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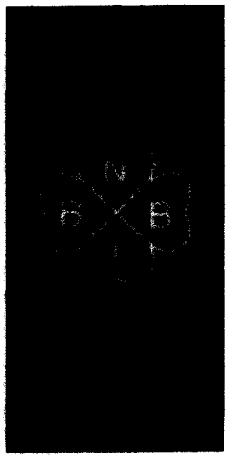

THE
NATIONAL
BOARD
OF BOILER AND
PRESSURE VESSEL
INSPECTORS

NATIONAL BOARD INSPECTION CODE COMMITTEE

AGENDA

Meeting of July 22, 2010
Columbus, 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 - 8:00 a.m.**

2. **Introduction of Members/Visitors**

3. **Announcements**

   a. Invitation to the Chief Inspector of Ohio

   b. Mr. David Douin, National Board Executive Director

   c. Others

4. **Adoption of the Agenda**

5. **Approval of the Minutes of July 2009 Meeting**

6. **Review of Rosters/Resignations/Nominations/Reappointments (Attachment 1)**

   a. Changes to rosters

   b. Resignations

      Mr. Ron Sulzer has resigned his position on all National Board Inspection Code Committees.

      Mr. Jim Yagen has lost his corporate sponsorship and has therefore resigned his position on all NBIC Committees.

   c. Nominations and reappointments for NBIC Committee members

      Mr. Terry Parks is eligible for reappointment as chair of the National Board Inspection Code Committee. Per the NBIC procedures 4.1.3 b):

      "A candidate for appointment or reappointment as the NBIC Committee Chair is selected by the Executive Director and confirmed by a majority vote of the NBIC Committee members."

      Attached please find a letter from David Douin recommending Mr. Parks for reappointment. A vote will be taken. (Attachment 1, pg. 2)

      Mr. Bob Reetz, Mr. Frank Hart, Mr. James Pillow, Mr. Craig Hopkins, Mr. Don Cook, Mr. Bob Wielgoszinski, Mr. Ray Snyder, Mr. George Galanes, Mr. John Richardson and Mr. Domenic Canonico are eligible for reappointment to the NBIC Main Committee. A vote will be taken.

      Ms. Linda Williamson has requested consideration for appointment to the NBIC Main Committee and the SC on Repairs and Alterations. A vote will be taken. (Attachment 1, pg. 3-5)

      Mr. Ron Pulliam has requested consideration for appointment to the NBIC Main Committee. A vote will be taken. (Attachment 1, pgs. 6-9)

      Mr. Jason Safarz has requested consideration for appointment to the SC on Inspection. A vote will be taken. (Attachment 1, pgs. 10-13)

Mr. Stuart Cameron has requested consideration for appointment to the SC on Repairs and Alterations. A vote will be taken. (Attachment 1, pgs. 14-20)

Mr. Edward Ortman has requested consideration for appointment to the Subcommittee on Repairs and Alterations. A vote will be taken. (Attachment 1 pgs. 21-23)

Dr. Robert Bryce has requested consideration for appointment to the SG on Historical Boilers. A vote will be taken. (Attachment 1, pgs. 24-30)

Mr. Venus Newton is eligible for reappointment to the SC on Inspection. A vote will be taken.

Mr. Robert Reetz is eligible for reappointment to the SC on Inspection. A vote will be taken.

7. **Report of Subcommittees**

a. **Subcommittee on Installation (Attachment 2)**

Charge: Responsible for developing new rules, revising, interpreting and maintaining existing rules which address administrative and technical requirements for installing pressure retaining items. This subcommittee also directs, supports, reviews and approves any items forwarded by each subgroup functioning under this subcommittee.

Membership: Michael Richards (Chair), Paul Bourgeois, Geoff Halley, Craig Hopkins, Stan Konopacki, Brian Moore, Gary Scribner, Raymond Snyder, Neil Titer, James McGimpsey (Secretary).

M. Richards is expected to report on the following:

1) Inquiries

There were no inquiries submitted for this subcommittee.

2) Public Review Comments for 2011 Edition Cycle A

There are no public review comments for this subcommittee.

3) Action Items

NB06-0306 ***Part 1 3.8.3.1 SG on Boilers*** Address combustion controls for fired boilers. Reference action item NB02-2502. Brian Moore reported that CSD-1 and Section IV are working jointly on controls and safety devices. There were plans to publish in 2008. A task group of B. Moore has been assigned. (No Attachment)

January 2007
Brian Moore gave a progress report that the CSD-1 Committee will be meeting in May 2007 and he will have a report at the July NBIC meeting. A task group of B. Moore and P. Bourgeois was assigned.

July 2007
Mr. Moore reported that the CSD-1 Committee made a number of changes to the document and that they should be publishing in April 2008. It was decided that this action item should be expanded upon to fill in the blanks where CSD-1 is lacking. A task group of Brian Moore,

Ron Sulzer, Ray Snyder and Geoff Halley was assigned to address solid fuel firing for a full range of boilers.

January 2008
Mr. Moore reported that the CSD-1 Committee still plans to publish in 2008. Mr. Halley also gave a brief report on solid fuels.

July 2008
Brian Moore reported the CSD-1 task group is working on new language for fuel trains with possible transfer of language to Part 2 of the NBIC.

January 2009
This action item was taken as a progress report. Mr. Moore reported that there are plans to publish at the end of April 2009.

July 2009
Mr. Brian Moore gave a progress report. He said that CSD-1still plans to publish in 2009 but he could not confirm the dates. Mr. Moore will continue to work on this item.

January 2010
Mr. Moore's alternate, Mr. Bob Cate gave a progress report. He stated that there should be more information by April of this year and Mr. Moore should have a report ready for the July 2010 meeting.

July 2010
Mr. Moore is expected to report.

NB07-1208 ***Part 1 Glossary (SG Boilers and PVP)*** Expand on the glossary for Part 1 Installation. A task group of C. Hopkins (Chair), P. Bourgeois, B. Moore and R. Snyder has been assigned. (No Attachment)

July 2007
This will be an ongoing action item as the glossary will expand. Due to a public review comment it was decided to delete all terms that do not have a definition following them.

January 2008
A progress report was given.

July 2008
A progress report was given along with a handout of suggested wording additions.

January 2009
A progress report was given.

July 2009
A progress report was given.

January 2010
A progress report was given.

July 2010
Mr. Hopkins is expected to report.

NB08-0320 Part 1 Installation 4.3 SG on Boilers Add a new paragraph in 4.3 General Requirements to address change of service for a pressure vessel. These requirements should caution installers, inspectors, owners, and jurisdictional authorities of the inherent dangers involved when changing service. A new supplement should be added to address the specific requirements for installation of pressure vessels that are being converted from one service to another. (Attachment 2, pgs. 1-2)

July 2008
A task group was assigned.

January 2009
Mr. Wielgoszinski gave a progress report.

July 2009
Mr. Bryan Schulte gave a progress report on NB08-0320, NB08-0321 and NB08-0322. in the absence of Mr. Bob Wielgoszinski. The task group will continue to work on these items simultaneously.

January 2010
Mr. Wielgoszinski gave a progress report.

July 2010
Mr. Wielgoszinski is expected to report on NB08-0320, NB08-0321 and NB08-0322.

NB08-2101 ***Part 1 Installation SG on Boilers*** CSD-1 does not address solid fuel firing and it would be appropriate for the NBIC to look into it. A task group of G. Halley (Chair), M. Richards, D. Pranghoffer and B. Moore has been assigned. (No Attachment)

July 2008
A progress report was given. Mr. Geoff Halley presented a handout.

January 2009
A progress report was given.

July 2009
A progress report was given.

January 2010
Mr. Halley gave a progress report. He stated that he is seeking guidance from other companies and he hopes that by the July 2010 meeting he will have a proposal ready.

July 2010
Mr. Halley is expected to report.

NB09-0204 ***Part 1 SG on Boilers*** Address water heaters other than fired storage units. (No Attachment)

July 2009
A progress report was given.

January 2010
Mr. Scribner gave a progress report.

July 2010
Mr. Scribner is expected to report.

NB09-0501 ***Part 1 SG on PVP*** Add the appropriate rules to Part 1 to ensure that Installation rules address the same requirements for pressure vessels and controls as will later be required for Inservice Inspection. (No Attachment)

January 2009
This item was taken as a progress report. A task group of G. Scribner (Chair), R. Snyder and J. Yagen was assigned.

July 2009
A progress report was given.

January 2010
Mr. Scribner gave a progress report.

July 2010
Mr. Scribner is expected to report.

NB10-0201 *Part 1 S3* Expand the section on installation of thermal fluid heaters. This action item is a result of splitting NB09-0601into two parts. A task group of G. Halley and P. Bourgeois has been assigned. (No Attachment)

January 2010
Mr. Scribner gave a progress report.

July 2010
Mr. Halley is expected to report.

NB10-0202 ***Part 1 SG on PVP*** Address solar fired boilers. A task group of G. Scribner (Chair), M. Richards, S. Torkelson, D. Cook, R. Snyder, and S. Konopacki has been assigned. (No Attachment)

January 2010
Mr. Torkelson gave a progress report and he and Don Cook were added to the TG.

July 2010
Mr. Scribner is expected to report.

NB10-1201 ***Part 1 SC Installation*** Request for a format change to NBIC Part 1 Code Rules. (No Attachment)

July 2010
Mr. Scribner is expected to report.

c. SC on Inspection (Attachment 3)

Charge: Responsible for developing new rules, revising, interpreting and maintaining existing rules which address administrative and technical requirements for inspection of pressure retaining items. This subcommittee also directs, supports, reviews and approves any items forwarded by each subgroup functioning under this subcommittee.

Membership: Don Cook (Chair), Steve Bacon, Domenic Canonico, Mark Horbaczewski, Jim Getter, Greg McRae, Mark Mooney, Venus Newton, David Parrish, Bob Reetz , John Richardson, Jim Riley, Mike Schwartzwalder, Stan Staniszewski, Randy Wacker and Bill Smith (Secretary).

D. Cook is expected to report on the following:

1) Inquiries

There were no inquiries submitted for this subcommittee.

2) Public Review Comments for 2011 Edition Cycle A

There were no public review comments submitted for this subcommittee.

3) Action Items

NB07-0905 ***Part 2 4.3.1-4.3.3 SC Inspection*** Review these sections for completeness and consistency in pressure testing. Mr. Cook suggested forming a task group from all three parts. A task group of G. Galanes (Chair), D. Parrish and M. Horbaczewski has been assigned. Included in the attachment is an email from Mr. Galanes requesting that his concern be addressed in this action item. (Attachment 3, pgs. 1-17)

July 2007
A progress report was given.

January 2008
A progress report was given.

July 2008
A progress report was given.

January 2009
A progress report was given.

July 2009
A progress report was given. The task group for this item was modified. Mr. Robert Aben is to be replaced by Mr. George Galanes as the representative from Part 3 Repairs and Alterations. Mr. Mark Horbaczewski is to replace Mr. Ron Shapiro on the task group.

January 2010
Mr. Cook reported with a handout of proposed terms to add to the Glossary and some wording changes to the section. The definitions were approved and it was decided to letter ballot the text changes to the SG on Inspection Specific and the SC on Inspection. The letter ballot passed in both Committees but failed at the Main Committee level.

July 2010
Mr. Cook is expected to report.

NB07-0910 ***Part 2 S6 SG Inspection Specific*** Review DOT supplement. A task group of S. Staniszewski (Chair), G. McRae and J. Riley has been assigned. This specific Supplement should be reviewed by the task group for completeness and accuracy. (No Attachment)

July 2007

A progress report was given. Changes to the DOT Glossary were approved previously due to approved public review comments.

January 2008

A progress report was given. The task group has met twice to discuss the public review comments received from the 2007 edition and in the process 11 more issues were identified.

July 2008

A progress report was given.

January 2009

This item was taken as a progress report. Mr. Staniszewski reported that the Federal Government is planning to release a standard on rule making under docket # PHMSA 2005-21351 in June of 2009.

July 2009

A progress report was given. Mr. Staniszewski reported that he would keep the Committee updated on the publication of the standard.

January 2010

Mr. Staniszewski gave a progress report.

July 2010

Mr. Staniszewski is expected to report.

NB07-0912 ***Part 2 SG Inspection Specific Inspection Guides Section 5*** Review the National Board Inspection guides for Cast Iron Boilers, Pressure Relief Devices, Water Level Controls & Devices and Operating Controls. (Attachment 3, pgs. 18-21)

July 2007
A progress report was given.

January 2008

Task groups were assigned to address the four inspection guides.

July 2008

- Guide for Cast Iron Boilers – Task group of W. Barbato, R. Dobbins, and D. Canonico. A

motion made to accept the review and updates of the task group. The motion was unanimously approved.

- Guide for PRD – Task group of J. Richardson and R. Wacker. A progress report was given by Mr. Wacker.

- Guide for Water Level Controls & Devices – Task group of S. Bacon and V. Newton. A motion made to accept the review and updates of the task group. The motion was unanimously approved.

- Guide for Operating Controls – Task group of S. Bacon and V. Newton. This guide was approved at the January 2009 meeting.

January 2009

A progress report was given. Three out of the four components have been approved by the Subcommittee. The guide for Pressure Relief Devices has not yet been reviewed.

July 2009

Mr. Staniszewski gave a report that stating that all parts of this action item have been approved except for the guide for PRD. The task group has reviewed the guide and forwarded it to the SC on PRD for their review.

January 2010

The Subcommittee on Inspection sent a letter ballot to the Subcommittee and approved the Guide for PRD.

July 2010

Mr. Cook is expected to report.

NB08-0701 ***Part 2 S7 SG on Inspection Specific*** Add a requirement for change of service from above ground to below ground installation of LPG tanks. We also need requirements for how to inspect these tanks. A task group of G. McRae (Chair), G. Galanes, J. Getter, M. Huffman, V. Mullins, J. Reed, D. Cook, J. Richardson and V. Newton has been assigned. (No Attachment)

January 2008

A progress report was given and a task group was assigned.

July 2008

A progress report was given.

January 2009

A progress report was given. This item will be discussed in conjunction with NB08-0321.

July 2009

This item was taken as a progress report. This action item will be worked on simultaneously with the task group assigned to NB08-0320, NB08-0321 and NB08-0322.

January 2010

A progress report was given.

July 2010
Mr. Cook is expected to report.

NB08-0702 ***Part 2 S7 SG on Inspection Specific*** The maximum corrosion allowance for a LPG tank should be 10% of the minimum thickness required. A task group of G. McRae (Chair), G. Galanes, J. Getter, M. Huffman, V. Mullins, J. Reed, D. Cook, J. Richardson and V. Newton has been assigned. (No Attachment)

January 2008
A progress report was given and a task group was assigned.

July 2008
A progress report was given.

January 2009
A progress report was given. There were plans to discuss this item at the April meeting of PVMA.

July 2009
A progress report. This action item will be worked on simultaneously with the task group assigned to NB08-0320, NB08-0321 and NB08-0322.

January 2010
A progress report was given.

July 2010
Mr. Cook is expected to report.

NB08-0703 ***Part 2 S7SG on Inspection Specific*** Investigate the feasibility of marking or stamping a re-rated name plate on a LPG tank that is being altered from an above ground tank to a below ground tank. A task group of G. McRae (Chair), G. Galanes, J. Getter, M. Huffman, V. Mullins, J. Reed, D. Cook, J. Richardson, and V. Newton has been assigned. (No Attachment)

July 2008
A progress report was given and a task group was assigned.

January 2009
A progress report was given. This item will be discussed in conjunction with NB08-0321.

July 2009
A progress report was given.

January 2010
A progress report was given.

July 2010
Mr. Cook is expected to report.

NB09-1201 ***Part 2 S2 SG on HB*** Expand supplement for Part 2, Inspection. (No Attachment)

July 2010
Mr. Reetz is expected to report.

NB10-0503 ***Part 2 S1.4.2.23 SG LB*** Add wording regarding handhold doors. (Attachment 3, pg. 22)

July 2010
Mr. Reetz is expected to report.

NB10-1101 ***Part 2 2.2.10.7 SG Inspection General*** Identify Inspector's responsibilities for boiler controls. (Attachment 3, pgs. 23-24)

January 2010
A task group was assigned: V. Newton (Chair), R. Dobbins, T. Barker, J. Riley and M. Mooney.

July 2010
Mr. Cook is expected to report.

NB10-1301 ***Part 2 SG Inspection Specific*** Address anhydrous ammonia nurse tank inspection. A task group of G. McRae, (Chair), S. Staniszewski, J. Getter and R. Reetz has been assigned. (No Attachment)

July 2010
Mr. Cook is expected to report.

d. SC on Repairs and Alterations (Attachment 4)

Charge: Responsible for developing new rules, revising, interpreting and maintaining existing rules which address administrative and technical requirements for repairing or altering pressure retaining items. This subcommittee also directs, supports, reviews, and approves any items forwarded by each subgroup functioning under this subcommittee.

Membership: George Galanes (Chair), Paul Edwards, Jack Given, Wayne Jones, Jim Larson, Frank Pavlovicz, Jim Pillow, Bryan Schulte, Jim Sekely, Mike Webb and Jeanne Bock (Secretary).

G. Galanes is expected to report on the following:

1) Inquiries

There were no inquiries submitted for this subcommittee.

2) Public Review Comments for 2011 Edition Cycle A

There were no public review comments assigned to this subcommittee.

3) Action Items

NB08-0304 ***Part 3 Forms 5.13.1 SG on R and A Specific*** The instruction guide for "R" Forms needs to be improved. The form also needs to have the ability to expand to accommodate

people filling it out completely. A task group of R. Pulliam (Chair), M. Webb and W. Jones has been assigned. (Attachment 4, pgs. 1-12)

January 2008
A progress report was given.

July 2008
A progress report was given

January 2009
A progress report was given.

July 2009
A progress report was given.

January 2010
Mr. Pillow gave a progress report. The subgroup approved work that the task group did "in theory." There are plans to letter ballot this before the next meeting.

July 2010
Mr. Galanes is expected to report.

NB09-1202 ***Part 3 S2 SG HB*** Review Part 3 supplement 2 to see what needs to be expanded upon. (No Attachment)

July 2010
Mr. Reetz is expected to report.

NB10-0101 ***Part 3 5.9.6 SG on R&A Specific*** Change 5.10 to facilitate information flow. and requirements for PRI stamping and nameplates. Task group of B. Boseo (Chair), J. Given and J. Sekely has been assigned. (Attachment 4, pgs. 13-26)

January 2010
Mr. Pillow gave a progress report.

July 2010
Mr. Galanes is expected to report.

NB10-0102 ***Part 3 S1.2.10 SG on Locomotives*** Clarify requirements for repairs and alterations to Boiler Barrel un-stayed areas. (Attachment 4, pg. 27)

January 2010
A progress report was given.

July 2010
Mr. Reetz is expected to report.

NB10-0103 ***Part 3 Part 3 S2.13.9.2 SG on Historical*** Resolve conflict of text and figure. S2.13.9.2. (No Attachment)

January 2010

A progress report was given.

July 2010
Mr. Reetz is expected to report.

NB10-0104 ***Part 3 S2.13.12.2 SG on Historical*** Should the reference in a) be to S2.13.11.2 or what is written? (No Attachment)

January 2010
A progress report was given.

July 2010
Mr. Reetz is expected to report.

NB10-0105 ***Part 3 S2.13.12.2 SG on Historical*** Remove a) from paragraph and revise wording so both paragraphs are clear. Clarify rules for Welded Flush Patches in Tubesheets. (No Attachment)

January 2010
A progress report was given.

July 2010
Mr. Reetz is expected to report.

NB10-0106 ***Part 3.S4.16.3.a) SG on FRP*** Change Manufacturer's Design report to Fabricator's Design Report. (Attachment 4, pgs. 28-30)

January 2010
A progress report was given.

July 2010
Mr. Galanes is expected to report.

NB10-0107 ***Part 3 S4.1.18.1 d) SG on FRP*** Revise paragraph to include alteration as well as repair. (Attachment 4, pgs. 28-30)

January 2010
A progress report was given.

July 2010
Mr. Galanes is expected to report.

NB10-0108 ***Part 3 S5.4 d) SG on Repairs and Alterations Specific*** Clarify documentation requirements for Yankee Dryers. Task group of J. Given has been assigned. (No Attachment)

January 2010
A progress report was given.

July 2010
Mr. Given is expected to report.

NB10-0109 ***Part 3 S617 SG on DOT*** Add the words alteration and modification to the first

sentence. The sentence should read, "The following requirements shall apply to all repairs, alterations and modifications to pressure retaining items. (No Attachment)

January 2010
A progress report was given.

July 2010
Mr. Galanes is expected to report.

NB10-0110 ***Part 3 S6.19.1 SG on DOT*** This information should be combined with S6.15.1 since they are talking about the same information. Has TR-1 and TR-2 been developed? (No Attachment)

January 2010
A progress report was given.

July 2010
Mr. Galanes is expected to report.

NB10-0302 ***Part 3 S3.2d) SG Graphite*** The current text permits the repair firm to make repairs from non-ASME Code material. The proposed revision requires new parts to be made from Code material. (Attachment 4, pgs. 31-32)

January 2010
Mr. Galanes gave a progress report. The Subcommittee had some suggested revisions for the subgroup to review and approve before the passage of this item.

July 2010
Mr. Galanes is expected to report.

NB10-0401 ***Part 3 1.3 a) SG Repairs and Alterations General*** Alter the definition of Authorized Inspection Agency. (Attachment 4, pgs. 33-34)

July 2010
Mr. Galanes is expected to report.

NB10-0502 ***Part 3 S1.1 SG on LB*** Add wording to the general requirements section of Part 3 supplement 1: "This part applies to all boilers attached to steam locomotives operating on track gaged at 24" or greater and all such boilers shall have inspections or repairs performed in accordance with the inspections and repairs performed in accordance with the inspection and repair procedures called out in 49 CFR Part 230." (Attachment 4, pg. 35)

July 2009
Mr. Reetz is expected to report.

NB10-0701 ***Part 3 SG on Repairs and Alterations General*** Assure the ultimate objective of quality of work with sufficient documentation to show what was accomplished under the R stamp program. Address record retention requirements.(Attachment 4, pgs. 36- 40)

January 2010
Mr. Pillow gave a progress report. This action item is similar to NB08-0304 so the only aspect that this item will focus on is record retention.

July 2010
Mr. Galanes is expected t o report.

NB10-0802 ***Part 3 SG R/A Specific*** Proposed new requirements for liquid pressure testing of low toughness steels. (Attachment 4, pgs. 41-42)

July 2010
Mr. Galanes is expected to report.

NB10-1001 ***Part 3 S2.13.14.3 b) SG on HB*** Add figure and reference for flush patch for fusible plugs. (No Attachment)

July 2010
Mr. Reetz is expected to report.

NB10-1002 ***Parts 1, 2 and 3 SG on HB*** Define scope. (No Attachment)

July 2010
Mr. Reetz is expected to report.

NB10-1003 ***Parts 1, 2 and 3 SG on HB*** Provide guidance for Inspection and test requirements for new and refurbished replacement boilers. (No Attachment)

July 2010
Mr. Reetz is expected to report.

NB10-1004 ***Part 3 S2 Fig. S213.13.1 SG on HB*** Figure and title are incorrect. Figure should show caulking of seam and rivet heads. The title should reflect caulking of seam and rivet heads also. (No Attachment)

July 2010
Mr. Reetz is expected to report.

NB10-1501 SG Repairs and Alterations Specific Part 3 2.5.2 b) Add wording and figure to this section to address PWHT. (Attachment 4, pgs. 43-45)

July 2010
Mr. Galanes is expected to report.

NB10-1601 ***SG Repair and Alterations General Part 3 5.13.4.1*** Revise the current "R" form at 5.13.4.1 and the referenced instruction guide to allow for abbreviation. (Attachment 4, pgs. 46-50)

July 2010
Mr. Galanes is expected to report.

NB10-1701 Part 3 3.2.1 b) SG Repairs and Alterations General Address the welding of corrugated rolls. (Attachment 4, pgs. 51-)

July 2010

Mr. Wielgoszinski is expected to report.

e. Subcommittee on PRD (Attachment 5)

Charge: To develop new rules, revise, interpret and maintain existing rules which address administrative and technical requirements for installation, inspection and repairs of pressure relief devices.

Membership: Frank Hart (Chair), Marianne Brodeur, Sid Cammeresi, Alton Cox, Denis DeMichael, Robert Dobbins, Robert Donalson, Thakor Patel, Raymond McCaffrey, Kevin Simmons and Joe Ball (Secretary).

F. Hart is expected to report on the following:

1) Inquiries

There were no inquiries assigned to this subcommittee.

2) Public Review Comments for 2011 Edition Cycle A

There are no public review comments for this subcommittee.

3) Action Items

NB10-1401 ***Part 1 SC PRD*** Review Part 1 for inclusion of rules regarding the installation and application of change-over valves for use under pressure relief valves on boilers. (Attachment 5, pg. 1)

July 2010
Mr. Ball is expected to report.

NB10-1402 *Part 2 2.5.7 g)Part 3 S7.10.1* SC on PRD Clarification of "Restoration of Set Pressure" Review rules relating to "test only" restoring set pressure and changes in set pressure. (Attachment 5, pgs. 2)

July 2010
Mr. Cox is expected to report.

NB10-1801 ***Part 3 5.4.2 SC on PRD*** Add wording regarding secondary pressure zone testing. (Attachment 5, pg. 3)

July 2010
Mr. Cox is expected to report.

9. Liaison Activities

a. ASME
b. AWS
c. API
d. PVRC
e. PCC

f. Others

10. New Business

NBIC Procedures – The NBIC Committee procedures have been altered as a result of the internal audit that was held in May 2010. Please view the recommended changes. (Attachment 6)

11. Future Meetings

The following meetings have been scheduled:

January 2011, Austin, Texas
July 2011, Columbus, OH

12. Adjournment

Respectfully submitted,

Robin Hough
Secretary, NBIC Committee
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ATTACHMENT 1

Committee on National Board Inspection Code

Member	Title	Expiration Date	Interest Category
Hough, Robin	Secretary		
Parks, Terry	Chair	07/31/2010	General Interest
Reetz, Robert		07/31/2010	Jurisdictional Authorities
Hart, Frank		07/31/2010	NB Certificate Holders
Pillow, James T.		07/31/2010	General Interest
Hopkins, Craig		08/31/2010	NB Certificate Holders
Cook, Don		08/31/2010	Jurisdictional Authorities
Wielgoszinski, Robert V.	Vice Chair	08/31/2010	Auth Inpection Agencies
Snyder, Raymond		08/31/2010	Auth Inpection Agencies
Galanes, PE, George W.		08/31/2010	Users
Richardson, John		08/31/2010	Manufacturer
Canonico, Dr. Domenic A.		08/31/2010	General Interest
Parrish, Dave		07/31/2011	Auth Inpection Agencies
Bourgeois, Paul		07/31/2011	Auth Inpection Agencies
Scribner, Gary		07/31/2011	Jurisdictional Authorities
Sekely, James		09/30/2011	General Interest
Given, Jack		01/31/2012	Jurisdictional Authorities
Edwards, Paul D.		08/31/2012	NB Certificate Holders
Staniszewski, Jr., Stanley		08/31/2012	Regulatory Authorities
Yagen, James M.		08/31/2012	Users
Richards, H. Michael		01/31/2013	Users
Bacon, Steven E.		01/31/2013	Users
Titer, H. Neal		01/31/2013	Users

Total Members: 22

THE
NATIONAL
BOARD
OF BOILER AND
PRESSURE VESSEL
INSPECTORS

May 24, 2010

Terry Parks
The National Board of B&PVI
1055 Crupper Avenue
Columbus, OH 43229

SUBJECT: Committee on National Board Inspection Code (NBIC)

Dear Mr. Parks:

I am recommending you for reappointment as Chair of the above Committee, for a three year term, pending confirmation by the NBIC Committee and the Chairman of the Board of Trustees.

Sincerely,

David Douin
Executive Director

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ORDER DEPARTMENT
Fax 614.847.1147

TRAINING DEPARTMENT
Fax 614.847.5542

EMAIL
information@nationalboard.org

WEB SITE
nationalboard.org

(2)

STATE OF WASHINGTON
DEPARTMENT OF LABOR AND INDUSTRIES
Specialty Compliance Services
Boiler/Pressure Vessel Program
PO Box 44410 • Olympia, Washington 98504-4410

February 23, 2010

Mr. Terry Parks
The National Board of Boiler and
Pressure Vessel Inspectors
1055 Crupper Avenue
Columbus, Ohio 43229

RE: NBIC Committee

Dear Mr. Parks:

As per our conversation on January 21, 2010, I am submitting my name for nomination to the NBIC Committee at the July 2010 meeting. I bring with me over 25 years of experience in the Boiler/Pressure Vessel Industry as an ASME Sec IX qualified welder, AWS Welding Inspector, ASME Manufacturing/NB Repair Shop QC Manager, ASME Shop Inspector, Jurisdictional Inspector, ASME/NB Team Leader, and Chief Boiler Inspector for the state of Washington. I hold a National Board Commission with "A" "B" and "N" endorsements. The Department of Labor and Industries supports me in this effort.

Sincerely,

Linda Williamson
Chief Boiler/Pressure Vessel Inspector
State of Washington

Steve McLain
Assistant Director SCS
Department of Labor & Industries

Enclosure

(3) 1/3

Linda Williamson
5065 Patton Road, Bellingham, WA 98226
(360) 398-0378
Email: WILN235@lni.wa.gov

QUALIFICATIONS:

- Technical knowledge and abilities acquired through education and many years of experience in the manufacturing, maintenance and repair industry.
- Professional, managerial, and leadership skills gained through education and experience as business owner, community non-profit leader, enforcement official, state wide government program manager and public servant.

EXPERIENCE:

2005-Present **Department of Labor & Industries, Boiler Program** Tumwater, WA
Chief Boiler Inspector

- Manage the Specialty Compliance Service Boiler/Pressure Vessel Program, which consists of 18 full time employees and a budget of 3.6 million dollars. Oversee the safe operation of more than 110,000 boilers and pressure vessels in the state.
- Administration of exams and commissioning of approximately 140 deputy and special boiler inspectors. Provide technical and professional training, not only to inspectors in Washington, but also to those in neighboring states.
- Auditing and verification of manufacturers and the provision of consultation services to our customers both external and internal.
- Review, interpret and enforce state laws, adopt national standards and department policies. Communicate with other regulatory agencies, stakeholders and involved customers to make determinations regarding state laws and departmental policies. Work in conjunction with the Board of Boiler Rules to provide consistent statewide safety standards making compliance easier for our customers.
- Work with department personnel to ensure the boiler program is in alignment with agency goals. Assist in the development and present to Executive Management Team a Boiler/Pressure Vessel Logic Model for the Government Management, Accountability and Performance Program.
- Work with Operations Manager, Senior Budget Analyst and Board of Boiler Rules to develop program budgets to ensure responsible use of state funds.
- Communicate with regional supervisors regarding inspector's issues and process improvement.
- Develop written material to educate our customers on the importance and benefits of safety inspections to promote voluntary compliance.

1994-2005 **Department of Labor & Industries, Boiler Program** Bellingham, WA
Boiler and Pressure Vessel Inspector I & II

- Scheduled and performed safety inspections of uninsured boilers and pressure vessels to ensure safe operation and compliance with state law.
- Interpreted applicability of various sections of the Washington State boiler law and followed up on violations to ensure timely corrective action.
- Performed detailed fabrication inspection for ASME authorized manufacturers.
- Consulted with management, labor, stakeholder and others to provide information concerning all aspects concerning pressure vessel safety.
- Coordinated with other L&I sections to promote a safe and productive work environment in keeping with L&I's mission.
- Provided informal technical advice to inspector's in other offices and participated in ASME joint review for manufacturer's recertification.

1993-1994 **TIC – Texaco Puget Sound Refinery** Anacortes, WA
Lead Inspector, Quality Assurance

- Supervised a team of 8 auditors, during a 50 million dollar refinery shut down with 500 thousand man-hours.
- Personally responsible for tracking and final inspection of over five hundred pressure vessels.

1988-1993 **Reid Boiler Works, Inc.** Bellingham, WA

Quality Control Manager & Office Manager

- Review, revision and administration of a quality control program established according to ASME Code and Washington State law, including: Preparation of drawings, design calculations, and material control.
- Supervised as many as twelve production workers to ensure compliance with the quality control program.
- Assisted Chairman of the Washington State Board of Boiler Rules with technical research and other related matters.
- Responsible for financial management, including material procurement, accounts receivable, accounts payable, payroll, general ledger, inventory control, etc.

1987-1988 **Maritime Contractors, Inc.** Bellingham, WA

Welder/Fitter

- Welding, fitting, and nondestructive examination for the maintenance, repair, and construction of vessels to ABS and NAVSEA specifications. Qualified in SMAW, GTAW, and FCAW.

1985-1986 **Atlantic Richfield Company** Blaine, WA

General Maintenance Technician

- Trained and employed as a maintenance technician in the repair and construction of refinery equipment.
- Qualified in eight ASME welding procedures.
- Participated in the audit of their National Board "R" Stamp (repair) quality control program.

EDUCATION:

Whatcom Community College Bellingham WA

- Completed courses in General Education and Grant Writing

Bellingham Technical College Bellingham, WA

- Completed courses in Welding, Blueprint Reading, Metallurgy, Boiler, Computers
- Earned Certificate in Veterinary Assistant Program

National Board of Boiler and Pressure Vessel Inspectors Columbus, OH

- Completed courses in Authorized Inspector N, A, B, CSD.1, In-service Inspection
- Earned National Board Boiler Inspector Commission with A, B, N Endorsements.

Department of Labor & Industries

- Completed training in Investigation, Quality Control Facilitator, Performance Management, Safety
- Earned a Washington State Boiler Inspector Certificate of Competency

Harvard Kennedy School – Executive Education

- Driving Government Performance – Leadership Strategies

American Welding Society

- Earned a American Welding Society Welding Inspector Certificate

PROFESSIONAL ASSOCIATION:

- Past Chair of the Washington State Boiler Inspectors Association (WSBIA)
- Past member of the Department of Labor & Industries Regional Council
- Past member of the Department of Labor & Industries Health & Safety Council
- Secretary of the Board of Boiler Rules

INTERESTS:

- Founder and past president of Northwest Wildlife Rehabilitation. Responsible for all aspects of creating and running a non-profit organization, including incorporating, permitting, budgeting, fundraising and operations. I found great personal satisfaction in providing a much needed public service and in working in a collaborative manner with community leaders, regulating government agencies and the general public.

RONALD L. PULLIAM

SUMMARY: Mr. Pulliam has 30 years of Fabrication, Machining, Inspection and Quality Assurance/Quality Control experience in the fabrication, assembly, and erection of power generation related equipment in the Navy nuclear and fossil fuel power industries.

EDUCATION:
MALONE UNIVERSITY
Canton, OH – 2002
Bachelors of Arts – Business Management

EXPERIENCE:

Babcock & Wilcox Construction Co., Inc.

2005– Present **Manager, Quality Assurance**
Manage the activities of Weld Engineering, Quality Assurance Engineering, Nondestructive Examination, and Regional Quality Assurance personnel. Responsible for the planning, development, and administration of Quality Assurance/Quality Control programs (including the preparation of procedures, specifications and manuals) for the construction and repair of power boilers, pressure vessels, piping, and related equipment. Responsible for maintaining the Company's ASME and National Board of Boiler and Pressure Vessel Inspectors (NBIC) Non-Nuclear Certificates of Authorization. Provide technical assistance to home office and field construction personnel in the areas covered by the various B&W/BWCC Quality Manuals, Codes and Standards.

BWX Technologies, Inc. – NED - Barberton Manufacturing Facility

2001-2005 **Manager, Quality Operations**
Responsible for all planning and execution activities of the MT/PT department, the RT department, the Visual and Dimensional Inspection department, the Gage Room, the Coordinate Measurement Systems Group (Laser Tracker/Faro Arm) and Inspection Planning. All departments directly support the Manufacturing Shop Operations. Act as the Division's Visual Weld and Dimensional Inspection Test Examiner, providing formalized training and testing functions as required. Directly interface with both on-site and off-site customer representatives on all shop floor related Quality issues. Responsible for all proposal and specification reviews and manhour goal setting and performance in all areas. Establish budgets for and manage three different cost centers. Responsible for all aspects of the Division's safety initiatives as they relate to my operations (confined spaces, fall protection, etc.) as well as the creation and implementation of Job Safety Analysis (JSA) prior to the onset of new operations or tasks. Responsible for the implementation of new technology that results in improved manhour performance and span

reductions (Laser Tracker, e.g.). Sponsor and lead TQM initiatives aimed at improving product quality and/or shop floor performance. Interact with and support shop superintendents and all Program Team members as needed.

1997 – 2001 **Quality Assurance Engineer**
Directly supported the Manager of Quality Operations. Performed all training and testing of Division's hourly and salary personnel in the Visual Weld Inspection and Dimensional Inspection areas. Performed vendor audits and source inspections on finished components as required. Directed customer Shakedown Inspections on components prior to shipment.

1992 – 1997 **QC Supervisor/Shift Foreman**
Directed the activities of all Inspection and NDE Supervisors on the shop floor as well as their respective crews in support of all Manufacturing Shop Operations on all three shifts. Responsible for all QC related shop floor performance measurements (manhour productivity and efficiency). Established manhour goal estimates and created work instructions and procedures to support contractually required inspections.

1988 – 1992 **Unit Manger – Inspection Planning and Gage Room**
Responsible for the Inspection Planning group which prepared contractually required documentation of all final dimensional inspections for all NR components. Managed the activities of the Gage Room Operations across all three shifts in support of Manufacturing Shop Operations. Coordinated the activities of the Optical Inspection crews on complex geometries on the shop floor.

1984 – 1988 **Visual and Dimensional Inspection / NDE Supervisor**
Responsible for the daily operations of my respective hourly work crews. Performed visual, dimensional, MT and PT overcheck inspections of previously dispositioned attributes. Assured manhour time-charging was accurate and complete on a daily basis. Assisted in developing goal hour estimates as well as techniques for performing a variety of inspections and tests.

1981 – 1984 **Inspection Planner**
Solely responsible for creating all dimensional Inspection Plans for all NR components manufactured in Barberton. Assigned inspection methodology to each dimension and worked closely with customer representatives obtaining approvals for these methods. Provided training

for all hourly inspectors in the areas of shop mathematics, Visual Weld inspection and Geometric Dimensioning and Tolerancing.

1979 – 1981 **Draftsman- Plant Engineering**
Created working drawings for maintenance crews to perform new construction and repairs to existing equipment and structures at the Barberton manufacturing plant. Obtained field measurements and information as required in support of these tasks

QUALIFICATION/TRAINING:

Certified Navsea Test Examiner in the areas of Visual Weld Inspection, Magnetic Particle and Dye Penetrant Testing

Visual Weld and Dimensional Inspection Level II - Inspector/Supervisor (ASME/TC1-A) – Certified Training

American Welding Society – Certified Welding Inspector
Certification # 06040621, Expires 04/12

TRAINING & SEMINARS:

10 Hour OSHA Safety Training Course – 2006
University of Michigan Business School – Executive Education Programs (Management for the New Leader – 2002 and Leadership in Plant Operations - 2003)
Lead Institute – Organizational Team Development - 2000
ASQ Certified Quality Technician (CQT) - 1998
ASQ Certified Quality Auditor (CQA) - 1999
Barberton Welding School - 1981

AFFILIATIONS:

Member American Welding Society
Board Member – CommonArc Corporation
Sub-Committee Member, NBIC – Repairs and Alterations
Past Board Member, Malone University Alumni Association

babcock & wilcox power generation group
20 south van buren avenue • p.o. box 351 • barberton, oh 44203-0351 usa
phone 330.753.4511 • fax 330.860.1886 • www.babcock.com

The National Board of Boiler and Pressure Vessel Inspection
c/o Terry Parks
1055 Crupper Ave
Columbus, Ohio 43229-1183

Dear Mr. Parks:

I am writing to nominate and endorse Mr. Ron Pulliam to the NBIC Main Committee. As you know Babcock & Wilcox has long supported the goals and ideals of the NBIC through participation on committees and adherence to code requirements. In fact, B&W is the proud recipient of "R" certificate number "1".

Mr. Pulliam is the QA Manager of B&W's Construction Company. He has more than twenty five years experience in quality related functions and five as QA Manager, dealing with the construction and repairs of fossil powered boilers. Ron is currently a member on the Subgroup for Repairs and Alterations (General Requirements) and has participated on numerous tasks groups. Ron, also has the full backing of B&W to attend NBIC meetings. It is my understanding that Mr. Ron Salzer has recently resigned from his committee assignments and it is our sincere hope and desire that Ron Pulliam can continue the legacy of supporting and representing the manufacturer's interest category on this very important committee.

Sincerely,

Frank J. Pavlovicz
Director, Group Quality
Babcock & Wilcox Power Generation Group

Cc T. Parks (NBIC)

Interest Inquiry for NBIC Part 2 Subgroup-Inspection-General
Jason Safarz
to:
RHough
03/19/2010 03:29 PM
Cc:
"Jason Safarz"
Show Details

Robin,

I am submitting for consideration to be added to the NBIC Part 2 Subgroup-Inspection-General. Mr. Venus Newton (Chubb) has given me some guidance on the materials needed for submission (attached) and has also spoke to Mr. Terry Parks about my participation.

Please review and let me know the next steps needed.

Thanks you and have a great weekend.

Jason Safarz
Senior Account Engineer
CEC Combustion Services Group
11699 Brookpark Road
Cleveland, OH 44130
O: 216.749.2992
M: 216.272.2306
www.combustionsafety.com

1/4 (10)

CEC Combustion Services Group

Inspections • Testing • Training • Design • Upgrades • Tuning

March 19, 2010

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

RE: National Board NBIC Part 2 Subcommittee & Subgroup Interest

Dear Robin,

I am writing to express interest in joining the NBIC Part 2 Subcommittee (Subgroup-Inspection-General).

My firm, CEC Combustion Services Group, Inc., specializes in boiler and combustion system safety (along with ovens and furnaces) and is a leader in the industry when it comes to testing of safety devices, training or personnel, and evaluation of gas piping and related safety systems. We actively participate in Codes and Standards committees in an effort to advance the cause for safety.

I currently sit on other Codes and Standards committees which would be of interest to the National Board. This work includes the American Society of Mechanical Engineers Control and Safety Devices for Automatically Fuel Fired Boilers (ASME CSD-1) for the past six years, Underwriters Laboratories Standards Technical Panel for Heating, Water Supply, and Power Boilers – Electric (UL 834), and participation in the American Insurance Association (AIA) meetings (Boiler and Machinery Legislative Committee).

I will be able to attend all meetings in support of this subcommittee work including the upcoming meeting in July 2010. Thank you for your consideration and please let me know if any additional information is needed.

Sincerely,

Jason Safarz
Senior Account Engineer
CEC Combustion Services Group, Inc.

11699 Brookpark Road ❶ Cleveland, Ohio 44130 ❶ 216.749.2992 ❶ Fax 216.398.8403
www.combustionsafety.com

CEC Combustion Services Group

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March 19, 2010

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

RE: National Board

Dear Robin,

CEC Combustion Services Group, Inc. will provide the time for Mr. Jason Safarz to attend meetings and fulfill the duties as required by NBIC Part 2 Subcommittee (Subgroup-Inspection-General). Our firm will also handle all the related travel expenses associated with these responsibilities to serve on the Subcommittee.

Sincerely,

John Puskar
Principal
CEC Combustion Services Group, Inc.

11699 Brookpark Road • Cleveland, Ohio 44130 • 216.749.2992 • Fax 216.398.8403
www.combustionsafety.com

3/4 (12)

CEC Combustion Services Group

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Jason Safarz - Qualification Summary

Relevant Education:

- Bachelors of Science:
  - Mechanical Engineering – Cleveland State University
  - Physics – Baldwin Wallace
- Combustion Safety, Inc. - Junior & Senior Auditor Course
- Allen-Bradley Fundamentals of Programmable Controller Systems
- Maxon Burner & Valve Seminar(s)
- North American Combustion Seminar(s)
- OSHA Approved Course General Industrial Safety (9 Modules)
- ITT Engineers Training for Pumps and Hydronic Systems

Certifications/Memberships:

- ASME CSD-1 Standards Committee Member for Automatically Fuel Fired Boilers (since Oct. 2004)
- UL 834 (Underwriters Laboratory) Standards Technical Panel Member
- American Insurance Association (AIA), Boiler and Machinery Legislative Committee participation
- National Fire Protection Association (NFPA)
- Association of Energy Engineers (AEE)
- Universal Refrigeration Certification, ID #071505022075
- Combustion Safety, Inc. Class "A" Senior Auditor

Combustion Safety, Inc. Experience - Engineering Manager & Senior Account Engineer

- Trained in the safe application and testing of natural gas, propane, #2-#6 oil, biofuels, and coal.
- Inspected or managed safety inspections on over 8,000 pieces of equipment (boilers and ovens) at more than 300 facilities worldwide.
- Manufacturers training and knowledge base Include:

Allen Bradley	Dungs	Johnston	Patterson-Kelley	Superior
Antunes	Eclipse	Kewanee	Protection Controls	Teledyne Laars
A.O. Smith	Engineered Air	King-National	Rapid Air	Titan
Ajax	Fisher	Krom Schroder	Raypak	TMI
Asco	Fireye	Lochinvar	Reznor	Trane
Babcock & Wilcox	Foster Wheeler	Mammoth	Rheem	Volcano
Bryan	Fulton	Maxon	Rite	Weben Jarco
Carrier	Hastings	Miura	Rupp Air	Weil-McClain
Clayton	Honeywell	Modine	Sellars	Wickes
Cleaver-Brooks	Hydrotherm	National	Siemens	Wisconsin
Columbia	Indeck	Nebraska	Sterling	Yokogawa
Dayton	Industrial Air Sys	North American	Strand	York-Shipley

11699 Brookpark Road ✪ Cleveland, Ohio 44130 ✪ 216.749.2992 ✪ Fax 216.398.8403
www.combustionsafety.com

DOOSAN

Doosan Babcock Energy

Porterfield Road,
Renfrew, PA4 8DJ
United Kingdom

T +44 (0) 141 885 3310
F +44 (0) 141 885 3338

Mr. David Douin
Executive Director
The National Board of Boiler and Pressure vessel Directors
1055 Crupper Avenue
Columbus, OH 4322901183

5 February 2010

Subject : Participation of S.W. Cameron on NBIC Committees

Dear Mr. Douin,

I am respectfully requesting consideration by the NBIC and National Board my application for membership of the Sub-Committee on Repairs and Alterations and the corresponding Sub-Groups for General and Specific item.

I bring almost 40 years experience in the design, fabrication and inspection of boilers and pressure vessels. I also have been involved in BSI, ASME and ISO Committees as outlined in my resume.

My application is endorsed by George Galanes, chairman of the Sub-Committee.

I believe that I would bring international experience in codes to the Committee, particularly where boiler components are manufactured in the Asia-Pacific region.

I have the full support of Doosan Babcock to attend and participate in committee meetings and task groups..

I have attached my resume for your review.

Yours sincerely

SWCameron.

Stuart Cameron
Chief Engineer

(14) 1/7

DOOSAN

Doosan Babcock Energy

Porterfield Road,
Renfrew, PA4 8DJ, United Kingdom
T +44 (0)141 886 4141
F +44 (0)141 885 3338

Mr David Douin
Executive Director
The National Board of Boiler and Pressure vessel Directors
1055 Crupper Avenue
Columbus, OH 4322901183

25 January 2010

Subject : Support for participation of S W Cameron on NBIC Committees

Dear Mr Douin,

Please accept this letter as Doosan Babcock's commitment to provide the necessary support for Stuart Cameron to participate in the activities of The National Board Inspection Code Committee. This support includes the time and financial resources needed to fulfil his obligations to the Committee should he be elected as a member.

Yours sincerely

R F Nimmo
Managing Director

(15) 2/7

RESUME - STUART W. CAMERON

SUMMARY

Chief Engineer with Doosan Babcock who are a multi-discipline specialist energy services company employing over 4000 people and operating in the thermal power, nuclear and petrochemical industries.

Chartered Engineer and Fellow of Institution of Mechanical Engineers in UK

Extensive experience in UK and EU legislation and International Standards on pressure equipment

QUALIFICATIONS

Dates	College / University	Course	Qualification
1968 - 70	Univ. of Strathclyde	Mechanical Eng.	BSc (1st Class Hons)
1980 - 83	Univ. of Glasgow (part-time)	Management	MBA

SUMMARY OF CAREER HISTORY

2006 – pres.	Doosan Babcock	Chief Engineer
2000 - 06	Mitsui Babcock	Engineering Director - Europe
1998 - 00	Mitsui Babcock	Manager – Engineering
1996 - 97	Mitsui Babcock	Manager – Services Engineering
1987 - 96	Babcock Energy Ltd	Manager of Mechanical Design
1981 - 87	Babcock Energy Ltd	Manager of Pressure Part Engineering
1976 - 81	Babcock Energy Ltd	Head of Design Group
1974 - 76	Babcock Energy Ltd	Project Engineer
1972 - 74	Babcock Energy Ltd	Stress Analyst
1970 - 72	Babcock Energy Ltd	Design Engineer
1968 - 70	University of Strathclyde	Student
1967 - 68	John Brown Shipyard	Assistant Design Engineer
1962 - 67	John Brown Shipyard	Apprenticeship

DETAILS OF CAREER HISTORY

2006 – present – Chief Engineer

Following the acquisition by Doosan Heavy Industries of Korea was appointed Chief Engineer report directly to CEO with specific responsibility for Engineering 'Centre of Excellence' which is a group of experienced engineers who address technical risk management and competency issues throughout all parts of the Company.

Responsible for ensuring Company compliance with existing and new legislation regarding pressure equipment, risk assessment and the requirements for identifying competency of engineering staff.

Principal contact with parent company Doosan Heavy in Korea on development of common design tools, application of plant layout software and manufacturing standardisation.

Visiting Professor at the University of Strathclyde for the development and implementation of their MSc in Power Plant Systems.

2000 – 2006 Engineering Director - Europe

Reported directly to the Managing Director for Europe with specific responsibility for all Engineering activities in Europe. Principal focus of the Department is on EPC new build, major plant improvement projects, nuclear services and engineering support to the Regional offices on petrochemical and boiler plant work.

1998 – 2000 Manager – Engineering, Plant improvement and Energy Services

Company was reorganised in to matrix structure with four product teams and five worldwide regions. Responsible for all engineering on two of these product teams, namely Plant Improvement and Energy Services which carries out engineering on all UK Region projects and provides specialist support to the other regions...

Responsible for all proposal and project engineering activities on –

- boiler plant upgrades, refurbishment, fuel conversions, etc
- CHP plant
- combustion equipment
- support for regional offices (UK and International)
- manufacturing design and detailing

1997 - 98 Manager - Service Engineering

Manager of new Department reporting directly to the Engineering Director, based in the Crawley offices, which was formed to provide a dedicated Engineering support to the Energy Services Division of the Company, which contributes 50% of the company turnover.

Responsible for all proposal and project activities on boiler plant rehabilitation, combustion equipment, pipework and vessels. This included support for Licensees and the company Indian organisation.

1987 - 1996 Manager - Mechanical Design

Reporting direct to Engineering Director.

Work covers pressure parts, pipework, combustion equipment, draught plant and supporting structures and ranges from concept design through to detail design and draughting of components for manufacture. Responsible for engineering interfaces with Manufacturing and Construction Divisions.

Responsible for the sub-contracting of manufacture in the UK and Overseas to competent manufacturers that meet the Company technical and QA requirements.

Extensive involvement with potential Clients and sub-contractors on Proposals, particularly with a view to the sub-contract of manufacture. Represented the Company in USA, Finland, Germany, China, India, Taiwan as well as throughout the UK

1981 - 87 Manager of Pressure Part Engineering

Responsible for design and draughting of all pressure parts on boiler components covering steam drums, furnace walls, pipework, superheaters, reheaters and economisers.

Additional responsibilities included QA within Engineering at the Renfrew site and total engineering on pressure vessel contracts.

1976 - 81 Head of Design Group

Head of Design Group consisting of stress analysts, design engineers and draughtsmen. Work consisted of design of pressure parts for transient conditions, stress analysis and fracture mechanics assessment of petrochemical vessels, analysis of boiler components outwith Code specification. Presented papers on analysis of pressure components at several Conferences.

1974 - 76 Project Engineer

Co-ordinating engineering activities at Renfrew on proposals for new Nuclear Power station in the UK.Babcock representative on In-service Inspection Committee with representatives from CEGB, SSEB, Nuclear Inspectorate and UKAEA.

1972 - 74 Stress Analyst

Analysis of pressure containment of prototype nuclear reactor vessels for submarines using finite element techniques

1970 - 72 Design Engineer

Design of pressure parts on boilers and pressure vessels to BS1113, BS5500, ASME, etc.

OTHER ACTIVITIES

Codes and Standards

1981 - 93	Member of BSI Committee for BS5500 Pressure Vessels
1993	Appointed Industrial Expert to Economic and Social Committee of EU to advise on Pressure Equipment Directive
1994 - 2002	Member of BSI Engineering Sector Board representing pressure equipment and nuclear industries. Board consists of ten representatives from various Trade Associations, Inspection Bodies, DTI and HSE and is responsible for developing BSI policy on engineering matters, allocating resource within BSI and establishing priorities for DTI funding.
2003 - present	Chairman of BSI Pressure Vessel Policy Committee co-ordinating UK policy on European pressure equipment standards. Committee consists of representatives from Manufacturer's Trade Associations, Users, Inspection Authorities and Government.
1994 - 1998	Lead UK delegate on CEN Pressure Equipment Committee in Brussels, supported by representatives from BSI and HSE.

1998 – present	UK expert on ISO TC11 – International Standard for the harmonisation of Boiler and Pressure Vessel Codes and Standards. Committee is responsible for developing a standard which will allow the harmonisation of national standards.
2005 – present	Chairman of WG11 of TC11 for procedures on compliance of Standards and leader of task group of experts to advise National Standardising Bodies to application for registration
2005 – present	Member of ASME Section I Committee on Power Boilers, Fabrication and Examination Sub-Group and International Materials Sub-Group.
2007 – present	Member of ASME Committee on Boiler and Pressure Vessel Conformity Assessment

Institution of Mechanical Engineers

1991 - 93	Member of Council - IMechE and member of Membership Committee.
1995 – present	On IMechE list of Fellows for conducting interviews for CEng candidates and chair interview panels 1-2 times / year.
1993 – 1999	Member of IMechE Investigatory Panel advising on cases of members considered to have misused their status of CEng or brought the name of the IMechE into disrepute
1996 - 2000	Member of IMechE Power Industries Board which establishes and monitors the business plan for the Power Industries Division, formulates the Division's input and response to IMechE initiatives and co-ordinates the various activities of the Technical Groups within the Division.
2008 – present	Member of Trustee Board
2008 – present	Vice Chairman of Scottish Region

PUBLICATIONS

External

"Influence of Defect Assessment on the Design of Structures" - ICPVT - London May 1980

"An appreciation of the problems associated with the use of fitness-for-purpose techniques" IMechE Conference on Defect Assessment - London 1981

"Application of Finite Element Methods to Heat Recovery Boilers for two shifting duty" – International conference on Power Stations - Liege 1993

"The PED from an HRSG Perspective" - keynote address to IMechE HRSG User Group - Birmingham Oct 2002

"Complying with the PED using ASME Section I" - ASME International Seminar – Milan Oct 02

(19) 4/7

"Practical aspects of Safe Boiler Design" - IMechE Seminar on Safety Issues with Power Plants – London June 2004

"International Standards relevant to Inspection of Plant in the US" - National Board Meeting - Tennessee July 2006

International Markets and the significance of Standards"
presented at

- IMechE Seminar on CEN Standards for Business Benefits – London June 07
- PVP Conference - Prague July 09
- Keynote lecture at KEPIC Annual Conference - Korea Aug 09

Managing Risk in the Global Supply Chain, Addressing Common Standards and Multiple Codes – Pressure Equipment Safety Seminar – Hong Kong Nov 09

S.W.Cameron

5 Feb 10

(20) 7/7

ALSTOM POWER INC., USA
THERMAL PRODUCTS BUSINESS
HRSG Windsor Execution Center

2000 Day Hill Road
Windsor, CT 06095-0500 USA
Phone: 1 860 285
Fax: 1 860 285
www.alstom.com

ALSTOM

February 25, 2010

Mr. David Douin, Executive Director
The National Board of Boiler and Pressure Vessel Inspectors
1055 Crupper Avenue
Columbus, Ohio 43229

Subject: Support for participation of
Mr. Edward Ortman on NBIC Committees

Dear Mr Douin,

Please accept this letter as Alstom Power's commitment to provide the necessary support for Mr. Ortman to participate in the activities of The National Board Inspection Code Committee. This support includes the time and financial resources needed to fulfill his obligations to the Committee should he be elected as a member.

Very truly yours,

Timothy J. Barry, Director
Project Operations

TJB/af

ALSTOM POWER INC. - USA
THERMAL PRODUCTS – HEAT RECOVERY
HRSG Field Engineering – Windsor Execution Center

CEP 8118-0426
2000 Day Hill Road
Windsor CT 06095-0500 USA
Phone: 860-285-2437
Fax: 860-285-4001
www.alstom.com

ALSTOM

March 2, 2010

Mr. David Douin, Executive Director
The National Board of Boiler and Pressure Vessel Inspectors
1055 Crupper Avenue
Columbus, OH 43229

Dear Mr. Douin,

I respectfully request consideration by the NBIC and National Board of my request for membership to the SubCommittee on Repairs and Alteration and the associated SubGroups for General and Specific. I have over twenty years experience with the design, manufacture, and repair of various types of boilers for locations within the US and around the world.

I have the full support of Alstom, both time and financial, to fully support the NBIC should I be approved for membership. I have attached a letter of support as well as my resume.

Respectfully,

Edward M. Ortman

cc: Jeanne Bock
George Galanes
Robin Hough
Terry Parks

(22) 2/3

EDWARD M. ORTMAN

HOME ADDRESS
184 Marshall Street
Winsted, CT 06098
(860)379-9248

WORK
Alstom Power, Inc.
CEP 8118-0426
2000 Day Hill Road
Windsor, CT 06095
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edward.m.ortman@power.alstom.com

EDUCATION:

1989 - Graduate of **Worcester Polytechnic Institute**, B.S. Mechanical Engineering

EXPERIENCE:

7/03 – Present -**Alstom Power, Inc.**
Technology Manager
- develop / maintain company standards related to HRSGs.
- develop / maintain standards and programs related to ASME Code and EN standards including material purchase requirements.

Field Engineer
- support site personnel with issues during erection and commissioning of HRSGs.

2/99 – 6/03 - **Alstom Power, Inc.**
Manager of Product Engineering
Managed a group of 15+ Engineers responsible for the hardware and performance of the HRSG as well as HRSG related standards.

3/93 – 2/99 - **ABB Combustion Engineering Systems - SPB Engineering**
Product Engineering
- design and selection of hardware and auxiliaries for HRSGs
- development of standards for selection of HRSG and auxiliaries
- development of ASME Code related standards

Project Engineering
- primary technical interface for customer, Project Management, Purchasing
- coordination of Product and Mechanical Engineering to meet customer schedule

6/89 - 2/93 - **ABB Combustion Engineering Systems - Marine and Package Steam Generators**
Product Engineering
- design, selection, and testing of hardware and auxiliaries for package boilers and marine boilers
- maintenance of engineering computer programs

5/88 - 8/88 - **Combustion Engineering Inc. - Marine and Industrial Boiler Systems**
Development and maintenance of HRSG engineering programs.

6/87 - 8/87 - **The Torrington Company**
Testing and evaluation of machinery from two newly acquired businesses and consolidation of assets into the existing company.

STANDARDS ORGANIZATIONS:

Alstom
7/04 – Present Chattanooga Change Review Board for material Purchase Instructions and Material and Processing Specifications.
1/07 – Present Alstom Boiler Materials Council

ASME
12/02 – Present BPV I SubGroup HRSG - Member
7/07 – Present BPV I SubGroup General Requirements – Member
3/08 – Present QAI Subcommittee on Accreditation - Alternate
2/09 – Present BPV Committee on Power Boilers - Alternate

HEARTLAND SOFTWARE SOLUTIONS INC.

Box 333
Austin, MB, Canada
Tel: +1 (204) 726-1990
http://www.heartlandsoftware.ca/

December 14, 2009

Attn. Robin Hough,

Heartland Software Solutions supports Dr. Bryce's activities regarding the Historical Boilers subgroup of NBIC. At this time, he intends to attend the January 2010 meeting in Austin, Texas to determine his suitability for participation on this subgroup.

Sincerely,

Robert Bryce
President, Heartland Software Solutions

1/7 (24)

Robert W. Bryce, Ph.D.

Box 333
Austin, MB
R0H-0C0

Phone: 778-231-7268
Email:
rbryce@heartlandsoftware.ca

Professional Experience

2007-Present President, Heartland Software Solutions Austin, MB

Chief Architect / Software Developer

- Validation, enhancements, and bug fixes to Prometheus, the Canadian standard forest fire growth simulation/modeling application (http://www.firegrowthmodel.com/), written in native C++ using MFC, ATL, COM, OpenMP technologies; and incorporates functionalities from CGAL, GDAL, OGR, Proj.4. This application implements the Canadian FWI and FBP standards including all updates and variations, and models fire growth using partial-differential equations. The primary development tool for Prometheus, and all other projects is Microsoft Visual Studio 2008.
- Enhancements and bug fixes to BurnP3, a CFS (Canadian Forest Service) application used to determine, among other things, detailed charts outlining potential burn hazard areas. Written in C++ using MFC, COM technologies.
- Co-designed and implemented new polygon set theory Boolean operations; to be published. Development uses managed and native C++, .Net technologies.
- Co-designed and implementing new spatial weather modelling algorithms; to be published.
- Oversaw the design and integration of a new Prometheus Beginner's Tutorial, including content, layout, development tools, and development of supporting software (managed languages).
- Proposed, implemented and validated a variety of improvements to the CFS FBP (Fire Behaviour Prediction) published standard, and Prometheus simulation models.
- Analysis, design, and direction for implementation of a MAWP calculator, written in C# using Microsoft Visual Studio 2008. This application calculates maximum allowable working pressures of steam boilers to assist inspectors during the process of evaluating the condition and rating of boilers. It implements the necessary subset of ASME Section I and NBIC equations.
- Performed analysis, design, and oversaw implementation of a flight-path generator for unmanned aerial vehicles (UAV's) over specific, user-defined areas based on user preferences and camera and plane settings. Pictures taken from the UAV are later automatically stitched together using recorded GPS data, then geo-referenced for use in GIS packages. This work included performing all necessary projection transformations, and rotation/pitch/yaw geometric calculations to correctly stitch pictures.
- Hiring and training of Heartland Software Solutions staff.
- Management, mentoring, and delegation of duties and responsibilities to company staff members (5), including analysis of information, project planning, programming techniques and methodologies, testing and validation regimes, and reporting and documentation skills and requirements.
- Performed migration of various software packages to the Microsoft Visual Studio 2008 IDE, resolved 32- to 64-bit and ASCII/Unicode migration issues, and added support for Microsoft *Interop* protocol to allow managed applications to gain access to native C++ COM objects.
- Managed computer and network configuration and administration for company and client offices, including review and choice of anti-virus/anti-malware software, router configuration, printer access, shared folder protocols, VPN configuration,

FTP and HTTP servers, and intra/inter-network website hosting.

- Served in an advisory capacity for a rewrite of a specific CSA (Canadian Standards Association) B51 clause.
- Performed analyses, comparative studies of various 3D packages which are available for development using Visual Studio 2008, for flight modelling software.

2007, 2010 Brandon University Brandon, MB

Sessional Instructor

- Taught half of the Computer Science course titled "62.306: Systems Programming". Covered the first half of the text titled "Operating Systems" by Gary Nutt, including operating system basics, device management, context switching, multithreading/ multi-processing, synchronization primitives and issues.
- Taught and mentored C++, C#, Java programming skills, techniques, and methodologies to students in the aforementioned course; a requirement for assignment completion. Development primarily occurred in Microsoft Visual Studio 2005.
- Provided course material, example business information, data, and database modelling criteria for the course titled "62.370: Information Systems". Reviewed student group projects which were developed using a SQL database, MS Access, and a variety of web interface toolsets.

2004-2006 Mobilia OS Technologies Inc. Richmond, B.C.

Chief Architect / Science Officer

- Architected and programmed many aspects of the design and construction of a prototype mobile operating system for direct, specific, efficient support for JAVA (J2ME) and soft real-time scheduling. Investigated porting said operating system to different mobile architectures.
- Performed software audit on Prometheus. Drafted and submitted software audit and future directions reports.
- Performed software audit on BurnP3. Drafted and submitted the software audit report.
- Ported Prometheus from Microsoft Visual C++ 6.0 to Microsoft Visual Studio 2003, the 2005.
- Implemented a variety of proposed improvements and encountered bug fixes to Prometheus. Researched, fixed, and improved upon many aspects of the model from a variety of perspectives including algorithmic, the implementation of underlying theoretical models, and performance. Actively participated in an academic problem-solving workshop covering interesting difficulties in the current model.
- Located errors and omissions, and suggested and implemented solutions, for issues found in the underlying theoretical models implemented by Prometheus.

1995–2004 Ramsoft Systems Ltd. Victoria, B.C.

Senior Programmer/Analyst

Designed, was the lead programmer, and managed CO-OP student programmers, for every major new application produced by this firm during half of my tenure with Ramsoft. Some projects include:

- Designed and implemented a conversion library in C++ to port legacy OWL

applications to the MFC library. Required a complete and thorough understanding of MFC and OWL (Borland's Object Windows Library) programming frameworks.

- Designed, programmed, and managed Co-op students programming on initial versions of Prometheus, the Canadian standard forest fire growth modeling application, with Visual C++ 6.0, COM, ATL, and MFC.
- Designed and programmed VISTAS, a 3-D visualization tool that provides immediate visual feedback for the user to select and perform forest operations such as pruning and thinning trees, with Visual C++ 6.0 and MFC.
- Designed and programmed a light interception modeling system (LITE V1, V2, SLIM V1, V2, BRITE) with Dr. P. Comeau, Ministry of Forests, with Visual C++ 6.0 and MFC.
- Helped design and implement a pathogen simulator (SWAT) which was integrated into a tree growth simulator (TASS), with GNU C for Linux. Located and reported a variety of programming errors, omissions and, bad assumptions in the TASS source code. Performed a variety of optimizations to improve performance substantially.
- Performed initial design work on VisTASS, a multi-threaded application based on the combination of VISTAS and TASS.
- Development of a client/server application pair to work over the internet using HTTP protocols across heterogeneous environments, with Visual C++ 6.0 and MFC on Windows, GNU C and C++ compilers in Linux and Unix.
- Design and development work on FWxWin, a fire weather index application under Borland Delphi.
- Maintenance of a Linux server to support internet access to a tree growth simulator (TASS).

1993-1995 University of Victoria Victoria, B.C.

Lab Instructor

- Lab instructor for networks courses

1992-1993 Brandon University Brandon, MB

Programmer/Analyst

- Developed FireBrand and FireCan; prototype applications to simulate forest fire growth using Borland C++ V3.0 and Object Windows Library (OWL).

Education

2003 University of Victoria Victoria, B.C.

Ph.D., Computer Science

Dissertation title: "*Chameleon, a Dynamically Extensible and Configurable Object-Oriented Operating System*"

- Supervisor: Dr. G. C. Shoja

Highlights: The focus of the research was on designing, then implementing a completely new, highly adaptable operating system structuring concept where different components can be introduced and replaced without requiring notification of other (dependent) components. Support for a range of applications with diverse requirements (specifically embedded and mobile systems) was motivation.

- The object orientation paradigm, including *meta* computations, was exploited to improve modularity, information hiding, and reusability. The solutions have applicability in hypervisor, kernel, operating system, and

application development layers.

- New object-oriented concepts replacing a micro-kernel and traditional communication and migration techniques were introduced and defined. These concepts allow new system events to be defined and dynamically introduced to a running system.
- The effectiveness and performance of the design was proven by gaining extreme flexibility with minimal overhead and real-time scheduling. Performance comparable to a microkernel was achieved. Traditional performance measures (e.g., IPC) were used. A variety of custom testing tools and methodologies were developed and used.
- Development languages were C, C++, assembler. A clear understanding of the compilation of C++ language constructs was required; dynamic binding among super- and sub-classes in the kernel in a manner that is not supported by the language, was required.

Course work covering real-time systems, fault-tolerant systems, internet-based applications.

- Implementation of an embedded real-time operating system (C, C++, assembler programming languages) controlling a stand-alone robot.
- Implementation of an internet client/server pair using the HTTP 1.1 protocol file upload features. The client implemented and used this portion of the HTTP protocol before commercial web clients (internet browsers) did. The server serialized batch job requests, and dynamically built HTML pages to provide job status and download information. The server software was implemented on Unix and later ported to Linux. The client software executed in a Windows environment.

1995 **University of Victoria** **Victoria, B.C.**

M.Sc., Computer Science

Thesis title: "*Enhancing Real-time Performance of an Object-Oriented Operating System*".

- Supervisor: Dr. G. C. Shoja

Highlights: This thesis work presents an in-depth analysis for the introduction of real-time scheduling to a research operating system called Apertos from Sony Computer Science Labs.

- A new theoretical model for hierarchical real-time scheduling was defined, implemented, and introduced to Apertos.
- Severe penalties in Apertos communication model were identified and corrected, resulting in a significant (8 times) performance improvement.
- A variety of other operating systems and their designs were reviewed for comparison.

Course work covering computer graphics and networks, distributed computing, real-time programming, and object-oriented design.

- Implementation of a stand-alone real-time operating system implementing a variety of hard real-time scheduling algorithms was developed, tested, and proven.
- The sementics, implementations, and features of various object-oriented languages were itemized.
- An application suite built atop a custom protocol using Ethernet communications was designed and tested.

1992 **Brandon University** **Brandon, MB**

B.Sc. (4-year Specialist)

- Major in Computer Science, Minor in Mathematics
- Course work covering calculus, geometry, computer graphics, database design, software engineering, networks, operating systems, programming languages

Refereed Publications and Conference Presentations

G. D. Richards and R. W. Bryce. "A Computer Algorithm for Simulating the Spread of Wildland Fire Perimeters for Heterogeneous Fuel and Meteorological Conditions" In *International Journal of Wildland Fire*. 5(2), pages 73-79, 1995.

R. W. Bryce, K. Murata, G. C. Shoja, and E. G. Manning. "Porting and Enhancements of a Real-time Object-Oriented Operating System" In *Proceedings of the IEEE Pacific Rim Conference on Communications, Computers, and Signal Processing.* Pages 606-609, 1995.

R. W. Bryce and G. C. Shoja. "Chameleon: A New Operating System Concept For Supporting Multimedia" In *7th IASTED Conference on Internet and Multimedia Systems and Applications (ISMA 2003)*. August, 2003.

T. Garcia, W. J. Braun, R. Bryce, C. Tymstra, "Smoothing and bootstrapping the Prometheus Fire Spread Model". in *Environmetrics* 2008. 19(8), pages 836-848, 2008.

C. Tymstra, R. W. Bryce B. M. Wotton, O. B. Armitage, "Development and structure of Prometheus: the Canadian wildland fire growth simulation model". Nat. Resour. Can., Can. For. Serv., North. For. Cent., Edmonton, AB. Inf. Rep. NOR-X-417, 2009.

C. Bose, R. Bryce, G. Dueck, "Untangling the Prometheus Nightmare". In MODSIM'09, accepted., June 2009.

Technical Reports

R. W. Bryce and G. C. Shoja. "Chameleon, a New Object-Oriented Operating System". Technical Report of the Department of Computer Science DCS-276-IR, University of Victoria, June 2003.

R. W. Bryce, M. Horie, E. G. Manning, G. C. Shoja. "The Mirrors System". Technical Report of the Department of Computer Science DCS-250-IR, University of Victoria, November 1996.

Grants and Awards

Natural Sciences and Engineering Research Council (NSERC)

1993–1995 **Post-Graduate Scholarship A**

1996–1998 **Post-Graduate Scholarship B**

University of Victoria

1993 **President's Award**

1994 **President's Award**

B. C. Advanced Systems Institute
1993 **G.R.A.P. Scholarship**

Brandon University
1989 **Certificate of Merit in Computer Science**

Additional Professional Qualifications

1994 **Power Engineer Certificate, Class ST, Province of Manitoba**

Toolsets, Languages

Spoken: **English**

Programming: C++, Java, Smalltalk, Pascal, Delphi, C, C#, IDL, Oberon, Basic, Fortran, Cobol, various assembly languages
COM, ATL, XML, Corba, OpenGL, DirectX

Tools / IDE's: Microsoft Visual Studio (2008, 2005, 2003, 6.0, 4.2, 1.52), NetBeans, Microsoft Office: Word, Excel, PowerPoint, Project, Sharepoint, Outlook, Bugzilla, Apache, Drupal, cygwin, OGRE

Operating Systems: (commercial) MS-DOS, Windows (7, Vista, XP, 2000, 98, 3.1; 32-bit and 64-bit), Linux, Unix, VMS

ATTACHMENT 2

NB08-0320

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

The following addition to the NBIC is proposed;

Add requirements to change the service of pressure vessels in Part 1, Installation, Part 2, Inspection, and Part 3 Repairs and Alterations.

Statement of Need

The Federal Railroad Administration has a proposal out on railcars carrying Poison Inhalation Hazard (PIH) that will require a number of existing tank cars to be retired early. There is a potential that some of these tanks will be recycled into stationary tanks for service other then what they were design for.

Additionally, this practice already occurs in some industries without any consideration for any damage mechanisms that made have been present in the initial service. The NBIC does not currently address these types of events.

Background Information

Part 1 – Add a new paragraph in 4.3 General Requirements to address change of service for a pressure vessel. These requirements should caution installers, inspectors, owners, and jurisdictional authorities of the inherent dangers involved when changing service. A new supplement should be added to address the specific requirements for installation of pressure vessels that are being converted from one service to another.

NB08-0321

Background Information

Part 2 – Add in Paragraph 1.5 Inspection Activities verbiage to address change of service for a pressure vessel. These requirements should caution inspectors, owners, and jurisdictional authorities of the inherent dangers involved when changing service. A new supplement or new Subject under 2.3.6, Description and Concerns of Specific Types of Pressure Vessels, should be added to address the specific requirements for inspection of pressure vessels that have been converted from one service to another.

NB08-0322

Part 3 - Add a new paragraph to 3.2 General Requirements for Repairs and Alterations to address change of service for a pressure vessel. These requirements should caution inspectors, owners, repair organizations and jurisdictional authorities of the inherent dangers involved when changing service. A new supplement should be added to address the specific requirements for repairs and alterations of pressure vessels that have been converted from one service to another.

ATTACHMENT 3

NB07-0905 Part Revision Proposal April 5, 2010

Subject Pressure Testing Terminology in the NBIC

File Number 07-0905 **Prop. on Pg.**

Proposal Review current use of pressure testing terminology and revise as necessary to provide consistency of terminology across Parts 1-3 of the NBIC. Also, evaluate need for cautionary statement regarding low toughness materials subjected to pressure testing.

Explanation

Project Manager M. Horbaczewski

Task Group Galanes (CHAIR), Parrish, Yagen, and Horbaczewski.

Task Group Negatives **TG Meeting Date**

Background

This task group (TG) has been re-assigned to report back to the NBIC main committee Chair. The purpose of this TG is to review pressure testing terminology as currently stated in the NBIC, and to recommend necessary revisions to provide consistency of pressure testing terminology for Parts 1-3 of the NBIC.

EXISTING TEXT	PROPOSED TEXT
rION CODE • PART 2 — INSPECTION procedures. Alternatively, lines may be blanked or sections of pipe removed. Blowoff lines, where practicable, shall be disconnected between pressure parts and valves. All drains and vent lines shall be open. 2) The Inspector shall review all personnel safety requirements as outlined in 1.4 prior to entry. Note: If a boiler has not been properly prepared for an internal inspection, the inspector shall decline to make the inspection. **2.2.7 EVIDENCE OF LEAKAGE** a) It is not normally necessary to remove insulating material, masonry, or fixed parts of a boiler for inspection, unless defects or deterioration are suspected or are commonly found in the particular type of boiler being inspected. Where there is evidence of leakage showing on the covering, the Inspector shall have the covering removed in order that a thorough inspection of the area may be made. Such inspection may require removal of insulating material, masonry, or fixed parts of the boiler. b) For additional information regarding a leak in a boiler or determining the extent of a possible defect, a leak test may be performed per 4.3.3.	**~~liquid~~ pressure** [replace "leak" with "liquid pressure"] **4.3.1** [replace 4.3.3. with 4.3.1]

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2.3.3 **EXTERNAL INSPECTION** The purpose of an external inspection is to provide information regarding the general condition of the pressure vessel. The following should be reviewed: a) Insulation or Other Coverings If it is found that external coverings such as insulation and corrosion-resistant linings are in good condition and there is no reason to suspect any unsafe condition behind them, it is not necessary to remove them for inspection of the vessel. However, it may be advisable to remove small portions of the coverings in order to investigate attachments, nozzles, and material conditions. Note: Precautions should be taken when removing insulation while vessel is under pressure. b) Evidence of Leakage Any leakage of gas, vapor, or liquid should be investigated. Leakage coming from behind insulation coverings, supports or settings, or evidence of past leakage should be thoroughly investigated by removing any covering necessary until the source of leakage is established. 36	**For additional information regarding a leak in a pressure vessel or determining the extent of a possible defect a ~~liquid~~ pressure test may be performed per Section 4.3.1.** [add new text following 2.3.3, b]

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ɔN CODE • PART 2 — INSPECTION 2.4.6 EVIDENCE OF LEAKAGE a) A leak should be thoroughly investigated and corrective action initiated. Leaks beneath piping insulation should be approached with caution, especially when removing insulation from a pressurized piping system for inspection. b) A pressure test may be required to obtain additional information regarding the extent of a defect or detrimental condition. c) To determine tightness, the test pressure need be no greater than the normal operating pressure. The metal temperature should be not less than 70°F (21°C) and the maximum metal temperature during inspection should not exceed 120°F (49°C). The potential corrosive effect of the test fluid on the piping material should be considered.	[Replace 2.4.6 with following and delete part "c."] **b) For additional information regarding a leak in piping or determining the extent of a possible defect a ~~liquid~~ pressure test may be performed per Section 4.3.1.** ~~c) To determine tightness, the test pressure need be no greater than the normal operating pressure. The metal temperature should be not less than 70°F (21°C) and the maximum metal temperature during inspection should not exceed 120°F (49°C). The potential corrosive effect of the test fluid on the piping material should be considered.~~

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3.4.9 CRACKS a) Cracks may result from flaws existing in material or excessive cyclic stresses. Cracking can be caused by fatigue of the metal due to continual flexing and may be accelerated A07 by corrosion. Fire cracks are caused by the thermal differential when the cooling effect of the water is not adequate to transfer the heat from the metal surfaces exposed to the fire. Some cracks result from a combination of all these causes mentioned. b) Cracks noted in shell plates and fire cracks that run from the edge of the plate into the rivet holes of girth seams should be repaired. Thermal fatigue cracks determined by engineering evaluation to be self arresting may be left in place. c) Areas where cracks are most likely to appear should be examined. This includes the ligaments between tube holes, from and between rivet holes, any flange where there may be repeated flexing of the plate during operation and around welded connections. d) Lap joints are subject to cracking where the plates lap in the longitudinal seam. If there is any evidence of leakage or other distress at this point, the Inspector shall thoroughly examine the area and, if necessary, have the plate notched or slotted in order to determine whether cracks exist in the seam. Repairs of lap joint cracks on longitudinal seams are prohibited. e) Where cracks are suspected, it may be necessary to subject the pressure-retaining item to a hydrostatic test or nondestructive examination to determine their presence and location. A07 f) Cracks shall either be repaired, or formally evaluated by Crack Propagation Analysis to quantify their existing mechanical integrity. 65	[Replace "hydrostatic" with "pressure" and add "a" preceding "nondestructive."] e) Where cracks are suspected, it may be necessary to subject the pressure-retaining item to a **~~liquid~~ pressure** test or **a** nondestructive examination to determine their presence and location.

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4.3.1 PRESSURE TESTING a) During an inspection of a pressure-retaining item, there may be certain instances where inservice conditions have adversely affected the tightness of the component or the inspection discloses unusual, hard to evaluate forms of deterioration that may affect the safety of the vessel. In these specific instances, a pressure test using air, water, or other suitable test medium may be required at the discretion of the Inspector to assess leak tightness of the pressure-retaining item. b) The Inspector is cautioned that a pressure test will not provide any indication of the amount of remaining service life or the future reliability of a pressure-retaining item. The pressure test in this instance only serves to determine if the pressure-retaining item contains defects that will not allow the item to retain pressure. In certain instances, pressure tests of inservice components may reduce the remaining service life of the component due to causing permanent deformation of the item.	**4.3.1. PRESSURE TEST METHODS** a) During an inspection, there may be certain instances where in-service conditions have adversely affected the tightness or the inspection discloses unusual, hard to evaluate forms of deterioration that may affect the pressure retaining capability of the pressure retaining item. In these specific instances, a pressure test using an incompressible liquid, air, or other suitable test medium may be required at the discretion of the Inspector to assess pressure boundary integrity of the pressure-retaining item. b) The Inspector is cautioned that a pressure test will not provide any indication of the amount of remaining service life or the future reliability of a pressure-retaining item. The pressure test only serves to determine if the item contains defects that will not allow the item to retain pressure. In certain instances, pressure tests of in-service items may reduce the remaining service life due to causing permanent deformation.

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c) If an inservice pressure test is required, the following precautions shall be met:

1) The test pressure should not exceed 90% of the set pressure of the lowest setting pressure relief device on the component to avoid damage to pressure relief devices.

2) Test pressure should be selected or adjusted in agreement between the Inspector and the owner-user. When the original test pressure includes consideration of corrosion allowance, the test pressure may be further adjusted based upon the remaining corrosion allowance.

3) The metal temperature during a pressure test should not be less than 60°F (16°C) unless the owner-user provides information on the toughness characteristics of the vessel material to indicate the acceptability of a lower test temperature.

4) The metal temperature shall not be more than 120°F (49°C) unless the owner-user specifies the requirement for a higher test temperature. If the owner-user specifies a test temperature higher than 120°F (49°C), then precautions shall be taken to afford the Inspector close examination without risk of injury.

5) When contamination of the vessel contents by any medium is prohibited or when a pressure test is not practical, other testing methods described below may be used provided the precautionary requirements of the applicable Section of the original construction code or other standards are followed. In such cases, there shall be agreement as to the testing procedure between the owner-user and the Inspector.

c) Use of pressure test methods, written or otherwise, shall be in agreement between the owner-user and the Inspector.

All instrumentation, including pressure and temperature gages, used to monitor a test shall be properly calibrated.

When contamination of the vessel contents by water is prohibited or when a liquid test is not practical due to weight or other considerations, alternate test media may be used provided the precautionary requirements of the applicable section of the original construction code or other standards are followed. In such cases, there shall be agreement as to the testing procedure between the owner-user and the Inspector.

Pressure testing shall not be conducted using flammable or toxic fluids.

NOTE: The requirements of NBIC Part 3 shall be followed when performing a liquid pressure test following repair or alteration of a pressure retaining item.

4.3.1.1 ALL PRESSURE TESTING:

Careful design of the test procedure can limit potential damage. For testing of pressure retaining items, parameters that should be considered are the test media, the test pressure, materials of construction and the metal temperature and temperature of the test media. Some carbon steel and low alloy steel materials that were manufactured prior to 1970 may not have sufficient notch

	toughness to prevent brittle fracture during pressure testing conducted at or even above generally acceptable temperature of 60°F (16 deg C). For thick-walled pressure retaining items, it is recommended to seek technical guidance in establishing the notch toughness characteristics of the steel plate prior to pressure testing so that the metal temperature may be warmed above 60 deg F (16 deg C) to avoid brittle fracture. The organization making any pressure test shall determine that the pressure-retaining item material has adequate notch toughness at the minimum temperature of the material and the test media during the pressure test. **4.3.1.2 LIQUID PRESSURE TESTING:** Test pressure should be selected or adjusted in agreement between the Inspector and the owner-user. The liquid test pressure shall not exceed the lesser of 150% of the MAWP or the test pressure established by the original code of construction. <u>When a pressure relief device is left in place,</u> the test pressure should not exceed 90% of the set pressure of the lowest setting pressure relief device on the pressure retaining item to avoid damage to pressure relief devices.

	During a liquid pressure test where the test pressure will exceed 90% of the set pressure of a pressure relief device, the device shall be removed whenever possible. If removal of valve-type devices is not possible or practical, a spindle restraint such as a gag may be used provided that the valve manufacturer's instructions and recommendations are followed. Extreme caution should be employed to ensure only enough force is applied to contain pressure. Excessive mechanical force applied to the spindle restraint may result in damage to the seat and/or spindle and may interfere with the proper operation of the valve. The spindle restraint shall be removed following the test. The organization who performs the liquid pressure test and applies a spindle restraint shall attach a metal tag that identifies the organization and date the work was performed to the pressure-relieving device. If the seal was broken, the organization shall reseal the adjustment housing with a seal that identifies the responsible organization. The process shall be acceptable to the jurisdiction where the pressure-retaining items are installed. The metal temperature shall not be more than 120°F (49°C) unless the owner-user specifies the requirement for a higher test temperature. If the owner-user specifies a test temperature higher than 120°F (49°C), then precautions shall be taken to afford the Inspector close examination without risk of injury. Hold-time for the liquid pressure test shall be for a minimum of 10

	minutes prior to the examination by the Inspector. Test pressure shall be maintained for the time necessary for the Inspector to conduct the inspection. **4.3.1.3 PNEUMATIC TESTING** A test using a compressible gas should not be considered due to the potential hazard unless a liquid pressure test cannot be performed without damaging the pressure retaining item or causing contamination of the internal surfaces of the pressure retaining item. Concurrence of the owner and the Inspector shall be obtained and the Jurisdiction where required prior to conducting a pneumatic test. The test pressure shall be the minimum required to verify leak tightness integrity but shall not exceed the maximum pneumatic test pressure of the original code of construction. Precautionary requirements of the original code of construction shall be followed. **WARNING:** Adequate safety precautions shall be taken to ensure personnel safety when a compressible gas is used due to the volumetric expansion potential upon release of the pressure test gas. Consideration shall be given to possible asphyxiation hazards. Properly calibrated instrumentation shall be used to detect leakage of the testing medium. The instrumentation selected shall be appropriate for the test medium. Instrumentation may detect changes in pressure or chemical

	concentrations and shall be sensitive enough to detect leakage.

4.3.2 LEAK TESTING

Leak testing for the purpose of detecting any leakage may be performed when a pressure test cannot be performed. Some methods or techniques for leak testing may include bubble test (direct pressure or vacuum), helium mass spectrometer, pressure change, or flow measurement. Use of leak test procedures shall be in agreement between the owner-user and the Inspector. Use of written procedures and experienced personnel is required when performing leak tests. The Inspector shall review the written procedure to become familiar with limitations, adequacy, methods, and acceptance standards identified.

4.3.3 EVIDENCE OF LEAKAGE IN A BOILER

For additional understanding regarding a leak in a boiler, see 2.2.7 for the extent of a possible defect. A pressure test may be performed as follows:

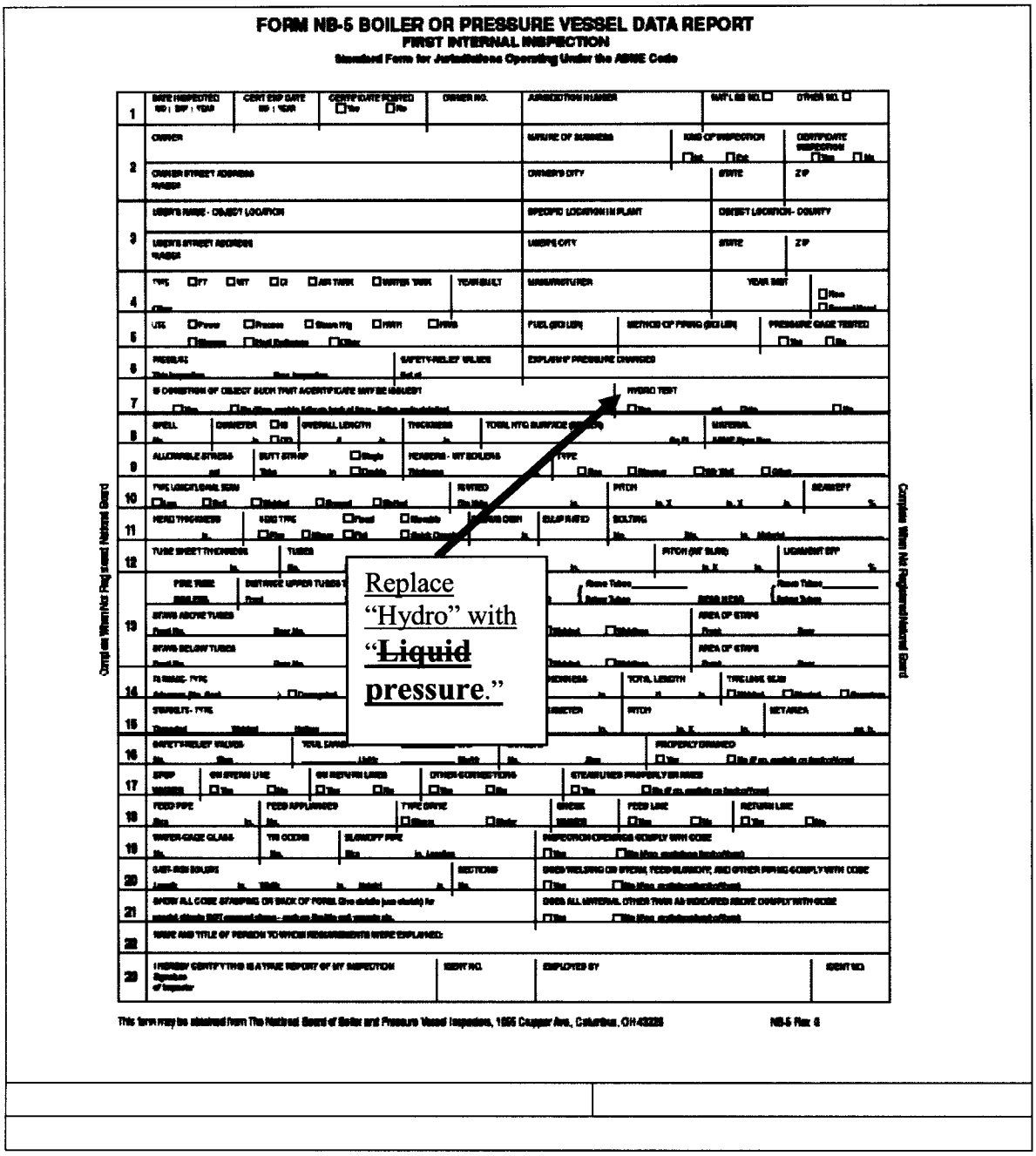
a) To determine tightness, the test pressure shall be no greater than the maximum allowable working pressure stamped on the pressure-retaining item.

b) During a pressure test where the test pressure will exceed 90% of the set pressure of a pressure relief device, the device shall be removed whenever possible. If not possible or practical, a spindle restraint such as a gag may be used provided that the valve manufacturer's instructions and recommendations are followed. Extreme caution should be employed to ensure only enough force is applied to contain pressure. Excessive mechanical force applied to the spindle restraint may result in damage to the seat and/or spindle and may interfere with the proper operation of the valve. The spindle restraint shall be removed following the test.

4.3.2 Delete

4.3.3 Delete

c) Components subjected to fire damage can exhibit altered mechanical properties, and should be evaluated to determine if the material has retained necessary strength and toughness as specified in the original code of construction. Heating above the lower critical temperature results in a phase transformation that upon rapid cooling can dramatically affect material properties. Evaluation methods may consist of: 1) Portable hardness testing 2) Field metallography or replication 3) Pressure testing 4) Magnetic particle testing 5) Liquid penetrant testing 6) Visual examination 7) Dimensional verification checks d) If visual distortion or changes in the microstructure or mechanical properties are noted, consider replacing the component or a detailed engineering analysis shall be performed to verify continued safe operation. e) Techniques for evaluating fire damage are referenced in applicable standards. See 1.3.	[NOTE: This is existing Section 4.4.8.5] **<u>3) Liquid</u> pressure testing**



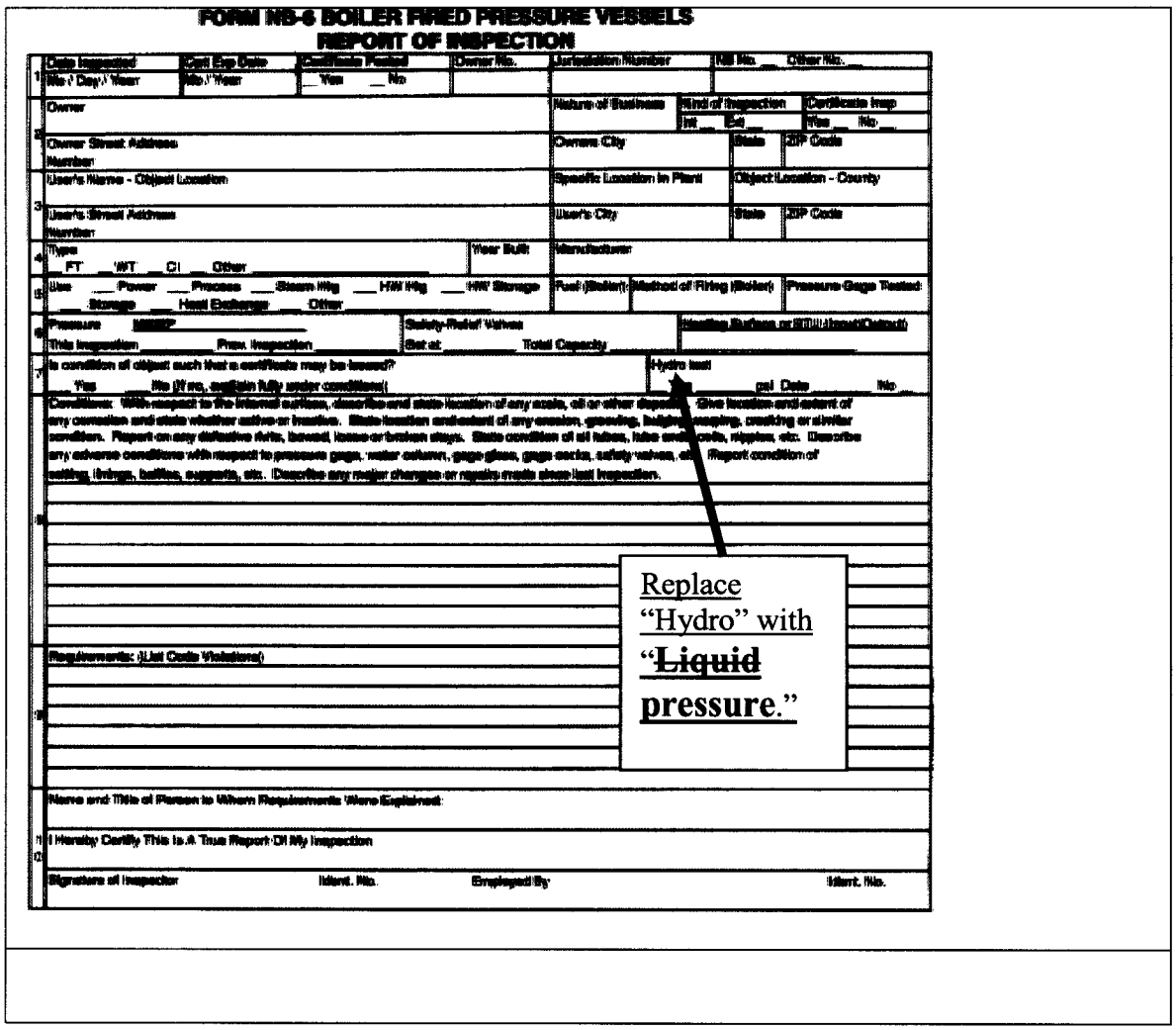
FORM NB-5 BOILER OR PRESSURE VESSEL DATA REPORT
FIRST INTERNAL INSPECTION
Standard Form for Jurisdictions Operating Under the ASME Code

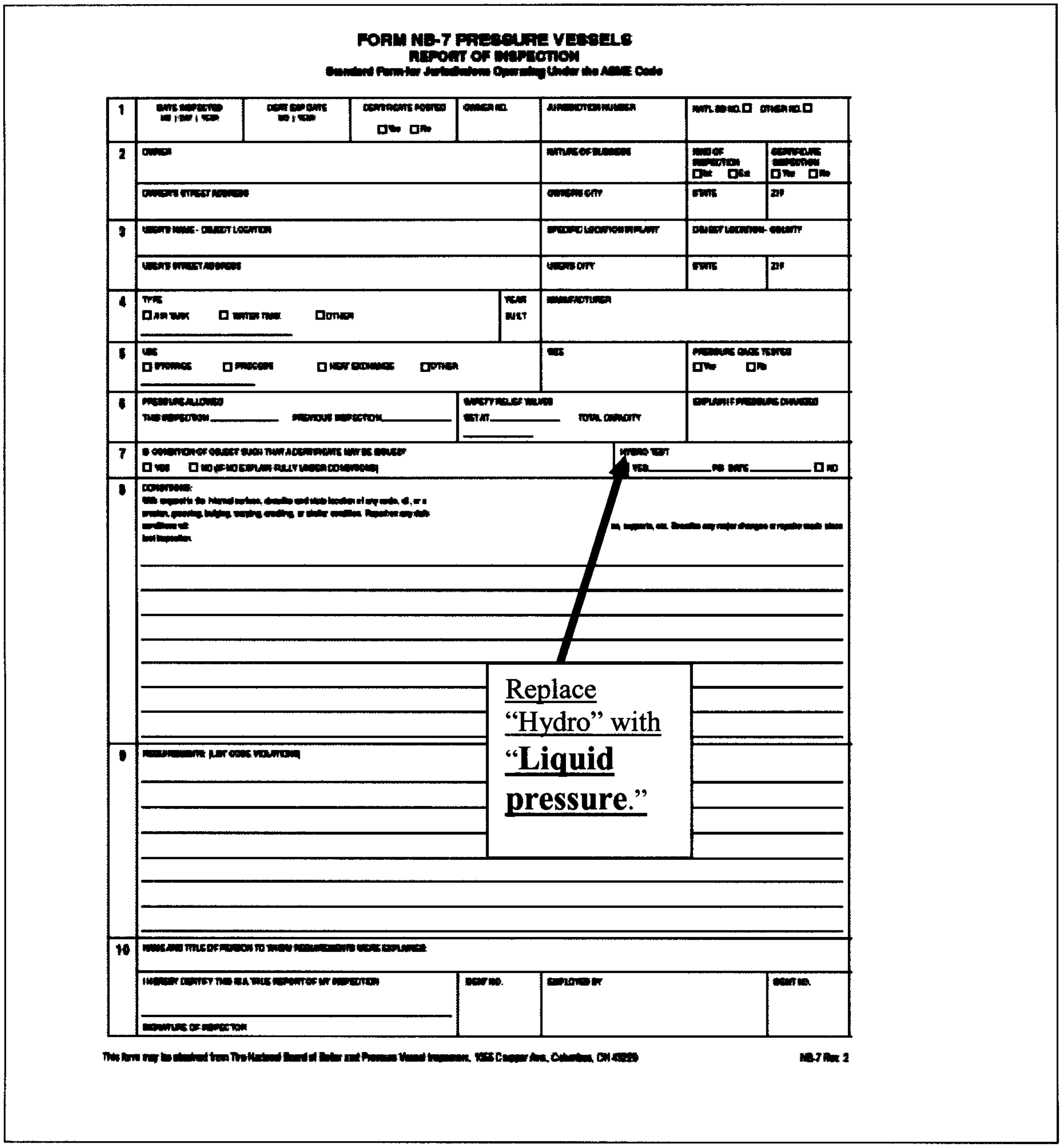
Complete When Not Registered/National Board

Complete When Not Registered/National Board

Replace "Hydro" with "~~Liquid~~ pressure."

This form may be obtained from The National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Ave., Columbus, OH 43229 NB-5 Rev. 6


FORM NB-6 BOILER FIRED PRESSURE VESSELS
REPORT OF INSPECTION
Hydro test
Replace "Hydro" with "~~Liquid~~ pressure."



FORM NB-7 PRESSURE VESSELS
REPORT OF INSPECTION

1			CERTIFICATE POSTED ☐ Yes ☐ No	OWNER NO.	JURISDICTION NUMBER	NAT'L BD NO. ☐ OTHER NO. ☐
2	OWNER				NATURE OF BUSINESS	
	OWNER'S STREET ADDRESS				OWNER'S CITY	STATE / ZIP
3	USER'S NAME - OBJECT LOCATION				SPECIFIC LOCATION IN PLANT	OBJECT LOCATION - COUNTY
	USER'S STREET ADDRESS				USER'S CITY	STATE / ZIP
4	TYPE ☐ AIR TANK ☐ WATER TANK ☐ OTHER			YEAR BUILT	MANUFACTURER	
5	USE ☐ STORAGE ☐ PROCESS ☐ HEAT EXCHANGE ☐ OTHER				SIZE	PRESSURE GAGE TESTED ☐ Yes ☐ No
6	PRESSURE ALLOWED THIS INSPECTION ____ PREVIOUS INSPECTION ____			SAFETY RELIEF VALVES SET AT ____ TOTAL CAPACITY		EXPLAIN IF PRESSURE CHANGED
7	IS CONDITION OF OBJECT SUCH THAT A CERTIFICATE MAY BE ISSUED? ☐ YES ☐ NO (IF NO EXPLAIN FULLY UNDER CONDITIONS)				HYDRO TEST YES ____ PSI DATE ____ ☐ NO	
8	CONDITIONS:					
9	REQUIREMENTS: (LIST CODE VIOLATIONS)					
10	NAME AND TITLE OF PERSON TO WHOM REQUIREMENTS WERE EXPLAINED					
	I HEREBY CERTIFY THIS IS A TRUE REPORT OF MY INSPECTION / SIGNATURE OF INSPECTOR			IDENT NO.	EMPLOYED BY	IDENT NO.

NB-7 Rev. 2

NATIONAL BOARD INSPECTION CO	Supplement S7.7 C
b) Common evidence of exposure to fire is: 1) charring or burning of the paint or other protective coat; 2) burning or scarring of the metal; 3) distortion; or 4) burning or melting of the valves. c) A pressure vessel that has been subjected to the action of fire shall be removed from service until it has been properly evaluated. The general intent of this requirement is to remove from service pressure vessels which have been subject to the action of fire that has changed the metallurgical structure or the strength properties of the steel. Visual examination with emphasis given to the condition of the protective coating can be used to evaluate exposure from a fire. This is normally determined by visual examination as described above with particular emphasis given to the condition of the protective coating. If there is evidence that the protective coating has been burned off any portion of the pressure vessel surface, or if the pressure vessel is burned, warped, or distorted, it is assumed that the pressure vessel has been overheated. If, however, the protective coating is only smudged, discolored, or blistered, and is found by examination to be intact underneath, the pressure vessel shall not be considered affected within the scope of this requirement. Vessels that have been involved in a fire and show no distortion shall be requalified for continued service by retesting using the hydrostatic test procedure applicable at the time of original fabrication.	[Replace "hydrostatic" with "liquid pressure" in part "c"] **liquid pressure**

NB07-0912

NBIC Pressure Relief Device (PRD) Inspection Guide

This guide provides a basis for NBIC Inspectors use in reviewing Pressure Relief Devices (PRD's) for compliance with the *National Board Inspection Code* (NBIC). It is only intended to provide general guidance, and must be used in conjunction with NBIC, Part 2 for specific details of inspection.

1. Description and Overview

Pressure relief devices are used to provide a means of venting excess pressure which could rupture a boiler or pressure vessel. A pressure relief device is the last line of defense for safety. If all other safety devices or operating controls fail, the pressure relief device must be capable of venting excess pressure.

2. Types of Devices

There are many types of pressure relief devices available for use in the boiler and pressure vessel industry. This inspector guide will address the most common devices found on boilers and pressure vessels. Virtually all jurisdictions require a pressure relief device to be manufactured and certified in accordance with the ASME Code in addition to being capacity certified by the National Board.

The most common types of pressure relief devices are:

- Pressure Relief Valve – A pressure relief device designed for emergency or abnormal over pressure conditions and designed to reclose after the pressure has been reduced.
- Safety Valve – This device is typically used for steam or vapor service. It operates automatically with a full-opening pop action and recloses when the pressure drops to a value consistent with the blowdown requirements prescribed by the applicable governing code or standard.
- Relief Valve – This device is typically used for liquid service. It operates automatically by opening farther as the pressure increases beyond the initial opening pressure and recloses when the pressure drops below the opening pressure.
- Safety Relief Valve – This device includes the operating characteristics of both a safety valve and a relief valve and may be used in either application.
- Temperature and Pressure Safety Relief Valve – This device is typically used on potable water heaters. In addition to its pressure-relief function, it also includes a temperature-sensing element which causes the device to open at a predetermined temperature regardless of pressure. The set temperature on these devices is usually 210°F.
- Rupture Disk – This device is classified as nonreclosing since the disk remains open upon actuation. This type of device may be found in use with a pressure vessel where a spring-loaded pressure relief valve is inappropriate due to the

operating conditions or environment. They may also be used at the inlet or outlet of a pressure relief valve to isolate it from corrosive or clogging fluids.

- Pilot Operated Pressure Relief Valve- This is a pressure relief valve where the disk is held closed by system pressure, and this pressure is controlled by a pilot valve actuated by the system pressure.

3. Device Operation

Pressure relief devices must operate as designed in order to perform their required task. Different types of problems can prevent normal operation:

- The inlet piping connected to the device must not be smaller in diameter than the inlet opening of the device. An inlet pipe that is smaller than the device inlet opening could affect capacity or performance for which the device was designed.
- The discharge piping connected to the device must be no smaller than the discharge opening of the device. A discharge pipe that is smaller than the device discharge opening could cause pressure to develop on the discharge side of the device while operating.
- Multiple devices discharging into a discharge manifold or header is a common practice. The discharge manifold or header must be sized so the cross-sectional area is equal to or greater than the sum of the discharge cross-sectional areas of all the devices connected to the discharge manifold or header. Failing this requirement, the devices would be subjected to pressure on the discharge side of the device while operating. Even a small amount of pressure here could adversely affect the operation of the device. If back pressure is present or anticipated, a device designed for these conditions such as a bellows valve or balanced valve should be considered.
- Constant leakage of the device can cause a build-up of scale or other solids around the discharge opening. This build-up can prevent the device from operating as designed.
- Discharge piping connected to the device must be supported so as not to impart any loadings on the body of the device. These loadings could affect or prevent the proper operation of the device including proper reclosure after operating.
- Some devices, especially on larger boilers, may have a discharge pipe arrangement which incorporates provisions for expansion as the boiler heats up or cools down. These expansion provisions must allow the full range of movement required to prevent loads being applied to the device body.
- Drain holes in the device body and discharge piping, when applicable, must be open to allow drainage of liquids from over the device disk on spring loaded valves. Any liquid allowed to remain on top of the device disk can adversely affect the operating characteristics of the device.
- Most jurisdictional requirements state the device must be "piped to a point of safe discharge." This must be accomplished while keeping the run of discharge piping as short as possible. Most jurisdictions also limit the number of 90 degree elbows that may be installed in the discharge piping. Too long of a run and multiple elbows can adversely affect the operation of the device.

- For threaded valves, the outlet pipe should be positioned such that when the valve is discharging, the discharge forces will not tend to cause the valve to unscrew itself from its installation point.

4. Inspection Steps

Personal Protection Equipment

The inspection of pressure relief devices can include the discharge of high velocity and/or high temperature fluids, and high noise levels can be encountered. Appropriate personal protective equipment, such as eye and ear protection should be used as appropriate.

While inspecting a boiler or pressure vessel, the inspector will also be evaluating the pressure relief device(s) installed on, or associated with, the equipment. The inspector should:

- Compare the device nameplate set pressure with the boiler or pressure vessel maximum allowable working pressure (MAWP) and ensure the device set pressure does not exceed the MAWP. A device with a set pressure less than MAWP is acceptable. If multiple devices are used, at least one must have a set pressure equal to or less than the MAWP. The ASME Code should be reviewed for other conditions relating to the use of multiple devices.
- Ensure the device still has the device manufacturer's seals intact (may be the seal of an Assembler or Repair organization). These seals can be in the form of wire through a drilled hole with a soft metal button, such as lead, crimped on the wire, or removable parts may be stake punched or crimped to inhibit accidental movement. Any evidence of the seal mechanism being broken or destroyed could indicate tampering. If this is found, the inspector should require replacement of the device or repair by a qualified organization. Seal identification should match the original or repair nameplate as applicable.
- Verify the discharge of the device is piped to a safe point of discharge.
- If there are no records that pressure relief valve(s) have been tested, request the owner or owner's representative to lift the test lever, if so equipped. Section IV valves can have the test levers lifted without pressure in the boiler. All other valves must have at least 75% of the valve set pressure under the device disk prior to lifting the test lever. If the valve is found to be stuck in a closed position, the equipment **must** be immediately removed from service until such time as the valve can be replaced or repaired. This testing can be hazardous and needs to be done under carefully controlled conditions.
- Lifting the test lever of a spring-loaded valve may not be practical in all cases when inspecting pressure vessels. The contents of the vessel may be hazardous. In these cases, the vessel owner/user should have a testing procedure in place which will ensure documented inspection and testing of the device at regular intervals.

- The small pressure relief devices found on many air compressor vessels have a ring inserted through a drilled hole on the end of the device stem. These are tested by pulling the stem straight out and then releasing. The discharge openings in this type of device are holes drilled around the periphery of the device. These holes often get filled with oily dust and grit which can cause eye damage when the device is tested. A rag, loosely wrapped around the device when testing, can help prevent personal injury from the dust and grit.
- Valve body drains and discharge pipes should be free of debris or liquids.
- For valves equipped with a balancing bellows make sure the bonnet vent is not plugged.
- If a rupture disk is installed between a pressure vessel and a pressure relief valve, make sure there is a pressure gage or tell-tale installed. If there is any pressure showing on the gage, this means the disk has burst and must replaced.
- Detailed testing and operational inspection guidelines can be found in the *National Board Inspection Code*, Part 2 2.5.4 and 2.5.7.
- Recommended inspection and test frequencies can be found in the *National Board Inspection Code*, Part 2 2.5.8.

Additional Information

Additional information to aid inspections of pressure relief devices, including installation requirements, can be found in the following publications and sources:

- *National Board Inspection Code*
- ASME Section I
- ASME Section IV
- ASME Section VI
- ASME Section VII
- ASME Section VIII (Divisions 1, 2, and 3)
- ASME Section X
- ASME CSD-1
- Manufacturer's Installation, Operation, and Maintenance Documentation
- Jurisdictional Laws, Rules, and Directives
- API-576 Inspection of Pressure Relief Devices

1-19-10 Draft, Includes SC-PRD Comments, editing notes removed

File: NBIC Pressure Relief Device Inspection Guide 1-19-10.doc

Action Item

NB10-0503

Current Version

Inspection Part 2,page 114

S1.4.2.23 HANDHOLE WASHOUT DOORS
Handhole washout doors and their mating surfaces shall be inspected for:
a) Damaged or cracked threads on the door studs
b) Corrosion of door sealing surfaces and studs
c) Cracks
d) Stretching or bending of the door stud or handhole door
e) Looseness
f) Leakage and steam cuts
g) Damage to the clamp
h) Damage to the clamp seating surface on the sheet
i) Confirmation that the handhole door makes unbroken line contact along the entire circumference of the sheet at the opening
j) Material of the hand hole door gaskets
k) Correct repairs
Notes: Confirmation that the handhole door has unbroken line contact against sheet can be determined by performing a "blue check." This requires applying a light coating of "contact blue" or "Prussian Blue" to the handhole door sealing surfaces. The door then is held against the sheet and re*moved.* The transfer of the bluing will show the areas that contact the sheet surfaces

Proposed Revisions

Inspection Part 2, page 114

S1.4.2.23 HANDHOLE WASHOUT DOORS
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e) Looseness
f) Leakage and steam cuts
g) Damage to the clamp
h) Damage to the clamp seating surface on the sheet
i) Confirmation that the handhole door makes unbroken line contact along the entire circumference of the sheet at the opening
j) Handhole doors and assembly components shall have proper fit at assembly.
k) Distortion of any of the components at assembly is prohibited
.l) ~~j)~~ Material of the hand hole door gaskets shall be suitable for the pressure and temperature of service.
~~k) Correct repairs~~

Notes: Confirmation that the handhole door has unbroken line contact against sheet can be determined by performing a "blue check." This requires applying a light coating of "contact blue" or "Prussian Blue" to the handhole door sealing surfaces. The door then is held against the sheet and re*moved.* The transfer of the bluing will show the areas that contact the sheet surfaces

Repair Part 3, page 149 Add a new paragraph as follows:

S2.13.14.3 Handhole doors, studs, nuts, yokes, and clamps which are worn, cracked or otherwise damaged shall be replaced and not repaired. Replacements shall be of new manufacture, rated for the pressure and temperature of service.

NB10-1101
Part 2 2.2.10.7
SG Inspection General
Inspector's Responsibility for Boiler Control's

2.2.10.7 Controls and Other Safety Devices

Establishing proper operation and maintenance of controls and safety devices is essential to safe boiler operation. Owner/Users are responsible for establishing and implementing management programs which will ensure such action is taken. In addition, any repairs to controls and safety devices must only be made by qualified individuals or organizations. Documentation of compliance with these management systems and repairs is an essential element of demonstrating the effectiveness of such systems.

a) Verify that the burner is labeled and listed by a recognized testing agency, that piping and wiring diagrams exist, that commissioning tests have been conducted and that a contractor/manufacturer's installation report has been completed and is available for review.

b) Verify that the Owner/User has established function tests, inspection requirements, maintenance and testing of all controls and safety devices in accordance with manufacturer's recommendations. Verify that these activities are conducted at assigned intervals in accordance with a written procedure, that non-conformances which impact continued safe operation of the boiler are corrected, and that the results are properly documented. These activities shall be conducted at a frequency recommended by the manufacturer or the frequency required by the jurisdiction. Where no frequencies are recommended or prescribed, the activity should be conducted at least annually.

    1. Where allowed, by the jurisdiction, Performance Evaluation may be used to increase or decrease the frequencies based on document review and approval by an appropriate engineer.

c) Verify that adequate combustion air is supplied to the boiler room.

d) Verify that a manually operated remote emergency stop button exists at each boiler room exit door.

e) Verify that low water and flow controls and protective devices are provided, when required by the jurisdiction as follows:

1. All steam boilers have at least two low water fuel cutoffs or equivalent protection to prevent startup and to cut off the fuel prior to loss of water level in the sight glass. Where required by the code of construction or jurisdictional requirements, low water protection with manual reset shall be provided.

2. All hot water heating or supply boilers have a low water cutoff device that is located to protect the boiler from a low water condition. Manual reset shall be provided.

3. All electric boilers are protected from a low water condition either by construction or a low water cutoff.

4. All forced flow circulation boilers should have a flow sensing device installed that will shut the burner down on a loss of flow.

f) Verify that steam pressure and temperature controls and protective devices are provided as follows:

1. All steam boiler systems have one operating steam pressure control and one high steam pressure limit control

2. All hot water boiler systems have one operating water temperature control and a high temperature limit control.

g) For other controls and devices such as, but not limited to, burners, fuel train valves and safety controls, fuel pumps, fuel measuring, and forwarding equipment, the Owner/User is responsible for establishing a program for periodic testing of those devices by qualified individuals and that proper records are maintained.

h) Any repair, alteration, or replacement of a control or safety device will meet the requirement of the original installation, be conducted by trained and qualified individuals with any additional certification as required by the jurisdiction, and will be documented.

NBIC Sub-Group Repairs & Alterations

Subject:	Minimum description detail needed to identify an exact scope of work for a repair and alteration.

NB-Item number:	Initiated by NB-staff ➡NB08-0304 *(accepted by LB- R/A Sub-Committee 6-9-10)*

Explanation of assignment needed:	The "R"-Form instruction guide shown at Part 3, Section 5.13.4.1 needs to be improved. Revise the "R"-Form Instruction Guide and determine if the forms R-1 & R-2 can be revised to allow additional space to better accommodate a complete description of work when the forms are completed outside of an electronic format. Also consider if making the R-2 form a 2-page document to allow electronic transfer while emphasizing the need to complete the design certification and review PRIOR to the start of construction.

Assigned to:	R. Pulliam, M. Webb, W. Jones

Background:	Mr. Terry Parks proposed a review to identify a more suitable orientation of the forms to better accommodate completing the form outside of an electronic format. Currently, the Code lacks sufficient guidance & instruction for what minimum description would represent an "exact scope of work" described in the completion guide at 5.13.4.1- step 12, for "work performed" as a repair or alteration. In focus was what responsibility did the certificate holder have to provide adequate details in describing the "exact scope of work" and what responsibility did the Inspector have to assure the description was adequate where no guidance was represented in the Code.

Existing Text in '09-addenda **5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS**	**Proposed Change #1**	Rationale
5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS	Re-title the GUIDE as **"INSTRUCTIONS"** and introduce an introductory statement. **5.13.4.1 INSTRUCTIONS FOR COMPLETING NATIONAL BOARD "R" REPORTS** These instructions are to be used when completing the National Board Form "R"-Reports. When computer generated, the format of the form shall replicate the type and relative location of the information depicted on the Form "R" Reports shown in Part 3, Section 5.13.1 through 5.13.4.	The added paragraph proposes an introductory statement to the guide for completing the National Board R-Forms. Subtle inaccuracies in computer generated forms when compared to the forms in Part 3, Section 5.13, may not be noticed and truly represent the interests of the National Board. The proposed language may allow some latitude without compromising the objectives of the National Board. Interpretation 95-40 **Subject:** Appendix 5, Form R-2 Report of Alteration, 1995 Edition with 1995 Addendum *Question1:* Does the NBIC require that the Data Report Forms used to report repairs and alterations be identical to the forms shown in Appendix 5? Reply: Yes. *Question 2:* May the Data Report Forms used for repairs and alterations be computer generated? Reply: Yes, provided they are identical to the forms shown in Appendix 5.

ATTACHMENT 4

Existing Text in '09-addenda **5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS**	**Proposed Change #2**	Rationale
1. Name and address of the "R" Certificate organization that performed the work. On Form R-2, the organization that performed the construction work (Line 1a) or the Design (Line 1b).	1. The name and address of the "R" Certificate Holder performing the work as it appears on the "Certificate of Authorization". On a Form R-2, the organization that performed the design-work will complete sheet 1 of 2, and the organization completing the construction activities will complete sheet 2 of 2.	The exact name is needed in the event that the line offered at the lower portion of the page @ instruction item 20 is not sufficient and must be abbreviated to meet the single-page requirements of the National Board. See Interpretation 95-40

Existing Text in '09-addenda **5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS**	**Proposed Change #3**	Rationale
2. For NBIC Report Forms registered with the National Board, indicate the sequential Form R Number assigned by the "R" Certificate Holder organization that is registering the form; otherwise indicate "N/A". For re-rating only, the Design Organization registers the R-2. Where physical work is also performed, the Construction Organization registers the R-2.	2. When registering a Form "R"-Report with the National Board, this line is solely designated for a unique sequential number assigned by the "R" Certificate Holder. When the "R"-Form is not to be registered, indicate so by "N/A". As described in 5.6, a log shall be maintained identifying sequentially, any "R"-forms registered with the National Board. For re-rating only, the Design Organization registers the R-2. Where physical work is also performed, the Construction Organization registers the R-2. **See Form R-2 & R-1 changes proposed @ change #21 & 22** →	Relative to the "R" Forms shown in change #21 & 22, the subscript information in the upper right corner on the "R" forms is proposed to change from "Form R No." to "Form "R" Registration No."

Existing Text in '09-addenda **5.6 FORM "R" LOG**	**Proposed Change #4**	Rationale
5.6 FORM "R" LOG The "R" Certificate Holder shall maintain a single, sequential log of "R" Form numbers assigned for NBIC Report Forms (e.g., R-1, R-2, and R-3) that are registered with the National Board.	**5.6 FORM "R" LOG** The "R" Certificate Holder shall maintain a single log, documenting unique and sequentially numbered Form "R"-Reports (e.g., R-1, R-2, and R-3) that are registered with the National Board.	

Existing Text in '09-addenda **5.2.2 PREPARATION OF FORM R-2**	**Proposed Change #5**	Rationale
5.2.2 PREPARATION OF FORM R-2 (ALTERATIONS) c) ..... The construction organization shall complete the Form R-2 provided by the design organization, including the "Construction Certificate" section of the form. When no construction work is performed (e.g., a re-rating with no physical changes), the "R" Certificate Holder responsible for the design shall prepare the Form R-2, including the gathering and attaching of the supporting reports. d) 2) Form R-3, Report of Fabricated Parts or Manufacturer's Partial Data Reports; and	**5.2.2 PREPARATION OF FORM R-2 (ALTERATIONS)** c) ..... The construction organization shall complete the Form R-2 provided by the design organization, including the "Construction ~~Certificate~~ Certification" section of the form. When no construction work is performed (e.g., a re-rating with no physical changes), the "R" Certificate Holder responsible for the design shall prepare the Form R-2, including the gathering and attaching of the supporting reports. d) 2) Form R-3, Report of Fabricated Parts, Manufacturer's Partial Data Reports, or Certificates of Compliance; and	c) The proposed change merely identifies the Construction "Certification" section of the form by the true nomenclature used on the existing form. d) Certificate of Compliance allowed by ASME Section I & VIII is proposed for inclusion to the list of supporting information.

Existing Text in '09-addenda **5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS**	**Proposed Change #6**	Rationale
5. Description of the pressure retaining item, such as a boiler or pressure vessel.	5. Description of the pressure retaining item, such as a boiler, ~~or~~ pressure vessel, or piping. Include the unit identification if applicable.	Regarding the Form "R-2" and "R-1", see the proposed change #21 & #22 to "Item" on line 4.

Existing Text in '09-addenda **5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS**	**Proposed Change #7**	Rationale
6. Name of original manufacturer of the pressure-retaining item if a boiler or pressure vessel. If other than a boiler or pressure vessel, compete if known.	6. Name of the original manufacturer of the pressure-retaining item. ~~if a boiler or pressure vessel. If other than a boiler or pressure vessel, compete if known~~. If the original manufacturer is unknown, indicate by, "unknown".	The current text proposes that if the original manufacturer is not known, the line may be left "blank". A blank-line could indicate the information was overlooked.

Existing Text in '09-addenda **5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS**	**Proposed Change #8**	Rationale
7. Serial number of the pressure retaining item as assigned by the original manufacturer.	7. Document the serial number of the pressure retaining item if assigned by the original manufacturer. If there is no serial number assigned or is unknown, indicate "unknown".	Following proposed change #7, if a manufacturer is not identified, there may also be no serial number. No blanks in the report. All lines should be completed or an indication made that the line was not overlooked.

Existing Text in '09-addenda **5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS**	**Proposed Change #9**	Rationale
8. Identification of the pressure-retaining item by applicable registration number. If installed in Canada, indicate the Canadian design registration number (CRN), and list the drawing number under "other".	8. When the pressure-retaining item is registered with the National Board, document the applicable registration number. ~~identification of the pressure-retaining item by applicable registration number.~~ If the pressure-retaining item is installed in Canada, indicate the Canadian design registration number (CRN), and list the drawing number under "other". If the item is not registerd, indicate, "none".	

NBIC Sub-Group Repairs & Alterations

Existing Text in '09-addenda **5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS**	**Proposed Change #10** **(the text shown below is all new and not double-underlined to clearly identify punctuation)**	Rationale
12. State exact scope of work, and attach additional data, sketch, Form R-4, etc. as necessary. If additional data is attached, so state.	12. Provide a summary describing the exact scope of work that was completed to a Pressure Retaining Item (PRI). The information to be included when describing the scope of work shall consider items such as, the nature of the repair or alteration characterized by the listed examples, the specific location of the work performed to the PRI, the method of repair used to include as applicable, the steps taken to remove a defect or as allowed by 3.3.4.8 to remain in place, the welding process and procedure when used, any special processes required such as PWHT; noting the soak time and temperatures recorded, and any acceptable in-process and final NDE-examinations or tests performed. When additional space is needed to fully describe the scope of work, a Form R-4 shall be used and attached.	Currently, the NBIC provides no guidance for what constitutes an exact scope of work. The following interpretation as well as the current NB instruction guide item #12 identifies the need for communicating a complete description. Per Part 3, Section 3.3.4.8, Method of repair allowing defects to remain in place. Interpretation 01-41 Question 1: In the event of an alteration to a boiler in which the boiler heating surface and steaming capacity is increased, is the new heating surface or new steaming capacity of this boiler required to be stamped on the new nameplate, boiler, or Form R-2? Re: No, however, **the exact scope of work must be included in the Form R-2**, which should include the added heating surface and / or steaming capacity.

Current Wording at 5.2.1, a-c:	**Proposed Change #11**
5.2.1 Preparation of Form R-1 (Repairs)	5.2.1 Preparation of Form R-1 (Repairs)
a) Preparation of Form R-1 shall be the responsibility of the "R" Certificate Holder performing the repair.	a) Using the instructions found at 5.13.4.1, preparation of the Form R-1 shall be the responsibility of the "R" Certificate holder performing the repair.
Add new b)	b) Information describing the scope of work used to repair a Pressure Retaining Item (PRI) shall be documented on a Form R-1 and extended to a Form R-4 as needed to fully describe the repair activities completed per the instructions at 5.13.4.1.
b) An Inspector shall indicate acceptance by signing the Form R-1	c) An Inspector shall indicate acceptance by signing the Form R-1, and Form R-4, if attached
c) The Form R-3 and Manufacturer's Data Reports described in this section shall be a part of the completed Form R-1 and shall be attached thereto.	d) The Form R-3, ~~and~~ Manufacturer's Data Reports, and Certificates of Compliance described in this section shall be a part of the completed Form R-1 and shall be attached thereto.
The former "c" now becomes "d"	

5/12

Existing Text in '09-addenda **Instruction guide for completing "R"-forms- continued**	Proposed Change **#12**	Rationale
5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS		
14. To be completed for all welded pressure components added during the work. Indicate the part, item number, manufacturer's name, stamped identification, and data report type.	14. As applicable, identify what parts manufactured by welding or bonding were introduced as needed to complete the scope of work. Indicate the part, item number, manufacturer's name, stamped identification, data report type or certificate of compliance. ***NOTE:*** →	The current lines on the R-forms noting "Replacement Parts" (line 9 for Form R-1 and line 8 for Form R-2) asks the certificate holder to describe the part, part reference information, the manufacturer, and attach Manufacturer's Partial Data Reports denoting a fabricated part by welding. However, the current Instruction Guide Note 14 identifies, "all welded pressure components added during the work". This could imply pressure retaining material added using welding to complete the scope of work. This represents a conflict of information and guidance. "Bonded" is introduced because ASME Section 10 enlists Partial Data Report RP-2 for FRP-equipment. If this is accepted, the Form R-3 may need to be re-titled, *"FORM R-3, REPORT OF FABRICATED PARTS" ~~BY WELDING~~*.

Existing Text in '09-addenda **5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS**	**Proposed Change #13**	Rationale
16. Type or print name of the authorized representative of the "R" Certificate Holder.	16. Type or print the name of the authorized representative of the "R" Certificate Holder attesting to the accuracy of the work described.	

NBIC Sub-Group Repairs & Alterations

Existing Text in '09-addenda **5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS**	**Proposed Change #14**	Rationale
20. Name of the "R" Certificate organization that performed the identified work..	20. Document the name of the "R" Certificate Holder that performed the described work, using the full name as shown on the Certificate of Authorization or an abbreviation acceptable by the National Board.	The exact name appearing on the "Certificate of Authorization" may not fit in the limited space provided on the Form "R" Report. In the event the line at instruction item-20 is not sufficient, an acceptable abbreviation may be needed to meet the administrative protocol of the National Board. The use of an abbreviated company name is being reviewed in a parallel item using NB-Item NB10-1601. In that item, the following is proposed for acceptance into the Code: 20. Document the name of the "R" Certificate Holder that performed the described work, using the full name as shown on the Certificate of Authorization or an abbreviation acceptable to the National Board.

Existing Text in '09-addenda **5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS**	**Proposed Change #15**	Rationale
29. Name and address of the organization that purchased the parts for incorporation into the repair or alteration, if known. If built for stock, so state.	29. Document the name and address of the organization that purchased the parts for incorporation into the repair or alteration. ~~if known.~~ If the part's origin is unknown or the part was built for stock, so state.	The exact name appearing on the "Certificate of Authorization may not fit in the limited space provided on the Form "R" Report. In the event the line at instruction item-29 is not sufficient, an acceptable abbreviation may be needed to meet the single-page administrative protocol of the National Board

Existing Text in '09-addenda **5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS**	**Proposed Change #16**	Rationale
30. Name of organization responsible for specifying the code design conditions.	30. Document the name of the organization responsible for specifying the code design conditions, if known. If the origin of the design conditions are unknown, state "unknown".	The exact name of the design organization may not fit in the limited space provided on the Form "R" Report. In the event the line at instruction item-30 is not sufficient, an acceptable abbreviation may be needed to meet the single-page administrative protocol of the National Board. "If known" was added to reflect the other potential unknowns of **instruction items 31, 32, and 35.**

Existing Text in '09-addenda **5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS**	**Proposed Change #17**	Rationale
31. Name of organization responsible for performing the code design, if known.	31. Document the name of the organization responsible for performing the code design, if known. If the code design organization is unknown, state "unknown".	The exact name of the design organization may not fit in the limited space provided on the Form "R" Report. In the event the line at instruction item-30 is not sufficient, an acceptable abbreviation may be needed to meet the single-page administrative protocol of the National Board. No blanks on the report. All lines should be completed or an indication made that the line was not overlooked.

Existing Text in '09-addenda **5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS**	**Proposed Change #18**	Rationale
32. Name, section, and division of the design code, if known.	32. Name, section, and division of the design code, if known. If the design is unknown, state "unknown".	No blanks on the report. All lines should be completed or an indication made that the line was not overlooked.

Existing Text in '09-addenda **5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS**	**Proposed Change #19**	Rationale
35. Indicate code paragraph reference for formula used to establish the MAWP, if known. Name, section, and division of the design code, if known.	35. Indicate the code paragraph reference for the formula used to establish the MAWP, if known. If the code reference of the formula is unknown, state "unknown".	No blanks on the report. All lines should be completed or an indication made that the line was not overlooked.

Existing Text in '09-addenda **5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS**	**Proposed Change #20**	Rationale
36. Identify name of part, such as "superheater header".	36. If available, identify the component by the part's original name, function, or use the original equipment manufacturer's "mark or item-number."	Manufacturers use different system names or nomenclature in describing their organization's components. Efforts should be made to ensure the correct component is being represented during replacements. Desuperheaters Vs. Attemporator, Secondary Superheater Vs. Finishing Superheater Vs. Rear-Pendant Superheater are examples.

NBIC Sub-Group Repairs & Alterations

Existing Form R-2, REPORT OF ALTERATION in '09-addenda @ 5.13.2

Proposed Change **#21** - Form R-2 **SHEET 1 of 2**, REPORT OF ALTERATION, **DESIGN REPORT** @ 5.13.2

FORM R-2 REPORT OF ALTERATION
in accordance with provisions of the *National Board Inspection Code*

1a. Construction performed by _____ (name of "R" organization responsible for construction) _____ (Form "R" No.)
_____ (address) _____ (P.O. No., Job No., etc.)

1b. Design performed by _____ (name of "R" organization responsible for design) _____ (Form "R" No.)
_____ (address) _____ (P.O. No., Job No., etc.)

2. Owner _____ (name)
_____ (address)

3. Location of installation _____ (name)
_____ (address)

4. Unit identification _____ (boiler, pressure vessel) Name of original manufacturer _____

5. Identifying nos.: _____ (mfg. serial no.) _____ (National Board No.) _____ (jurisdiction no.) _____ (other) _____ (year built)

6. NBIC Edition / Addenda: _____ (edition) _____ (addenda)
Original Code of Construction for Item: _____ (name / section / division) _____ (edition / addenda)
Construction Code Used for Alteration Performed: _____ (name / section / division) _____ (edition / addenda)

7a Description of construction work: _____ (use supplemental sheet, Form R-4, if necessary)

7b Description of design scope: _____ (use supplemental sheet, Form R-4, if necessary)

Pressure Test, if applied _____ psi MAWP _____ psi

8. Replacement Parts. Attached are Manufacturer's Partial Data Reports or Form R-3's properly completed for the following items of this report:
_____ (name of part, item number, data report type, mfg's name and identifying stamp)

9. Remarks: _____

FORM R-2 REPORT OF ALTERATION
in accordance with provisions of the *National Board Inspection Code*

DESIGN REPORT SHEET 1 OF 2

1. Design performed by _____ (name of "R" organization responsible for design) _____ (Form "R" Authorization No.)
_____ (address) _____ (P.O. No., Job No., etc.)

2. Owner _____ (name)
_____ (address)

3. Location of installation _____ (name)
_____ (address)

4. Item identification _____ (boiler, pressure vessel, or system) Name of original manufacturer _____

5. Identifying nos.: _____ (mfg. serial no.) _____ (National Board No.) _____ (jurisdiction no.) _____ (other) _____ (year built)

6. NBIC Edition / Addenda: _____ (edition) _____ (addenda)
Original Code of Construction for Item: _____ (name / section / division) _____ (edition / addenda)
Construction Code to be Used for Alteration Performed: _____ (name / section / division) _____ (edition / addenda)

7. Description of Design Scope: _____ (use supplemental sheet, Form R-4, if necessary) ☐ FORM R-4, REPORT SUPPLEMENTARY SHEET IS ATTACHED

Pressure Test, if applied _____ psi MAWP _____ psi

8. Replacement Parts. Attached are Manufacturer's Partial Data Reports or Form R-3's properly completed for the following items of this report:
_____ (name of part, item number, data report type or Certificate of Conformance, mfg's name and identifying stamp)

9. Remarks: _____

DESIGN CERTIFICATION

I, _____ certify that to the best of my knowledge and belief the statements in this report are correct and that the Design Change described in this report conforms to the *National Board Inspection Code*.
National Board "R" Certificate of Authorization No. _____ expires on _____
Date _____ _____ (name of design organization) Signed _____ (authorized representative)

CERTIFICATE OF DESIGN CHANGE REVIEW

I, _____ holding a valid Commission issued by The National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction of _____ and employed by _____ of _____ have reviewed the design change as described in this report and state that to the best of my knowledge and belief such change complies with the applicable requirements of the *National Board Inspection Code*.
By signing this certificate, neither the undersigned nor my employer makes any warranty, expressed or implied, concerning the work described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.
Date _____ Signed _____ (inspector) Commissions _____ (National Board and jurisdiction no.)

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NBIC Sub-Group Repairs & Alterations

Existing Form R-2, REPORT OF ALTERATION **(back)** in '09-addenda @ 5.13.2

Form R-2 (back)

(Form R No.)

DESIGN CERTIFICATION

I, _____ certify that to the best of my knowledge and belief the statements in this report are correct and that the Design Change described in this report conforms to the *National Board Inspection Code*.
National Board "R" Certificate of Authorization No. _____ expires on _____
Date _____ _____ Signed _____
(name of design organization) (authorized representative)

CERTIFICATE OF DESIGN CHANGE REVIEW

I, _____ holding a valid Commission issued by The National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction of _____ and employed by _____ of _____ have reviewed the design change as described in this report and state that to the best of my knowledge and belief such change complies with the applicable requirements of the *National Board Inspection Code*.
By signing this certificate, neither the undersigned nor my employer makes any warranty, expressed or implied, concerning the work described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.
Date _____ Signed _____ Commissions _____
(inspector) (National Board and jurisdiction no.)

CONSTRUCTION CERTIFICATION

I, _____ certify that to the best of my knowledge and belief the statements in this report are correct and that all material, construction, and workmanship on this Alteration conforms to the *National Board Inspection Code*.
National Board "R" Certificate of Authorization No. _____ expires on _____
Date _____ _____ Signed _____
(name of alteration organization) (authorized representative)

CERTIFICATE OF INSPECTION

I, _____ holding a valid Commission issued by the National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction of _____ and employed by _____ of _____ have inspected the work described in this report on _____ and state that to the best of my knowledge and belief this work complies with the applicable requirements of the *National Board Inspection Code*.
By signing this certificate, neither the undersigned nor my employer makes any warranty, expressed or implied, concerning the work described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.
Date _____ Signed _____ Commissions _____
(inspector) (National Board and jurisdiction no.)

Proposed Change **#21- (CONTINUED)** Form R-2, **SHEET 2 of 2** REPORT OF ALTERATION, **CONSTRUCTION REPORT ,** @ 5.13.2

FORM R-2 REPORT OF ALTERATION
in accordance with provisions of the *National Board Inspection Code*

CONSTRUCTION REPORT SHEET 2 OF 2

1. Construction performed by _____ _____
(name of "R" organization responsible for construction) (Form "R" Authorization No.)
_____ _____
(address) (P.O. No., Job No., etc.)
2. Owner _____
(name)
_____
(address)
3. Location of installation _____
(name)
_____
(address)
4. Item identification _____ Name of original manufacturer _____
(boiler, pressure vessel, or piping)
5. Identifying nos.: _____ _____ _____ _____ _____
(mfg. serial no.) (National Board No.) (jurisdiction no.) (other) (year built)

CERTIFICATE of DESIGN _____ , **ACKNOWLEDGED by CONSTRUCTION OGANIZATION**
(identify the design organization's Form "R" Authorization No. or referencing P.O., job, or tracking number if the Form "R" Report is not registered)
I, _____ acknowledge the provisions and requirements of design described on the DESIGN REPORT, sheet 1, and the design was introduced into the construction scope as required by the *National Board Inspection Code*.
Date _____ _____ Signed _____
(name of construction organization) (authorized representative)

7. Description of Construction Scope: _____
(use supplemental sheet, Form R-4, if necessary) ☐ FORM R-4, REPORT SUPPLEMENTARY SHEET IS ATTACHED
_____
_____
_____

Pressure Test, if applied _____ psi MAWP _____ psi

8. Replacement Parts. Attached are Manufacturer's Partial Data Reports or Form R-3's properly completed for the following items of this report:
_____
(name of part, item number, data report type or Certificate of Compliance, mfg's name and identifying stamp)
_____
_____

9. Remarks: _____

CONSTRUCTION CERTIFICATION

I, _____ certify that to the best of my knowledge and belief the statements in this report are correct and that all material, construction, and workmanship on this Alteration conforms to the *National Board Inspection Code*.
National Board "R" Certificate of Authorization No. _____ expires on _____
Date _____ _____ Signed _____
(name of alteration organization) (authorized representative)

CERTIFICATE OF INSPECTION

I, _____ holding a valid Commission issued by the National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction of _____ and employed by _____ of _____ have inspected the work described in this report on _____ and state that to the best of my knowledge and belief this work complies with the applicable requirements of the *National Board Inspection Code*.
By signing this certificate, neither the undersigned nor my employer makes any warranty, expressed or implied, concerning the work described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.
Date _____ Signed _____ Commissions _____
(inspector) (National Board and jurisdiction no.)

This form may be obtained from The National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Ave., Columbus, OH 43229 NB-104 Rev. 7

Existing Form R-1, REPORT OF REPAIR in '09-addenda @ 5.13.1	Proposed Change **#22-** Form R-1, REPORT OF REPAIR @ 5.13.1

FORM R-1 REPORT OF REPAIR
in accordance with provisions of the *National Board Inspection Code*

1. Work performed by _____ (name of repair organization) _____ (Form R No.)
_____ _____ (P.O. No. Job No. etc.)
2. Owner _____ (name)
_____ (address)
3. Location of installation _____ (name)
_____ (address)
4. Unit identification _____ (boiler, pressure vessel) Name of original manufacturer _____
5. Identifying nos.: _____ (mfg. serial no.) _____ (National Board No.) _____ (jurisdiction no.) _____ (other) _____ (year built)
6. NBIC Edition / Addenda: _____ (edition) _____ (addenda)
Original Code of Construction for Item: _____ (name / section / division) _____ (edition / addenda)
Construction Code Used for Repair Performed: _____ (name / section / division) _____ (edition / addenda)
7. Repair Type: ☐ Welded ☐ Graphite Pressure Equipment ☐ FRP Pressure Equipment
8. Description of work: _____ (use supplemental sheet, Form R-4, if necessary)
_____ Pressure Test, if applied _____ psi MAWP _____ psi
9. Replacement Parts. Attached are Manufacturer's Partial Data Reports or Form R-3's properly completed for the following items of this report:
_____ (name of part, item number, data report type, mfg's. name and identifying stamp)
10. Remarks: _____

CERTIFICATE OF COMPLIANCE

I, _____ certify that to the best of my knowledge and belief the statements in this report are correct and that all material, construction, and workmanship on this Repair conforms to the *National Board Inspection Code*.
National Board "R" Certificate of Authorization No. _____ expires on _____
Date _____ _____ (name of repair organization) Signed _____ (authorized representative)

CERTIFICATE OF INSPECTION

I, _____ holding a valid Commission issued by the National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction of _____ and employed by _____ of _____ have inspected the work described in this report on _____ and state that to the best of my knowledge and belief this work complies with the applicable requirements of the *National Board Inspection Code*.
By signing this certificate, neither the undersigned nor my employer makes any warranty, expressed or implied, concerning the work described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.
Date _____ Signed _____ (inspector) Commissions _____ (National Board and Jurisdiction No.)

FORM R-1 REPORT OF REPAIR
in accordance with provisions of the *National Board Inspection Code*

1. Work performed by _____ (name of repair organization) _____ (Form R Registration No.)
_____ _____ (P.O. No. Job No. etc.)
2. Owner _____ (name)
_____ (address)
3. Location of installation _____ (name)
_____ (address)
4. Item identification _____ (boiler, pressure vessel, or tank) Name of original manufacturer _____
5. Identifying nos.: _____ (mfg. serial no.) _____ (National Board No.) _____ (jurisdiction no.) _____ (other) _____ (year built)
6. NBIC Edition / Addenda: _____ (edition) _____ (addenda)
Original Code of Construction for Item: _____ (name / section / division) _____ (edition / addenda)
Construction Code Used for Repair Performed: _____ (name / section / division) _____ (edition / addenda)
7. Repair Type: ☐ Welded ☐ Graphite Pressure Equipment ☐ FRP Pressure Equipment
8. Description of work: (use Form R-4, if necessary) ☐ Form R-4, Report Supplementary Sheet is attached ☐ FPSA Form (NB-403) is attached
_____ Pressure Test, if applied _____ psi MAWP _____ psi
9. Replacement Parts. Attached are Manufacturer's Partial Data Reports or Form R-3's properly completed for the following items of this report:
_____ (name of part, item number, data report type or Certificate of Compliance, mfg's. name and identifying stamp)
10. Remarks: _____

CERTIFICATE OF COMPLIANCE

I, _____ certify that to the best of my knowledge and belief the statements in this report are correct and that all material, construction, and workmanship on this Repair conforms to the *National Board Inspection Code*.
National Board "R" Certificate of Authorization No. _____ expires on _____
Date _____ _____ (name of repair organization) Signed _____ (authorized representative)

CERTIFICATE OF INSPECTION

I, _____ holding a valid Commission issued by the National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction of _____ and employed by _____ of _____ have inspected the work described in this report on _____ and state that to the best of my knowledge and belief this work complies with the applicable requirements of the *National Board Inspection Code*.
By signing this certificate, neither the undersigned nor my employer makes any warranty, expressed or implied, concerning the work described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.
Date _____ Signed _____ (inspector) Commissions _____ (National Board and Jurisdiction No.)

This form may be obtained from The National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Ave., Columbus, OH 43229 NB-84 Rev. 11

Summary of Proposed Changes #21	***Rationale***
Revise Form R-2 to Sheet 1 and Sheet 2	
As proposed, the traditional identification of the form, FORM R-2, REPORT OF ALTERATION", would be unchanged. As shown, the following changes have been proposed: 1. "Design & Construction Reports represent sheet 1 & sheet 2 of the Form R-2 2. "Form "R" Registration No. is now identified. 3. The "item", is now described in lieu of "unit" and "or piping", is included to better describe recognized pressure-retaining items. 4. The design organization defines the Code-edition / addenda that the Construction organization is required to follow- *displacing any difference in the Code used.* 5. Continuity of work is better demonstrated. The "Design Report, sheet-1" would be acknowledged by the construction organization-sheet-2, before the construction activities begin. 6. New Certificate of Design Acknowledged-box on sheet-2 provides a reference link to the Design Report, Sheet-1, whether the "R" Report is registered or not, by the same or a different "R" Certificate Holder. 7. A check-box now identifies a FORM R-4 is attached with additional and supporting information for the Design & Construction organizations at line #7 on each of the two sheets. 8. Certificate of Compliance allowed by ASME Section I & VIII is added to the form @ line-8.	Revising the current one sheet, 2-sided Form "R" -2 profile, into two, single-sided sheets: • Will allow electronic completion and electronic document transfer. • The Forms have also been revised to demonstrate process continuity by establishing the design requirements and acceptance PRIOR to starting the Construction phase of the work scope. • The check-box when marked would identify additional information not necessarily apparent to an Inspector, the National Board, or organization requesting registered information from the National Board. • As a single sided form, the design and construction organizations can be assured that all attachments have been accounted for. The Preparation of Form R-2 described at 5.2.2 d) 2) is proposed for revision to include "Certificates of Compliance". See proposed change #12.

Summary of Proposed Changes #22	
Revise Form R-1	
As shown, the following changes have been proposed: 1. "Form "R" Registration No. is now identified. 2. The "item", is now described in lieu of "unit" and "or piping", is included to better describe recognized pressure-retaining items. 3. The addition of the reference boxes, Form R-4, Report Supplementary Sheet is attached and FFSA-Form (NB-403) is attached" @ line 8. 4. Certificate of Compliance allowed by ASME Section I & VIII is added to the form @ line-9.	The reference boxes, when marked, would identify additional information not necessarily apparent to an Inspector, the National Board, or an organization requesting registered information from the National Board. The use or reference to the Form R-4, Report Supplementary Sheet and FFSA-Form, as proposed at item 12 of the Instruction guide is consistent between the R-Forms The Preparation of Form R-1 described at 5.2.1 d) 2) is proposed for revision to include "Certificates of Compliance". See proposed change #11

Existing Text in '09-addenda **5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS**	**Proposed Change #23**	Rationale
53. If applicable, purchase order, job number, etc., assigned by the organization performing the work.	53. If applicable, document the unique purchase order, job, or tracking number, ~~etc.,~~ assigned by the organization performing the work.	

NBIC Repairs and Alterations (Specific)

NB-Item No.:	NB10-0101 Part 3, Section 5, Paragraph 5.10
Explanation of Assignment Needed:	Change 5.10 to facilitate information flow, requirements for PRI stamping and nameplates.
Assigned To:	B. Boseo, J. Given, & J. Sekely
Background:	N/A

Existing Text in - 09 Addenda	Proposed Revision	Rational
R&A, Part 3, Table of Contents		
5.8 REMOVAL OF ORIGINAL STAMPING OR NAMEPLATE	5.11 REMOVAL OF ORIGINAL STAMPING OR NAMEPLATE	To Facilitate Subject Flow
5.9 STAMPING REQUIREMENTS FOR PRESSURE RELIEF DEVICES	5.12 STAMPING REQUIREMENTS FOR PRESSURE RELIEF DEVICES	
5.9.1 Nameplates 5.9.2 Repair Nameplate 5.9.3 Changes to Original Pressure Relief Valve Nameplate Information 5.9.4 Test Only Nameplate 5.9.5 Replacement of Illegible or Missing Nameplates	5.12.1 Nameplates 5.12.2 Repair Nameplate 5.12.3 Changes to Original Pressure Relief Valve Nameplate Information 5.12.4 Test Only Nameplate 5.12.5 Replacement of Illegible or Missing Nameplates	
5.11 STAMPING FOR FIBER-REINFORCED VESSELS	5.8 REMOVAL OF ORIGINAL STAMPING OR NAMEPLATE	
5.11.1 REMOVAL OF ORIGINAL STAMPING OR NAMEPLATE	Deleted	Duplication
5.11.2 STAMPING FOR REPAIRS	5.8.1 STAMPING FOR REPAIRS	To Facilitate Subject Flow
5.11.3 STAMPING FOR ALTERATIONS	5.8.2 STAMPING FOR ALTERATIONS	
5.12 STAMPING REQUIREMENTS FOR YANKEE DRYERS	5.9 STAMPING REQUIREMENTS FOR YANKEE DRYERS	

R&A, Part 3, Section 1		
1.7.7.5 OUTLINE OF REQUIREMENTS FOR A QUALITY SYSTEM	1.7.7.5 OUTLINE OF REQUIREMENTS FOR A QUALITY SYSTEM	
l) Valve Repair Nameplates An effective valve stamping system shall be established to ensure proper stamping of each valve as required by 5.9.2. The manual shall include a description of the nameplate or a drawing.	l) Valve Repair Nameplates An effective valve stamping system shall be established to ensure proper stamping of each valve as required by 5.12.2. The manual shall include a description of the nameplate or a drawing.	
R&A, Part 3, Section 5		
5.7 STAMPING REQUIREMENTS FOR REPAIRS AND ALTERATIONS		
5.7.1 GENERAL	5.7.1 GENERAL	
The stamping of or attaching of a nameplate to a pressure-retaining item shall indicate that the work was performed in accordance with the requirements of this Code. Such stamping or attaching of a nameplate shall be done only with the knowledge and authorization of the inspector. The "R" Certificate Holder responsible for the repair or the construction portion of the alteration shall apply the stamping. For a rerating where no physical changes are made to the pressure-retaining item, the "R" Certificate Holder responsible for design shall apply the stamping.	The stamping of or attachment of a nameplate to a pressure-retaining item shall indicate that the work was performed in accordance with the requirements of this Code. Such stamping or attaching of a nameplate shall be done only with the knowledge and authorization of the inspector. The "R" Certificate Holder responsible for the repair or the construction portion of the alteration shall apply the stamping. For a rerating where no physical changes are made to the pressure-retaining item, the "R" Certificate Holder responsible for design shall apply the stamping.	Reads better
5.8 REMOVAL OF ORIGINAL STAMPING OR NAMEPLATE	5.11 REMOVAL OF ORIGINAL STAMPING OR NAMEPLATE	To facilitate subject flow
If it becomes necessary to remove the original stamping, the Inspector shall, subject to the approval of the Jurisdiction, witness the	If it becomes necessary to remove the original stamping, the Inspector shall, subject to the approval of the Jurisdiction, witness the	

making of a facsimile of the stamping, the obliteration of the old stamping, and the transfer of the stamping to the new item. When the stamping is on a nameplate, the Inspector shall witness the transfer of the nameplate to the new location. Any relocation shall be described on the applicable NBIC "R" Form. The re-stamping or replacement of a code symbol stamp shall be performed only as permitted by the governing code of construction.	making of a facsimile of the stamping, the obliteration of the old stamping, and the transfer of the stamping to the new item. When the stamping is on a nameplate, the Inspector shall witness the transfer of the nameplate to the new location. Any relocation shall be described on the applicable NBIC "R" Form. The re-stamping or replacement of a code symbol stamp shall be performed only as permitted by the governing code of construction.	
5.9 STAMPING REQUIREMENTS FOR PRESURE RELIEF DEVICES	5.12 STAMPING REQUIREMENTS FOR PRESURE RELIEF DEVICES	
5.9.1 NAME PLATES	5.12.1 NAME PLATES	
Proper marking and identification of tested or repaired valves is critical to ensuring acceptance during subsequent inspections, and also provide for traceability and identification of any changes made to the valve. All operations that require the valve's seals to be replaced shall be identified by a nameplate as described in 5.9.2 or 5.9.4.	Proper marking and identification of tested or repaired valves is critical to ensuring acceptance during subsequent inspections, and also provide for traceability and identification of any changes made to the valve. All operations that require the valve's seals to be replaced shall be identified by a nameplate as described in 5.12.2 or 5.12.4.	
5.9.2 REPAIR NAME PLATE	5.12.2 REPAIR NAMEPLATE	
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 mounted directly on the valve, the nameplate shall be securely attached so as not to interfere with valve operation and sealed in accordance with the quality system.	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 mounted directly on the valve, the nameplate shall be securely attached so as not to interfere with valve operation and sealed in accordance with the quality system.	
a) Prior to attachment of the repair nameplate, the previous repair nameplate,	**No Change**	

if applicable, shall be removed from the repaired valve. b) As a minimum, the information on the valve repair nameplate (see Figure 5.7.5-e) 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.); 4) Date of repair; 5) Set pressure; 6) Capacity and capacity units (if changed from original nameplate due to set pressure or service fluid change); 7) Type/Model number (if changed from original nameplate by a conversion. See Supplement S7.2); and 8) When an adjustment is made to correct for service conditions of superimposed back pressure and/or temperature or the differential between popping pressure between steam and air (see 4.5.2), the information on the valve repair nameplate shall include the: a. Cold Differential Test Pressure (CDTP), and b. Superimposed Back Pressure (BP)		

(only when applicable).		
5.9.3 CHANGES TO ORIGINAL PRESSURE RELIEF VALVE NAMEPLATE INFORMATION	5.12.3 CHANGES TO ORIGINAL PRESSURE RELIEF VALVE NAMEPLATE INFORMATION	To facilitate subject flow
a) If the set pressure is changed, the set pressure, capacity, and blowdown, if applicable, on the original nameplate or stamping shall be marked out but left legible. The new capacity shall be based on that for which the valve was originally certified.	**No Change**	
b) If the service fluid is changed, the capacity, including units, on the original nameplate or stamping shall be marked out but left legible. The new capacity shall be based on that for which the valve was originally certified, or if a conversion has been made, as described in S7.2 on the capacity certification for the valve as converted.	b) If the service fluid is changed, the capacity, including units, on the original nameplate or stamping shall be marked out but left legible. The new capacity shall be based on that for which the valve was originally certified, or if a conversion has been made, as described in Supplement S7.2 on the capacity certification for the valve as converted.	Changed for consistency
c) If the Type/Model number is changed, the Type/Model number on the original nameplate shall be marked out but left legible.	**No Change**	
d) If the blowdown is changed, the blowdown on the original nameplate or stamping shall be marked out but left legible. The new blowdown may be based on the current ASME Code requirements.		
e) Incorrect information on the original Manufacturer's nameplate shall be marked out but left legible. Corrected information shall be indicated on the repair nameplate and noted on the document as required by		

the quality system.		
5.9.4 TEST ONLY NAMEPLATE	5.12.4 TEST ONLY NAMEPLATE	To facilitate subject flow
a) Where a valve has been tested and adjusted, as permitted by S7.10.1, but not otherwise repaired, a "Test Only" nameplate shall be applied that contains the following information:	a) Where a valve has been tested and adjusted, as permitted by Supplement S7.10.1, but not otherwise repaired, a "Test Only" nameplate shall be applied that contains the following information:	Changed for consistency
1) Name of responsible organization;	**No Change**	
2) Date of test;		
3) Set Pressure; and		
4) Identification, such as "Test Only."		
b) A "test only" nameplate is also recommended when periodic testing has been performed, even when no adjustments have been made, for the purpose of identifying the date the valve was tested.		
c) The existing repair nameplates, if applicable, shall not be removed during such testing.		
5.9.5 REPLACEMENT OF ILLEGIBLE OR MISSING NAMEPLATES	5.12.5 REPLACEMENT OF ILLEGIBLE OR MISSING NAMEPLATES	To facilitate subject flow
a) Illegible Nameplates When the information on the original manufacturer's or assembler's nameplate or stamping is illegible, but traceability can be confirmed, the nameplate or stamping will be augmented or replaced by a nameplate furnished by the "VR" stamp holder stamped "duplicate." It shall contain	a) Illegible Nameplates When the information on the original manufacturer's or assembler's nameplate or stamping is illegible, but traceability can be confirmed, the nameplate or stamping will be augmented or replaced by a nameplate furnished by the "VR" stamp holder stamped "duplicate." It shall contain	

all information that originally appeared on the nameplate or valve, as required by the applicable section of the ASME Code, except the "V," "HV," or "UV" symbol and the National Board mark. The repair organization's nameplate, with the "VR" stamp and other required data specified in 5.9.2, will make the repairer responsible to the owner and the Jurisdiction that the information on the duplicate nameplate is correct.	all information that originally appeared on the nameplate or valve, as required by the applicable section of the ASME Code, except the "V," "HV," or "UV" symbol and the National Board mark. The repair organization's nameplate, with the "VR" stamp and other required data specified in 5.12.2, will make the repairer responsible to the owner and the Jurisdiction that the information on the duplicate nameplate is correct.	
b) Missing Nameplates When the original valve nameplate is missing, the repair organization is not authorized to perform repairs to the valve under the "VR" program, unless positive identification can be made to that specific valve and verification that the valve was originally stamped with an ASME "V" or "UV" symbol or marked with an ASME "HV" symbol. Valves that can be positively identified will be equipped with a duplicate nameplate, as described in this section, in addition to the repairer's "VR"-stamped nameplate. The repairer's responsibilities for accurate data, as defined in 5.9.5(a) (Illegible Nameplates), shall apply.	b) Missing Nameplates When the original valve nameplate is missing, the repair organization is not authorized to perform repairs to the valve under the "VR" program, unless positive identification can be made to that specific valve and verification that the valve was originally stamped with an ASME "V" or "UV" symbol or marked with an ASME "HV" symbol. Valves that can be positively identified will be equipped with a duplicate nameplate, as described in this section, in addition to the repairer's "VR"-stamped nameplate. The repairer's responsibilities for accurate data, as defined in 5.12.5(a) (Illegible Nameplates), shall apply.	
c) Marking of Original Code Stamp When a duplicate nameplate is affixed to a valve, as required by this section, it shall be marked "Sec. I," "Sec. IV," or "Sec. VIII," as applicable, to indicate the original ASME Code stamping.	**No Change**	
5.10 ALTERNATIVE MARKING AND STAMPING FOR GRAPHITE PRESSURE EQUIPMENT		

a) General Requirements 1) This procedure may be used in lieu of the stamping and nameplate requirements defined in this section. 2) The required data as defined in this section shall be 5/32 in. (4 mm) high, minimum. 3) The National Board code symbol ("R") shall be used to make the impression in the cement. b) Application of the "R" Code Symbol 1) The graphite surface shall be clean and smooth. 2) Apply a thin coating of cement onto the Code part. The cement should have the consistency of toothpaste. 3) Apply sufficient heat to the cement so that it begins to form a skin. 4) Apply a coating of a thinned release agent, such as "ANTISEIZE," to the tip of the *"R"* stamp with a brush. 5) Press the coated stamp all the way to the bottom of the cement and remove by pulling straight out before the cement hardens. 6) Cure or heat the impression as required. 7) When cured, the part may be washed to remove any excess release agent.		

c) Application of characters directly to graphite 1) Use a very thin template of a flexible material (stainless steel; flexible and easily cleaned). 2) Place the template over a clean smooth surface. 3) Hold the template securely and trowel over with approved cement to fill all of the template area. 4) Carefully lift the template from the graphite part and examine the detail of the characters. 5) If acceptable, cure the cement. 6) If the characters are incorrect or damaged, wipe off the cement with a compatible solvent and reapply. **Note:** The preceding methods can be applied jointly to identify the graphite part and to transfer the "R" stamp.		
5.11 STAMPING FOR FIBER-REINFORCED VESSELS The attaching of a nameplate to a repaired or altered vessel or tank shall indicate that the work was performed in accordance with the requirements of this Code. The attachment of a nameplate shall be done only with the knowledge and authorization of the Inspector. The Certificate Holder responsible for the repair or alteration shall apply the stamping	5.8 STAMPING FOR FIBER-REINFORCED VESSELS The attaching of a nameplate to a repaired or altered vessel or tank shall indicate that the work was performed in accordance with the requirements of this Code. The attachment of a nameplate shall be done only with the knowledge and authorization of the Inspector. The Certificate Holder responsible for the repair or alteration shall apply the stamping	To facilitate subject flow

nameplate. Required stamping and nameplate information are shown in NBIC, Part 3, 5.7.	nameplate. Required stamping and nameplate information are shown in NBIC, Part 3, 5.7.	
5.11.1 REMOVAL OF ORIGINAL STAMPING OR NAMEPLATE If it becomes necessary to remove the original stamping, the Inspector shall, subject to the approval of the Jurisdiction, witness the making of a facsimile of the stamping, the obliteration of the old stamping, and the transfer of the stamping to the new item. When the stamping is on a nameplate, the Inspector shall witness the transfer of the nameplate to the new location. Any relocation shall be described on the applicable NBIC form. The restamping or replacement of a code symbol stamp shall be performed only as permitted by the governing code of construction.	Delete	Redundant
5.11.2 STAMPING FOR REPAIRS Pressure-retaining items repaired in accordance with the NBIC shall have a nameplate as required by Section 5.7. Subject to the acceptance of the jurisdiction and the concurrence of the Inspector, nameplates may not be required for routine repairs. (See 5.7.2 [b]). In all cases, the type and extent of repairs necessary shall be considered prior to waiving the requirement.	5.8.1 STAMPING FOR REPAIRS Pressure-retaining items repaired in accordance with the NBIC shall have a nameplate as required by Section 5.7. Subject to the acceptance of the jurisdiction and the concurrence of the Inspector, nameplates may not be required for routine repairs. (See 5.7.2 [b]). In all cases, the type and extent of repairs necessary shall be considered prior to waiving the requirement.	To facilitate subject flow
5.11.3 STAMPING FOR ALTERATIONS The nameplate shall be applied in accordance with Section 5.7. The location of the nameplate shall be documented on the Form R-2.	5.8.2 STAMPING FOR ALTERATIONS The nameplate shall be applied in accordance with Section 5.7. The location of the nameplate shall be documented on the Form R-2.	
5.12 STAMPING REQUIREMENTS FOR YANKEE DRYERS	5.9 STAMPING REQUIREMENTS FOR YANKE DRYERS	

a) Stamping is not required for repairs that do not affect the pressure-retaining capability of the Yankee shell, as indicated on the De-rate Curve, or other pressure-retaining parts, as indicated on the original Manufacturer's Data Report. b) Stamping is required for repairs that do affect the pressure-retaining capability of the Yankee shell, as indicated on the De-rate Curve, or other pressure-retaining parts as indicated on the original Manufacturer's Data Report.	**No Change**	
c) Stamping is required for alterations as listed in S5.7.2	c) Stamping is required for alterations as listed in Supplement S5.7.2	Changed for consistency
d) Stamping, when required, shall meet the requirements for stamping in 5.7.3. The location of stamping shall be described in the "remarks" section of Form R-2.	**No Change**	
Supplement 7 S7.2 GENERAL REQUIREMENTS		
b) Conversions, changes, or adjustments affecting critical parts are also considered repairs. The scope of conversions may include changes in service fluid and changes such as bellows, soft seats, and other changes that may affect Type/Model number provided such changes are recorded on the document as required for a quality system and the repair nameplate. (See 5.9.1).	b) Conversions, changes, or adjustments affecting critical parts are also considered repairs. The scope of conversions may include changes in service fluid and changes such as bellows, soft seats, and other changes that may affect Type/Model number provided such changes are recorded on the document as required for a quality system and the repair nameplate. (See 5.12.1).	To facilitate subject flow
S7.14.2 SPRING-LOADED PRESSURE RELIEF VALVES		

l) Nameplate The repairer will place a repair nameplate on each repaired valve. The nameplate shall, as a minimum, meet the requirements of 5.9.1.	l) Nameplate The repairer will place a repair nameplate on each repaired valve. The nameplate shall, as a minimum, meet the requirements of 5.12.1.	
S7.14.3 PILOT OPERATED SAFETY RELIEF VALVES		
g) Nameplate The repairer will place a repair nameplate on each repaired valve. The nameplate, as a minimum, shall meet the requirements of 5.9.1.	g) Nameplate The repairer will place a repair nameplate on each repaired valve. The nameplate, as a minimum, shall meet the requirements of 5.12.1	
Supplement 9		
S9.3 GENERAL RULES		
e) When an ASME "NV"-stamped pressure relief device requires a duplicate nameplate because the original nameplate is illegible or missing, it may be applied using the procedures of 5.9.5 provided concurrence is obtained from the Authorized Nuclear Inspector and Jurisdiction. In this case the nameplate shall be marked "SEC. III" to indicate the original ASME Code stamping.	e) When an ASME "NV"-stamped pressure relief device requires a duplicate nameplate because the original nameplate is illegible or missing, it may be applied using the procedures of 5.12.5 provided concurrence is obtained from the Authorized Nuclear Inspector and Jurisdiction. In this case the nameplate shall be marked "SEC. III" to indicate the original ASME Code stamping.	
R&A, Part 3, Index		
Capacity Certification — Part 1, Part 2 and Part 3 (5.9.3), (Section 9)	**Capacity Certification —** Part 1, Part 2 and Part 3 (5.12.3), (Section 9)	
Illegible Nameplates — Part 3 (5.9.5)	**Illegible Nameplates —** Part 3 (5.12.5)	
Jurisdiction — Part 1 (Foreword), (Introduction), (1.4.3); Part 2 (Foreword), (Introduction), (1.2), (2.5.8), (5.3.1), (5.3.4), (5.4.7), (5.5.1),	**Jurisdiction —** Part 1 (Foreword), (Introduction), (1.4.3); Part 2 (Foreword), (Introduction), (1.2), (2.5.8), (5.3.1), (5.3.4), (5.4.7), (5.5.1),	

(S1.2); Part 3 (Foreword), (Introduction), (3.3.2), (3.3.4.3(e)), (3.4.1), (3.4.2), (4.2), (4.3), (4.4), (4.4.1), (4.4.2), (4.5), (5.7), (5.9.5), (S2.2), (S4.16.4), (S6.3) **Nameplates —** Part 2 (5.2); Part 3 (5.9), (5.9.1), (5.9.2), (5.9.3), (5.9.4), (5.9.5), (5.9.6), (5.9.6.1), (5.9.6.2), (5.9.6.3), (5.9.6.4), (5.9.6.5), (5.10), (5.11), (5.11.1), (5.11.3), (5.12), (5.11.2), (S1.2.10), (S1.2.11), (S1.2.11.1), (S1.2.11.2), (S1.2.11.3), (S1.2.11.4), (S1.2.11.5), (S1.2.11.6), (S1.2.12), (S1.2.12.1), (S1.2.12.2), (S6.14.1) **"NR" Symbol Stamp —** Part 3 (1.8.4), (5.9) **Parts —** Part 1 (2.6.3.3), (2.9.2), (3.7.4), (3.7.7), (8.4), (S1.3); Part 2 (2.3.5), (2.1), (2.2.6), (2.2.7), (2.2.10), (2.2.12), (2.3.4), (2.3.5), (2.3.6), (2.5.7), (2.5.8), (8.4); Part 3 (1.7.7.5), (1.8.5), (3.2.2), (3.3.3), (4.5.1), (4.5.4), (5.2.2), (5.9.6.5), (5.12), (8.4), (S2.7.2), (S2.13), (S3.2), (S3.5), (S4.9), (S5.3.1), (S5.6), (S7.2) **Pressure Relief Devices —** Part 1 (2.9), (3.9), (4.5); Part 2 - (2.2.10.6), (2.5); Part 3 (4.5), (5.9) **Pressure Relief Valve Nameplates —** Part 3 (5.9.2), (5.9.3), (5.9.4), (5.9.5), (5.9.6), (Supplement 7), (Supplement 8) **Removal of Stamping —** Part 3 (5.8), (S6.14.1)	(S1.2); Part 3 (Foreword), (Introduction), (3.3.2), (3.3.4.3(e)), (3.4.1), (3.4.2), (4.2), (4.3), (4.4), (4.4.1), (4.4.2), (4.5), (5.7), (5.12.5), (S2.2), (S4.16.4), (S6.3) **Nameplates —** Part 2 (5.2); Part 3 (5.8), (5.8.1), (5.8.2), (5.9), (5.10), (5.11.), (5.12), (5.12.1), (5.12.2), (5.12.3), (5.12.4), (5.12.5), (delete 5.9.6), (delete 5.9.6.1), (delete 5.9.6.2), (delete 5.9.6.3), (delete 5.9.6.4), (delete 5.9.6.5), (S1.2.10), (S1.2.11), (S1.2.11.1), (S1.2.11.2), (S1.2.11.3), (S1.2.11.4), (S1.2.11.5), (S1.2.11.6), (S1.2.12), (S1.2.12.1), (S1.2.12.2), (S6.14.1) **"NR" Symbol Stamp —** Part 3 (1.8.4), (5.12) **Parts —** Part 1 (2.6.3.3), (2.9.2), (3.7.4), (3.7.7), (8.4), (S1.3); Part 2 (2.3.5), (2.1), (2.2.6), (2.2.7), (2.2.10), (2.2.12), (2.3.4), (2.3.5), (2.3.6), (2.5.7), (2.5.8), (8.4); Part 3 (1.7.7.5), (1.8.5), (3.2.2), (3.3.3), (4.5.1), (4.5.4), (5.2.2), (delete 5.9.6.5), (5.9), (8.4), (S2.7.2), (S2.13), (S3.2), (S3.5), (S4.9), (S5.3.1), (S5.6), (S7.2) **Pressure Relief Devices —** Part 1 (2.9), (3.9), (4.5); Part 2 - (2.2.10.6), (2.5); Part 3 (4.5), (5.12) **Pressure Relief Valve Nameplates —** Part 3 (5.12.2), (5.12.3), (5.12.4), (5.12.5), (delete 5.9.6), (Supplement 7), (Supplement 8) **Removal of Stamping —** Part 3 (5.11), (S6.14.1)	

Replacement Stamping — Part 2 (5.2), (5.5.2); Part 3 (5.8), (5.9.3), (5.9.5), (5.9.6), (5.10), (5.11)	**Replacement Stamping —** Part 2 (5.2), (5.5.2); Part 3(5.8), (5.10), (5.11), (5.12.3), (5.12.5), (delete 5.9.6),	

Action Item

NB 10 – 0102

Present Wording

S1.2.10 REPAIRS AND ALTERATIONS TO BOILER BARREL UNSTAYED AREAS

a) Defects such as cracks and wastage may be repaired by weld buildup, a welded flush patch or a riveted patch. Installation of a riveted patch shall be considered an alteration. Prior to repairing cracks, the plate shall be examined for defects. Affected sections shall be repaired.

Proposed Wording

S1.2.10 REPAIRS AND ALTERATIONS TO BOILER BARREL UNSTAYED AREAS

a) Except as provided in 3.3.4.8 a repair of a defect in a welded joint or base material shall not be made until the defect has been removed. A suitable Nondestructive Examination (NDE) method such as Magnetic Particle (MT) or Liquid Penetrant (PT) may be necessary to ensure complete removal of the defect. If the defect penetrates the full thickness of the material, the repair shall be made with a full penetration weld such as a double buttweld or a single buttweld with or without backing. Where circumstances indicate that the defect is likely to recur, consideration should be given to removing the defective area and installing a flush patch or taking other corrective measures acceptable to the Inspector and when required by the Jurisdiction.

Rationalization: To bring wording into alignment with 3.3.4.1

(27)

[redacted]

Re: 2 new action items
Francis Brown to: Robin Hough 01/05/2010 02:24 PM

Hi Robin,

I think I never replied to you about the 2 action items.

NB10-0106 Part 3 S4.16.3 a)
Change Manufacturer's Design Report to Fabricator's Design Report. Agree.

NB10-0107 Part 3 S4.1.18.1 b)
Add the word alteration to this sentence. The sentence should read, " The repair or alteration shall meet the requirements of the original construction standard.... I think the reference should be S4.18.1 b). Agree.

Sorry for the late response.

Francis

28 1/3

During the vacuum test, the vacuum source may be left connected to the vessel to compensate for leakage at fittings. All vessels acoustic emission tested, as required by the original code of construction, shall be retested during the vacuum test concentrating on the repaired or altered part of the vessel.

S4.16 ADDITIONAL REQUIREMENTS FOR REPAIRS

S4.16.1 SCOPE

This section provides additional requirements for repairs to pressure-retaining items and shall be used in conjunction with S4.1 thru S4.14 and S4.18.

S4.16.2 DRAWINGS

Drawings shall be prepared or modified to describe the repair. Drawings shall include sufficient information to satisfactorily perform the repair.

S4.16.3 REPAIR PLAN

When repairs other than those defined in S4.16.4 are being made to ASME Section X or RTP-1 stamped equipment, the user shall prepare or cause to have prepared a detailed plan covering the scope of the repair.

a) Professional Engineer Review
The repair plan shall be reviewed and certified by a Professional Engineer who is registered in one or more of the states of the United States of America or the provinces of Canada and is experienced in reinforced plastic vessel design. The review and certification shall be such to ensure that the work involved in the repair is compatible with the *User's Design Specification* or *User's Basic Requirements Specification* and the *Manufacturer's Design Report*. The certification shall also include any drawings and calculations prepared as part of the repair plan.

b) Authorized Acceptance
Following review and certification, the repair plan shall be submitted to the Inspector for his review and acceptance. Repairs to pressure-retaining items shall not be initiated without the authorization of the Inspector. Subject to acceptance of the Jurisdiction, the Inspector may give prior approval for routine repairs, provided the Inspector assures that the Certificate Holder has acceptable procedures covering the repairs.

S4.16.4 ROUTINE REPAIRS

Prior to performing routine repairs, the Certificate Holder should determine that routine repairs are acceptable to the Jurisdiction where the work is to be performed.

a) Acceptable routine repairs are listed below:

1) The addition or repair of non-load bearing attachments to pressure-retaining items where post curing is not required.

2) Replacement and repair of damaged corrosion liner areas in shells and heads shall not exceed 100 sq. in. (65 sq. cm) and not exceed the original corrosion liner thickness.

b) Routine repairs may be performed under the Certificate Holder's quality system program; however, the requirement for in-process involvement of the Inspector and stamping are waived. (See Section 5 of this part).

(29) 2/3

2) Hold the maximum load for at least 30 minutes.

3) Condition the vessel by holding at reduced load as required by Section V, Article 11, T-1121.

4) Retest the vessel as required by this appendix.

5) The vessel shall be judged against the evaluation criteria for subsequent loadings.

f) Hold time for the examination by the Inspector shall be the time necessary for the Inspector to conduct the inspection.

g) When pressure testing using liquids is not practical, other methods shall be used as follows:

1) The pressure test may be a pneumatic test provided the Certificate Holder has the concurrence of the Inspector, the jurisdictional authority where required, and the owner. Precautionary requirements of the applicable section of the original code of construction shall be followed.

2) For vessels designed for vacuum, a vacuum test shall be carried out to as close as practical to the design vacuum level of the vessel. During the vacuum test the vacuum source may be left connected to the vessel to compensate for leakage at fittings. All vessels originally acoustic emission tested shall be retested during the vacuum test concentrating on the repaired or altered part of the vessel.

S4.18 REPAIR AND ALTERATION METHODS

S4.18.1 GENERAL REQUIREMENTS

a) In general, when a defective or damaged vessel wall is to be repaired, the total structural laminate sequence of laminate construction removed as part of the repair shall be replaced. The replacement laminate shall provide structural properties meeting or exceeding the requirement of the original construction standard. Moreover, when damage includes the corrosion barrier, a corrosion barrier of the same type, which shall meet or exceed the barrier properties of the original construction, shall replace the corrosion barrier removed as part of the repair.

b) The repair shall meet the requirements of the original construction standard.

S4.18.2 CLASSIFICATION OF REPAIRS

a) Vessel repairs shall be classified into the following types:

1) Type 1a — Corrosion barrier repairs

2) Type 1b — Corrosion barriers with precision bores

3) Type 2 — Corrosion barrier and interior structural layer repairs

4) Type 3 — External structural layer repairs

5) Type 4 — Alterations

6) Type 5 — Miscellaneous general external repairs or alterations

7) Type 6 — Thermoplastic repairs

8) Type 7 — Gel coat repairs

[redacted]

NB10-.302
Francis Brown to: Robin Hough 02/16/2010 11:23 AM

History: This message has been replied to.

Hi Robin,

I sent the proposed word changes for NB10-0302 to the Subgroup. The change as approved is shown in the attachment.

Regards,
Francis

Approved S3.2(d).docx

Proposed by Subcommittee

S3.2
d) When ASME is the original code of construction, replacement parts subject to internal or external pressure shall be fabricated from certified material supplied by an organization having the appropriate ASME *Certificate of Authorization*. The item shall be inspected and stamped as required by the applicable section of the ASME Code. ~~A completed~~ The R stamp holder shall obtain an ASME *Manufacturer's Partial Data Report* ~~shall be~~ supplied by the impregnated graphite material ~~manufacturer~~.

The following was approved by NBIC-Subgroup: 6 Approved
1 disapproved

d) When ASME is the original code of construction, replacement parts subject to internal or external pressure shall be fabricated from certified material supplied by an organization having the appropriate ASME *Certificate of Authorization*. The item shall be inspected and stamped as required by the applicable section of the ASME Code. The R stamp holder shall obtain an ASME *Manufacturer's Partial Data Report* supplied by the impregnated graphite material manufacturer.

"Manufacturer" must be retained or the sentence does not make sense.

I propose the following change to NBIC, Part 3, 1.3 a) and Parts 1, 2, & 3, Section 9, Glossary of Terms – Authorized Inspection Agency:

Part 3, 1.2 – INSPECTOR

a) Inspection and certification shall be made by an Inspector holding a valid commission issued by the National Board and employed by an ~~accredited Inservice~~ Authorized Inspection Agency (see 9.0, Glossary of Terms, for definition of AIA).

Authorized Inspection Agency

New Construction: An Authorized Inspection Agency ~~is one that is accredited by the National Board~~ meeting the qualification and ~~duties~~ definition of N B-360, Criteria for Acceptance of Authorized Inspection Agencies for New Construction.

Justification for Change

Currently most NB-360 AIAs perform the acceptance inspection and sign the R Form for repairs/alterations that have been made in accordance with the NBIC. I do not believe it was the intent to limit this activity to only Inservice Authorized Inspection Agencies. With the change to NB-263, *Rules for National Board Inservice and New Construction Commissioned Inspectors*, this revision to the NBIC will align the two.

The NBIC Glossary definition for New Construction, Authorized Inspection Agency is incorrect. The National Board does not accredit NB-360 Authorized Inspection Agencies. NB-360 AIAs are **accepted** by the National Board as entities that employ National Board Commissioned Inspectors to conduct third party inspections on pressure-retaining items registered with the National Board.

Background Information

Definition from NB-263 – Rules for National Board Inservice and New Construction Commissioned Inspectors:

Authorized Inspection Agency
New Construction: An Authorized Inspection Agency meeting the qualification and definition of NB-360, Criteria for Acceptance of Authorized Inspection Agencies for New Construction.

Inservice: An Authorized Inspection Agency is either:

(a) A jurisdictional authority as defined in the National Board Constitution; or

(b) An entity accredited in accordance with NB-369, Qualifications and Duties for Authorized Inspection Agencies (AIAs) Performing Inservice Inspection Activities and Qualifications for Inspectors of Boilers and Pressure Vessels.

Introduction from NB-360 – Criteria for Authorized Inspection Agencies (AIAs) Providing Inspection Services for ASME Code Items:

1.0 – Requirements for Authorized Inspection Agencies (AIAs) providing Inspection Services for ASME Code Items

1.1 Introduction

Authorized Inspection Agencies (AIAs) provide third party inspection services in which boilers, pressure vessels and other pressure retaining items are inspected during construction to verify their conformity with the code of construction. The requirements for the acceptance of Authorized Inspection Agencies are described in this document.

It is required that boilers, pressure vessels and other pressure retaining items registered with the National Board be subject to third party inspection by National Board commissioned inspectors who are employed by Authorized Inspection Agencies that are accepted by the National Board.

Action Item

NB10-0502

Present Wording

SUPPLEMENT 1

STEAM LOCOMOTIVE FIRETUBE BOILER REPAIRS

S1.1 GENERAL REQUIREMENTS

Proposed Wording

SUPPLEMENT 1

STEAM LOCOMOTIVE FIRETUBE BOILER REPAIRS

S1.1 GENERAL REQUIREMENTS

This part applies to all boilers attached to steam locomotives operating on track gaged at 24" or greater, and all such boilers shall have inspections and repairs performed in accordance with the inspection and repair procedures called out in 49 CFR Part 230.

Rationalization: It is the intent of this wording to require that boilers exceeding a certain size meet a consistent set of requirements regardless of whether they are actively under FRA jurisdiction or not. The wording dictates compliance with the repair and inspection procedures required by the FRA but does not require filing FRA reports if the locomotive is not under active FRA jurisdiction. Reporting requirements are further defined in S1.1.1, which remains unchanged from the 09 addenda.

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NBIC Sub-Group Repairs & Alterations-General

Subject:	**Record Retention**

NB-Item number:	**NB10-0701**

Explanation of assignment needed:	Currently the NBIC has no requirements for record retention but is implied in several areas (FFSA, welder continuity, and the retention of R-forms not registered @ the N-BD.) Without some scheme of record retention by Code, the prudent retention plan is subject only to the "interpretation" of the National Board review-team, and the AIA accepting the stamp holder's quality system. Without directives or a scheme of record retention within the body of the Code, the necessity of records and their retention will be ambiguous and not necessarily mandatory.

Assigned to:	**M. Webb, J. Larson**

Background:	NB-item NB10-0701 was introduced to R/A Subgroup-General and was initially recognized as mirroring some of the work progressing on NB-item NB08-0304; more specifically the instruction guide for completing R-Forms and the need for required detail when summarizing a description of work. After hearing the progress report on item NB08-0304 during the January 2010 R/A Subgroup-Specific meeting, the scope of the item NB10-0701 as submitted by Mr. Gary Scribner was more specifically targeted to address only record retention.

Proposal:	**Proposed – This 5.14 is all new text**	**Rational**
Introduce Part 3, Section 5.14 : Records and Record Retention 12. State exact scope of work, and attach additional data, sketch, Form R-4, etc. as necessary. If additional data is attached, so state.	5.14 Records - General a) Records can represent any information used to further substantiate the statements attesting to the scope of work completed to a pressure-retaining item (PRI), and documented on a Form "R" report. b) Records are not limited to depicting or calculating an acceptable design, NDE, PWHT-charts, a WPS used, welder process continuity, drawings, sketches, or photographs. c) The organization performing repairs or alterations may register Form "R" Reports with the National Board and any associated records substantiating the statements used to describe the scope of work on a Form "R" Report. 5.14.1 Record Retention a) The organization performing repairs and alterations shall retain a copy of the completed Form "R" Report on file, and all records substantiating the summary of work described @ 5.13.4.1, item 12,	New Section 5.14 Records & Record Retention is a natural fit as it follows the continuity of Section 5 (preparation, registration and certifying of forms, stamping). Record Retention a) '09-addendum of ASME Section VIII, Div. I @ UG-120, indicates the Manufacturer is to keep the Manufacturer's Data Report for a minimum of 3 years; a Certificate of Compliance too. Earlier editions were 5-years. The retention of "other records" is not described. b) The record retention period as described by API-579 is applicable to API-510 and API-570 which describes, "permanent records shall be maintained throughout the service life of each equipment item;...". • ASME Section V: "...manufacturer, fabricator, or installer shall be responsible for all required records / documentation.

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	for a minimum of five years. When the method of repair described at 3.3.4.8. is used, the record retention period shall be as described in b). b) When the method of repair described at 3.3.4.8 is used, the record retention period shall be for the duration described on the Fitness For Service Assessment (FFSA) Form required by the repair method and as described in NBIC Part 2, 4.4. 1. The "R" Certificate Holder should be aware that when used, some of the referenced codes and standards identified in the NBIC Part 2, Section 1.3, describe requirements for permanent record retention throughout the service life of each equipment item. 2. When the "R" Certificate Holder is not the owner or user of the equipment, the record retention period can be limited to the FFSA-results described on line 8 of the Report of Fitness For Service Assessment Form (NB-403). c) Document and record retention as identified in a) and b) shall apply to the organizations on the applicable distribution described in NBIC Part 3, Section 5.3 and 5.4. d) The minimum retention period of welder continuity records within the Certificate Holder's control system shall be established at the time of the applicants initial certificate review and demonstrated at each triennial review required thereafter to maintain the "R" Certificate Holder's Certificate of Authorization.	As described in 3.3.4.8 a): "...The specified period of time the defect can remain in service after a weld repair shall be based on no measurable defect growth..." (This implies comparison records are available). Without record retention, risk based inspection frequencies may be undermined. Also, 3.3.4.8 c) 2) references NBIC Part 2, @4.4. In this section, FFSA per API-579 is introduced which can be used in conjunction with other API-codes (API-510 & API-570) requiring, "... permanent and progressive records to be maintained throughout the service life of each equipment item...". By adding the Section 5.14, the NBIC would have a similar continuity as other referenced industry codes and standards. QUESTION: Should a distinction be made between a document (*certified*- Form "R" Report) and the *records* substantiating the stated scope of repair or alteration on the document? If a distinction can not be made between a FORM "R" report representing a *document or a record,* then should all "R" forms and corroborating records be retained for the 5-years proposed? Should there be a difference in the retention period for a document Vs. a record?

If new Section 5.14 is brought into the code, the following Sections might also be considered for change:

1. Section 5.2
2. Section 5.5 and 5.5.2 b)
3. Section 2.2.6
4. Adding section 2.2.6.1

Existing Text:	**Proposed Text**	**Rational**
5.2 DOCUMENTATION a) Repairs that have been performed in accordance with the NBIC shall be documented on Form R-1, *Report of Repair*, as shown in this section. Form R-4, *Report*	5.2 DOCUMENTATION a) Repairs that have been performed in accordance with the NBIC shall be documented on a Form R-1, *Report of Repair*, as shown in this section. A Form R-4, *Report Supplementary Sheet*, shall	

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Supplementary Sheet, shall be used to record additional data when space is insufficient on Form R-1. b) Alterations performed in accordance with the NBIC shall be documented on Form R-2, Report of Alteration, as shown in this section. Form R-4, Supplementary Sheet, shall be used to record additional data when space is insufficient on form R-2. ***Add here @ 5.2 (c)*** ***5.2 (c) was relocated from 5.5 (c***	be used to document additional data when the space provided on Form R-1 is not sufficient. b) Alterations performed in accordance with the NBIC shall be documented on a Form R-2, Report of Alteration, as shown in this section. A Form R-4, Supplementary Sheet, shall be used to document additional data when the space provided on Form R-2 is not sufficient. c) ~~For those "R" Forms not registered with the National Board~~, The organization performing repairs and alterations shall retain a copy of the completed Form "R" Report ~~Form~~ on file and all records substantiating the summary of work as described @ 5.2.1 (b) for a minimum of five years, or as otherwise described when the repair method at 3.3.4.8. is used.	This paragraph "c" if accepted, would make no distinction of record retention. All "R" Certificate Holders would be required to retain the Form "R" Reports and corroborating records for 5-years By requiring supporting records to be kept along with the "R" Form, any questions arising from the owner / user, Inservice Inspector or jurisdiction due to a lack of detail on the "R" Form within that described time line, might be answered.

Existing Text:	**Proposed Text**	**Rational**
5.5 REGISTRATION OF "R" FORMS -GENERAL a) Organizations performing repairs or alterations under the "R" stamp program may register such repairs or alterations with the National Board. b) It should be noted that some Jurisdictions may require registration or repairs and alterations with the National Board. c) For those "R" Forms not registered with the National Board, the organization performing repair or alterations shall retain a copy of the "R" Form on file for a minimum period of five years.	5.5 REGISTRATION OF "R" FORMS -GENERAL a) "R" Certificate Holders ~~Organizations~~ performing repairs or alterations ~~under the stamp program~~ may register such repairs or alterations with the National Board. b) The "R" Certificate Holder should be aware that some Jurisdictions may require registration of repairs and alterations with the National Board. c) For those "R" Forms not registered with the National Board, the org ***Delete (c) and re-locate to 5.2 (c)*** l retain a copy of ~~the "R" Form on file for a minimum period~~ of five years.	By requiring supporting records to be kept along with the "R" Form, any questions arising from the owner / user due to a lack of detail on the "R" Form within that described 5-yr time line, might be answered. The need for record retention is recognized in the '07-edition of ASME B31.1. New Section VII now describes record retention for the life of the pipe system. As described in 3.3.4.8 a) "...The specified period of time the defect can remain in service after a weld repair shall be based on no measurable defect growth..." (This implies comparison records are available). Without record retention, risk based inspection frequencies may be undermined. Also, 3.3.4.8 c) 2) references NBIC Part 2, @4.4. In this section, FFSA per API-579 is introduced which can be used in conjunction with other API-codes (API-510 & API-570) requiring, "... permanent and progressive records to be maintained throughout the service life of each equipment item...".

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Existing Text:	Proposed Text	Rational
5.5.2 REGISTRATION FOR ALTERATIONS b) If the item was not registered with the National Board, one original Form R-2, together with attachments, may be registered with the National Board or retained as required by 5.5.	5.5.2 REGISTRATION FOR ALTERATIONS b) If the item was not registered with the National Board, one original Form R-2, together with attachments, may be registered with the National Board or retained as required by 5.14.1 a).	By requiring supporting records to be kept along with the "R" Form, any questions arising from the owner / user due to a lack of detail on the "R" Form within that described 5-yr time line, might be answered.

Existing Text:	Proposed Text	Rational
2.2.6 WELDER'S CONTINUITY The performance qualification of a welder or welding operator shall be affected when one of the following conditions occur: a) When the welder or welding operator has not welded using a specific process during a period of six months or more, their qualifications for that process shall expire. The "R" Certificate Holder shall maintain a welding continuity record and shall make the record available to the Inspector. The method of recording welding continuity and the record retention period shall be described in the "R" Certificate Holder's Quality System Manual. b) NO CHANGE	2.2.6 WELDER'S CONTINUITY The performance qualification of a welder or welding operator shall be affected when one of the following conditions occur: a) When the welder or welding operator has not welded using a specific process during a period of six months or more, their qualifications for that process shall expire. ~~The "R" Certificate Holder shall maintain a welding continuity record and shall make the record available to the Inspector. The method of recording welding continuity and the record retention period shall be described in the "R" Certificate Holder's Quality System Manual.~~ b) NO CHANGE 2.2.6.1 WELDER CONTINUITY RECORDS a) The "R" Certificate Holder shall maintain a welding continuity record system and shall make the records available to the Inspector, upon request. b) The method of recording welding continuity and the record retention period, meeting the minmum requirements of 5.14, shall be described in the "R" Certificate Holder's Quality System Manual.	The portion of the text relative to "record" was merely relocated from 2.2.6 to the new proposed 2.2.6.1

NBIC Sub-Group Repairs & Alterations-General

Definitions developed to support the proposed revisions:

Existing Text:	**Proposed Text**	**Rational**
Definition: ***"Record"***	Any preserved information used to further substantiate, illustrate, depict, or qualify the summary of work described by a representative of the repair organization completing the work summary on a Form "R" report. Records as described are not limited to photographs, drawings, reports, calculations, or charts, supporting or limiting the area of the work completed.	
Definition: ***"Documentation"***	A gathering or general assembly of reported information qualifying or supporting the statements attesting to the steps, evaluations, and methods used in completing a repair or alteration meeting the requirements of the NBIC.	The Code already recognizes "documentation" at 5.2, but does not identify what it is or what should be considered when describing documentation. The acceptance of NB08-0304 will get us closer.
Definition: ***"Document"***	A signature-culminating summary of completed activities used to repair or alter a pressure retaining item (PRI), reported on a Form "R" Report, to the requirements of the National Board Inspection Code.	***Alternative definition:*** The combined testimony and signature of an authorized representative of the repair or altering organization, and the Inspector accepting the work and accuracy of the work described on a Form "R" Report meeting the requirements of the NBIC.
Definition: ***"Report"***	A formal written account, unlimited in detail of fact based information supporting a conclusion.	

Other committee considerations:

- **Distinguish a record from a document-** By making a subtle distinction between a document and a record, the retention schedule could be different to mitigate storage space issues, and registration / retrieval costs. Example: some Jurisdictions may require the Form "R" Report to be registered with the National Board but not the corroborating records.
- **What is motivating the need for records or a record retention schedule?-** Records being reviewed during triennial reviews, Fitness for Service evaluations and establishing inspection frequencies, long-term maintenance planning such as Flow-assisted erosion-corrosion inspection / evaluations,
- **Should there be a distinction between how some records are used-** Welder-process continuity records may be limited to a 3-yr retention period. Equipment associated records representing repairs, alterations, and fitness for service evaluations used to determine future inspection frequencies shall minimally retained for 5-yrs. Is it too cumbersome to have different rules for different records?

NBIC Subcommittee R&A Action Block

Subject Liquid Pressure Testing Requirements for Low Toughness Steels

File Number NB10-0802 **Prop. on Pg.**

Proposal Proposed new requirements for liquid pressure testing of low toughness steels

Explanation Currently, the NBIC, Part 3 R&A provides a general cautionary statement for pressure testing low toughness steels. This proposal provides technical guidance for liquid pressure testing SA 212, SA 517 grades of steel.

Project Manager
Galanes and others (Chair to decide)

Task Group **TG Meeting Date**

Negatives

Pressure Testing Low Toughness Steels

The chart below may be used for liquid pressure testing ASME SA 212 (Grade B) and ASME SA 517 (Grades P, F and E) low toughness steels in lieu of conducting notch toughness tests to determine the pre-warming liquid temperature to reduce the risk of brittle fracture. The chart contains minimum pre-warming liquid temperature requirements based on metal thickness of the pressure retaining part.

Table xxx

Minimum Liquid Temperature for Pressure Testing (deg F)	Thickness (inches) of Pressure Retaining Object t
60	t</= 0.5"
70	t > 0.5" </= 1"
85	t > 1" </= 2"
100	t > 2" </= 4"
110	t > 4"

As an alternative option to pre-warming liquid above 60 deg F for liquid pressure testing of SA 212 and SA 517 steels or steels with known poor toughness, the test pressure can be reduced to 50% of operating pressure commensurate with a longer hold time.

NB10-1501

May 28, 2010

Secretary, NBIC Committee
The National Board of Boiler and Pressure vessel Inspectors
1055 Crupper Avenue
Columbus, OH 43229

Subject: Addition of Figure 2.5.2 in Part 3 of the NBIC

Dear Ms. Secretary:

Proposed Revision
2.5.2 b) When it is impractical or detrimental to postweld heat treat (PWHT) the entire item or band around the item, the following local PWHT method may be performed on spherical or cylindrical pressure retaining items using the time and temperature parameters in the original code of construction and in accordance with a written acceptance by the Inspector and, when required, by the Jurisdiction. Figure 2.5.2 b) provides guidance for nozzle installation. WRC Bulletin 452 Recommended Practices for Local Heating of Welds in Pressure Vessels provides more technical guidance for other joint configurations.

Statement of Need
Most recently, Mr. John Burpee, Chief Boiler, Elevator & Tramway Inspector of the State of Maine reported a repair that was using the wrong dimemnsions for SB and could have caused overheating of the base metal of the pressure retaining item.

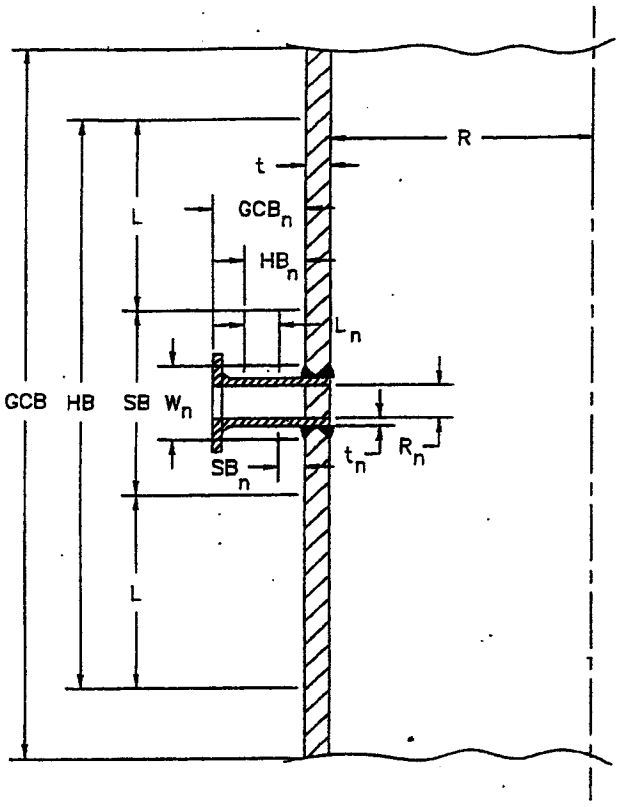
At the National Board Inspection Training Center and during our Inservice Inspection Seminars we receive questions about this paragraph concerning the layout of the nomeclature. It is edvident that more information is required to ensure that the requirements of this paragraph are met.

Background
WRC Bulletin 452, Recommended Practices for Local Heating of Welds in Pressure Vessels, provides a technical explanation the local PWHT required by Paragraph 2.5.2 b). In addition the figures in this document define multi-directional limits for our defined nomeclature as well as recommended temperature measurment locations.

Encl.

Respectfully,

Robert E. Ferrell
Senior Staff Engineer
The National Board of Boiler and
Pressure Vessel Inspectors
614 888 8320 x240



Nomenclature:

W_n	=	Widest width of nozzle attachment weld.
SB	=	Soak band on shell or head (width of the volume of the material where the holding temperature equals or exceeds the minimum required. The minimum width equals W_n plus a multiple of t on each side of the weld).
SB_n	=	Soak band on nozzle. The minimum width equals a multiple of t_n from the widest width of the weld.
L, L_n	=	Minimum distance over which the temperature may drop to one half of that at the edge of the soak band ($L = 2\sqrt{Rt}$ and $L_n = 2\sqrt{R_n t_n}$).
HB, HB_n	=	Heated band (width of heat source).
GCB, GCB_n	=	Gradient control band (minimum width of insulation and/or gradient heat source).
t, t_n	=	Nominal thickness of shell, head, or nozzle neck.
R, R_n	=	Inside radius of shell, head or nozzle neck.

Fig. 7—Uniform width circumferential band with nozzle.

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NB10-1601

Xcel Energy™
PUBLIC SERVICE COMPANY

Revision to Code Rules

May 12, 2010

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

Subject: The use of an abbreviated company name when completing a Form "R" Report

Statement of need:
With the understanding that the named repair organization shown on line-1 of a Form "R" Report is to mirror the named company on the "Certificate of Authorization", the exact name appearing on the "Certificate of Authorization" may not fit in the limited space characterized by the "R" forms shown at 5.13.1 through 5.13.4, at the line referenced in the instruction guide at 5.13.4.1, as instruction item-20.

Recognizing the National Board's rightful conviction to retain the information format (See interpretation 95-40) and relative location of the information profiled on the Form "R"-Report forms shown in Part 3, Section 5.13, the use of a recognized abbreviation may aid in retaining the information profile and legible completion of the form without compromising the integrity of the information being provided. Currently the Code has no rules to *"permit or prohibit"* the use of an abbreviated company name when completing a Form "R" Report. Recognize too, that the item in focus does not represent the extended description of work on a Form "R"-4, but only the limited space provided within the "Certificate of Compliance"-portion of the form, or another area where the National Board-forms may have a space-limited format.

With this in mind, a proposal is made to revise the current instruction guide at instruction item-20 as shown:

Existing Text in '09-addenda **5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS**	**Proposed Change**
20. Name of the "R" Certificate organization that performed the identified work.	20. Document the name of the "R" Certificate Holder that performed the described work, using the full name as shown on the Certificate of Authorization or an abbreviation acceptable to the National Board.

Additionally,
If the proposed item is accepted, an administrative suggestion is offered to the National Board to revise:

- The form NB-12, page 1, line 5 to reflect, "Abbreviation to be used for stamping or as allowed for completing a Form "R" Report".
- Revise the corresponding instruction guide on form NB-12, page-3, item 5 to reflect this action.
- Revise NB-form NB-397 titled, "National Board "R" or "NR" Certificate of Authorization Revision Request" to reflect the applicant's use of an abbreviated name if needed.

Submitted by:

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Background information:

This proposed revision to the Code Rules is a parallel item to National Board item NB08-0304. The distinction between the two items proposing a revision at instruction item-20 is, "the accepted use of an abbreviated company name when completing a Form "R" Report".

The National Board-staff has indicated that they do not currently have rules for the *permitted or prohibited* use of an "R"-Certificate Holder's abbreviated name in the limited space provided for the circled item-20, depicted at 5.13.1 through 5.13.4, or as described per the instruction guide at 5.13.4.1, when completing any of the Form "R" reports.

Within the NBIC, the use of an acceptable abbreviation is clearly allowed for nameplate stamping described at Part 3, Section 5.7.5 d):

> "The certificate holder shall use its full name as shown on the Certificate of Authorization or an abbreviation acceptable to the National Board".

Using the form NB-12, and completing line 5 on page 1, The National Board has a vehicle in place for accepting an abbreviated company name at the time of certificate application or renewal. With an acceptable abbreviation on record as currently indicated @ 5.7.5 d), the consistent use of the accepted abbreviation would be secured and limited to stamping or for use in completing a Form "R" Report if needed per the instruction item-20.

Seeing that the profiled nameplate figures shown at 5.7.5 a-c do not require any other identifying mark or company logo other than the registered "R" Certificate of Authorization-number, in conjunction with the registered identity of the Certificate Holder (which may be minimally abbreviated as "ABC"), the Code-community recognizes and accepts the limited nameplate stamping by precedence, as an unmistakable system of establishing repair organization certainty.

This certainty is presumed to be recognized by:

- The original application (NB-12, pg 1, line 5) on file at the National Board that includes the requested abbreviation accepted by the National Board and,
- The unique and registered "Certificate of Authorization"-number displayed when stamping is required.

As a comparison, referencing the instructions at 5.13.4.1 for completing a Form "R" Report, three individual sources of information affirms the repair organization's identity:

- Instruction item-1: The organization completing the Form "R" Report is required to identify the exact name and address of the "R" Certificate Holder performing the work as it appears on the "Certificate of Authorization".
- Instruction item-17: The Certificate Holder's "Certificate of Authorization"-number is to be documented.
- Instruction item-20: The name of the "R" Certificate Holder is again to be documented enlisting an identity on record with the National Board.

A list of reviewed sections indicating no rules or guidance *prohibiting or permitting* the use of an abbreviated company name on a Form "R" report:

1. Part 3, Section 1.6- Accreditation of "R" repair Organizations
2. Part 3, Section 5.2- Documentation
3. Part 3, Section 5.2.1 and 5.2.2- Preparation of Form R-1 and R-2, respectively
4. Part 3, Section 5.13.4.1- guide for completing National Board Form "R" Reports
5. Part 3, Section 5.7.5. d) Requirements ***for stamping***-
   - "...an abbreviation acceptable to the National Board", is identified.
6. National Board document NB-12 – Application for the National Board "R" Certificate of Authorization.
   - NB-12, page 1- Permits the use of an abbreviation for stamping...but does not prohibit an abbreviation to be used in the certificate area of the Form "R" report.
   - NB-12, page 3- The instruction guide for completing the application profile on NB-12, pg 1 only identifies the use of an abbreviation for stamping, item 5.

-EXAMPLE ONLY-

APPLICATION FOR THE NATIONAL BOARD "R" CERTIFICATE OF AUTHORIZATION

NEW APPLICATION [1] ☐ RENEWAL [2] ☐ REVISION TO PREVIOUS APPLICATION [3] ☒
(i.e., name or address change, etc. Refer to NBIC, Part 3, 1.4.3 for details.)

[4] Public Service Company of Colorado (PSCo), an Xcel Energy company
(Company or Corporate name as it will appear on the Certificate)

THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

Abbreviation to be used for stamping (if applicable) [5] PSCo, an Xcel Energy company

[6] Applying For: [7] ☐ "R" Only or [8] ☐ "R" With ASME

Check All Requested Scopes:

[9] ☐ Repairs [10] ☐ Shop [11] ☐ Metallic [12] ☐ Design Only
[13] ☐ Alterations [14] ☐ Field [15] ☐ Non-Metallic
☐ Both ☐ Both

Authorized Inspection Agency or Owner/User Inspection Organization: [16] _____

REVISIONS ONLY: ($50.00 revision fee will apply)
Authorized Inspection Agency acceptance: [17] _____
Authorized Inspection Agency Representative — Date

NEW APPLICANTS AND AIA CHANGES:
Please enclose a copy of your contract cover page. [18] Effective dates of contract: _____

By signing this form, you acknowledge that you have read and understand the Conditions and the Statement of Due Process and Confidentiality on Page 2 of this application.

X [19] _____ [20] _____
Signature of authorized representative within the applicant's company — Date — Print name & title of authorized representative within the applicant's company

Note: If you have organizational changes at any time which affect the primary contact within your company, please notify us in writing as soon as possible with the new individual's name and email address.

To be completed by applicant:

[21] _____ Physical Address
[22] _____ City, State, Province, Country, Postal Code
[23] _____ Mailing Address
[24] _____ City, State, Province, Country, Postal Code
[25] _____ Print name of primary contact within the company
[26] _____ Telephone No.
[27] _____ Fax. No.
[28] _____ Email Address
[29] _____ Web Site Address

National Board Use:

Certificate Nos.
Date issued
Date revised
Date expired
Accreditation Department
Staff Engineer
Company ID No.
Amount Paid
Date of Check
Check No.

Conditions

- The Certificate and "R" Symbol Stamp shall be used only by the named company and in the manner prescribed in the National Board Inspection Code (NBIC). The company must have all parts of the current edition of the NBIC with all applicable addenda when performing work under the Certificate of Authorization.
- The certificate and stamp will be surrendered should the company discontinue the above activities, at the request of the National Board or at the expiration of the certificate. The company will pay any and all legal fees and National Board costs associated with the recovery of the certificate and stamp.
- The National Board member jurisdictions or the National Board may make audits or unannounced visits as deemed necessary to ensure compliance with the rules of the National Board.
- **Under no circumstances shall the National Board 'R' Symbol Stamp be used without the acceptance of a National Board Commissioned Inspector.**

Statement of Due Process and Confidentiality

- A Review Team will conduct an evaluation of the company's Quality System. The company must demonstrate sufficient implementation of the Quality System to provide evidence of the company's knowledge of welding, nondestructive examination postweld heat treatment and other repair or alteration activities performed as applicable for the requested scope of work.
- The Review Team's responsibility is to document any findings and report them to the National Board along with a recommendation concerning issuance of a Certificate of Authorization.
- Team members are prohibited from discussing this company's proprietary information as well as the information contained in their report at any time, unless with National Board staff or Appeals Committee members. Information obtained by the Team, staff or committee members will be held in strict confidence. A copy of their report will be left with the applicant upon request.
- National Board policy provides for due process by an aggrieved party. Individuals may request information concerning this procedure by contacting the Appeals Committee, 1055 Crupper Avenue, Columbus, Ohio 43229-1183 or fax 614/ 847-1828.

Recommended Airport: City[30-a] — Name of Airport[30-b]

Do you recommend renting a car? ☐ Yes ☐ No [31-a] [31-b] _____
Hotel/Motel for Review Team:

First Choice:
[32] Hotel/Motel name — Address — Telephone — Miles from lodging to airport — Approximate taxi cost

Second Choice:
[33] Hotel/Motel name — Address — Telephone — Miles from lodging to airport — Approximate taxi cost

[34] Please check the days of the week that your company is open for business: SU☐M☐TU☐W☐TH☐F☐SA☐

Submit completed form and fee to: National Board, ATTN : Accreditation Dept., 1055 Crupper Avenue, Columbus Ohio 43229-1183
Please note: An incomplete/ improperly completed application may delay the processing of this request. Please be sure your form is COMPLETE before submitting. Thank you.

National Board Use:

Date	Hotel	Confirmation Number

-Not Part of Record-

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(18)

GUIDE FOR COMPLETING THE APPLICATION FOR THE NATIONAL BOARD "R" CERTIFICATION OF AUTHORIZATION	
[1]	Check this box if this is an application for your first "R" Certificate of Authorization.
[2]	Check this box if this is an application for a renewal of an existing Certificate of Authorization
[3]	Check this box if this is an application for a revision of an existing Certificate of Authorization
[4]	Print the name of the applicant exactly as it will appear on the Certificate of Authorization. This name shall be on the cover of the Quality Control manual. Punctuation, spacing and capitalization of the name are important.
[5]	Supply the exact abbreviation used for marking or stamping as required by the NBIC. For example, Acme Building Company may use (ABC) for their name for the stamping.
[6], [7], [8]	Are you having a review for an "R" Certificate only or will you also have a joint review for an ASME Certificate? Check box [7] or [8]
[9]	Check the box if the applicant's program only covers repairs as defined in the NBIC.
[10]	Check the box if the applicant will be performing work only at the address on the Certificate. (see SHOP in NBIC Part 3, Section 9)
[11]	Check the box if the applicant will be performing work on metallic pressure retaining items.
[12]	Check the box if the applicant will perform code calculations for re-rating or alterations as defined in the NBIC and will not perform physical work to the pressure retaining item except for the "R" stamping or NDE.
[13]	Check the box if the applicant will perform alterations only as defined in the NBIC and will perform physical work to the pressure retaining item.
[14]	Check the box if the applicant will perform code calculations or physical work which is controlled from the address listed on the Certificate of Authorization.
[15]	Check the box if the applicant will perform work on non-metallic pressure retaining items such as FRP or graphite.
[16]	Name of your Authorized Inspection Agency or Owner-User organization.
[17]	When revising your current certificate, an Authorized Inspection Agency representative shall acknowledge acceptance of this revision by signing this line or providing a letter of acceptance to the Accreditation Department.
[18]	Supply effective dates of the contract with the Authorized Inspection agency, as applicable.
[19]	Signature of the authorized representative of the applicant
[20]	Print the name of the authorized representative that signed line 19
[21]	Physical address listed on the Certificate of Authorization (shop)
[22]	City, state, province, territory, country, postal code of physical address
[23]	Mailing address if different from line 21 and 22
[24]	City, state, province, territory, country, postal code of mailing address
[25]	Print the name of the company's primary contact to the National Board
[26]	Telephone number of the applicant organization
[27]	Facsimile machine number of the applicant organization
[28]	Email address of the applicant organization which is routinely monitored
[29]	Applicants web site address if applicable
[30-a]	Print the city of the recommended airport for the Team Leader to arrive
[30-b]	Print the name of the airport or airport code
[31-a]	What transportation from the airport to the hotel and the shop do you recommend?
[31-b]	Provide any special instructions if required.
32	Provide complete contact information for the first choice hotel
33	Provide complete contact information for the second choice hotel
34	Check the box of the days of the week that your company is open for business (for a Review).

THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

National Board "R" or "NR" Certificate of Authorization Revision Request

Request Date

Certificate Number

Certificate Expiration Date

Change from:

Change to:

Signature of Authorized Company Representative

Date

ID # (listed on your last invoice)

General Information:

- **Before a certificate revision will be granted the National Board must have a completed application and appropriate fee for certificate revision.**
- Your Authorized Inspection Agency should accept this change in your QC manual and note acceptance on line 17 of the application or send a separate letter accepting this revision to the National Board on AIA letterhead.
- The cost for a revision is $50 USD.
- You may choose to submit your own request letter. Please include the above information in your letter.
- Mail, fax, or email your request to:

  Accreditation Department
  1055 Crupper Ave.
  Columbus, OH 43229-1183
  614.431.3234 – phone
  614.847.1828 – fax
  lcondo@nationalboard.org

Note: **You should continue using the company name that appears on your current *Certificate of Authorization* when stamping repaired/altered items and completing R-forms until the revised certificate is issued.**

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5.13.1 FORM R-1, *REPORT OF REPAIR*

FORM R-1 REPORT OF REPAIR
in accordance with provisions of the *National Board Inspection Code*

1. Work performed by (1) (2) (3)
2. Owner (5) (4)
3. Location of installation (4)
4. Unit identification (5) Name of original manufacturer (6)
5. Identifying nos.: (7) (8) (8) (8) (9)
6. NBIC Edition/Addenda: (10) (10)
   Original Code of Construction for Item: (11) (11)
   Construction Code Used for Repair Performed: (11) (11)
7. Repair Type: (12) ☐ Welded ☐ Graphite Pressure Equipment ☐ FRP Pressure Equipment
8. Description of work: (12)

Pressure Test, if applied (13) psi MAWP (14) psi

9. Replacement Parts. Attached are Manufacturer's Partial Data Reports or Form R-3a properly completed for the following items of this report:
   (14)
10. Remarks: (15)

CERTIFICATE OF COMPLIANCE

I, (16), certify that to the best of my knowledge and belief the statements in this report are correct and that all material, construction, and workmanship on this Repair conforms to the *National Board Inspection Code*.
National Board "R" Certificate of Authorization No. (17), expires on (18)
Date (19), (20) Signed (21)

CERTIFICATE OF INSPECTION

I, (22), holding a valid Commission issued by The National Board of Boiler and Pressure Vessel Inspectors and certificate of competency, where required, issued by the jurisdiction of (23)
and employed by (24) of (25)
have inspected the work described in this report on (26), and state that to the best of my knowledge and belief this work complies with the applicable requirements of the *National Board Inspection Code*.
By signing this certificate, neither the undersigned nor my employer makes any warranty, expressed or implied, concerning the work described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.
Date (28), (28) Signed (27) Commissions (29)

 NB-84 Rev. 11

FORM R-1 REPORT OF REPAIR
in accordance with provisions of the *National Board Inspection Code*

1. Work performed by Public Service Company of Colorado (PSCo), an Xcel Energy company (Name of repair organization) N/A (Form R No.)
   4653 Table Mountain Drive, Golden, CO 80403 (P.O. No., Job No., etc.)
2. Owner Public Service Company of Colorado (PSCo), an Xcel Energy company (name)
   4653 Table Mountain Drive, Golden, CO 80403 (address)
3. Location of installation (name)
   (address)
4. Unit identification (Boiler, pressure vessel) Name of original manufacturer
5. Identifying nos.: (mfg. serial no.) (National Board No.) (jurisdictional no.) (other) (year built)
6. NBIC Edition / Addenda: (edition) (addenda)
   Original Code of Construction for Item: (name / section / division) (edition / addenda)
   Construction Code Used for Repair Performed: (name / section / division) (edition / addenda)
7. Repair Type: ☒ Welded ☐ Graphite Pressure Equipment ☐ FRP Pressure Equipment
8. Description of work: (use supplemental sheet, Form R-4, if necessary)

Pressure Test, if applied psi MAWP psi

9. Replacement Parts. Attached are Manufacturer's Partial Data Reports or Form R-3's properly completed for the following items of this report:
   (name of part, item number, date repair type, mfg's name and identifying stamp)
10. Remarks:

CERTIFICATE OF COMPLIANCE

I, certify that to the best of my knowledge and belief the statements in this report are correct and that all material, construction, and workmanship on this Repair conforms to the *National Board Inspection Code*.
National Board "R" Certificate of Authorization No. 4684 expires on December 4, 2011
Date Signed PSCo, an Xcel Energy company (name of repair organization) (authorized representative)

CERTIFICATE OF INSPECTION

I, Michael Webb, holding a valid Commission issued by the National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction of State of Colorado and employed by Xcel Energy Services, Inc. of Golden, Colorado have inspected the work described in this report on and state that to the best of my knowledge and belief this work complies with the applicable requirements of the *National Board Inspection Code*.
By signing this certificate, neither the undersigned nor my employer makes any warranty, expressed or implied, concerning the work described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.
Date Signed (inspector) Commissions OUT52 (National Board and jurisdictional No.)

S/C

Welding of corrugating rolls
Robert_Wielgoszinski
to:
RHough
05/18/2010 09:47 AM
Cc:
tparks, ggalanes
Show Details

Robin, would you please open an item at the NBIC for the repair welding of corrugating rolls. In the cardboard and paper industry it is common to have drum rolls made of SA-649 material. And it is frequent that in the manufacture of cardboard these rolls are refurbished, which includes welding. The refurbishment method is roughly described as machining the used rolls to a smooth surface, overlay welding the rolls with a hard face, and then machining the corrugation grooves in the hard faced surface. There is sometimes preheat and post weld heat treatment involved, but not always. Other repair work is performed, but generally not germane to the NBIC.

When someone wants to refurbish the rolls in accordance with the NBIC, they are directed back to the ASME Code, which has very specific rules for the manufacturing of these forged rolls. Any welding or rework is to be done in accordance with the material specification, SA-649. The material spec. does not have very much guidance on how to handle welding. This is because it is a specification for new material. And new material Manufacturers seldom like to weld on new material. Also, this forged material has a high carbon content and is not very ductile, and therefore susceptible to cracking. Hence the reason the MM's don't want it welded. But there are numerous companies, all around the world, that will refurbish the rolls to some degree. And reportedly with excellent results. They have been doing this for many years.

The NBIC allows for welding on corrugating rolls (these rolls) in Part 3, 3.2.1b), but provides no guidance of the best practices in doing so. With no guidance anyone could weld any roll, with any welding process, and with no heat treatment. This makes for a dangerous environment. It would behoove the industry, and general public, if there was some rules established to govern this practice.

We are soliciting some of the repair firms that specialize in refurbishing corrugating rolls for their input and potential participation in this item. But in the mean time, please open an item on this. And I would be happy to participate as a task group member.

Regards,
Robert V. Wielgoszinski
Principal Code Consultant
Hartford Steam Boiler of Connecticut
One State Street
Hartford, CT 06141-0299
800-472-1866 x5064
direct dial 860-722-5064
fax 860-722-5705
www.hsbglobalstandards.com

(51)

NB10-1401

ATTACHMENT 5

request for new NBIC Business item
Joe Ball to: Robin Hough 01/25/2010 03:18 PM

For book-keeping after the NBIC meeting, the SC-PRD requests that a new business item be opened based upon discussions concerning the installation and use of "Change-over" valves.

Subject: Change-over valve Installation and Use

Proposal: Review NBIC Part 1 for inclusion of rules regarding the installation and application of change-over valves for use under pressure relief valves on boilers

Explanation: Current Part 1 rules indicate that no valve of any description shall be placed between a pressure relief valve and the boiler it is protecting. Change-over valves are available which allow the installation of two pressure relief valves and the ability to switch from one valve to another while the boiler remains running. They are covered by ASME new construction Code Case 2254, and their use is acknowledged in Part 2, paragraph 2.5.4 i). Part 1 should be reviewed for possible inclusion of rules for the installation and use of change-over valves for boilers.

Project Manager: To be assigned

Task Group: To be assigned

Please call me if there are any questions.

Thanks

Joseph F. Ball, P. E.
Director, Pressure Relief Department

National Board Testing Laboratory
7437 Pingue Drive
Worthington OH 43085

National Board Main Phone: 614-888-8320
Direct line phone no.: 614-431-3209
Jball@nationalboard.org
http://www.nationalboard.org
Fax: 614-848-3474

NBIC - 1402

Fw: TEST ONLY VERSUS RESET- Request for new business item

Joe Ball to: Robin Hough 02/12/2010 10:32 AM
Cc: alton, fhart

Robin,

I missed this in the last agenda. Please assign a new business number.

Subject: Clarification of "Restoration of Set Pressure"

Proposal: Review rules relating to "test only", restoring set pressure, and changes in set pressure.

NBIC References: Part 2 par. 2.5.7 g), Part 3 par. S7.10.1

Thank you,

Joseph F. Ball, P. E.
Director, Pressure Relief Department

National Board Testing Laboratory
7437 Pingue Drive
Worthington OH 43085

National Board Main Phone: 614-888-8320
Direct line phone no.: 614-431-3209
Jball@nationalboard.org
http://www.nationalboard.org
Fax: 614-848-3474
----- Forwarded by Joe Ball/NationalBoard on 02/12/2010 10:27 AM -----

From:	Alton Cox <alton@jaltoncox.com>
To:	Frank Hart <fhart@furmanite.com>, Joe Ball <JBall@nationalboard.org>
Cc:	Kevin Fitzsimmons <kfitzsimmons@carterchambers.com>, Thakor Patel <tpatel@curtisswright.com>, Raymond McCaffrey <ray@qualityvalves.com>, Kevin Simmons <ksimmons@tycovalves.com>, Sidney Cammeresi <sidneycammeresi@hotmail.com>, <marianne@ivicorp.net>, <bdonalson@tycovalves.com>, <glynhumphrey@bellsouth.net>
Date:	01/07/2010 12:17 AM
Subject:	TEST ONLY VERSUS RESET

Frank:

There seems to be widespread misunderstanding in the PRV Industry regarding the provisions for "Test Only" or restoration of Set Pressure in NBIC. Part 3, Supplement 7, Para. S7.10. There is a misconception that this provision allows resetting a PRV to a new Set Pressure. The words are very specific that it does not apply to change of Set Pressure. Rather, S7.10.5 states that "Only external adjustments to restore the required set pressure and/or performance of a pressure relief valve shall be made under the provisions of S7.10.1".

Some of the confusion appears to apply to ASME provisions for resetting a PRV within 5% of the nameplate set pressure, or within the spring range or when determined to be acceptable to the OEM. This provision does apply to reset (set pressure change), but it

has been interpreted by NBIC SCOP back in 1998. See below.

I would like to open an item at NBIC SC-PRD to clarify that the purpose of S7.10 is to confirm or restore a PRV to nameplate set pressure and does not include change in set pressure.

Thank you,
Alton Cox

Reference Interpretation 98-26
INTERPRETATION 98-26
Subject: RA-2262(b)(1)
1998 Edition with the 1998 Addenda

Question: May the spring on a pressure relief valve be reset within the guidelines of ASME Section 1, PG-72.3 or Section VIII, Div. 1, UG-126(c), as applicable, provided the repair activities are within the scope stated on the "VR" holder's certificate and the requirements of paragraph RA-2262(b)(1) are met?

Reply: Yes, provided the set pressure is within the manufacturer's spring range.

2/26

NB10-1801

Subject: Deletion of Back Pressure Testing for Owner Users

NBIC Reference: Part 3 4.5.1 a) 4

Background Information: Many Owner/User locations have multiple PRVs with Closed Bonnets and Closed Caps or Packed Levers which discharge to atmosphere. The ASME requirement for Secondary Pressure Zone Testing of new PRVs is intended for OEMs and Assemblers who may not know where the PRV will eventually be installed. However, the Owner/User does know where the PRV is installed and should be permitted to waive the Secondary Pressure Zone (Back Pressure) Test provided the PRV is discharging to atmosphere.

There is already an exemption in ASME for PRVs under NPS 1 inlet size. Therefore, since the precedent for exemption is already set in ASME and there is precedent in NBIC, Part 3, Para. 4.5.2, for Owner/User exemption for testing Section VIII, Steam Service, PRVs on Air, I would like to request SC-PRD open a new item regarding Secondary Pressure Zone Testing.

Statement of Need:
I would like to propose that SC-PRD consider revising the NBIC "VR" Rules to permit an Owner/User exemption for Secondary Pressure Zone Testing as required by ASME, Section VIII, Div. 1, Para. UG-136(d)(3) for PRVs which discharge to atmosphere regardless of the PRV Bonnet or Cap design.

National Board Inspection Code Procedure

THE NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

Approved by NBIC Committee: August 31, 2009
Approved by the Board of Trustees: October 5, 2009
Approved by ANSI: January 12, 2010

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

Table of Contents *Page*

1.0 *Purpose*

This procedure defines the organization, scope, duties and responsibilities of the NBIC Committee, subcommittees, subgroups and task groups. The NBIC Committee is established by the Board of Trustees for the purpose of maintaining the NBIC. The NBIC Committee is accredited by ANSI as a "developer of American National Standards in accordance with the ANSI Essential Requirements. This procedure also describes the administrative process for the publication of the National Board Inspection Code.

Revisions to this procedure must be approved by the NBIC Committee, the Board and ANSI.

A copy of this procedure or any referenced document is either available on the National Board's Web site: www.nationalboard.org or may be obtained from the NBIC secretary.

2.0 Responsibilities

The Executive Director of the National Board is responsible for ensuring that the requirements of this procedure are met. The Secretary of the NBIC Committee is responsible for the day-to-day implementation of this procedure. Other responsibilities are described throughout this procedure.

3.0 Definitions

The following are terms and their definitions used throughout this document.

ANSI	American National Standards Institute
Board	The Board of Trustees of the National Board
Code	The National Board Inspection Code (NBIC)
NBIC Committee	The NBIC Main Committee, accredited by ANSI as the final consensus body for the purpose of approving American National Standards
committee	The NBIC Committee and all subcommittees, subgroups and task groups
National Board	The National Board of Boiler and Pressure Vessel

	Inspectors
NB Mark	A National Board Code Symbol Stamp
NBIC	The National Board Inspection Code which was established to provide rules and guidelines for the repair, alteration, inspection, installation, maintenance and testing of boilers, pressure vessels and other pressure retaining items.
subcommittee	A unit established to address recurring functions, address specific issues or maintain specific sections of the NBIC. A subcommittee is established by the NBIC Committee. Each subcommittee will follow rules for consensus approval insofar as possible but is not considered the final consensus body for the purpose of approving American National Standards.
subgroup	A unit established to address recurring topics or functions specific to a subcommittee. A subgroup is established by the NBIC Committee. Subgroup actions are reported to the subcommittee for approval.
task group	A unit established to address a specific topic. A task group may be established by the NBIC Committee, subcommittee or subgroup.

4.0 Committee Structure

The committee structure consists of the NBIC Committee, subcommittees, and subgroups appointed by the NBIC Committee and task groups appointed by the NBIC Committee, a subcommittee or subgroup. The duties, responsibilities and administration of each are described below.

4.1 *NBIC Committee*

4.1.1 *Responsibilities*:

The NBIC Committee is responsible for:

a. approving new rules and revising existing rules of the Code and voting on such additions and revisions;

b. approving interpretations of the rules of

the Code;

c. hearing requests for reconsideration regarding interpretations and revisions to the Code;

d. acting on any matter related to the scope of the Code as may be assigned by the Board.

4.1.2 *Membership:*

The NBIC Committee shall consist of not more than twenty-six (26) voting members within the interest categories described in paragraph 4.5.

a. At least one individual representing manufacturers shall be employed by a manufacturer of safety relief devices.

b. At least one individual representing National Board Certificate Holders shall be employed by an organization holding a valid "R" Certificate of Authorization.

c. At least one individual representing National Board Certificate Holders shall be employed by an organization holding a valid "VR" Certificate of Authorization.

d. Not more than one-third of the total NBIC Committee membership shall represent any single category of interest. The chair and vice chair of the NBIC Committee are considered within this membership. The secretary is a member of the NBIC Committee without vote.

e. Each member of the NBIC Committee may recommend a person, within the same interest category, as a representative to serve in the absence of the member at a specific meeting. Representatives have the same privileges and responsibilities as the member when serving in the member's capacity. The representative's involvement terminates at the conclusion of the specific meeting requested by the member.

f. NBIC Committee members, upon change of employment status affecting the member's category of interest, will be deemed to have submitted their resignations from the NBIC Committee.

4.1.3 *NBIC Committee Member Selection, Approval and Term*

a. A candidate for appointment or reappointment as a voting member of the NBIC Committee is selected by a majority vote of the NBIC Committee membership. The candidate's name is then submitted to the Chairman of the Board for consideration. All voting members of the NBIC Committee must be appointed by the Chairman of the Board.

b. A candidate for appointment or reappointment as the NBIC Committee Chair is selected by the Executive Director and confirmed by a majority vote of the NBIC Committee members. The NBIC Committee Vice Chair is selected by a majority vote of the NBIC Committee membership.
The candidate's names are then submitted to the Chairman of the Board for consideration. The chair and vice chair must be appointed by the Chairman of the Board.

c. The NBIC Committee secretary is selected by the Executive Director of the National Board.

d. The term of all voting members is three (3) years. Voting members are eligible for reappointment.

e. The term for the chair and vice chair is the same as their NBIC Committee membership expiration date. The chair and vice chair are eligible for renewal of their terms of office.

f. A candidate for membership on the NBIC Committee must provide both a resume and a letter of support from their employer.

4.2 *Subcommittees*

4.2.1 *Responsibilities*

Subcommittees are responsible for:

a. maintaining (adding new requirements, revising existing requirements) those sections of the NBIC that are assigned to the subcommittee.

b. acting on requests for interpretations of the rules for those assigned sections of the NBIC;

c. acting on any matter related to the scope of the NBIC as may be assigned by the NBIC Committee;

d. forwarding all subcommittee actions to the NBIC Committee.

4.2.2 *Membership*

a. The number of members appointed to each subcommittee shall be as necessary to carry on the assigned responsibility. The size of subcommittees will be limited to numbers which will best serve operational needs. ~~Not more than one-third of the total subcommittee membership shall represent any single category of interest.~~

b. Each member of the NBIC subcommittee may recommend a person, within the same interest category, as a representative to serve in the absence of the member at a specific meeting. Representatives shall have the same privileges and responsibilities as the member when serving in the member's capacity. The representative's involvement automatically terminates at the conclusion of the specific meeting requested by the member.

c. NBIC subcommittee members, upon change of employment status affecting the member's category of interest, will be deemed to have submitted their resignations from the subcommittee.

4.2.3 Subcommittee Member Selection, Approval and Term

a. A candidate for appointment or reappointment as a voting member of the subcommittee is selected by majority vote of the NBIC Committee membership. Subcommittee members need not necessarily be members of the NBIC Committee or subgroup. The candidate's name is then submitted to the Chairman of the Board for consideration. All voting members of the subcommittee must be appointed by the Chairman of the Board.

b. Candidates for appointment or reappointment as the subcommittee chair and vice chair are selected by a majority vote of the subcommittee membership. The candidate's names are then submitted to the Chairman of the Board for consideration. The chair and vice chair must be appointed by the Chairman of the Board.

c. The subcommittee secretary is a member of the subcommittee without vote and is selected by the Executive Director of the National Board.

d. The term for all voting members is three (3) years. Voting members are eligible for reappointment.

e. The term for the chair and vice chair is the same as their subcommittee membership expiration date. The chair and vice chair are eligible for renewal of their terms of office.

f. A candidate for membership on the subcommittee must provide both a resume and a letter of support from their employer.

4.3 *Subgroups*

4.3.1 Responsibilities

Subgroups are responsible for:

a. developing new rules and revising existing rules for specific Code sections or paragraphs;

b. acting on requests for interpretations of the rules for specific Code sections or paragraphs;

c. acting on any matter related to the scope of the Code as may be assigned by the committee or subcommittee;

d. forwarding all subgroup actions to the subcommittee, as appropriate

4.3.2 *Membership*

The number of members appointed to each subgroup shall be as necessary to carry out the assigned work. The size of subgroups will be limited to numbers to best serve operational needs.

4.3.3 *Subgroup member selection, approval and term*

a. A candidate for appointment or reappointment as a member of the subgroup is selected by the majority vote of the subcommittee membership. Subgroup members need not necessarily be members of the Committee or subcommittee. The candidate's name is then submitted to the Chairman of the Board for consideration. All voting members of the subgroup must be appointed by the Chairman of the Board.

b. Candidates for appointment or reappointment as subgroup chair and vice chair are selected by a majority vote of the subcommittee membership. The chair and vice chair of each subgroup shall be appointed by the NBIC Committee Chair.

c. The subgroup secretary is selected by the Executive Director of the National Board and is a member of the subgroup without vote. In the absence of a selected secretary, the subgroup chair may appoint a voting member of the subgroup to act as secretary.

d. The term for all voting members is for three years. Voting members are eligible for reappointment.

e. The term for the chair or vice chair is the same as their membership expiration date and these positions are eligible for renewal.

f. The name of a National Board Member who is a candidate to serve on a subgroup, but is not a member of the NBIC Committee or a subcommittee, must be submitted to the Chairman of the Board for approval.

g. A candidate for membership on a subgroup must provide both a resume and a letter of support from their employer.

4.4 Task Groups

4.4.1 Responsibilities

Task groups are responsible for:

a. developing new rules and revising existing rules for specific Code topics or paragraphs;

b. acting on requests for interpretations of the rules for specific Code topics or paragraphs;

c. acting on any matter related to the scope of the Code as may be assigned by committees

d. forwarding all task group actions to the committee as appropriate.

4.4.2 Membership

The number of members appointed to each task group shall be as necessary to carry out the assigned task. The size of task groups will be limited to numbers which will best serve operational needs.

4.4.3 Task Group Member Selection, Approval and Term

a. When the committee agrees on the need or at the discretion of the chair of a committee, a task group, members, and chair shall be appointed by

the committee chair. A member of the task group may be appointed as task group secretary by the task group chair. Task group members need not necessarily be members of a committee.

b. The name of a National Board Member who is a candidate to serve on a task group, but is not a member of the NBIC Committee or a subcommittee, must be submitted to the Chairman of the Board for approval.

c. The task group will be dismissed once the task has been completed or at the discretion of the chair of the committee.

4.5 *Interest Categories*

4.5.1 NBIC Committee, subcommittee, subgroup and task group members shall not be considered as representing any specific organization. Participation by individuals employed by governmental agencies or affiliated with industry is not to be interpreted as government or industry endorsement. Membership shall be selected from the categories of interest listed below.

a. General Interest: Individuals who are not employed by an organization characterized by b through h shall be considered General Interest.

b. Manufacturers: Any organization accredited by ASME to hold an ASME Code symbol stamp.

c. Authorized Inspection Agency: An authorized (insurance) inspection agency recognized by the National Board.

d. Jurisdictional Authorities: National Board members.

e. National Board Certificate Holders: Repair organizations accredited by the National Board to hold "R", "NR" or "VR" certification.

f. Users: Owners or users of boilers/pressure vessels.

g. Labor: Individuals representing labor organizations whose members are skilled workers in boiler or pressure

vessel manufacturing or repairing, such as the United Association of Journeymen and Apprentices of Plumbing and Pipe Fitting Industry of the United States and Canada or the International Brotherhood of Boilermakers, Ship Builders, Blacksmiths, Forgers and Helpers.

h. Regulatory Authorities: Representatives of US Governmental agencies who regulate boilers or pressure vessels.

4.5.2 Lack of any particular representative of any interest category at a meeting shall not preclude the committee from conducting its business when a quorum is present.

5.0 Duties of NBIC Committee, Subcommittee, Subgroup and Task Group Membership

5.1 *Chair*

The chair shall preside at meetings of the committee and shall perform other duties as are customarily assigned to that position.

The chair of the NBIC Committee shall make an annual review of the activity of each voting member of the NBIC Committee, subcommittee and subgroup with regard to the member's contribution to the work, attention to correspondence, and attendance at meetings. Based on this review, if a consistent lack of attendance or participation within the past year is noted, the chair may recommend to the Chairman of the Board that the member's appointment to the NBIC Committee be terminated. The chair's report of NBIC Committee member's activities shall be sent to the Chairman of the Board and the Executive Director of the National Board.

5.2 *Vice Chair*

The vice chair shall, in the absence of the chair, fulfill the duties of the chair.

5.3 *Secretary*

In addition to the responsibilities required by this procedure, the Secretary shall prepare agendas and record minutes of meetings and shall perform such other duties as are customarily assigned to such an office.

In the absence of the chair and vice chair at a meeting, the secretary shall take the chair for the purpose of receiving nominations from the members present for election of a chair pro tem, who shall then preside at the meeting.

5.4 *Members*

The duty of each member is to give thorough consideration to each subject brought before the committee for action, vote on acceptance or rejection of each proposal, and assist generally in carrying out the assigned functions. Such duties may be carried out by attendance at meetings, by correspondence, and by telephone.

6.0 *Meetings*

6.1 *Scheduling Meetings*

NBIC Committee meetings shall be held at the call of the Chair, as decided upon by a majority of NBIC Committee members, or as directed by the Chairman of the Board. Subcommittee, subgroup and task group meetings held at times and locations other than in conjunction with the NBIC Committee meeting, shall require the approval of the National Board Executive Director. Meeting requests shall be in writing to the Executive Director and include the subcommittee, subgroup or task group members' roster.

6.2 *Locations*

The NBIC Committee shall meet in National Board member jurisdictions.

6.3 *Meeting Notification*

All committee meeting schedules shall be posted on the National Board web site. The National Board member in whose jurisdiction the NBIC Committee is meeting shall be invited to attend the meeting.

A meeting agenda shall be made available to the members prior to the meeting and shall be subject to approval at the commencement of each meeting.

6.4 *Public Meetings*

Meetings at which the committee considers proposed revisions to the NBIC, reaffirmation of previously considered revisions or withdrawal of previously approved revisions shall be open to the general public. Unless matters to be discussed by the committee are deemed to be of a confidential nature by the chair, committee meetings shall be open to any interested person who shall be given an opportunity to participate in the discussions on subjects of interest to them.

6.5 *Quorum*

Fifty-one percent of the NBIC Committee, subcommittee or subgroup voting membership must be present to conduct committee business.

6.6 *Meeting Conduct*

The committee shall conduct meetings in accordance with the latest available edition of *Roberts Rules of Order (Revised)* unless rules to the contrary are specified in these procedures.

6.7 *Recording Meeting Proceedings*

Taping of committee meetings, other than by the secretary, is prohibited.

6.8 *Minutes*

All meetings of the NBIC Committee, subcommittees and subgroups shall be documented in minutes of the meeting. The minutes are not to be considered a verbatim record of the meeting but rather a record of the voted actions and highlights of significant discussions or conclusions.

The title page of committee minutes shall include the following statements:

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

Minutes of committee meetings will be distributed to the members of the committees, the Executive Director, National Board members and Advisory Committee members, as requested. Copies of committee minutes will be made available on the National Board's Web site for review until the next scheduled meeting minutes are available.

7.0 *Voting*

7.1 *General*

7.1.1 Each committee member shall exercise their vote within the presented time limits. When a committee member fails to report when due, or consistently abstains from voting, the committee member's appointment shall be subject to termination. The individual may appeal such action. Committee members are encouraged to vote as soon as possible.

7.1.2 Votes for committee actions may be obtained by letter, fax, recorded votes at meetings, or electronic means. All committee members shall have an opportunity to vote. When recorded votes are taken at meetings, the committee members who are absent shall be given the opportunity to vote.

7.1.3 The vote of each committee member shall be in one of the following categories:

- Approved
- Disapproved
- Abstention
- Not voting (for possible conflict of interest)

A response of not voting signifies neither approval nor disapproval and should be executed only when the committee member believes that they have a conflict of interest or potential conflict of interest and is removing themselves from the voting process.

Committee members casting disapproved responses should include an alternate action that will resolve their disapproved vote.

Committee members casting abstained responses should include a reason for the abstention.

7.1.4 Approval of committee actions shall be by a majority vote. Approval of the following actions of the NBIC Committee or subcommittee shall require two-thirds (2/3) majority vote of the committee membership, excluding not voting responses or not returned ballots.:

- committee procedures and interest categories
- reaffirmation of the NBIC as an ANSI Standard
- NBIC revisions
- interpretation of the NBIC
- scope of the NBIC Committee or subcommittee

7.1.5 Voting by NBIC Committee members not present at a meeting or by letter ballot may be obtained by letter, facsimile, or by other electronic means.

7.2 *Voting at Meetings*

NBIC Committee members not present at a meeting for final approval of Code revisions shall be afforded the opportunity to submit their vote within two weeks after the date of the NBIC Committee meeting. It is the responsibility of this member to obtain the information relating to the item.

7.3 *Voting by Letter Ballot*

7.3.1 A letter ballot on any subject may be authorized by the Chair of the NBIC Committee, Chair of a subcommittee, Chairman of the Board, or a majority vote of those present and voting at a NBIC Committee or subcommittee meeting. The voting period for a letter ballot may be four (4) calendar weeks; however, in order to expedite the item, this period may be shortened to no less than two calendar weeks by the person authorizing the letter ballot. Voting periods shall be closed upon receipt of all responses, but not later than the established closing date. All letter ballots shall be coordinated by the NBIC Committee secretary.

7.3.2 At the conclusion of the letter ballot period, the NBIC Committee or subcommittee secretary shall tally the votes and report the results to the members. The secretary shall collect the comments accompanying votes and distribute these to the appropriate committee for disposition. If approved disposition is not accomplished, the item shall be placed on the agenda for the next meeting. All disapproved comments shall be reviewed by the NBIC Committee or subcommittee.

All negative voters shall be advised in writing of the disposition of their comment(s) and of their right to appeal the NBIC Committee's or subcommittee's decision.

NBIC Committee or subcommittee members shall be apprised of any unresolved comments and given two (2) weeks from notification to reconsider their original vote. If the required vote approval percentage is affirmative after this time period, the ballot shall be considered approved. Letter ballots not approved shall be placed on the agenda for the next scheduled meeting of the NBIC Committee or subcommittee.

8.0 *National Board Inspection Code Publication Administration*

8.1 *ANSI Approval Process*

The NBIC Committee is accredited by ANSI as a developer of American National Standards. The NBIC Committee, subcommittees, subgroups and task groups must conduct activities in accordance with this procedure and the current rules and procedures of ANSI.

8.1.1 *Documentation*

a. After the NBIC Committee has approved the revisions to be included in the edition or addendum, the secretary shall prepare and submit a Standards Action Public Review Request (BSR-8) form. A notice of all revisions shall be posted on the National Board's Web site for public review and comment.

b. At the conclusion of the required comment period, the

secretary shall collect all comments submitted and distribute the comments to the appropriate subcommittee.

c. The secretary shall coordinate the disposition of public review comments.

d. The disposition of all public review comments shall be approved by the NBIC Committee.

e. The commenter shall be advised, in writing, of the disposition of the comment and the commentator's right to appeal the NBIC Committee's decision.

f. All NBIC Committee members shall be notified of all unresolved comments to afford all members an opportunity to respond, reaffirm or change their vote.

g. Resolutions involving substantive changes to approved text shall be resubmitted for public review at the next scheduled public review and comment period or a new action shall be generated to address the commentators recommended change as appropriate. No substantive changes shall be made to an approved revision unless ANSI Essential Requirements are met.

h. When the disposition of all comments has been completed, or if no comments were submitted, the secretary shall prepare and submit the Formal Submittal Checklist for approval or withdrawal as an American National Standard (BSR-9) Form.

8.1.2 *Secretariat*

a. The National Board is the secretariat for the NBIC Committee. Its duties include:

1. providing administrative support for the activities of the secretary, and
2. publishing and distributing the Code, addenda, minutes, and interpretations approved in accordance with these procedures.

b. It shall be the responsibility of the secretary to:

1. ensure that the NBIC Committee adheres to these and other referenced or applicable procedures,
2. apply to ANSI for accreditation of the NBIC Committee by that organization,
3. maintain a committee roster of the members which shall include names of the officers, and members, their address, business affiliation, category of interest, appointment expiration date,
4. comply with ANSI requirements for the NBIC Committee administration, and
5. submit proposed revisions to this procedure to ANSI for approval.

8.1.3 *Internal Audits*

At least once every three years, the Executive Director of the National Board shall have an audit made of the NBIC Committee's activities to ensure these procedures are followed. The audit shall be conducted by person(s) who are not members of the NBIC Committee. The audit report and follow-up action of deficiencies uncovered by an audit shall be reported to the NBIC Committee and the Chairman of the Board.

8.1.4 *Patent Policy*

The National Board complies with the ANSI patent policy as described in the ANSI Essential Requirements.

8.1.5 *Commercial Terms*
The National Board complies with the ANSI Commercial Terms and Conditions Policy as described in the ANSI Essential Requirements

8.1.6 Withdraw of an American National Standard (ANS)

When required by ANSI Essential Requirements or the National Board elects to withdraw an American National Standard, the National Board shall immediately notify ANSI for announcement in ANSI Standards Action. The National Board shall comply with all ANSI Essential Requirements for withdrawal of an American National Standard.

8.2 *Revisions to the NBIC*

8.2.1 Any interested person may request consideration of a revision to the NBIC by submitting such request in writing to the secretary. If deemed editorial as determined by the secretary, requests will be incorporated into the NBIC draft addendum for distribution and public review. Comments which are editorial in nature need not be submitted to the NBIC Committee or subcommittees for consideration prior to inclusion in the addendum. Any public review comments associated with these editorial comments will be handled as such and will be considered by the NBIC Committee and subcommittee at the next scheduled meetings for final approval.

Requests which are technical in nature will be forwarded to the appropriate subcommittee for consideration and recommendations made to the NBIC Committee, for their approval. Once approved, these revisions will be incorporated into the next draft. If approval is not reached, the item will be returned to the subcommittee for further action.

8.2.2 Following approval of a revision by the NBIC Committee and acceptance under ANSI procedures, the approved revision shall be published in the next addendum.

8.3 *Interpretations of the NBIC*

8.3.1 The NBIC Committee has the responsibility for interpreting and replying to questions concerning the application of NBIC rule or guideline. Any interested person may request, in writing, an interpretation of a rule or guideline contained in the NBIC through the NBIC Committee secretary.

8.3.2 Upon receipt of such a request the NBIC Committee secretary determines which subcommittee should develop a technical response.

When responding to questions concerning the interpretation of a rule or guideline, the following is to be used as a response:

"The NBIC was developed under procedures approved by the American National Standards Institute. The NBIC Committee that approved the NBIC and revisions thereto is a consensus NBIC Committee balanced to assure that individuals from competent and concerned interests have been afforded the opportunity to participate. Further, all proposed revisions to the NBIC are made available for public review and comment which provides an opportunity for additional input from jurisdictions, industry and the public at large."

From time to time a request for interpretation regarding a superseded edition of the NBIC may be submitted to the NBIC Committee. If in the opinion of the members of the NBIC Committee, a response can be formulated, the NBIC Committee should respond to the inquirer's question. However, when it is the consensus of the NBIC Committee that a response cannot be formulated, the NBIC Committee should respond as follows:

"The (edition of the NBIC) has been superseded. The historical knowledge that the NBIC Committee feels is needed to respond to your request for interpretation is no longer available to the NBIC Committee."

8.3.3 All interpretations of the NBIC shall be approved by the NBIC Committee.

8.3.4 All interpretations of the NBIC shall be posted on the National Board web site..

8.3.5 The National Board accepts responsibility for, and recognizes only those interpretations approved by the NBIC Committee.

8.4 *Publications*

8.4.1 *NBIC*

The NBIC shall be identified as "An American National Standard" and "ANSI/NB-23" in accordance with ANSI procedures.

A new edition of the NBIC shall be published every three years.

An addendum to the NBIC shall be published annually, except for those years when a new edition is published.

Each edition and addendum shall have a date of issue. The NBIC may be used beginning with the date of issue. Six (6) months after the date of issue, the edition or addendum becomes the requirement for compliance with NBIC.

Complimentary copies of the NBIC will be provided to the members of the NBIC Committee and subcommittees

8.4.2 *Forms*

National Board forms are part of the standard and follow the same requirements for revision as outlined in this procedure.

8.5 *General*

8.5.1 *Referencing Other Standards*

When the NBIC Committee wishes to reference another code or standard, the date of the specific, referenced code or standard shall not be cited unless required.

8.5.2 *Copyrights*

Copyright and all rights in all materials produced by the committee are owned by the National Board.

9.0 Due Process

The National Board provides due process for the impartial handling of complaints regarding procedural or technical issues for any action or inaction. As part of this due process there are several levels to which an aggrieved party may appeal. This section gives criteria regarding right to appeal, how appeals are made and what may be appealed.

At any level of the appeal process, there shall be no informal discussions between the body hearing the appeal and representatives of the appellant.

Persons who have directly and materially affected interests and who have been or will be adversely affected by any procedural or technical action or

inaction with regard to the development of a proposed American National Standard or the revision, reaffirmation or withdrawal of the NBIC have the right to appeal. Appeals shall be addressed promptly and a decision made expeditiously. The following process shall be followed:

a. Any person aggrieved by an interpretation, disposition of comments, procedural or technical issues may appeal to the NBIC Committee.

b. The aggrieved person shall first request reconsideration by the NBIC Committee. Such request shall be in writing, addressed to the NBIC Committee secretary, and shall state the reasons for requesting reconsideration.

c. Should the person remain aggrieved following such reconsideration by the NBIC Committee or should such reconsideration be denied, the aggrieved person then, in writing, addressed to the National Board's Executive Director, may request review by the National Board Appeals Committee.

   The findings of the National Board Appeals Committee operating under their procedures, shall be binding on the NBIC Committee as to the specific item under appeal and it shall be incumbent upon the NBIC Committee to consider incorporating the National Board Appeals Committee findings.

d. Should the person remain aggrieved following the National Board Appeals Committee's decision, further appeal may be taken to the Board. Such appeal is initiated by a written request, addressed to the National Board's Executive Director setting forth the grounds for such appeal. The appeal shall be heard at the next regular or special meeting of the Board which is held at a time of sufficient duration following such request as to allow distribution of all relevant documents and materials to the Board members. The Board, upon considering such appeal, by affirmative majority vote of those present, may allow a variance, may direct the NBIC Committee to consider a revision, or may sustain the action of the National Board Appeals Committee. The decision of the Board of Trustees on such appeal shall be final.

10.0 Records

Records shall be retained as identified in Table 1.

***TABLE 1**
Document Retention Schedule

DOCUMENT	RETENTION TIME (YEARS) MINIMUM	PERMANENT
Agendas	1	-
Minutes	-	-
NBIC Committee	Note 1	-
Subcommittees	Note 1	
Subgroups, Task Groups	3	-
Letter Ballots (NBIC)	5	-
Returned Ballot Forms	5	-
Closure letter/report	5	-
Interpretations File	2	-
Issued reply (published)	-	-
Drafts	until next draft	-
ANSI Documentation	Note 1	-
Due Process Proceedings (NBIC Committee)	-	Yes
Routine Correspondence	1	-
Published editions & addenda	-	Yes
Withdrawal of NBIC	5	-

Note 1: The minimum retention time is one complete standards cycle or five years from the date of withdrawal of the NBIC whichever is greater.