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

**SUBGROUP
ON REPAIRS and ALTERATIONS
GENERAL**

AGENDA

*Meeting of July 17, 2012
Columbus, Ohio*

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

1. **Call to Order – 8:00 a.m.**
2. **Announcements**
3. **Adoption of the Agenda**
4. **Approval of Minutes of January 17, 2012 meeting**
5. **Review of the Roster (Attachment 1)**
6. **Action Items (Attachment 2)**

NB12-1101 Part 3, 5.13.1 SG R/A General - Revision of R forms. A task group consisting of M. Webb (Chair), G. Galanes, R. Pulliam, Nikki Estep (NB Staff), Deanna Mazik (NB Staff) and Donna Radcliff (NB Staff) will work on this action item.

January 2012

A detailed progress report and background documents in the form of (2) handouts were provided by Mike Webb. (Attachment 2, pp. 1-4)

July 2012

Mr. Webb is expected to report.

NB08-0322 Part 3 3.2 SG on Repairs and Alterations General - 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. A task group representing all three parts of the NBIC has been formed under the leadership of Bob Wielgoszinski. Task group members from R & A are P. Edwards and B. Schulte. (Attachment 2, pp. 5-7)

July 2008

A task group was assigned.

July 2011

A progress report was provided by Bob Wielgoszinski during which he informed the subgroup that the task group would be meeting with the goal of providing a proposal to the subcommittee on July 20, 2011.

January 2012

A progress report was provided by Bob Wielgoszinski with a scheduled task group meeting at 3 p.m. on January 17th.

July 2012

Mr. Edwards is expected to report.

NB11-1201 Part 3, 1.8, SG on R/A General - Revise Part 3, 1.8 “NR” Accreditation requirements to include repairs to ASME Section III stamped components. (Attachment 2, pp.8-10)

January 2011

Mr. Charles Withers presented a progress report. A task group was assigned of C. Withers, P. Edwards, B. Schaefer, and B. Wielgoszinski (or another designated HSBCT Representative) to take a look at the NR Program.

July 2011

Pat Nightengale, National Board Staff was added to the task group.

January 2012

A progress report was provided by Paul Edwards and a target goal of the 2015 NBIC was discussed. A task group consisting of B. Wielgoszinski (Chair), C. Withers, B. Schaefer, P. Edwards and P. Nightengale has been assigned.

July 2012

Mr. Withers is expected to report.

NB12-0501 Part 3, 5.11 SG R/A General - Hydrostatic testing of pressure parts. (Attachment 3, pp. 11-12)

July 2011

A task group of B. Wielgoszinski, G. Galanes and B. Moore was formed.

January 2012

A progress report and handouts (2 ea.) with proposed revisions were provided by Bob Wielgoszinski. The handouts consisted of Version 1 and Version 2 and were discussed by the subgroup. .

July 2012

Mr. Wielgoszinski is expected to report.

NB12-0603 Part 3, 1.5.1, 1.7.1, 1.8.1, SG R/A General - Removal of administrative requirements from Part 3. (Attachment 2, pp. 13- 105)

January 2012

A progress report was provided by Terry Parks with a July 2012 goal for completion for inclusion in the 2013 NBIC. A task group was formed consisting of; Terry Parks (chair), B. Boseo and R. Cauthon.

July 2012

Mr. Parks is expected to report.

NB12-2001 Part 3, 5.13.4.1 SG R/A General - Revise text in this section to address the inconsistent interpretations of item 12 of the R form. This item will be handled by the same TG handling NB12-1101. (Attachment 3, pp. 106-107)

July 2012

Mr. Webb is expected to report.

7. New Business

8. Future Meetings

January 14-18, 2013, Mobile, Alabama

July 15-19, 2013, Columbus, Ohio

9. Adjournment

Respectfully Submitted,

Jim McGimpsey

Secretary

SG on R/A-General

Member	Title	ExpirDate	Interest Category
Boseo, Brian		1/31/2015	NB Certificate Holders
Bramucci, Angelo		1/31/2013	Manufacturer
Cameron, Stuart		8/17/2013	Manufacturer
Edwards, Paul D.	Chairman	8/31/2012	NB Certificate Holders
Larson, James P.		8/31/2012	Auth Inpection Agencies
McGimpsey, Jim	Secretary		
McManamon, Larry		1/31/2015	Organized Labor
Morelock, Brian		1/31/2015	Users
Ortman, Edward		8/30/2013	Manufacturer
Pulliam, Ron		7/31/2014	Manufacturer
Schaefer, Benjamin		2/28/2014	NB Certificate Holders
Schulte, Bryan	Vice Chair	8/31/2012	Users
Sperko, Walt		8/17/2013	General Interest
Valdez, Rick		8/12/2014	Manufacturer
Webb, Michael		8/31/2012	Users

Total Members:	14
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NBIC Sub-Group Repairs & Alterations

Subject: Review Form R-2 and Instructions accepted by Main Committee Letter Ballot September 2010

NB-Item number: Initiated by NB-staff ➔ **NB12-1101**

Explanation of assignment needed:

- ✓ Mr. Terry Parks initiated this item to revisit the configuration of the "as-published" Form R-2 after receiving numerous comments as to how the Form was to work within the industry as well as within the National Board. To that end, Mr. Parks proposed a TG-approach with N-BD staff to clarify the objectives of the Form R-2 and best use the time between January 2012 and January 2013 to develop or introduce any other changes prior to issuing the 2013-Edition. This assignment represents:
 - Affirm the direction of the Committee to portray the natural continuity of work flow, and as described in the book at 5.2.2 when preparing a Form R-2, emphasizing the need to complete the design certification and review PRIOR to the start of construction.
 - Enhance the scope of work description fields to better afford the completion of the Form R-2 outside of an electronic format.
 - Affirm the perception of betterment in separating the form as sheet 1 and sheet 2 for the purpose of expediting communication & registration.
- ✓ **No betterment**
 - Interact with N-BD staff as a TG to understand the fallout of the noted tasks and to recognize any obstacles to overcome within the Nati.-BD's EDT-system.
 - Review the Instruction sheet developed by N-BD staff for inclusion into the Instructions for completing N-BD Forms @ 5.13.4.1.

Assigned to: M. Webb, Ron Pulliam, Wayne Jones, Nikki Estep and Donna Radcliff (N-BD staff), Ben Schaefer, Bob Wielgoszinski

Background: The Form R-2 as published in the 2011-Edition of NB-23 was published in error and does not reflect the accepted Form by MC-Letter Ballot in September 2010. See [Ballot Archives, NB08-0304](#). The N-BD will use the "as-published" Form R-2 until the correction or other action is adopted for the 2013 code Edition.

Existing Text in '11-Edition	Proposed Change #1 <small>(Proposed changes are <u>double-underlined</u>)</small>	Rationale
<p>5.13.4.1 INSTRUCTIONS FOR COMPLETING NATIONAL BOARD FORM "R" REPORTS</p>	<p>5.13.4.1 INSTRUCTIONS: ITEM 2</p>	
<p>5.13.4.1 INSTRUCTIONS FOR COMPLETING NATIONAL BOARD FORM "R" REPORTS</p> <p>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.</p>	<p>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. <u>The requirements for registration can be found at Part 3, 5.5.2.</u></p> <p>Information is relocated to: 5.5.2 b) REGISTRATION OF ALTERATIONS →</p>	<p>As instructions for line 2, the language specifically identifying registration requirements may be better profiled as a reference to the applicable section of the Code; Part 3, 5.5.2 a) - c).</p> <p>RELOCATED TO 5.5.2 b)- PROPOSED CHANGE 2</p> <p>-For re-rating only, the Design Organization registers the R-2. Where physical work is also performed, the Construction Organization registers the R-2.</p>

NBIC Sub-Group Repairs & Alterations

<p>Accepted Text NB-item: NB10-0701</p> <p>5.5.2 REGISTRATION FOR ALTERATIONS</p>	<p>Proposed Change #2 (Proposed changes are <u>double-underlined</u>)</p> <p>5.5.2 REGISTRATION FOR ALTERATIONS</p>	<p>Rationale</p>
<p>a) If the pressure retaining item is originally registered with the National Board, an original Form R-2, together with attachments, shall be registered with the National Board.</p> <p>b) If the item was not <i>originally</i> registered with the National Board, one original Form R-2 <i>meeting the requirements of the Code</i>, together with attachments <i>when the exact scope of work is not described</i>, may be registered with the National board or retained as required by <i>The Quality Manual System</i>.</p> <p>As shown the <i>italicized script</i> represents item NB10-0701 accepted by Main Committee “b” is relocated as “d”. →</p>	<p>a) No Change</p> <p>b) For re-rating or <u>design-only</u> where <u>no physical work is performed</u>, the Design Organization assigns a <u>unique sequential number shown on the Form R-2; front and back, as instructed at 5.13.4.1 item 2 and when required, is responsible for registering the Form R-2 Report with the National Board.</u></p> <p>c) Where physical work is also performed, the Construction Organization <u>assigns a unique sequential number shown on the Form R-2; front and back, as instructed at 5.13.4.1 item 2 and when required, is responsible for registering the Form R-2 Report with the National Board.</u></p> <p>d) If the item was not <i>originally</i> registered with the National Board, one original Form R-2 <i>meeting the requirements of the Code</i>, together with attachments <i>when the exact scope of work is not described</i>, may be registered with the National board or retained as required by <i>The Quality Manual System</i>.</p>	<p>The proposed relocation of information shown as “b” and “c” is from Instruction item #2. The subject matter @ 5.5.2 “REGISTRATION FOR ALTERATIONS” goes beyond an <u>Instruction item for line 2 and describes Code responsibilities of the Design and Construction organizations</u>. The Task Group suggests it may be better suited as <u>Code-text</u> rather than as an instruction item.</p>
<p>Existing Text in '11-Edition</p> <p>5.2.2 PREPARATION OF FORM R-2</p> <p>c) ... The construction organization shall complete the Form R-2 provided by the design organization, including the “Construction 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>Proposed Change #3 (Proposed changes are <u>double-underlined</u>)</p> <p>c) ... The construction organization shall complete the Form R-2 provided by the design organization, including the “Construction Certification” section of the form. When no construction work is performed (e.g., a re-rating or <u>design-only</u> 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 <u>and other information pertaining to the work.</u></p>	<p>Rationale</p> <p>Adding <u>design only</u> merely represents consistency to the thought of limited scope throughout the section.</p> <p>The addition reflecting the reports <u>and other information pertaining to the work</u>, merely affirms instruction item-12 and instruction item-15 @ 5.13.4.1.</p>

Separated Form R-2- DESIGN REPORT- Sheet 1

Separated form R-2- CONSTRUCTION REPORT- Sheet 2

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) _____ (address) _____ (P.O. No., Job No., etc.)

2. Owner _____ (name) _____ (address) _____ (P.O. No., Job No., etc.)

3. Location of installation _____ (name) _____ (address) _____ (city) _____ (state) _____ (zip)

4. Item identification _____ (name of original manufacturer) _____ (address) _____ (city) _____ (state) _____ (zip)

5. Identifying tag: _____ (number, pressure vessel, or piping) _____ (National Board No.) _____ (date) _____ (year built)

6. NBIC Edition / Addenda: _____ (name / section / division) _____ (address) _____ (city) _____ (state) _____ (zip)

Construction Code Used for Alteration Performed: _____ (name / section / division) _____ (address) _____ (city) _____ (state) _____ (zip)

7. Description of Design Scope: _____ (see 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, etc.; 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 _____ 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 _____ have inspected the design change as described in this report and 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 any employee makes any warranty, expressed or implied, concerning the work described in this report. Furthermore, neither the undersigned nor any employee 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.)

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) _____ (address) _____ (P.O. No., Job No., etc.)

2. Owner _____ (name) _____ (address) _____ (P.O. No., Job No., etc.)

3. Location of installation _____ (name) _____ (address) _____ (city) _____ (state) _____ (zip)

4. Item identification _____ (name of original manufacturer) _____ (address) _____ (city) _____ (state) _____ (zip)

5. Identifying tag: _____ (number, pressure vessel, or piping) _____ (National Board No.) _____ (date) _____ (year built)

CERTIFICATE OF DESIGN

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 and 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 any employee makes any warranty, expressed or implied, concerning the work described in this report. Furthermore, neither the undersigned nor any employee 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.)

ACKNOWLEDGED BY CONSTRUCTION ORGANIZATION

I, _____ (name of construction organization) _____ (address) _____ (city) _____ (state) _____ (zip) 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 _____ (authorized representative)

7. Description of Construction Scope: _____ (see 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, etc.; 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 _____ have inspected the work described in this report and 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 any employee makes any warranty, expressed or implied, concerning the work described in this report. Furthermore, neither the undersigned nor any employee 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.)

This form was developed from The International Code Book "Boiler and Pressure Vessel Inspection Code, 1997 Edition, October 1997, NBIC 1997, 2nd Ed.

FORM R-2 REPORT OF ALTERATION

in accordance with provisions of the National Board Inspection Code

(Form "R" Registration No.)
(P.O. No., Job No., etc.)

- 1a. Design performed by: _____
(name of "R" organization responsible for design)
- 1b. Construction performed by: _____
(name of "R" organization responsible for construction)

2. Owner of Pressure Retaining Item _____
(name)

3. Location of installation _____
(address)

4. Item identification _____
(code, pressure vessel, or piping) Name of original manufacturer _____

5. Identifying nos.: _____
(unif. serial no.) (National Board No.) (other) (vess. 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 Design Scope: _____

7b. Description of Construction Scope: _____

Form R-4 Report Supplementary Sheet is attached

Form R-4 Report Supplementary Sheet is attached

Pressure Test, if applied _____ psi MAWP _____ psi

8. Replacement Parts. Attached are Manufacturer's Partal 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, unit, name and identifying group)

Form R-2 (back)

(Form "R" Registration No.)
(P.O. No., Job No., etc.)

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 _____ 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 _____ 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.) (Commission)

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 American 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 _____ 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.) (Commission)

NB08-0322

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 than 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 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.

NB08-0322 Part 3 3.2 General Requirements for Repairs and Alterations to address change of service for a pressure retaining item (PRI)

Proposal: Add a new paragraph 3.2.6 to address change of service for a PRI.

Scope:

This section provides requirements for PRIs that will be converted from one service to another. Changes in service can be successfully accomplished provided there is an understanding of the effect on the PRI.

Definition:

Change in Service: A change in the contents or the environment of a PRI that is different from the original design or previous service conditions.

Requirements:

1. Determine if the change in service is a repair or alteration per NBIC.
2. Evaluate the PRI for the new service requirements of pressure, temperature, flow rates, etc.
3. Review existing documentation for this PRI (i.e. vessel drawings, manufacturer's data reports, material test reports, pressure test, NDE, repairs, alterations, etc.).
4. Evaluate the PRI using NDE methods for establishing current thickness, corrosion rate, weld quality, etc.
5. A review shall be completed and documented by a competent individual with experience in pressure vessel design, alteration, repair, etc. This review shall be approved by the Owner/User or designated agent.
6. Verify the maximum allowable working pressure (MAWP), maximum allowable working external pressure (MAWEP), maximum allowable temperature (MAT), minimum design metal temperature (MDMT) for the new service.
7. Verify the PRI supports are adequate for the new service conditions. Verify all new PRI loads for the new service.
8. Compare specific gravity of new service medium with existing PRI design.
9. The PRI materials of construction shall be evaluated for compatibility of the new service.
10. Determine the corrosion effects of the new service conditions and establish remaining life of the PRI per NBIC.
11. Evaluate the PRI for fatigue service and thermal gradients.

12. Evaluate the new pressure and temperature relieving requirements for the new service conditions.
13. Verify that the proper nameplate(s) are attached per NBIC. Change in service could require additional information on the NBIC "R" nameplate.
14. Determine if jurisdictional rules have any effect on this change of service. Notify the jurisdiction as required.

Examples:

Put in example of repairs and alterations.

- If the PRI support is changed (i.e. from horizontal to vertical), the PRI should be evaluated for the new supports for new loadings such as hydrostatic loads, wind loads, seismic loading, nozzle loadings, etc.
- If the PRI was in hydrogen service, it shall be checked for hydrogen embrittlement prior to use in the new service.
- Addition of mechanical equipment such as agitators, instrumentation, spargers, etc shall be evaluated.

References:

B31.3 App F – Precautionary Considerations

API-510 8.2(c) Rerating

NFPA-58 para 5.2.8

OSHA Technical Manual, Sec 4, Ch 3. Pressure Vessel Guidelines

API RB 750 Process Safety Management

PCC-3 Risk Based Methods

API-579

1.8 "NR" ACCREDITATION REQUIREMENTS

1.8.1 SCOPE

- a) This section provides requirements that must be met for an organization to obtain a National Board *Certificate of Authorization* to use the "NR" Symbol Stamp for the Repair/Replacement activities performed in accordance with this Part and ~~ASME Section XI requirements~~ meeting the requirements of ASME Section III and XI.
- b) The issuance of the "NR" stamp is not restricted to organizations whose primary business is to perform repair/replacement activities or to manufacturers or assemblers that hold an ASME "N"-type Code symbol stamp. Owners and users of nuclear components and other organizations that qualify in accordance with these rules may also obtain the "NR" stamp.

1.8.2 APPLICATION

- a) ASME Section XI requires the Owner or an outside organization perform repair/replacement activities in accordance with an acceptable Quality System Program. Quality System Program requirements are established in ASME Sections III and XI for ASME Certificate of Authorization Holders for the Owner and outside organizations, as applicable. The requirements specified in this section for Quality System Programs to be written, maintained and implemented by the "NR" Certificate of Authorization Holder are in accord with the requirements specified in ASME Section III and XI for Quality System Programs.
- b) Prior to the completion of installation activities, an item that meets all of the requirements of ASME Section III may have repair/replacement activities performed using the rules set forth in ASME Section III or ASME Section XI, as determined by the Owner.
- c) After the completion of installation activities, repair/replacement activities shall meet the requirements of the Owner, with acceptance of the Regulatory Authority, Jurisdiction, and the Authorized Inspection Agency, as applicable.
- d) Organizations in possession of an "NR" Certificate of Authorization may perform repair/replacement activities to items certified as complying with ASME Section III either prior, during or after installation.

1.8.3 QUALITY SYSTEM PROGRAM

A holder of a National Board "NR" *Certificate of Authorization* shall have and maintain a written Quality System Program. The system shall satisfactorily meet the requirements of the NBIC, jurisdictional requirements, regulatory authority, and shall be available for review. The Quality System Program may be brief or voluminous, depending on the circumstances. It shall be treated confidentially by the National Board.

**1.8.3.1 OUTLINE OF REQUIREMENTS FOR A QUALITY SYSTEM PROGRAM FOR TO
QUALIFICATION FOR THE NATIONAL BOARD "NR" SYMBOL STAMP
CERTIFICATE OF AUTHORIZATION**

These rules set forth the requirements for planning, managing, and implementing the organization's Quality System Programs for controlling the quality of activities performed during repair/replacement activities of components and systems in nuclear power plants within the scope of the applicable edition and addenda of Section III or XI of the ASME Code. These rules are to be the basis for evaluating such programs prior to the issuance or renewal of the National Board "NR" *Certificate of Authorization*.

a) Organization

- 1) The authority and responsibility of those in charge of the Quality System Program and activities affecting quality shall be clearly established and documented. The ~~person and~~ responsible individuals within the organization performing Quality System functions shall have sufficient and well-defined responsibility, authority, and organizational freedom to:
 - a. Identify quality problems;
 - b. Initiate action which results in solutions;
 - c. Verify implementation of solutions to those problems; and
 - d. Control further processing, delivery or installation of a nonconforming item, deficiency or unsatisfactory condition until proper disposition has been made.
- 2) The ~~person individual and organization~~ responsible for defining and ~~for~~ measuring the overall effectiveness of the Quality System Program shall be designated and shall be sufficiently independent from the pressure of production, have direct access to responsible management at a level where appropriate action can be ~~required~~ taken and report regularly on the effectiveness of the program. Assurance of quality requires management to establish measures which provide that the individual or group assigned the responsibility of inspection, testing, checking, or otherwise verifying that an activity has been correctly performed, is independent of the individual or group directly responsible for performing the specific activity. The specific responsibilities of within the Quality Assurance System's organization of the "NR" Certificate Holder shall include the review of written procedures and monitoring of all activities concerned with the Quality System Program as covered in these rules.

b) Quality System Program

- 1) Before becoming a holder of an "NR" *Certificate of Authorization*, the applicant shall establish a Quality System Program for the control of the quality of work to be performed. The program shall define the organizational structure within which the

Quality System Program is to be implemented and shall clearly delineate the responsibilities, levels of authority, and lines of communication for the various individuals involved. The program shall be documented in detail in a Quality System Manual that shall be a major basis for ~~demonstration of~~ demonstrating compliance with the NBIC. The applicant's Quality System Program shall be documented by written policies, procedures, and instructions and shall be based on the organization's scope of work to be performed.

- 2) The applicant's ~~program~~ manual need not be in the same format or sequential arrangement as the requirements in these rules as long as all applicable program requirements have been covered. The program shall provide for the accomplishment of activities affecting quality under suitably controlled conditions. Controlled conditions include the use of appropriate equipment, suitable environmental conditions for accomplishing the activity and assurance that prerequisites for the activity have been satisfied. The program shall take into account the need for special controls, processes, test equipment, tools, and personnel skills to attain the required quality and need for the verification of quality by examination, inspection and test methods. The program shall provide for ready detection of nonconforming material and items and for timely and positive corrective actions.
- 3) The program shall provide for indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained. It shall be the responsibility of the "NR" Certificate Holder to ensure that all personnel performing quality functions within the scope of these rules, including personnel of subcontracted services, are qualified as specified in these rules. The assignment of qualified personnel shall be at the discretion of the "NR" Certificate Holder.
- 4) The "NR" Certificate Holder shall be responsible for advising his Authorized Nuclear Inspection Agency of any proposed changes to the Quality System Manual and shall have acceptance of the Authorized Nuclear Inspection Agency's Authorized Nuclear Inspector Supervisor before putting such changes into effect. The "NR" Certificate Holder shall make a current copy of the Quality System Manual available to the Authorized Nuclear Inspector. The "NR" Certificate Holder shall be responsible for promptly notifying the Authorized Nuclear Inspector of such accepted changes, including evidence of acceptance by the Authorized Nuclear ~~Inspection Agency~~ Inspector Supervisor.
- 5) The quality of all repair/replacement activities shall be controlled at all points necessary to ensure conformance with the requirements of these rules and the "NR" Certificate Holder's Quality System Manual.
- 6) The "NR" Certificate Holder shall make available to the Authorized Nuclear Inspector such ~~drawings and process sheets~~ documentation as are necessary to make the Quality System Program intelligible.

- b) Replacement parts that will be subject to internal or external pressure that are preassembled by attachment welds shall have the welding performed in accordance with the original code of construction. The supplier or manufacturer shall certify that the material and fabrication are in accordance with the original code of construction. This certification shall be supplied in the form of bills of material and drawings with statement of certification. Examples include boiler furnace wall or floor panel assemblies, prefabricated openings in boiler furnace walls, such as burner openings, air ports, inspection openings, or sootblower openings;
- c) When ASME is the original code of construction, replacement parts subject to internal or external pressure fabricated by welding, which require inspection by an Authorized Inspector shall be fabricated by an organization having an appropriate ASME *Certificate of Authorization*. The item shall be inspected and stamped as required by the applicable section of the ASME Code. A completed ASME *Manufacturer's Partial Data Report* shall be supplied by the manufacturer;

The "R" Certificate Holder, using replacement parts fabricated and certified to an ASME Code edition and addenda different from that used for the original construction, shall consider and seek technical advice, where appropriate, for change or conflicts in design, materials, welding, heat treatment, examinations and tests to ensure a safe repair/alteration is performed. Note that work once classified as a repair could now be considered an alteration;

- d) When the original code of construction is other than ASME, replacement parts subject to internal or external pressure, fabricated by welding, shall be manufactured by an organization certified as required by the original code of construction. The item shall be inspected and stamped as required by the original code of construction. Certification to the original code of construction, as required by the original code of construction or equivalent, shall be supplied with the item. When this is not possible or practicable, the organization fabricating the part shall have a National Board "R" *Certificate of Authorization*; replacement parts shall be documented on Form R-3 and the "R" Symbol Stamp applied as described in NBIC Part 3, Section 5.

3.2.3 DRAWINGS

As appropriate, drawings shall be prepared to describe the repair or alteration. Drawings shall include sufficient information to satisfactorily perform the repair or alteration.

3.2.4

e) All new or replacement fabricated parts with pressure retaining welds shall be pressure tested at the pressure required by the original code of construction. The pressure test may be performed on the part prior to or after installation in the pressure retaining item.

- a) Many repairs may not require drawings or design calculations when the original code of construction is known and drawings and/or a Manufacturer's Data Report is available;
- b) The "R" Certificate Holder performing repairs and alterations shall establish the construction standard or code and sufficient controls to ensure that all required design information, applicable drawings, design calculations, specifications, and instructions are prepared, obtained, controlled, and interpreted to provide the basis for a repair or an alteration in accordance with the original code of construction. When a *Manufacturer's Data Report* is required by the original construction standard, a copy of the original data report shall be obtained, where available, for use in the design of the repair or alteration. When the original *Manufacturer's Data Report* cannot be obtained, agreements on the method of establishing design basis for the repair or alteration shall be obtained from the Inspector and the Jurisdiction, when required.

- b) , and shall be subjected to a hydrostatic test in accordance with the code of construction requirements, prior to installation.
- assembled by attachment of construction. The replacement shall be in accordance with the original code of construction. This certification shall be supplied in the form of bills of material and drawings with statement of certification. Examples include boiler furnace wall or floor panel assemblies, prefabricated openings in boiler furnace walls, such as burner openings, air ports, inspection openings, or sootblower openings;
- c) When ASME is the original code of construction, replacement parts subject to internal or external pressure fabricated by welding, which require inspection by an Authorized Inspector shall be fabricated by an organization having an appropriate ASME *Certificate of Authorization*. The item shall be inspected and stamped as required by the applicable section of the ASME Code. A completed ASME *Manufacturer's Partial Data Report* shall be supplied by the manufacturer;

The "R" Certificate Holder, using replacement parts fabricated and certified to an ASME Code edition and addenda different from that used for the original construction, shall consider and seek technical advice, where appropriate, for change or conflicts in design, materials, welding, heat treatment, examinations and tests to ensure a safe repair/alteration is performed. Note that work once classified as a repair could now be considered an alteration;

- d) When the original code of construction is other than ASME, replacement parts subject to internal or external pressure, fabricated by welding, shall be manufactured by an organization certified as required by the original code of construction. The item shall be inspected and stamped as required by the original code of construction. Certification to the original code of construction, as required by the original code of construction or equivalent, shall be supplied with the item. When this is not possible or practicable, the organization fabricating the part shall have a National Board "R" *Certificate of Authorization*; replacement parts shall be documented on Form R-3 and the "R" Symbol Stamp applied as described in NBIC Part 3, Section 5.

, and shall be subjected to a hydrostatic test in accordance with the code of construction requirements, prior to installation.

3.2.3 DRAWINGS

As appropriate, drawings shall be prepared to describe the repair or alteration. Drawings shall include sufficient information to satisfactorily perform the repair or alteration.

3.2.4 DESIGN REQUIREMENTS FOR REPAIRS AND ALTERATIONS

- a) Many repairs may not require drawings or design calculations when the original code of construction is known and drawings and/or a Manufacturer's Data Report is available;
- b) The "R" Certificate Holder performing repairs and alterations shall establish the construction standard or code and sufficient controls to ensure that all required design information, applicable drawings, design calculations, specifications, and instructions are prepared, obtained, controlled, and interpreted to provide the basis for a repair or an alteration in accordance with the original code of construction. When a *Manufacturer's Data Report* is required by the original construction standard, a copy of the original data report shall be obtained, where available, for use in the design of the repair or alteration. When the original *Manufacturer's Data Report* cannot be obtained, agreements on the method of establishing design basis for the repair or alteration shall be obtained from the Inspector and the Jurisdiction, when required.

1.5.1 ACCREDITATION PROCESS

- a) The National Board administers accreditation programs for authorization of organizations performing repairs and alterations to pressure-retaining items and/or pressure relief valves.
- b) Any organization may apply to the National Board to obtain a Certificate of Authorization for the requested scope of activities. A review shall be conducted to evaluate the organization's quality system. The individual assigned to conduct the evaluation shall meet the qualification requirements prescribed by the National Board. Upon completion of the evaluation, any deficiencies within the organization's quality system will be documented and a recommendation will be made to the National Board regarding issuance of a Certificate of Authorization.
- c) As part of the accreditation process, an applicant's quality system is subject to a review. National Board procedures provide for the confidential review resulting in recommendations to issue or not issue a Certificate of Authorization.
- ~~d) When the quality system requirements of this Section have been met, a Certificate of Authorization and appropriate National Board symbol stamp shall be issued.~~
- ~~d) e) The accreditation programs provide requirements for organizations performing repairs and alterations to pressure-retaining items. Depending upon the expected scope of activities at the time of review, organizations may be authorized to perform design only, metallic or non-metallic repairs, and/or alterations either in the shop only, field only, or shop and field. Repairs and/or alterations to metallic and non-metallic pressure-retaining items are made by welding, bonding and/or mechanical assembly.~~

~~1.5.2 SCOPE ISSUANCE AND REVISION TO A QUALITY SYSTEM~~

- ~~a) Any scope revision shall require authorized inspection agency acceptance of quality system changes. These changes shall be submitted to the National Board for acceptance. A program review may be required by the National Board or the Jurisdiction to ensure quality system requirements are met for scope changes. Upon acceptance of the changes, the National Board will issue a Certificate of Authorization with a revised scope.~~
- ~~b) The "VR" accreditation program provides requirements for organizations performing repairs to pressure relief valves. For scope issuance and revisions, refer to 1.7.~~

~~1.6 ACCREDITATION OF "R" REPAIR ORGANIZATIONS~~

~~1.6.1 SCOPE~~

- ~~a) This section provides requirements that must be met by organizations in order to obtain a National Board Certificate of Authorization to use the "R" Symbol Stamp for the~~

~~repair or alteration of pressure-retaining items. Organizations may be authorized to perform repairs only, or repairs and alterations.~~

~~b) The issuance of the "R" Stamp is not restricted to organizations whose primary business is to repair and alter pressure-retaining items, nor to manufacturers of pressure-retaining items. Owners and Users of pressure-retaining items and other organizations that qualify in accordance with these rules may also obtain the "R" Stamp.~~

~~c) Owners or users may be accredited for both a repair and inspection program provided the owner or user complies with the requirements of the "R" program and the National Board requirements of NB-371 for an Owner-User Inspection Organization. The requirements of 1.6.2(a) do not apply if the owner or user chooses to use the Owner-User Inspection Organization to accept the repair quality system when:~~

~~1) There is no conflict with jurisdictional requirements.~~

~~2) The line of authority for the Owner-User Inspection Organization shall be independent of the organization responsible for execution of "R" program work.~~

~~3) The process and Inspector limitations are described in the written Owner-User Inspection Organization's quality system manual.~~

~~1.6.2 PREREQUISITES FOR ISSUING A NATIONAL BOARD CERTIFICATE OF AUTHORIZATION~~

~~Before an organization can obtain a National Board "R" Certificate of Authorization, the organization shall:~~

~~a) Have and maintain an Inspection Agreement with an Authorized Inspection Agency;~~

~~b) Have, in the English language, a written Quality System that complies with the requirements of this section and includes the expected scope of activities;~~

~~c) Have the current edition and addendum of the National Board Inspection Code, all parts; and~~

~~d) Have available a copy of the code of construction appropriate to the intended scope of work.~~

~~1.6.3 PROCEDURE FOR OBTAINING OR RENEWING A NATIONAL BOARD CERTIFICATE OF AUTHORIZATION~~

~~a) Prior to issuance or renewal of a National Board "R" Certificate of Authorization, the organization and its facilities are subject to a review of its Quality System. The implementation of the Quality System shall be satisfactorily demonstrated by the~~

~~organization. The National Board reserves the absolute right to cancel, refuse to issue, or renew such authorization.~~

~~e) b) Organizations desiring to renew or obtain a National Board Certificate of Authorization shall apply to the National Board using forms obtained from the National Board. Application for renewal shall be made prior to the expiration date of the Certificate of Authorization.~~

~~f) e) When an organization has plants or shops in more than one location, the organization shall submit separate applications for each plant or shop. The organization may perform repairs or alterations in its plants, shops, or in the field, provided such operations are described in the organization's Quality System.~~

~~d) Upon notification of the review dates from the National Board, it is the responsibility of the organization to make arrangements for the review.~~

~~e) The Review Team, as a minimum, shall consist of one representative each from the Authorized Inspection Agency and the Jurisdiction.²~~

~~f) The Review Team shall conduct an evaluation of the organization's Quality System. The organization shall demonstrate sufficient implementation of the Quality System to provide evidence of the organization's knowledge of welding, nondestructive examination, postweld heat treatment, and other repair or alteration activities performed appropriate for the requested scope of work. The demonstration may be performed using current work, a demonstration mock-up, or a combination of both.~~

~~g) A recommendation to issue, renew, or withhold the National Board Certificate of Authorization shall be included in a Review Report prepared by the Review Team. The completed Review Report shall be forwarded to the National Board.~~

~~h) If proper administrative fees are paid and all other requirements are met, a Certificate of Authorization will be issued evidencing permission to use the "R" Symbol Stamp. The certificate shall expire on the triennial anniversary date.~~

~~i) When an organization holding a National Board Certificate of Authorization changes ownership, name, location, or address, the National Board shall be notified. The Certificate of Authorization may be revised by submitting an application for National Board "R" Certificate of Authorization; however, a re-review may be required.~~

~~j) The holder of an ASME Code Symbol Stamp, whose facilities were reviewed (with the exception of "V," "UV," "HV," "NV," and "H" [cast iron]) may obtain National Board authorization without a review of its facilities, provided:~~

~~1) The organization has a Quality System to cover the scope of the repairs or alterations to be made, subject to review by the Jurisdiction; and~~

~~2) The application for the "R" Certificate of Authorization is submitted within 12 months from the issuance of the ASME Certificate of Authorization. The initial Certificate of Authorization shall be issued to expire concurrent with the ASME Certificate of Authorization. Subsequent certificates shall be renewed upon a successful review and implementation of its Quality System by a National Board Representative.~~

~~g) k)~~ The Jurisdiction² may audit the Quality System and activities of an organization upon a valid request from an owner, user, inspection agency, or the National Board.

~~h) j)~~ The NBIC Committee may at any time change the rules for the issuance of Certificates of Authorization and use of the "R" Symbol Stamp. These rules shall become binding on all certificate holders.

1.6.4 NATIONAL BOARD "R" SYMBOL STAMP

a) All "R" Symbol Stamps shall be obtained from the National Board of Boiler and Pressure Vessel Inspectors. Authorization to use the "R" Symbol Stamp may be granted by the National Board at its absolute discretion to the certificate holder.

b) The "R" Symbol Stamp is furnished on loan by the National Board for a nominal fee. Each organization shall agree if authorization to use the "R" Symbol Stamp is granted, that the "R" Symbol Stamp is at all times the property of the National Board and will be promptly returned upon demand. If the organization discontinues the use of the "R" Symbol Stamp, inspection agreement with an Authorized Inspection Agency, or if the Certificate of Authorization has expired and no new certificate has been issued, the "R" Symbol Stamp shall be returned to the National Board.

c) The organization's Quality System shall provide for adequate control of the "R" Symbol Stamp. Provisions may be made for the issuance of the "R" Symbol Stamp for use at various field locations.

d) The holder of a Certificate of Authorization may obtain more than one "R" Symbol Stamp provided the organization's Quality System describes how the use of such stamps is controlled from the location shown on the certificate.

e) An organization shall not permit others to use the "R" Symbol Stamp loaned to it by the National Board.

² Jurisdiction: The National Board member jurisdiction where the organization is located. Alternatively, where the Jurisdiction elects not to perform the review or where there is no Jurisdiction or where the Jurisdiction is the organization's Authorized Inspection Agency, the National Board of Boiler and Pressure Vessel Inspectors will represent the Jurisdiction. At the Jurisdiction's discretion, the Jurisdiction may choose to be a member of the review team if the Jurisdiction chooses not to be the team leader.

1.6.5 QUALITY SYSTEM

A holder of a National Board Certificate of Authorization shall have and maintain a written Quality System. The System shall satisfactorily meet the requirements of the NBIC and shall be available for review. The Quality System may be brief or voluminous, depending on the projected scope of work. It shall be treated confidentially by the National Board.

1.6.5.1 OUTLINE OF REQUIREMENTS FOR A QUALITY SYSTEM FOR QUALIFICATION FOR THE NATIONAL BOARD "R" CERTIFICATE OF AUTHORIZATION

The following is a guide for required features of a Quality System which shall be included in the organization's Quality System Manual. As a minimum, each organization shall address the required features relative to the scope of work to be performed. Organizations shall explain their intent, capability and applicability for each required feature outlined in this section. Work may be subcontracted provided controls are clearly defined for maintaining full responsibility for code compliance by the National Board repair organization certifying the work.

a) Title Page

The name and complete address of the company to which the National Board Certificate of Authorization is issued shall be included on the Title Page of the Quality System Manual.

b) Contents Page

The manual should contain a page listing the contents of the manual by subject, number (if applicable), and revision number of each document.

c) Scope of Work

The manual shall clearly indicate the scope and type of repairs or alterations the organization is capable of and intends to carry out.

d) Statement of Authority and Responsibility

A dated Statement of Authority, signed by an officer of the organization, shall be included in the manual. Further, the Statement of Authority shall include:

- 1) A statement that all repairs or alterations carried out by the organization shall meet the requirements of the NBIC and the Jurisdiction, as applicable.
- 2) A statement that if there is a disagreement in the implementation of the Quality

System, the matter is to be referred for resolution to a higher authority in the company.

3) The title of the individual who will be responsible to ensure that (1) above is followed and has the freedom and authority to carry out the responsibility.

e) Manual Control

The manual shall include the necessary provisions for revising and issuing documents to maintain the manual current. The title of the individual authorized to approve revisions shall be included in the manual. Revisions must be accepted by the Authorized Inspection Agency prior to issuance of the manual and implementation.

f) Organization

An organizational chart shall be included in the manual. It shall include the title of the heads of all departments or divisions that perform functions that can affect the quality of the repair or alteration, and it shall show the relationship between each department or division. The manual shall identify the title of those individuals responsible for preparation, implementation, or verification of the Quality System. The responsibilities shall be clearly defined and the individuals shall have the organizational freedom and authority to fulfill those responsibilities.

g) Drawings, Design and Specifications

The manual shall contain controls to ensure that all design information, applicable drawings, design calculations, specifications, and instructions are prepared or obtained, controlled, and interpreted in accordance with the original code of construction.

h) Repair and Alteration Methods

The manual shall include controls for repairs and alterations, including, mechanical assembly procedures, materials, nondestructive examination methods, pre-heat, and postweld heat treatment, as applicable. Special requirements such as nonmetallic repairs and alterations to graphite and fiber-reinforced thermosetting plastic pressure-retaining items including bonding or mechanical assembly procedures shall be addressed, if applicable.

i) Materials

The manual shall describe the method used to assure that only acceptable materials (including welding material) are used for repairs and alterations. The manual shall include a description of how existing material is identified and new material is ordered, verified, and identified. The manual shall identify the title of the individual(s) responsible for each function and a brief description of how the function is to be performed.

j) Method of Performing Work

The manual shall describe the methods for performing and documenting repairs and alterations in sufficient detail to permit the Inspector to determine at what stages specific inspections are to be performed. The method of repair or alteration must have prior acceptance of the Inspector.

k) Welding, NDE and Heat Treatment

The manual shall describe controls for welding, nondestructive examination, and heat treatment. The manual is to indicate the title of the individual(s) responsible for the welding procedure specification and its qualification, and the qualification of welders and welding operators. It is essential that only welding procedure specifications and welders or welding operators qualified, as required by the NBIC, be used in the repair or alteration of pressure-retaining items. It is also essential that welders and welding operators maintain their proficiency as required by the NBIC, while engaged in the repair or alteration of pressure-retaining items. The manual shall also describe controls for assuring that the required WPS or SWPS is available to the welder or welding operator prior to welding. Similar responsibility for nondestructive examination and heat treatment shall be described in the manual.

l) Examinations and Tests

Reference shall be made in the manual for examinations and tests upon completion of the repair or alteration.

m) Calibration

The manual shall describe a system for the calibration of examination, measuring, and test equipment used in the performance of repairs and alterations.

n) Acceptance and Inspection of Repair or Alteration

The manual shall specifically indicate that before the work is started, acceptance of the repair/alteration shall be obtained from an Inspector who will make the required inspections and confirm NBIC compliance by signing and dating the applicable NBIC Report Form³ upon completion of the work.

³ NBIC Report Form: National Board Form R-1 for Repairs, Form R-2 for Alterations, or Form R-3 for Fabricated Parts or altered component can be considered in compliance with the NBIC.

o) Inspections

The manual shall make provisions for the Inspector to have access to all drawings, design calculations, specifications, procedures, process sheets, repair or alteration procedures, test results, and other documents as necessary to ensure compliance with the NBIC. A copy of the current manual shall be available to the inspector.

p) Report of Repair or Alteration Form

The manual shall indicate the title of the individuals responsible for preparing, signing, and presenting the NBIC Report Forms to the Inspector. The distribution of the NBIC Report Forms shall be described in the manual.

q) Exhibits

Any forms referenced in the manual shall be included. The form may be a part of the referencing document or included as an appendix. For clarity, the forms may be completed and identified as examples. The name and accepted abbreviations of the "R" Certificate Holder shall be included in the manual.

r) Construction Code

The manual shall include provisions for addressing the requirements that pertain to the specific construction code for the equipment being repaired or altered.

s) Nonconforming Items

There shall be a system acceptable to the Inspector for the correction of nonconformities. A nonconformance is any condition that does not comply with the applicable rules of the NBIC, construction code, jurisdictional requirements, or the quality system. Nonconformance must be corrected or eliminated before the repaired

1.5.1 ACCREDITATION PROCESS

- a) The National Board administers accreditation programs for authorization of organizations performing repairs and alterations to pressure-retaining items and/or pressure relief valves.
- b) Any organization may apply to the National Board to obtain a Certificate of Authorization for the requested scope of activities. A review shall be conducted to evaluate the organization's quality system. The individual assigned to conduct the evaluation shall meet the qualification requirements prescribed by the National Board. Upon completion of the evaluation, any deficiencies within the organization's quality system will be documented and a recommendation will be made to the National Board regarding issuance of a Certificate of Authorization.
- c) As part of the accreditation process, an applicant's quality system is subject to a review. National Board procedures provide for the confidential review resulting in recommendations to issue or not issue a Certificate of Authorization.
- d) The accreditation programs provide requirements for organizations performing repairs and alterations to pressure-retaining items. Depending upon the expected scope of activities at the time of review, organizations may be authorized to perform design only, metallic or non-metallic repairs, and/or alterations either in the shop only, field only, or shop and field. Repairs and/or alterations to metallic and non-metallic pressure-retaining items are made by welding, bonding and/or mechanical assembly.
- e) Organizations desiring to renew or obtain a National Board Certificate of Authorization shall apply to the National Board using forms obtained from the National Board. Application for renewal shall be made prior to the expiration date of the Certificate of Authorization.
- f) When an organization has plants or shops in more than one location, the organization shall submit separate applications for each plant or shop. The organization may perform repairs or alterations in its plants, shops, or in the field, provided such operations are described in the organization's Quality System.
- g) The Jurisdiction may audit the Quality System and activities of an organization upon a valid request from an owner, user, inspection agency, or the National Board.
- h) The NBIC Committee may at any time change the rules for the issuance of Certificates of Authorization and use of the "R" Symbol Stamp. These rules shall become binding on all certificate holders.

1.5.2 NATIONAL BOARD “R” SYMBOL STAMP

- a) All “R” Symbol Stamps shall be obtained from the National Board of Boiler and Pressure Vessel Inspectors. Authorization to use the “R” Symbol Stamp may be granted by the National Board at its absolute discretion.
- b) The “R” Symbol Stamp is furnished on loan by the National Board for a nominal fee. Each organization shall agree if authorization to use the “R” Symbol Stamp is granted, that the “R” Symbol Stamp is at all times the property of the National Board and will be promptly returned upon demand. If the organization discontinues the use of the “R” Symbol Stamp, inspection agreement with an Authorized Inspection Agency, or if the Certificate of Authorization has expired and no new certificate has been issued, the “R” Symbol Stamp shall be returned to the National Board.
- c) The organization’s Quality System shall provide for adequate control of the “R” Symbol Stamp. Provisions may be made for the issuance of the “R” Symbol Stamp for use at various field locations.
- d) The holder of a Certificate of Authorization may obtain more than one “R” Symbol Stamp provided the organization’s Quality System describes how the use of such stamps is controlled from the location shown on the certificate.
- e) An organization shall not permit others to use the “R” Symbol Stamp loaned to it by the National Board.

² Jurisdiction: The National Board member jurisdiction where the organization is located. Alternatively, where the Jurisdiction elects not to perform the review or where there is no Jurisdiction or where the Jurisdiction is the organization’s Authorized Inspection Agency, the National Board of Boiler and Pressure Vessel Inspectors will represent the Jurisdiction. At the Jurisdiction’s discretion, the Jurisdiction may choose to be a member of the review team if the Jurisdiction chooses not to be the team leader.

1.6 QUALITY SYSTEM

A holder of a National Board Certificate of Authorization shall have and maintain a written Quality System. The System shall satisfactorily meet the requirements of the NBIC and shall be available for review. The Quality System may be brief or voluminous, depending on the projected scope of work. It shall be treated confidentially by the National Board.

1.6.1 OUTLINE OF REQUIREMENTS FOR A QUALITY SYSTEM FOR QUALIFICATION FOR THE NATIONAL BOARD “R” CERTIFICATE OF AUTHORIZATION

The following is a guide for required features of a Quality System which shall be included in the organization’s Quality System Manual. As a minimum, each organization

shall address the required features relative to the scope of work to be performed. Organizations shall explain their intent, capability and applicability for each required feature outlined in this section. Work may be subcontracted provided controls are clearly defined for maintaining full responsibility for code compliance by the National Board repair organization certifying the work.

a) Title Page

The name and complete address of the company to which the National Board Certificate of Authorization is issued shall be included on the Title Page of the Quality System Manual.

b) Contents Page

The manual should contain a page listing the contents of the manual by subject, number (if applicable), and revision number of each document.

c) Scope of Work

The manual shall clearly indicate the scope and type of repairs or alterations the organization is capable of and intends to carry out.

d) Statement of Authority and Responsibility

A dated Statement of Authority, signed by an officer of the organization, shall be included in the manual. Further, the Statement of Authority shall include:

- 1) A statement that all repairs or alterations carried out by the organization shall meet the requirements of the NBIC and the Jurisdiction, as applicable.
- 2) A statement that if there is a disagreement in the implementation of the Quality System, the matter is to be referred for resolution to a higher authority in the company.
- 3) The title of the individual who will be responsible to ensure that (1) above is followed and has the freedom and authority to carry out the responsibility.

e) Manual Control

The manual shall include the necessary provisions for revising and issuing documents to maintain the manual current. The title of the individual authorized to approve revisions shall be included in the manual. Revisions must be accepted by the Authorized Inspection Agency prior to issuance of the manual and implementation.

f) Organization

An organizational chart shall be included in the manual. It shall include the title of the heads of all departments or divisions that perform functions that can affect the quality of the repair or alteration, and it shall show the relationship between each department or division. The manual shall identify the title of those individuals responsible for preparation, implementation, or verification of the Quality System. The responsibilities shall be clearly defined and the individuals shall have the organizational freedom and authority to fulfill those responsibilities.

g) Drawings, Design and Specifications

The manual shall contain controls to ensure that all design information, applicable drawings, design calculations, specifications, and instructions are prepared or obtained, controlled, and interpreted in accordance with the original code of construction.

h) Repair and Alteration Methods

The manual shall include controls for repairs and alterations, including, mechanical assembly procedures, materials, nondestructive examination methods, pre-heat, and postweld heat treatment, as applicable. Special requirements such as nonmetallic repairs and alterations to graphite and fiber-reinforced thermosetting plastic pressure-retaining items including bonding or mechanical assembly procedures shall be addressed, if applicable.

i) Materials

The manual shall describe the method used to assure that only acceptable materials (including welding material) are used for repairs and alterations. The manual shall include a description of how existing material is identified and new material is ordered, verified, and identified. The manual shall identify the title of the individual(s) responsible for each function and a brief description of how the function is to be performed.

j) Method of Performing Work

The manual shall describe the methods for performing and documenting repairs and alterations in sufficient detail to permit the Inspector to determine at what stages specific inspections are to be performed. The method of repair or alteration must have prior acceptance of the Inspector.

k) Welding, NDE and Heat Treatment

The manual shall describe controls for welding, nondestructive examination, and heat treatment. The manual is to indicate the title of the individual(s) responsible for the welding procedure specification and its qualification, and the qualification of welders and welding operators. It is essential that only welding procedure specifications and welders

or welding operators qualified, as required by the NBIC, be used in the repair or alteration of pressure-retaining items. It is also essential that welders and welding operators maintain their proficiency as required by the NBIC, while engaged in the repair or alteration of pressure-retaining items. The manual shall also describe controls for assuring that the required WPS or SWPS is available to the welder or welding operator prior to welding. Similar responsibility for nondestructive examination and heat treatment shall be described in the manual.

l) Examinations and Tests

Reference shall be made in the manual for examinations and tests upon completion of the repair or alteration.

m) Calibration

The manual shall describe a system for the calibration of examination, measuring, and test equipment used in the performance of repairs and alterations.

n) Acceptance and Inspection of Repair or Alteration

The manual shall specifically indicate that before the work is started, acceptance of the repair/alteration shall be obtained from an Inspector who will make the required inspections and confirm NBIC compliance by signing and dating the applicable NBIC Report Form³ upon completion of the work.

o) Inspections

The manual shall make provisions for the Inspector to have access to all drawings, design calculations, specifications, procedures, process sheets, repair or alteration procedures, test results, and other documents as necessary to ensure compliance with the NBIC. A copy of the current manual shall be available to the inspector.

p) Report of Repair or Alteration Form

The manual shall indicate the title of the individuals responsible for preparing, signing, and presenting the NBIC Report Forms to the Inspector. The distribution of the NBIC Report Forms shall be described in the manual.

³ NBIC Report Form: National Board Form R-1 for Repairs, Form R-2 for Alterations, or Form R-3 for Fabricated Parts or altered component can be considered in compliance with the NBIC.

q) Exhibits

Any forms referenced in the manual shall be included. The form may be a part of the referencing document or included as an appendix. For clarity, the forms may be completed and identified as examples. The name and accepted abbreviations of the "R" Certificate Holder shall be included in the manual.

r) Construction Code

The manual shall include provisions for addressing the requirements that pertain to the specific construction code for the equipment being repaired or altered.

s) Nonconforming Items

There shall be a system acceptable to the Inspector for the correction of nonconformities. A nonconformance is any condition that does not comply with the applicable rules of the NBIC, construction code, jurisdictional requirements, or the quality system. Nonconformance must be corrected or eliminated before the repaired

1.7 ACCREDITATION OF "VR" REPAIR ORGANIZATIONS

1.7.1 SCOPE

a) These administrative rules and procedures are provided by the National Board for those who wish to obtain a National Board Certificate of Authorization for use of the "VR" (Repair of Pressure Relief Valves) symbol stamp. It should be noted that the issuance of the "VR" stamp is not restricted to companies whose primary business is the repair of pressure relief valves, nor to manufacturers or assemblers that hold an ASME "V," "HV," "UV," or "NV" Code symbol stamp. Owners and users of boilers and pressure vessels and other organizations that qualify in accordance with the National Board Rules and Regulations may also obtain the "VR" Certificate and stamp.

~~b) In order to provide due process in the issuance, renewal, and revocation of "VR" symbol stamps and certificates of authorization, the National Board Appeals Committee procedures provide an affected "VR" Certificate of Authorization applicant the right of appeal, or to provide additional information that may affect the Committee's decision.~~

1.7.2 JURISDICTIONAL PARTICIPATION

The National Board member jurisdiction in which the "VR" organization is located is encouraged to participate in the review and demonstration of the applicant's quality system. The Jurisdiction may require participation in the review of the repair organization and the demonstration and acceptance of the repair organization's quality system manual.

1.7.3 GENERAL RULES

~~The general rules of the National Board "VR" certification program apply only to the repair of National Board capacity certified ASME Code Section I "V" stamped, Section IV "HV" marked, and Section VIII "UV" stamped pressure relief valves that:~~

~~a) Have been in service or have been exposed to environmental or other conditions such that there is reason to question their ability to perform equivalent to the standards for new valves; or~~

~~b) Any or all of the valve's external adjustment seals have been broken, opened, or otherwise disturbed, regardless of the valve's age or service status.~~

1.7.4 REPAIR OF NUCLEAR VALVES

~~Provided that the requirements of Supplement 9 and applicable requirements of these rules are met, the "VR" certificate may be extended to apply to the repair of any ASME Code Section III, Class 1, 2, or 3, pressure relief devices that have been capacity certified by the National Board and have been in service, regardless of their intended function, in a nuclear system.~~

1.7.3 ~~1.7.5~~ ISSUANCE AND RENEWAL OF THE “VR” CERTIFICATE OF AUTHORIZATION

1.7.3.1 ~~1.7.5.1~~ GENERAL

Authorization to use the stamp bearing the official National Board “VR” symbol as shown in Section 5 of this Part, will be granted by the National Board pursuant to the provisions of the following administrative rules and procedures. ~~Supplement 9 of this Part, provides rules for the repair of ASME Section III “NV” stamped pressure relief devices.~~

1.7.3.2 ~~1.7.5.2~~ ISSUANCE OF CERTIFICATE

a) Repair organizations, manufacturers, assemblers, or users that make repairs to the American Society of Mechanical Engineers (ASME) Code symbol, stamped or marked (as applicable), and The National Board of Boiler and Pressure Vessel Inspectors (National Board) capacity certified pressure relief valves may apply to the National Board for a Certificate of Authorization to use the “VR” symbol. ~~The National Board may at any time, through the NBIC Committee, modify the regulations concerning the issuance and use of such valve repair symbol. All such modified regulations shall become binding upon holders of valid Valve Repair Certificates of Authorization.~~

b) ~~Authorization to use the “VR” stamp may be granted or withheld by the National Board in its absolute discretion. If authorization is granted and proper administrative fees paid, a Certificate of Authorization will be issued evidencing permission to use such a symbol, expiring on the triennial anniversary date. The certificate will be signed by the National Board Chairman of the National Board of Trustees, the Executive Director, or any other duly authorized officer.~~

e) ~~The certificate shall list the physical, permanent address of record for the certificate holder’s shop/plant. For field-only scopes, this address of record shown on the Certificate of Authorization is where administrative, technical, and quality aspects of the business are controlled.~~

1.7.5.3 RENEWAL OF CERTIFICATE

~~The Certificate of Authorization is renewable every three (3) years subject to a review of the Quality System by a representative of the National Board, review and acceptance of the representative’s report by the National Board, and successful completion of capacity verification tests. See 1.7.8 for exceptions. The applicant should apply to the National Board for renewal of authorization and re-issuance of the certificate prior to the date of expiration. The National Board reserves the absolute right to cancel, refuse to issue, or renew such authorization.~~

1.7.5.4 REVIEW OF APPLICANT'S FACILITY

a) Before issuance or renewal of pressure relief "VR" Certificates of Authorization, the repair organization, its written quality system, and its facilities are subject to a review and verification of implementation of its quality system by a representative of the National Board. The implementation demonstration shall include, as a minimum, disassembly, inspection, repair, application of special processes, reassembly, setting, and testing of valves within the scope of the applicant's quality system.

b) The applicant shall repair and submit for verification testing one (1) valve for each Code section (except Section III) and test fluid (steam, air/gas, liquid) which will appear on the Certificate of Authorization. A minimum of two (2) valves are required regardless of Code sections or test fluid. The valves shall be within the capabilities of the National Board accepted laboratory. When an applicant is using the provisions of 4.5.2, the applicant shall submit one additional Section VIII steam valve set on air for verification testing on steam.

e) The applicant shall have a copy of the National Board Pressure Relief Device Certifications publication, NB-18, dated within one year (available from the National Board Web page), the latest edition and addenda of the National Board Inspection Code (NBIC), all parts; and the ASME Code section(s) that the organization is including in its scope.

d) It is the responsibility of the valve repair organization to make arrangements for this review. Certificates cannot be issued or renewed until the National Board is in receipt of approval of this review. Wherever possible, National Board reviews of valve repair organizations shall be coordinated with ASME reviews, when applicable.

e) For field-only repair scopes, the review shall encompass both the applicant's address of record and field repair demonstration site. The demonstration site shall be representative of that typically encountered by the applicant (see 1.7.5.6).

1.7.5.5 VERIFICATION TESTING

a) Before the "VR" Certificate of Authorization and stamps may be issued or renewed, the demonstration valves must successfully complete capacity and operational verification tests at a National Board accepted testing laboratory. See 1.7.5.6 and 1.7.8 for exceptions. The valves shall be typical of those repaired by the organization and within the capabilities of the testing laboratory.

b) Tests conducted at the accepted testing laboratory shall be witnessed by a representative of the National Board. The purpose of the tests is to ensure that the repairs have been satisfactorily carried out and the function and operation of the valves meet the requirements of the section of the ASME Code to which they were manufactured.

~~e) Valves not meeting the function or operational requirements of the section of the ASME Code to which they were manufactured shall be considered to have failed. Replacement valves shall be repaired and selected for testing as stated above, at a rate of two (2) valves for each one (1) that failed.~~

~~1) If either or both of these replacement valves fail to meet the above criteria, the applicant shall document the cause of the noted deficiencies and actions taken to guard against future occurrence. Upon acceptance of this information by the National Board, one (1) additional valve for each replacement valve that failed shall be repaired and tested. The valve(s) shall be of the same ASME Code Section, fluid and set pressure scope, as the valve previously failing to meet the test requirement.~~

~~2) Failure of this valve(s) to meet the ASME Code to which the valve was manufactured shall be cause for consideration by the National Board of revocation of the "VR" Certificate of Authorization or acceptance of alternative corrective action.~~

1.7.5.6 VERIFICATION TESTING ALTERNATIVES

~~a) In such cases where all valves repaired by the applicant for a specified ASME Code Section or test fluid exceed the capabilities of the accepted testing laboratory, valves for that ASME Code Section or test fluid shall be selected as specified in 1.7.5.4, and a demonstration test shall be successfully performed in lieu of verification testing specified in 1.7.5.5 above. The demonstration tests shall be conducted at a facility mutually agreeable to the National Board representative, the facility owner, and the applicant. The purpose of these tests is to demonstrate, in the presence of a National Board representative, that the repaired valves shall have adequate seat tightness at the maximum expected operating pressure prior to lifting, shall open within the required set pressure tolerance, operate consistently without chatter, and reclose within the required blowdown.~~

~~b) If a valve lift assist device is used by the applicant to establish set pressure after repairs, this device must also be used to set the demonstration valves.~~

~~e) If either of these valves fail to meet the above criteria, then replacement valves shall be repaired and tested at a rate of two valves for each one that failed.~~

~~1) If either or both of these replacement valves fail to meet the above criteria, the applicant shall document the cause of the noted deficiencies and actions taken to guard against future occurrence. Upon acceptance of this information by the National Board, one (1) additional valve for each replacement valve that failed shall be repaired and tested. The valve(s) shall be of the same ASME Code section, fluid, and set pressure scope as the valve previously failing to meet the test requirement.~~

~~2) Failure of this valve(s) to meet the ASME Code to which the valve was manufactured shall be cause for consideration by the National Board of revocation of the "VR" Certificate of Authorization or acceptance of alternative corrective action.~~

1.7.4 ~~1.7.6~~ USE OF THE "VR" AUTHORIZATION

1.7.4.1 ~~1.7.6.1~~ TECHNICAL REQUIREMENTS

The administrative requirements of ~~1.7~~ for use of the "VR" stamp shall be used in conjunction with the technical requirements for valve repair as described in Supplement 7 of the NBIC. Those requirements shall be mandatory when a "VR" repair is performed.

~~1.7.6.2~~ STAMP USE

Each "VR" symbol stamp shall be used only by the repair firm within the scope, limitations, and restrictions under which it was issued.

1.7.4.2 ~~1.7.6.3~~ RETURN OF STAMP

Each applicant shall agree, if authorization to use the stamp is granted, that the stamp is at all times the property of the National Board and will be promptly returned upon demand. If the applicant discontinues the repair of such valves or if the "VR" Certificate of Authorization issued to such applicant has expired and no new certificate has been issued, the stamp will be returned to the National Board.

~~1.7.6.4~~ MULTIPLE LOCATIONS

A holder of a National Board "VR" stamp shall not permit any others to use the "VR" symbol stamp loaned to it by the National Board. When a repair organization, manufacturer, or user has a repair department and/or equipment in fixed plants or shops located in more than one geographical area, it must submit separate applications for each plant or shop with the addresses of all such repair locations.

~~1.7.6.5~~ CERTIFICATE OF AUTHORIZATION CONTENTS

Qualification for repair location (shop, shop and field, or field only), code section (Section I, III, IV, and/or VIII valves), special processes, and test media shall be specified on the repair organization's "VR" Certificate of Authorization.

~~1.7.6.6~~ CHANGES TO CERTIFICATES OF AUTHORIZATION

a) When a "VR" Certificate Holder intends to change the address of record (location), the certificate holder shall notify the National Board in writing prior to relocating. The new facilities and related quality system for the new location shall be reviewed in

~~accordance with 1.7.5.4. Issuance of a new Certificate of Authorization is subject to the procedures herein.~~

~~b) When a "VR" Certificate Holder intends to change ownership or scope, the certificate holder shall notify the National Board in writing prior to the change. A review, in accordance with 1.7.5.4, may be required depending upon the nature and extent of the change to the quality system manual, repair procedures, or facilities. Issuance of a new Certificate of Authorization is subject to the procedures herein.~~

~~1.7.6.7 ISSUANCE OF MORE THAN ONE "VR" SYMBOL STAMP TO A CERTIFICATE OF AUTHORIZATION HOLDER~~

~~The holder of a Certificate of Authorization may obtain more than one "VR" symbol stamp provided its quality system manual controls the use of such stamps from the address of record shown on the Certificate of Authorization.~~

~~1.7.5~~ 1.7.7 QUALITY SYSTEM

~~1.7.5.1~~ 1.7.7.1 GENERAL

Each applicant for a new or renewed "VR" Certificate of Authorization shall have and maintain a quality system which shall establish that all of these rules and administrative procedures and applicable ASME Code requirements, including material control, fabrication, machining, welding, examination, setting, testing, inspection, sealing, and stamping will be met.

~~1.7.5.2~~ 1.7.7.2 WRITTEN DESCRIPTION

A written description, in the English language, of the system the applicant will use shall be available for review and shall contain, as a minimum, the features set forth in 1.7.7.5. This description may be brief or voluminous, depending upon the projected scope of work, and shall be treated confidentially. In general, the quality system shall describe and explain what documents and procedures the repair firm will use to validate a valve repair.

~~1.7.7.3~~ REVIEW

~~A review of the applicant's quality system will be performed by a representative of the National Board. The review will include a demonstration of the implementation of the provisions of the applicant's quality system.~~

1.7.5.3 ~~1.7.7.4~~ MAINTENANCE OF CONTROLLED COPY

Each applicant to whom a "VR" Certificate of Authorization is issued shall maintain thereafter a controlled copy of the accepted quality system manual with the National Board. Except for changes that do not affect the quality system, revisions to the quality system manual shall not be implemented until such revisions are accepted by the National Board.

1.7.5.4 ~~1.7.7.5~~ OUTLINE OF REQUIREMENTS FOR A QUALITY SYSTEM

The following establishes the minimum requirements of the written description of the quality system. It is required that each valve repair organization develop its own quality system that meets the requirements of its organization. For this reason it is not possible to develop one quality system that could apply to more than one organization. The written description shall include, as a minimum, the following features:

a) Title Page

The title page shall include the name and address of the company to which the National Board Certificate of Authorization is to be issued.

b) Revision Log

A revision log is required to assure revision control of the quality system manual. The log should contain sufficient space for date, description and section of revision, company approval, and National Board acceptance.

c) Contents Page

The contents page should list and reference, by paragraph and page number, the subjects and exhibits contained therein.

d) Statement of Authority and Responsibility

A statement of authority and responsibility shall be dated and signed by an officer of the company. It shall include:

1) A statement that the "VR" stamp shall be applied only to pressure relief valves that meet both of the following conditions:

a. Are stamped with an ASME "V", "UV", or "NV" Code symbol or marked with an ASME "HV" symbol and have been capacity certified by the National Board; and

b. Have been disassembled, inspected, and repaired by the Certificate Holder such that the valves' condition and performance are equivalent to the standards for new valves.

2) The title of the individual responsible to ensure that the quality system is followed and who has authority and freedom to effect the responsibility;

3) A statement that if there is a disagreement in the implementation of the written quality system, the matter is to be referred to a higher authority in the company for resolution; and

4) The title of the individual authorized to approve revisions to the written quality system and the method by which such revisions are to be submitted to the National Board for acceptance before implementation.

e) Organization Chart

A chart showing the relationship between management, purchasing, repairing, inspection, and quality control personnel is required and shall reflect the actual organization in place.

f) Scope of Work

1) The scope of work section shall indicate the scope and type of valve repairs, including conversions the organization is capable of and intends to perform. The location of repairs (shop, shop and field, or field only), ASME Code Section(s) to which the repairs apply, the test medium (air, gas, liquid, or steam, or combinations thereof), and special processes (machining, welding, postweld heat treatment, or nondestructive examination, or combinations thereof) shall be specifically addressed.

2) The types and sizes of valves to be repaired, pressure ranges and other limitations, such as engineering and test facilities, should also be addressed.

g) Drawings and Specification Control

The drawings and specification control system shall provide procedures assuring that the latest applicable drawings, specifications, and instructions required are used for valve repair, including conversions, inspection, and testing.

h) Material and Part Control

The material and part control section shall describe purchasing, receiving, storage, and issuing of parts.

- 1) State the title of the individual responsible for the purchasing of all material.
- 2) State the title of the individual responsible for certification and other records as required.
- 3) All incoming material and parts shall be checked for conformance with the purchase order and, where applicable, the material specifications or drawings. Indicate how material or part is identified and how identity is maintained by the quality system.

i) Repair and Inspection Program

The repair and inspection program section shall include reference to a document (such as a report, traveler, or checklist) that outlines the specific repair and inspection procedures used in the repair of pressure relief valves. Repair procedures shall require verification that the critical parts meet the valve manufacturer's specification. Supplement S7.14 outlines recommended procedures covering some specific items. Provisions shall be made to retain this document for a period of at least five years.

1) Each valve or group of valves shall be accompanied by the document referred to above for processing through the plant. Each valve shall have a unique identifier (i.e., repair serial number, shop order number, etc.) appearing on the repair documentation and repair nameplate such that traceability is established.

2) The document referred to above shall describe the original nameplate information, including the ASME Code symbol stamping and the repair nameplate information, if applicable. In addition, it shall include material checks, replacement parts, conversion parts (or both), reference to items such as the welding procedure specifications (WPS), fitup, NDE technique, heat treatment, and pressure test methods to be used. Application of the "VR" stamp to the repair nameplate shall be recorded in this document. Specific conversions performed with the new Type/Model number shall be recorded on the document. There shall be a space for "signoffs" at each operation to verify that each step has been properly performed.

3) The system shall include a method of controlling the repair or replacement of critical valve parts. The method of identifying each spring shall be indicated.

4) The system shall also describe the controls used to ensure that any personnel engaged in the repair of pressure relief valves are trained and qualified in accordance with Supplement S7.

j) Welding, NDE, and Heat Treatment (when applicable)

The quality system manual shall indicate the title of the person(s) responsible for and describe the system used in the selection, development, approval, and qualification of welding procedure specifications, and the qualification of welders and welding operators in accordance with the provisions of S7.

1) The quality system manual may include controls for the "VR" Certificate Holder to have the pressure relief valve part repaired by a National Board "R" Certificate Holder, per Supplement S7.

2) The completed Form R-1 shall be noted on and attached to the "VR" Certificate Holder's document required in 1.7.7.5(i). Similarly, NDE and heat treatment techniques must be covered in the quality system manual. When outside services are used for NDE and heat treatment, the quality system manual shall describe the system whereby the use of such services meet the requirements of the applicable section of the ASME Code.

k) Valve Testing, Setting, and Sealing

The system shall include provisions that each valve shall be tested, set, and all external adjustments sealed according to the requirements of the applicable ASME Code Section and the National Board. The seal shall identify the "VR" Certificate Holder making the repair. Abbreviations or initials shall be permitted, provided such identification is acceptable to the National Board.

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.

m) Calibration

1) The manual shall describe a system for the calibration of examination, measuring, and test equipment used in the performance of repairs. Documentation of these calibrations shall include the standard used and the results.

2) All calibration standards shall be calibrated against certified equipment having known valid relationships to nationally recognized standards.

n) Manual Control

The quality system shall include:

- 1) Measures to control the issuance of and revisions to the quality system manual;
- 2) Provisions for a review of the system in order to maintain the manual current with these rules and the applicable sections of the ASME Code;
- 3) The title(s) of the individual(s) responsible for control, revisions, and review of the manual;
- 4) Provision of a controlled copy of the written quality system manual to be submitted to the National Board; and
- 5) Revisions shall be submitted for acceptance by the National Board prior to being implemented.

o) Nonconformities

The system shall establish measures for the identification, documentation, evaluation, segregation, and disposition of nonconformities. A nonconformity is a condition of any material, item, product, or process in which one or more characteristics do not conform to the established requirements. These may include, but are not limited to, data discrepancies, procedural and/or documentation deficiencies, or material defects. Also, the title(s) of the individual(s) involved in this process shall be included.

p) Exhibits

Forms used in the quality system shall be included in the manual with a written description. Forms exhibited should be marked SAMPLE and completed in a manner typical of actual valve repair procedures.

q) Testing Equipment (See Supplement 8)

The system shall include a means to control the development, addition, or modification of testing equipment to ensure the requirements of 4.5.1(b) are met.

r) Field Repairs (See Supplement S7.7)

If field repairs are included in the scope of work, the system shall address any differences or additions to the quality system required to properly control this activity, including the following:

- 1) Provisions for annual audits of field activities shall be included;
- 2) Provisions for receipt and inspection of replacement parts, including parts received from the owner-user, shall be addressed;
- 3) If owner-user personnel will assist with repairs, provisions for the use of owner-user personnel shall be included; and
- 4) Provisions for use of owner-user measurement and test equipment, if applicable, shall be addressed.

~~1.7.8 ASME "V," "HV," OR "UV" CERTIFICATE HOLDERS~~

~~a) A manufacturer holding a valid ASME Certificate of Authorization for use of an ASME "V," "HV," or "UV" Code symbol stamp may obtain the "VR" Certificate of Authorization for the repair of pressure relief valves covered by the ASME Certificate of Authorization and that meet the requirements of 1.7.3. This can be accomplished without a review of the facilities provided there is a written quality system to cover the scope of the repairs to be made and the repairs are carried out at the same location where the ASME valves are manufactured. Unless the repaired valves are tested on the same facilities and to the same procedures as new valves, two (2) repaired valves shall be selected by a National Board representative for verification tests.~~

~~b) The initial Certificate of Authorization shall be issued to expire concurrent with the ASME Certificate of Authorization. Subsequent certificates shall be renewed upon a successful review and verification of implementation of its quality system by a National Board representative. This review shall be performed concurrently with the ASME Certificate renewal review.~~

~~e) A manufacturer may also perform field repairs of pressure relief valves covered by the ASME Certificate of Authorization provided the provisions of Supplement S7.7 are met.~~

~~d) Assemblers holding ASME Certificates of Authorization shall qualify for the "VR" Certificate of Authorization as required elsewhere in these rules.~~

~~e) The quality system manual shall be submitted for review and acceptance by the National Board.~~

f) In order for an ASME Code symbol stamp holder to qualify for the National Board "VR" stamp, the following areas to the written quality system usually require attention.

1) Statement of Authority and Responsibility

This should clearly indicate that valve repairs are carried out in accordance with the requirements and the rules of the National Board and the quality system manual. In addition, the scope and type of valve repairs covered by the manual should be indicated.

2) Organization

Unless the functions which affect the quality of valve repairs are carried out by individuals other than those responsible for manufacturing or assembly, it should not be necessary to revise the organization chart.

3) General Quality Functions

Usually quality system requirements regarding valve repairs may be controlled in the same manner as for ASME manufacturing or assembly provided applicable shop and/or field activities are covered. If this is the case, the applicant for the "VR" stamp should include in its quality system manual a separate section covering valve repairs that references the applicable section of the manual. For a more explicit explanation see 1.7.7.5, Outline of Requirements for a Quality System.