



*THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS*

NATIONAL BOARD INSPECTION CODE NR TASK GROUP

MINUTES

Meeting of January 17th, 2022
San Diego, CA

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-
1183
Phone: (614)888-8320
FAX: (614)847-1828

1. **Call to Order**
Secretary Hellman called the meeting to Order at 8:00 AM Pacific Time in the Riviera room on the third floor of the hotel.
2. **Introduction of Members and Visitors:** Secretary Hellman called roll of members and held introduction of visitors.
3. **Check for a Quorum** With all but one member present, a Quorum was reached. ([Attachment](#))
4. **Announcements**
 - The National Board will be hosting a reception on Wednesday evening from 5:30pm to 7:30pm at The Smoking Gun.
 - The National Board will be hosting a breakfast and lunch for the Main Committee meeting 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 Le Fontainebleau.
 - A coffee station will be provided outside of the meeting rooms on each floor.
5. **Adoption of the Agenda:** The Agenda was accepted unanimously.
6. **Approval of the Minutes of the July 12th, 2021 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**
None
 - b. **Membership Reappointments**
None
 - c. **Officer Nominations** – Secretary Hellman asked if the TG would like to nominate a Vice Chair. There were no nominations.

8. Action Items

Item Number: A20-48 NBIC Location: Part 3, 1.6	No Attachment
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.	
July Meeting Action: Mr. Edwards presented a Progress Report .	
January 2022 Meeting Action: R. Spuhl was not able to present the item. This was a PR	

Item Number: A20-52 NBIC Location: Part 3, 1.6.2 a) 2)	Attachment
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.	
July Meeting Action: Mr. Edwards presented a Progress Report .	
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.	

Item Number: A21-02	NBIC Location: Part 3, 1.6	Attachment
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.		
July Meeting Action: Mr. Edwards presented a Progress Report .		
January 2022 Meeting Action: Mr. Spuhl presented a PR		

New Items:

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

9. Future Meetings

- July 2022 – TBD
- January 2023 – Charlotte, NC

10. Adjournment @ 9:27 AM

Respectfully submitted,

Terrence Hellman

Terrence Hellman

NR Task Group Secretary

INTRODUCTION TO SECTION XI, DIVISION 2
RELIABILITY AND INTEGRITY MANAGEMENT (RIM)
PROGRAM

FIRST ASME RIM PUBLICATION IN JULY 2019

**Division 2
Requirements for Reliability
and Integrity Management
(RIM) Programs for Nuclear
Power Plants**

OUTLINE OF RIM

- Section XI Division 2 Reliability Integrity Management (RIM) overview.
 - What is RIM and why is it essential to Advanced Reactor designs?
 - What is important about RIM that Advanced Reactor designers should consider during design?

CHALLENGES FOR ADVANCED DESIGN REACTORS

- Present ASME Section XI Division 1 is not well suited for many advanced design reactors currently under development.
- Division 1 was developed for, and evolved around Light Water Reactor technology (e.g., BWRs & PWRs).

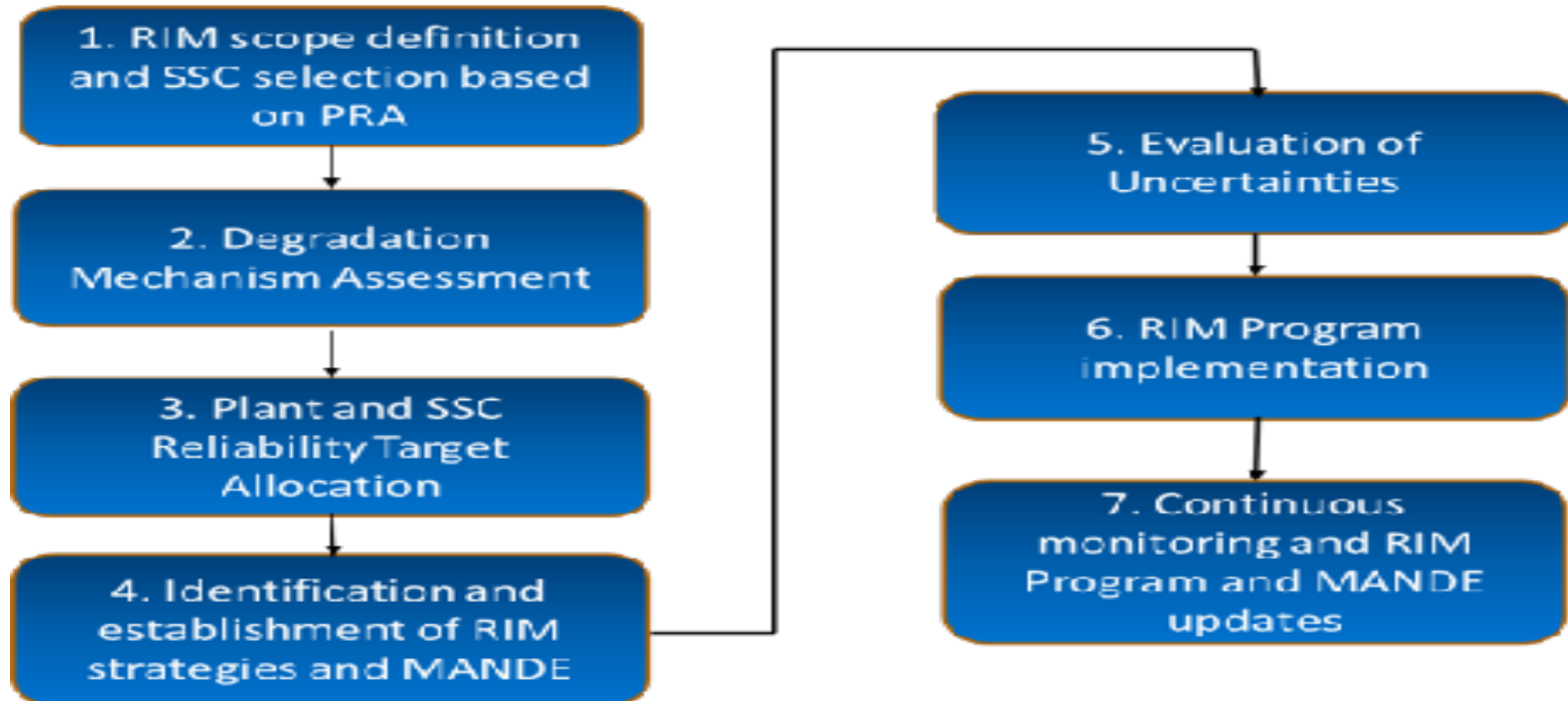
RELIABILITY INTEGRITY MANAGEMENT (RIM)

ASME Section XI Sub Group – RIM developed a new ASME XI Division 2

Reliability and Integrity Management (RIM) - A methodology to establish Inservice Inspection criteria regardless of technology.

- RIM is "technology neutral" – applicable to all reactor designs
- RIM criteria may be established by deterministic or probabilistic means
- RIM requires Monitoring and NDE (**MANDE**) to be assigned to SSC based on credible degradation mechanisms and their individual contribution to risk significance.

RELIABILITY INTEGRITY MANAGEMENT (RIM) PROCESS CONCEPTS



RIM PROCESS DESCRIPTION:

- MANDE selected must be based on:
 - SSC credible and postulated material degradation assessment
 - MANDE must be ***“Performance Demonstrated”*** to confirm that a required SSC’s Reliability Targets is met

- Any SSC that could affect plant reliability are scoped into the RIM program.
 - All SSC are initially evaluated to determine if they need to be included within the program scope.
 - Non-Safety Related SSC deemed risk significant are also contained in RIM program.

This contrasts the existing ASME XI Div. 1 Class 1, Class 2, Class 3, Class MC, Class CC, etc. ISI approach, with each class having different graduated criteria based on the class of an SSC rather risk significance.

RIM PROCESS DESCRIPTION:

- RIM is an on-going “Living Program” that applies over the entire plant life cycle:
 - Continually updated based on gained Operating Experience
 - **Not focused exclusively on weld examinations**
 - Periodicity for prescribed MANDE is based on SSC's:
 - ❖ Active degradation mechanisms
 - ❖ Reliability Target value and,
 - ❖ Operating conditions (e.g., longer fuel cycles than PWR or BWR)

ADVANCED REACTOR DESIGNERS CONSIDERATIONS:

- Integrating RIM considerations during conceptual and detailed design efforts including:
 - Establishing risk significant SSC via RIM and PRA,
 - Establishing credible degradation mechanisms,
 - Setting Reliability Target values for SSC,
 - Establishing and demonstrating MANDE selected for SSC in the RIM Program
- Working with ASME XI Division 2 committees to update and revise RIM, to address specific or unique reactor design considerations to best accommodate any reactor design as it evolves.

SUMMARY

- Advanced nuclear reactors have varied designs
 - Alternative-approach to current ISI activities are needed to accommodate new technologies.
 - Technology is moving to designs **other than** traditional LWRs
 - Some proposed reactors are for applications other than power production (e.g., medical isotope production, desalination, experimental test reactors, etc.)
 - RIM was developed to address and accommodate these new designs.

SUMMARY

- RIM process can be used:
 - For any reactor design or application.
 - It provides targeted MANDE criteria for an unique designs.
 - It serves as a living program to monitor aging effects on risk significant SSC
- Nuclear power is moving toward new designs, miniaturization, etc. but reactor safety and long term reliability remains paramount
- RIM can accommodate these changes while maintaining long term safety and reliability

QUESTIONS

????????????????????????????????



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 Test: 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>and therefore 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.



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

PROPOSED REVISION OR ADDITION



PROPOSED REVISION OR ADDITION

Item No.
21-37
Subject/Title
Parts used in NR activities
NBIC Location
Part: Repairs and Alterations & Repairs and Alterations; Section: 5; Paragraphs: 5.2.5 & 5.2.6
Project Manager and Task Group
Robert Wielgoszinski
Source (Name/Email)
TG NR Committee generated
Statement of Need
Action Item 21-37 is proposing revisions/additions to Part 5 regarding completion of the Forms NR-1 and NVR-1. Particularly including provision to assure that parts or items meeting ASME Code and reported on appropriate ASME Forms are certified by an Inspector holding the proper endorsements. That is the N, I, and/or C endorsements.as appropriate.
Background Information
Current text in the NBIC does not specify any special rules for parts or other items to be used in NR work. This change will assure that any work performed on parts or other items to be used in NR activities is inspected and certified by an appropriate ANI, ANII, or ANI-C
Existing Text
Proposed Text
See attached proposal

VOTE:							
COMMITTEE	Appr oved	Disapproved	Abs taine d	Not Voting	Passed	Faile d	Date

(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.

P
R
E
P
A
R
A
T
I
O
N
O
F
F
O
R
M
N
V
R
-

**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.

SECTION 5