acronym is unclear (is this the manufacturer ICC or something else?)

July 2024 Meeting Action:
The SG reviewed the proposal and made some revisions. The SG also all agreed that "Sulfur Dioxide Service Sweet to Sour Gas Service" should be left as it is, without being further defined. A motion was made to accept the revised proposal. The motion was seconded and **unanimously approved**.

Item Number: 24-55	NBIC Location: Part 2, S9.3 a) and c)	Attachment Page 9

General Description: Overpressure protection considerations for a change in service.

Subgroup: Inspection
Task Group: None assigned.
Submitted by: L. Ponce

Explanation of Need: Overpressure protection can apply to both S9.3 a) Design Considerations and S9.3 c) Environmental. A change in design due to a change in service with regard to overpressure protection may be possible. In addition, S9.3 c) 2) could be explained in more detail to add considerations for a 'safe point of discharge' and 'environmental regulation compliance' if the change in service includes substances and applications that will be harmful to the environment.

July 2024 Meeting Action:
Mr. Ponce's proposal was presented to the SG. The TG made a few revisions to the proposal and a motion was made to accept the revised proposal. The motion was seconded and **unanimously approved**.

Item Number: 24-58	NBIC Location: Part 2, 4.4.3 b)	Attachment Page 10

General Description: Add requirements for the drain valve to be locked/tagged open.

Subgroup: Inspection
Task Group: None assigned.
Submitted by: L. Ponce

Explanation of Need: Currently, there is no requirement for the drain valve or cock to be locked/tagged in the open position when between the stop valves in a required double block and bleed configuration. This item is created for the committee to consider adding this requirement for safety purposes.

July 2024 Meeting Action:
Mr. Ponce's proposal was presented to the SG. The TG made a few revisions to the proposal and a motion was made to accept the revised proposal. The motion was seconded and **unanimously approved**.

Item Number: 24-59	NBIC Location: Part 2, 5.3.2	No Attachment

General Description: NB-6 and NB-7 forms

Subgroup: Inspection
Task Group: None assigned.
Submitted by: D. Buechel

Explanation of Need: Align fields with how data is entered in JRS.

July 2024 Meeting Action:
Mr. Buechel presented this item to the SG. After discussion, it was decided that since there are no words being changed, and the forms are just being rearranged to align with JRS, the changes should be made editorially by the National Board Staff. A motion was made to **close this item with no action by the SG**. The motion was seconded and **unanimously approved**.

Item Number: 24-62	NBIC Location: Part 2, Section 2	No Attachment

General Description: Temporary Boiler Inspection

Subgroup: Inspection
Task Group: None assigned.
Submitted by: V. Scarcella

Explanation of Need: No guidance for inspectors for temporary boiler inspections.

July 2024 Meeting Action:
Mr. Scarcella presented this item to the SG and a TG was created.

Task Group: P. Pollick (PM), V. Newton, B. Ross, M. Horbaczewski, J. Mangus, J. Beaureguard, M. Whitlock

Item Number: 24-69	NBIC Location: Part 2, S12.4 c)	Attachment Page 11

General Description: CO2 is heavier than air; Part 2, S12.4 c) should say "above" not "below"

Subgroup: Inspection
Task Group: None assigned.
Submitted by: G. Scribner

Explanation of Need: CO2 is like the foam on a beer mug flowing over, it is heavier than air. being below and an air intake it goes down so should not be a issue, if it is above an air intake it will be dropping down and go into the air intake.

July 2024 Meeting Action:
The proposal was presented to the SG. After discussion a motion was made to accept the proposal as presented. The motion was seconded and **unanimously approved**.

Item Number: 24-71	NBIC Location: Part 2, 5.3.3	Attachment Page 12

General Description: Changes to NB-136 Instructions

Subgroup: Inspection
Task Group: None assigned.
Submitted by: G. Scribner, M. Vance, J. Metzmaier

Explanation of Need: Clarification

July 2024 Meeting Action:
Ms. Metzmaier presented the proposal to the SG. The SG reviewed the proposal and made a motion to accept the proposal as presented. The motion was seconded and **unanimously approved**.

14. Discussion Items

A. Editorial Review Inquiries for Passed Items for the 2025 Edition

- **Item 21-25:** The group reviewed the suggested changes found during the editorial review of this item and chose to open a new item in order to move the changes through.

  A motion was made to revise the agenda to add new action item number is 24-74. The motion was seconded and unanimously approved.

Item Number: 24-74	**NBIC Location: Part 2, 2.3.6.5b)2)b.**	**Attachment Page 13**
General Description: change "would be necessary" to "shall" **Subgroup:** Inspection **Task Group:** None assigned. **Submitted by:** G. Scribner, M. Vance, J. Metzmaier **Explanation of Need:** Clarity		
July 2024 Meeting Action: Ms. Metzmaier presented the proposal to the SG. A motion was made to accept the proposal as presented. The motion was seconded and **unanimously approved**.		

- **Item 21-34:** The SG reviewed the editorial review inquiry from this item, and they chose to make a slight editorial change to the wording. A new item was not opened for this editorial review inquiry. The editorial changes will be completed by the NB staff.

- **Item 22-22:** The SG reviewed the editorial review inquiry from this item, and they chose to make a slight editorial change to the wording. A new item was not opened for this editorial review inquiry. The editorial changes will be completed by the NB staff.

- **Item 23-28:** The editorial review inquiries for this item were reviewed and incorporated into action item 24-71.

- **Item 23-37:** The SG reviewed the editorial review inquiry from this item, and they chose to make a slight editorial change to the wording. A new item was not opened for this editorial review inquiry. The editorial changes will be done by NB staff.

15. Future Meetings

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

  Mr. Graf discussed future meetings with the group.

16. Adjournment

A motion was made to adjourn the meeting at 5:10 pm EST. The motion was seconded and unanimously approved.

Respectfully submitted,

Jodi Metzmaier
Subgroup Inspection Secretary

Subgroup Inspection Member Attendees - July 2024

Name:	Interest Category	Email	Registered	In Person Attendance	Remote Attendance	Not In Attendance
Darrell Graf - Chair	National Board Certificate Holders	grafdr@airproducts.com	In-Person	x		
Jim Clark - Vice Chair	Manufacturers	james.clark@worthingtonindustries.com	Remote		x	
Jodi Metzmaier - Secretary	NBBI	jmetzmaier@nbbi.org	In-Person	x		
Tim Barker	Authorized Inspection Agencies	timothy.barker@fmglobal.com	In-Person	x		
Joseph Beauregard	Users	joeducati@hotmail.com	In-Person	x		
Chuck Becker	Authorized Inspection Agencies	hggbecker@yahoo.com	In-Person	x		
Tim Bolden	Authorized Inspection Agencies	timothy.bolden@cna.com	In-Person	x		
David Buechel	Authorized Inspection Agencies	davidbuechel55@gmail.com	Remote		x	
Lee Burton (Damon)	National Board Certificate Holders	burtondl@airproducts.com	In-Person	x		
James Calvert	National Board Certificate Holders	jlcalvert@lilly.com	In-Person			x
David Dexter	Users	dexterde@dow.com	Remote		x	
William Hackworth	Authorized Inspection Agencies	william.hackworth@tuvsud.com	Remote		x	
Mark Horbaczewski	Users	mhorbaczewski@diamondtechnicalservices.com	In-Person	x		
Jerry Jessick	Users	jjessick@fusion-etc.com			x	
Randy Kennedy	National Board Certificate Holders	crkennedy@babcock.com	In-Person	x		
John Mangas	General Interest	jcmangas@gmail.com		x		
Venus Newton	Authorized Inspection Agencies	venus_newton@yahoo.com	In-Person	x		
Jeff Petersen	Users	petejc@inl.gov	In-Person	x		
Pat Polick	Jurisdictional Authorities	patrick.polick@illinois.gov	In-Person	x		
Brent Ray	Users	bdray@marathonpetroleum.com	In-Person	x		
James Roberts	Manufacturers	james.roberts@triarccorp.com	In-Person	x		
David Rose	Users	dr3747@telus.net			x	
Jason Safarz	General Interest	jsafarz@karldungsusa.com	In-Person	x		
Vincent Scarcella	Authorized Inspection Agencies	vincent.scarcella@cna.com	In-Person	x		
Jeremy Smith	General Interest	jeremy.smith@labor.nc.gov	In-Person	x		
Thomas Vandini	National Board Certificate Holders	tvandini@propanetank.com	In-Person		x	
Clay Moultie	Alternate for Tom Vandini beginning at 10:30 AM	cmoultrie@propanetank.com			x	
Mike Whitlock	Authorized Inspection Agencies	gerald_whitlock@hsb.com	In-Person	x		
Brandon Wilson	General Interest	bwilson@lmce.solutions	In-Person	x		

Subgroup Inspection Visitor Attendees - July 2024

Name	Company/Title/Interest	Email	Registered	In Person Attendance	Remote Attendance
Rich Wallace	Diamond Technical Services - GM	rwallace@diamondtechnicalservices.com	In-Person	x	
Wil Griffith	Zurich - RE Manager	william.griffith@zurichna.com	In-Person	x	
William Ross	Commonwealth of PA	wross@pa.gov	In-Person	x	
Brandon Steinhart	FM Global	brandon.steinhart@fmglobal.com	In-Person	x	
Ken Barkdoll	Arise	ken.barkdoll@tuvsud.com	Remote		x
James Bell	Fink Engineering/ASME PVHO	jim@finkusa.com	In-Person	x	
Clay Moultrie	Quality Directory/Quality Steel Corp	cmoultrie@propanetank.com	Remote		x
Gavin Kopp	Arizona Boiler Inspectors	Gavin@stateboilerinspectors.com			x
James Hadley	Fact Fancy, LLC	james.hadley@factplusfancy.com			x
John Swezy	BV				x
Jim Getter				x	
Gary Scribner	NBBI	gscribner@nbbi.org	In-Person	x	
Mark Mooney	NBBI	mmooney@nbbi.org	In-Person	x	
Luis Ponce	NBBI	lponce@nbbi.org	In-Person	x	

Announcements

- MS Teams Notes:
  - Please stay muted during the meeting. If you would like to speak, please use the "raise hand" feature, and then you can unmute as you are called on. Teams will note the order in which your hands were raised, and we will call on you in that order.
  - Any messages sent through chat **will be displayed for anyone in the meeting to see**. If you need to send me a private message, please send it to me directly and not through the meeting chat.

- This meeting marks the end of Cycle D for the 2025 NBIC edition. This meeting marks the end of the 2025 NBIC development cycle and is the last opportunity for code revisions to be approved for the 2025 NBIC. **Anything that is being sent to letter ballot will NOT be included in the 2025 edition.**

- The National Board will be hosting a reception on Wednesday evening from 5:30 p.m. to 7:30 p.m. at the Rooftop Garden on the 16th floor of the hotel.

- The National Board will be hosting breakfast and lunch on Thursday on the 1st floor in Citation A/B for those attending the Main Committee meeting. Breakfast will be served from 7:00 a.m. to 8:00 a.m. and lunch will be served from 11:30 a.m. to 12:30 p.m.

- There is a tutorial for submitting NBIC requests on the NBIC tab of the Business Center. The link is under the NBIC Requests section. If there are any other tutorials you think would be helpful, please let us know and we can do our best to add more.

- Letter Ballots – When we send a proposal to letter ballot, we want to remind everyone that PM's must reply to ALL comments even when the vote is for "approval." If ALL comments are not replied to, the ballot will fail. Please try to refrain from making comments like "I like it" or "Agreed".

- Meeting schedules, meeting room layouts, and other helpful information can be found on the National Board website under the **NBIC** tab → NBIC Meeting Information.

- Remember to add any attachments that you'd like to show during the meeting (proposals, reference documents, power points, etc.) to the NBIC file share site (nbfileshare.org) **prior to the meeting**.
  - Note that access to the NBIC file share site is limited to committee members only.
  - ALL power point attachments/presentations must be sent to the NBIC Secretary prior to the meeting for approval.
  - Contact Jonathan Ellis (*nbicsecretary@nbbi.org*) for any questions regarding NBIC file share access.

- All proposals should be submitted in word with "strike through/underline" tracking.
  - Please contact me (jmetzmaier@nbbi.org) if you need any help with this.
  - Project Managers: please ensure any proposals containing text from the 2021 NBIC are updated to contain text from the 2023 NBIC.

- If you'd like to open a new Interpretation or Action Item, this should be done through the National Board Business Center.
  - Anyone, member or not, can open a new item.

Announcements

- As a reminder, anyone who would like to become a member of a group or committee:
  - Should attend at least 2 meetings prior to being put on the agenda for membership consideration. The nominee will be on the agenda for vote during their 3rd meeting, and they would become a voting member during their 4th meeting.
  - The nominee must submit the formal request along with their resume to the NBIC Secretary, Jonathan Ellis, **PRIOR TO** the meeting. *nbicsecretary@nbbi.org*
  - If needed, we can also create a ballot for voting of a new member between meetings.

- We have been told by the hotel that if you plan to go eat at the restaurants at the hotel for dinner, you should make a reservation through the open table app. They told us that the restaurant fills up quickly, and it's best to make a reservation to ensure you can get in. They also mentioned that it's best to make reservations for restaurants outside of the hotel.

- Thank you to everyone who registered online for this meeting. The online registration is very helpful for planning our reception, meals, the room set up, etc. Please continue to use the online registration for each meeting, whether you are attending in person or remote. It also is a good way to make sure we have the most up-to-date contact information.
  If you did not register, please do this now so we have an accurate count for the reception on Wednesday and breakfast and lunch on Thursday.

Interpretation Item 23-70
Submitted by Craig Bierl (craig.bierl@chubb.com)
12-2-23
Page **1** of **1**

Subject: Inspection of vessels at and above 10,000 PSI (c) & (d) "requalification"

Statement of Need: Isostatic Pressure Vessel manufacturers are currently "requalifying" pressure vessels through an engineering evaluation without the involvement of the NB Alteration process and therefore an Inspector. This leaves control of this process of a code vessel in the hands of the manufacturer and impairs the code integrity of the vessel.

Background:

2.3.6.11 INSPECTION OF VESSELS FOR PRESSURES AT AND ABOVE 10,000 PSI

c) Vessels constructed for a set number of cycles, as defined by the code of construction, which have reached the end of those cycles, must be removed from service or requalified for continued use. Any requalification for continued service must be completed in accordance with the requirements of the jurisdiction where applicable. The Inspector shall verify that documentation of any requalification is retained.

d) Requalification of any vessel shall either be completed by the original manufacturer or a manufacturer familiar with the construction of pressure vessels at and above 10,000 PSI (68.95 MPa). Guidance for completing requalification can be found in ASME PCC-3, Inspection Planning and Using Risk-Based Methods.

It is not clear in the new Part 2 guidance, and I have already had a manufacturer question this. I would like this interpretation to also consider the prior interpretation:

19-15 INTERPRETATION
Subject: PV Cycles of operations change as an alteration (Part 3, 3.4.4). Edition: 2019
Question: When the design of a pressure retaining item (PRI) includes cyclic loading data, should an adjustment, modification or change in analysis of the original design data be considered an alteration?
Reply: Yes.

Proposed Question: Is the “requalification for continued service” of a vessel constructed for a set number of cycles, as defined by the code of construction, which has reached the end of those cycles, required to be completed as an alteration?

Proposed Reply: Yes, requalification of a pressure vessel requires an alteration.

Committee’s Question: Is the “requalification for continued service” of a vessel constructed for a set number of cycles, as defined by the code of construction, which has reached the end of those cycles, required to be completed as an alteration?

Committee’s Reply: Yes.

Rationale: As per the original interpretation 19-15.

Interpretation Item 24-04
Submitted by L. Ponce (lponce@nbbi.org)
01-04-2024

Subject: Thickness for determining corrosion rates for circumferential stress

Location: Part 2; Section: 4; Paragraph: 4.4.7.2 h) & 4.4.7.2 i)

Statement of Need: It is unclear if the statement made in the NBIC Part 2, 4.4.7.2 i) also applies to 4.4.7.2 h). The statement reads, "The thicknesses used for determining corrosion rates at the respective locations shall be the most critical value of average thickness." Mr. Dominguez believes the statement applies to both paragraphs.

Background:
This inquiry was received from Mr. Alejandro Domingues, Eng. National Institute of Industrial Technology (INTI), Argentina. Mr. Domingues has led the effort for the adoption of the NBIC Parts 1 and 2 in several provinces in Argentina and Uruguay.

S7.8.5 CORROSION
c) General Corrosion
For a corroded area of considerable size, the thickness along the most damaged area may be averaged over a length not exceeding 10 in. (250 mm). The thickness at the thinnest point shall not be less than 75% of the required wall thickness, and the average shall not be less than 90% of the required wall thickness.

So, the intent could be
1- limit the average thickness (as in SUPPLEMENT 7)
2- The thicknesses used for determining corrosion rates at the respective locations shall be the most critical value of average thickness (as in 4.4.7.2 i))

Proposed Question: For the purposes of determining PRI corrosion rates when circumferential stresses govern, it is the intent of the NBIC that the statement in 4.4.7.2 i), "The thicknesses used for determining corrosion rates at the respective locations shall be the most critical value of average thickness" also applies to 4.4.7.2 h)?

Proposed Reply: Yes

Committee's Question: For the purposes of determining PRI corrosion rates when circumferential stresses govern, it is the intent of the NBIC that the statement in 4.4.7.2 i), "The thicknesses used for determining corrosion rates at the respective locations shall be the most critical value of average thickness" also applies to 4.4.7.2 h)?

Committee's Reply: No.

Rationale: 4.4.7.2 h) and 4.4.7.2 i) are stand-alone paragraphs.

NBIC Location: Part 2, 4.4.8.7 g)

General Description: Recommended clarification of requirements for Evaluating Local Thin Areas

Subgroup: Inspection

Task Group: V. Newton (PM), T. Barker, J. Morgan, B. Wilson

Submitted by: L. Ponce

Explanation of Need: The existing text may lead to confusion due to a misplaced comma after 'specified' in the first sentence and no reference to what is being specified in the paragraph. The proposed text is a way to tie in the specified requirement in paragraph (f).

4.4.8.7 EVALUATING PRESSURE-RETAINING ITEMS CONTAINING LOCAL THIN AREAS

f) Widely scattered corrosion pits may be left in the pressure-retaining item in accordance with the following requirements:

1. Their depth is not more than one-half the required thickness of the pressure-retaining item wall (exclusive of corrosion allowance);
2. The total area of the pits does not exceed 7 $in.^2$ (4,500 mm^2) within any 50 $in.^2$ (32,000 mm^2); and
3. The sum of their dimensions (depth and width) along any straight line within this 50 $in.^2$ (32,000 mm^2) area does not exceed 2 in. (50 mm).

g) If metal loss is less than the specified~~,~~ corrosion/erosion allowance and adequate thickness is available for future corrosion, then monitoring techniques should be established. If metal loss is greater than the specified corrosion/erosion allowance and repairs are not performed, ~~and~~ a detailed engineering evaluation shall be performed to ensure continued safe operation.

Action Item 24-48
Submitted by Michelle Vance
4/19/2024
Page **1** of **1**

Subject: Part 2, Table S9.4 - clarify service condition changes

Statement of Need: For Column 1, Row 7, please explain what gas services are being described. For Column 1, Row 10, please spell out what ICC is because the acronym is unclear (is this the manufacturer ICC or something else?)

Background: N/A

TABLE S9.4

EXAMPLES OF CHANGE OF SERVICE CONDITIONS

Change	Some Factors to Consider
LP Gas to Ammonia	• PWHT of Vessel During Construction Wet-fluorescent magnetic particle testing (WFMT) on all internal surfaces • Internal access of vessel is necessary, may need to install manhole • NFPA 58 should be consulted
Ammonia to LP gas	• NFPA 58 should be consulted for restrictions. • Wet-fluorescent magnetic particle testing (WFMT) on all internal • surfaces • Internal access of vessel is necessary., may need to install manhole • Also see, NBIC Part 2, 2.3.6.4, S7.8.6, S7.9
LP gas service: from above ground to underground	• Requires alterations (additional nozzles) • Corrosion protection • See NFPA 58
LP gas to air receiver	• Assurance of vessel cleanliness, i.e. removal of mercaptan • Appropriateness and number of inspection and drain openings • Corrosion allowance
Boiler Service: steam to hot water	• Nozzles may require modification for water inlet and outlet • Change of Pressure Relief Device
Boiler Service: High-Pressure to Low-Pressure	• Controls required by the LP boiler code • Safety Valve Change • Need for larger openings for steam outlets and safety relief valves
Sulfur Dioxide Service Sweet to Sour Gas Service	• Concern Over Hydrogen Cracking
Inert to Oxidizing or Reducing Atmosphere	• Inspection for Damage ~~mechinisims~~mechanisms that may be present from previous service life that is detrimental to the vessel in the new environment • Cleanliness of Hydrocarbons
Lethal Service to Non-Lethal	• Design Conditions and suitability for service
DOT Railcars and ~~of ICC~~ Transport Tanks to Stationary Service	• Prohibited by DOT regulations for permanent service • Temporary stationary service prohibited as per NFPA • Inspection or damage mechanisms that may be present from previous service life that is detrimental to the vessel in the new environment

Action Item 24-55
Submitted by Luis Ponce
4/26/2024
Page **1** of **1**

Subject: Overpressure protection considerations for a change in service.

Statement of Need: Overpressure protection can apply to both S9.3 a) Design Considerations and S9.3 c) Environmental. A change in design due to a change in service with regard to overpressure protection may be possible. In addition, S9.3 c) 2) could be explained in more detail to add considerations for a 'safe point of discharge' and 'environmental regulation compliance' if the change in service includes substances and applications that will be harmful to the environment.

Background: A NBBI staff review of Part 2 for any applicable editorial changes revealed some possible improvements to S9.3 a) and S9.3 c).

PROPOSAL

S9.3 FACTORS TO CONSIDER

Before a change of service is to be made, the owner or user shall consider and evaluate the effects of the new operating conditions or environment on the existing condition and suitability for service of the pressure-retaining item. Various factors will have an impact on the reliability of the pressure-retaining item in its new service environment. Changes can be successfully adopted providing there is an understanding of the effect on the pressure-retaining item. However, there are some cases where changes are detrimental to the existing pressure-retaining item. The owner or user should seek technical guidance of experienced personnel in appropriate areas affected by the change of service (e.g. design, metallurgy, or operations of the pressure retaining item).

The following is a listing of criteria that should be evaluated as appropriate. The criterion is not limited to that listed herein. Other factors may be considered as necessary~~:~~.

a) Design Consideration:
   1) Thickness of existing vessel material.
   2) Vessel or system flow rate or pressure.
   3) Weight of vessel with new contents.
   4) Existing or additional loads imposed on nozzles and highly stressed areas.
   5) Change in pressure or temperature~~,~~ and cycling.
   6) Compliance to product or industry standards, such as ~~ANSI K61~~CGA G-2.1, API 579, or NFPA 58.
   7) Overpressure protection requirements as applicable.

b) Material Consideration:
   1) Chemical and mechanical properties of existing material or any new material to be added or replaced to ensure it has the required strength and toughness to withstand the pressure and temperature effects of the new environment.
   2) Effects of erosion or corrosion.
   3) Time dependent effects on service life - creep or fatigue, or both effects combined.

c) Environment
   1) Physical condition of the pressure-retaining item.
   2) ~~Overpressure protection needs~~Considerations for safe point of discharge and environmental regulation compliance.
   3) Regulatory environment – Verification of compliance to new or existing jurisdictional rules or regulations.
   4) Vessel cleanliness – When changing lading fluids or contents consideration should be given to cleaning or decontaminating the vessel as appropriate.

Action Item 24-55
Submitted by Luis Ponce
5/9/2024
Page **1** of **1**

Subject: Add requirements for the drain valve to be locked/tagged open.

Statement of Need: Currently, there is no requirement for the drain valve or cock to be locked/tagged in the open position when between the stop valves in a required double block and bleed configuration. This item is created for the committee to consider adding this requirement for safety purposes.

Background: I conducted an investigation where a welder working on an offline boiler was severely burned because the drain valves were shut and not included in the lockout/tagout procedure. The reason the drain valves were shut was because the two stop valves leaked at their seats causing condensation to form in the desuperheater piping of the offline boiler. The welder was working several feet above this piping and eventually enough energy in the condensate caused a "steam burp" that reached and burned the welder.

PROPOSAL

2.2.6 INTERNAL INSPECTION

a) When a boiler is to be prepared for internal inspection, the water shall not be withdrawn until the setting has been sufficiently cooled at a rate to avoid damage to the boiler as well as additional preparations identified in NBIC Part 2, 1.4.1 and 1.5.3.

b) The owner or user shall prepare a boiler for internal inspection in the following manner:

1) Before opening the manhole(s) and entering any part of the boiler that is connected to a common header with other boilers, the required steam or water system stop valves (including bypass) ~~must~~ shall be closed, locked ~~out,~~ and/or tagged out ~~in accordance with the owner or user's procedures~~, and drain valves or cocks between the two closed stop valves shall be opened, locked and/or tagged out in accordance with the owner or user's procedures. After draining the boiler, the blowoff valves shall be closed, locked ~~out,~~ and/or tagged out in accordance with the owner ~~-~~ or user's procedures. Alternatively, lines may be blanked, or sections of pipe removed. Blowoff lines, where practicable, shall be disconnected between pressure parts and valves. All drains and vent lines shall be open.
2) The Inspector shall review all personnel safety requirements as outlined in NBIC Part 2, 1.4 prior to entry.

Note: If a boiler has not been properly prepared for an internal inspection, the Inspector shall decline to make the inspection.

Item 24-69
Submitted by Gary Scribner/Michelle Vance/Jodi Metzmaier/Terrence Hellman
7/3/2024
Page **1** of **1**

Subject: CO2 is heavier than air; Part 2, S12.4 c) should say "above" not "below"

Explanation of Need: CO2 is like the foam on a beer mug flowing over, it is heavier than air. being below and an air intake it goes down so should not be an issue, if it is above an air intake it will be dropping down and go into the air intake.

Background Information: I was the project manager on this item originally

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Part 2

S12.4 FILL BOX LOCATION / SAFETY RELIEF / VENT VALVE CIRCUIT TERMINATION
The inspection should verify that fill boxes and~~/or~~ vent valve terminations are installed above grade, outdoors in an unenclosed, free airflow area, and that the fill connection is located so not to impede means of egress or the operation of sidewalk cellar entrance doors, including during the delivery process and that they are:

a) ~~At~~ at least 3 ft~~.~~ (0.9 m) from any door or operable windows;
b) ~~At~~ at least 3 ft~~.~~ (0.9 m) above grade;
c) ~~Not~~ not located within 10 ft~~.~~ (3~~.0~~ m) above, or from side to side at the same level ~~or below~~, ~~from~~ of any air intakes; and
d) ~~Not~~ not located within 10 ft~~.~~ (3~~.0~~ m) ~~from~~ of stair~~-~~wells that go below grade.

Note: Many systems installed prior to ~~1/1/2014~~January 1, 2014, do not meet the above requirements and the local ~~Jurisdiction~~ jurisdiction should be consulted for guidance.

REFERENCE Item 24-68 on the Part 1 Agenda. Below are the changes they will be making to align these two sections.

S3.3 FILLBOX LOCATION / SAFETY RELIEF / VENT VALVE CIRCUIT TERMINATION
Fill boxes and~~/or~~ vent valve terminations shall be installed above grade, outdoors in an unenclosed, free airflow area. The fill connection shall be located so not to impede means of egress or the operation of sidewalk cellar entrance doors, including during the delivery process and shall ~~be~~:

a) ~~At~~ be at least ~~36 in. (915 mm)~~ 3 ft (0.9 m) from any door or operable windows;
b) ~~At~~ be at least ~~36 in. (915 mm)~~ 3 ft (0.9 m) above grade;
c) ~~Shall~~ not be located within 10 ft~~.~~ (~~31~~ 3 m) above, or from side to side at the same level ~~or below~~, ~~from~~ of any air intakes; and
d) ~~Shall~~ not be located within 10 ft~~.~~ (~~31~~ 3 m) ~~from~~ of stairwells that go below grade.

5.3.3 INSTRUCTIONS FOR COMPLETING THE FORM NB-136, REPLACEMENT OF STAMPED DATA FORM

~~14.~~ Item 14 shall ~~To~~ be completed by the ~~jurisdiction or Authorized Inspection Agency's authorized representative~~Authorized Jurisdictional Representative or Inspector.

14. If the original manufacturer is currently in business, concurrence shall be obtained by the owner or user.

The requester shall submit the form, along with any attachments, to the jurisdiction where the pressure-retaining item is installed for approval. If there is no jurisdiction or the pressure-retaining item is a stock item, the requester shall submit the form (and any attachments) to a National Board Commissioned Inspector for approval.

After the form is authorized, it ~~will~~ shall be returned to the owner, user, original manufacturer, or "R" Certificate Holder who made the request. The requester is required to contact the jurisdiction or an Authorized Inspection Agency to provide a National Board Commissioned Inspector to witness the re-stamping or installation of the new nameplate. If the nameplate is being welded to the pressure-retaining boundary of the vessel, the welding shall be performed by an "R" Certificate Holder. The requester ~~will~~ shall provide the new nameplate or have on hand the tools to do the re-stamping in accordance with the original code of construction.

Items 15-17 shall be completed by the responsible party as indicated.

15. Once the re-stamping is completed, or the new nameplate is attached, the requester shall provide a true facsimile of the replacement stamping.

16. The owner, user, original manufacturer, or "R" Certificate Holder shall fill in their name (and "R" Certificate Number if an "R" Certificate Holder), signature, and the date of completion.

17. To be completed by the National Board Commissioned Inspector who witnessed the re-stamping or installation of the new nameplate.

~~**Note:**~~ Once the form is completed, the requester shall file a copy with the jurisdiction where the pressure-retaining item is installed (if applicable), the National Board, and the owner or user of the pressure-retaining item (if the request was made by the original manufacturer or the "R" Certificate Holder); a copy of the form shall furthermore be provided upon request to the Authorized Inspection Agency who witnessed the re-stamping or attachment of the new nameplate.

Item 24-74
Metzmaier
7/16/24
Page **1** of **1**

Item 21-25 is an item that has already passed and will be included in the 2025 edition; however, during an editorial review of passed items, the questions of should "would be necessary" change to a "shall" was brought up.

The below change is being made to new wording that will be published in the 2025 from item 21-25.

Part 2

2.3.6.5b)2)b. (a. was deleted so c. has become b.)

b. Pressure gages intended to measure the operating pressure in the vessel are not usually sensitive or easily read at low pressures approaching atmospheric. It may be advisable to install an auxiliary gage that reads inches of water (millimeters of mercury) and measures pressure from atmospheric to low pressures. This ensures there is zero pressure in the vessel before opening. ~~It would be necessary to protect the auxiliary low-pressure gage from the higher operating pressures.~~If installed, the auxiliary low-pressure gage shall be protected from the higher operating pressures.