

Date Distributed:



*THE NATIONAL BOARD
OF BOILER AND PRESSURE VESSEL INSPECTORS*

NATIONAL BOARD INSPECTION CODE GRAPHITE TASK GROUP

MINUTES

Meeting of May 17th, 2022
Columbus, OH

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

The Task Group Chair, Mr. Aaron Viet, called the meeting to order at 9:10 AM Eastern Time.

2. Introduction of Members and Visitors

The following members were in attendance for the meeting:

- Aaron Viet, Chair
- Jonathan Ellis, Secretary
- Tracy Rudy
- Justin Clements
- Nolan Lee
- Andy Stupica
- Francis Brown

Additionally, Mr. Sam Mehrez was in attendance as a visitor.

3. Announcements

Mr. Viet announced that Mr. Richard Bulgin and Mr. Monte Bost have retired from committee work. Mr. Tracy Rudy asked Mr. Ellis to change his interest category from Users to Manufacturers. Mr. Ellis also announced lunch arrangements for the meeting.

4. Adoption of the Agenda

A motion was made, seconded, and unanimously approved to adopt the agenda as presented.

5. Approval of the Minutes of October 2019 Meeting

The minutes from the October 2019 meeting can be found on the National Board website on the NBIC Committee Information page under the Inspection Code tab.

A motion was made, seconded, and unanimously approved to accept the minutes from the October 2019 meeting.

6. Review of Rosters

a. Membership Nominations

- i. Mr. Viet stated that Mr. Mehrez is interested in becoming a member of the task group. Mr. Mehrez spoke on his experience in the graphite pressure vessel industry. A motion was made, seconded, and unanimously approved to nominate Mr. Mehrez for membership. His nomination will be sent to Main Committee for final approval.

b. Membership Reappointments

- i. Mr. Aaron Viet, Mr. Greg Becherer, Mr. Francis Brown, Mr. Justin Clements, Mr. Keith Cummins, and Mr. Andy Stupica's memberships are set to expire on August 30, 2022. The group voted unanimously to reappoint all the listed members except for Mr. Cummins. Mr. Viet recommended that his membership be allowed to expire as he has only participated in one meeting since joining the group.

c. Officer nominations

- i. No new nominations.

7. NBIC Business

Item Number: NB15-2208	NBIC Location: Part 3, S3	No Attachment
General Description: Investigate repair options for graphite block heat exchangers		
Subgroup: Graphite		
Task Group: G. Becherer (PM), Aaron Viet		
May 2022 Meeting Action: Mr. Becherer was not present to report on any work he has done for this item. Mr. Viet stated that he came up with a list of practical repairs to look at how many of those are covered in the NBIC. From there his goal will be to see if any new sketches are needed or if a new repair operation section needs to be added to the NBIC. In discussing the list with the group, they felt that inlay repairs could use an additional sketch to expand on the different situations in which that repair would be used. Mr. Viet will work on some preliminary sketches to present at the next meeting.		

Item Number: 17-167	NBIC Location: Part 3, S3.2 d)	No Attachment
General Description: Clarify repair inspection requirements for machined only graphite parts		
Subgroup: Graphite		
Task Group: A. Viet (PM)		
May 2022 Meeting Action: Mr. Viet gave an overview of the item as a refresher for the group. After spending time discussing potential action that could be taken for this item, the group ultimately decided that making a change would not be needed. A motion was made, seconded, and unanimously approved to close the item with no further action.		

Item Number: 18-94	NBIC Location: Part 3, S3.2 f), h); S3.4 a), b), c) etc.	Attachment
General Description: G-mark Requirements for Various Repairs/Alteration to Graphite		
Subgroup: Graphite		
Task Group: C. Cary (PM)		
May 2022 Meeting Action: Mr. Cary presented a proposal for this item. Discussion was held on which ASME code year should be referenced when doing a spring alteration. The group agreed that it should be the 2019 or later edition. Further discussion was held on whether spring alterations could be done by an R stamp holder or if a G mark would be required. The group felt allowing any R stamp holder to perform the alteration could require additional guidelines to provide information if they are not familiar with graphite vessels. Mr. Viet felt that focusing on getting the current proposal into NBIC, then working on a procedure to allow R stamp holders to do this alteration would be the best path forward. After discussion and some changes to Mr. Cary's original proposal, a motion was made and seconded to approve the proposal for this item. This motion was unanimously approved.		

Item Number: 19-73	NBIC Location: Part 3, S3	No Attachment
General Description: Requirements for who can make hole plugging repairs on graphite blocks		
Subgroup: Graphite		
Task Group: C. Cary (PM), A. Viet, A. Stupica, S. Mehrez		
May 2022 Meeting Action: The group spent some time reviewing the scope of the item. After some initial discussion, the group felt that the procedure for hole plugging in tubes could be modified to include blocks. A point was made that while hole plugging in blocks is simple and could be done by any R stamp holder, there may be a need to partially disassemble the pressure vessel to reach the block. This would require a G mark to do this. The task group stated they will review the hole plugging procedure in S3.5.4 to see what can be done to at least have a procedure for G mark holders.		

Item Number: 19-74	NBIC Location: Part 3, S3.3	Attachment
General Description: Routine repair requirements for partial nozzle replacement		
Subgroup: Graphite		
Task Group: A. Stupica (PM)		
May 2022 Meeting Action: Discussion was held on the proposal and draft sketches. Mr. Viet stated that he will help clean up the initial sketches. Since it will take some time to get the sketches ready, he proposed to move this forward with just the text edits in the proposal, and then add a figure and further language on nozzle repair in a separate item. A motion was made and seconded to approve the proposal. This motion was approved unanimously.		

Item Number: 19-79	NBIC Location: Part 3, S3.5.4 h)	Attachment
General Description: Re-word Part 3, S3.5.4 h) to clarify cementing procedure for plugs		
Subgroup: Graphite		
Task Group: A. Stupica (PM)		
Explanation of Need: Existing language includes unnecessary steps and is clunky to read. Re-word to clarify the full procedure.		
May 2022 Meeting Action: The group discussed Mr. Stupica's proposal and did some wordsmithing to clarify the intended changes. After discussion concluded, a motion was made and seconded to approve to the proposal. This motion was unanimously approved.		

8. New Business

During discussion for Item 17-167, the group felt some adjustments needed to be made to S3.2 d) and e) to clarify those sections and the paperwork needed for those procedures. Mr. Lee offered to be the PM for this project and will prepare an initial proposal for the next meeting.

9. Future Meetings

NBIC Meeting – July 11th-14th, 2022 in Indianapolis, IN and on Zoom
TG Graphite Meeting – August 23rd and 24th, 2022 in Columbus, OH

10. Adjournment

Mr. Viet adjourned the meeting at 1:10PM Eastern Time.

Respectfully submitted,

Jonathan Ellis

Jonathan Ellis
NBIC Secretary

Item 18-94: Requirements for spring alterations in a graphite pressure vessel

S3.4 ALTERATIONS

- a) The requirements provided in this section shall apply, insofar as they are applicable to the materials discussed herein. Completed alterations shall be subjected to a pressure test not less than that required by the code of construction. The test pressure shall be maintained for a minimum of 30 minutes. The pressure shall be reduced to MAWP and maintained for inspection.
- a)b) Alteration of the spring design (e.g. change in stiffness or the initial compression) of a graphite shell-and-tube heat exchanger shall be done only after revised calculations have been prepared in accordance with the "R" Certificate Holder's Quality Control System and accepted by the Inspector. When the standard governing the original construction is the ASME Code, the calculations shall comply with Section VIII, Div. 1 2019 Edition or later.
- b)c) The nameplate shall be applied in accordance with Section 5 of this part. The letter "G" shall be applied to the nameplate under the "R" stamp when graphite alterations are made. The alternate procedure defined in 5.10 may be used in lieu of the stamping and nameplate attachment requirements of NBIC Part 3, Section 5.
- e)d) Organizations performing alterations under an "R" stamp program shall register such alterations with the National Board.

Item 19-74: Routine repair requirements for partial nozzle replacement

Part 3, S3.3 REPAIRS OF A ROUTINE NATURE

a) The following repairs shall be considered routine, and shall comply with NBIC Part 3, 3.3.2.

1) Machining — routine repair shall not include the machining of pressure-retaining parts with the exception of minor machining for cleaning and joint preparation not to exceed 1/32 in. (0.8 mm) of material thickness.

2) Repair of Gasket Surfaces — re-machining of gasket surfaces, re-serrating, or flattening is permitted if the design thickness is maintained.

3) Replacing Individual Tubes — drilling out and replacing tubes with new tubes or repaired tubes. Only certified materials shall be used for this repair.

4) Nozzle Replacement — complete or partial replacement of nozzles by removing ~~the old nozzle and cementing a new nozzle~~ all or a length of the existing nozzle and cementing a new piece in place. This is applicable for nozzles with inside diameters not exceeding 6 inches (152 mm).

Item 19-79: Reword Part 3, S3.5.4 h) to clarify cementing procedure for plugs

S3.5.4 PLUGGING OF LEAKING OR DAMAGED TUBES

g) The cement shall be prepared per the cement manufacturer's instructions.

h) When cementing the plug(s), ~~100% of individual plugs~~ all contact surfaces of each plug, as well as the inside diameter of the tube opening(s), shall be coated with cement. The plug(s) shall ~~then~~ be inserted ~~one by one, against each other,~~ into each end of the tube(s) being plugged.

i) Once the plugging is completed, and before the cement cures, the ~~end~~ plug(s) may need to be held in place, as newly cemented plugs may exhibit a tendency to dislodge from the plugged tube(s) prior to final curing of the cement.