



THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

NATIONAL BOARD INSPECTION CODE SUBCOMMITTEE INSTALLATION

MINUTES

Meeting of January 11, 2023
Charleston, SC

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

The National Board of Boiler & Pressure Vessel Inspectors
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1. Call to Order

Mr. Patten called the meeting to order at 8:02 a.m. Eastern Standard Time (EST).

2. Introduction of Members and Visitors

Mr. Patten held roll call with the members and visitors. Each member and visitor (in person and remote) introduced themselves with their name and company/interest category. Ms. Kimberly Gates (with Authorized Inspection Associates, LLC) attended remotely as an alternate for Mr. Rex Smith. And Mr. Kim Black (with ABMA) sat as an alternate for Mr. Gene Tompkins. All attendees are listed on **Attachment Page 1**.

3. Check for a Quorum

With all 14 members present/represented (in person and remote), a quorum was reached.

4. Awards/Special Recognition

There were no awards or special recognitions for this meeting.

5. Announcements

Mr. Patten gave the announcements:

- The National Board will be hosting a reception on Wednesday evening from 5:30 p.m. to 7:30 p.m. in the Colonial Ballroom at the hotel.
- The National Board will be hosting breakfast and lunch on Thursday. Breakfast will be served from 7:00 a.m. to 8:00 a.m. in the Colonial Ballroom, and lunch will be served from 11:30 a.m. to 12:30 p.m. in the Colonial Ballroom.

6. Adoption of the Agenda

Mr. Patten added Interpretation Item 23-03 to the agenda. An officer appointment (for Vice Chair) was also added to the agenda. A motion to adopt the agenda with the mentioned revisions was made, seconded, and unanimously approved.

7. Approval of the Minutes of the July 13, 2022, Meeting

A motion to approve the minutes from the July 13, 2022, meeting was made, seconded, and unanimously accepted.

8. Review of Rosters

a. Membership Nominations

It was noted that Mr. Byrum would like to be appointed as a member of the subcommittee. He plans to send his formal request and resume to Jonathan before the July meeting.

b. Membership Reappointments

The following **subgroup** memberships are set to expire prior to the July 2023 NBIC meeting:

- Mr. Todd Creacy
- Mr. Matt Downs
- Mr. Patrick Jennings
- Mr. Stanley Konopacki
- Mr. Rex Smith

Mr. Smith stated during the subgroup meeting that he is not renewing his membership to the committee due to retirement.

The committee voted individually for the reappointment of the rest of the members listed above. One at a time, each of those members left the room (or was placed in a Zoom breakout room if remote) so the committee could vote. Each member's reappointment was unanimously approved.

The following **subcommittee** memberships are set to expire prior to the July 2023 NBIC meeting:

- Mr. Stanley Konopacki
- Mr. Rex Smith
- Mr. Milton Washington

Mr. Konopacki was placed in a Zoom breakout room so the committee could vote on his membership. A motion to approve his reappointment to the subcommittee was made, seconded, and unanimously approved.

Mr. Smith is not renewing his membership.

Mr. Washington informed the committee that he may be retiring before July, so he, too, will not be renewing his membership.

c. **Officer Appointments**

It was noted that a new subgroup Vice Chair should be appointed. Mr. Wiggins nominated Mr. Clark, and Mr. Creacy nominated Mr. Adams. Each nominee spoke about their employment, background, and history with the NBIC.

Upon further review of the NB-240, *National Board Inspection Code Procedure*, it was noted that at least two years of experience voting on the subcommittee is needed before a candidate is eligible for appointment as Chair or Vice Chair of either committee (Reference NB-240, 4.3.3 b.). At this point, neither candidate was eligible for appointment as Vice Chair.

9. Mr. Patten and Ms. Vance reviewed several NBIC-related processes: how to submit an action item or interpretation request through the Business Center; using the Business Center to review past letter ballots and the status of past or active items; NBIC FileShare (i.e., the Cloud) practices, like uploading or downloading items, creating folders, etc.; good practices for voting in letter ballots; using the "Track Changes" feature in Microsoft Word; and how we would like items to be named (e.g., Item Number – Last Name of Submitter – Revision date- Revision number).

10. **Open PRD Items Related to Installation**

- NB15-0305 – Create Guidelines for Installation of Overpressure Protection by System Design – D. Marek (PM)
 - Mr. Brockman reported that this is being sent as a letter ballot to SG/SC Parts 1 and 4.
- NB15-0315 – Review isolation valve requirements in Part 1, 4.5.6 and 5.3.6 – D. DeMichael (PM)
- 19-83 – Address Alternate Pressure Relief Valve Mounting Permitted by ASME CC2887-1 – D. Marek (PM).
 - This is being sent as a letter ballot to SG/SC Parts 1 and 4.
- 22-08 – Review and improve guidance for T&P valve installation relating to probe.
- 22-15 – What is the meaning of "service limitations" as used in Part 4, 2.4.5?
 - This is being sent as a letter ballot to SG/SC Parts 1 and 4.

- 22-16 – Allow the use of pressure relief valves on potable water heaters.
 - Mr. Clark showed the proposal with the editorial revisions incorporated. The whole thing will be sent as a letter ballot to SG/SC Parts 1 and 4.

11. Interpretations

Item Number: 23-03	NBIC Location: Part 1, 1.6.3	Attachment Pages 2-3
General Description: Boiler Room Exit		
Subgroup: SG Installation		
Task Group: P. Jennings (PM), T. Clark, and J. Kleiss		
Explanation of Need: Some Inspectors' interpretations are restricting exits to ground-level egress only.		
January 2023 Meeting Action: Proposal		
A task group was assigned during the subgroup meeting. Mr. Jennings briefly discussed the <i>Exit</i> paragraph in Part 1, 1.6.3, as well as the definition of "exit" shown in the Glossary. Neither entry states where the exit should lead. Mr. Richards gave some history on the issues this has raised in the past. This is outside of the scope of the NBIC. The committee's proposed response to the interpretation was shown. A motion to pass the committee response as presented was made, seconded, and unanimously approved.		

12. Action Items

Item Number: 20-27	NBIC Location: Part 1, 1.6.9 & S6.3	No Attachment
General Description: Carbon Monoxide Detector/Alarm NBIC 2019		
Subgroup: SG Installation		
Task Group: E. Wiggins (PM), G. Tompkins, R. Spiker, R. Smith, S. Konopacki, R. Austin, T. Creacy, and J. Kleiss		
Explanation of Need: These codes are being enforced by some jurisdictions on existing installations. Inspectors need to know what codes we need to enforce. Do the detectors have specific levels of CO when an alarm is to go off? Is there a requirement for an audible alarm or decibel level of the alarm? Where in the boiler room should the alarm/monitor be mounted?		
January 2023 Meeting Action: Close with no Action		
Mr. Wiggins and Mr. Patten relayed the Executive Committee's discussion on this. The Executive Committee recommended closing this item with no action. A motion to close this item with no action was made, seconded, and unanimously approved. More specific items related to this topic may be opened later.		

Item Number: 20-33	NBIC Location: Part 1	No Attachment
General Description: Flow or Temp Sensing Devices forced Circulation Boilers		
Subgroup: SG Installation		
Task Group: M. Downs (PM), D. Patten, and M. Wadkinson		
Explanation of Need: Incorporation of applicable CSD-1 requirements.		
January 2023 Meeting Action: Close with no Action		
Mr. Downs moved to close this item with no action. Upon the task group's review of CSD-1 and NBIC requirements, no more verbiage is needed. Both texts cover the topic adequately. The motion to close this item with no action was seconded and unanimously approved.		

Item Number: 20-44	NBIC Location: Part 1	No Attachment
General Description: CW Vacuum Boilers		
Subgroup: SG Installation		
Task Group: R. Spiker (PM), M. Washington, and M. Byrum		
Explanation of Need: Incorporation of applicable CSD-1 requirements.		
January 2023 Meeting Action: Close with no Action		
Mr. Spiker stated that the manufacturers aren't communicating with the task group. CSD-1 doesn't cover what to do with these devices. He recommended that they close this item with no action, and if possible, open a new item that addresses this more specifically. A motion to close this item with no action was made, seconded, and unanimously approved.		

Item Number: 20-62	NBIC Location: Part 1, 1.4.5.1	No Attachment
General Description: Update the National Board Boiler Installation Report		
Subgroup: SG Installation		
Task Group: T. Clark (PM), E. Wiggins, R. Spiker, T. Creacy, P. Jennings, G. Tompkins, and D. Patten.		
Explanation of Need: The form has not been updated in years. The form will be part of the National Board's Jurisdictional Reporting System (JRS) which is currently under development.		
January 2023 Meeting Action: Progress Report — LB for Review and Comment		
Mr. Clark shared the updated report with all jurisdictional input incorporated. This can be used for installing contractors or jurisdictions. JRS will utilize this form as a base report and will allow each jurisdiction to manipulate the form according to its requirements. This report is not mandatory, so states will adopt as they see fit/based on their requirements. The form will be letter balloted for Review and Comment. Then once comments are received and instructions are finished, all will be incorporated in a proposal to be voted on at the July meeting.		

Item Number: 20-86	NBIC Location: Part 1, 2.10.1 a)	No Attachment
General Description: Testing and Acceptance: Boil-out Procedure		
Subgroup: SG Installation		
Task Group: E. Wiggins (PM), D. Patten, M. Washington, and S. Konopacki		
Explanation of Need: This was brought to my (Mr. Eddie Wiggins) attention by Ernest Brantley. Mr. Brantley indicated during an acceptance inspection, he found boiler with excessive oil on the tubes and tube sheet after boiler was delivered and installed. He could not find any reference to boil-out to remove this extraneous material.		
January 2023 Meeting Action: Progress Report		
Mr. Wiggins shared the verbiage on steam blow submitted by Mr. Washington. Mr. Wiggins will work on this for the next meeting. Mr. Richards will help with the verbiage submitted to Part 3. This item should revolve more around power boilers, and a new item involving heating and hot water may be opened.		
Task Group Update: Add R. Spiker		

Item Number: 22-13	NBIC Location: Part 1, 3.8.2.2	Attachment Page 4
General Description: Align hot-water boiler thermometer requirements with ASME Section IV		
Subgroup: SG Installation		
Task Group: T. Clark (PM), P. Jennings, R. Adams, G. Tompkins, and D. Zalusky		
Explanation of Need: NBIC Part 1 does not expressly permit the use of temperature sensors or digital displays as thermometers for hot water heating or supply boilers, even though they are permitted under ASME Section IV, HG-612. NBIC Part 1 also does not address the required temperature range of thermometers, inconsistent with ASME Section IV.		
January 2023 Meeting Action: Proposal		
Mr. Clark presented his proposal, and some revisions were made. A motion to accept the revised proposal was made, seconded, and unanimously approved.		

13. New Items:

Item Number: 22-28	NBIC Location: Part 1, 9.1	No Attachment
General Description: Pool Heater definition		
Subgroup: SG Installation		
Task Group: J. Kleiss (PM), R. Spiker, T. Creacy, and M. Byrum		
Explanation of Need: The NBIC Installation and Inspection Codes do not have a definition for pool heaters. There is potential for confusion regarding which NBIC requirements, if any, should apply to pool heaters.		
January 2023 Meeting Action: Progress Report		
A task group was assigned during the subgroup meeting. They will work on adding pool heater requirements before adding definitions. They may reach out to the jurisdictions about their exemption requirements.		

Item Number: 22-30	NBIC Location: Part 1, 3.6.3	No Attachment
General Description: Drains in equipment rooms with heating boilers containing glycol		
Subgroup: SG Installation		
Task Group: P. Jennings (PM), R. Adams, D. Zalusky, D. Patten, and R. Smith		
Explanation of Need: Glycol should be disposed of in accordance with regulations. The intent of this addition to the text is to identify that drains may not be the proper way to dispose of glycol.		
January 2023 Meeting Action: Progress Report		
A task group was assigned during the subgroup meeting. They will look into drainage of glycol (and possibly the relationship with safety valves) with respect to the drainage requirements of other codes, the U.S. Environmental Protection Agency (EPA), etc.		

Item Number: 22-31	NBIC Location: Part 1, 3.8.2.3	Attachment Page 5
General Description: Location of temperature controls		
Subgroup: SG Installation		
Task Group: P. Jennings (PM)		
Explanation of Need: There is currently no requirement that the temperature controls measure the boiler temperature at or near the boiler outlet.		
January 2023 Meeting Action: Proposal		
Mr. Jennings summarized his rationale for the verbiage of the proposal. After some discussion, a motion to approve the proposal as presented was made, seconded, and unanimously approved.		

Item Number: 22-32	NBIC Location: Part 1, 3.8.1.4 b)	No Attachment
General Description: High pressure limit control requirements for fired jacketed steam kettles		
Subgroup: SG Installation		
Task Group: R. Adams (PM), D. Patten, T. Clark, and T. Creacy		
Explanation of Need: As a safeguard to over pressurizing the fired jacketed steam kettle, the pressure range of the actuated high pressure limit control should not exceed the MAWP of the vessel.		
January 2023 Meeting Action: Progress Report		
A task group was assigned during the subgroup meeting. Mr. Adams explained that the information from 3.8.1.4 b) may need to be moved to Part 4. And high pressure limit control requirements for fired jacketed steam kettles could be addressed in Part 1, 4.4, on <i>Instruments and Controls</i> . The task group will further discuss if that is the right placement for the text or if they need to create a new supplement addressing jacketed steam kettles.		

14. New Business

Ms. Wadkinson discussed the Review and Comment ballot (Item 21-43; sent to all parts) on the definitions of “practical” versus “practicable.” The group discussed replacing those words with synonyms that would be more understandable and not prone to misuse, especially since organizations outside of the United States also use the NBIC. Ms. Wadkinson will follow up with Mr. Toth (PM) on this discussion and what it will entail to make changes across all parts, maybe presenting a proposal to the Executive Committee at the July meeting.

15. Future Meetings

Mr. Patten announced the future NBIC meeting dates and locations.

- July 10 – 13, 2023 – St. Louis, MO
- January 8 – 11, 2024 – Charlotte, NC

16. Adjournment

A motion to adjourn the meeting at 11:15 a.m. (EST), was made, seconded, and unanimously approved.

Respectfully submitted,



Michelle Vance
Subcommittee Installation Secretary

Subcommittee Installation Attendance: January 11, 2023

MEMBERS:	Interest Category	In Person	Remote	Not In Attendance
Don Patten	Manufacturers	x		
Edward Wiggins	Jurisdictional Authorities		x	
Joe Brockman	Authorized Inspection Agencies	x		
Tom Clark	Jurisdictional Authorities	x		
Todd Creacy	Authorized Inspection Agencies	x		
J. Matt Downs	Manufacturers	x		
Patrick Jennings	Authorized Inspection Agencies	x		
Stanley Konopacki	Users		x	
H. Michael Richards	General Interest	x		
Kimberly Gates (in for Rex Smith)	Authorized Inspection Agencies		x	
Ron Spiker	Jurisdictional Authorities	x		
Kim Black (in for Gene Tompkins)	Manufacturers	x		
Melissa Wadkinson	Manufacturers	x		
Milton Washington	Jurisdictional Authorities		x	
Michelle Vance	Secretary	x		

VISITORS:	Company / Interest	In Person	Remote
Bryan Ahee	Bradford White Corporation	x	
David Warshall	Dept. of Buildings City of New York		x
David Zalusky	CNA Insurance	x	
Jeff Kleiss	Lochinvar, LLC	x	
Jessica Robertson	Chemours		x
Jim Byrum	ARISE Boiler	x	
Robert Smith	Naval Facilities Engineering Systems Command	x	
Rodger Adams	Zurich	x	
Gary Scribner	NBBI Staff	x	
Luis Ponce	NBBI Staff	x	



PROPOSED INTERPRETATION

Item No. 23-03
Subject/Title Boiler Room Exit
Project Manager and Task Group
Source (Name/Email) Dwayne Dierksen / dwayne.dierksen@chubb.com
Statement of Need Some inspectors interpretations are restricting exits to ground level egress only.
Background Information A boiler room on a roof elevation with exit onto that roof elevation would only be allowed if a fire escape or an additional roof egress back into another part of the building was incorporated to reach the ground level.
Proposed Question Are there any restrictions where the boiler room exits to? Such as roofs, a secured (fenced area), other rooms, etc?
Proposed Reply No.
Committee's Question 1 Does NBIC Part 1 specify where the boiler room exits should lead?
Committee's Reply 1 No
Rationale NBIC Part 1 – Neither 1.6.3 nor the glossary of terms definition for “Exit” state where exits lead.
Committee's Question 2
Committee's Reply 2
Rationale

CODE INTERPRETATIONS

Requests for code Interpretations shall provide the following:

a) Inquiry

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

b) Reply

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

c) Background Information

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

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

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

A request seeking the rationale for code requirements.

Item 22-13

Submitted by: Tom Clark

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Part 1**3.8.2.2 THERMOMETERS**

Each hot-water heating or hot-water supply boiler shall have a thermometer so located and connected that it shall be easily readable. The thermometer shall be so located that it shall at all times indicate the temperature of the water in the boiler at or near the outlet. The thermometer shall have a minimum indication of 70°F (20°C) or less and a maximum indication at least equal to 320°F (160°C) but not more than 400°F (205°C).

An electronic temperature sensor and display may be used in lieu of a thermometer, and the display shall have a minimum indication range of 70°F (20°C) to 320°F (160°C); the display shall always be on.

HG-612 Thermometers/Temperature Sensors

Each hot water heating or hot water supply boiler shall have a thermometer or temperature sensor with display so located and connected that it shall be easily readable. The thermometer or sensor shall be so located that it shall at all times indicate the temperature of the water in the boiler at or near the outlet.

- (a) Thermometer shall have a minimum reading of 70°F (20°C) or less.
- (b) Thermometer shall have a maximum reading at least equal to 320°F (160°C) but not more than 400°F (205°C).
- (c) Electronic temperature sensor used in lieu of a thermometer shall meet the following requirements:
 - (1) The sensor shall be powered from the boiler power supply, and it shall have a display that remains on at all times. The sensor shall have a backup power supply.
 - (2) The full scale of the sensor and display must be a minimum of 70°F (20°C) to 320°F (160°C). It shall be accurate to within ± 1 deg.
 - (3) The sensor shall have a minimum operating temperature range of 32°F to 300°F (0°C to 150°C).
 - (4) The display shall have an ambient operating temperature range of 32°F to 120°F (0°C to 50°C) unless otherwise required by the application.

Item 22-31

Submitted by: Patrick Jennings

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Part 1, 3.8.2.3

3.8.2.2 THERMOMETERS

Each hot-water heating or hot-water supply boiler shall have a thermometer so located and connected that it shall be easily readable. The thermometer shall be so located that it shall at all times indicate the temperature of the water in the boiler at or near the outlet.

3.8.2.3 TEMPERATURE CONTROL

Each automatically fired hot-water heating or hot-water supply boiler shall be protected from over-temperature by at least two temperature-operated controls.

- a) Each individual hot-water heating or hot-water supply boiler or each system of commonly connected boilers shall have at least one control that will cut off the fuel supply when the water temperature reaches an operating limit, which shall be less than the maximum allowable temperature.
- b) In addition to a) above, each individual automatically fired hot-water heating or hot-water supply boiler shall have at least one safety limit control with manual reset that will cut off the fuel supply at or below the maximum allowable temperature at the boiler outlet.
- c) Each operating and safety limit control shall have its own sensing element and operating switch. The temperature sensing elements shall be so located that they shall at all times sense the temperature of the water in the boiler at or near the outlet.
- d) Alternatively, integrated controls with multiple sensors may be used to meet the requirements of 3.8.2.3 a) and b).