Date Distributed: January 20, 2015

THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

SUBGROUP INSTALLATION

AGENDA

Meeting of January 20, 2015
Orlando, FL

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 – 8:00 a.m.**

2. **Announcements**

3. **Adoption of the Agenda**

4. **Approval of Minutes of July 15, 2014**

5. **Review of the Roster (Attachment page 1)**

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 was assigned. (No attachment)

July 2010
Mr. Scribner gave a progress report.

January 2011
Mr. Richards presented a progress report. The goal is to consolidate all the general requirements for Boilers, Pressure Vessels, etc.

July 2011
Mr. Richards reported with a handout created to compare power boilers and steam heating boilers. It was found that power boilers are lacking in the book so the task group is looking to expand wording on power boilers.

July 2012
Mr. Scribner presented a progress report. A power point presentation is planned to go out to the group for comment from Section 2 and 3 and then look at moving to General. There was a motion to move this item to the SG Boilers agenda. The motion was unanimously approved.

January 2013
Mr. Scribner presented a progress report. The TG continues to work on achieving consistency in Section 2 and 3 with all common wording and does it really need to be in both sections or in a general section. A partial draft should be completed to present at the July 2013 meeting with a final to be completed by the next edition.

July 2013
Mr. Scribner presented a progress report. A break out group session took place (8:45am – 9:45am) to discuss a specifically defined course of action with respect to wording commonalities and requirements for format change with the goal of having a proposal to present by the next meeting of January 2014.

January 2014
Mr. Gary Scribner presented an overview to the SG and agreed to gather information as to the wording commonalities and requirements for format change to give to the TG. The TG will then take this information and prepare a proposal to present by the next meeting of July 2014.

July 2014
G. Scribner presented a progress report with regard to the Index. The index for each part is progressing with Part 1 completed. However due to his position change and time that has had to be spent on the project for the 2015 Edition, there has been no progress with regard to providing the TG with information as to wording commonalities and requirements for format change.

January 2015
Ms. Wadkinson is expected to report.

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 2012
Mr. Scribner presented a progress report.

July 2012
Mr. Scribner presented a progress report. Concentration will be aimed in defining types and then identifying installation requirements.

January 2013
Mr. Scribner presented a progress report. Part 2 has been and continues working on this with several conversations having took place. ASME standards have revealed a number of additional needs in specific areas such as, single chamber, multi-chamber, animals, etc. In addition, there is a belief that there should be a specific endorsement for an individual to sign off on these devices. This is being further investigated with NBIC. The direction is to define the different types of PVHO's by letter ballot before the next meeting. The TG will work with PVHO to come up with definitions. Mr. Brian Moore has been added to the TG.

July 2013
Mr. Scribner presented no new progress at this time. Ongoing conversations and follow-up with Part 2 continues and should have an update/proposal by the January 2014 meeting.

January 2014
Mr. Brian Moore reported no new progress at this time due to the change in TG members.

July 2014
B. Moore presented a progress report of the TG has met and continues to research such factors as installation of portable verses non-portable (industrial versions verses non-industrial versions), seals, venting, source of gas, hook-ups, warning signage for oxygen atmosphere, etc..

January 2015
B. Moore is expected to report.

NB13–1101 – Part 1 - Addition of installation requirements for condensing hot water boilers. A TG of G. Halley (PM), M. Wadkinson, D. Patton, B. Moore, and P. Bourgeois were assigned.
(Attachment pages 2-3)

July 2013
Mr. Halley presented a progress report. A break out group session took place (8:45am – 9:45am) to discuss this being a stand-alone supplement.

January 2014
Mr. Geoffrey Halley presented a progress report and an updated proposed document of an "Outline of Proposed Installation Requirements for Condensing Boilers". A break-out session was held to discuss the proposed document in more detail. Melissa and Geoffrey will meet to expand on the list and have a proposal to present by the July 2014 meeting. It was noted that Part 2 Inspection may need to also be involved.

July 2014
G. Halley presented a progress report and an updated proposed document of an "Outline of Proposed Installation Requirements for Condensing Boilers". A break-out session was held to discuss this updated proposed document in more detail.

January 2015
G. Halley is expected to report.

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

July 2013
NBIC Parts 1, 2, and 3 have evolved. It was requested that a new Action Item be opened (NB14 – 0403) to address the proofing of Part 1 – Index. A TG of B. Moore (PM), has been assigned.

January 2014
Mr. Brian Moore presented an overview of who, what, and why expectations to take place with regard to proofing of the index of Part 1.

July 2014
D. Cook provided clarification on what exactly the task at hand is for the SG. Each Index will be unique to each Part. Therefore, the task at hand is to identify terms that are specific to Part 1 that is felt should be included in the Index. B. Moore has asked that these terms be submitted no later than October 1, 2014.

January 2015
B. Moore is expected to report.

NB14-1402 – Part 1, 3.5.3-e – This item is the result of action item NB12-1401 Test need to be revised in this section (No attachment)

January 2015
It is expected that a task group will be formed to address this issue.

NB15-0401 – Part 1, 2.5.1.3 – Remove "the expected pressure drop across the boiler" (Attachment pages 4-5)

January 2015
It is expected that action will be taken to address this issue.

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

January 2015
A task group is expected to be formed to address this item.

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? (No attachment)

January 2015
A task group is expected to be formed to address this item.

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 section3 but not in section 2 for power boilers? This is required in CSD-1 (CW-140) but not found in NBIC part 1 (No attachment)

January 2015
A task group is expected to be formed to address this item.

7. New Business

8. Future Meetings

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

9. Adjournment

Respectfully Submitted,

Jeanne Bock
Secretary

Subgroup Installation

Last Name	First Name	Interest Category	Role	Exp. Date
Wadkinson	Melissa	Manufacturers	Chair	07/31/2015
Patten	Don	Manufacturers	Vice Chair	01/31/2017
Bock	Jeanne		Secretary	01/31/2099
Bourgeois	Paul	Authorized Inspection Agencies	Member	07/31/2015
Creacy	Todd	Authorized Inspection Agencies	Member	01/31/2017
Halley, PE	Geoffrey	Manufacturers	Member	07/31/2015
Hopkins	Craig	National Board Certificate Holders	Member	07/31/2015
Konopacki	Stanley	Users	Member	01/31/2017
Millette	Joseph	General Interest	Member	08/31/2017
Moore, PE	Brian	Authorized Inspection Agencies	Member	07/31/2015
Richards	H. Michael	Users	Member	07/31/2015
Schuelke	Paul	Manufacturers	Member	01/31/2016
Washington	Milton	Any NBIC Subgroup ;Jurisdictional Authorities	Member	08/31/2017
Watson	Kenneth	Jurisdictional Authorities	Member	08/31/2017
Wiggins	Edward	Authorized Inspection Agencies	Member	07/31/2016

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.

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

Attachment Page 4

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.