



*THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS*

NATIONAL BOARD INSPECTION CODE NR TASK GROUP

MINUTES

Meeting of July 11th, 2022
Indianapolis, IN

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

The National Board of Boiler & Pressure
Vessel Inspectors 1055 Crupper Avenue
Columbus, Ohio 43229-
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1. Call to Order

Chair Spuhl called the meeting to order at 8:00am Eastern Time in Fletcher Place on the second floor of the hotel.

2. Introduction of Members and Visitors.

Secretary Hellman called roll of the Members and held introductions of visitors

3. Check for a Quorum

Secretary Hellman verified a quorum was reached. ([Attachment 1](#))

4. Announcements

- The National Board will be hosting a reception on Wednesday evening from 6:30pm to 8:30pm in City Way Gallery.
- The National Board will be hosting breakfast and lunch on Thursday. Breakfast will be served from 7:00am to 8:00am, and lunch will be served from 11:30am to 12:30pm. Both meals will be served at the hotel in Market Table.
- This meeting is the last at which items can be approved for inclusion in the 2023 NBIC edition.

5. Adoption of the Agenda

- a. The following revisions were made to the Agenda:
 - i. Added nomination of Mr. Creaser and Mr. Dinic to NR TG
- b. The agenda was unanimously accepted, as revised.

6. Approval of the Minutes of the January 17th, 2022 Meeting

The minutes are available for review on the National Board website, www.nationalboard.org. The Minutes were motioned, seconded, and unanimously approved.

7. Review of Rosters

a. Membership Nominations

- i. Mr. Eben Creaser would like to be considered for membership to the Task Group.
- ii. Mr. Caslav Dinic would like to be considered for membership to the Task Group.
- iii. Both Mr. Creaser and Mr. Caslav were UA to join the NRTG.

b. Membership Reappointments

None

c. Officer Nominations

8. Action Items

Item Number: A20-48 NBIC Location: Part 3, 1.6	Attachment 2
General Description: Review NR Program (1.6) to 2015 NQA-1 Edition	
Subgroup: Repairs and Alterations	
Task Group: R. Spuhl appointed as PM	
Explanation of Need: Latest NQA-1 revision to be compared to NR program (1.6) for consistency.	
January 2022 Meeting Action: R. Spuhl was not able to present the item. This was a PR	
July 2022 Meeting Action: R. Spuhl presented a proposal. After discussion the proposal was revised to include additional external audit requirements for Category 1 and 2. The proposal was Unanimously Approved (UA) as revised.	

Item Number: A20-52 NBIC Location: Part 3, 1.6.2 a) 2)	Attachment 3
General Description: Rvw NR requirements for ASME Section XI Div. 2 potential applications	
Subgroup: Repairs and Alterations	
Task Group: T. Roberts appointed as PM	
Explanation of Need: This was created based on discussion from Item 20-47 dealing with ANIA requirements.	
January 2022 Meeting Action: Mr. Roberts presented a presentation on new ASME Sect. XI, Div 2. Reliability and Integrity Management (RIM) Overview. Discussions were held regarding: <ul style="list-style-type: none">• ANDE vs MaNDE;• Designers taking Div. 2 requirements for systems and for individual components of systems• Should an Item be opened to clarify the NBIC is specific to only Sect. XI Div. 1 or incorporate Sect. XI Div. 2?• Mr. Roberts will do a mark-up of Part 3 to specify Sect. XI, Div. 1 where applicable. and where Div 2 requirements should be specified/incorporated into Sect. 1.6 of Part 3 of the NBIC. This was a PR.	
July 2022 Meeting Action: Mr. Roberts presented a proposal clarifying references to Section XI are specific to “Division 1”. The proposal was UA.	

Item Number: A21-02 **NBIC Location: Part 3, 1.6**

[Attachment 4](#)

General Description: Define "Fuel Loading" as it pertains to NR activities

Subgroup: Repairs and Alterations

Task Group: R. Spuhl appointed as PM

Explanation of Need: The NR TG would like to clarify "Fuel Loading" as used to determine Category 1, 2 or 3 NR activities.

January 2022 Meeting Action: Mr. Spuhl presented a **PR**

July 2022 Meeting Action: R. Spuhl presented. The proposal was revised and **UA**.

Item Number: A21-37 **NBIC Location: Part 3, 1.6**

[Attachment 5](#)

General Description: Parts used in NR Activities

Subgroup: Repairs and Alterations

Task Group: B. Wielgoszinski (PM), R. Spuhl assigned as PM in Dec. 2021.

Explanation of Need: Clarification that parts used in NR activities are fabricated by NR Certificate Holders and inspected by appropriately endorsed National Board commissioned Inspectors.

January 2022 Meeting Action: B. Wielgoszinski presented adding instructions to prepare an NR Form to 5.1.3 of the 21 NBIC Part 3.

Mr. Roberts commented that repairs for different Groups (1, 2 and 3) may have different documentation requirements (e.g. NVR-1 vs NR-1. B. W. will reach out to the NB PRD Lab personnel to discuss and get input on NR valve repair requirements.

Mr. Caslav commented this becomes more complicated outside of the US (e.g. Canada does not recognize ASME Sect. XI, so Inspector qualifications becomes an issue for non-ASME countries. How should Replacement Parts be handled?

Bob W. proposed to put this proposal out to **Rvw and Comment LB to NR TG and Part 4 SC**.

July 2022 Meeting Action: R. Spuhl presented. A Rvw and Comment LB was never sent out after the Jan. meeting. Discussion held regarding the need of both the MDR and Cert. of Compliance as part of the NR-1. Discussion was held regarding parts fabricated by welding and on the need for a new repair form (e.g. NR-3?) for nuclear repairs activities. The proposal to submit this item to a **Rvw and Comment LB to NR TG** was **UA**.

9. Additional Business

Annual Audit of NR Certificate Holder:

- Mr. Spuhl would like to discuss a change to the NBIC that removed the requirement for an annual audit of the NR Certificate Holder.
- One of the changes in the 2021 NBIC was to delete the sentence below in 1.6.6.2 s), 1.6.7.2 s) and 1.6.8.2 s).

A comprehensive system of planned and periodic audits of the NR Certificate Holder's Quality Assurance Program shall be performed. ~~Audits shall include internal audits by the Certificate Holder and audits by the Authorized Inspection Agency.~~ Audit frequency shall be specified in the organization's Quality Assurance Manual. Audits shall be conducted at least annually (within 12 months) for any ongoing code activity to verify compliance with the Quality Assurance Program requirements, performed criteria, and to determine the effectiveness of the Quality Assurance Program. When no code work has been

However, in 1.6.4 d) the audit requirement remains for the Authorized Nuclear Inspection Agency to conduct an annual audit.

- d) The "NR" *Certificate of Authorization* holder shall be subject to an audit annually by the Authorized Nuclear Inspection Agency to ensure compliance with the Quality Assurance Program.

Do you believe the intent was to remove the AIA from 1.6.6.2, 1.6.7.2, and 1.6.8.2, and leave in 1.6.4 d) or do we need to open an action item to be consistent across the board?

- **July Meeting Action:** B. Schaefer opened a new Action Item to remove verbiage from the "ANI Audits" portion for Category 1, 2, and 3. Verbiage in 1.6.4 d) will be left in place.

10. Future Meetings

- January 2023 – Charleston, SC
- July 2023 – TBD

11. Adjournment @ 12 PM by Chair Spuhl.

Respectfully submitted,

Terrence Hellman

Terrence Hellman

NR Task Group Secretary



ITEM 20-48

PROPOSED REVISION OR ADDITION

Subject Title: Review "NR" Program requirements against NQA-1 2015 Edition

NBIC Location: Part 3

Project Manager and Task Group: Paul Edwards/Ray Spuhl, NR TG

Source Name and Email:

Statement of Need: The 2015 Edition of NQA-1 is currently referenced by the 2019 Edition of ASME Section III, Table NCA-7100-2 and by the 2019 Edition of ASME Section XI, Table IWA-1600-1. NBIC Item 20-48 has been opened to review the NR Program in Part 3, Section 1.6, for update to current ASME III and XI QA Program requirements.

Background Information:

Category 1 applications under the NR Program are established for repair / replacement activities on any ASME Section III certified item or system prior to fuel loading, regardless of physical location or installation status. By reference to ASME III, the NBIC QA Program criteria for NR Category 1 applications need to be consistent with the 2015 Edition of NQA-1.

Category 2 applications under the NR Program are established for repair / replacement activities on items or systems under the scope of ASME Section XI, regardless of physical location. By reference to ASME XI, the NBIC QA Program criteria for NR Category 2 applications need to be consistent with the 2015 Edition of NQA-1.

Category 3 requirements under the NR Program are established for other than ASME III or ASME XI applications and are therefore not directly impacted by NQA-1 - 2015. NBIC Part 3, 1.6.8.1, does, however, permit a Category 3 NR Certificate holder to optionally include QA Program requirements from Category 1 and/or 2 applications, to allow consistency in the NR Certificate holder's QA Program.

Existing Text:
Part 3, 1.6.6.2 d)
d) Design Control
The provisions identified in ASME NQA-1, Part 1, Requirement 3, shall apply except Paragraph 601.

Proposed Test:
Part 3, 1.6.6.2 d)
d) Design Control
The provisions identified in ASME NQA-1, Part 1, Requirement 3, shall apply except Paragraph 601.

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<p>The following additional requirements shall be considered when applicable:</p> <ol style="list-style-type: none"> 1) The “NR” Certificate Holder shall establish measures to ensure applicable requirements of the owner’s design specifications, owner’s requirements, and code of construction requirements are correctly translated into drawings, specifications, procedures and instructions. 2) All design documents, including revisions, shall be verified by the “NR” Certificate Holder to be correct and adequate in accordance with the owners requirements. 3) Repair/replacement plans shall be completed prior to performing any work, inspections, examinations or testing; however repair/replacement plans are not required for the design phase of a repair/ replacement activity including activities that require design only (except rerating). 4) The repair/replacement plan (see NBIC Part 3, Table 1.6.9) shall identify any applicable Code Edition/ Addenda and Code Cases, owner’s requirements and the Construction Code Edition/Addenda utilized to perform the work. 5) The repair/replacement plan shall identify expected life of the item when less than the intended life as specified in the owner’s design specification. 6) The “NR” Certificate Holder shall ensure that specifications, drawings, procedures and instructions do not conflict with the owner’s design specifications. A system must be described in the Quality Assurance Manual to resolve or eliminate such conflicts. Resolution shall consider the Design Specification Requirements, as well as, the owner requirements, Jurisdictional and Regulatory Authority Requirements as applicable. 	<p>The following additional requirements shall be considered when applicable:</p> <ol style="list-style-type: none"> 1) The “NR” Certificate Holder shall establish measures to ensure applicable requirements of the owner’s design specifications, owner’s requirements, and code of construction requirements are correctly translated into drawings, specifications, procedures and instructions. 2) All design documents, including revisions, shall be verified by the “NR” Certificate Holder to be correct and adequate in accordance with the owners requirements. 3) Repair/replacement plans shall be completed prior to performing any work, inspections, examinations or testing; however repair/replacement plans are not required for the design phase of a repair/ replacement activity including activities that require design only (except rerating). 4) The repair/replacement plan (see NBIC Part 3, Table 1.6.9) shall identify any applicable Code Edition/ Addenda and Code Cases, owner’s requirements and the Construction Code Edition/Addenda utilized to perform the work. 5) The repair/replacement plan shall identify expected life of the item when less than the intended life as specified in the owner’s design specification. 6) The “NR” Certificate Holder shall ensure that specifications, drawings, procedures and instructions do not conflict with the owner’s design specifications. A system must be described in the Quality Assurance Manual to resolve or eliminate such conflicts. Resolution shall consider the Design Specification Requirements, as well as, the owner requirements, Jurisdictional and Regulatory Authority Requirements as applicable. <u>7) Computer programs used for design analysis shall meet the requirements of NQA-1, Part II, Subpart 2.7 unless independently verified with the design analysis for each application.</u>
<p>Part 3, 1.6.6.2 d) s) Audits The provisions identified in ASME NQA-1, Part 1, and Requirement 18 shall apply and shall include the following: A comprehensive system of planned and periodic audits of the “NR” Certificate Holder’s Quality Assurance Program shall be performed. Audit frequency shall be specified in the organization’s Quality Assurance Manual. Audits shall be conducted at least annually (within 12 months) for any ongoing code activity to verify compliance with Quality Assurance Program requirements, performance criteria</p>	<p>Part 3, 1.6.6.2 d) s) Audits The provisions identified in ASME NQA-1, Part 1, and Requirement 18 shall apply and shall include the following: A comprehensive system of planned and periodic audits of the “NR” Certificate Holder’s Quality Assurance Program shall be performed. <u>Internal and Supplier</u> Audit frequencies shall be specified in the organization’s Quality Assurance Manual. <u>Internal</u> Audits shall be conducted at least annually (within 12 months) for any ongoing</p>

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<p>and to determine the effectiveness of the Quality Assurance Program. When no code work has been performed, the required annual audit need only include those areas of responsibility required to be continually maintained such as training, audits, organizational structure, and Quality Assurance Program revisions. The Quality Assurance Manual shall as a minimum describe the following:</p> <ol style="list-style-type: none"> 1) Audits shall be performed in accordance with written procedures or checklists by qualified audit personnel not having direct responsibility in areas being audited; 2) Audit personnel shall be qualified in accordance with the current requirements of ASME NQA-1; 3) Audit results shall be documented and reviewed by responsible management for adequacy and effectiveness of the quality assurance program; 4) Requirements for follow-up actions shall be specified for any deficiencies noted during the audit; 5) Audit records and applicable documentation shall be made available to the Authorized Nuclear Inspection Agency for review; and 6) Audit records shall include as a minimum; <ol style="list-style-type: none"> a. Written procedures; b. Checklists; c. Reports; d. Written replies; and e. Completion of corrective actions. <p>Performance of Authorized Inspection Agency audits required by ASME QAI-1 and NB-263, RCI-1 shall be addressed in the Quality Assurance Manual.</p>	<p>code activity to verify compliance with Quality Assurance Program requirements, performance criteria and to determine the effectiveness of the Quality Assurance Program. When no code work has been performed, the required annual internal audit need only include those areas of responsibility required to be continually maintained such as training, audits, organizational structure, and Quality Assurance Program revisions <u>etc. External audits (e.g., Supplier audits) of organizations with certification/accreditation permitted by ASME may not be required if acceptable to the Regulatory Authority.</u></p> <p>The Quality Assurance Manual shall as a minimum describe the following:</p> <ol style="list-style-type: none"> 1) Audits shall be performed in accordance with written procedures or checklists by qualified audit personnel not having direct responsibility in areas being audited; 2) Audit personnel shall be qualified in accordance with the current requirements of ASME NQA-1; 3) Audit results shall be documented and reviewed by responsible management for adequacy and effectiveness of the quality assurance program; 4) Requirements for follow-up actions shall be specified for any deficiencies noted during the audit; 5) Audit records and applicable documentation shall be made available to the Authorized Nuclear Inspection Agency for review; and 6) Audit records shall include as a minimum; <ol style="list-style-type: none"> a. Written procedures; b. Checklists; c. Reports; d. Written replies; and e. Completion of corrective actions. <p>Performance of Authorized Inspection Agency audits required by ASME QAI-1 and NB-263, RCI-1 shall be addressed in the Quality Assurance Manual.</p>
<p>Part 3, 1.6.7.2 s) s) Audits A comprehensive system of planned and periodic audits of the "NR" Certificate Holder's Quality Assurance Program shall be performed. Audit frequency shall be specified in the organization's Quality Assurance Manual. Audits shall be conducted at least annually (within 12 months) to verify compliance with Quality Assurance Program requirements, performance criteria and to determine the effectiveness of the Quality Assurance Program. When no code work has been performed, the required annual audit need only include those areas of responsibility required to be continually maintained such as training, audits, organizational structure, Quality Assurance Program revisions, etc. The Quality Assurance Manual shall as a minimum describe the following:</p> <ol style="list-style-type: none"> 1) Audits shall be performed in accordance with written procedures or checklists by qualified audit personnel 	<p>Part 3, 1.6.7.2 s) s) Audits A comprehensive system of planned and periodic audits of the "NR" Certificate Holder's Quality Assurance Program shall be performed. <u>Internal and External</u> Audit frequency shall be specified in the organization's Quality Assurance Manual. <u>Internal</u> Audits shall be conducted at least annually (within 12 months) to verify compliance with Quality Assurance Program requirements, performance criteria and to determine the effectiveness of the Quality Assurance Program. When no code work has been performed, the required annual internal audit need only include those areas of responsibility required to be continually maintained such as training, audits, organizational structure, Quality Assurance Program revisions, etc. <u>External audits (e.g., Supplier audits) shall be performed on a triennial basis and supplemented by annual evaluations of the Supplier's</u></p>

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<p>not having direct responsibility in areas being audited; 2) Audit personnel shall be qualified in accordance with the current requirements of NQA-1; 3) Audit results shall be documented and reviewed by responsible management for adequacy and effectiveness of the quality assurance program; 4) Requirements for follow-up actions for any deficiencies noted during the audit; 5) Audit records and applicable documentation shall be made available to the Authorized Nuclear Inspection Agency for review; and 6) Audit records shall include as a minimum: a. written procedures; b. checklists; c. reports; d. written replies; and e. completion of corrective actions. Performance of Authorized Inspection Agency audits required by ASME QAI-1 and NB-263, RCI-1 shall be addressed in the Quality Assurance Manual.</p>	<p><u>performance to determine if the regular schedule audit frequency shall be maintained or decreased or if other corrective action is required. A continuous or ongoing evaluation of the Supplier's performance may be conducted in lieu of the annual evaluations, provided that the results are reviewed in order to determine if corrective action is required. A grace period of 90 days may be applied to scheduled audits and annual evaluations of supplier performance. When the grace period is used, the next scheduled date for the activity shall be based on the activity schedule date and not on the date the activity was actually performed. If the activity is performed early, the next schedule date shall be based on the date the activity was actually performed.</u></p> <p>The Quality Assurance Manual shall as a minimum describe the following: 1) Audits shall be performed in accordance with written procedures or checklists by qualified audit personnel not having direct responsibility in areas being audited; 2) Audit personnel shall be qualified in accordance with the current requirements of NQA-1; 3) Audit results shall be documented and reviewed by responsible management for adequacy and effectiveness of the quality assurance program; 4) Requirements for follow-up actions for any deficiencies noted during the audit; 5) Audit records and applicable documentation shall be made available to the Authorized Nuclear Inspection Agency for review; and 6) Audit records shall include as a minimum: a. written procedures; b. checklists; c. reports; d. written replies; and e. completion of corrective actions. Performance of Authorized Inspection Agency audits required by ASME QAI-1 and NB-263, RCI-1 shall be addressed in the Quality Assurance Manual.</p>
<p>Part 3, 1.6.8.2 s) s) Audits A comprehensive system of planned and periodic audits of the "NR" Certificate Holder's Quality Assurance Program shall be performed. Audit frequency shall be specified in the organization's Quality Assurance Manual. Audits shall be conducted at least annually (within 12 months) to verify compliance with Quality Assurance Program requirements, performance criteria and to determine the effectiveness of the Quality Assurance Program. When no code work has been performed, the required annual audit need only include those areas of responsibility required to be continually maintained such as training,</p>	<p>Part 3, 1.6.8.2 s) s) Audits A comprehensive system of planned and periodic audits of the "NR" Certificate Holder's Quality Assurance Program shall be performed. Audit frequency shall be specified in the organization's Quality Assurance Manual. Audits shall be conducted at least annually (within 12 months) to verify compliance with Quality Assurance Program requirements, performance criteria and to determine the effectiveness of the Quality Assurance Program. When no code work has been performed, the required annual audit need only include those areas of responsibility required to be continually maintained such as training,</p>

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<p>audits, organizational structure, Quality Assurance Program revisions, etc. The Quality Assurance Manual shall as a minimum describe the following:</p> <ol style="list-style-type: none"> 1) Audits shall be performed in accordance with written procedures or checklists by qualified audit personnel not having direct responsibility in areas being audited; 2) Audit personnel shall be qualified in accordance with recognized standards, such as NQA-1; 3) Audit results shall be documented and reviewed by responsible management for adequacy and effectiveness of the quality assurance program; 4) Requirements for follow-up actions for any deficiencies noted during the audit; 5) Audit records and applicable documentation shall be made available to the Authorized Nuclear Inspection Agency for review; 6) Audit records shall include as a minimum: <ol style="list-style-type: none"> a. written procedures; b. checklists; c. reports; d. written replies; and e. completion of corrective actions. <p>Performance of Authorized Inspection Agency audits required by ASME QAI-1 and NB-263, RCI-1 shall be addressed in the Quality Assurance Manual.</p>	<p>audits, organizational structure, Quality Assurance Program revisions, etc. The Quality Assurance Manual shall as a minimum describe the following:</p> <ol style="list-style-type: none"> 1) Audits shall be performed in accordance with written procedures or checklists by qualified audit personnel not having direct responsibility in areas being audited; 2) Audit personnel shall be qualified in accordance with recognized standards, such as NQA-1; 3) Audit results shall be documented and reviewed by responsible management for adequacy and effectiveness of the quality assurance program; 4) Requirements for follow-up actions for any deficiencies noted during the audit; 5) Audit records and applicable documentation shall be made available to the Authorized Nuclear Inspection Agency for review; 6) Audit records shall include as a minimum: <ol style="list-style-type: none"> a. written procedures; b. checklists; c. reports; d. written replies; and e. completion of corrective actions. <p>Performance of Authorized Inspection Agency audits required by ASME QAI-1 and NB-263, RCI-1 shall be addressed in the Quality Assurance Manual.</p>
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**THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS**

PROPOSED REVISION OR ADDITION

Form "R" Reports, Records, or Documents	Instructions	Minimum Retention Period
d) Administrative record review of the "R" Certificate Holder's administrative processes.	Records supporting completed administrative reviews or audits of procedures or processes required by the "R" Certificate Holder's Quality System Manual, or in combination with the applicable part of the NBIC Part 3, Supplement 6 as it applies to the identified scope listed on the "R" <i>Certificate of Authorization</i> .	Subject to review during the triennial evaluation of the certificate holder's Quality System.

1.6 "NR" PROGRAM REQUIREMENTS

1.6.1 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 repair/replacement activities to nuclear items constructed in accordance with the requirements of the ASME Code or other internationally recognized codes or standards for construction or inservice inspection of nuclear facilities.
- b) For administrative requirements to obtain or renew a National Board "NR" *Certificate of Authorization* and the "NR" Symbol Stamp, refer to National Board Procedure NB-417, *Accreditation of "NR" Repair Organizations*.

1.6.2 GENERAL

- a) An organization applying for an "NR" *Certificate of Authorization* shall have a written Quality Assurance Program (QAP) that details the specific requirements to be met based on the intended category of activities selected by that organization as described below and shown in Table 1.6.2. Controls used, including electronic capabilities, in the Quality Assurance Program shall be documented in a Quality Assurance Manual (QAM). Controls required to be included within the QAM shall include who, what, when, where, why and how with an understanding that the how can be a reference to an implementation procedure or instruction. Quality activities to be described in the Quality Assurance Program are identified in Section 1.6.5 of this part. Applicants shall address all requirements in their Quality Assurance Program based on the category of activity and scope of work to be performed (organization's capabilities) to which certification is requested.

1) Category 1

Any ASME Section III Code certified item or system requiring repair/replacement activities irrespective of physical location and installation status prior to fuel loading.

2) Category 2

After fuel loading, any item or system under the scope of ASME Section XI requiring repair/replacement activities irrespective of physical location. Based on regulatory or jurisdictional acceptance, Category 2 may be used prior to fuel loading.

3) Category 3

Items other than those covered by Category 1 or Category 2, requiring repair/replacement activities irrespective of physical location, installation status and fuel loading.

REVISE TO READ: ASME
Section XI Division 1

- b) Repair organizations performing repairs of pressure relief devices in nuclear service shall meet the additional requirements of NBIC Part 4, Section 4 and NBIC Part 4, Supplement 6.

TABLE 1.6.2**“NR” QUALITY ASSURANCE PROGRAM (QAP) REQUIREMENTS**

Category of Activity	Owner	Organizations other than Owner
Category 1	10 CFR Part 50 Appendix B ^{1,2} and ASME Section III NCA-4000 & NQA-1 Part 1	10 CFR Part 50 Appendix B ^{1,2} and ASME Section III NCA-4000 & NQA-1 Part 1
Category 2	10 CFR Part 50, Appendix B ^{1,2} or NQA-1 ³ , Part 1 and ASME Section XI IWA-4142	10 CFR Part 50, Appendix B ^{1,2} supplemented as needed with Owner’s QA program; or ASME NQA-1 ³ , Part 1; or ASME Section III, NCA-4000
Category 3	ASME NQA-1, Part 1, or Specify the Standard to which certification is desired	ASME NQA-1 ³ , Part 1, or Specify the Standard to which certification is desired
Note 1: Code of Federal Regulations (CFR) – rules and regulations published by the executive departments and agencies of the federal government of the United States.		
Note 2: 10 CFR 50 Appendix B – Title 10 of the Code of Federal Regulations Part 50 Appendix B describes the quality assurance criteria for nuclear plants and fuel reprocessing plants.		
Note 3: The Edition (and Addenda, as applicable) of NQA-1 to be utilized shall be the latest endorsed by the Regulatory Authority, or as specified in the Owner’s QA Program description reviewed and approved by the Regulatory Authority.		

1.6.2.1 DEFINITIONS

The NBIC terms and definitions shall be supplemented, as applicable, by the terms and definitions of ASME Section III, Section XI, NQA-1, or other standards specified by the Regulatory Authority.

The following terms are as defined in the NBIC Glossary of Terms Section 9:

- Authorized Inspection Agency
- Authorized Nuclear Inspection Agency
- Jurisdiction
- “NR” Certificate Holder

TABLE 1.6.2.1
ACRONYMS

ASME	American Society of Mechanical Engineers
Applicant	An Organization applying for "NR" <i>Certificate of Authorization</i> (new or renewal)
CFR	Code of Federal Regulations
Code	ASME Code of Construction, Section III, Division I, (NCA, NB, NC, ND, NE, NF, NG, and NH) or ASME Section XI Rules for Inservice Inspection of Nuclear Power Plant Components as applicable.
Jurisdiction	Revise to read: ASME Section XI Division 1 National Board of Boiler and Pressure Vessel Inspectors
NB	National Board of Boiler and Pressure Vessel Inspectors
NBIC	National Board Inspection Code
NB-263, RCI-1	Rules for Commissioned Inspectors
NCA	ASME Section III, Subsection NCA, General Requirements for Division 1 and Division 2
NQA-1*	ASME Quality Assurance Requirements for Nuclear Facility Applications
NR	Nuclear Repair
"NR" CH	"NR" Certificate Holder
QA	Quality Assurance
QAI-1	ASME Qualifications for Authorized Inspection
QAM	Quality Assurance Manual
QAP	Quality Assurance Program
QC	Quality Control
WA	ASME Section III, Division 3, Subsection WA, General Requirements

Note:

* Edition(s) endorsed by the Regulatory Authority

1.6.3 PREREQUISITES FOR ISSUING A NATIONAL BOARD "NR" CERTIFICATE OF AUTHORIZATION (21)

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

- a) Have and maintain an inspection agreement with an Authorized Nuclear Inspection Agency accepted in accordance with NB-360, *National Board Acceptance of Authorized Inspection Agencies (AIA) Accredited by the American Society of Mechanical Engineers (ASME)*, with accreditation to perform repair and alteration acceptance inspections.
- b) Have a written Quality Assurance Program which includes the quality assurance manual and any supporting procedures, instructions and specifications required to comply with this section. The Quality Assurance Program shall address all controls for the intended category and scope of activities requested.
- c) Have a current edition of the NBIC.

- d) Have available ASME Section XI, the code of construction and referenced code sections and standards appropriate for the scope of work to be performed. ASME Section XI and codes of construction (Editions/Addenda) shall meet the requirements of the Regulatory Authority and the owner.

Revise to read: ASME
Section XI Division 1

MAINTAINING OR RENEWING A NATIONAL BOARD "NR" CERTIFICATE OF AUTHORIZATION

Revise to read: ASME
Section XI Division 1

- a) Before an "NR" *Certificate of Authorization* will be issued or renewed, the applicant must have the Quality Assurance Program and the implementation of the program reviewed and found acceptable by representatives of the National Board, the Jurisdiction, and the Authorized Nuclear Inspection Agency. The Jurisdiction will be the National Board Member Jurisdiction in which the applicant is located or the location where the Quality Assurance Program is demonstrated/implemented. At the request of the Jurisdiction, or where there is no National Board Member Jurisdiction, the National Board representative shall act on behalf of the Jurisdiction. The implementation of the Quality Assurance Program shall be satisfactorily demonstrated by the organization. Demonstration of implementation shall meet the most stringent (classification) code requirements for the scope and category of work to be specified on the *Certificate of Authorization* or as requested by the applicant.
- b) If the applicant is an ASME "N" type *Certificate of Authorization* holder, has satisfactorily demonstrated within the last twelve (12) months the implementation of their Quality Assurance Program and can provide documentation that the organization is capable of implementing its Quality Assurance Program as being in compliance with this section, a further hardware verification implementation may not be necessary.
- c) The Regulatory Authority or Jurisdiction, upon request to the National Board, may attend the survey process for an "NR" *Certificate of Authorization* to be issued or renewed.
- d) The "NR" *Certificate of Authorization* holder shall be subject to an audit annually by the Authorized Nuclear Inspection Agency to ensure compliance with the Quality Assurance Program.

1.6.5 QUALITY ASSURANCE PROGRAM

- a) An applicant or a holder of a National Board "NR" *Certificate of Authorization* ("NR" Certificate Holder) shall have and maintain a written Quality Assurance Program. The Quality Assurance Program shall satisfactorily meet the requirements of this section, and Jurisdictional and Regulatory requirements as applicable. The Quality Assurance Program may be brief or voluminous, depending on the circumstances. It shall be treated confidentially by the National Board and available for review by the Survey Team.
- b) Each applicant or "NR" Certificate Holder is responsible for establishing and executing a Quality Assurance Program. The applicant or "NR" Certificate Holder may subcontract activities needed to implement the Quality Assurance Program, as limited by ASME Section III and XI, but responsibility for adherence to the Quality Assurance Program remains with the Applicant or "NR" Certificate Holder.
- c) These rules set forth the requirements for planning, managing, and implementing the Quality Assurance Program to control and ensure quality is performed and maintained during repair/replacement activities of components, items, parts, and systems for nuclear facilities. 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*. Rules identified in subsections 1.6.6, 1.6.7 and 1.6.8 of this section detail the Quality Assurance Program requirements for each category of activity. These rules are established to meet and follow the requirements specified in NBIC Part 3, Table 1.6.2 of this section.

Revise to read: ASME
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1.6.6 QUALITY ASSURANCE PROGRAM REQUIREMENTS FOR CATEGORY 1 ACTIVITIES

1.6.6.1 SCOPE

Owners or organizations other than owners shall have a written Quality Assurance Program meeting the criteria specified in NBIC Part 3, Table 1.6.2 for Category 1 activities. The following quality elements shall be specified and described within the QAM.

1.6.6.2 QUALITY PROGRAM ELEMENTS

(21)

a) Organization

The provisions identified in ASME NQA-1, Part 1, Requirement 1, shall apply in its entirety. The authority and responsibility for individuals involved in activities affecting quality shall be clearly established and documented throughout the Quality Assurance Program and identified on a functional organizational chart contained within the QA Manual.

b) Statement of Policy and Authority shall:

- 1) identify the titles of individuals who have the authority and responsibility charged with ensuring the quality program is implemented as described;
- 2) confirm their freedom in the organization to identify quality problems and to initiate, recommend and provide solutions;
- 3) include a statement that if there is a disagreement in the implementation of the quality assurance program, the matter is to be referred for resolution to a higher authority and shall be resolved in a manner that will not conflict with code, jurisdiction/regulatory authority or quality program requirements;
- 4) include a statement of the full support of management; and
- 5) be dated and signed by a senior management official within the organization.

c) Quality Assurance Program (QAP)

The provisions identified in ASME NQA-1, Part 1, Requirement 2, shall apply, except paragraph 301. Additionally, the following criteria shall be used when developing and maintaining the QAP.

- 1) The Quality Assurance Program as used in this section shall include a written Quality Assurance Manual, with supporting procedures and instructions used to meet all the requirements of this Section.
- 2) Qualification of non-destructive examination personnel shall be as required by the code of construction or as specified in the owner's Quality Assurance Program.
- 3) The "NR" Certificate Holder shall be responsible for advising the Authorized Nuclear Inspection Agency of proposed changes to the Quality Assurance Manual to obtain acceptance of the Authorized Nuclear Inspector Supervisor before putting such changes into effect. The "NR" Certificate Holder shall make a current controlled copy of the Quality Assurance Manual available to the Authorized Nuclear Inspector and Authorized Nuclear Inspector Supervisor. The Certificate Holder shall be responsible for notifying the Authorized Nuclear Inspector of QAM changes, including evidence of acceptance by the Authorized Nuclear Inspector Supervisor.
- 4) The Quality Assurance Manual need not be in the same format or sequential arrangement as the requirements in these rules as long as all applicable requirements have been covered.

- 5) The "NR" Certificate Holder shall implement and maintain a program for qualification, indoctrination, training and maintaining proficiency of personnel involved with quality functions, including personnel of subcontracted services.
 - 6) The "NR" Certificate Holder shall address in their QAM the requirements for interfacing with the owner specified in NBIC Part 3, 1.6.9.
 - 7) Specified controls including responsibilities for personnel shall be described in the quality assurance program.
- d) Design Control

The provisions identified in ASME NQA-1, Part 1, Requirement 3, shall apply except Paragraph 601. The following additional requirements shall be considered when applicable:

- 1) The "NR" Certificate Holder shall establish measures to ensure applicable requirements of the owner's design specifications, owner's requirements, and code of construction requirements are correctly translated into drawings, specifications, procedures and instructions.
 - 2) All design documents, including revisions, shall be verified by the "NR" Certificate Holder to be correct and adequate in accordance with the owners requirements.
 - 3) Repair/replacement plans shall be completed prior to performing any work, inspections, examinations or testing; however repair/replacement plans are not required for the design phase of a repair/replacement activity including activities that require design only (except rerating).
 - 4) The repair/replacement plan (see NBIC Part 3, Table 1.6.9) shall identify any applicable Code Edition/Addenda and Code Cases, owner's requirements and the Construction Code Edition/Addenda utilized to perform the work.
 - 5) The repair/replacement plan shall identify expected life of the item when less than the intended life as specified in the owner's design specification.
 - 6) The "NR" Certificate Holder shall ensure that specifications, drawings, procedures and instructions do not conflict with the owner's design specifications. A system must be described in the Quality Assurance Manual to resolve or eliminate such conflicts. Resolution shall consider the Design Specification Requirements, as well as, the owner requirements, Jurisdictional and Regulatory Authority Requirements as applicable.
- e) Procurement Document Control

The provisions identified in ASME NQA-1, Part 1, Requirement 4, shall apply. Procurement documents shall require suppliers to provide a Quality Assurance Program consistent with the applicable requirements of ASME Section III and this section.

- f) Instructions, Procedures, and Drawings

The provisions identified in ASME NQA-1, Part 1, Requirement 5, shall apply. All activities affecting quality shall be prescribed by documented instructions, procedures or drawings appropriate for the scope of work to be performed. Instructions, procedures or drawings shall describe acceptance criteria to ensure quality activities are accomplished.

- g) Document Control

The provisions identified in ASME NQA-1, Part 1, Requirement 6, shall apply. The Quality Assurance Program shall detail measures to control the preparation, review, issuance, use, approval and distribution of all documents related to quality as identified in the applicants Quality Assurance Program. Revisions shall meet the same requirements as the originals unless the applicant specifies other

measures within their program. Measures shall ensure the latest approved documents represent the repair/replacement activities performed.

h) Control of Purchased Material, Items, and Services

The provisions identified in ASME NQA-1, Part 1, Requirement 7 shall apply, except:

- 1) Procurement of Authorized Inspection Agency services is not applicable as specified in paragraph 507.
- 2) The decision to perform bid evaluation as described in paragraph 300 is the responsibility of the "NR" Certificate Holder.
- 3) For Certificates of Conformance specified in paragraph 503 changes, waivers, or deviations including resolution of non-conformances must meet the requirements of ASME Section III and this Section.
- 4) The provisions identified in ASME NQA-1, Part 1, Requirement 7, paragraph 700 are not applicable to this section.
- 5) Documentary evidence for items shall conform to the requirements of ASME Section III, NCA and this Section. Materials shall meet the material certification requirements as specified in ASME Section III, NCA-3800 or NCA-4470 as applicable. Documented evidence for ASME stamped items is satisfied by a Manufacturer's Data Report. Utilization of unqualified source material shall meet the requirements of ASME Section III, NCA-4255.5.
- 6) The "NR" Certificate Holder may obtain items from an owner, provided the owner provides the required documentation and items are identified to meet Code and the Certificate Holders Quality Assurance Program. The "NR" Certificate Holder shall not be required to audit the owner as an approved supplier, provided the items used are exclusively for the owner and the owner procured and controlled the items under the owner's Quality Assurance Program.
- 7) The Quality Assurance Program shall establish controls to ensure all purchased materials, items, and services conform to the requirements of the owner's design specifications and the code of construction Edition/Addenda used to perform the work. Materials shall meet the requirements specified in ASME Section III, NCA-3800 or NCA-4470 as applicable.

i) Identification and Control of Items

The provisions identified in ASME NQA-1, Part 1, Requirement 8, shall apply and include the following additional requirements:

- 1) Controls shall assure only correct and acceptable items, parts and components are used or installed when performing repair/replacement activities.
- 2) Welding, brazing and fusing materials shall be identified and controlled.
- 3) Required Certified Material Test Reports and Certificates of Conformance shall be received, traceable to the items, reviewed to comply with the material specification and found acceptable.
- 4) The "NR" Certificate Holder shall utilize checklists to identify required characteristics using accepted procedures, compliance with records received, results of examinations and tests performed, range of values when required, and spaces for inclusion of document numbers and revision levels, signatures initials / stamps and dates of examinations or tests performed, verified, and/or witnessed by the "NR" Certificate Holder's qualified Representative and Authorized Nuclear Inspector.

j) Control of Processes

The provisions identified in ASME NQA-1, Part 1, Requirement 9, shall apply. Documents used to control processes shall include spaces for signatures, initials, stamps and dates that activities were performed by the Certificate Holder's representative and the Authorized Nuclear Inspector when the processes conforms to the specified acceptance criteria as listed on drawings, procedures, instructions, specifications or other appropriate documents including revisions.

k) Examinations, Tests, and Inspections

The provisions identified in ASME NQA-1, Part 1, Requirement 10, shall apply, except paragraph 700 for inspections during operations is not required.

- 1) A repair/replacement plan shall be described in the Quality Assurance Manual that addresses required information to perform the work needed for repair/replacement activities. Spaces shall be included for mandatory hold points where witnessing is required by the "NR" Certificate Holder's Qualified Representative, the Authorized Nuclear Inspector or the owner's representative, if required. Work shall not proceed beyond designated mandatory hold points without documented consent as appropriate.
- 2) The following guidance is provided for information to be included within the repair/replacement plan:
 - a. A detailed description of repair/replacement activities to be performed;
 - b. Describe any defects and examination methods used to detect the defects;
 - c. Defect removal method and requirements for identifying reference points;
 - d. Any procedures including revisions utilized; (e.g. welding, brazing, heat treat, examination, testing) and material requirements;
 - e. Required documentation and stamping;
 - f. Acceptance criteria used to verify acceptability; and
 - g. Applicable Code editions/addenda and code cases.
- 3) Repair/Replacement plans and evaluations shall be subject to review by the Jurisdictional and Regulatory Authority when required.

l) Test Control

The provisions identified in ASME NQA-1, Part 1, Requirement 11 shall apply. Testing shall be performed in accordance with written test procedures with acceptance criteria clearly defined. Prerequisites for performing each test to include calibration, equipment, trained personnel, environmental conditions and provisions for data acquisition shall be described. Test results shall be documented and evaluated by qualified personnel.

m) Control of Measuring and Test Equipment

The "NR" Certificate Holder may utilize calibration and test activities performed by subcontractors when surveys and audits are performed. As an alternative to performing a survey and audit for procuring Laboratory Calibration and Test Services, the "NR" Certificate Holder as documented in their Quality Program may accept accreditation of an International Calibration and Test Laboratory Services by the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) provided this alternative method is described in the "NR" Certificate Holder's Quality Program and the following requirements are met:

- 1) The "NR" Certificate Holder shall review and document verification that the supplier of calibration or test services was accredited by an accredited body recognized by the ILAC MRA encompassing ISO/IEC-17025:2005 or 2017, "General Requirements for the Competence of Testing and Calibration Laboratories".
 - 2) For procurement of calibration services, the published scope of accreditation for the calibration laboratory covers the needed measurement parameters, ranges and uncertainties.
 - 3) For procurement of testing services, the published scope of accreditation for the test laboratory covers the needed testing services including test methodology and tolerances/uncertainty.
 - 4) The "NR" Certificate Holder's purchase documents shall include:
 - a. Service provided shall be in accordance with their accredited ISO/IEC-17025:2005 or 2017 program and scope of accreditation;
 - b. As-found calibration data shall be reported in the certificate of calibration when items are found to be out-of-calibration;
 - c. Standards used to perform calibration shall be identified in the certificate of calibration;
 - d. Notification of any condition that adversely impacts the laboratories ability to maintain the scope of accreditation;
 - e. Any additional technical and/or quality requirements, as necessary, which may include tolerances, accuracies, ranges, and standards; and
 - f. Service suppliers shall not subcontract services to any other supplier.
 - 5) The "NR" Certificate Holder shall upon receipt inspection, validate that the laboratory documentation certifies that:
 - a. Services provided by the laboratory has been performed in accordance with their ISO/IEC-17025:2005 or 2017 program and performed within their scope; and
 - b. Purchase order requirements have been met.
- n) Handling, Storage, and Shipping
- The provisions of ASME NQA-1, Part 1, and Requirement 13 shall apply.
- o) Quality Assurance Records
- The provisions identified in ASME NQA-1, Part 1, Requirement 17, shall apply, except Paragraphs 400, 500, and 600 are not applicable. The following requirements shall be followed:
- 1) Records shall be identifiable and retrievable;
 - 2) Records shall be retained consistent with the owners requirements for duration, location and assigned responsibility;
 - 3) Forms NR-1 and NVR-1 as applicable shall be completed by the "NR" Certificate Holder upon completion of all repair/replacement activities. Completion of forms, registrations and stamping of the "NR" symbol stamp shall meet the requirements of NBIC Part 3, Section 5. A log shall be maintained in accordance with NBIC Part 3, 5.6;
 - 4) Lifetime and non-permanent records shall be as specified in ASME Section III, NCA-4134, Tables NCA-4134.17-1, and 4134.17-2;

- 5) Radiographs (digital images or film) may be reproduced provided that:
 - a. The process shall be subject to owner's approval;
 - b. The "NR" Certificate Holder is responsible for the process used and shall include a system for controlling and monitoring the accuracy so that the image will provide the same information as the original; and
 - c. Procedures shall contain requirements for exposure scanning, focusing, contrast, resolution and distinguishing film artifacts as applicable for reproduced images.
- 6) Records shall be classified, maintained and indexed and shall be accessible to the owner, owner's designee, and the Authorized Nuclear Inspector; and
- 7) When the "NR" Certificate Holder is the owner, designated records and reports received by the owner, shall be filed and maintained in a manner to allow access by the Authorized Nuclear Inspector. Suitable protection from deterioration and damage shall be provided by the owner. All records and reports shall be retained as specified in the owners QAP for the lifetime of the component or system.

p) Corrective Action

The provisions identified in ASME NQA-1, Part 1, Requirement 16 shall apply.

- 1) Measures shall be established to ensure that conditions adverse to quality such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and other non-conformances are promptly identified and corrected.
- 2) In the case of significant conditions adverse to quality, the measures shall also ensure that the cause of these conditions be determined and corrected to preclude repetition. The identification of significant conditions adverse to quality, the cause, condition, and the corrective action taken shall be documented and reported to the appropriate levels of management.
- 3) These requirements shall also extend to the performance of subcontractors' corrective action measures.

q) Inspection or Test Status (not to include operating status)

The provisions identified in ASME NQA-1, Part 1, Requirement 14 shall apply. Measures shall be established to indicate inspection and test status of parts, items, or components during the repair/replacement activity. The system used shall provide positive identification of the part, item, or component by means of stamps, labels, routing cards, or other acceptable methods. The system shall include any procedures or instructions necessary to achieve compliance. Procedures shall be provided for the identification of acceptable and unacceptable items and for the control of status indicators. The authority for application and removal of status indicators shall also be specified.

r) Nonconforming Materials or Items

The provisions identified in ASME NQA-1, Part 1, Requirement 15 shall apply. Measures shall be established to control materials or items that do not conform to requirements to prevent their inadvertent use, including measures to identify and control the proper installation of items and to preclude nonconformance with the requirements of these rules. These measures shall include procedures for identification, documentation, segregation when practical, and disposition. Nonconforming items shall be reviewed for acceptance, rejection, or repair in accordance with documented procedures. The responsibility and authority for the disposition of nonconforming items shall be defined. Repaired or replaced items shall be re-examined in accordance with the applicable procedures. Measures that control further processing of a nonconforming or defective item, pending a decision on its disposition, shall be established and maintained. Ultimate disposition of nonconforming items shall be documented.

s) Audits

The provisions identified in ASME NQA-1, Part 1, and Requirement 18 shall apply and shall include the following:

A comprehensive system of planned and periodic audits of the “NR” Certificate Holder’s Quality Assurance Program shall be performed. Audit frequency shall be specified in the organization’s Quality Assurance Manual. Audits shall be conducted at least annually (within 12 months) for any ongoing code activity to verify compliance with Quality Assurance Program requirements, performance criteria and to determine the effectiveness of the Quality Assurance Program. When no code work has been performed, the required annual audit need only include those areas of responsibility required to be continually maintained such as training, audits, organizational structure, and Quality Assurance Program revisions. The Quality Assurance Manual shall as a minimum describe the following:

- 1) Audits shall be performed in accordance with written procedures or checklists by qualified audit personnel not having direct responsibility in areas being audited;
- 2) Audit personnel shall be qualified in accordance with the current requirements of ASME NQA-1;
- 3) Audit results shall be documented and reviewed by responsible management for adequacy and effectiveness of the quality assurance program;
- 4) Requirements for follow-up actions shall be specified for any deficiencies noted during the audit;
- 5) Audit records and applicable documentation shall be made available to the Authorized Nuclear Inspection Agency for review; and
- 6) Audit records shall include as a minimum;
 - a. Written procedures;
 - b. Checklists;
 - c. Reports;
 - d. Written replies; and
 - e. Completion of corrective actions.

Performance of Authorized Inspection Agency audits required by ASME QAI-1 and NB-263, RCI-1 shall be addressed in the Quality Assurance Manual.

t) Authorized Nuclear Inspector

Measures shall be taken to reference the commissioned rules for National Board Authorized Nuclear Inspector, in accordance with NB-263, RCI-1 *Rules for Commissioned Inspectors*. The “NR” Certificate Holder shall ensure that the latest documents including the Quality Assurance Manual, procedures and instructions are made available to the Authorized Nuclear Inspector. The Authorized Nuclear Inspector shall be consulted prior to the issuance of a repair/replacement plan by the “NR” Certificate Holder in order that the Authorized Nuclear Inspector may select any in-process inspection or hold points when performing repair/replacement activities. The “NR” Certificate Holder shall keep the Authorized Nuclear Inspector informed of progress of the repair/replacement activity so that inspections may be performed. The Authorized Nuclear Inspector shall not sign Form NR-1 or Form NVR-1, as applicable, unless satisfied that all work carried out is in accordance with this Section. The Authorized Nuclear Inspector and Authorized Nuclear Inspector Supervisor shall have access to areas where work is being performed including subcontractors facilities in order to perform their required duties. The ANI shall be involved in dispositions and verification for non-conformances and corrective actions involving quality or code requirements.

u) Exhibits

Forms and exhibits referenced in the Quality Assurance Manual shall be explained in the text and included as part of the referencing document or as an appendix to the Quality Assurance Manual. Forms shall be controlled and identified to show the latest approved revision, name, and other corresponding references as stated in the Quality Assurance Manual.

1.6.7 QUALITY ASSURANCE PROGRAM REQUIREMENTS FOR CATEGORY 2 ACTIVITIES

1.6.7.1 SCOPE

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Organizations other than owners shall have a written Quality Assurance Program meeting one of the criteria specified in Table 1.6.2 of this section. Organizations applying for a Category 2 "NR" *Certificate of Authorization* shall specify in their written Quality Assurance Program which program criteria their Quality Assurance Program follows. Owners shall have a Quality Assurance Program meeting the requirements of either 10 CFR 50, Appendix B or NQA-1 Part 1 and shall include the additional requirements specified in ASME Section XI, IWA-4142 when applicable. Organizations other than the owner shall comply with requirements specified in either 10 CFR 50, Appendix B supplemented as needed with the owner's QAP; NQA-1 Part 1; or NCA-4000. Organizations may elect to choose to follow all the rules specified in one of the allowed QAP criteria specified in Table 1.6.2 or they may elect to combine or supplement requirements from other specified QAP's. When organizations elect to combine QAP requirements, it shall be clearly specified and understood in the QAM which QAP requirement is being followed for each activity specified in their QAM. The following quality elements shall be specified and described within the QAM.

(21) 1.6.7.2 QUALITY PROGRAM ELEMENTS

a) Organization

The authority and responsibility for individuals involved in activities affecting quality shall be clearly established and documented throughout the Quality Assurance Program and identified on a functional organizational chart contained within the QA Manual.

b) Statement of Policy and Authority shall:

- 1) identify the titles of individuals who have the authority and responsibility charged with ensuring the quality program is implemented as described;
- 2) confirm their freedom in the organization to identify quality problems and to initiate, recommend and provide solutions;
- 3) include a statement that if there is a disagreement in the implementation of the quality assurance program, the matter is to be referred for resolution to a higher authority and shall be resolved in a manner that will not conflict with code, jurisdiction/regulatory authority or quality program requirements;
- 4) include a statement of the full support of management; and
- 5) be dated and signed by a senior management official within the organization.

c) Quality Assurance Program (QAP)

- 1) Qualification of non-destructive examination personnel shall be as required by the code or as specified in the owner's Quality Assurance Program.

- 2) Prior to returning an item to service, the owner shall evaluate the suitability of the item subjected to the repair/replacement activity. Corrective actions shall be taken when an item is determined to be deficient or does not satisfy the requirements of this section.
 - 3) The "NR" Certificate Holder shall provide a copy of the Quality Assurance Manual to the owner for review and acceptance. The "NR" Certificate Holder shall make a current controlled copy of the Quality Assurance Manual available to the Authorized Nuclear Inspector and Authorized Nuclear Inspector Supervisor. When a repair/replacement activity is split between the owner and an "NR" Certificate Holder, each Quality Assurance Program shall comply with this section for their respective activities. The owner shall establish interfaces for assuring this section is met for the two Quality Assurance Programs.
 - 4) The "NR" Certificate Holder shall be responsible for advising the Authorized Nuclear Inspection Agency of proposed changes to the Quality Assurance Manual to obtain acceptance of the Authorized Nuclear Inspector Supervisor before putting such changes into effect. The Certificate Holder shall be responsible for notifying the Authorized Nuclear Inspector of QAM changes, including evidence of acceptance by the Authorized Nuclear Inspector Supervisor.
 - 5) The Quality Assurance Manual need not be in the same format or sequential arrangement as the requirements in these rules as long as all applicable requirements have been covered.
 - 6) The "NR" Certificate Holder shall implement and maintain a program for qualification, indoctrination, training and maintaining proficiency of personnel involved with quality functions, including personnel of subcontracted services.
 - 7) The "NR" Certificate Holder shall address in their QAM the requirements for interfacing with the owner specified in 1.6.9 of this section.
 - 8) Specified controls including responsibilities for personnel shall be described in the quality assurance program.
- d) Design Control
- 1) Repair/replacement activities, code edition and addenda used shall correspond with the owner's Inservice Inspection Program unless later code editions and addenda have been accepted by the owner, the Enforcement and/or the Regulatory authority having jurisdiction at the plant site.
 - 2) The repair/replacement plan (see NBIC Part 3, 1.6.7.2 j)) shall identify expected life of the item when less than the intended life as specified in the owner's requirements and the owner shall be advised of the condition.
 - 3) "NR" Certificate Holder shall assure that specifications, drawings, procedures and instructions do not conflict with the owner's requirements. A system must be described in the Quality Assurance Manual to resolve or eliminate such conflicts. Resolution shall consider the design specification requirements, as well as, the owner Requirements, Jurisdictional and Regulatory requirements as applicable.
 - 4) ASME Section XI establishes that the owner is responsible for design in connection with repair/replacement activities. The "NR" Certificate Holder must ensure that the design specification, drawings, or other specifications or instructions furnished by the owner satisfy the code edition and addenda of the owner's requirements. To satisfy this requirement, the "NR" Certificate Holder shall establish requirements that correctly incorporate the owner's requirements into their specifications, drawings, procedures, and instructions, which may be necessary to carry out the work. The "NR" Certificate Holder's system shall include provisions to ensure that the appropriate quality standards are specified and included in all quality records. These records shall be reviewed for compliance with the owner's requirements and the requirements of ASME Section XI.

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e) Procurement Document Control

Procurement documents shall require suppliers to provide a Quality Assurance Program consistent with the applicable requirements of ASME Section III, NCA and this section. Documents for procurement of materials, items, and subcontracted services shall include requirements to the extent necessary to ensure compliance with the owner's requirements and IWA-4000 of ASME Section XI. To the extent necessary, procurement documents shall require suppliers to maintain a Quality Assurance Program consistent with the applicable requirements of the edition and addenda of the code of construction to which the items are constructed. Measures shall be established to ensure that all purchased material, items, and services conform to these requirements.

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f) Instructions, Procedures, and Drawings

Repair/replacement plans and any verification of acceptability (evaluations) shall be subject to review by Jurisdiction and Regulatory Authorities having jurisdiction at the plant site. Activities affecting quality shall be prescribed by documented instructions, procedures or drawings of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings shall include appropriate quantitative and qualitative criteria for determining that activities affecting quality have been satisfactorily accomplished. The "NR" Certificate Holder shall maintain a written description of procedures, instructions, or drawings used by the organization for control of quality and examination requirements detailing the implementation of the Quality Assurance Program requirements. Copies of these procedures shall be readily available to the Authorized Nuclear Inspector and Authorized Nuclear Inservice Inspector, as applicable.

g) Document Control

The program shall include measures to control the issuance, use, and disposition of documents, such as specifications, instructions, procedures, and drawings, including changes thereto. These measures shall ensure that the latest applicable documents, including changes, are reviewed for adequacy and approved for release by authorized personnel and distributed for use at the location where the prescribed activity is performed.

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h) Control of Purchased Material, Items, and Services

Purchase of materials and small products shall meet the requirements specified in ASME Section XI, IWA 4142. Measures shall be established to ensure that purchased material, items, and services conform to the owner's requirements and applicable edition and addenda of the code of construction and ASME Section XI. These measures shall include identification for material traceability. Provisions shall be identified for source evaluation and objective evidence shall be provided evidencing quality standards for material examination upon receipt.

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i) Identification and Control of Items

- 1) Measures shall be established for identification and control of material and items, including partially fabricated assemblies. These measures shall ensure that identification is maintained and traceable, either on the material or component, or on records throughout the repair/replacement activity. These measures shall be designed to prevent the use of incorrect or defective items and those which have not received the required examinations, tests, or inspections.
- 2) Identification for traceability shall be applied using methods and materials that are legible and not detrimental to the component or system involved. Such identification shall be located in areas that will not interfere with the function or quality aspects of the item.
- 3) Certified Material Test Reports shall be identified as required by the applicable material specification in ASME Section II and shall satisfy any additional requirements specified in the original code of construction. The Certified Material Test Report or Certificate of Compliance need not be duplicated for submission with compliance documents when a record of compliance and satisfactory reviews

of the Certified Material Test Report and Certificate of Compliance is provided. Quality documents shall provide a record that the Certified Material Test Report and Certificate of Compliance have been received, reviewed, and found acceptable. When the "NR" Certificate Holder authorizes a subcontracted organization to perform examinations and tests in accordance with the original code of construction, the "NR" Certificate Holder shall certify compliance either on a Certified Material Test Report or Certificate of Compliance that the material satisfies the original code of construction requirements.

j) Control of Processes

- 1) The "NR" Certificate Holder shall operate under a controlled system such as process sheets, checklists, travelers, plans or equivalent procedures. Measures shall be established to ensure that processes such as welding, nondestructive examination, and heat treating are controlled in accordance with the rules of the applicable section of the ASME Code and are accomplished by qualified personnel using qualified procedures.
- 2) Process sheets, checklists, travelers, or equivalent documentation shall be prepared, including the document numbers and revisions to which the process conforms with space provided for reporting results of completion of specific operations at checkpoints of repair/replacement activities.

k) Examinations, Tests, and Inspections

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- 1) A repair/replacement plan shall be prepared in accordance with the Quality Assurance Program whenever repair/replacement activities are performed. As a minimum, the repair/replacement plan shall include the requirements specified in ASME Section XI, IWA-4150.
- 2) In-process and final examinations and tests shall be established to ensure conformance with specifications, drawings, instructions, and procedures which incorporate or reference the requirements and acceptance criteria contained in applicable design documents. Inspection, test and examination activities to verify the quality of work shall be performed by persons other than those who performed the activity being examined. Such persons shall not report directly to the immediate supervisors responsible for the work being examined.
- 3) Process sheets, travelers, or checklists shall be prepared, including the document numbers and revision to which the examination or test is to be performed, with space provided for recording results.
- 4) Mandatory hold/inspection points at which witnessing is required by the "NR" Certificate Holder's representative or the Authorized Nuclear Inspector/Authorized Nuclear Inservice Inspector shall be indicated in the controlling documents. Work shall not proceed beyond mandatory hold/inspection points without the consent of the "NR" Certificate Holder's representative or the Authorized Nuclear Inspector/Authorized Nuclear Inservice Inspector, as applicable.

l) Test Control

- 1) Testing shall be performed in accordance with the owner's written test procedures or procedures acceptable to the owner, that incorporate or reference the requirements and acceptance criteria contained in applicable design documents.
- 2) Test procedures shall include provisions for ensuring that prerequisites for the given test have been met, that adequate instrumentation is available and used, and that necessary monitoring is performed. Prerequisites may include calibrated instrumentation, appropriate equipment, trained personnel, condition of test equipment, the item to be tested, suitable environmental conditions, and provisions for data acquisition.
- 3) Test results shall be documented and evaluated to ensure that test requirements have been satisfied.

m) Control of Measuring and Test Equipment

The "NR" Certificate Holder may utilize calibration and test activities performed by subcontractors when surveys and audits are performed. As an alternative to performing a survey and audit for procuring Laboratory Calibration and Test Services, the "NR" Certificate Holder as documented in their Quality Program may accept accreditation of an International Calibration and Test Laboratory Services by the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) provided this alternative method is described in the "NR" Certificate Holder's Quality Program and the following requirements are met:

- 1) The "NR" Certificate Holder shall review and document verification that the supplier of calibration or test services was accredited by an accredited body recognized by the ILAC MRA encompassing ISO/IEC-17025:2005 or 2017, "General Requirements for the Competence of Testing and Calibration Laboratories";
- 2) For procurement of calibration services, the published scope of accreditation for the calibration laboratory covers the needed measurement parameters, ranges and uncertainties;
- 3) For procurement of testing services, the published scope of accreditation for the test laboratory covers the needed testing services including test methodology and tolerances/uncertainty;
- 4) The "NR" Certificate Holder's purchase documents shall include:
 - a. Service provided shall be in accordance with their accredited ISO/IEC-17025:2005 or 2017 program and scope of accreditation;
 - b. As-found calibration data shall be reported in the certificate of calibration when items are found to be out-of-calibration;
 - c. Standards used to perform calibration shall be identified in the certificate of calibration;
 - d. Notification of any condition that adversely impacts the laboratories ability to maintain the scope of accreditation;
 - e. Any additional technical and/or quality requirements, as necessary, which may include tolerances, accuracies, ranges, and standards; and
 - f. Service suppliers shall not subcontract services to any other supplier.
- 5) The "NR" Certificate Holder shall upon receipt inspection, validate that the laboratory documentation certifies that:
 - a. Services provided by the laboratory has been performed in accordance with their ISO/IEC-17025:2005 or 2017 program and performed within their scope; and
 - b. Purchase order requirements have been met.

n) Handling, Storage, and Shipping

Measures and controls shall be established to maintain quality requirements for handling, storage, and shipping of parts, materials, items, and components.

o) Quality Assurance Records

Revise to read: ASME
Section XI Division 1

Documentation, reports and records shall be in accordance with ~~ASME~~ Section XI, IWA-6000.

- 1) The owner is responsible for designating records to be maintained. Measures shall be established for the "NR" Certificate Holder to maintain these records [see NBIC Part 3, 1.6.7.2.o) 2)] required for Quality Assurance of repair/replacement activities. These shall include documents such as records

of materials, manufacturing, examination, and test data taken before and during repair/replacement activity. Procedures, specifications, and drawings used shall be fully identified by pertinent material or item identification numbers, revision numbers, and issue dates. The records shall also include related data such as personnel qualification, procedures, equipment, and related repairs. The "NR" Certificate Holder shall take such steps as may be required to provide suitable protection from deterioration and damage for records while in his care. Also, it is required that the "NR" Certificate Holder have a system for correction or amending records that satisfies the owner's requirements. These records may be either the original or a reproduced, legible copy and shall be transferred to the owner upon request.

- 2) Records to be maintained as required in NBIC Part 3, 1.6.7.2 o) 1) above shall include the following, as applicable:
 - a. An index that details the location and individual responsible for maintaining the records;
 - b. Manufacturer's Data Reports, properly executed, for each replacement component, part, appurtenance, piping system, and piping assembly, when required by the design specification or the owner;
 - c. The required as-constructed drawings certified as to correctness;
 - d. Copies of applicable Certified Material Test Reports and Certificates of Compliance;
 - e. As-built sketch(es) including tabulations of materials repair/replacement procedures, and instructions to achieve compliance with ASME Section XI;
 - f. Nondestructive examination reports, including results of examinations, shall identify the name and certification level of personnel interpreting the examination results. Final radiographs shall be included where radiography has been performed. Radiographs may be microfilmed or digitally reproduced in accordance with the requirements listed in ASME Section V, Article 2, Mandatory Appendix VI. The accuracy of the reproduction process shall be verified and monitored for legibility, storage, retrievability and reproduction quality;
 - g. Records of heat treatments may be either the heat treatment chart or a tabulation of heat treatment time and temperature data certified by the "NR" Certificate Holder. Heat treatments performed by the material manufacturer to satisfy requirements of the material specifications may be reported on the Certified Material Test Report; and
 - h. Nonconformance reports shall satisfy IWA-4000 of ASME Section XI and shall be reconciled by the owner prior to certification of the Form NR-1 or NVR-1, as applicable.
- 3) After a repair/replacement activity, all records including audit reports required to verify compliance with the applicable engineering documents and the "NR" Certificate Holder's Quality Assurance Program, shall be maintained at a place mutually agreed upon by the owner and the "NR" Certificate Holder. The "NR" Certificate Holder shall maintain records and reports for a period of five years after completion of the repair/replacement activity.
- 4) When the "NR" Certificate Holder is the owner, designated records and reports received by the owner, shall be filed and maintained in a manner to allow access by the Authorized Nuclear Inservice Inspector. Suitable protection from deterioration and damage shall be provided by the owner. These records and reports shall be retained as specified in the owners QAP for the lifetime of the component or system.
- 5) The original of the completed Form NR-1 or Form NVR-1, as applicable, shall be registered with the National Board and, if required, a copy forwarded to the Jurisdiction where the nuclear power plant is located. A log shall be maintained in accordance with NBIC Part 3, 5.6.

Revise to read: ASME
Section XI Division 1

Revise to read: ASME
Section XI Division 1

p) Corrective Action

- 1) Measures shall be established to ensure that conditions adverse to quality such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and other nonconformances are promptly identified, controlled and corrected.
- 2) In the case of significant conditions adverse to quality, the measures shall also ensure that the cause of these conditions be determined and corrected to preclude repetition. The identification of significant conditions adverse to quality, the cause, condition, and the corrective action taken shall be documented and reported to the appropriate levels of management.
- 3) Corrective action requirements shall also extend to the performance of subcontractors' activities.

q) Inspection or Test Status (not to include operating status)

Measures shall be established to indicate examination and test status of parts, items, or components during the repair/replacement activity. The system used shall provide positive identification of the part, item, or component by means of stamps, labels, routing cards, or other acceptable methods. The system shall include any procedures or instructions necessary to achieve compliance. Also, measures shall be provided for the identification of acceptable and unacceptable items. They shall also include procedures for control of status indicators, including the authority for application and removal of status indicators.

r) Nonconforming Materials or Items

- 1) Measures shall be established to control materials or items that do not conform to specified requirements to prevent their inadvertent use, including measures to identify and control the proper installation of items and to preclude nonconformance with the requirements of these rules. These measures shall include procedures for identification, documentation, segregation, and disposition. Nonconforming items shall be reviewed for acceptance, rejection, or repair in accordance with documented procedures. The responsibility and authority for the disposition of nonconforming items shall be defined. Repaired/replaced or altered items shall be re-examined in accordance with the applicable procedures.
- 2) Measures that control further processing of a nonconforming or defective item, pending a decision on its disposition, shall be established and maintained. Ultimate disposition of nonconforming items shall be documented.

s) Audits

A comprehensive system of planned and periodic audits of the "NR" Certificate Holder's Quality Assurance Program shall be performed. Audit frequency shall be specified in the organization's Quality Assurance Manual. Audits shall be conducted at least annually (within 12 months) to verify compliance with Quality Assurance Program requirements, performance criteria and to determine the effectiveness of the Quality Assurance Program. When no code work has been performed, the required annual audit need only include those areas of responsibility required to be continually maintained such as training, audits, organizational structure, Quality Assurance Program revisions, etc. The Quality Assurance Manual shall as a minimum describe the following:

- 1) Audits shall be performed in accordance with written procedures or checklists by qualified audit personnel not having direct responsibility in areas being audited;
- 2) Audit personnel shall be qualified in accordance with the current requirements of NQA-1;
- 3) Audit results shall be documented and reviewed by responsible management for adequacy and effectiveness of the quality assurance program;
- 4) Requirements for follow-up actions for any deficiencies noted during the audit;

- 5) Audit records and applicable documentation shall be made available to the Authorized Nuclear Inspection Agency for review; and
- 6) Audit records shall include as a minimum:
 - a. written procedures;
 - b. checklists;
 - c. reports;
 - d. written replies; and
 - e. completion of corrective actions.

Performance of Authorized Inspection Agency audits required by ASME QAI-1 and NB-263, RCI-1 shall be addressed in the Quality Assurance Manual.

t) Authorized Nuclear Inspector

Measures shall be taken to reference the commissioned rules for National Board Authorized Nuclear Inspector, in accordance with NB-263, RCI-1 *Rules for Commissioned Inspectors*. The “NR” Certificate Holder shall ensure that the latest documents including the Quality Assurance Manual, procedures and instructions are made available to the Authorized Nuclear Inspector. The Authorized Nuclear Inspector shall be consulted prior to the issuance of a repair/replacement plan by the “NR” Certificate Holder in order that the Authorized Nuclear Inspector may select any in process inspection or hold points when performing repair/replacement activities. The “NR” Certificate Holder shall keep the Authorized Nuclear Inspector informed of progress of the repair/replacement activity so that inspections may be performed. The Authorized Nuclear Inspector shall not sign Form NR-1 or Form NVR-1, as applicable, unless satisfied that all work carried out is in accordance with this section. The Authorized Nuclear Inspector and Authorized Nuclear Inspector Supervisor shall have access to areas where work is being performed including subcontractors facilities in order to perform their required duties. The ANI shall be involved in dispositions and verification for nonconformances and corrective actions involving quality or code requirements.

u) Exhibits

Forms and exhibits referenced in the Quality Assurance Manual shall be explained in the text and included as part of the referencing document or as an appendix to the Quality Assurance Manual. Forms shall be controlled and identified to show the latest approved revision, name, and other corresponding references as stated in the Quality Assurance Manual.

1.6.8 QUALITY ASSURANCE PROGRAM REQUIREMENTS FOR CATEGORY 3 ACTIVITIES

1.6.8.1 SCOPE

Organizations requesting a Category 3 “NR” *Certificate of Authorization* may elect to follow the requirements specified in ASME NQA-1 Part 1 or follow specific Quality Assurance Program requirements outlined in other specified standards as required by the owner, Regulatory Authority or Jurisdiction. Organizations shall specify in the QAM what QAP requirements are followed. When standards other than ASME NQA-1 are followed, the organization shall have available a copy of that standard for review by the NB Survey Team and the ANIA, as applicable. Each organization shall, as a minimum, include in their written QAM the specified elements listed in Category 1 and/or 2 (1.6.6, 1.6.7) QAP requirements. Additional requirements, as specified within NBIC Part 3, 1.6.8 and 1.6.9 shall be included within the QAP. Also, limitations or additions to ASME NQA-1, as specified for Category 1 or 2 may be incorporated and referenced within the QAM.

(21) 1.6.8.2 QUALITY PROGRAM ELEMENTS**a) Organization**

The authority and responsibility for individuals involved in activities affecting quality shall be clearly established and documented throughout the Quality Assurance Program and identified on a functional organizational chart contained within the QA Manual.

b) Statement of Policy and Authority shall:

- 1) identify the titles of individuals who have the authority and responsibility charged with ensuring the quality program is implemented as described;
- 2) confirm their freedom in the organization to identify quality problems and to initiate, recommend and provide solutions;
- 3) include a statement that if there is a disagreement in the implementation of the quality assurance program, the matter is to be referred for resolution to a higher authority and shall be resolved in a manner that will not conflict with code, jurisdiction/regulatory authority or quality program requirements;
- 4) include a statement of the full support of management; and
- 5) be dated and signed by a senior management official within the organization.

c) QAP

The quality assurance program shall be documented by written policies, procedures and instructions. It shall account for special controls, processes, test equipment, tools and skills to obtain quality and for verification of quality by inspections and tests. Indoctrination, training and maintaining proficiency of personnel effecting quality shall be described. The status, adequacy and effectiveness of the QAP shall be regularly reviewed by management. The scope shall be included within the written QAM. The "NR" Certificate Holder shall make a current controlled copy of the Quality Assurance Manual available to the Authorized Nuclear Inspector and Authorized Nuclear Inspector Supervisor. The "NR" Certificate Holder shall address in their QAM the requirements for interfacing with the owner specified in 1.6.9 of this section. Specified controls including responsibilities for personnel shall be described in the quality assurance program.

d) Design Control

Established measures to assure applicable quality standards and regulatory requirements are accurately specified and translated into design documents. Any deviations shall be identified and controlled. Control measures (such as review, approval, release, distribution and revisions) for suitability of materials, parts, equipment, procedures, instructions and processes, shall be performed to ensure adherence to specified design basis requirements. Qualifications, responsibilities and certifications of design personnel shall be clearly defined within the quality assurance program.

e) Procurement Document Control

Documents for procurement of material, equipment and services shall ensure regulatory requirements, design bases and other quality requirements are included or referenced. Procurement documents shall require contractors or subcontractors provide a Quality Assurance Program consistent with the provisions specified herein. Controls necessary to ensure materials, equipment, and services meet specified design criteria shall be clearly described within the quality assurance program.

f) Instructions, Procedures, and Drawings

Activities affecting quality shall be accomplished in accordance with prescribed instructions, procedures or drawings and shall include appropriate quantitative or qualitative acceptance criteria to determine activities are satisfactorily accomplished.

g) Document Control

Shall define measures to control the preparation, issuance, use, review approval, revisions and distribution of all documents, including procedures, instructions and drawings related to quality. Responsibilities shall be described within the quality program.

h) Control of Purchased, Materials, Items and Services

Purchased material, items and services shall conform to the procurement documents. Measures shall be established for source evaluation and selection, objective evidence of quality, inspections at the source and examination of products upon delivery. Effectiveness of quality of suppliers shall be assessed by the applicant or designee at specified intervals. Documented evidence shall be performed and made available to assure materials and services conform to procurement documents, quality procedures and instructions.

i) Identification and Control of Items

Specified controls shall ensure only correct and acceptable items, parts and components are used and installed and traceable to required documents such as certified material test reports, certificates of conformance, or data reports. These controls shall include traceability on the items or on records traceable to the items during fabrication and final acceptance and test.

j) Control of Processes

Documents used to control processes shall be prepared, including the document numbers and revision to which the process conforms and shall include space for providing reporting of results of specific operations at checkpoints of repair/replacement activity, and provide spaces for signatures, initials, stamps and dates for activities performed by the Certificate Holders' representative and the Authorized Nuclear Inspector. Special processes including welding, nondestructive examinations, heat treating, and bending are performed using qualified and approved procedures and qualified personnel in accordance with applicable codes, standards and other specified criteria.

k) Examinations, Tests, and Inspections

A repair / replacement plan, developed in accordance with Table 1.6.9, shall address all required information for performing examinations, tests and inspections including but not limited to:

- 1) Establishing hold points;
- 2) Identifying procedures, methods, acceptance criteria;
- 3) Defects identified, removal methods, welding, brazing, fusing, and material requirements, reference points used for identification; and
- 4) Evaluations of results

Examinations, tests and inspections shall be performed using trained and qualified personnel. Personnel records for qualification and training shall be available for review.

l) Test Control

Tests shall be performed using written procedures identifying prerequisites, acceptance limits, calibration, equipment, personnel qualifications, environmental conditions, and required documentation.

Personnel responsibilities shall be described for performance, acceptance/inspection and documenting results.

m) Control of Measuring and Test Equipment

The "NR" Certificate Holder may utilize calibration and test activities performed by subcontractors when surveys and audits are performed. As an alternative to performing a survey and audit for procuring Laboratory Calibration and Test Services, the "NR" Certificate Holder as documented in their Quality Program may accept accreditation of an International Calibration and Test Laboratory Services by the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) provided this alternative method is described in the "NR" Certificate Holder's Quality Program and the following requirements are met:

- 1) The "NR" Certificate Holder shall review and document verification that the supplier of calibration or test services was accredited by an accredited body recognized by the ILAC MRA encompassing ISO/IEC-17025:2005 or 2017, "General Requirements for the Competence of Testing and Calibration Laboratories";
- 2) For procurement of calibration services, the published scope of accreditation for the calibration laboratory covers the needed measurement parameters, ranges and uncertainties;
- 3) For procurement of testing services, the published scope of accreditation for the test laboratory covers the needed testing services including test methodology and tolerances/uncertainty;
- 4) The "NR" Certificate Holder's purchase documents shall include:
 - a. Service provided shall be in accordance with their accredited ISO/IEC-17025:2005 or 2017 program and scope of accreditation;
 - b. As-found calibration data shall be reported in the certificate of calibration when items are found to be out-of-calibration;
 - c. Standards used to perform calibration shall be identified in the certificate of calibration;
 - d. Notification of any condition that adversely impacts the laboratories ability to maintain the scope of accreditation;
 - e. Any additional technical and/or quality requirements, as necessary, which may include tolerances, accuracies, ranges, and standards; and
 - f. Service suppliers shall not subcontract services to any other supplier.
- 5) The "NR" Certificate Holder shall upon receipt inspection, validate that the laboratory documentation certifies that:
 - a. Services provided by the laboratory has been performed in accordance with their ISO/IEC-17025:2005 or 2017 program and performed within their scope; and
 - b. Purchase order requirements have been met.

n) Handling, Storage, and Shipping

Processes or procedures shall be established to prevent damage, deterioration or misuse of material, items or components used and stored. Controls for handling, shipping, storage, cleanliness and preservation shall be specified in the quality program.

o) Records

- 1) All quality related records shall be classified, identified, verified, maintained, distributed retrievable, and accessible. When the "NR" Certificate Holder is the owner, designated records and reports

received by the owner, shall be filed and maintained in a manner to allow access by the Authorized Nuclear Inservice Inspector (ANII). Suitable protection from deterioration and damage shall be provided by the owner. These records and reports shall be retained as specified in the owner's QAP for the lifetime of the component or system. Records to support evidence of activities affecting quality shall include as applicable:

- a. Inspections and acceptance criteria/results;
 - b. Tests performed and supporting reports;
 - c. Procedures/instructions;
 - d. Qualification of personnel, procedures, and equipment;
 - e. Types of observations and results;
 - f. Audits;
 - g. Nonconformances; and
 - h. Corrective actions.
- 2) The original of the completed Form NR-1 or Form NVR-1, as applicable, shall be registered with the National Board and, if required, a copy forwarded to the Jurisdiction where the nuclear power plant is located. A log shall be maintained in accordance with NBIC Part 3, 5.6.
- p) Corrective Action
- 1) Measures shall be established to ensure that conditions adverse to quality such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and other nonconformances are promptly identified and corrected.
 - 2) In the case of significant conditions adverse to quality, the measures shall also ensure that the cause of these conditions be determined and corrected to preclude repetition. The identification of significant conditions adverse to quality, the cause, condition, and the corrective action taken shall be documented and reported to the appropriate levels of management.
 - 3) Corrective action requirements shall also extend to the performance of subcontractors' activities.
- q) Inspection or Test Status
- Measures shall be established to indicate inspection and test status of parts, items or components during repair/replacement activity. Measures shall include identification, procedures, control indicators (acceptable, unacceptable) and responsibility of personnel.
- r) Nonconforming Material or Items
- Measures to control material or items, nonconforming to specified criteria shall be established. Measures shall include identifying, controlling, documenting, reviewing, verifying, dispositioning and segregation when practical.
- s) Audits
- A comprehensive system of planned and periodic audits of the "NR" Certificate Holder's Quality Assurance Program shall be performed. Audit frequency shall be specified in the organization's Quality Assurance Manual. Audits shall be conducted at least annually (within 12 months) to verify compliance with Quality Assurance Program requirements, performance criteria and to determine the effectiveness of the Quality Assurance Program. When no code work has been performed, the required annual audit need only include those areas of responsibility required to be continually maintained such as training,

audits, organizational structure, Quality Assurance Program revisions, etc. The Quality Assurance Manual shall as a minimum describe the following:

- 1) Audits shall be performed in accordance with written procedures or checklists by qualified audit personnel not having direct responsibility in areas being audited;
- 2) Audit personnel shall be qualified in accordance with recognized standards, such as NQA-1;
- 3) Audit results shall be documented and reviewed by responsible management for adequacy and effectiveness of the quality assurance program;
- 4) Requirements for follow-up actions for any deficiencies noted during the audit;
- 5) Audit records and applicable documentation shall be made available to the Authorized Nuclear Inspection Agency for review;
- 6) Audit records shall include as a minimum:
 - a. written procedures;
 - b. checklists;
 - c. reports;
 - d. written replies; and
 - e. completion of corrective actions.

Performance of Authorized Inspection Agency audits required by ASME QAI-1 and NB-263, RCI-1 shall be addressed in the Quality Assurance Manual.

t) Authorized Nuclear Inspector

Qualifications and duties shall be as specified in ASME QAI-1 and NB-263, RCI-1 for the Authorized Inspection Agencies, Authorized Nuclear Inspector and the Authorized Nuclear Inspector Supervisor. Additional requirements are specified in NBIC Part 3, 1.6.6.2 s), 1.6.7.2 s), and 1.6.9.

u) Exhibits

Quality related forms and exhibits described in the Quality Assurance Program shall be identified, controlled and where applicable included as a reference document within the QAM or referenced procedures.

1.6.9 INTERFACE WITH THE OWNER'S REPAIR/REPLACEMENT PROGRAM (FOR CATEGORIES 1, 2, AND 3 AS APPLICABLE)

Revise to read: ASME
Section XI Division 1

owner's repair/replacement program shall meet the following:

- a) The "NR" Certificate Holder's repair/replacement plan (see Table 1.6.9) shall be subject to the acceptance of the owner and the owner's Authorized Nuclear Inservice Inspector (ANII) and shall be subject to review by the Jurisdiction and Regulatory Authorities having jurisdiction at the plant site.
- b) Repair/Replacement activities of nuclear components shall meet the requirements of ASME Section III, ASME Section XI, and/or other applicable standard, and the owner's requirements, and shall be subject to verification by the Jurisdiction and Regulatory Authorities having jurisdiction at the plant site.
- c) Documentation of the repair/replacement activities of nuclear components shall be recorded on the Report of Repair/Replacement Activities of Nuclear Components and Systems for Nuclear Facilities, Form NR-1, or Report of Repair/Replacement Activities for Nuclear Pressure Relief Devices, Form NVR-1, in accordance with the NBIC Part 3, Section 5. The completed forms shall be signed by a

representative of the “NR” Certificate Holder and the Authorized Nuclear Inspector when the repair/replacement activity meets the requirements of this section. For repair/replacement activities that involve design changes, Form NR-1, or Form NVR-1, as applicable, shall indicate the organization responsible for the design or design reconciliation in accordance with the owner’s requirements.

- d) The “NR” Certificate Holder shall provide a copy of the signed Form NR-1 or Form NVR-1, as applicable, to the owner, the Enforcement, and the Regulatory Authority if required, and the Authorized Nuclear Inspection Agency. The original Form NR-1 or Form NVR-1, as applicable, shall be registered with the National Board by the “NR” Certificate Holder. A NB registration log shall be maintained by the “NR” Certificate Holder. See NBIC Part 3, Section 5.5 and 5.6.
- e) The “NR” Certificate Holder shall provide a nameplate/stamping for repair/replacement activities for each nuclear component unless otherwise specified by the owner’s Quality Assurance Program. The required information and format shall be as shown in NBIC Part 3, Section 5.

PROPOSED REVISION OR ADDITION

Item No.: 21-02
Subject Title: Define "Fuel Loading" as it pertains to NR activities.
NBIC Location: Part 3 Repairs and Alterations: 1.6.2 a)
Project Manager and Task Group: Raymond Spuhl, NR TG
Source Name and Email: Terrence Hellman, thellman@nationalboard.org
Statement of Need: The NR TG would like to clarify "Fuel Loading" as used to determine Category 1, 2 or 3 NR activities.
Background Information:
Existing Text: 1.6.2 a) 1) Category 1 Any ASME Section III Code certified item or system requiring repair/replacement activities irrespective of physical location and installation status prior to fuel loading. 2) Category 2 After fuel loading, any item or system under the scope of ASME Section XI requiring repair/replacement activities irrespective of physical location. Based on regulatory or jurisdictional acceptance, Category 2 may be used prior to fuel loading. 3) Category 3 Items other than those covered by Category 1 or Category 2, requiring repair/replacement activities irrespective of physical location, installation status and fuel loading.
Proposed Text: 1.6.2 a) 1) Category 1 Any ASME Section III Code certified item or system requiring repair/replacement activities irrespective of physical location and installation status prior to fuel loading <u>not under the scope of ASME Section XI</u> . 2) Category 2 After fuel loading, a Any item or system under the scope of ASME Section XI requiring repair/replacement activities irrespective of physical location <u>under the scope of ASME Section XI</u> . b Based on regulatory or jurisdictional <u>requirements</u> acceptance, Category 2 may be used prior to fuel loading . 3) Category 3 <u>Any item or system</u> , other than those covered by Category 1 or Category 2, requiring repair/replacement activities irrespective of physical location, installation status and fuel loading.

(MDSC), or BTU/hr (W) heating capacity, the new MRRC shall be documented on Form R-2 and indicated on the appropriate nameplate of NBIC Part 3, Figure 5.7.5-b or NBIC Part 3, Figure 5.7.5-c.

- a) Final preparation of Form R-2, including gathering and attaching supporting reports, shall be the responsibility of the "R" Certificate Holder that performed the construction portion of the alteration. The construction organization shall complete the Form R-2 provided by the design organization, including the "Construction Certification" section of the form. An Inspector shall indicate that the work complies with the applicable requirements of this code by completing and signing the "Certificate of Inspection" 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 gathering and attaching of supporting documentation.
- b) The following shall be attached to and become a part of completed Form R-2:
 - 1) For ASME boilers and pressure vessels, a copy of the original Manufacturer's Data Report, when available;
 - 2) Form R-3, Report of Parts Fabricated by Welding, Manufacturer's Partial Data Reports, or Certificates of Compliance, if applicable; and
 - 3) For other than ASME, the manufacturer's reports (i.e., reports required by the original code of construction, etc.), when available.

(21) **5.1.1 PREPARATION OF FORM R-3 REPORT OF PARTS FABRICATED BY WELDING**

Using the instructions found in Table S9.4 of Supplement 9, preparation of Form R-3 shall be the responsibility of the "R" Certificate Holder responsible for performing the work.

(21) **5.1.2 PREPARATION OF FORM R-4 REPORT SUPPLEMENT SHEET**

Using the instructions found in Table S9.5 of Supplement 9, preparation of Form R-4 shall be the responsibility of the "R" Certificate Holder responsible for performing the work.

(21) **5.1.3 PREPARATION OF FORM NR-1, REPORT OF REPAIR/REPLACEMENT ACTIVITIES FOR NUCLEAR FACILITIES**

Using the instructions found in Table S9.6 of Supplement 9, preparation of Form NR-1 shall be the responsibility of the "NR" Certificate Holder responsible for performing the work.

- (21)
 - a) Using the instructions found in Table S9.6 of Supplement 9, preparation of Form NR-1 shall be the responsibility of the "NR" Certificate Holder performing the repair.
 - b) Information describing the scope of work used to repair a pressure-retaining item (PRI) shall be documented on a Form NR-1 and extended to a Form R-4 as needed to fully describe the repair activities completed per the instructions in Table S9.6 of Supplement 9.
 - c) An Inspector holding appropriate endorsements shall indicate acceptance by signing Form NR-1, and Form R-4, if attached.
 - d) The Form R-3, *Report of Parts Fabricated by Welding*, Manufacturer's Data Reports, and Certificates of Compliance described in this section shall be a part of the completed Form NR-1 and shall be attached thereto. Parts or items fabricated by welding to ASME shall be reported on the appropriate ASME Data Report Form, certified by an Authorized Nuclear Inspector holding the appropriate endorsements and attached to the Form NR-1.

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5.2**5.2.6 PREPARATION OF REPORT OF REPAIR/REPLACEMENT
ACTIVITIES FOR NUCLEAR PRESSURE RELIEF DEVICES**

~~Being the instructions found in Table S9.7 of Supplement 9, preparation of Form NVR-1 shall be the responsibility of the "NR" Certificate Holder, possessing the "VR" Certificate denoting the repair of nuclear pressure relief valves, responsible for performing the work.~~

- a) ~~Using the instructions found in Table S9.7 of Supplement 9, preparation of Form NVR-1 shall be the responsibility of the "NR" Certificate Holder, possessing the "VR" Certificate denoting the repair of nuclear pressure relief valves, responsible for performing the repair.~~
- b) ~~Information describing the scope of work used to repair a pressure-retaining item (PRI) shall be documented on a Form NVR-1 and extended to a Form R-4 as needed to fully describe the repair activities completed per the instructions in Table S9.7 of Supplement 9.~~
- c) ~~An Inspector holding appropriate endorsements shall indicate acceptance by signing Form NVR-1, and Form R-4, if attached.~~
- d) ~~The Form R-3, *Report of Parts Fabricated by Welding*, Manufacturer's Data Reports, and Certificates of Compliance described in this section shall be a part of the completed Form NVR-1 and shall be attached thereto. Parts or items fabricated by welding to ASME shall be reported on the appropriate ASME Data Report Form, certified by an Authorized Nuclear Inspector holding the appropriate endorsements and attached to the Form NVR-1.~~

5.2 DISTRIBUTION OF FORM R-1

- a) Legible copies of completed Form R-1, together with attachments, shall be distributed to the owner or user and Jurisdiction, if required, and shall be provided to the Inspector and the inservice Authorized Inspection Agency of the pressure retaining item upon request.
- b) Distribution of Form R-1 and attachments shall be the responsibility of the organization performing the repair.