Date Distributed:

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

NATIONAL BOARD INSPECTION CODE SUBCOMMITTEE PRESSURE RELIEF DEVICES

AGENDA

Meeting of July 9, 2025
Cincinnati, OH

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 will be called to order at 8:00 a.m. Eastern Time, in Mt. Auburn on the 4th floor of the hotel.

2. **Introduction of Members and Visitors**

3. **Check for Quorum**

4. **Announcements**
   - This meeting marks the end of Cycle B for the 2027 NBIC edition.
   - The National Board will be hosting a reception on Wednesday evening from 5:30 p.m. to 7:30 p.m. at Ault Park, on the 4th floor of the hotel.
   - The National Board will be hosting breakfast and lunch on Thursday for those attending the Main Committee meeting. Breakfast will be served from 7:00 a.m. to 8:00 a.m. in Madisonville A/B, and lunch will be served from 11:30 a.m. to 12:30 p.m. in Madisonville A/B.
   - Meeting schedules, meeting room layouts, and other helpful information can be found on the National Board website under the **NBIC** tab → NBIC Meeting Information.
   - The NBIC Committee has transitioned from NB File Share to SharePoint. Remember to add any attachments that you'd like to show during the meeting (proposals, reference documents, powerpoints, etc.) to the NBIC SharePoint site (nationalboard.sharepoint.com/sites/NBIC) **prior to the meeting**.
     - Note that access to the NBIC SharePoint site is limited to committee members only.
     - ALL powerpoint attachments/presentations must be sent to the NBIC Secretary for approval prior to the meeting.
     - Contact Jonathan Ellis (*nbicsecretary@nbbi.org*) for any questions regarding NBIC SharePoint access.
   - When possible, please submit proposals in Word format showing "strike through/underline." Project Managers: please ensure any proposals containing text from previous NBIC editions are updated with text from the most current edition.
   - If you'd like to request a new Interpretation or Action item, do so on the National Board Business Center.
     - Anyone, member or not, can request a new item.
   - As a reminder, anyone who would like to become a member of a group or committee:
     - Should attend at least two meetings prior to being put on the agenda for membership consideration. The nominee will be on the agenda for voting during their third meeting.
     - The nominee must submit the formal request along with their resume to the NBIC Secretary **PRIOR TO** the meeting. *nbicsecretary@nbbi.org*
     - If needed, we can also create a ballot for voting on a new member between meetings.
   - Thank you to everyone who registered online for this meeting. The online registration is very helpful for planning our reception, meals, room setup, etc. It is also a good way to make sure we have the most up-to-date contact information. Please continue to use the online registration for each meeting.

5. **Adoption of the Agenda**

6. **Approval of Minutes of the January 2025 Meeting**
   The minutes from the January 2025 meeting can be found on the NBIC Committee information page on the National Board's website, nbbi.org.

7. **Awards/Special Recognition**

8. **Review of the Roster**
   a. **Nominations**

   b. **Reappointments**
      i. The following **Subgroup PRD** memberships are up for reappointment: Mr. Eben Creaser, Mr. Prakash Dhobi, Mr. Alfred Donaldson, Mr. David Sullivan, and Mr. Tom Tarbay.
      ii. The following **Subcommittee PRD** memberships are up for reappointment: Mr. Eben Creaser.

   c. **Resignations**

   d. **Officer Selections**

9. **Interpretation Requests**

Item Number: 24-38	**NBIC Location: Part 4, 2.5.4.2 & Part 1, 3.9.1.6 c)**	**Attachment Page 1**

General Description: T&P relief device installation on modular HWH supply header

Task Group: None assigned.

Explanation of Need: The NBIC does not address the installation or location of a common T&P valve for modular HWH's. Clarification is needed on whether the common supply header can be considered part of the HWH, and whether T&P valves can be installed in the horizontal position with the outlet pointed down, if installed directly to the header with no more than 4 in. maximum interconnecting piping.

January 2025 Meeting Action: This is an intent interpretation. The associated action item needs to be approved prior to any further action taking place with this interpretation.

Item Number: 24-46	NBIC Location: Part 4, 4.3.1 a)	Attachment Page 2

General Description: Replacement of Bodies and Transfer of Nameplates During Repair

Task Group: None assigned.

Explanation of Need: Clarity on what defines "the valve". Is "the valve" the nameplate solely or the nameplate and serialized base; and subsequent ability to divorce the nameplate and base during repair when the base requires replacement.

January 2025 Meeting Action: This is an intent interpretation. The associated action item needs to be approved prior to any further action taking place with this interpretation.

Item Number: 24-87	NBIC Location: Part 4, 4.7.3 a) and b)	Attachment Page 3

General Description: Changes to the original pressure relief device nameplate.

Task Group: None assigned.

Explanation of Need: Clarification is needed on the correct way to communicate changes to a relief device through nameplate stamping.

January 2025 Meeting Action: A motion was made to accept the proposed question and reply. The motion was seconded and approved unanimously. This represents an intent interpretation. A motion was made to open an action item to review and clarify guidelines for conversion nameplate stamping. The motion was seconded and approved unanimously, and Item 25-01 was opened.

New Interpretation Requests:

Item Number: 25-10	NBIC Location: Part 4, 2.6	Attachment Page 4

General Description: Is a Pressure Relief Device the only Relief Method for Pressure Vessels?

Task Group: None assigned.

Explanation of Need: The jurisdiction is claiming the NBIC implies that a pressure relief device is the only acceptable relief method for a pressure vessel since Part 4 Section 2.6 only addresses pressure relief devices.

July 2025 Meeting Action:

10. Action Items

a. Items From other Committees

i. Item 24-18 – Definition of Controlled Fill (P. Gilston as PM)

Item Number: NB15-0305	**NBIC Location: Part 4**	**No Attachment**
General Description: Create Guidelines for Installation of Overpressure Protection by System Design. **Task Group:** B. Nutter, A. Renaldo, D. Marek (PM), D. DeMichael, J. Wolf, D. Schirmer, J. Grace, D. Sullivan **January 2025 Meeting Action:** A proposal was presented. The proposal will go to letter ballot to SG Installation, Inspection, and PRD. **NOTE:** This item is on hold until the NBBI Board of Trustees decides if they approve of revising the NBIC's scope to include overpressure protection by system design.		

Item Number: NB15-0315	**NBIC Location: Part 4, 2.5.6 and 2.6.6 and Part 1, 4.5.6 and 5.3.6**	**No Attachment**
General Description: Review isolation Valve Requirements, and reword to allow installation of pressure relief devices in upstream piping. **Task Group:** D. DeMichael, B. Nutter (PM), A. Renaldo, D. Marek, K. Beise **January 2025 Meeting Action:** Progress report. Work continues on this item. B. Nutter was reassigned as the PM.		

Item Number: 19-83	**NBIC Location: Part 4, Part 1**	**No Attachment**
General Description: Address alternate pressure relief valve mounting permitted by ASME CC2887-1. **Task Group:** D. Marek (PM), T. Patel, J. Ball, R. Ceccarelli **January 2025 Meeting Action:** Progress report. Work continues on this item. R. Ceccarelli was added to the task group.		

Item Number: 21-08	NBIC Location: Part 4, S4.4	No attachment

General Description: Additional guidance for tank vent repairs

Subgroup: PRD
Task Group: D. DeMichael, H. Cornett, B. Nutter (PM), K. Beise, J. Grace

Explanation of Need: The recently approved S4.4, "Weight Loaded Vents," (NB12-0901) provided new guidance for tank vent repairs. Several additional topics need to be addressed to enhance the guidance. These topics include: 1) Suggested test equipment and configuration for the prescribed tank vent testing. 2) Minimum requirements for replacement parts, 3) Guidance for painting tank vent components.

January 2025 Meeting Action: Progress report. Work continues on this item. B. Nutter was reassigned as the PM

Item Number: 22-09	NBIC Location: Part 4, 4.6.1	No Attachment

General Description: Add language to NBIC Part 4 for valves manufactured to Code Case 2787

Subgroup: PRD

Task Group: A. Donaldson (PM), H. Cornett, B. Nutter, T. Tarbay, J. Simms, T. Patel

Explanation of Need: There are no requirements to address valve repairs that were manufactured or assembled to Code Case 2787 (use of more than one certified capacity on the pressure relief valve or the nameplate).

January 2025 Meeting Action: Progress report. Work continues on this item. Mr. Thakor Patel was added to task group.

Item Number: 22-20	NBIC Location: Part 4, 4.7.4	No Attachment

General Description: Inspection and testing of PRV's located above isolation valves.

Subgroup: PRD

Task Group: D. Marek (PM), K. Beise, J. Ball, E. Creaser, H. Cornett, A. Renaldo

Explanation of Need: Add requirement to make sure the internals of a PRV inlet and outlet are inspected when it is tested, and require tests to be done with a pressure vessel with volume.

January 2025 Meeting Action: Progress report. Work continues on this item.

Item Number: 23-32	NBIC Location: Part 4, 3.3 and Supp. 6	No Attachment

General Description: Rules for T/O activities related to Nuclear Class Valves

Subgroup: PRD

Task Group: E. Creaser (PM), P. Dhobi, D. McHugh, J. Simms

Explanation of Need: Nuclear facilities that perform repair and T/O activities would by allowing them to use T/O for nuclear class valves that were serviced but not in need of repair but need to be set and sealed again.

January 2025 Meeting Action: Progress report. Work continues on this item.

Item Number: 24-35	NBIC Location: Part 4, 4.6.2	No Attachment

General Description: Update Testing of UV-Designated Steam valves on Air to match ASME XIII

Subgroup: PRD

Task Group: Tom Beirne (PM)

Explanation of Need: ASME Section XIII Table 3.6.3.1-1 Note 3 permits UV-designated steam valves to be tested using air when the valve is beyond the testing capabilities due to set pressure or capacity. The NBIC only permits steam valves to be tested on air by the owner/user. This should be permitted by any VR shop that has steam test equipment since it is permitted under the rules for new construction.

January 2025 Meeting Action: A motion was made to made to send the proposal back to SG PRD for rework. The motion was seconded and approved unanimously.

Item Number: 24-72	NBIC Location: Part 4, 4.3.1	No Attachment

General Description: Add Language to Address Replacement of Valve Bodies and Bases

Subgroup: PRD

Task Group: A. Donaldson (PM), G. Salwan, E. Creaser, H. Cornett, B. Nutter, P. Dhobi, T. Tarbay, T. Patel

Explanation of Need: Under the current text of 4.3.1 there are no guidelines for the replacement of valve components to which the original nameplate is attached.

January 2025 Meeting Action: Progress report. Work continues on this item.

Item Number: 24-91	NBIC Location: Part 4, 3.2.3, Part 1 S3.6 d)	No Attachment

General Description: Require means to prevent safety valve discharge piping blockage for LCDSV (Part 4)

Subgroup: PRD

Task Group: A. Renaldo (PM), J. Simms, D. Schirmer, D. Sullivan, R. Ceccarelli

Explanation of Need: Adding verbiage to the NBIC Part 1, Part 2 and Part 4 to require a means to prevent foreign material introduction to the safety valve discharge pipe.

January 2025 Meeting Action: A proposal was presented. A task group was assigned to develop the proposal further.

Item Number: 24-101	NBIC Location: Part 4, Sections 3 and 4	No Attachment

General Description: Revise NBIC to expand VR and T/O programs beyond ASME Certified Valves

Subgroup: PRD

Task Group: E. Creaser (PM), D. Marek, T. Beirne, H. Cornett, K. Beise, R. Viers, N. Bailey, A. Donaldson

Explanation of Need: The National Board upper management and Board of Trustees have decided to expand the VR and T/O programs to valves that are constructed to standards other than ASME. The proposal file contains changes that would accomplish this goal. Changes to NB-514 and NB-528 will follow.

January 2025 Meeting Action: A proposal was presented. A task group was formed to further develop the proposal.

Item Number: 25-01	NBIC Location: Part 4, 4.7.3	No Attachment

General Description: Review and Clarify Guidelines for Nameplate Stamping Following Conversion

Subgroup: PRD

Task Group: J. Simms (PM), E. Heck, C. Turner, N. Bailey, P. Dhobi, D. Mosley, B. Nutter, D. Schirmer

Explanation of Need: The current NBIC language lacks sufficient detail and instruction for modification of original nameplate information following conversion.

Background Information: This stems from I24-87, requesting guidance on how much information should be marked out from original model number/type.

January 2025 Meeting Action: A task group was assigned.

11. New Business

Item Number: 25-08	NBIC Location: Part 4, 4.6.1	Attachment Page 5

General Description: Add Requirements for Qualification of Mobile Test Equipment

Subgroup: PRD

Task Group: None assigned.

Explanation of Need: The current working in 4.6.1 only addresses performance test equipment. We do not address mobile test equipment. I believe we need to add a new paragraph 4.6.1 c) that addresses test equipment other than just the performance test equipment.

Background Information: Per T. Tarbay:
The reason I think we need to address test equipment is I am finding shops that are using low volume tests stands for field testing (i.e. nitrogen bottle with an air hose). As you know, using these low volume stands, you cannot "pop" a valve.

July 2025 Meeting Action:

Item Number: 25-19	NBIC Location: Part 4, Supplement 4	No Attachment

General Description: Spring slackness with time in the HP steam for more than 5 years

Subgroup: PRD

Task Group: None assigned.

Explanation of Need: The current NBIC guidelines do not explicitly address the time-dependent degradation of safety valve springs in high-temperature steam services. We have observed premature opening of safety valves in our HP steam headers, which has been attributed to spring relaxation over time. Without specific guidance on inspection frequency and replacement intervals, there is a risk of undetected spring degradation leading to operational disruptions, potential overpressure events, and increased maintenance costs. This amendment will provide clear and practical recommendations to mitigate these risks.

Background Information: To ensure the continued reliability and integrity of high-pressure steam safety valves, it is proposed that the NBIC guidelines be amended to include:
1- Mandatory spring inspection during each scheduled safety valve inspection. This inspection should include, but not be limited to, assessing spring relaxation, free height, and visual inspection for signs of fatigue or damage.
2- A recommended spring replacement interval of five years for safety valves operating in high-temperature steam services. This interval is based on observed spring relaxation and the potential for thermal/mechanical fatigue over time.

This amendment aims to proactively address the issue of premature safety valve operation and potential spring failures, enhancing safety and operational reliability.

July 2025 Meeting Action:

Item Number: 25-30	NBIC Location: Part 4, 4.7.2 b) 3)	Attachment Page 6

General Description: Association of Repair for Pilots and Main Valves

Subgroup: PRD

Task Group: None assigned.

Explanation of Need: There is currently not language tying the pilot and main valve of a pilot-operated pressure relief valve to one another following repair.

Background Information: ASME Section XIII 3.9 (f) (1) mandates that the pilot and main valve of a pilot-operated pressure relief valve each be marked with the same unique identifier to establish association of both components. This would create a similar requirement in NBIC to establish association of the pilot and main valve of pilot-operated pressure relief valves as being part of a single VR repair.

July 2025 Meeting Action:

Item Number: 25-38	NBIC Location: Part 4, 3.2.5.1 and 4.6.1	Attachment Page 7
General Description: Address Testing of Pilot Valves as Complete Assembly **Subgroup:** PRD **Task Group:** None assigned. **Explanation of Need:** ASME CC 3057 requires that pilot operated valves be tested at least once as a complete assembly to verify all components are properly connected, leak tight, and that the pilot actuates the main valve. This also verifies freedom of operation of the main valve. **Background Information:** Pilot operated valves in service have been field tested by checking pilot set point without verification that the main valve will open. **July 2025 Meeting Action:**		

12. Future Meetings

- January 12-15, 2026 – New Orleans, LA

13. Adjournment

Respectfully Submitted,

Robert Viers
Secretary, Subcommittee Pressure Relief Devices

PROPOSED INTERPRETATION

Item No.

24-38

THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject/Title

T&P relief device installation on modular HWH supply header

Project Manager and Task Group

Source (Name/Email)

Terrence Hellman / thellman@nationalboard.org

Statement of Need

The NBIC does not address the installation or location of a common T&P valve for modular HWH's. Clarification is needed on whether the common supply header can be considered part of the HWH, and whether T&P valves can be installed in the horizontal position with the outlet pointed down, if installed directly to the header with no more than 4 in. maximum interconnecting piping.

Background Information

ASME Section IV, Article 9 addresses Modular Water Heater Requirements, and allows for multiple units to be certified as a single water heater with a single pressure relief valve on the supply header per HLW-903(g)(1). NBIC does not address the installation or location of a common T&P valve for modular HWH's.

Proposed Question

For an assembled modular water heater certified as a single water heater, with the temperature and pressure relief device located on the supply header as permitted in ASME Sect. IV, para. HLW-903(g)(1), may it be installed in the horizontal position with the outlet pointed down as allowed in NBIC Part 1, 3.9.1.6 c), 3.9.4.2, and Part 4, 2.5.4.2?

Proposed Reply

Yes.

Committee's Question 1

For an assembled modular water heater certified as a single water heater, with the temperature and pressure relief device located on the supply (i.e. distribution) header, may it be installed in the horizontal position with the outlet pointed down as allowed in NBIC Part 1, 3.9.1.6 c), 3.9.4.2, and Part 4, 2.5.1.6 c)~~.4.2~~?

Committee's Reply 1

Yes.

Rationale

Part 1, 3.9.1, 3.9.4.2, and Part 4 2.5.1 do not exclude modular design. The term supply header is defined as distribution from the heater in ASME Sec IV. It is not intended to refer to the cold water inlet supply.

Committee's Question 2

Committee's Reply 2

Rationale

PROPOSED INTERPRETATION

Item No.

24-46

THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject/Title

Replacement of Bodies and Transfer of Nameplates During Repair

Project Manager and Task Group

Source (Name/Email)

Benjamin Atwell / Ben.Atwell@puffer.com

Statement of Need

Clarity on what defines "the valve". Is "the valve" the nameplate solely or the nameplate and serialized base; and subsequent ability to divorce the nameplate and base during repair when the base requires replacement.

Background Information

We on occasion run into issues where a body needs replaced and lead time on a new valve drives necessity. Since the body carries the manufacturer/assembler nameplate with the Code stamp and is the serialized part of the valve it could be viewed as "the valve". Replacing the base would require transferring the original nameplates to the new body, grinding off any serial numbers on the new body, and restamping/etching the new body with the original serial number. Driving factor for this question is the discussion around what distinguish "the valve". If replacement of bodies and transfer of nameplates is acceptable it leads to the hypothetical situation where all or nearly all parts in a valve could be replaced with new components. Effectively replacing a valve with a "new valve" and circumventing the assembler requirements per ASME as the original nameplate carries a valid code stamp and now lives on the "new valve".

Proposed Question

Is it permissible to replace the body of a valve during a repair and transfer the nameplate from the original body to the new body?

Proposed Reply

Yes or no on ability to transfer a nameplate to a new base and adopt all markings/code stamps onto the new base.

Committee's Question 1

Is it permissible to replace the body of a valve during a repair and transfer the nameplate from the original body to the new body?

Committee's Reply 1

Yes

Rationale

Under the current text of Part 4, 4.3.1, this activity is not prohibited.

Committee's Question 2

Committee's Reply 2

Rationale

NBIC Interpretation Item I24-87
Submitted by Darris Mosley (Darris_mosley@oxy.com)
12/16/2024

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	Changes to the original pressure relief device nameplate.
NBIC Location:	2023 NBIC Part 4, 4.7.3 a) and b)
Statement of Need:	Clarification is needed on the correct way to communicate changes to a relief device through nameplate stamping.
Background Information:	A VR certificate holder has been audited and has received corrective actions for only stamping out the items of a relief device's part number that have been changed. The shop was given guidance to update their quality control manual to stamp out the entire part number even when not all components have been changed.
Proposed Question:	Part 4, paragraph 4.7.3 (a) second sentence states "For these repairs, the invalidated information on the original nameplate or stamping shall be marked out but left legible." Is the invalidated information considered the to be the entire field (for example entire model number or only a portion of model number)?
Proposed Reply:	No. Only the portion that is invalidated shall be marked out but left legible. However, the entire new model number shall be marked on the VR nameplate.
Committee's Question:	Part 4, paragraph 4.7.3 (a) second sentence states "For these repairs, the invalidated information on the original nameplate or stamping shall be marked out but left legible." Is the invalidated information considered to be the entire field?
Committee's Reply:	Yes, the intention is to mark out the entire field, but leave the old information legible.
Rationale:	

NBIC Interpretation Item I25-10
Submitted by Riley Collins (rileycollins@eastman.com)
4/8/2025

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	Is a Pressure Relief Device the only Relief Method for Pressure Vessels?
NBIC Location:	2023 NBIC, Part 4, 2.6
Statement of Need:	The jurisdiction is claiming the NBIC implies that a pressure relief device is the only acceptable relief method for a pressure vessel since Part 4 Section 2.6 only addresses pressure relief devices.
Background Information:	NBIC Part 4 Section 2.6 only provides requirements for the pressure relief devices that protect pressure vessels. This does not mean that a pressure relief device is the only relief method for pressure vessels. ASME Section VIII Div 1 permits the use of open flow paths and overpressure protection by system design which do not have pressure relief devices.
Proposed Question:	NBIC Part 4 Section 2.6 only provides requirements for the pressure relief devices that protect pressure vessels. Is NBIC Part 4 Section 2.6 declaring that a pressure relief device is the only relief method for pressure vessels?
Proposed Reply:	No.
Committee's Question:	<Question(s) the committee will interpret. Can be the same wording as the proposed question>
Committee's Reply:	<Yes or no response>
Rationale:	<Additional clarification for response>

NBIC Action Item A25-08
Submitted by Bob Viers (rviers@nbbi.org)
3/10/2025

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	Add Requirements for Qualification of Mobile Test Equipment
NBIC Location:	2023, Part 4, 4.6.1
Statement of Need:	The current working in 4.6.1 only addresses performance test equipment. We do not address mobile test equipment. I believe we need to add a new paragraph 4.6.1 c) that addresses test equipment other than just the performance test equipment.
Background Information:	Per T. Tarbay: The reason I think we need so address test equipment is I am finding shops that are using low volume tests stands for field testing (i.e. nitrogen bottle with an air hose). As you know, using these low volume stands, you cannot "pop" a valve.

Proposed Text:

4.6.1 TEST MEDIUM AND TESTING EQUIPMENT

c) All equipment used in testing of pressure relief valves must have the information required by 4.6.1. b) 2) and must be qualified before use. This qualification may be done by comparing the results of two valves, for each test media, tested on the performance test equipment and then tested on the other equipment. The results must be within ASME Code tolerances.

NBIC Action Item A25-30
Submitted by Bob Viers (rviers@nbbi.org)
6/27/2025

THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	Association of Repair for Pilots and Main Valves
NBIC Location:	2025, Part 4, 4.7.2 b) 3)
Statement of Need:	There is currently not language tying the pilot and main valve of a pilot-operated pressure relief valve to one another following repair.
Background Information:	ASME Section XIII 3.9 (f) (1) mandates that the pilot and main valve of a pilot-operated pressure relief valve each be marked with the same unique identifier to establish association of both components. This would create a similar requirement in NBIC to establish association of the pilot and main valve of pilot-operated pressure relief valves as being part of a single VR repair.

Proposed Text:

4.7.2 REPAIR NAMEPLATES

When a pressure relief valve is repaired, a metal repair nameplate stamped with the information required below shall be securely attached to the valve adjacent to the original manufacturer's stamping or nameplate. If not installed directly on the valve, the nameplate shall be securely attached to the valve independent of the external adjustment seals in a manner that does not interfere with valve operation and sealed in accordance with the quality system.

a) Prior to attachment of the repair nameplate, the previous repair nameplate, if applicable, shall be removed from the repaired valve.

b) As a minimum, the information on the valve repair nameplate (see Figure 4.7.2-a) shall include:

1) The name of the repair organization preceded by the words "repaired by";
2) The "VR" repair symbol stamp and the "VR" certificate number;
3) Unique identifier (e.g., repair serial number, shop order number, etc.);

a. For pilot operated pressure relief valves, the pilot and main valve shall each bear a repair nameplate marked with the same unique identifier to establish association of repair of both components under a single application of the "VR" stamp.

NBIC Action Item A25-38
Submitted by Bob Viers (rviers@nbbi.org)
6/27/2025

THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS

Subject:	Address Testing of Pilot Valves as Complete Assembly
NBIC Location:	2025, Part 4, 3.2.5.1 and 4.6.1
Statement of Need:	ASME CC 3057 requires that pilot operated valves be tested at least once as a complete assembly to verify all components are properly connected, leak tight, and that the pilot actuates the main valve. This also verifies freedom of operation of the main valve.
Background Information:	Pilot operated valves in service have been field tested by checking pilot set point without verification that the main valve will open.

Proposed Text:

3.2.5.1 TESTING AND OPERATIONAL INSPECTION OF PRESSURE RELIEF VALVES

In addition to the requirements of 3.2.5, the following apply to testing and operational inspection of pressure relief valves.

a) Pressure relief valves shall be tested periodically to ensure that they are free to operate and will operate in accordance with the requirements of the original code of construction. Testing should include device set or opening pressure, reclosing pressure (where applicable), and seat leakage evaluation. Tolerances for these operating requirements specified in the original code of construction shall be used to determine the acceptability of test results.

b) Valves may be tested using lift assist devices when testing at full pressure may cause damage to the valve being tested or when it is impractical to test at full pressure due to system design. Lift assist devices apply an auxiliary load to the valve spindle or stem, and using the measured inlet pressure, applied load, and other valve data, allow the set pressure to be calculated. If a lift assist device is used to determine valve set pressure, the conditions of 4.6.3 shall be met. It should be noted that false set pressure readings may occur for valves which are leaking excessively or otherwise damaged.

c) If valves are not tested on the system using the system fluid, the following test media shall be used:
   1) High pressure boiler pressure relief valves, high temperature hot-water boiler pressure relief valves, low pressure steam heating boilers: steam;

2) Hot-water heating boiler pressure relief valves: steam, air, or water;
3) Hot water heater temperature and pressure relief valves: air or water;
4) Air and gas service process pressure relief valves: air, nitrogen, or other suitable gas;
5) Liquid service process pressure relief valves: water or other suitable fluid; and
6) Process steam service pressure relief valves: steam or air with manufacturer's steam to air correction factor.

Note: Valves being tested after a repair must be tested on steam except as permitted by 4.6.2.

d) For pilot-operated pressure relief valves freedom of operation of the main valve shall be tested in addition to pilot set point.

~~d)~~e) As an alternative to performing a pressure test, the owner may check the valve for freedom of operation by activating the test or "try" lever (i.e., manual check). For high-pressure boiler and process valves, this test should be performed only at a pressure greater than 75% of the stamped set pressure of the valve, otherwise the lifting device may be damaged. This test will indicate only that the valve is free to operate; it does not provide any information on the actual set pressure. All manual checks should be performed with some pressure under the valve to flush out debris from the seat. (Debris may cause leakage.)

Note: The manual check at 75% or higher is based on lift lever design requirements for ASME Section I and VIII valves. Code design requirements for lifting levers for Section IV valves require that the valve is capable of being lifted without pressure.

~~e)~~f) Systems with multiple valves will require the lower set valves to be held closed to permit the higher set valves to be tested. A test clamp or "gag" should be used for this purpose. The spring compression screw shall not be tightened. It is recommended that when the valve is at or near the test temperature, the test clamps are applied in accordance with the valve manufacturer's instructions; application should be hand-tight only to avoid damage to the valve stem or spindle.

~~f)~~g) Upon completion of set pressure testing, all pressure relief valve gags shall be removed. Any stop valves used to isolate lower set pressure relief devices shall be reopened (and locked if applicable).

4.6.1 TEST MEDIUM AND TESTING EQUIPMENT

Valves marked for steam service, or having special internal parts for steam service, shall be tested on steam. Valves marked for air, gas, or vapor service shall be tested with air or gas. Valves marked for liquid service shall be tested with water or other suitable liquid. ASME BPV Code Section IV hot-water valves shall be tested on water, steam, or air.

NBIC Action Item A25-38
Submitted by Bob Viers (rviers@nbbi.org)
6/27/2025

a) Each valve shall be tested to demonstrate the following:

1) Set pressure (as defined by the valve manufacturer and listed in NB-18, *Pressure Relief Device Certification*);

2) Response to blowdown when required by the original code of construction;

3) Seat tightness; and

4) For valves designed to discharge to a closed system, the tightness of the secondary pressure zone shall be tested as required by the original code of construction.

5) For pilot operated pressure relief valves, the testing conducted in 1) through 4) shall be performed as a complete assembly in accordance with the original construction standard.

b) The equipment used for the performance testing prescribed above shall meet the following requirements:

1) The performance testing equipment shall include a pressure vessel of adequate volume and pressure source capacity to ensure compliance with 4.6.1 a) 1);

2) Prior to use, all performance testing equipment shall be qualified by the Certificate Holder to ensure that the equipment and testing procedures will provide accurate results when used within the ranges established for that equipment. This qualification may be accomplished by benchmark testing, comparisons to equipment used for verification testing as specified in the QMS, or comparisons to field performance. This qualification shall be documented. Documentation of this qualification shall be retained in accordance with Table 4.8.5.4 s). Documentation of this qualification shall include but not be limited to the following:

a. Schematic of the performance test equipment;
b. Size and pressure ranges of valves to be tested and the test fluid to be used;
c. Dimensions of test vessels;
d. Accuracy of pressure measuring equipment;
e. Size and design type of valves used to control flow; and
f. Method of qualifying.

3) Prior to the implementation of any addition or modification to the testing equipment that would alter the contents of the document required in 4.6.1 b) 2), the Certificate Holder shall re-qualify the performance test equipment in accordance with 4.6.1 b) 2). If the equipment changed was used to satisfy the requirements of verification testing, the Certificate Holder shall notify the National Board. Additional verification testing in accordance with the QMS may be required.