

NR Task Group Meeting
Monday, January 8, 2018
New Orleans, Louisiana

Minutes

1. Call to Order

The Chair, Mr. Paul Edwards called the meeting to order at 10:10 AM local time, on Monday, January 08, 2017.

2. Introductions/Announcements

Introductions of members and visitors were made (Attachment Page 1). Secretary Hellman announced the Wednesday evening reception in the Lagniappe room on the 2nd floor at 5:30 PM, and the breakfast and lunch will be provided to NBIC Committee members and visitors in the Gallery on the 1st floor on Thursday.

3. Approval of Agenda

Secretary Hellman amended the Agenda to include Item 17-168 for discussion. It was moved, seconded and unanimously approved by the NR Task Group to adopt the proposed agenda as amended.

4. Accept Minutes dated July 17, 2017

The minutes for the meeting of July 17, 2017 were approved as written with no additions or revision added by a unanimous vote of the NR Task Group.

5. Action Items for Discussion

NOTE: Attachments are uploaded on the NBIC Cloud (www.nbicshare.org) -> January 2018 folder -> NR Task Group folder

a) NBIC 2019 Edition Approved items

The task group reviewed all approved changes that related to the NR program for the 2019 edition of the NBIC. This was meant as a review to ensure all changes to the code accurately reflected the wishes of the NR task group. Approved action items **NB17-0702, NB16-0610, 17-154**, were reviewed.

b) NBIC 2019 Edition Open Items

- 1) **NB16-0603** – The purpose of this Item is to add requirements to Part 4, Supplement 6 for when the NR program is applied to safety related relief valves in nuclear service.

Progress Report:

This item was out for MC Letter Ballot. The letter ballot was set to close on 01/06/2018, but after discussion, Mr. Bob Wielgoszinski requested the ballot close date be extended to allow for more voting. The Ballot was extended to close on 01/13/2018. As of 01/09/2018, 17 of the 21 members voted to approve, and 1 has abstained.

- 2) **NB16-0608** – The purpose of this item is to address nuclear QA program requirements for owners and Certificate Holders functioning under earlier editions of NQA-1, or limited by other requirements (Section XI, Appendix B or regulatory requirements). Mr. Clay Smith – Project Manager.

Progress Report:

Mr. Clay Smith will submit attachment for review by NR Task Group.

- 3) **NB16-0609** – The purpose of this item is to add/correct calibration and testing requirements for accredited organizations using Category 1, 2, and 3 quality programs. C. Withers – Project Manager.

Progress Report:

This was approved by the NR Task Group in July 2017 with the intent to have the item letter balloted to both SC and SG R/A. NOTE: Item was approved to have joint letter ballot to SC Repairs and Alterations and SG Repairs and Alterations in the SC Repairs and Alterations meeting on January 9, 2018.

- 4) **NB17-0701** – The purpose of this item is to add wording in NBIC Part 3, 1.8.1 to ensure the NR Program meets the requirements of NQA-1, Part 2, 2.1.4 and 2.7. Clay Smith – Project Manager.

Progress Report:

Mr. Clay Smith is to submit proposed changes for NR Task Group review. Mr. Smith was not in attendance. No action was taken.

6. New Action Items

- 1) Review of NB-417 to address all categories;

Note: NB-417 is not part of NBIC, but this item is part of a general review of forms and guides for the continual improvement based on feedback from Certificate Holders.

Progress Report:

Mr. Withers gave a progress report that this revision is currently ongoing. No action taken.

- 2) **17-168** - Revisions to Category 3 (Attachment Pages 2-24)

Mr. Withers provided a draft for editorial changes and additional requirements for the complete NR Accreditation Program as outlined in NBIC Part 3, 1.6. After review and discussion by Task Group members, it was accepted and submitted to SG Repairs and Alterations for approval with the intent of having a joint letter ballot to SG Repairs and Alterations and SC Repairs and Alterations.

7. Update on Promoting NR Accreditation Program

Mr. Withers gave a progress report on a meeting with the Canadian Nuclear Safety Commission (CNSC) held to promote and clarify use of the NR/NVR Accreditation. The CNSC has indicated that they are interested in the NR program and have requested approval to observe a NR Survey within the next year. Mr. Withers is to recommend an upcoming NR Survey that would agree to the observation.

8. New Business

No new business.

9. Future Meetings

The NR Task Group will meet at the National Board Headquarters in Columbus, Ohio on July 16, 2018 in Columbus, OH.

10. Adjournment

The meeting was adjourned at 3:38 PM local time.

NR Task Group Attendance Sheet - 1/8/18

Name	Company	Phone Number	Email	Signature
Paul Edwards	WECTEC STONE & WEBSTER	781-298-3584 (617) 589-5677	edwardsp4@asme.org	Paul D Edwards
Benjamin Schaefer	AEP	614-716-1843	bschaefer@aep.com	B. Schaefer
Clayton Smith	Fluor		clayton.t.smith@fluor.com	
Bob Wielgoszinski	HSB	(860) 722-5064	robert_wielgoszinski@hsbct.com	R. Wielgoszinski
Chuck Withers	National Board	(614) 888-8320	cwithers@nationalboard.org	was present (TH)
Tom Roberts	MPR		troberts@mpr.com	
Paul Fisher	HSB		paul.fisher@hsbct.com	
Edward Maloney	PSEG		edward.maloney@pseg.com	
Kerri Kavanagh	NRC		kerri.kavanagh@nrc.gov	
Richard McIntyre	NRC		richard.mcintyre@nrc.gov	
Bryan Toth	WECTEC STONE & WEBSTER		tothbm@westinghouse.com	PRESENT (P)
Joe Ball	National Board	(614) 888-8320	jball@nationalboard.org	
Terrence Hellman	National Board		hellman@nationalboard.org	Terrence Hellman

NB17-168**2017 NBIC Part 3, 1.6****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 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 constructed to codes or standards other than ASME, requiring repair/replacement activities irrespective of physical location, installation status and fuel loading.

- 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	10 CFR Part 50 Appendix B ^{1,2} and ASME Section III NCA-4000
Category 2	10 CFR Part 50, Appendix B ¹ or NQA-1, Part 1 and ASME Section XI, IWA-4142	10 CFR Part 50, Appendix B ¹ , supplemented as needed with Owner's QA program; or ASME NQA-1, Part 1; or ASME Section III, NCA-4000
Category 3	ASME NQA-1, or Specify the Standard to which certification is desired	ASME NQA-1, or Specify the Standard to which certification is desired
<p>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.</p>		
<p>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.</p>		

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:

- a) Authorized Inspection Agency
- b) Authorized Nuclear Inspection Agency
- c) Jurisdiction
- d) "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	Enforcement Authority
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:

* Latest Edition endorsed by the Regulatory Authority

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

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, Criteria for Acceptance of Authorized Inspection Agencies for New Construction or accredited in accordance with NB-369, Qualifications and Duties for Authorized Inspection Agencies (AIAs) Performing Inservice Inspection Activities and Qualification of Inspectors of Boilers and Pressure Vessels.
- b) Have a written Quality Assurance Program that complies with the requirements of this section and address all controls for the intended category and scope of activities.
- 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.

1.6.4 OBTAINING OR RENEWING A NATIONAL BOARD “NR” CERTIFICATE OF AUTHORIZATION

- 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 organization’s 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 1.6.2-1 of this section.

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 Table 1.6.2 of this section for Category 1 activities. The following quality elements shall be specified and described within the QAM.

1.6.6.2 QUALITY PROGRAM ELEMENTS

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 1.6.9 of this section.
- 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 owner's 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 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

- 1) The provisions identified in ASME NQA-1, Part 1, Requirement 7 shall apply, except:
 - a) Procurement of Authorized Inspection Agency services is not applicable as specified in paragraph 507.
 - b) The decision to perform bid evaluation as described in paragraph 300 is the responsibility of the "NR" Certificate Holder.
 - c) 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.
 - d) The provisions identified in ASME NQA-1, Part 1, Requirement 7, paragraph 700 are not applicable to this section.
- 2) 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-~~3970-4470~~ 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-~~3855-5-4255.5~~

3) 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.

4) 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-~~3970-4470~~ as applicable.

5) Add wording from NB16-0609 pending approval

h)j) 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 ~~valves-values~~ when required, and spaces for inclusion of document numbers and revision levels, signatures, / stamps and dates of examinations or tests performed, verified, and/or witnessed by the "NR" Certificate Holder's qualified Representative and Authorized Nuclear Inspector.

i)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 conform to the specified acceptance criteria as listed on drawings, procedures, instructions, specifications or other appropriate documents including revisions.

j)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; and
 - f. Acceptance criteria used to verify acceptability.

f.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.

k)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.

h)m) Control of Measuring and Test Equipment

The provisions identified in ASME NQA-1, Part 1, Requirement 12 shall apply.

- 1) The "NR" Certificate Holder may perform periodic checks on equipment to determine calibration is maintained. When periodic checks are used the method and frequency shall be included in the "NR" Certificate Holder's Quality Assurance Program and if discrepancies are found, shall be resolved to the prior periodic check.
- 2) The "NR" Certificate Holder may accept accreditation for calibration activities by National Voluntary Laboratory Accreditation Program (NVLAP), American Association for Laboratory Accreditation (A2LA) or other accrediting body recognized by NVLAP through the International Laboratory Accreditation Cooperation (ILAC) mutual recognition arrangement (MRA) provided the following requirements are met:
 - a. Accreditation is to ANSI/ISO/IEC 17025:2005 "General Requirements for the Competence of Testing and Calibration Laboratories";
 - b. Scope of the accreditation for the calibration laboratory covers needed measurement parameters, ranges and uncertainties;
 - c. "NR" Certificate Holder shall specify that calibration reports shall include, laboratory equipment/standards used and as found and as left data;
 - d. The "NR" Certificate Holder shall verify conformance to the requirements of this process; and
 - e. Utilization of this process shall be described and documented in the "NR" Certificate Holders QAM. Note: replace paragraph 2 above with NB16-0609 pending approval

m)n) Handling, Storage and Shipping

The provisions of ASME NQA-1, Part 1, and Requirement 13 shall apply.

n)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 owner's 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; and
- 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.
- 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 Inservice 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.

Ⓢ 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.

Ⓢ 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.

Ⓢ 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.

Ⓢ 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 ~~internal~~ audits of the "NR" Certificate Holder's Quality Assurance Program shall be performed ~~by the "NR" Certificate Holder.~~ 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 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 Inspector 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.

s)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.

t)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

Owners or 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.

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.

7)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 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) The "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.

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.

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.

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.

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

- 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

- 1) Measures shall be established and documented to ensure that tools, gages, instruments, and other measuring and testing equipment and devices used in activities affecting quality are of the proper range, type, and accuracy to verify conformance to established requirements. A procedure shall be in effect to ensure that they are calibrated and properly adjusted at specified periods or use intervals to maintain accuracy within specified limits. Calibration shall be traceable to known national standards, where these standards exist, or with the device manufacturer's recommendation.

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

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 1.6.7.2 n) 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 at his-upon request.
- 2) Records to be maintained as required in NBIC Part 3, 1.6.7.2 n) 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 charts or a summary description 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 System 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.
- 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

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.

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 ~~internal~~ audits of the "NR" Certificate Holder's Quality Assurance Program shall be performed ~~by each organization,~~ 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 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 Inspector 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.

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.

1.6.8.2 QUALITY PROGRAM ELEMENTS

a) Organization

~~Persons and organization shall have authority and freedom to identify quality problems; initiate, recommend or provide solutions and verify implementation of solutions. 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, ~~and~~ 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 1.86.9 of this section. Specified controls including responsibilities for personnel shall be described in the quality assurance program.

d) Design Control

Established measures to assure ~~approximate applicable~~ quality standards and regulatory requirements are accurately specified and translated included 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 ~~and~~ are included or referenced. Procurement documents shall require contractors or subcontractors provide a Quality Assurance Program consistent with the provisions specified herein, in this NBIC Part 3, 1.8.8. 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 ~~approximate appropriate~~ quantitative or qualitative qualified 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 Purchases, 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 ~~conform to specified acceptance criteria~~ shall include space for providing reporting of results of specific operations at checkpoints of repair/replacement activity, and provide 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

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

m) Control of Measuring and Test Equipment

Procedures, methods and frequency of calibration shall be described for all types of measuring and test equipment used to verify quality. Controls shall ensure accuracy within specified limits. Any discrepancies shall be identified and resolved.

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, ~~retraceable, 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

4)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 for registration 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 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) Corrective action requirements shall also extend to the performance of subcontractors' activities.

~~Measures established to assure conditions adverse to quality are promptly identified and corrected and action taken to preclude repetition.~~

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 system of planned and periodic audits shall be established to verify compliance of the Quality Assurance Program. Audits shall include; written procedures, checklists, trained/qualified personnel not having direct responsibility for areas being audited, documentation, review by management and follow up actions when required. 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 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 Inspector 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.

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. for the Authorized Inspection Agencies, Authorized Nuclear Inspector and the Authorized Nuclear Inspector Supervisor. Additional requirements are specified in Sections 1.~~86~~.6.2 s), 1.~~86~~.7.2 s), and 1.~~68~~.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)

Interface with the 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.

<u>Table 1.6.9</u>		
<u>Repair/Replacement Plan Criteria</u>		
	<u>Essential Requirements</u>	<u>Instruction</u>
<u>A</u>	<u>Edition and/or addenda of codes</u>	<u>Including codes of construction, code cases, or standards used for the work performed, the NBIC Code edition, and the owner's requirements.</u>
<u>B</u>	<u>Identification of items</u>	<u>Description of items affected by the repair/replacement activity, including serial numbers, vendor identification, and code classes if applicable.</u>
		<u>Location of installation if applicable.</u>
<u>C</u>	<u>Performance of the Repair/Replacement activity</u>	<u>Description of any defects, and nondestructive examination methods used to detect the defects</u>
		<u>Defect removal method, measurement, and area identification/reference points.</u>
		<u>Applicable welding/brazing procedures, heat treatment, nondestructive examination, and tests.</u>
		<u>Final examination criteria to verify acceptability.</u>
		<u>Preservice examination criteria if applicable.</u>
<u>D</u>	<u>Materials</u>	<u>Original specifications, new material specifications, including heat numbers, code edition/class and reconciliation requirements if applicable.</u>
<u>E</u>	<u>Description of Repair/Replacement activity</u>	<u>Include expected life of the item after completion if different from the original intended life as specified by the design specification. Application of the "NR" code symbol stamp if required.</u>
<u>F</u>	<u>Documentation</u>	<u>Generated as required by the quality assurance program and/or the owner's requirements.</u>
		<u>Retention and submittal in accordance with the quality assurance program and/or the owner's requirements.</u>
<u>G</u>	<u>Evaluations/Acceptance</u>	<u>Evaluations/acceptance by the jurisdictional/regulatory authority as applicable.</u>
<u>H</u>	<u>Testing</u>	<u>Post repair/replacement testing criteria.</u>
		<u>Test acceptance criteria to verify acceptability.</u>
		<u>Types (pneumatic, hydrostatic, system leakage, or other).</u>
<u>I</u>	<u>Design</u>	<u>When applicable, design documents shall be certified by qualified/certified engineer.</u>
<u>J</u>	<u>Authorized Inspection Agency</u>	<u>Authorized Nuclear Inspector review/acceptance.</u>
		<u>Authorized Nuclear Inservice Inspector review/acceptance.</u>
<u>K</u>	<u>Responsibilities for review, verification, and acceptance</u>	<u>Design, quality, work performed, examination/test, and records.</u>
		<u>Owner acceptance of the repair/replacement plan.</u>

