



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

**NATIONAL BOARD  
INSPECTION CODE  
SUBCOMMITTEE ON INSPECTION**

***MINUTES***

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*Meeting of July 18, 2012  
Columbus, Ohio*

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

The National Board of Boiler & Pressure Vessel Inspectors  
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Columbus, Ohio 43229-1183  
Phone: (614)888-8320  
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**MINUTES OF SUBCOMMITTEE ON INSPECTION  
JULY 18, 2012 COLUMBUS, OHIO**

**1. Call to Order**

The Chairman Don Cook called the meeting to order at 8:00 AM on July 18, 2012.

**2. Announcements**

- a) The National Board would host an outing to the Clippers Baseball game on July 18, 2012. Bus transportation from the Crowne Plaza was provided from 5:30PM –? PM.
- b) The National Board would host a continental breakfast on July 19, 2012 from 7 – 8:00 AM
- c) The National Board would provide a daily luncheon from 12 - 1:00 PM

**3. Adoption of the Agenda**

There was a motion to approve the Agenda as modified. The motion unanimously approved.

**4. Approval of the Minutes of January, 2012**

There was a motion to approve the minutes of the January, 2012 meeting. The motion was unanimously approved.

**5. Review of the Roster**

The attendees, members, alternates and guests are identified on **Attachment 1**. With the attached attendance listing, a quorum was established. Messrs. McRae, Pate, Safarz, Schwartzwalder, Staniszewski and Wacker were excused.

The following members of SG Inspection General were reappointed: Domenic Canonico, Jim Getter, and John Richardson. David Parrish is retiring and was not reappointed.

The following members of SG Inspection Specific were reappointed: Don Cook, Jim Getter, Greg McRae, Jim Riley, Mike Schwartzwalder, and Stan Staniszewski. Randy Wacker is retiring and was not reappointed.

**6. Inquiries**

**IN12-0201** *SC on Inspection Part 2, 5.2 Q: If a National Board Commissioned Inspector has verified the replacement of stamped data or nameplate by an "R" Certificate Holder on Corrugated Rolls that are not stationary and subject to operation in multiple Jurisdictions, possibly by multiple owners, is the application of an NB-36 "Replacement of Stamped Data" form required? A: No, if performed by an "R" Certificate Holder and verified by an National Board Commissioned Inspector the responsibility of traceability and nameplate accuracy is on the Certificate Holder similar to nameplate replacement in the NBIC Part 3, 5.5.9.5.*

**IN12-0202** *SC on Inspection Part 2, 5.2 Q: Can an NB-36 "Replacement of Stamped Data" form which is required to be signed by an National Board Commissioned Inspector, for Corrugated Rolls that are not stationary and subject to operation in multiple Jurisdictions, possibly by multiple owners, be filed with the National Board and copied to the applicable Jurisdiction in lieu of obtaining an approval signature from the Jurisdiction? A: Yes, the approval from one Jurisdiction should not be incumbent on any other Jurisdiction due to transient nature of Corrugated Roll Pressure Wquipment. Similarly, if there is no Jurisdiction in the location of installation another Jurisdiction would be compelled to accept National Board filing if the equipment is moved.*

Both of the above inquiries were assigned to Acton Item NB12-1801. A Task Group was assigned.

**7. Action Items**

**NB07-0910** *Part 2 S-6 SG Inspection Specific Review DOT supplement. A Task Group comprised of S. Staniszewski (Lead), G. McRae, and J. Riley is assigned*

A progress report was given by Mr. Cook.

**Action Items (Continued)**

**NB08-0321** *Part 2 1.5 SG on Insp. Spec. Add in paragraph 1.5 Inspection Activities wording to address change of service for a pressure vessel. These requirements should caution inspectors, owners, and jurisdictional authorities of the inherent dangers involved when changing service. A new supplement or new Subject under 2.3.6. Description and Concern of Specific Types of Pressure Vessels, should be added to address the specific requirements for inspection of pressure vessels that have been converted from one service to another. A Task Group has been formed from all three parts of the NBIC under the leadership of R. Wielgoszinski. Task group members from Part 2 are G. McRae (Lead), R. Reetz, R. Wacker, D. Cook, and J. Getter.* A progress report was given by Mr. Cook on a proposed Supplement 9. A straw poll was taken of the Sub-Committee. The majority supported inclusion of the text into a new paragraph 1.6 in lieu of a new Supplement 9.

**NB08-0701** *Part 2 S7 SG on Insp. Spec. Add a requirement for change of service from above ground to below ground installations of LPG tanks. Also needed are requirements for how to inspect these tanks. A Task Group comprised of G. McRae(Lead), G. Galanes, J. Getter, M. Huffman, V. Mullins, J. Reed, D. Cook, J. Richardson, and V. Newton is assigned.* A report was given by Mr. Mullins. After discussion, there was a motion to accept the proposal. The motion was unanimously approved. **(Attachment 2)**

**NB08-0703** *Part 2 S7 SG on Insp. Spec. Investigate the feasibility of marking or stamping a re-rated name plate on a LPG tank that is being altered from an above ground tank to a below ground tank. A Task Group comprised of G. McRae(Lead), G. Galanes, J. Getter, M. Huffman, V. Mullins, J. Reed, D. Cook, J. Richardson, and V. Newton is assigned.*

This item is handled under NB08-0701. There was a motion to close the item with no action taken. The motion was unanimously approved.

**NB10-0601** *Part 2 S6, SG on Fiber Reinforced Plastic - Inspection of high pressure composite vessels.*  
An informational report was given by Mr. Francis Brown.

**NB10-1301** *Part 2 SG Inspection Specific - Anhydrous Ammonia Nurse Tank Inspection. A Task Group consisting of G. McRae, S. Staniszewski, J. Getter, and R. Reetz(Chair) is assigned.*

A report was given by Mr. Reetz. After discussion, there was a motion to accept the proposal. The motion was unanimously approved. **(Attachment 3)**

**NB11-0201** *Part 2 Supplement 2 SG on Historical Boilers Limits for Bulged Stayed Firebox Sheets A Task Group consisting of R. Bryce (Chair), D. Cook and F. Johnson was assigned.* A progress report was given by Mr. Reetz and Mr. Cook.

**NB11-0203** *Part 3 Supplement 2 S2.13.9.1 SG on Historical Boilers Revise text and Figure to incorporate the correct percentage of wasting allowed. A Task Group consisting of M. Wahl and T. Dillon was assigned.*

This item was transferred to Part 3.

**NB11-0204** *Part 2 & 3 Supplement 2 SG on Historical Boilers Review NDE requirements of stayed areas. A Task Group consisting of M. Wahl (Chair), J. Larson and F. Johnson was assigned.* A progress report was given by Mr. Reetz.

**NB11-0401** *Part 4 SC PRD The development of a possible fourth part of the NBIC to cover pressure relief topics.* A straw poll was taken concerning the development of a Part 4. Results were:  
**2** For **5** Against **2** No Opinion

**NB11-0901** *Part 2 Supplement 2 SG on Historical Boilers This section should be revised to provide chart(s) and formula(s) for calculating maximum allowable working pressure for cylindrical components under external pressure. A Task Group of Tom Dillard and Steve Torkildson was assigned.* A report was given by Mr. Reetz. There was a motion to close the item with no action taken. The motion was unanimously approved.

**Action Items (Continued)**

**NB11-1101** *Part 2 S2.6.2 b) SG on Historical Boilers* This section should be revised to provide more guidance for evaluating local pitting corrosion versus general corrosion. A Task Group consisting of M. Wahl and Don Cook was assigned. A progress report was given by Mr. Reetz.

**NB11-1601** *Part 2 S2 Table S2.10.4.1* This chart contains errors in formula and nomenclature and should be revised. A Task Group of R. Reetz, F. Johnson and R. Bryce was assigned. A report was given by Mr. Reetz. There was a motion to letter ballot this item to the Sub-Committee. The motion was unanimously approved.

**NB11-1603** *Part 2 S2.10.2 SG on Historical Boilers* Define deteriorated rivet heads. A Task Group consisting of Dr. Bryce and Dennis Ruppert was assigned. A report was given by Mr. Reetz. There was a motion to letter ballot this item to the Sub-Committee. The motion was unanimously approved.

**NB11-2101** *Part 2 SG on Insp. Spec. – Address Refurbished Tanks.* A task group of V. Mullins(chair), J. Getter, J. Richardson and D. Canonico was assigned. A report was given by Mr. Mullins. There was a motion to accept the proposal. The motion was unanimously approved. (Attachment 4)

**NB12-0604** *Part 2 Forms NB-6 and NB-7 SG Inspection General - Change these forms to become current with Jurisdictional requirements.* A Task Group of on Don Cook (Chair), Ralph Pate, Mark Mooney, Tim Barker and Robert Dobbins was assigned. A report was given by Mr. Cook. There was a motion to accept the revised forms. The motion was unanimously approved. (Attachment 5)

**NB12-1201** *Part 2 S2.10.2 SG on Historical Boilers* Review requirements for stayed areas. A task group of D. Cook, T. Dillon, and R. Bryce was assigned. A progress report was given by Mr. Reetz.

**NB12-1501** *Part 2 SG Inspection General - Review inspection requirements so as to align with installation requirements in Part 1.* A Task Group of V. Newton, M. Horbaczewski, J. Daiber and J. Safarz was assigned. A progress report was given by Mr. Newton.

**NB12-1801** *Part 2 5.5.2 – 5.5.3 SG Inspection General - This item is a result of IN12-0201 & IN12-0202.* Replacement of stamping during inservice inspection. A Task Group consisting of M. Mooney (Lead), R. Dobbins, T. Barker, D. Canonico, and Daren Daily was assigned.

**NB12-1901** *All 3 parts SC on Inspection - This action item was opened as a result of NB11-1501 to address the usage of the words "metal" and "material".* The Task Group of V. Newton (Lead), B. Moore, and J. Pillow has been assigned to examine their respective parts. A report was given by Mr. Newton. There was a motion to accept the wording previously accepted under NB11-1501. The motion was unanimously approved. (Attachment 6).

**8. New Business**

**9. Future Meetings**

January 2013      Mobile, AL  
July 2013          Columbus, Ohio

**10. Adjournment**

The meeting was adjourned at 2:30 PM on January 18, 2012.

Respectfully Submitted,  
Bill Smith

Secretary, Subcommittee on Inspections

Attachment 1- Attendance Roster

Attachment 2- NB08-0701

Attachment 3- NB10-1301

Attachment 4- NB11-2101

Attachment 5- NB12-0604

Attachment 6- NB12-1901

## Attendance List SC on Inspection

Meeting Date: July 18, 2012

<p><b>Don Cook</b> Principal Safety Engineer Dept. of Industrial Relations Div. of Industrial Safety &amp; Health 1515 Clay Street, Suite 1302 Oakland, CA 94612-1302</p> <p>Ph: 510-622-3050 Fax: 510-622-3063 E-mail: <a href="mailto:dcook@hq.dir.ca.gov">dcook@hq.dir.ca.gov</a></p>	<p>Attended: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p><i>MC</i> Initial</p>	<p><b>Domenic A. Canonico</b> Canonico &amp; Assoc. <del>35 Old Riding Way</del> Signal Mountain, TN 37377 <i>1423 EAST BROAD ROAD</i></p> <p>Ph: 423-886-1008 Fax: E-mail: <a href="mailto:canonicod@epbfi.com">canonicod@epbfi.com</a></p>	<p>Attended: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p><i>DAC</i> Initial</p>
<p><b>Stanley Staniszewski, Jr.</b> US Dept. of Transportation, Pipelines &amp; Administration Hazardous Materials Safety East Building PHH -20 1200 New Jersey Ave. SE Washington, DC 20590</p> <p>Ph: 202-366-4545 x 0453 Fax: 202-366-3753 E-mail: <a href="mailto:stanley.staniszewski@dot.gov">stanley.staniszewski@dot.gov</a></p>	<p>Attended: Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Initial</p>	<p><b>Robert Reetz</b> Chief Boiler Inspector North Dakota Insurance Department Boiler Inspection Program 1701 S. 12<sup>th</sup> Street Bismarck, ND 58504-6644</p> <p>Ph: 701/328-9607 Fax: 701/328-9610 E-mail: <a href="mailto:breetz@nd.gov">breetz@nd.gov</a></p>	<p>Attended: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p><i>RR</i> Initial</p>
<p><b>Tim Barker</b> FM Global 601 108<sup>th</sup> NE Suite 1400 Bellevue, WA 98004</p> <p>Ph: 360-801-3790 Fax: E-mail: <a href="mailto:Timothy.Barker@FMGlobal.com">Timothy.Barker@FMGlobal.com</a></p>	<p>Attended: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p><i>TMB</i> Initial</p>	<p><b>David Parrish</b> FM Global 1151 Bos-Prov Turnpike PO Box 9102 Norwood, MA 02062-9102 P: 781-255-4734 F: 781-762-9375 E: <a href="mailto:david.parrish@fmglobal.com">david.parrish@fmglobal.com</a></p>	<p>Attended: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p><i>DP</i> Initial</p>
<p><b>Mark Mooney</b> Liberty Mutual Insurance Engineering Manager-Eastern Region 20 Riverside Road MS:03BN Weston, MA Ph: 781-891-890 x 27329 Fax: 781-642-6512 E-mail: <a href="mailto:Mark.Mooney@LibertyMutual.com">Mark.Mooney@LibertyMutual.com</a></p>	<p>Attended: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p><i>MM</i> Initial</p>	<p><b>Jim Getter</b> Worthington Cylinders 200 Old Wilson Bridge Road Columbus, OH 43085 P: 614-840-3087 F: 614-438-3083 E-mail: <a href="mailto:jmgetter@worthingtonindustries.com">jmgetter@worthingtonindustries.com</a></p>	<p>Attended: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p><i>Jm</i> Initial</p>
<p><b>Mike Schwartzwalder</b> Stress Engineer Services, Inc. 5380 Courseview Drive Mason, OH 45045</p> <p>Ph: 513-336-6701 Fax 614-716-1744 E-mail: <a href="mailto:meschwartzwr@stress.com">meschwartzwr@stress.com</a></p>	<p>Attended: Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Initial</p>	<p><b>Bill Smith</b> National Board 1055 Crupper Ave. Columbus, OH 43229 P: 614-888-8320 F: 614-847-1828 E: <a href="mailto:bsmith@nationalboard.org">bsmith@nationalboard.org</a></p>	<p>Attended: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p><i>WBS</i> Initial</p>

## Attendance List SC on Inspection

Meeting Date: July 18, 2012

<p><b>Jim Riley</b>  <del>Conoco Phillips</del> <i>66</i>            1380 San Pablo Ave.            Rodeo, CA 94572-1354</p> <p>P: 510-245-5895            F:</p> <p>E-mail: <a href="mailto:jim.riley@conocoPhillips.com">jim.riley@conocoPhillips.com</a> <i>P66</i></p>	<p>Attended:</p> <p>Yes <input checked="" type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p><i>JR</i>            Initial</p>	<p><b>Randy Wacker</b>            Dupont            4417 Lancaster Pike            CRO 722/1050            Wilmington, DE 19880</p> <p>Ph: 302-999-2607            Fax: 302-999-6273            E-mail:  <a href="mailto:randy.a.wacker@usa.dupont.com">randy.a.wacker@usa.dupont.com</a></p>	<p>Attended:</p> <p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p>_____            Initial</p>
<p><b>Venus Newton</b>            Manager of Jurisdictional Inspection Services            One CIS Insurance Company            3380 Chastain Meadows Pkwy            Kennesaw, GA 30144</p> <p>Ph: 770-590-6726            Cell: 678-457-1310            Fax:            E-mail:  <a href="mailto:venus.newton@us.bureauveritas.com">venus.newton@us.bureauveritas.com</a></p>	<p>Attended:</p> <p>Yes <input checked="" type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p><i>VN</i>            Initial</p>	<p><b>Greg McRae</b>            Engineering and Technical Director            Trinity Containers, LLC            2525 Stemmons Freeway            Dallas, TX 75207</p> <p>Ph: 214-589-8559            Fax: 214-589-8553            E-mail: <a href="mailto:greg.mcrae@trin.net">greg.mcrae@trin.net</a></p>	<p>Attended:</p> <p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p>_____            Initial</p>
<p><b>John Richardson</b>            Consultant - Dresser, Inc.            980 Richardson Road            Colfax, LA 71417</p> <p>Ph: 318-627-5504            Fax: 318-627-2969</p> <p>E-mail: <a href="mailto:jwrichar@aol.com">jwrichar@aol.com</a></p>	<p>Attended:</p> <p>Yes <input checked="" type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p><i>JR</i>            Initial</p>	<p><b>Mark Horbaczewski</b>            Midwest Generation            1111 W Cermak            Chicago, IL 60608</p> <p>Ph: 773-447-5667            Fax:            E-mail: <a href="mailto:MHorbaczewski@MWGen.com">MHorbaczewski@MWGen.com</a></p>	<p>Attended:</p> <p>Yes <input checked="" type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p><i>MH</i>            Initial</p>
<p><b>Jason Safarz</b>            Senior Account Engineer            CEC Combustion Services Group            1699 Brookpark Road            Cleveland, OH 44130</p> <p>Ph: 216-749-2992            Fax: 216-398-8403</p> <p>Email:  <a href="mailto:jsafarz@cumbustionsafety.com">jsafarz@cumbustionsafety.com</a></p>	<p>Attended:</p> <p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p>_____            Initial</p>	<p><b>Ralph Pate</b>            Chief Elevator/Boiler Inspector            Alabama Department of Labor            100 North Union St., Suite 630            PO Box 303500            Montgomery AL 36130-3500</p> <p>Ph: 334-242-3066            Fax: 334-240-3417            Email: <a href="mailto:ralph.pate@labor.alabama.gov">ralph.pate@labor.alabama.gov</a></p>	<p>Attended:</p> <p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p>_____            Initial</p>

## Attendance List SC on Inspection

Meeting Date: July 18, 2012

<p>VIRGIL MULLINS QUALITY STEEL CORP 662-719-2397 C MULL@PROPANETANK.COM 662-843-4046 O</p>	
<p>MARK ANDERSON MARQUIP, LLC 1300 NORTH <del>RD</del> AIRPORT RD. PHILLIPS, WIS. 54555 715: 339: 2191 EXT. 2407 MARK.ANDERSON@MARQUIPWARNEDUNITE. COM</p>	
<p>DAREN DAILY MARQUIP, LLC 1300 N. AIRPORT RD PHILLIPS, WI 54555 715-339-2191 EXT. 2303 DAREN.DAILY@MARQUIPWARNEDUNITE.COM</p>	

**NBO8-0701****S7.9 REQUIREMENTS FOR CHANGE OF SERVICE FROM ABOVE GROUND TO UNDERGROUND SERVICE**

ASME LPG storage containers, less than 2000 gallons, may be changed from above ground (AG) service to underground (UG) service subject to the following conditions:

1. Containers that have been previously used in anhydrous ammonia service shall not be converted to LPG service. Any blue coloring of the brass valves indicates that the container has been in anhydrous ammonia service.
2. The container shall be blasted down to bare metal so that an inspection can be performed under the guidelines of this Supplement.
3. Verify that there is no internal corrosion due to valves having been removed while the container was out of service.
4. Any unused connections located on the container shall be welded shut using a forged plug or removed and replaced with a flush patch. Any flush patch shall be of the same thickness and type as the original material.
5. All connections on the top of the container, except for the check lock/liquid withdrawal shall be replaced with a multivalve. The multivalve will be attached to a standpipe that will extend the assembly to grade. This assembly will be enclosed by a domed sleeve that reaches the top of the grade.
6. The check lock/liquid withdrawal connection on top of the container shall be located inside the domed sleeve.
7. The bleeder valve tube shall be of the correct length for the container size.
8. The support legs and lifting lugs may remain in place. All attachment welds shall encircle the attachment to prevent crevices that create a potential area of corrosion.
9. There shall be connections for attachment of anodes for cathodic protection.
10. Any welding shall be performed by a qualified "R" stamp holder using qualified welding procedures.
11. The repair nameplate shall have the information from the original nameplate. This shall include the manufacturer's name, container serial number, National Board number, MAWP, year built, and head and shell thicknesses. Additional information shall include an indication of underground service, new maximum percentage of fill, and a National Board "R" stamp. See Part 2- 5.2, Part 3- 5.7 for additional stamping requirements.
12. A coating shall be applied that is suitable for corrosion protection in an underground burial application. Any coating touch up needed at the time of installation shall be compatible with the original coating.

**NB10-1301 Part 2, SG Inspection Specific*****Task Group on Anhydrous Ammonia Nurse Tank Inspection***

*Task Group Members: Greg McRae (Trinity), Stan Staniszewski (DOT), Jim Getter (Worthington Cylinders), Bob Reetz (State of North Dakota)*

**June 11, 2012 Draft**

*This would be a new section of Part 2. It should be numbered 2.3.6.5 and come directly after 2.3.6.4., the current section on "Liquid Ammonia Vessels". (Present 2.3.6.5 would be renumbered as 2.3.6.6)*

**2.3.6.5 ANHYDROUS AMMONIA NURSE TANKS**

- a) Nurse tanks (considered as implements of husbandry) are anhydrous ammonia pressure vessels on farm wagons, not exceeding a capacity of 3,000 water gallons (11,355 liters), used for agricultural application of liquid anhydrous ammonia to farm fields as fertilizer. Nurse tanks come under United States Department of Transportation (DOT) requirements and may also be subject to various local jurisdictional requirements. Nurse tanks should be inspected closely at least once per seasonal use. Inspections of nurse tanks include the following items. These items are not meant to be all inclusive.
- b) Inspection shall consist of the following:
  - 1) Pressure Vessel - Verify that the pressure vessel is constructed for anhydrous ammonia service and that it is ASME stamped and National Board registered, as required by the jurisdiction. Check that the data plate is legible and not painted over or sand blasted. If the data plate is missing or illegible, welding is prohibited, and the tank shall be tested and operated under the DOT Hazardous Material Regulation (HMR) as required in Title 49 Code of Federal Regulations (CFR) 173.315m or the tank shall be removed from service. Post-construction welding, if any, to the pressure vessel, nozzles or support legs shall be in accordance with NBIC procedures and stamping as required in Part 3. (Also see ANSI K61.1 for the definition of repair.) Cracks, dents, bulges, cuts, gouges and corrosion shall not exceed the acceptance criteria of Section 2.3.6.4 (f).
  - 2) Valves and Fittings - Verify that the pressure relief device is ASME constructed and National Board capacity certified, has correct capacity and set pressure, is date current, and is not leaking, corroded or painted. Check that a rain cap is installed. Ensure that the hydrostatic relief valve is set for 350-400 psi (2415-2760 kPa), is in place in or on the liquid withdrawal valve and that it is in good condition and date current. A liquid level float gage shall be installed and be operable. In addition, a fixed liquid level gage (85% gage) shall be operable and unobstructed by tape or paint. A pressure gage with a clear lens and with a 0-400 psi (0-2760 kPa) dial range shall be installed and be observed to be operable. A liquid withdrawal valve shall be in place and observed to be in good condition. Liquid and vapor fill valves shall be in operable condition and their end fittings protected with valve covers. In addition, check that no galvanized, brass, or cast iron fittings are installed.

- 3) Nurse Tank Painting, Decals, and Marking – The paint shall be white or aluminum, the painted surface not damaged or faded, and the tank surface not rusted. A nurse tank unique owner identification number shall be observed to be in place. A DOT approved slow-moving vehicle (SMV) emblem or sign shall be installed at the rear. Legible transfer and safety decals shall be in place near the fill valves. "INHALATION HAZARD" markings or decals shall be observed to be in place on each side. On each side and on each end, observe that "DOT 1005" markings or decals and "ANHYDROUS AMMONIA" markings or decals are in place. (Note that these markings or decals are not required on the end of a tank with valves and fittings on that end.) Liquid and vapor valves shall be observed to be color coded or labeled for liquid or vapor. Markings for tests and inspections required due to a missing or illegible data plates shall be in place as required by DOT Hazardous Material Regulations.
- 4) Safety Specific and Miscellaneous Equipment - Roll-over protection for valves and appurtenances, to include the pressure relief device, shall be observed to be in place. This required protection must include any bottom liquid withdrawal valves. Observe that the transfer hose, if so equipped, is date current and in good condition (not cut to the cords or showing stretch damage, bulging, or kinking). Check that a fitting is in place to secure the transfer hose (if so equipped) during transport and storage. Protective gloves and Z87 rated goggles shall be observed to be in a safety kit on the nurse tank. A safety water container [5 gallon (19 liter) minimum capacity] with adequate withdrawal hose shall be on the nurse tank and be in usable condition.
- 5) Trailer and Running Gear – Ensure that the hitch and undercarriage are in good repair. Observe that welds are not cracked or the rails bent. The trailer tires shall be in serviceable condition with no cuts to the cords. Two safety chains and hooks shall be in place with one hitch pin and lock pin available. The tank to trailer anchorage shall be satisfactory and any bolting tightened. Spring leaves shall not be cracked or broken on inspection and the ends secured.

## SUPPLEMENT 7

## NB11-2101

## INSPECTION OF CONTAINERS IN LIQUEFIED PETROLEUM GAS (LPG) SERVICE

## S7.1 SCOPE

Containers designed for storing LPG can be stationary or can be mounted on skids. LPG is generally considered to be non-corrosive to the interior of the container. NBIC Part 2, Supplement 7 is provided for guidance of a general nature for the owner, user, commercial refurbisher or jurisdictional authority. There may be occasions where more detailed procedures will be required such as changing from one service to another (e.g., anhydrous ammonia to LPG; aboveground to underground; or containers that are commercially refurbished).

The application of this Supplement to underground containers will only be necessary when evidence of structural damage to the container has been observed, leakage has been determined, or the container has been dug up, and is to be reinstalled. Special consideration will be given to containers that are commercially refurbished (see NBIC Part 2, Supplement 7.10).

## S7.2 PRE-INSPECTION ACTIVITIES

A review of the known history of the container shall be performed. This shall include a review of information, such as:

1. Operating conditions;
2. Historical contents of the container;
3. Results of any previous inspection;
4. Current jurisdictional inspection certificate, if required;
5. ASME Code symbol stamping or mark of code of construction, if required; and
6. National Board and/or jurisdictional registration number, if required.

The container shall be sufficiently cleaned to allow for visual inspection. Except for commercially refurbished containers see S7.9

## S7.3 INSERVICE INSPECTION FOR CONTAINERS IN LP GAS SERVICE

The type of inspection given to containers shall take into consideration the condition of the container and the environment in which it operates. The inspection may be external or internal, and use a variety of nondestructive examination methods. Where there is no reason to suspect an unsafe condition or where there are no inspection openings, internal inspections need not be performed. When service conditions change from one service to another, such as ammonia to LPG, an internal inspection may be required. The external inspection may be performed when the container is pressurized or depressurized, but shall provide the necessary information that the essential sections of the container are of a condition to operate.

## S7.4 EXTERNAL INSPECTION

All parts of the container shall be inspected for corrosion, distortion, cracking, or other conditions as described in this Section. In addition, the following shall be reviewed, where applicable:

## a.) Insulation or Coating

If the insulation or coating is in good condition and there is no reason to suspect an unsafe condition behind it, then it is not necessary to remove the insulation or coating in order to inspect the container, except for commercially refurbished containers see S7.9 However, it may be advisable to remove a small portion of the insulation or coating in order to determine its condition and the condition of the container surface.

**S7.8.2 DENTS**

b.) Welds

The maximum mean dent diameter on welds (i.e., part of the deformation includes a weld) shall not exceed 10% of the shell diameter. The maximum depth shall not exceed 5% of the mean dent diameter.

**S7.8.4 CUTS OR GOUGES**

When a cut or a gouge exceeds 25% of the required thickness of the container, the container shall be removed from service until it is repaired by a qualified repair organization or permanently removed from service.

**S7.8.5 CORROSION**

a) Line and Crevice Corrosion

For line and crevice corrosion, the depth of the corrosion shall not exceed 25% of the required thickness.

b) Isolated Pitting

Isolated pits may be disregarded provided that:

- 1) Their depth is not more than 25% of the required thickness of the container wall;
- 2) The total area of the pits does not exceed 7 sq. in. (4500 sq. mm) within any 8 in. (200 mm) diameter circle; and
- 3) The sum of their dimensions along any straight line within this circle does not exceed 2 in. (50 mm).

c) General Corrosion

For a corroded area of considerable size, the thickness along the most critical plane of such area may be averaged over a length not exceeding 10 in. (250 mm). The thickness at the thinnest point shall not be less than 75% of the required wall thickness, and the average shall not be less than 90% of the required wall thickness. When general corrosion is identified that exceeds the limits set forth in this paragraph, the container shall be removed from service until it is repaired by a qualified "R" Stamp holder or permanently removed from service unless an acceptable fitness for service evaluation is performed in accordance with Part 2- 4.4 .

**(New Section)****57.9 ASME LPG Containers Less Than 2000 Gallons Being Refurbished By a Commercial Source.**

Commercially refurbished containers are used containers that are temporarily taken out of service for repair and or renewal and sent to a company which specializes in this type of work. Because the history of some of these containers is unknown, special attention shall be given to inspection and repair before returning any of these containers back to service. ASME LPG containers less than 2000 gallons may be refurbished subject to the following conditions:

- 1) A complete external inspection shall be completed under the guidelines of this Supplement.
  - a) If any defects are found, the defect shall be repaired under NBIC Part 3, Repairs and Alterations by qualified personnel or permanently removed from service
- 2) Containers that have been previously used in anhydrous ammonia service shall not be converted to LPG service. Any blue coloring of the brass valves indicates that the container has been in anhydrous ammonia service.
- 3) The container shall be blasted down to bare metal so that an inspection can be performed under the guidelines of this Supplement.
- 4) Verify that there is no internal corrosion due to valves having been removed while the container was out of service.

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ATTACHMENT 3  
1 of 3

5.3.4 BOILER OR PRESSURE VESSEL DATA REPORT FORM (NB-5)

FORM NB-5 BOILER OR PRESSURE VESSEL DATA REPORT  
FIRST INTERNAL INSPECTION

Standard Form for Jurisdictions Operating Under the ASME Code

1	DATE INSPECTED MO   DAY   YEAR	CERT EXP DATE MO   YEAR	CERTIFICATE POSTED <input type="checkbox"/> Yes <input type="checkbox"/> No	OWNER NO.	JURISDICTION NUMBER	NAT'L BO NO. <input type="checkbox"/>	OTHER NO. <input type="checkbox"/>
2	OWNER			NATURE OF BUSINESS	KIND OF INSPECTION <input type="checkbox"/> Int <input type="checkbox"/> Ext	CERTIFICATE INSPECTION <input type="checkbox"/> Yes <input type="checkbox"/> No	
3	OWNER'S STREET ADDRESS NUMBER			OWNER'S CITY	STATE	ZIP	
4	USER'S NAME - OBJECT LOCATION			SPECIFIC LOCATION IN PLANT	OBJECT LOCATION - COUNTY		
5	USER'S STREET ADDRESS NUMBER			USER'S CITY	STATE	ZIP	
6	CERTIFICATE COMPANY NAME			CERTIFICATE COMPANY CONTACT NAME	EMAIL		
7	CERTIFICATE COMPANY ADDRESS			CERTIFICATE COMPANY CITY	STATE	ZIP	
8	TYPE <input type="checkbox"/> FT <input type="checkbox"/> WT <input type="checkbox"/> CI <input type="checkbox"/> AIR TANK <input type="checkbox"/> WATER TANK	YEAR BUILT	MANUFACTURER	YEAR INST	<input type="checkbox"/> New <input type="checkbox"/> Second Hand		
9	USE <input type="checkbox"/> Power <input type="checkbox"/> Process <input type="checkbox"/> Steam Htg <input type="checkbox"/> HWI <input type="checkbox"/> HWS <input type="checkbox"/> Storage <input type="checkbox"/> Heat Exchange <input type="checkbox"/> Other	FUEL (BOILER)	METHOD OF FIRING (BOILER)	PRESSURE GAGE TESTED <input type="checkbox"/> Yes <input type="checkbox"/> No			
10	PRESSURE This Inspection <input type="checkbox"/> Prev. Inspection <input type="checkbox"/>	SAFETY-RELIEF VALVES Set at	EXPLAIN IF PRESSURE CHANGED				
11	IS CONDITION OF OBJECT SUCH THAT A CERTIFICATE MAY BE ISSUED? <input type="checkbox"/> Yes <input type="checkbox"/> No (If no, explain fully on back of form - listing code violation)				PRESSURE TEST <input type="checkbox"/> Yes <input type="checkbox"/> No		
12	SHELL No <input type="checkbox"/> Yes <input type="checkbox"/>	DIAMETER <input type="checkbox"/> ID <input type="checkbox"/> OD	OVERALL LENGTH ft in	THICKNESS in	TOTAL HTG SURFACE (BOILER) Sq Ft	MATERIAL ASME Spec. No.	
13	ALLOWABLE STRESS psi	BUIT STRAP Type <input type="checkbox"/> Single <input type="checkbox"/> Double	HEADERS - WT BOILERS Thickness in		TYPE <input type="checkbox"/> Box <input type="checkbox"/> Spherical <input type="checkbox"/> Wire Wall <input type="checkbox"/> Other		
14	TYPE LONGITUDINAL SEAM <input type="checkbox"/> Lap <input type="checkbox"/> Butt <input type="checkbox"/> Welded <input type="checkbox"/> Braze <input type="checkbox"/> Riveted	RIVETED Dia Hole in	PITCH in X in	SEAM EFF %			
15	HEAD THICKNESS in	HEAD TYPE <input type="checkbox"/> Fixed <input type="checkbox"/> Movable <input type="checkbox"/> Plus <input type="checkbox"/> Minus <input type="checkbox"/> Flat <input type="checkbox"/> Quick Opening	RADIUS DISH in	ELLIP RATIO	BOLTING No Dia in Material		
16	TUBE SHEET THICKNESS in	TUBES No Dia in Length ft in	PITCH (WT BLS) in X in	LIGAMENT EFF %			
17	FIRE TUBE BOILERS	DISTANCE UPPER TUBES TO SHELL Front Rear in	STAYED AREA Above Tubes Below Tubes	FRONT HEAD	BEAR HEAD	Above Tubes Below Tubes	
18	STAYS ABOVE TUBES Front No Rear No		TYPE <input type="checkbox"/> Head in Head <input type="checkbox"/> Diagonal <input type="checkbox"/> Welded <input type="checkbox"/> Weldless	AREA OF STAYS Front Rear			
19	STAYS BELOW TUBES Front No Rear No		TYPE <input type="checkbox"/> Head in Head <input type="checkbox"/> Diagonal <input type="checkbox"/> Welded <input type="checkbox"/> Weldless	AREA OF STAYS Front Rear			
20	FURNACE - TYPE Adanson (No. Sect) <input type="checkbox"/> Corrugated <input type="checkbox"/> Plain <input type="checkbox"/> Other	THICKNESS in	TOTAL LENGTH ft in	TYPE LONG SEAM <input type="checkbox"/> Welded <input type="checkbox"/> Riveted <input type="checkbox"/> Seamless			
21	STAYRODS - TYPE Threaded <input type="checkbox"/> Welded <input type="checkbox"/> Hollow <input type="checkbox"/> Other (Size Hole in)	DIAMETER in	PITCH in X in	NET AREA sq in			
22	SAFETY-RELIEF VALVES No <input type="checkbox"/> Size	TOTAL CAPACITY Cfm Lb/hr	OUTLETS No <input type="checkbox"/> Size	PROPERLY DRAINED <input type="checkbox"/> Yes <input type="checkbox"/> No (If no, explain on back of form)			
23	STOP VALVES <input type="checkbox"/> Yes <input type="checkbox"/> No	ON STEAM LINE <input type="checkbox"/> Yes <input type="checkbox"/> No	ON RETURN LINES <input type="checkbox"/> Yes <input type="checkbox"/> No	OTHER CONNECTIONS <input type="checkbox"/> Yes <input type="checkbox"/> No	STEAM LINES PROPERLY DRAINED <input type="checkbox"/> Yes <input type="checkbox"/> No (If no, explain on back of form)		
24	FEED PIPE Size in	FEED APPLIANCES	TYPE DRIVE <input type="checkbox"/> Steam <input type="checkbox"/> Motor	CHECK VALVES	FEED LINE <input type="checkbox"/> Yes <input type="checkbox"/> No	RETURN LINE <input type="checkbox"/> Yes <input type="checkbox"/> No	
25	WATER GAGE GLASS No <input type="checkbox"/>	TRAY COCKS No <input type="checkbox"/>	BLOWOFF PIPE Size in Location	INSPECTION OPENINGS COMPLY WITH CODE <input type="checkbox"/> Yes <input type="checkbox"/> No (If no, explain on back of form)			
26	CAST-IRON BOILERS Length in Width in Height in			SECTIONS in	DOES WELDING ON STEAM, FEED BLOWOFF AND OTHER PIPING COMPLY WITH CODE? <input type="checkbox"/> Yes <input type="checkbox"/> No (If no, explain on back of form)		
27	SHOW ALL CODE STAMPING ON BACK OF FORM. Give details (use sketch) for special objects NOT covered above - such as double wall vessels, etc.				DOES ALL MATERIAL OTHER THAN AS INDICATED ABOVE COMPLY WITH CODE? <input type="checkbox"/> Yes <input type="checkbox"/> No (If no, explain on back of form)		
28	NAME AND TITLE OF PERSON TO WHOM REQUIREMENTS WERE EXPLAINED:						
29	I HEREBY CERTIFY THIS IS A TRUE REPORT OF MY INSPECTION Signature of Inspector			IDENT NO.	EMPLOYED BY	IDENT NO.	

Complete When Not Registered National Board

NB12-0604

**FORM NB-6 BOILER-FIRED PRESSURE VESSEL  
REPORT OF INSPECTION**  
Standard Form for Jurisdictions Operating Under the ASME Code

1	DATE INSPECTED MO   DAY   YEAR	CERT EXP DATE MO   YEAR	CERTIFICATE POSTED <input type="checkbox"/> Yes <input type="checkbox"/> No	OWNER NO.	JURISDICTION NUMBER	NAT'L BD NO. <input type="checkbox"/>	OTHER NO. <input type="checkbox"/>
2	OWNER			NATURE OF BUSINESS	KIND OF INSPECTION <input type="checkbox"/> Int <input type="checkbox"/> Ext	CERTIFICATE INSPECTION <input type="checkbox"/> Yes <input type="checkbox"/> No	
	OWNER'S STREET ADDRESS NUMBER			OWNER'S CITY	STATE	ZIP	
3	USER'S NAME - OBJECT LOCATION			SPECIFIC LOCATION IN PLANT	OBJECT LOCATION - COUNTY		
	USER'S STREET ADDRESS NUMBER			OWNER'S CITY	STATE	ZIP	
4	CERTIFICATE COMPANY NAME			CERTIFICATE COMPANY CONTACT NAME		EMAIL	
	CERTIFICATE COMPANY ADDRESS			CERTIFICATE COMPANY CITY	STATE	ZIP	
5	TYPE <input type="checkbox"/> FT <input type="checkbox"/> WT <input type="checkbox"/> C <input type="checkbox"/> Other _____		YEAR BUILT	MANUFACTURER			
6	USE <input type="checkbox"/> Power <input type="checkbox"/> Process <input type="checkbox"/> Steam Htg <input type="checkbox"/> HWH <input type="checkbox"/> HWS <input type="checkbox"/> Other _____			FUEL	METHOD OF FIRING	PRESSURE GAGE TESTED <input type="checkbox"/> Yes <input type="checkbox"/> No	
7	PRESSURE ALLOWED MAWP _____		SAFETY-RELIEF VALVES		HEATING SURFACE OR BTU (Input/Output)		
	This Inspection _____ Prev. Inspection _____		Set at _____ Total Capacity _____				
8	IS CONDITION OF OBJECT SUCH THAT A CERTIFICATE MAY BE ISSUED?				HYDRO TEST		
	<input type="checkbox"/> Yes <input type="checkbox"/> No (If no, explain fully under conditions)				<input type="checkbox"/> Yes _____ psi Date _____ <input type="checkbox"/> No		
9	<p>CONDITIONS: With respect to the internal surface, describe and state location of any scale, oil or other deposits. Give location and extent of any corrosion and state whether active or inactive. State location and extent of any erosion, grooving, bulging, warping, cracking or similar condition. Report on any defective rivets, bowed, loose or broken stays. State condition of all tubes, tube ends, coils, nipples, etc. Describe any adverse conditions with respect to pressure gage, water column, gage glass, gage rocks, safety valves, etc. Report condition of setting, linings, baffles, supports, etc. Describe any major changes or repairs made since last inspection.</p>						
10	REQUIREMENTS: (List Code Violations)						
11	NAME AND TITLE OF PERSON TO WHOM REQUIREMENTS WERE EXPLAINED:						
	I HEREBY CERTIFY THIS IS A TRUE REPORT OF MY INSPECTION						
	SIGNATURE OF INSPECTOR		IDENT NO.		EMPLOYED BY		IDENT NO.

NB12-0604

**FORM NB-7 PRESSURE VESSELS  
REPORT OF INSPECTION**  
Standard Form for Jurisdictions Operating Under the ASME Code

1	DATE INSPECTED MO   DAY   YEAR	CERT EXP DATE MO   YEAR	CERTIFICATE POSTED <input type="checkbox"/> Yes <input type="checkbox"/> No	OWNER NO.	JURISDICTION NUMBER	NAT'L. BO. NO. <input type="checkbox"/> OTHER NO. <input type="checkbox"/>
2	OWNER			NATURE OF BUSINESS	KIND OF INSPECTION <input type="checkbox"/> Int <input type="checkbox"/> Ext	CERTIFICATE INSPECTION <input type="checkbox"/> Yes <input type="checkbox"/> No
	OWNER'S STREET ADDRESS			OWNER'S CITY	STATE	ZIP
3	USER'S NAME - OBJECT LOCATION			SPECIFIC LOCATION IN PLANT	OBJECT LOCATION - COUNTY	
	USER'S STREET ADDRESS			USER'S CITY	STATE	ZIP
4	CERTIFICATE COMPANY NAME			CERTIFICATE COMPANY CONTACT NAME	EMAIL	
	CERTIFICATE COMPANY ADDRESS			CERTIFICATE COMPANY CITY	STATE	ZIP
5	TYPE <input type="checkbox"/> AIR TANK <input type="checkbox"/> WATER TANK <input type="checkbox"/> OTHER		YEAR BUILT	MANUFACTURER		
6	USE <input type="checkbox"/> STORAGE <input type="checkbox"/> PROCESS <input type="checkbox"/> HEAT EXCHANGE <input type="checkbox"/> OTHER			SIZE	PRESSURE GAGE TESTED <input type="checkbox"/> Yes <input type="checkbox"/> No	
7	PRESSURE ALLOWED THIS INSPECTION _____ PREVIOUS INSPECTION _____		SAFETY RELIEF VALVES SET AT _____ TOTAL CAPACITY _____		EXPLAIN IF PRESSURE CHANGED	
8	IS CONDITION OF OBJECT SUCH THAT A CERTIFICATE MAY BE ISSUED? <input type="checkbox"/> YES <input type="checkbox"/> NO (IF NO EXPLAIN FULLY UNDER CONDITIONS)				HYDRO TEST <input type="checkbox"/> YES _____ PSI DATE _____ <input type="checkbox"/> NO	
9	<p><b>CONDITIONS:</b> With respect to the internal surface, describe and state location of any scale, oil or other deposits. Give location and extent of any corrosion and state whether active or inactive. State location and extent of any erosion, grooving, bulging, warping, cracking or similar condition. Report on any defective rivets, bowed, loose or broken stays. State condition of all tubes, tube ends, coils, nipples, etc. Describe any adverse conditions with respect to pressure gage, water column, gage glass, gage cocks, safety valves, etc. Report condition of settling, linings, baffles, supports, etc. Describe any major changes or repairs made since last inspection.</p>					
10	REQUIREMENTS: (LIST CODE VIOLATIONS)					
10	NAME AND TITLE OF PERSON TO WHOM REQUIREMENTS WERE EXPLAINED:					
	I HEREBY CERTIFY THIS IS A TRUE REPORT OF MY INSPECTION			IDENT NO.	EMPLOYED BY	IDENT NO.
	SIGNATURE OF INSPECTOR					

NB12-1901

**Original Comment:**

Please replace the word "metal" in the first sentence with the word "Material" as metal is not the only material used in the construction of a pressure retaining item. Also we need to indicate that the metal/material temperature being talked about are the minimum and/or maximum values.

**4.3.1.1 ALL PRESSURE TESTING**

Careful design of test procedure can limit potential damage. For testing of pressure retaining items, parameters that should be considered are the test media, test pressure, materials of construction and metal material temperature and temperature of test media. Some carbon steel and low alloy steel materials that were manufactured prior to 1970 may not have sufficient notch toughness to prevent brittle fracture during pressure testing conducted at, or even above, the generally acceptable temperature of 60°F (16 deg C).

For thick-walled pressure-retaining items, it is recommended to seek technical guidance in establishing notch toughness characteristics of steel plate prior to pressure testing so that the metal temperature may be warmed above 60 deg F (16 deg C) to avoid brittle fracture.

The organization making any pressure test shall determine pressure-retaining item material has adequate notch toughness at the minimum temperature of the material and test media during pressure test.

**4.3.1.2 LIQUID PRESSURE TESTING****Paragraph 7**

**Metal:** Material temperature shall not be more than 120°F (49°C) unless the owner-user specifies the requirement for a higher test temperature. If the owner-user specifies a test temperature higher than 120°F (49°C), then precautions shall be taken to afford the Inspector close examination without risk of injury.