Date Distributed:

THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

SUBGROUP ON INSTALLATION

Minutes

Meeting of January 20, 2015
Orlando, FL

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

1.

1. Call to Order – 8:00 a.m.

Chair, M. Wadkinson called the meeting to order at 8:00 a.m.

2. Announcements

Introductions took place amongst all members and visitors and an attendance sheet was circulated for review and check off.

Wednesday evening - Reception at the hotel beginning at 5 p.m.

Thursday - Continental breakfast and lunch.

3. Adoption of the Agenda

In the July 2014 meeting the following took place:
- NB13-1101, Mr. Tony Millette was added to the TG.
- NB14-1402, A TG was assigned of P. Bourgeois (PM), D. Patten, B. Moore, T. Creacy, K. Watson and P. Schuelke.

Corrections were made to the January 2015 Agenda as follows:
- The item listed as NB15-0302 Part 2 to be NB15-1302 Part 1
- An attachment was added supporting NB15-0401
- The spelling of D. Patten's last name

There was a motion to adopt the Agenda as published with the added items. The motion was unanimously approved.

4. Approval of Minutes of July 15, 2014

There was a motion to approve the Minutes of July 15, 2014 (SG Boilers & SG Pressure Vessel & Piping) as published. The motion was unanimously approved.

5. Review of the Roster (Attachment page 1-3)

- Announced are upcoming reappointments of members to be:
  M. Wadkinson (7/30/2015), P. Bourgeois (7/30/2015), G. Halley (7/30/2015), B. Moore, and M. Richards (7/30/2015). A vote will be taken in the SC meeting scheduled in July 2015.
- Mr. C. Hopkins should be removed from the listing on SG Installation.
- Mr. T. Millette should be listed as category type User.

With the attached roster a quorum was established. There was a motion to approve the roster as published with the added additions and or changes. The motion was unanimously approved.

6. Action Items

NB10–1201 Part 1 – Request for a format change to Part 1 Installation. A TG of M. Wadkinson (PM), B. Moore, S. Konopacki. E. Wiggins and D. Patten were assigned. **(No attachment)**

January 2015

The TG held a breakout session to discuss and compile a list of priority sections to give to Mr. Scribner of the National Board to begin reviewing for common language.

Priorities for review

Supports, foundations and setting
Structural steel
Exit
Ladders and runways
Combustion air
Electrical
Chimney and stack
Clearances

NB12–0302 Part 1 – Define installation requirements for (PVHO) hyperbaric chambers. This action item is a result of splitting NB09-0601into two parts. A task group of B. Moore (PM), T. Creacy, and M. Richards has been assigned. **(No attachment)**

January 2015

The TG held a breakout session to discuss to focus on wound treatment, acrylic items, etc.

- T. Millette and K. Watson are to added to the TG.

NB13–1101 Part 1 – Addition of installation requirements for condensing hot water boilers. A TG of G. Halley (PM), M. Wadkinson, D. ~~Patton~~Patten, B. Moore, and P. Bourgeois were assigned. **(Attachment page 4-5)**

January 2015

G. Halley presented an updated document, "Special Requirements for the Installation of Condensing Boilers", for review and discussion. The TG held a breakout session to discuss this further. Some points of importance were made of the following: Who is responsible? It is important to not assign to a specific but rather to the task at hand. Who are we writing this for (the OU, Jurisdiction, Inspector, etc.). It was also decided that this will serve better as a supplement for the intention for use as a guideline. A few areas of concern are "combustion quality" (considering just taking out) and the "condensate drain system" (rewrite a sentence to address accordingly). A revised document will be circulated amongst the TG with the intention of having a proposal by the July 2015 meeting.

- In the July 2014 meeting, Mr. Tony Millette was added to the TG.
- Correction of D. Patton to D. Patten

NB14–0403 Part 1 – Index proofing. A TG of B. Moore (Project Manager), M. Richards, T. Creacy, K. Watson and M. Washington were assigned. **(No attachment)**

January 2015

B. Moore presented a progress report. In looking forward it is expected to keep this item open for one more round in order to take a look at the 2015 Edition. Once that review is complete this item will be closed out and new action items will be opened to address each accordingly.

NB14–1402 Part 1, 3.5.3-e – This item is the result of action item NB12-1401 Text needs to be revised in this section. P. Bourgeois (PM), D. Patten, B. Moore, T. Creacy, K. Watson and P. Schuelke. **(No attachment)**

January 2015

In the July 2014 meeting, a TG was assigned - P. Bourgeois (PM), D. Patten, B. Moore, T. Creacy, K. Watson and P. Schuelke.

P. Bourgeois presented a progress report. This action item was left open to address the venting gas regulator. After further research it has been determined that this is addressed in other codes so as to not cause a conflict this item should be closed with no action. There was a motion to close this item with no action needed. The motion was unanimously approved.

NB15–0401 – Part 1, 2.5.1.3 – Remove "the expected pressure drop across the boiler" **(Attachment pages 6-11)**

January 2015

Task group assigned - E. Wiggins (PM), D. Patten, S. Konopacki, and K. Watson.

The TG held a break out session to discuss this proposal in more detail. The TG presented a modified proposal to change the wording to read "Plus the expected pressure losses." There was a motion to move this item to the SC for approval and then to the MC. The motion passed with 10 approved and 1 disapproved.

NB15–1001 Part 1 – Address wording of "ASME Code Symbol Stamp" vs. "Symbol" vs. "Code Symbol" vs. "Stamp" vs. "Certification" **(No attachment)**

January 2015

Task group assigned - P. Bourgeois (PM), K. Watson, M. Richards and M. Wadkinson. The TG held a break out session to discuss this item further. The TG will review ASME codes requirements regarding stamp language and present to the committee in July 2015.

NB15–1301 Part 1 – In NBIC Part 1, Section 3 (3.8.1.4) it states that "each automatically fired steam boiler shall be protected from overpressure by two pressure operated controls." My question is why isn't this requirement also in section 2 for power boilers? **(Attachment page 12)**

January 2015

Task group assigned - T. Millette (PM), K. Watson, T. Creacy, B. Moore and M. Wadkinson.

The TG held a break out session to discuss this item further. The task group reviewed the wording in CSD-1 and the wording in Section 3 (Heating Boilers) of Part 1. A proposal will be developed to include wording in Section 2 (Power Boilers) that is consistent with CSD-1 and Section 3, however, there will also be provisions for larger boilers that are not covered by CSD-1.

NB15–1302 Part 1 – Two low water cutoffs are required on steam boilers and (c) states "a secondary low water cutoff with manual reset shall be provided on each automatically fired steam or vapor system boiler." In section 2 (2.8.1) it states that "each automatically fired steam boiler shall be equipped with at least two low-water cutoffs." My question is why is a manual reset required on the second LWCO in section 3 but not in section 2 for power boilers? This is required in CSD-1 (CW-140) but not found in NBIC part 1. **(Attachment page 12)**

January 2015

Task group assigned - T. Millette (PM), K. Watson, T. Creacy, B. Moore and M. Wadkinson.

The TG held a break out session to discuss this item further. The task group reviewed the wording in CSD-1 and the wording in Section 3 (Heating Boilers) of Part 1. A proposal will be developed to include wording in Section 2 (Power Boilers) that is consistent with CSD-1 and Section 3, however, there will also be provisions for larger boilers that are not covered by CSD-1.

7. New Business

- New Action Item (NB15–0103) to address 2.9.6 (c) **(Attachment page 13-14)**
  TG assigned - B. Moore (PM), T. Creacy, and S. Konopacki.

  B. Moore presented a brief summary. This new item deals with the fitting associated with the Safety relief inlet.

- New Action Item (NB15–0104) to address Table 2.5.1.3 **(Attachment page 15-16)**
  TG assigned - D. Patten (PM), E. Wiggins, S. Konopacki, and K. Watson.

  D. Patten presented a proposal. There was a motion to move this item to the SC and then to the MC for approval. The motion was unanimously approved.

- New Action Item (NB15-0105) to address B31.9 Building Services Piping **(Attachment page 17-18)**
  TG assigned – M. Wadkinson (PM), D. Patten, K. Watson, S. Konopacki, B. Moore and E. Wiggins.

  B. Moore presented a brief summary of concern with regard to various materials used for discharges as vents. The issue is what type of materials are acceptable in the installation of PRD discharge piping for heating and hot-water supply boilers? B31.9 or other codes may allow non-metallic material and questions have arisen from the field and from Jurisdictions.

8. Future Meetings

- M. Richards briefed the SG on the location selection process (the expense, availability, holidays, etc.) for the January NBIC meetings.

July 2015 - Columbus, Ohio
January 2016 – Tucson, Arizona

9. Adjournment

The meeting adjourned at 10:45 a.m.

Respectfully Submitted,

Jeanne Bock
Secretary

Attendance List Installation Subgroup

Meeting Date: January 20, 2015

Melissa Wadkinson Fulton Companies 912 Centerville Road PO Box 257 Polaski, NY 13142 P: 315-298-7112 Fax: Email: Melissa.wadkinson@fulton.com	Attended: Yes ☒ No ☐ MW *Initial*	**Geoffrey Halley** ABMA 1315 Ridge Road Wildwood, MO 63021 Ph: 636-394-3483 Fax: 636-527-2839 Email: ghalleysji@aol.com	Attended: Yes ☐ No ☐ _____ *Initial*
Paul Bourgeois Travelers Insurance 12318 Hidden Falls Drive Northport, AL 35475 P:205-339-6314 Fax: 888-803-1522 E-mail: pcbourge@travelers.com	Attended: Yes ☒ No ☐ PCB *Initial*	**Donald Patten** R.F. MacDonald Co. 25920 Eden Landing Road Hayward, CA 94545 P: 510-570-7422 F: 510-784-1004 Email: don.patten@rfmacdonald.com	Attended: Yes ☑ No ☐ D.P. *Initial*
Brian Moore Hartford Steam Boiler One State Street P.O. Box 5024 Hartford, CT 06102–5024 Ph: 860-722-5657 Fax: 860-722-5530 Email: brian_moore@hsb.com	Attended: Yes ☒ No ☐ BMM *Initial*	**Jeanne Bock** National Board 1055 Crupper Ave. Columbus, OH 43229 P: 614-888-8320 F: 614-847-1828 Email: jbock@nationalboard.org	Attended: Yes ☑ No ☐ JB *Initial*
H. Michael Richards Southern Company 42 Inverness Center Pkwy. Birmingham, AL 35242 P: 205-992-7111 Fax: 205-992-0361 E-mail: hmrichar@southernco.com	Attended: Yes ☑ No ☐ HMR *Initial*	**Stanley Konopacki** NRG Energy 529 E 135th Street Romeoville, IL 60446 P:815-372-~~4357~~ F: 4740 Email: Stanley.Konopacki@~~NRGEnergy~~.com NRG.com	Attended: Yes ☒ No ☐ SCK *Initial*

Attendance List Installation Subgroup

Meeting Date: January 20, 2015

Paul Schuelke Weil-McLain 500 Blaine Street Michigan City, IN 46360 P: 219-879-6561 Fax: 219-877-0535 Email: pschuelke@weil-mclain.com	Attended: Yes ☐ No ☐ Initial	**Todd Creacy** Zurich Services 171 Crestwood Lane Springtown, TX 76082 P: 817-403-4601 Fax: Email: todd.creacy@zurichna.com	Attended: Yes ☒ No ☐ Initial
Milton Washington Bureau of Boiler and Pressure Vessel Compliance Department of Labor and Workforce Development Labor Standards and Safety Enforcement 1 John Fitch Plaza, 3rd Floor Trenton, NJ 08625-0392 P: (609)292-2345 Fax: 609-984-1877 Email: milton.washington@dol.state.nj.us	Attended: Yes ☐ No ☐ Initial	**Kenneth Watson** Director/Chief Inspector Mississippi Department of Health Boiler & Pressure Vessel Safety Branch PO Box 1700 Jackson, MS 39215-1700 P: (601)991-6040 Fax: Email: Kenneth.Watson@msdh.state.ms.us	Attended: Yes ☒ No ☐ Initial
Edward Wiggins Liberty Mutual 519 Woodland Ave West Wedowee, AL 36278 P: (256)497-7092 edward,wiggins@libertymutual.com	Attended: Yes ☒ No ☐ Initial	**Tony Millette** University of Alabama Birmingham 1300 6th Ave. S Birmingham, AL 52134 P:975-425-5091 Fax: Email: JMillett@UAB.edu	Attended: Yes ☒ No ☐ Initial

Attendance List Installation Subgroup

Meeting Date: January 20, 2015

Name: John Burpee Company: STATE of MAINE Address: 35 STATE HOUSE STATION City/State/Zip: AUGUSTA, ME 04333 Ph.: 207 552 0631 Ext. Fax: 207 624 8636 E-mail: john.h.burpee@maine.gov	Name: Company: Address: City/State/Zip: Ph: Ext. Fax: E-mail:
Name: Company: Address: City/State/Zip: Ph.: Ext. Fax: E-mail:	Name: Company: Address: City/State/Zip: Ph: Ext. Fax: E-mail:
Name: Company: Address: City/State/Zip: Ph.: Ext. Fax: E-mail:	Name: Company: Address: City/State/Zip: Ph: Ext. Fax: E-mail:
Name: Company: Address: City/State/Zip: Ph.: Ext. Fax: E-mail:	Name: Company: Address: City/State/Zip: Ph.: Ext. Fax: E-mail:

NB13-1101

Special Requirements for the Installation of Condensing Boilers (Rev. December 2014)

Rational

Define the aspects of installation of Condensing Boilers which are unique from other products covered by this section.

- *General Statements*

1. This section is written, based on the belief that Local, State or National Building Codes require the installation of a Carbon Monoxide (CO) detector/alarm in the boiler room.
2. The requirements of this paragraph are not intended to override those of the equipment manufacturer's Installation Manual, but rather to supplement them. In cases where a conflict exists, the manufacturer's requirements shall be followed.

- *Flue Gas Venting System Piping*

- The vent piping shall be corrosion resistant and fabricated from either stainless alloy or plastic, as defined by the boiler manufacturer, and Local, State or National Building Codes.
- The diameter of the vent piping shall be as defined by the boiler manufacturer and shall not be reduced over its entire length.
- The "Equivalent Length" of the vent piping, and the pressure drop through the vent piping, shall not exceed that stated in the Boiler Manufacturer's Installation Manual. (Note Equivalent Length includes the pressure loss effect of various pipe fittings, such as elbows, etc.) Horizontal pipe runs shall slope toward the boiler and the condensate collection point.
- The termination point of the vent piping shall be positioned such that there is no possibility of vented flue gas being entrained in the combustion air intake. Additionally the vent termination shall be located above the highest known snowline for the location involved, and be designed in such a manner, so as to prevent freezing.

- *Sealed combustion systems*

- The location of the outside air intake, relative to the flue gas vent, shall be such that there shall be no cross contamination with products of combustion. Additionally the location of the combustion air intake shall be above the highest known snowline for the location involved.

- The diameter, length and routing of the combustion air intake piping shall be such that the pressure drop though the system, including any filters, shall not exceed the maximum pressure drop stated by the burner manufacturer.
- *Combustion Quality – CSA High Turndown CO production 200 – 2000 ppm on 10:1 (For discussion – Should this be included in this section?)*

- *Condensate drain system*
- The flue gas condensate shall be collected at a single point, and the routing of the drain piping shall include the following features;
  - ✓ A water trap, the height of which (in inches) shall exceed the pressure drop of the flue gas vent piping by (? % or i.w.c.). Also refer to manufacturers instructions.
  - ✓ A visible means of ensuring that the condensate water trap contains the correct water level.
  - ✓ A discharge point away from occupied areas.
  - ✓ A method of controlling the pH of the condensate prior to its discharge into a sewer system, if required by local building Codes.

Future Actions

1) Once this document has been finalized, a second document outlining inspection requirements for condensing boiler installations will be prepared for use by Part 2 of the NBIC.

NB15-0401

Part 1, 2.5.1.3 – Remove "the expected pressure drop across the boiler"

The second sentence in the paragraph 2.5.1.3 a) states that "Each source of feedwater shall be capable of supplying feedwater to the boiler at a minimum pressure of 3% higher than the highest setting of any safety valve on the boiler *plus the expected pressure drop across the boiler*." For a natural circulation boiler there really isn't any pressure drop across the boiler per se. Perhaps a more relevant factor is the pressure drop in the feedwater piping between the boiler feed pump and the boiler. However, the feedwater piping pressure drop is already addressed by the fact that the 3% over pressure is required to be supplied to the boiler.

Section I PG-61.1 has a similar requirement for the 3% overpressure, but without additional the words regarding pressure drop across the boiler. In order to be consistent with Section I, I am submitting the request for revision on the following page for consideration by the Committee.

Response:

PG-61.1: Addresses feedwater supply at the boiler.

Part 1, 2.5.1.3: Addresses pumps which include system losses beyond the boiler and feedwater supply throughout the entire system.

Proposal:

Change wording to read: Boiler feedwater pumps shall have discharge pressure in excess of the boiler rated pressure (MAWP) in order to compensate for frictional losses, entrance losses, regulating valve losses, and normal static head, etc. Each source of feedwater shall be capable of supplying feedwater to the boiler at a minimum pressure of 3% higher than the highest setting of any safety valve on the boiler plus the expected pressure losses.~~drop across the boiler~~. The following table is a guideline for estimating feed pump differential:

CLEAVER BROOKS
The power of commitment.

September 19, 2014

Robin Hough, Secretary, NBIC Committee
The National Board of Boiler and Pressure Vessel Inspectors
1055 Crupper Avenue
Columbus, Ohio 43229

Re: Request for Revision
2013 NBIC, Part 1 Installation, Paragraph 2.5.1.3 a)

The second sentence in the paragraph 2.5.1.3 a) states that "Each source of feedwater shall be capable of supplying feedwater to the boiler at a minimum pressure of 3% higher than the highest setting of any safety valve on the boiler *plus the expected pressure drop across the boiler*.". For a natural circulation boiler there really isn't any pressure drop across the boiler per se. Perhaps a more relevant factor is the pressure drop in the feedwater piping between the boiler feed pump and the boiler. However, the feedwater piping pressure drop is already addressed by the fact that the 3% over pressure is required to be supplied to the boiler.

Section I PG-61.1 has a similar requirement for the 3% overpressure, but without additional the words regarding pressure drop across the boiler. In order to be consistent with Section I, I am submitting the request for revision on the following page for consideration by the Committee.

Respectfully,

Peter A. Molvie
Manager, Codes & Standards

e) For boilers having a water heating surface of not more than 100 sq. ft. (9 sq. m), the feedwater piping and connection to the boiler shall not be smaller than NPS 1/2 (DN 15). For boilers having a water heating surface more than 100 sq. ft. (9 sq. m), the feedwater piping and connection to the boiler shall not be less than NPS 3/4 (DN 20).

f) Electric boiler feedwater connections shall not be smaller than NPS 1/2 (DN 15).

g) High-temperature water boilers shall be provided with means of adding water to the boiler or system while under pressure.

2.5.1.3 PUMPS

a) Boiler feedwater pumps shall have discharge pressure in excess of the boiler rated pressure (MAWP) in order to compensate for frictional losses, entrance losses, regulating valve losses, and normal static head, etc. Each source of feedwater shall be capable of supplying feedwater to the boiler at a minimum pressure of 3% higher than the highest setting of any safety valve on the boiler plus the expected pressure drop across the boiler. The following table is a guideline for estimating feed pump differential:

Table 2.5.1.3
Guide for Feedpump Differential

Boiler Pressure		Boiler Feedwater Pump Discharge Pressure	
psig	(MPa)	psig	(MPa)
200	(1.4)	250	(1.7)
400	(2.8)	475	(3.3)
800	(5.5)	925	(6.4)
1,200	(8.3)	1,350	(9.3)

b) For forced-flow steam generators with no fixed steam or water line, each source of feedwater shall be capable of supplying feedwater to the boiler at a minimum pressure equal to the expected maximum sustained pressure at the boiler inlet corresponding to operation at maximum designed steaming capacity with maximum allowable pressure at the superheater outlet.

c) Control devices may be installed on feedwater piping to protect the pump against overpressure.

2.5.1.4 VALVES

a) The feedwater piping shall be provided with a check valve and a stop valve. The stop valve shall be located between the check valve and the boiler.

b) When two or more boilers are fed from a common source, there shall also be a globe or regulating valve on the branch to each boiler located between the check valve and the feedwater source.

c) When the feedwater piping is divided into branch connections and all such connections are equipped with stop and check valves, the stop and check valve in the common source may be omitted.

Yes, I talked with Pete. His proposal is to remove "plus the expected pressure drop across the boiler". However there is also another issue, The first line says "Boiler feedwater pumps shall have a discharge pressure in excess of the boiler rated pressure (MAWP)" Then a second requirement is "Each source of feedwater shall be capable of supplying feedwater to the boiler at a minimum pressure of 3% higher than the highest safety valve on the boiler plus the expected pressure drop"

So an example,

200 psi MAWP steam boiler. By the first requirement the boiler would need to have pumps discharging above 200 psi.

The boiler has two safety valves both set at 150 psi. 150 plus 3% = 154.5 so 155 psi. to meet the second requirement.

So which is correct?

Assign this an action item, add it to the agendas, etc.

Thanks,

Gary L. Scribner

From: Peter Molvie <PMolvie@cleaverbrooks.com>
To: "rhough@nationalboard.org" <rhough@nationalboard.org>
Cc: "dcook@dir.ca.gov" <dcook@dir.ca.gov>, Bob Wielgoszinski <robert_wielgoszinski@hsbct.com>, "hmrichar@southernco.com" <hmrichar@southernco.com>
Date: 09/19/2014 04:41 PM
Subject: NBIC Revision Request

Robin,

Attached please find a request for revision to NBIC, Part 1, 2.5.1.3. Thanks.

Peter A. Molvie, P.E.
Manager, Codes & Standards
Cleaver-Brooks Product Development
3232 W. Lancaster Ave.
Milwaukee, WI 53209
414-438-5465

Item NB15-0401

Explanation of my negative vote.

I agree with the inquirer that the proposed phrase should be stricken and oppose the proposed revision for the following reasons:

1. The existing language already goes beyond the requirements of ASME Section I PG-61.1 by including design consideration for pressure drops (frictional losses) in piping. Design piping losses are beyond the scope of an installation standard.

ASME Section I	NBIC
PG-61 FEEDWATER SUPPLY PG-61.1 Except as provided for in PG-61.2 and PG-61.4, boilers having more than 500 ft2 (47 m2) of water-heating surface shall have at least two means of feeding water. Except as provided for in PG-61.3, PG-61.4, and PG-61.5, each source of feeding shall be capable of supplying water to the boiler at a pressure of 3% higher than the highest setting of any pressure relief valve on the boiler proper. For boilers that are fired with solid fuel not in suspension, and for boilers whose setting or heat source can continue to supply sufficient heat to cause damage to the boiler if the feed supply is interrupted, one such means of feeding shall not be susceptible to the same interruption as the other, and each shall provide sufficient water to prevent damage to the boiler	2.5.1.3 Pumps a) Boiler feedwater pumps shall have discharge pressure in excess of the boiler rated pressure (MAWP) in order to compensate for frictional losses, entrance losses, regulating valve losses, and normal static head, etc. Each source of feedwater shall be capable of supplying feedwater to the boiler at a minimum pressure of 3% higher than the highest setting of any safety valve on the boiler plus the expected pressure drop across the boiler. The following table is a guideline for estimating feed pump differential: The Table 2.5.1.3 is the subject of a new item.

2. Further, there are three Section I interpretations that address FW pump flow.

Interpretation: I-98-25
Subject: Section I, PG-61.1, Feedwater Flow Rate
Date Issued: June 24, 1999
File Number: BC99-225C
Related Documents: I-81-25

Question: Does Section I have rules for establishing the amount of feedwater to be provided in order to prevent damage to the boiler?

Reply: No. Also, see Interpretation I-81-25.

Interpretation:	I-81-25
Subject:	Section I, PG-61.1, Minimum Feedwater Flow Rate
Date Issued:	September 9, 1981
File Number:	BC-81-354
Related Documents:	I-81-20 I-98-25

Question: What is the minimum flow rate required to satisfy the requirements of PG-61.1?

Reply: Section I does not define the minimum flow rate required to satisfy the requirements of PG-61.1. It is the responsibility of the designer to provide for sufficient feedwater flow to satisfy all requirements of Section I.

Interpretation:	I-81-20
Subject:	Section I, PG-61 Feedwater Supply
Date Issued:	August 7, 1981
File Number:	BC-81-169
Related Documents:	I-81-25

Question (1): The rules of PG-61.1 require that each source of feedwater be capable of supplying water to the boiler at a pressure 3% higher than the highest setting of any safety valve on the boiler. Does the phrase "at a pressure" apply to the pressure at the feedwater pump outlet or to the pressure in the boiler drum?

Reply (1): The feedwater pressure requirements in PG-61.1 apply to pressures in the boiler drum, not to the pressure at the feedwater pump outlet.

Question (2): Is the total capacity of the feedwater source based on the maximum process steam requirements, or on the maximum boiler evaporation?

Reply (2): Section I rules do not address the capacity requirements for the boiler feedwater source.

3. The above Interpretation states that the FW pressure requirements are at the drum and that the delivered capacity at 3% overpressure is not addressed. Therefore, any discussion of flow losses in the NBIC is encroaching into construction code requirements that are beyond the scope of the NBIC.
4. Finally, a better solution to the inquirer's comment is to open a new item to completely review Section 2.5.1.3 including the table.

Brian W. Moore
Brian W. Moore
01/20/2015

Include these as additions to Part 1 for the agenda. Request for code addition.

Gary L. Scribner

From: "Nelson, Mike D." <mnelson@cabq.gov>

To: "'gscribner@nationalboard.org'" <gscribner@nationalboard.org>,

Date: 12/19/2014 10:09 AM

Subject:NBIC PART 1

Good morning. Per our conversation yesterday, I thought I would e-mail you, and bring up 2 areas I have found that need clarification.

NB15-1301

In NBIC part 1, section 3 (3.8.1.4) it states that “each automatically fired steam boiler shall be protected from overpressure be two pressure-operated controls.” My question is why isn’t this requirement also in section 2 for power boilers? It is a requirement in CSD-1(CW-310), but not found in NBIC part 1.

NB15-1302

The second question is regarding NBIC part 1 section 3(3.8.1.5-c). Two low water cutoffs are required on steam boilers and (c) states “a secondary low water cutoff with manual reset shall be provided on each automatically fired steam or vaporsystem boiler.” In section 2 (2.8.1) it states that “each automatically fired steam boiler shall be equipped with at least two low-water cutoffs.” My question is why is a manual reset required on the second LWCO in section 3 but not in section 2 for power boilers? This is required in CSD-1(CW-140) but not found in NBIC part 1.

Thank you and have a great weekend.

Michael Nelson
Boiler inspector
City of Albuquerque, Planning Dapartment
Building Safety Division
600 2nd ST NW
Albuquerque ,NM 87102
(505)924-3328
(505)924-3970 Fax
mnelson@cabq.gov

Action Item Request Form

8.3 CODE REVISIONS OR ADDITIONS

Request for Code revisions or additions shall provide the following:

a) Proposed Revisions or Additions

For revisions, identify the rules of the Code that require revision and submit a copy of the appropriate rules as they appear in the Code, marked up with the proposed revision. For additions, provide the recommended wording referenced to the existing Code rules.

Existing Text:

c) The opening or connection between the boiler and the safety or safety relief valve shall have at least the area of the valve inlet and the inlet pipe to the pressure relief valve shall be no longer than the face to face dimension of the corresponding tee fitting of the same diameter and pressure class. When a discharge pipe is used, the cross-sectional area shall not be less than the full area of the valve outlet or of the total of the areas of the valve outlets discharging there into and shall be as short and straight as possible and arranged to avoid undue stresses on the valve or valves.

b) Statement of Need

Provide a brief explanation of the need for the revision or addition.

Although the existing text is similar to ASME Section I PG-71.2, the face-to-face linear dimension of the tee is not well defined.

PG-71.2 The pressure relief valve or valves shall be connected to the boiler independent of any other connection, and attached as close as possible to the boiler or the normal steam flow path, without any unnecessary intervening pipe or fitting. Such intervening pipe or fitting shall be not longer than the face-to-face dimension of the corresponding tee fitting of the same diameter and pressure under the applicable ASME Standard listed in PG-42 and shall also comply with PG-8 and PG-39. Every pressure relief valve shall be connected so as to stand in an upright position, with spindle vertical. On high-temperature water boilers of the watertube forced-circulation type, the valve shall be located at the boiler outlet.

c) Background Information

Provide background information to support the revision or addition, including any data or changes in technology that form the basis for the request that will allow the Committee to adequately evaluate the proposed revision or addition. Sketches, tables, figures, and graphs should be submitted as appropriate.

When applicable, identify any pertinent paragraph in the Code that would be affected by the revision or addition and identify paragraphs in the Code that reference the paragraphs that are to be revised or added.

This also potentially impacts Part 1 Section 2.9.1.2 c) which has a nearly duplicate requirement. Both locations need to clarified.

d) TG Assigned

Project Manager:	Brian W. Moore, P.E.
Members:	Todd Creacy and Stan Konopacki

Action Item Request Form

8.3 CODE REVISIONS OR ADDITIONS

Request for Code revisions or additions shall provide the following:

a) Proposed Revisions or Additions

For revisions, identify the rules of the Code that require revision and submit a copy of the appropriate rules as they appear in the Code, marked up with the proposed revision. For additions, provide the recommended wording referenced to the existing Code rules.

Existing Text:

The following table is a guideline for estimating feed pump differential:

Table 2.5.1.3
Guide for Feedpump Differential

Boiler Pressure		Boiler Feedwater Pump Discharge Pressure	
psig	(MPa)	psig	(MPa)
200	(1.4)	250	(1.7)
400	(2.8)	475	(3.3)
800	(5.5)	925	(6.4)
1,200	(8.3)	1,350	(9.3)

b) Statement of Need

Provide a brief explanation of the need for the revision or addition.

Remove the last sentence of Part 1. Pumps 2.5.1.3 a) “The following table is a guideline for estimating feed pump differential:” and Table in whole.

The table does not take into account all of the design variables of the various installations and systems and can result in providing incorrect guidance. In addition an oversized pump will in most cases not perform properly in normal operating conditions which are typically lower operating pressures than the highest setting of the safety relief valve on a power boiler.

Provide background information to support the revision or addition, including any data or changes in technology that form the basis for the request that will allow the Committee to adequately evaluate the proposed revision or addition. Sketches, tables, figures, and graphs should be submitted as appropriate.

When applicable, identify any pertinent paragraph in the Code that would be affected by the revision or addition and identify paragraphs in the Code that reference the paragraphs that are to be revised or added.

d) TG Assigned

Project Manager:	Don Patten
Members:	Stan Konopacki and Ed Wiggins

Action Item Request Form

8.3 CODE REVISIONS OR ADDITIONS

Request for Code revisions or additions shall provide the following:

a) Proposed Revisions or Additions

For revisions, identify the rules of the Code that require revision and submit a copy of the appropriate rules as they appear in the Code, marked up with the proposed revision. For additions, provide the recommended wording referenced to the existing Code rules.

Existing Text:

Not addressed

b) Statement of Need

Provide a brief explanation of the need for the revision or addition.

The issue is what type of materials are acceptable in the installation of PRD discharge piping for heating and hot-water supply boilers? B31.9 or other codes may allow non-metallic material and questions have arisen from the field and from Jurisdictions.

c) Background Information

Provide background information to support the revision or addition, including any data or changes in technology that form the basis for the request that will allow the Committee to adequately evaluate the proposed revision or addition. Sketches, tables, figures, and graphs should be submitted as appropriate.

When applicable, identify any pertinent paragraph in the Code that would be affected by the revision or addition and identify paragraphs in the Code that reference the paragraphs that are to be revised or added.

B31.9 and other ASME Codes will be reviewed.

d) TG Assigned

Project Manager:	Melissa Wadkinson
Members:	Donald Patten, Ken Watson, Stanley Konopacki, Brian Moore, Edward Wiggins