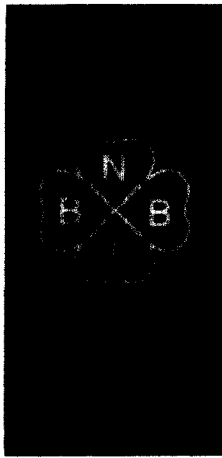


Date Distributed: December 15, 2009



**THE
NATIONAL
BOARD**
OF BOILER AND
PRESSURE VESSEL
INSPECTORS

**SUBGROUP
ON REPAIRS and ALTERATIONS
SPECIFIC**

AGENDA

*Meeting of January 19, 2010
Austin, Texas*

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 – 1:00 p.m.**
2. **Announcements**
3. **Adoption of the Agenda**
4. **Approval of Minutes of July 2009 meeting**
5. **Review of the Roster (Attachment 1)**
6. **Action Items (Attachment 2)**

NB08-0304 Part 3 Forms 5.13.4.1 SG on R and A Spec. 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 TG of R. Pulliam (Chair), M. Webb and W. Jones has been assigned. (Attachment 2, pgs. 1-9)

January 2008

A task group was assigned.

July 2008

Task group was altered.

January 2009

A progress report was given.

July 2009

A progress report was given.

January 2010

Mr. Pulliam 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.(Attachment 2, pg. 10)

January 2010

Mr. Given is expected to report.

7. **New Business**
8. **Future Meetings**

July 2010, Columbus, Ohio
January 2011, Austin, Texas
9. **Adjournment**

Respectfully Submitted,
John Hoh
Secretary
:rh

SG on R/A-Specific

Member	Title	ExpirDate	Interest Category
Boseo, Brian		1/21/2012	Manufacturer
Galanes, PE, George W.		8/27/2012	Users
Given, Jack		8/27/2012	Jurisdictional Authorities
Hoh, John	Secretary		
Huffman, Mike		8/27/2012	Manufacturer
Jones, Wayne	Vice Chair	7/24/2011	Auth Inspection Agencies
Pavlovicz, Frank		8/27/2012	Manufacturer
Pillow, James T.	Chair	8/27/2012	General Interest
Sekely, James		8/27/2012	General Interest
Total Members:		8	

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

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.

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 '08-addenda 5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS	Proposed Revision #1	Rational
<p>5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS</p>	<p>5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS</p> <p style="text-align: center;">↓ <i>Add</i></p> <p><u>This guide provides instruction for completing the National Board "R"-forms to coincide with requirements of this Code. When computer generated, the information format of the "R"-form being used must replicate the information format and comparative information location of the forms shown in Part 3, Section 5.13</u></p>	<p>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.</p> <p>Interpretation 95-40 Subject: Appendix 5, Form R-2-Report of Alteration, 1995 Edition with 1995 Addendum Question 1: 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.</p>

NBIC Sub-Group Repairs & Alterations

Existing Text in '08-addenda 5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS	Proposed Revision #2	Rational
<p>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).</p>	<p>1. Name and address of the "R" Certificate organization that performed the work. On Form R-2, the organization that performed the design (Line 1a) or the construction work (Line 1b) <u>as described in 5.2.2.</u></p>	<p>The guidance @ 5.2.2. offers instruction in what is to be included in the Form R-2, Report of Alteration and who has responsibility in completing the form. As proposed, line 1a representing the design organization and line 1b representing the construction organization were switched to better represent workflow continuity.</p>
Current Wording at 5.2.2, a-d:		
Proposed Revision #3		
Rational		
<p>5.2.2 PREPARATION OF FORM R-2 (ALTERATIONS)</p> <p>a) Initial preparation- No change</p> <p>b) The information describing an alteration to a pressure-retaining item shall be identified on the Form 5.2.2, a-d- Accepted language as a result of WJ of accepted Natl. BD item NB505-1201 <u>scope of work</u> of WJ of accepted Natl. BD item NB505-1201 <u>scope of work</u> that will increase the Minimum Required Relieving Capacity (MRRC) of a pressure retaining item, such as a change in heating surface, Maximum Designed Steaming Capacity (MDSC), or Bituhtr (W) heating capacity, the new MRRC shall be documented on the Form R-2 and indicated on the appropriate nameplate of Figure 5.9.6-b or Figure 5.9.6-c.</p> <p>c) Final preparation of Form R-2, including the gathering and attaching of supporting reports, shall be the responsibility of the "R"-Certificate Holder that performed the construction portion of the alteration. 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.</p> <p>d) The following shall be attached to and become a part of the completed Form R-2: ... NO CHANGE-</p>	<p>5.2.2 PREPARATION OF FORM R-2 (ALTERATIONS)</p> <p>a) Initial preparation- No change</p> <p>b) The information describing an alteration to a pressure-retaining item shall be identified on the Form R-2 with a complete description of the scope of work for physical or non-physical changes.... No Change</p> <p>c) Final preparation of Form R-2, including the gathering and attaching of supporting reports, shall be the responsibility of the "R"-Certificate Holder that performed the construction portion of the alteration. 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.</p> <p>d) NO CHANGE-</p>	<p>The guidance offered in the Code at 5.2.2 b) makes specific reference to the Construction "Certificate" section of the form. The proposed change merely identifies the Construction "Certification" section of the form by the true nomenclature used on the existing form.</p>

NBIC Sub-Group Repairs & Alterations

Existing Text in '08-addenda 5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS	Proposed Revision #4	Rational
<p>12. State exact scope of work, and attach additional data, sketch, Form R-4, etc. as necessary. If additional data is attached, so state.</p>	<p>12. <u>Provide a summary describing the exact scope of work completed to a Pressure Retaining Item (PRI) and identify any attachments, additional data, sketches, or Form R-4 needed to substantiate the work. The minimum information describing the exact scope of work for a Repair or Alteration as applicable, to a pressure retaining item should include:</u></p> <p>12.1 REPAIR</p> <p>a) <u>Complete the Form R-1 preparation requirements identified at 5.2.1 to disclose the complete process of repair to include as applicable, any evaluation required to support or substantiate the definitions and examples of a repair.</u></p> <p>b) <u>Document the original material as identified on the original manufacturer's Data Report. When a change in material is made, describe the replacement material.</u></p> <p>c) <u>The removal of defects and/or preparation of the base material as applicable.</u></p> <p>d) <u>The WPS, used in completing the work when welding is utilized.</u></p> <p>e) <u>The identity of the qualified welders completing the work, as applicable to the scope of work.</u></p> <p>f) <u>Identify any special processes required to meet the requirements of this Code such as PWHT</u></p>	<p>Opinions vary as to what is considered a complete description of work.</p> <p>Currently, the NBIC provides no guidance for what should be considered when describing an exact scope of work</p> <p>The following interpretation as well as the current Natl. BD- instruction guide item #12 identifies the need for communicating a complete description, but nothing identifying what should be considered when describing a complete scope of work.</p> <p>Interpretation 01-41</p> <p>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?</p> <p>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.</p>

NBIC Sub-Group Repairs & Alterations

	<p>g) <u>All applicable and acceptable in-process NDE-examinations to include the Code required visual examination and the results of the final acceptance test or examination, as allowed by this Code.</u></p>	
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<p>Existing Text in '08-addenda 5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS</p>	<p>Proposed Revision #4 (Continued)</p>	<p>Rational</p>
<p>12. State exact scope of work, and attach additional data, sketch, Form R-4, etc. as necessary. If additional data is attached, so state.</p>	<p>12.2 ALTERATION</p> <p>a) <u>Complete the Form R-2 preparation requirements shown at 5.2.2 to document the complete process of the alteration within the "R"-Certificate Holder's scope of Authorization to include as applicable, any evaluation required to support or substantiate the definitions and examples of an alteration, as applicable.</u></p> <p>b) <u>Document the original material as identified on the original manufacturer's Data Report when a change in material is made, or as proposed by an "R"-Certificate Holder with limited authorization scope.</u></p> <p>1. <u>Acceptance of parts and materials: provided within or outside of the construction organization's system, is a construction activity and is to be described in the construction organization quality system.</u></p> <p>c) <u>The WPS' used in completing the work when welding is utilized.</u></p> <p>d) <u>The identity of the qualified welders completing the work, as applicable.</u></p> <p>e) <u>Identify any special processes required to meet the requirements of this Code such as PWHT.</u></p> <p>f) <u>All applicable and acceptable in-process NDE-examinations to include the Code required visual examination, and the results of the final acceptance test or examination, as allowed by this Code.</u></p>	<p>b) 1. - Installation of material or parts by welding is recognized as a "construction activity." While the Code does not require material or parts to be purchased by a certificate holder, the Code does not prohibit others from providing the material or parts to be installed by the construction certificate holder. The construction organization has the accountability of ensuring that the materials or parts meet the requirements of the NBIC. How this is accomplished is to be described in the certificate holders quality system.</p>

NBIC Sub-Group Repairs & Alterations

Current Wording at 5.2.1, a-c:	Proposed Revision #5
<p>5.2.1 Preparation of Form R-1 (Repairs)</p> <p>a) Preparation of Form R-1 shall be the responsibility of the "R" Certificate Holder performing the repair.</p> <p>b) An Inspector shall indicate acceptance by signing the Form R-1</p> <p>c) The Form R-3, referenced and Manufacturer's Data Reports described in this section shall be a part of the completed Form R-1 and shall be attached thereto.</p>	<p>5.2.1 Preparation of Form R-1 (Repairs)</p> <p>a) Preparation of the Form R-1 shall be the responsibility of the "R" Certificate holder performing the repair.</p> <p><u>Add</u></p> <p>b) <u>The information describing a repair to a pressure-retaining item shall be identified on the Form R-1 and extended to a Form R-4 as needed with a complete description of the work scope, as detailed at 5.13.4.1; guide notes 12.1 a-g.</u></p> <p>c) An Inspector shall indicate acceptance by signing the Form R-1, <u>and Form R-4 as required</u></p> <p>d) Former "c" becomes "d"</p>

Existing Text in '08-addenda Instruction guide for completing "R"-forms - continued	Proposed Change #6	Rational
<p>5.13.4.1 GUIDE FOR COMPLETING NATIONAL BOARD "R" REPORTS</p> <p>14. To be completed for all welded pressure work components added during the work. Indicate the part, item number, manufacturer's name, stamped identification, and data report type.</p>	<p>14. <u>As applicable, identify what parts manufactured by welding were introduced as a portion of the work scope completed.</u> Indicate the part, item number, manufacturer's name, stamped identification, and data report type.</p>	<p>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.</p> <p>However, the current Instruction Guide note #14 identifies, "all welded pressure work components added during the work," implies materials as well and represent a conflict of information and guidance.</p> <p>The proposed change #5 representing Instruction Guide note 12.1 (b) and 12.2 (b) would identify existing and changed material.</p>

NBIC Sub-Group Repairs & Alterations

Existing Form R-2, REPORT OF ALTERATION in '08-addenda @ 5.13.2

Proposed Change #7 - Form R-2 SHEET 1 of 2, REPORT OF ALTERATION @ 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-2 organization responsible for construction) (Form R-2 No.)

1b. Design performed by _____ (Name of R-2 organization responsible for design) (Form R-2 No.)

2. Owner _____ (Form R-2 No.)

3. Location of installation _____ (Form R-2 No.)

4. Unit Identification _____ (Date, pressure vessel) Name of original manufacturer _____ (Date)

5. Identifying no.: _____ (NBIC Board No.) _____ (Date) _____ (Over tag)

6. NBIC Edition / Addenda: _____ (Date) _____ (Date) _____ (Date)

Original Code of Construction for Item: _____ (Form / section / addenda) _____ (Date / addenda)

Construction Code Used for Alteration Performed: _____ (Form / section / addenda) _____ (Date / addenda)

7a. Description of construction work: _____ (See supplemental sheet, Form R-2, if necessary)

7b. Description of design scope: _____ (See supplemental sheet, Form R-2, if necessary)

Pressure Test, if applied _____ psi MAWP _____ psi

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

9. Remarks: _____

FORM R-2 REPORT OF ALTERATION

In accordance with provisions of the National Board Inspection Code

1a. Design performed by _____ (Name of R-2 organization responsible for design) (Form R-2 No.)

1b. Construction performed by _____ (Name of R-2 organization responsible for construction) (Form R-2 No.)

2. Owner _____ (Form R-2 No.)

3. Location of installation _____ (Form R-2 No.)

4. Unit Identification _____ (Date, pressure vessel) Name of original manufacturer _____ (Date)

5. Identifying no.: _____ (NBIC Board No.) _____ (Date) _____ (Over tag)

6. NBIC Edition / Addenda: _____ (Date) _____ (Date) _____ (Date)

Original Code of Construction for Item: _____ (Form / section / addenda) _____ (Date / addenda)

Construction Code Used for Alteration Performed: _____ (Form / section / addenda) _____ (Date / addenda)

7a. Description of design scope: Form R-2, Report Supplemental Sheet is attached (See supplemental sheet, Form R-2, if necessary)

7b. Description of construction work: Form R-2, Report Supplemental Sheet is attached (See supplemental sheet, Form R-2, if necessary)

Pressure Test, if applied _____ psi MAWP _____ psi

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

9. Remarks: FORM R-2 REPORT SUPPLEMENTAL SHEET IS ATTACHED

NBIC Sub-Group Repairs & Alterations

Existing Form R-2, REPORT OF ALTERATION (back)
 in '08-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. _____ Signed _____ expires on _____ Date _____ (name of design organization) _____ (individual 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 _____ 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) _____ (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. _____ Signed _____ expires on _____ Date _____ (name of design organization) _____ (individual 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 _____ 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) _____ (National Board and jurisdiction no.) _____

Proposed Change #7- (CONTINUED) Form R-2, SHEET 2 of 2
REPORT OF ALTERATION SHEET 2 @ 5.13.2

Form R-2 (SHEET 2 OF 2) (Form R No.)
 In accordance with provisions of the National Board Inspection Code Optional location
 SHEET 2 OF 2

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. _____ Signed _____ expires on _____ Date _____ (name of design organization) _____ (individual 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 _____ 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) _____ (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. _____ Signed _____ expires on _____ Date _____ (name of design organization) _____ (individual 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 _____ 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) _____ (National Board and jurisdiction no.) _____

NBIC Sub-Group Repairs & Alterations

Existing Form R-1, REPORT OF REPAIR in '08-addenda @ 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.)
 _____ (7-01 No. 53 No. en)

2. Owner _____ (Name)

3. Location of installation _____ (Address)

4. Unit Identification (Order, process vessel) _____ Name of original manufacturer _____

5. Identifying nos.: (tag, serial no.) _____ (National Board No.) _____ (Date) _____ (Year built)

6. NBIC Edition / Addenda: _____ (Edition) _____ (Addenda)

Original Code of Construction for Item: _____ (Edition / Addenda)

Construction Code Used for Repair Performed: _____ (Year / Edition / Edition)

7. Repair Type: Welded On-site Pressure Equipment FRP Pressure Equipment

8. Description of work: _____ (See supplemental sheet, Form R-4, if necessary)

9. Replacement Parts: _____ Pressure Test, If applied _____ psi _____ MAWP _____ psi
 Attached are Manufacturer's Partial Data Reports or Form R-3's properly completed for the following items of this report: _____

10. Remarks: _____ (Name of part, item number, date report type, with name and identifying mark)

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) _____ (National Board and Inspection No.)

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 _____ 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 _____ (Name) _____ (National Board and Inspection No.)

Proposed Change #8- 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.)
 _____ (7-01 No. 53 No. en)

2. Owner _____ (Name)

3. Location of installation _____ (Address)

4. Unit Identification (Order, process vessel) _____ Name of original manufacturer _____

5. Identifying nos.: (tag, serial no.) _____ (National Board No.) _____ (Date) _____ (Year built)

6. NBIC Edition / Addenda: _____ (Edition) _____ (Addenda)

Original Code of Construction for Item: _____ (Edition / Addenda)

Construction Code Used for Repair Performed: _____ (Year / Edition / Edition)

7. Repair Type: Welded On-site Pressure Equipment FRP Pressure Equipment

8. Description of work: _____ (See supplemental sheet, Form R-4, if necessary) Form R-4, Report Supplementing, Sheet is attached

9. Replacement Parts: _____ Pressure Test, If applied _____ psi _____ MAWP _____ psi
 Attached are Manufacturer's Partial Data Reports or Form R-3's properly completed for the following items of this report: _____

10. Remarks: FORM R-4 REPORT SUPPLEMENTING SHEET ATTACHED

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) _____ (National Board and Inspection No.)

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 _____ 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 _____ (Name) _____ (National Board and Inspection No.)

NBIC Sub-Group Repairs & Alterations

Proposed Changes #7 and #8		Rational
Proposed Change #7: Revise Form R-2-Sheet 1 and Sheet 2		Separate the one form from front & back into two forms, allowing electronic completion. Identification of the form, FORM R-2, REPORT OF ALTERATION, would be unchanged; "Form R-2, SHEET 1 of 2" and "Form R-2, Sheet 2 of 2" would be added as shown in the examples.
The addition of the reference boxes, "Form "R"-4, Report Supplementary Sheet is attached" @ line 7a and 7b.		The reference 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 shown, an alternative location in the remarks field may be another location. However, since the current form identifies, "use supplemental sheet, Form R-4, if necessary", the proposed location seems more appropriate. Additionally, as a single sided form, the design and construction organizations can be assured that all attachments have been accounted for.
Proposed Change #8: Revise Form R-1		
The addition of the reference boxes, "Form "R"-4, Report Supplementary Sheet is attached" @ line 8.		The reference 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. The use or reference to the Form "R"-4, Report Supplementary Sheet, as proposed at item 12 of the Instruction guide is consistent between the "R"-Forms As shown, an alternative location in the remarks field may be another location. However, since the current form identifies, "use supplemental sheet, Form R-4, if necessary", the proposed location seems more appropriate. The decided location of the proposed check box should be consistent between the Forms, "R-1" and "R-2".

SUPPLEMENT 5

**GENERAL REQUIREMENTS FOR
REPAIRS AND ALTERATIONS TO
YANKEE DRYERS**

S5.1 SCOPE

This supplement provides additional requirements for repairs and alterations to Yankee dryer pressure-retaining components and shall be used in conjunction with inspection requirements identified in Part 2, *Inspection Supplement 5*.

**S5.2 EXAMINATIONS AND TEST
METHODS**

In addition to the requirements of 4.4.1 and 4.4.2, the following are recommended:

- a) Acoustic emission testing
- b) Metallographic examination when thermal damage is suspected due to operational or repair activities.

**S5.3 YANKEE DRYER REPAIR
METHODS**

This supplement provides additional requirements for repair methods to yankee dryer pressure-retaining components and shall be used in conjunction with Section 2 thru 5 of this part, as appropriate.

**S5.3.1 REPLACEMENT PARTS FOR
YANKEE DRYERS**

- a) Yankee dryer replacement pressure-retaining parts shall be fabricated in accordance with the manufacturer's design and the

original code of construction. Yankee dryer pressure-retaining parts may include:

- 1) shell
- 2) heads
- 3) center shaft, stay, or trunnion
- 4) stay bars
- 5) structural bolting
- 6) journals
- b) Replacement of nonpressure-retaining parts, when different from the manufacturer's design, shall be evaluated for any possible effect on the pressure-retaining parts.

**S5.4 REPAIR GUIDE FOR YANKEE
DRYERS**

- a) Welding or brazing shall not be used on any Yankee dryer pressure-retaining component manufactured from cast iron. The *Manufacturer's Data Report* shall be carefully reviewed to determine the material of construction of each Yankee dryer component such as shell, heads, and journals.
- b) Structural deterioration or damage caused by corrosion, thinning, or cracking shall not be repaired until their extent has been determined by suitable nondestructive examination.
- c) The user shall have a plan covering the scope of the repair. The plan shall ensure that the work involved is compatible with the original design specification and good engineering practices.
- d) All repair work shall be documented.