Date Distributed: July 25, 2017

THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

NATIONAL BOARD SUBGROUP INSPECTION

MINUTES

Meeting of July 18th, 2017
Columbus, Ohio

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

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 was called to order at 8:02 a.m. on July 18, 2017 by Mr. Jim Getter.

2. **Introduction of Members and Visitors**
   The attendees are identified on the attendance sign in sheet (**Attachment Pages 1-2)**. With the attached attendance listing, a quorum was established.

3. **Announcements**
   - The National Board invites all committee members and visitors to a reception at the Pavilion.
   - Lunch will be provided Tuesday through Thursday, breakfast will be provided on Thursday before the Main Committee Meeting.
   - Additional announcements were made by the Secretary, Jodi Metzmaier
   - Mr. Mooney addressed the SG regarding assigning a new Chair at the next meeting

4. **Adoption of the Agenda**
   - It was noted that item NB14-0802 should be on the SG Locomotive Agenda, and it does not need to be discuss at SG Inspection.
   - New item 17-153 was added to the agenda
   - J. Roberts and J. Safarz were added to the agenda as Membership Nominations

   A motion was made to adopt the revised agenda, the motion was unanimously approved.

5. **Approval of the Minutes of January 10th, 2017 Meeting**
   The minutes from the January 2017 meeting were approved unanimously.

6. **Review of Rosters**
   a. **Membership Nominations**
      Donnie LeSage (Jurisdiction), James Roberts (Manufacturer) and Jason Safarz (General Interest), were all membership nominees for the SG on Inspection. Each nominee addressed the SG stating who they were, what their interest group was and how they would benefit the SG. A motion was made to approve all 3 nominees for membership. The motion was unanimously approved.

   b. **Membership Reappointments**
      David Ford & Greg McRae were both up for membership reappointment for the SG on Inspection. Mr. G. McRae has retired and will not be reappointed. Mr. D. Ford was not present at the meeting; however, he did express his interest to remain a member of the SG on Inspection. A motion was made to reappoint Mr. D. Ford, the motion was unanimously approved.

7. NBIC Business

a. Interpretations

Item Number: IN16-0501	NBIC Location: Part 2	Attachment Page 3

General Description: Change of service from Ammonia to LP gas

Subgroup: Inspection
Task Group: None assigned.

July 2017 Meeting Action:
The SG discussed the letter ballot disapproval comment from Mr. Amato and created a response based on the 2017 edition of the NBIC. A motion was made to close this item based on the response. **The motion was unanimously approved.** No task group was assigned, as this item was approved to be presented to the SC Inspection.

b. Action Items – Old Business

Item Number: NB14-0901	NBIC Location: Part 2	Attachment Pages 4-9

General Description: Review inspection requirements for pressure vessels designed for high pressures

Subgroup: Inspection
Task Group: M. Horbaczewski (PM), M. Schwartzwalder, D. Graf, G. Scribner, B. Wilson

July 2017 Meeting Action:
Mr. M Horbaczewski discussed this item with the SG stating he spoke with Mr. D. Cook for background information on where this item originated. Mr. Horbaczewski has presented a document to the SG with new language to be added as a guideline for Pressure Vessel Inspections. The SG made many changes to the document and a motion was made to send it to letter ballot to the SG for further review. **The motion was unanimously approved.**

Item Number: NB14-1802	NBIC Location: Part 2	No Attachment

General Description: Riveted staybolt head dimensions and Figure S1.2.2-c

Subgroup: Inspection
Task Group: P. Welch (PM), R. Stone

July 2017 Meeting Action:
This item is a SG Locomotive item. No action was taken by the SG Inspection.

Item Number: NB16-1001	NBIC Location: Part 2, CO2 Supp.	No Attachment

General Description: Edit CO2 supplement based on AIA proposed revision

Subgroup: Inspection
Task Group: None assigned.

July 2017 Meeting Action:
Mr. M. Mooney gave a progress report stating no progress.

Task Group was assigned in January 2017: M. Mooney (PM), D. Buechel, T. Barker, V. Newton

Item Number: NB17-0202	NBIC Location: Part 2, 2.3.6	Attachment Pages 10-12

General Description: Result of public review comments submitted after deadline, review use of mandatory code language in S12

Subgroup: Inspection
Task Group: M. Mooney (PM), D. Buechel, D. Graf

July 2017 Meeting Action:
Mr. M Mooney presented a document incorporating the letter ballet comments from MC. He discussed the changes that were made, and a motion was made to approve the document. **The motion was unanimously approved.**

Item Number: NB17-0203	NBIC Location: Part 2, S12.5	No Attachment

General Description: Clarification on calibration of gas detectors

Subgroup: Inspection
Task Group: D. Buechel (PM), D. Graf, B. Hart

July 2017 Meeting Action:
D. Graf gave a progress report stating they are still looking for further information.

c. Action Items – New Business

Item Number: 17-140	NBIC Location: Part 2, 5.2.2	Attachment Pages 13-14

General Description: Updates to Part 2, 5.2.2 and NB-136 Form

Subgroup: Inspection
Task Group: None Assigned.

July 2017 Meeting Action:
Mr. G Scribner reviewed the proposed changes to Part 2, 5.2.2 and NB-136 with the SG. The SG has made a few changes to the proposed document and a motion was made to approve the document as revised. **The motion was unanimously approved**. No task group was assigned as this item was approved to be presented to the SC Inspection.

Item Number: 17-144	NBIC Location: Part 2	Attachment Page 15

General Description: Reference EPRI publication on use of fracture mechanics in FFS assessments

Subgroup: Inspection
Task Group: George Galanes

July 2017 Meeting Action:
Mr. J. Getter reviewed Mr. Galanes' request to ass EPRI publication as a reference. A motion was made to approve this request. **The motion was unanimously approved.**

Item Number: 17-148	NBIC Location: Part 2, 1.7	Attachment Page 16

General Description: Vessel initial and installation inspections

Subgroup: Inspection
Task Group: None Assigned.

July 2017 Meeting Action:
Mr. J. Riley presented a document with new wording for Part 2, 1.7. After much discussion and changes to the document the SG decided to move this item to Part 1 with the suggested wording. **A motion was made and unanimously approved.**

Item Number: 17-153	NBIC Location: Part 2	No Attachment

General Description: Clarify what are acceptable conditions for UT thickness readings on air tanks.

Subgroup: Inspection
Task Group: None Assigned.

July 2017 Meeting Action:
Mr. T. Barker presented a document for discussion. A task group was assigned and the document will be sent to the task group for further work.

Task Group Assigned: T. Barker (PM), J. Roberts, J. Burgess, T. Shernisky, J. Mangus

8. Future Meetings

- January 8th-11th, 2018 – New Orleans, Louisiana
- July 16th-19th, 2018 – Columbus, Ohio

9. Adjournment

A motion was made and unanimously approved to adjourn the meeting at 11:41 a.m.

Respectfully submitted,

Jodi Metzmaier
SG Inspection Secretary

SG Inspection Attendance Sheet - 7/18/17

Name	Company	Phone Number	Email	Signature	Attend Rec.?	Bringing Guest?
Jim Getter	Worthington Industries	(614) 840-3087	jim.getter@worthingtonindustries.com		X	
Mike Schwartzwalder	AEP	(614) 581-6456	mschwartzwalder@aep.com		X	
Jodi Metzmaier	National Board	(614) 888-8320	jmetzmaier@nationalboard.org		X	
Timothy Barker	Factory Mutual	360 801 ~~(781) 255-4784~~ 3796	timothy.barker@fmglobal.com		X	N
Ernest Brantley	XL Insurance	(337) 842-7044	ernest.brantley@bpcllcga.com		X	N
David Ford	U.S. DOT	(202) 366-4545	david.ford@dot.gov			
Darrell Graf	Air Products & Chemicals	(601) 799-2889	grafdr@airproducts.com		X	X
Mark Horbaczewski	Diamond Technical Services	815-634 ~~(630) 799-8162~~ 2727	mhorbaczewski@diamondtechnicalservices.com		X	
Greg McRae	Trinity Industries	(214) 589-8559	greg.mcrae@trin.net			
Mark Mooney	Liberty Mutual	(781) 891-8900	mark.mooney@libertymutual.com		X	
Venus Newton	Boiler & Property Insurance	(770) 614-3111	venus.newton@boilerproperty.com		X	
Jim Riley	Phillips 66	(510) 245-5895	jim.riley@p66.com		X	
Stanley Staniszewski	U.S. DOT	(202) 366-4545	stanley.staniszewski@dot.gov		X	
Thomas Vandini	Quality Steel Corporation	(419) 334-2664	tvandini@propanetank.com		X	
Paul Welch	Arise	(678) 446-5290	paul.welch@ariseinc.com		X	
JASON SAFARZ	HIMA AMERICAS	281.520. 8747	JSAFARZ@HIMA-AMERICAS.COM			
JAMES ROBERTS	TRINITY INDUSTRIES	214 589 8344	JAMES.ROBERTS@TRIN.NET		X	X
JAMES LUCAS CALVERT	ELI LILLY	317-760-5585	jlcalvert@lilly.com		X	
JEFFREY CASTLE	ZURICH	716-753-0928	jeffrey.castle@zurichna.com			X
JON WOLF	ZURICH	920-253 8481	jon.wolf@zurichna.com		X	
ADAM RENALDO	PRAXAIR	716-879-2928	Adam_Renaldo@Praxair.com		X	

SG Inspection

Name	Company	Phone Number	Email	Signature	Attend Rec.?	Bringing Guest?
Joe Frey	Stress Engineering Services	713 2017861	joe.frey@stress.com	Joe Frey	X	
John Mangas	AIR PRODUCTS	925-997-5633	mangasJL@airproducts.com		X	
TOM SHERNISKY	ONECIS	304-374-5165	thomas.shernisky@onecis.com	Thomas J Shernisky	X	
Matthew Sansone	State of NY	585-303 1316	Matthew.Sansone@Labor.ny.gov	MS	X	
Donnie LeSage	State of Louisiana	225 268-5549	Donnie.LeSage@LA.Gov	Donnie LeSage	X	
JOEY Burgess	Liberty Mutual	940 475-1033	joey.burgess@libertyMutual.com	Joey L Burgess	X	

IN16-0501

Response to Interpretation: No, Refer to 2017 NBIC Part 2, S7.8.6

S7.8.6 ANHYDROUS AMMONIA SERVICE

Pressure vessels of 3000 gal. (11.4 m_3) water capacity or less used to store anhydrous ammonia, except for pressure vessels used in cargo tank vehicle service, shall not be converted to LPG service.

Cargo tank pressure vessels less than 3000 gal. (11.4 m_3) water capacity to be converted from ammonia to LPG service shall be wet-fluorescent magnetic particle tested (WFMT) on all internal surfaces (see NBIC Part 2, 2.3.6.4).

Blue coloring of the brass valves is one indication that the pressure vessel has been in anhydrous ammonia service.

x.x.x.x INSPECTION GUIDELINES FOR FERRITIC PRESSURE VESSELS

Introduction

This section provides guidelines for inspection of ferritic pressure vessels typically designed for 15 psi or greater service. The scope of inspection of these vessels should be performed to verify the integrity of the vessel for ongoing use.

Scope

These inspection guidelines are for the inspection of ferritic pressure vessels that are designed for 15 Psi or greater and would include, for example, process vessels, deaerators, air receivers and any vessel manufactured with ferritic materials.

Inspection Frequency

1. External visual inspection should be conduct annually.
2. External thickness measurements should be conducted every 3 years.
3. Internal inspection of a pressure vessel, with a manhole, should be conducted every 3 years, if operated in corrosive service. If not operated in corrosive service, every 10 years.
4. Review of operations and maintenance history should be conducted every 3 years or when a pressure excursion or an unusual event occurs.

Note: A thorough assessment of a pressure vessel is performed in order to determine its actual condition and the period of time it may be safely used until the next thorough inspection. It shall include the following:

1. Internal inspection includes but not limited to surface exam of all welds, including attachments welds, surface examination of all girth and longitudinal welds and a UT thickness check using a grid pattern.

2. Assessment of the equipment's maintenance and operating history.

3. Review operation history process, deviations, incidents, design and process changes, and other issues that could affect the integrity of the pressure equipment.

4. For vessels with an MAWP at and above 10,000 psi, designed and constructed per ASME Section VIII, Div. 3, refer to ASME High Pressure Systems.

Pre-Inspection Activities

A review of the known history of the pressure vessel should be performed. This should include a review of information such as:

1. Operating conditions
2. Normal contents of the vessel
3. Date of last inspection

4. ASME Code Symbol stamping or mark of code of construction.
5. The type of connections used during fabrication of the vessel to determine the proper joint efficiency to be used during stress analysis of the pressure vessel.
6. Serial number and materials of construction.
7. Records of wall thickness surveys, especially on vessels where corrosion is a consideration
8. Records of wall thickness surveys, especially on vessels where corrosion is a consideration

The following activities should be performed if required to support the inspection:

1. Remove inspection manhole covers
2. Clean vessel sufficiently to allow for visual inspection of internal and external surfaces

General External Inspection Procedure

The type of installation given to pressure vessels should take into consideration the condition of the vessel and the environment in which it operates. This inspection may be external, internal, or both and use a variety of non-destructive examination techniques. The inspection may be performed with the vessel in service or depressurized, but should provide the necessary information that allows an adequate assessment of the pressure vessel.

A thorough inspection of a pressure vessel should include the following items:

1. External examination of the pressure vessel and associated equipment.
2. An ultrasonic thickness examination of the pressure vessel wall and dished heads and documentation for permanent record keeping.
3. An internal examination of the pressure vessel, if required. An internal examination may not be required if the pressure vessel is stamped with the original wall thickness and the thickness survey shows no loss of material. Pressure vessels in which the original wall thickness is unknown should have an initial internal examination performed to determine the baseline condition of the vessel.
4. Ultrasonic measurement techniques to determine the shell and dished head wall thicknesses for each pressure vessel. Other types of non-destructive examinations should be performed as required for any suspect areas identified during the external or internal examination.
5. Actual wall thickness data acquired during the ultrasonic thickness survey. These results should be compared with the manufacturer’s data report.
6. A thorough inspection of the pressure relief valves and other safety devices to ensure the vessel is operating within its specified pressure range and is being adequately protected. Functional testing of the relief valves should be performed by a qualified repair organization.
7. Vessel connections, Manholes, reinforcing plates, nozzles, or other connections should be examined for cracks, deformation, or other defects. Bolts and nuts should be checked for corrosion or defects. Weep holes in reinforcing plates should remain open to provide visual evidence of leakage as well as to prevent

pressure buildup between the vessel and the reinforcing plate. Accessible flange faces should be examined for distortion and to determine the condition of gasket seating surfaces.

8. The surfaces of the vessel should be checked for;
    a. Dents in a vessel are deformations caused by contact with a blunt object in such a way that the thickness of the metal is not materially impaired. In some cases, a dent can be repaired by mechanically pushing out the indentation.

    b. If any distortion is suspected or observed, the overall dimensions of the vessel should be checked to determine the extent and seriousness of the distortion.

    c. Local or general wastage from corrosion and erosion.

    d. Cuts or gouges can cause high stress concentrations and decrease the wall thickness. Depending on the extent of the defect, it may be necessary to repair the area by welding or patching. Blend grinding may be a useful method of eliminating some minor types of cuts or gouges.

    e. The surfaces of shells and heads should be examined for possible cracks, blisters, bulges, and other evidence of deterioration, giving particular attention to the skirt and to the support attachment and knuckle regions of the heads.

    f. Welded joints and the adjacent heat affected zones should be examined for cracks or other defects. Magnetic particle and liquid penetrant examination are useful methods of examining suspect areas.

Thickness Survey

A thickness survey of the pressure vessels wall and dished heads should be performed and documented by a qualified NDT examiner using ultrasonic testing equipment. The ultrasonic testing equipment should be properly calibrated. The wall thickness data for each subsequent inspection should be used for comparisons to determine if any wall thinning may be taking place and compromising the factor of safety for the pressure vessel.

Internal Inspection

An internal inspection may be required only if the ultrasonic wall thickness data indicate that there is some wall thinning occurring or if the pressure vessel does not have a stamp indicating the original wall thickness of the shell and dished heads.

A general visual inspection is the first step in making an internal inspection. A borescope may also be used to facilitate the internal inspection of a pressure vessel. All parts of the vessel should be inspected for corrosion, erosion, hydrogen blistering, deformation, cracking, and laminations.

The following items should be reviewed:

a. Threaded connections should be inspected to ensure that an adequate number of threads are engaged. All openings leading to any external fittings or controls should be examined as thoroughly as possible to ensure they are free from obstructions.

b. Any special closures including those on autoclaves, normally termed quick actuating (quick opening) closures which are used frequently in the operation of a pressure vessel, should be checked for adequacy and wear. A check should also be made for cracks at areas of high stress concentration.

c. Where pressure vessels are equipped with removable internals, these internals need not be completely removed, provided evidence exists that deterioration in regions rendered inaccessible by the internals is not occurring to an extent that might constitute a hazard or to an extent beyond that found in more readily accessible parts of the vessel.

d. The type of corrosion (pitted or uniform), its location, and any obvious conditions should be established. Data collected for vessels in similar service will aid in locating and analyzing corrosion in the vessel being inspected. The liquid level lines, the bottom, and the shell area adjacent to and opposite inlet nozzles are often locations of most severe corrosion. Welded seams and nozzles and areas adjacent to welds are often subjected to accelerated corrosion.

Non Destructive Testing

Several different methods of non-destructive testing may be used to properly assess the condition of a pressure vessel. The most important and useful technique is ultrasonic testing to determine actual wall thickness for the shell and dished heads of the pressure vessels. These examination techniques should be performed by experienced and qualified individuals. The type and amount of nondestructive examination should be determined by the inspector. Generally, some type of surface preparation will be required prior to the use of these examination methods. These examination methods include: magnetic particle examination, liquid penetrant examination, ultrasonic examination, radiography, eddy current examination, visual examination, metallographic examination, and acoustic emission.

Inspection of Safety Devices

The most important appurtenances on any pressurized system are the safety devices provided for over-pressure protection of that system. These are devices such as safety valves, safety relief valves, pilot valves, and rupture disks or other non-reclosing devices that are called on to operate and reduce an over-pressure condition.

These devices are not designed or intended to control the pressure in the system during normal operation. Instead, they are intended to function when normal operating controls fail or abnormal system conditions are encountered.

The set pressure of the relief valve shall be no higher than the maximum allowable working pressure (MAWP) marked on the pressure retaining item. It should be noted that pressure regulators are not acceptable for protection against excessive system pressure because they do not vent air. Instead, they regulate pressure by restricting air flow.

Periodic inspection and maintenance of these important safety devices is critical to ensure their continued functioning and to provide assurance that they will be available when called on to operate.

Inspectors are cautioned that the operation of these safety devices involves the discharge of high pressure fluids or gas. Extreme caution should be used when working around these devices because of hazards to personnel. Because extremely high noise levels that can damage hearing may be encountered during testing, suitable hearing protection should be provided.

Inspection of Safety Device Data

The following steps should be performed for each safety device:

a. Compare the nameplate marking or stamping of the device to the stamping on the pressure retaining item. **The set pressure shall be no higher than the maximum allowable working pressure (MAWP) marked on the pressure retaining item.**
b. Ensure that the difference between set pressure does not exceed that permitted by the original code of construction if multiple devices are provided.
c. Verify the nameplate capacity and, if possible, compare it to the system capacity requirements.
d. Check identification on seals and ensure they match nameplates or other identification (repair or reset nameplate) on the valve or device.

The following steps should be performed to assist in evaluating the installation of each safety device:

a. Inspect inlet piping and ensure that it meets the requirements of the original code of construction.
b. Inspect discharge piping and ensure that it meets the original code of construction. Check that the discharge pipe size is not smaller than the device outlet size.
c. Check that the valve drain piping is open.
d. Check drainage of discharge piping.

e. Check that the discharge piping is not binding on the valve body because binding can lead to distortion of the valve body and leakage or malfunction.
f. Check the adequacy and condition of pipe supports. Discharge piping support should be independent of the device itself.
g. Check for possible hazards to personnel from the valve discharge or discharge pipe.
h. Check that there are no intervening valves (such as a block valve) between the pressure source and the valve inlet or between the valve outlet and the point of discharge. Block valves may be permitted in some pressure vessel service under certain controlled conditions when shutting down the vessel to repair a damaged or leaking valve would be difficult. If block valves are used, their use should be carefully controlled by written procedures, and the block valves should have provisions to be locked in an open position when not being used.

Inspection of Rupture Disks

Rupture disks or other non-reclosing devices may be used as sole relieving devices or in combination with safety relief valves to protect pressure vessels. When rupture disks are used with safety relief valves, the following additional steps should be considered during inspection:

1. Check the rupture disk nameplate information, including stamped burst pressure and coincident temperature, to ensure it is compatible with the vessel and/or safety relief valve.
2. Carefully check markings indicating direction of flow to ensure they are correct. Some rupture disks when installed in the incorrect position may burst well above the stamped pressure.
3. Check that the space between a rupture disk and a safety relief valve is supplied with a pressure gage, try cock, or telltale indicator to indicate signs of leakage through the rupture disk. Leaking disks should be replaced.
4. If a rupture disk is used on a valve outlet, the valve design must be of a type not influenced by back pressure from leakage through the valve. For non-toxic and non-hazardous fluids, vent or drain the space between the valve and the ruptured disk to prevent the accumulation of pressure.
5. For rupture disks installed on the valve inlet, review the installation to ensure that the combination rules of the code of construction have been applied.

.

Part 2 Section 2.3.6.6 d

d) Any damage to the cylinder or closures can lead to premature failure. Frequent visual inspection should be made of internal and external surfaces of the cylinder, frame and closures. A thorough examination should be completed if any visually apparent damage is identified or if any excursion beyond design temperature or pressure occurs.

In addition, surfaces of the cylinder and closures should be examined by dye penetrant or magnetic particle method at intervals based on vessel remaining life. Closures may require ultrasonic examination of passageways.

As part of this inspection guideline for wire wound pressure vessels, periodic inspection of the following items should include ~~be reviewed~~:

1) ~~Verify no change in the process, such as the~~Changes of the processing fluid, that ~~might~~ may adversely impact vessel integrity.
2) ~~Review the vessel manufacturer's~~Manufacturer's inspection recommendations for vessel, closures and frame. If manufacturer's recommendations are not available, the owner should obtain recommendations from a recognized wire wound vessel service provider.
3) ~~Verify any repair~~Repairs ~~to~~ pressure retaining items ~~has been~~should be completed by a National Board authorized service provider having wire wound vessel expertise.
4) ~~Verify overpressure~~Overpressure ~~protection with appropriate set pressure and capacity is~~ ~~should be provided~~ protection as described in the original code of construction with the appropriate set pressure and capacity is to be in place with no observable compromise to the intended service.. Rupture discs are commonly used for pressures exceeding 14,500 psi (100 MPa) to avoid valve seat leakage. Overpressure protection devices are frequently replaced to avoid premature operation.
5) If there are no manufacturer's recommendations available for the vessel, the following are additional recommended inspections that should be conducted to ensure vessel integrity and safety.
    a. ~~Conduct annual~~Annual visual and dimensional vessel inspections ~~with~~ should be conducted using liquid penetrant examination of maximum stressed areas to ensure that the surfaces are free of defects. ~~Conduct ultrasonic~~ Ultrasonic examination of the vessel should be conducted after every 25% of the design cycle life or every five years, whichever comes first, to detect subsurface cracks. Special attention should be given to the roots of threads and closures using threaded head retention construction. Other geometric discontinuities that are inherent in the design or irregularities resulting from localized corrosion, erosion, or mechanical damage should be carefully examined. This is particularly important for units of monoblock construction.

b. The closure mechanism of the vessel end-closure ~~is~~ may be opened and closed frequently during operation~~. It should be~~, therefore, the closure mechanism should be closely inspected for freedom of movement and proper contact with its locking elements. ~~Wire wound vessels must have~~ The presence of yoke-type closures should be verified and~~so the yoke frame will need to be~~ closely inspected on a regular basis.

6) Gages, Safety Devices, and Controls

a. ~~Verify that the~~ The vessel ~~is~~ should be provided with control and monitoring of pressure, temperature, the electrical system, fluid flow, liquid levels, and all variables that are essential for the safe operation of the system. If the vessel is automatically controlled, manual override should be available. Also, safety interlocks should be provided on the vessel closure to prevent vessel pressurization if the vessel closure is not complete and locked.

b. ~~Verify that all~~All safety device isolation valves ~~are~~ should be locked open ~~if used.~~as allowed by the code of construction, e.g. ASME Section VIII ~~Div 1, UG-135~~.

c. ~~Verify appropriate~~ Appropriate pressure relief devices ~~is~~ should be installed with the setpoint at the lowest pressure possible, consistent with the ~~normal~~ operating pressure, but in no case higher than the maximum allowable working pressure ~~design operating pressure~~ of the vessel. Rupture discs are normally considered more suitable for these types of applications, since pressure relief devices operating at pressures above 14,500 psi may tend to leak by their seat.

d. ~~Verify that pressure~~ Pressure and temperature of the vessel coolant and vessel wall ~~is~~ should be controlled and monitored. Interlock devices should be installed that will de-energize or depressurize the vessel at established setpoints.

e. ~~Verify audible~~Audible and visual alarms ~~are~~ should be installed to indicate unsafe conditions.

NB17-0202 Withdrawn LB Comments 6-27-17

Archived Comments for Ballot: NB17-0202-MC	
Edwards,Paul 4/13/2017 12:22:49 PM	Approved, with the understanding that these materials will be included under a new Part 2-2.3.6.10 (as corrections to the paragraph numbering in Item 13-1701), and not as a replacement of the current text in Part 2-2.3.6.6.
Simmons,Kevin 4/7/2017 2:57:54 PM	I agree with Mr. Webb's comments and await a response before my final vote. In addition, both paragraphs d.4 and d.6.c both contain language regarding the use of rupture discs. The language is different in the two paragraphs. I also question if the language is necessary,particularly the use of the word "normally" in d.6.c
Webb,Michael 3/31/2017 4:20:47 PM	At this time I will "abstain" only to ask the following 3-questions: 1) third paragraph of the introduction to d) indicating periodic inspection… "should", states clearly (in my opinion) that the sub-paragraphs d-1 through d, 6-e) are all within the non-mandated, "should"-venue. Moreover, is paragraph d-4 Overpressure protection now "overstated" as, should be provided? Could the d-4 paragraph be revised to read: "Overpressure protection as described in the original code of construction with the appropriate set pressure and capacity is to be in place with no observable compromise to the intended service? 2) Paragraph d, 6-b) Could the line be revised to read: All safety device isolation valves should be locked open as allowed by the construction code; e.g. ASME Section VIII, D-I, UG-135. 3) Lastly, d 6-c) Is there specific reason why, "…in no case higher than the design operating pressure of the vessel…" was used in lieu of the more traditional reference to, "…in no case higher than maximum allowable working pressure of the vessel…"? M.Webb, 3-31-17

17-140 Scribner 5-2-17

5.2.2 Replacement of Nameplate or Stamped Data

a) The re-stamping or replacement of data shall be witnessed by a National Board Commissioned Inspector.

b) When the standard governing the original construction is the ASME Code or ASME RTP -1 ,~~T~~the re-stamping or replacement of a ~~code~~ Code ~~symbol~~ Symbol ~~stamp~~ Stamp or Certification Mark shall be performed only as permitted by ~~the governing code of construction~~ ASME CAP-21 (*Criteria for Reapplication of An ASME Certification Mark*).

~~b)~~c) When the standard governing the original construction is not the ASME Code or ASME RTP-1, the re-stamping or replacement of a code symbol stamp shall be performed only as permitted by the original code of construction.

~~c)~~d) Replacement nameplates or stamped data shall be clearly marked "Replacement"

Revisions to NB-136:

1. **Change " 'R' Certificate Holder's Name" to " 'R' Certificate Holder's Name & Number/Owner or User's Name".**
2. **Remove "Number"**

NB-136 Form Page 1

10. If nameplate is lost or illegible, traceability documentation, verified by the Inspector shall be attached to this report.

11. I request authorization to replace the stamped data and/or nameplate on the above described ...spection Code (NBIC).

"R" Certificate Holder's Name & Number/Owner or User's Name:

~~"R" Certificate Holder's Name:~~ _____ ~~Number~~ _____

Signature _____ Date _____

Verification of Traceability _____ NB Commission _____
(Name of inspector)

12. Authorization is granted to replace the stamped data or to replace the nameplate of the above described pressure-retaining item.

Signature _____ Date _____
(chief inspector or authorized representative)

Jurisdiction (if available) or NB Commission no. _____

This form may be obtained from The National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Ave., Columbus, OH 43229 NB-136 Rev.7

17-140 Scribner 5-2-17

NB-136 Form Page 2

I certify that to the best of my knowledge and belief, the statements in this report are correct, and that the replacement information, data, and identification numbers are correct and in accordance with provisions of the *National Board Inspection Code*.

~~"R" Certificate Holder~~ _____ ~~Number~~ _____

Signature _____ Date _____
(authorized representative)

Witnessed by _____ Employer _____
(name of inspector)

Signature _____ Date _____ NB Commission _____
(inspector)

This form may be obtained from The National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Ave., Columbus, OH 43229 NB-136 Rev.7(Back)

Replace "R Certificate Holder's Name" line with "Owner or User"

Delete "Number" line

Change "NB Commission" line to "NB Commission No."

NBIC Subcommittee R&A Action Block

Subject Revision to 2015 Edition, NBIC Part 2, 1.3

Item 17-144 **Prop. on Pg.**

Proposed Revision Statement of Need

See below

Project Manager

Galanes

SubGroup 0 **SG Meeting Date**

Negatives

Need; Update reference documents in Part 2 of the NBIC to include a new, EPRI free publication on “Applications of Fracture Mechanics Methods to Fossil-Fueled Boiler Components”, 3002008607. Having this reference will enable Users or repair organization to utilize tools for evaluation of defects in pressure retaining items.

See below for proposed revision in Part 2 of the NBIC, page 2;

1.3 add new (v) below

(v). Electric Power Research Institute (EPRI) publication 3002008607 (Applications of Fracture Mechanics Methods to Fossil-Fueled Boiler Components)

17-148 - Metzmaier – 170718

Part 1 Installation

VESSEL INITIAL AND INSTALLATION INSPECTIONS

After a vessel has been installed and prior to commissioning/re-commissioning an inspection should be performed to verify that the vessel is safe for operation and that no unacceptable damage occurred during transportation to the installation site. The scope of the installation inspection should verify that all Jurisdictional requirements are met.

This inspection also provides an opportunity to collect desired base line information and to obtain the initial thickness readings at designated locations.