

Tennessee Rule Cases and Interpretations

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Tennessee Boiler Rule Cases

Case: BC92-06

**Attendance Requirements for Steam Generators and High Pressure Fluid Heaters (e.g., Clayton)
0800-3-3-.04(22)**

Inquiry: Is it required for high pressure steam generators and high pressure fluid heaters such as the Clayton boiler and model DZ fluid heater to adhere to the twenty (20) minute attendance requirements set in Tennessee Rule 0800-3-3-.04(22)?

Reply: It is in the opinion of the Board that a high pressure steam generator that operates over fifteen (15) psi is a power boiler, therefore the attendant rule applies. It is also in the opinion of the Board that a high temperature fluid heater, such as the Clayton model DZ, is classified as a high temperature hot water boiler and is not subject to the attendant Rule 0800-3-3-.04(22).

Case: BC98-03
Clearance Requirements for Water
Storage Heaters and Unfired Pressure
Vessels
0800-3-3-.04(13)(a)

Inquiry: Is it required for a potable water storage heater (hot water heater) or unfired pressure vessel to adhere to the three (3) foot clearance requirements set forth in Rule 0800-3-3-.04(13) of the Tennessee Boiler Rules and Regulations?

Reply: It is in the opinion of the Board

that potable water storage heaters (hot water heaters) that do not exceed a heat input of 400,000 BTU/hr, and unfired pressure vessels that do not exceed fifty (50) square feet (measured by diameter x length), are exempt from the clearance requirements of Rule 0800-3-3-.04(13)(a). Providing the name plate and code stamping is in view or as stated in Rule 0800-3-3-.03(23), and there is a minimum clearance of at least one and one-half feet (1½') between all sides of the vessel, unless further permitted in Rule 0800-3-3-.04(13)(b).

Case: BC01-15
Routine Repairs in Tennessee
Rule 0800-3-3-.03

Inquiry: What is the position of the State of Tennessee Boiler Board regarding their acceptance of “Routine Repairs” per the NBIC?

Reply: It is the opinion of the Board that the State of Tennessee does not recognize Routine Repairs”. However, the replacement of tubes (boiler and U.P.V.) may be replaced by mechanical means as long as there is no welding involved in the repair. These repairs will be handled in the same manner as welded repairs minus the in-process inspection by the inspector. The repair must be documented on a National Board R-1 form and must be signed by the authorizing inspector or an employee of his A.I.A.

Inquiry: What repairs are required to be documented on a Form R-1, “Report of Welded Repair”?

Reply: It is the opinion of the Board that the proper name of Form R-1 is “Report of Repair”; therefore all repairs (mechanical and welding) shall be documented on the Form R-1. For mechanical repairs, item 7 of the repair shall be left blank and “Mechanical Repair” shall be included under “Description of Work”.

Inquiry: Where does the boundary of the NBIC start/stopped regarding repairs? Example: blow down line replacement; screwed piping connected to water controls, etc.

Reply: It is the opinion of the Board that it is not the Tennessee Board of Boiler Rules’ position to determine the boundaries of where the NBIC starts and/or stops.

Case: BC04-28
Repair/Erection License Expiration
Date
0800-3-3-.03

Inquiry: May a previously Tennessee licensed repair company, that allowed their license to expire, be reissued a renewal license by the Chief Boiler Inspector, as long as the license has not been expire more than one (1) year?

Reply: It is the opinion of the Board that as long as the company in question has continuously maintained their Certificate of Authorization for repair/alteration from

the National Board of Boiler and Pressure Vessel Inspectors, and where applicable the A.S.M.E., that the Chief Inspector may reissue a renewal license for the applying company.

Inquiry: May the same company be reissued by the Chief Boiler Inspector if their license has been expired for more than one (1) year?

Reply: It is the opinion of the Board that the company must reapply and have their application reviewed and ruled on by the Tennessee Board of Boiler Rules.

**Case: BC05-11
Eastman Chemical Company
(Tennessee Operation) Owner-User
Inspection Agency Repair Form in Lieu
of National Board "R" Form
0800-3-3-.03(21)(a)**

Statement of Need: Eastman Chemical Company is requesting approval from the Tennessee Board of Boiler Rules to allow use of Eastman's Repair Authorization Form to be used in lieu of the National Board Form R-1 on documentation and submission of repairs to unfired pressure vessels that are repaired as part of Eastman's Owner/User program in the State of Tennessee. Eastman has used their Repair Authorization Form in lieu of the NBIC Form R-1 since they began their Owner/User program with acceptance by the State of Tennessee. These completed Repair Authorization Forms are stored at Eastman Chemical Company's Tennessee Operations site.

Background: Eastman has maintained forms for documentation and submission of repairs and alterations to unfired pressure vessels since 1954. Up until 1996, Eastman Chemical Company retained the State of Tennessee as their AIA. On November 15, 1995 Eastman received Owner-User Certificate of Authorization #1 from the National Board. The NBIC has stated that Form R-1's may be registered with the National Board and that some jurisdictions may require registration of repairs with the National Board. However, the Chief Inspectors for the State of Tennessee prior to 2001 did not require completion of Form R-1's. Chief Inspector Martin Toth has been working with Eastman to assemble this proposed Rule Case BC05-11 to obtain the proper Board approvals for use of Eastman's Repair Authorization in lieu of NBIC Form R-1. Eastman's Quality Control Manual and

Owner/User Manual were written stating that the Repair Authorization Form was to be used to record repairs to unfired pressure vessels that are repaired as part of Eastman's Owner/User program in the State of Tennessee. This practice was approved by the State of Tennessee during the triennial reviews of Eastman's NBIC "R" and "O/U" Certificates of Authorization.

Eastman's Repair Authorization Form contains all of the information required on the NBIC Form R-1. The Repair Authorization Form is an electronic form that contains hyperlinks to allow review of previous repairs and alterations associated with that particular pressure vessel.

Inquiry: May Eastman Chemical Company use their Repair Authorization Form in lieu of the National Board Form R-1 for documentation and submission of repairs to unfired pressure vessels that are repaired as part of Eastman's Owner/User program in the State of Tennessee?

Reply: It is in the opinion of the Board that Eastman Chemical Company's Repair Authorization Form is adequate documentation for repairs and alterations of unfired pressure vessels that are within Eastman Chemical Company's Tennessee owner-user program only. This excludes repairs and alterations to fired pressure vessels (boilers) and vessels outside their owner-user program.

All Repair Authorization Forms must be stored at the Kingsport plant and available upon request by the Board, Chief Inspector, or Department.

Any change to the approved form must be provided to the Board for review and acceptance, and changes documented in their Eastman Owner-User Inspection Manual and Eastman Quality Control Manual.

Case: BC05-21
HSB registered vessels in lieu of
National Board registration
0800-3-3-.03(1)(b)

Inquiry: Does a pressure vessel that bears an HSB (Hartford Steam Boiler) registration number satisfy the requirements set forth in Tennessee Rule 0800-3-3-.03(1)(b) for National Board registration?

Reply: It is in the opinion of the Board that a secondhand/reinstalled unfired pressure vessel that bears an HSB (Hartford Steam Boiler) Inspection Agency's Serial number in lieu of the National Board registration number may be installed and operated in the state of Tennessee as long as the following is adhered to:

1) The vessel must have been

originally constructed to ASME Section VIII, Division 1.

- 2) construction must have been prior to January 1, 1961
- 3) The vessel must have a manufacturer's data plate attached that bears both the ASME code symbol stamp and the HSB serial number.
- 4) The owner must provide a copy of the original Manufacturers Data Report that documents the HSB serial number stamped on the vessel.
- 5) The owner/user of the vessel must apply to the Chief Inspector for permission to reinstall the vessel in the state of Tennessee prior to installation.
- 6) After approval is granted, the vessel shall be inspected by a Deputy Inspector of the state of Tennessee.

Case: BC05-32
TN registered vessels that have lost its
manufacturer's data plate
0800-3-3-.03(2)

When registered unfired pressure vessels are found missing their manufacturer's data plate (nameplate) bearing the ASME "U" stamp, a request is made to the Tennessee Board of Boiler Rules for a ruling pertaining to the continued safe operation of these vessels. This Board Rule Case is being requested to provide approved practices to assist owner/users of registered unfired pressure vessels in this matter.

Inquiry: May a registered unfired pressure vessel in the State of Tennessee that has lost its original manufacturer's data plate (nameplate) be categorized as a "Tennessee Special" and permitted to be operated?

Reply: Yes; provided all the following conditions are met:

- (1) The vessel has been previously registered and inspected, with the original manufacturer's data plate (nameplate) attached, per Tennessee Boiler and Pressure Vessel Inspection Laws, Rules and Regulations.
- (2) The manufacturer of this vessel has either gone out of business or no longer holds a valid ASME "U" Certificate of Authorization and "U" Stamp.
- (3) The vessel has been registered with the National Board and has a valid National Board number and Manufacturer's Data Report available.
- (4) The owner/user of the vessel has replaced the missing

manufacturer's data plate (nameplate) with a replacement nameplate bearing the words "Tennessee Special" or "T Special", clearly marked "Replacement" and the identical data information from the original stamping, minus the ASME "U" stamp. If the plate is to be welded directly to the vessel, the welding must be completed by a National Board certified repair company.

- (5) Prior authorization from the Tennessee Chief Boiler Inspector has been attained following the submitting of the National Board "Replacement of Stamped Data" form. The form must be completed entirely, minus the original manufacturer's portion, and submitted with a copy of the original manufacturer's data report.
- (6) Witnessing of the stamping must be by a Tennessee Deputy Boiler Inspector or Commissioned Inspector designated and authorized by the Tennessee Chief Boiler Inspector. After the inspector has signed the form, the form must be returned to the Tennessee Chief Boiler Inspector for retention.
- (7) Once removed from its current location, the vessel may not be resold for use as a registered pressure vessel within the state of Tennessee.

Case: BC06-16
Internal Inspection Requirements of
Thermal Fluid Heaters and Vaporizers,
Organic and Synthetic (e.g., Dowtherm,
Hot Oil)
0800-3-3-.03(9)

Statement of Need: ARISE Incorporated is requesting, on behalf of its clients, a ruling by the Tennessee Board of Boiler Rules to allow Thermal Fluid Heaters and Vaporizers to receive an external operational inspection in lieu of the required internal fluid side inspection to obtain a Tennessee Certificate of Inspection.

Background: Many manufacturers are utilizing Thermal Fluid Heaters (i.e. Dowtherm, Hot Oils, etc.) that contain organic or synthetic fluids that will operate at greater temperatures, but lower pressures before vaporizing.

These types of boilers (heaters) are normally built to Section I or VIII, division 1 (Direct Fired) of the ASME Code, and are covered under the in-service inspection section of the NBIC.

NBIC RB-5603 states: *"Inspection of thermal fluid heaters typically is done in either the operating mode or the shutdown mode. Internal inspections, however, are rarely possible due to the characteristics of the fluids and the need to drain and store the fluid. Reliable and safe operation of a heater requires frequent analysis of the fluid to determine that its condition is satisfactory for continued operation. If the fluid begins to breakdown, carbon will form and collect on heat transfer surfaces within the heater. Overheating and pressure boundary failure may result. Review of fluid test results and controls and safety device maintenance records are*

essential in determining satisfactory conditions for continued safe heater operation."

Inquiry: May an external in-service operational inspection to a *Thermal Fluid Heater*, which heats or vaporizes an organic or synthetic fluid, be acceptable to receive a Certificate of Inspection from the state of Tennessee in lieu of the required internal (fluid side) inspection?

Reply: It is in the opinion of the Board that an external in-service operational inspection to a Thermal Fluid Heater would be acceptable provided the following requirements are met:

1. The boiler (heater) must meet the construction standards stated in Rules 0800-3-3-.03 (1) of the Tennessee Boiler Inspection Rules and Regulations.
2. There is no evidence found by the inspector during the in-service operational inspection to warrant an internal inspection.
3. Frequent analysis of the internal fluid must be performed to assure that the fluid is being maintained within satisfactory levels.
4. Temperature measurements must be made to assure that over-heating of the heat transfer surfaces is not occurring.
5. Records of the fluid analysis and temperature measurements must be available to the inspector for review during all external in-service inspections.
6. There shall be two (2) external in-service inspections performed and reported to the Tennessee Boiler Inspection Division annually, with the certificate inspection being designated as the internal.

Case: BC06-23
Clearance Requirements for Wall Mounted, Stacked and Modular L.P. Boilers
0800-3-3-.04(13)(a)

Statement of Need: The staff of the Tennessee Boiler Inspection Division is requesting a ruling by the Tennessee Board of Boiler Rules to allow hot water heating and hot water supply boilers of wall mounted, slacked, and modular design to be exempt in part for the installation clearance requirements of Rule 0800-3-3-.04(13).

Background: With advances in technology and design, the boiler industry has seen hot water heating and hot water supply boilers coming into the market that are mounted on walls, stacked atop each other, and even in modular.

These low pressure boilers have either been labeled and/or listed by a nationally registered testing agency. In the case of those boilers 200,000 BTU/hr and greater, the boiler is required to be stamped ASME and registered with the National Board.

Inquiry: Is it required for a low pressure hot water supply or hot water heating boiler designed and installed as a wall mounted, stacked, or modular unit to adhere to the three (3) foot clearance requirements set forth in Rule 0800-3-3-.04(13) of the Tennessee Boiler Rules and Regulations?

Reply: It is in the opinion of the Board that wall mounted, stacked, and modular low pressure hot water heating and hot water supply boilers that are designed accordingly may be exempt from the clearance requirements of Rule 0800-3-3-.04(13) as follows:

- 1) Wall side of wall mounted boilers.
- 2) Surfaces between stacked boilers (excluding those provided with an inspection manway).
- 3) Sides of modular boilers that are designed and installed to operate as a single multi-unit installation.
- 4) Unless exempt in (1), (2) and (3) above, boilers that exceed a heat input of 400,000 BTU/hr are required to have three feet (3 ft), while boilers that do not exceed a heat input of 400,000 BTU/hr must have a minimum clearance of at least one and one-half feet (1½ ft).
- 5) The boiler nameplate, and where applicable, code stamping is in view or as stated in Rule 0800-3-3-.03(23).
- 6) The boiler's safety relief device is easily accessible by the inspector.
- 7) The installer must indicate if the boiler is wall mounted, stacked, or modular on the permit application submitted for permission to install.

Case: BC06-24
Exit Exemption for Pre-Existing
Buildings
0800-3-3-.04(15)

Issued Date: September 20, 2006

Statement of Need: St. John's UMC has engaged Thompson Engineers, Inc. to produce construction documents for the replacement of an existing low pressure steam boiler. I am requesting, on their behalf and at their request, a variance from Paragraph (15) *Exit from Boiler Room* of Section 0800-3-3-.04 of the Rules of Tennessee Department of Labor and Workforce Development Division of Boiler and Elevator Inspection Board of Boilers Rules ("Boiler Code").

Background: The existing boiler is a Peerless Super Section No. 150-13-5, 1800 MBtuh natural gas input, 15 psi steam boiler, s/n 150.1631. The boiler was installed in 1959, and has remained in operation since. The boiler is located in a 555 sq.ft. basement which has only one exit.

The replacement boiler will be of similar size, style and capacity. It will be located in the same basement boiler room.

I am requesting a ruling from the Board to

permit the design, installation and start-up of the replacement boiler without adding another exit from the boiler room.

- The basement boiler room is surrounded by unexcavated earth on the north and east sides.
- An existing Exit to the outdoors is provided by a 39" wide stair up to ground level on the west side.
- The existing interior sides of the walls on the south and west sides are blocked by an existing stair and an existing air handling unit room, neither of which would allow adequate clearance to construct an additional exit.
- There is no architectural/general construction work involved in the project. It is solely a boiler replacement project.

Inquiry: May a pre-existing building be exempt from the exit requirements of Rule 0800-3-3-.04(15) whenever the existing boiler is replaced by a boiler of like or similar size, style and capacity?

Reply: It is in the opinion of the Board that all exemption requests must take and be ruled upon on a case by case basis. All requests must be submitted through the Chief Boiler Inspector for inclusion on the agenda to the next scheduled meeting of the Tennessee Board of Boiler Rules.

Case: BC07-21
Permit Inspection Fees for Replaced
Registered High and Low Pressure
Boilers
0800-3-3-.09(10)

Background: When the rule for the application for permission to install a boiler or pressure vessel (lethal service) was enacted by the Tennessee Board of Boiler Rules, there was a fee range established based on the number of days notice the applicant (i.e., owner, user, or installer) gave the Boiler Inspection Division prior to installation. The higher fee for less notice (e.g., \$250 for 1 – 10 days notice) was intended to encourage the applicant to apply in a timely manner prior to installation.

This timely notification helps the Boiler Inspection Division to operate in a more efficient manner, while keeping the cost of doing business at a minimum. The higher fee was not planned to penalize those applicants who are intending to replace a boiler or pressure vessel (lethal service) due to failure, unplanned outage, or incidence beyond their control.

Inquiry: May the permit inspection fee (special inspection fee) for replacement boilers of pressure vessel (lethal service) be set at a rate lower than that issued in 0800-3-3-.03(6) and listed in 0800-3-3-.09(10)?

Reply: It is the opinion of the Board that it was not the intent to penalize those applicants placed in a hardship due to a failure, unplanned outage, or incidence beyond their control. Provided all the following conditions are met, the applicant (i.e., owner, user, or installer) shall be billed a maximum of fifty dollars (\$50) for

any replacement permit inspection with a notice between 1-30 days. For notices greater than 30 days, the replacement permit inspection fee will be thirty-five dollars (\$35):

(1) The boiler or pressure vessel (lethal service) being replaced must be registered with the Tennessee Boiler Inspection Division.

(2) The vessel being replaced must have a current certificate of inspection with the Tennessee Boiler Inspection Division.

(3) If the installation is classified as an “Emergency Installation”, the applicant must follow and submit the Application for Permission to Install” per the requirements of Rule 0800-3-3-.03(6)(h); and indicate on the application both “Emergency Installation” and the Tennessee Number of the boiler or lethal service pressure vessel being replaced.

(4) The applicant is required to contact the Deputy Inspector indicated on the approved permit application prior to the replacement boiler or lethal service pressure vessel being place into operation. Excluding those installations approved as “Emergency Installations”, which may be temporarily operated until such time that the Deputy Inspector is contacted to perform the initial inspection.

(5) Any permitted replacement boiler or lethal service pressure vessel found to be in operation without prior authorization, or any Emergency Installation found in operation where the Deputy Inspector has not been contacted for an inspection, will be subject to a permit inspection fee (special inspection fee) of one-hundred dollars (\$100) for a half day inspection, and two-hundred dollars (\$200) for a full day.

Tennessee Boiler Rule Interpretations

Interpretation: BI04-22

Subject: Repair and Alterations to Tennessee Specials, 0800-3-3-.03(2)

Date Issued: September 22, 2004

Question (1): Is it the intent of the Tennessee Boiler Rules that approval of the Chief Inspector is both necessary and sufficient approval for the repair of a “Tennessee Special” boiler or pressure vessel.

Reply (1): Yes.

Question (2): Is it the intent of the Tennessee Boiler Rules that approval of the Board is both necessary and sufficient approval for the alteration of a “Tennessee Special” boiler or pressure vessel.

Reply (2): Yes; however, all requests must be submitted to the Chief Inspector forty-five (45) days in advance of the next scheduled Board of Boiler Rules meeting.

Question (3): Is it the intent of the Tennessee Boiler Rules that a repair or alteration to “Tennessee Special” boiler or pressure vessel be done in accordance with the National Board Inspection Code.

Reply (3): Yes.

Interpretation: BI04-30

Subject: Fired Oil Heaters, 0800-3-3-.03(1)

Date Issued: December 1, 2004

Question: Can an oil heater that is not fabricated to the ASME Code be operated in the State of Tennessee?

Reply: No, at a minimum the heater must be constructed to U-1(h) of Section VIII, division 1 of the ASME Code (Direct Fired) and stamped accordingly.

Interpretation: BI05-06
Subject: Owner-User Inspector
Date Issued: March 16, 2005

Inquiry (1): Does an “Owner-User Inspector” fall under the meaning of “Special Inspector”?

Reply (1): Yes; under T.C.A. 68-122-108, an Owner-User Inspector (defined in the rule) is also classified as a Special Inspector.

Inquiry (2): Would the Tennessee state boiler inspector’s Certificate of Competency and Identification Card (State Commission) indicate “Owner-User Inspector”

Reply (2): No; both the Certificate of Competency and Identification Card will indicate the owner-user inspector as a “Special Inspector”

Interpretation: BI05-22
Subject: ASME Section I Stamped Boiler used as a Heating Boiler
Date Issued: September 28, 2005

Inquiry (1): Can a steam boiler that is constructed to Section I of the ASME code, and stamped accordingly, with a safety relief valve set at or below 15 psig steam, be registered with the state of Tennessee as a low pressure steam heating boiler?

Reply (1): Yes; per Rule 0800-3-3-.01(8)(i) a steam heating boiler is a steam boiler for operation at pressures not exceeding 15 psig.

Inquiry (2): Can a hot water boiler that is constructed to Section I of the ASME code, and stamped accordingly, with a safety relief valve set at or below 160 psig water and operating below 250°F, be registered with the state of Tennessee as a low pressure hot water heating or hot water supply boiler?

Reply (2): Yes; per Rule 0800-3-3-.01(8)(j) and (k) a hot water heating and hot water supply boiler is a boiler operated at a pressure not exceeding 160 psig and/or a temperature of 250°F at or near the boiler outlet.

Inquiry (3): If inquiries (1) and (2) are “yes”, can the boilers in question be inspected on a once every two (2) years basis versus the twice a year basis required of power boilers?

Reply (3): Yes; per 0800-3-3-.03(4) and 68-122-110(a)(2) a low pressure heating boiler shall be inspected once every two (2) years both internally and externally where construction permits.

Interpretation: BI05-33

Subject: Safety Valves during Pressure Testing

Date Issued: December 7, 2005

Inquiry (1): Is it allowed to restrain or gag the disk of the safety or safety relief valve during the pressure or leak test of a boiler or pressure vessel in the state of Tennessee?

Reply (1): Yes; per Rule 0800-3-3-.04(5)(b) a restrained or gagged safety or safety relief valve disc shall be held to its seat by a means of a testing clamp per the valve manufacturer's instructions and recommendations.

Inquiry (2): If yes, is it allowed to adjust the screw of the valve setting to restrict the lifting of the valve disk?

Reply (2): No; per Rule 000-3-3-.04(5)(b) the compression screw may not be screwed down upon the spring to restrict the lifting of the disk.

Inquiry (3): If the seat is not restrained, what is the maximum pressure during the test allowed before the safety or safety relief valve must be removed and the valve inlet opening plugged?

Reply (3): During the pressure/leak test where the test pressure will exceed 90% of the set pressure of the lowest set pressure relief device(s), the valve shall be removed to avoid damage to the pressure relief device, and the opening for the device(s) must be plugged.

Inquiry (4): Is it allowed for the organization performing the pressure test to replace the safety valve adjustment seal if removed/detached during the course of the test?

Reply (4): No; replacement of the adjustment seal on a pressure relieving device must be performed by a National Board certified valve repair company after the set pressure of the device has been verified by testing.

Interpretation: BI05-34

Subject: Unfired Steam Boiler Category & Inspections

Date Issued: December 7, 2005

Inquiry (1): Can an unfired steam boiler with a “U” ASME code symbol stamp be categorized as an unfired pressure vessel if the MAWP is greater than fifteen (15) psi?

Reply (1): Yes

Inquiry (2): Can an unfired steam boiler with a “S” ASME code symbol stamp be categorized as an unfired pressure vessel if the MAWP is greater than fifteen (15) psi?

Reply (2): Yes

Inquiry (3): If inquiries (1) and (2) are “yes”, will an unfired steam boiler receive a certificate good for two (2) years following a certificate inspection?

Reply (3): Yes

Inquiry (4): If inquiry (3) is “yes”, may the certificate inspection be an external inspection?

Reply (4): No; unless specifically allowed by the Board, the certificate inspection of an unfired steam boiler must be an internal.

Inquiry (5): If inquiry (3) is “yes”, is there any additional inspection requirement for unfired steam boilers other than the internal certificate inspection?

Reply (5): Yes; the unfired steam boilers must receive an external inspection every six (6) months between certificate inspections by a Tennessee commissioned boiler inspector.

Interpretation: BI06-05
Subject: Exemption of Water Service Vessels
Date Issued: March 8, 2006

The purpose of this request is for the Board to give an interpretation of an unfired pressure vessel in water service built prior to 1979 to be exempt from the inspection and registration requirements of Tennessee Rule 0800-3-3 since the vessel is also exempt from ASME Section VIII, Division 1.

Inquiry (1): Does an unfired pressure vessel in water service built prior to 1979 fall under the requirements of Tennessee Rule 0800-3-3?

Reply (1): No; this vessel is considered a water service vessel under Tennessee Rule 0800-3-3 because prior to the 1979 Addenda of the 1977 edition of ASME Section VIII, Division 1, additives in the water for vessels in water service were not defined and was considered to be outside the scope of ASME Section VIII, Division 1.

Inquiry (2): Does an unfired pressure vessel in water service built from 1979 to present that contains additives in the water, that causes the flash point of the aqueous solution at atmospheric pressure to be less than 185 degrees F, fall under the requirements of Tennessee Rule 0800-3-3?

Reply (2): Yes; this vessel is not exempt from the scope of ASME Section VIII, Division 1 and therefore not exempt from the requirements of Tennessee Rule 0800-3-3. In the 1979 Addenda of the 1977 edition of ASME Section VIII, Division 1, a footnote was added to a paragraph in U-1 defining the limitations of the flashpoint of the aqueous solution.

Interpretation: BI06-10
Subject: ASME Code Cases and Interpretations
Date Issued: May 31, 2006

The purpose of this request is for the Board to give an interpretation of the use of Code Cases and Interpretation that are issued by the ASME Boiler and Pressure Vessel Codes and Standards Committee in the State of Tennessee.

Inquiry (1): Are ASME Code Cases allowed to be used in the construction, and subsequent repair and alteration, of boilers and pressure vessels constructed and used in Tennessee?

Reply (1): Yes; though the manufacturer shall notify the Chief Inspector to ensure the Code Case does not contradict Tennessee Laws, Rules and Regulations, or a ruling by the Tennessee Board of Boiler Rules.

Inquiry (2): Are ASME Code Cases allowed to be used in the construction, and subsequent repair and alteration, of boilers and pressure vessels constructed in Tennessee and used in another jurisdiction other than Tennessee?

Reply (2): The Board has no jurisdiction over the use of boilers and pressure vessels in jurisdictions other than Tennessee. The manufacturer is to gain authorization to use a Code Case from the jurisdiction to which the boiler or pressure vessel is to be installed and operated.

Inquiry (3): Are Code Cases automatically accepted by the Board for use in the State of Tennessee upon issuance?

Reply (3): Code Cases are reviewed by the Chief Inspector upon issuance. The Chief Inspector will ensure that the Code Case does not contradict Tennessee Laws, Rules and Regulations, or a ruling by the Tennessee Board of Boiler Rules. If a Code Case is found to be in contradiction, the Chief Inspector will bring such contradiction to the attention of the Board for a ruling of acceptance.

Inquiry (4): Are ASME Code Interpretations accepted by the Board for use in the State of Tennessee upon issuance?

Reply (4): Code Interpretations are accepted by the Board on a case-by-case basis through the acceptance of the Chief Inspector. The Board considers Code Interpretations not part of the Code, but the opinion of the individual Code Committee issuing the Interpretation. An Interpretation applies either to the Edition and Addenda in effect on the date of issuance of the Interpretation or the Edition and Addenda stated in the Interpretation. Subsequent revisions to the Code may supersede the Interpretation.

Interpretation: BI06-11

Subject: Installation Permit Requirements for DOT UPV's

Date Issued: May 31, 2006

The purpose of this request is for the Board to give an interpretation of the requirement of a lethal service pressure vessel that is under the jurisdiction of the Department of Transportation (DOT) to obtain an installation permit that is required under the recent revision of Rule 0800-3-3.

Inquiry: Is it required for lethal services vessels that are under the jurisdiction of the Department of Transportation (DOT) to obtain an installation permit that is mandated under Rule 0800-3-3-.03 paragraphs (5) and (6)?

Reply: No; under 68-122-105(a)(2) the Tennessee Code Annotated (TCA), "Unfired pressure vessels meeting the requirements of the interstate commerce commission for shipment of liquids or gases under pressure;" are exempt from the requirements of state registration and inspection.

Interpretation: BI06-12

Subject: Owner-User Inspection Organization EBI/RBI Inspection Programs

Date Issued: May 31, 2006

The purpose of this request is for the Board to give an interpretation of an authorized Owner-User Inspection Organization (OUIO) having an Evidence Based Inspection (EBI) / Risk Based Inspection (RBI) program to no longer have this program considered a "pilot program" by the Board and the jurisdiction.

Inquiry: With the adoption of the 2005 Addenda of National Board Inspection Code (NBIC), 2004 Edition, is it required for an Authorized Owner-User Inspection Agency, with a Board accepted EBI/RBI program, to continue to provide an annual report as a pilot program to the Board and the jurisdiction?

Rely: No, as long as the EBI/RBI is reviewed and accepted during the Owner-User Inspection Agency's National Board triennial review of their Owner-User Inspection Program per NB-371.

Interpretation: BI06-13
Subject: NBIC Interpretations
Date Issued: May 31, 2006

The purpose of this request is for the Board to give an interpretation on the use and acceptance of Interpretations to the National Board Inspection Code (NBIC).

Inquiry (1): Are Interpretations to the NBIC allowed to be used in the repair and alteration of boilers and pressure vessels installed in Tennessee?

Reply (1): Yes; though the Interpretations are only applicable to the edition of the NBIC to which they are issued.

Inquiry (2): Are Interpretations that were written in a prior edition and addenda of the NBIC valid for the current accepted edition?

Reply (2): No; only Interpretations written for the current edition are valid.

Inquiry (3): Are Interpretations automatically accepted by the Board for use in the State of Tennessee upon issuance?

Reply (3): NBIC Interpretations are reviewed by the Chief Inspector upon issuance. The Chief Inspector will ensure that the NBIC Interpretation does not contradict Tennessee Laws, Rules and Regulations, or a ruling by the Tennessee Board of Boiler Rules. If an Interpretation is found to be in contradiction, the Chief Inspector will bring such contradiction to the attention of the Board for a ruling of acceptance.

Inquiry (4): Is it required for the user of an NBIC Interpretation to notify the Chief Inspector of their intent prior to its use in a repair or alteration of a boiler or pressure vessel in Tennessee?

Reply (4): Yes

Interpretation: BI06-14

Subject: PRD repairs and adjustment by owners and users

Date Issued: May 31, 2006

The purpose of this request is for the Board to give an interpretation on the repair and adjustment of safety, relief and safety relief valves by a maintenance organization of the owner or user of the vessel to which the safety valve is attached.

Inquiry (1): Does the title “owner-user maintenance organization” mentioned in Rule 0800-3-3-.03(16)(d) pertain to a maintenance organization of an “Owner or User” entity as defined in Rule 0800-3-3-.01(33)?

Reply (1): No; The title “owner-user maintenance organization” pertains to a maintenance organization or group of a Board accepted Owner-User Inspection Agency as defined in Rule 0800-3-3-.03(34).

Inquiry (2): Is it allowed for the Owner or User of a boiler or pressure vessel, which is registered in the state of Tennessee, to repair the safety, relief or safety relief valves that are attached to the boiler or pressure vessel?

Reply (2): Only if the Owner or User is a Board accepted Owner-User Inspection Agency, possesses a “VR” stamp from the National Board, and has the process and procedures documented in their Owner-User Inspection Manual.

Inquiry (3): Is it allowed for the Owner or User of a boiler or pressure vessel that is registered in the state of Tennessee to adjust the setting of safety, relief or safety relief valves that are attached to the boiler or pressure vessel?

Reply (3): Only if the Owner or User is a Board accepted Owner-User Inspection Agency, possesses a “VR” stamp from the National Board, and has the process and procedures documented in their Owner-User Inspection Manual.

Inquiry (4): Does the above mentioned requirements also pertain to safety, relief and safety relief valves of boilers and pressure vessels located at establishments under federal control?

Reply (4): No; 68-122-105(a)(1) of the Tennessee Code Annotated (T.C.A.) exempts boilers (pressure vessels) under federal control.

Interpretation: BI06-15

Subject: Cast Iron and Riveted Boiler Repairs and Alterations

Date Issued: May 31, 2006

The purpose of this request is for the Board to give an interpretation on the types of repairs conducted within the state to cast iron and riveted boilers.

Inquiry (1): Is the addition or removal of a section in a Cast Iron Boiler to be considered as an Alteration?

Reply (1): Yes

Inquiry (2): If the answer is Yes, Is this activity required to be done by an "R" stamp holder?

Reply (2): Yes

Inquiry (3): Is a welded repair to a stationary riveted Boiler or Pressure Vessel allowed within the State of Tennessee?

Reply (3): Yes; provided the following requirements are met:

1. Prior authorization must be obtained from the Chief Boiler Inspector before any welding is performed to the boiler or pressure vessel in question.
2. Unless classified by the definition in 0800-3-3-.01 as a "Historic Power Boiler", the boiler or pressure vessel must have been constructed and stamped in accordance with A.S.M.E. Code Section I or Section VIII, Division 1, accordingly.
3. The repair organization must be in possession of a copy of the original manufacturer's data report, or material analysis to ensure material composition and weldability, at the direction of the Chief Boiler Inspector.
4. The repair organization must possess both a Tennessee Repair/Erection License and a Certificate of Authorization from the National Board of Boiler and Pressure Vessel Inspectors, Columbus, OH, to perform repairs and alterations to boilers and pressure vessels.
5. All other inquiries concerning this matter shall be directed to the Chief Boiler Inspector for determination.

Interpretation: BI06-21

Subject: NDE in lieu of Hydro or Pneumatic Test to Repairs and Alterations

Date Issued: December 6, 2006

Inquiry: May Non-Destructive Examinations (NDE) be used as an acceptable alternative to hydrostatic or pneumatic pressure tests for repairs and alterations of boilers and pressure vessels in Tennessee?

Reply: Yes, per RC-2051(e) for repairs and per RC-3031(c) for alterations per the National Board Inspection Code (NBIC) that complies with Rule 0800-3-3.02, Rule 0800-3-3-.03(15), and Rule 0800-3-3-.4(5)(e). Only the following NDE methods are accepted by the Board as suitable for providing meaningful results and verifying the integrity of the repair or alteration for use in Tennessee as an alternative to hydrostatic or pneumatic pressure tests for repairs and alterations of boilers and pressure vessels accepted by the inspector. The Inspector must make the determination that pneumatic or hydrostatic tests are impracticable:

1. Dye Penetrant Examination (PT)
2. Magnetic Particle Examination (MT)
3. Radiographic Examination (RT)
4. Ultrasonic Examination (UT)

Interpretation: BI06-22

Subject: 3.5 Design Margin vs. 4.0 for Repairs and Alterations of Pressure Retaining Items

Date Issued: September 20, 2006

The purpose of this request is for the Board to give an interpretation on the use of the 3.5 Design Margin for repairs and alterations of boilers or pressure vessels built prior to 1998 for use in Tennessee and to further clarify TN Board ruling on Item 98-10 from 1998.

Inquiry (1): May an ASME Section I boiler or Section VIII, Division 1 pressure vessel built prior to 1998, having a design margin of 4.0, be rerated or recalculated using the 1998-to-present editions of ASME Section I and ASME Section VIII, Division 1, with the 3.5 design margin, to take advantage of the higher allowable stresses for the materials of construction?

Reply (1): No.

Inquiry (2): May pressure-retaining items designed to the 1998-to-present editions of ASME Section I and ASME Section VIII, Division 1, with a 3.5 design margin, be used for repairs of pressure vessels built prior to 1998, having a design margin of 4.0, for use in Tennessee?

Reply (2): Yes, provided that all requirements for repairs per the National Board Inspection Code (NBIC) are met and there is no change in the dimensions (i.e. thickness) or contour of the pressure-retaining item.

Inquiry (3): May pressure-retaining items designed to the 1998-to-present editions of ASME Section I and ASME Section VIII, Division 1, with a 3.5 design margin, which would affect the minimum wall thickness, be used for alterations of pressure vessels built prior to 1998, having a design margin of 4.0, for use in Tennessee?

Reply (3): Yes, provided that all requirements for alterations per the National Board Inspection Code (NBIC) are met.

Interpretation: BI06-31

Subject: Exemption of Residential Low Pressure Hot Water Supply Boilers and Water Heaters

Date Issued: December 6, 2006

Purpose

The purpose of this request is for the Board to give an interpretation on the exception status of low pressure hot water supply boilers (water heaters) that are 100,000 Btu/Hr and greater that are installed in private residences or in apartment houses of less than six (6) families.

Background

With the advent of the boiler installation permit, the division's boiler inspectors are being asked by the installer if water heaters that are over 100,000 Btu/Hr in a private residence are required to be permitted and inspected.

Inquiry (1): Are hot water supply boilers or water heaters that are 100,000 Btu/Hr or greater, and installed in a private residence or in apartment houses of less than six (6) families required to be permitted through the Tennessee Boiler Inspection Division prior to installation?

Reply (1): No; though the installer is responsible to ensure all local and municipal permitting requirements are met.

Inquiry (2): Are hot water supply boilers or water heaters that are 100,000 Btu/Hr or greater, and installed in a private residence or in apartment houses of less than six (6) families exempt from the registration, inspection and inspection requirements of the Tennessee Board of Boiler Rules?

Reply (2): Yes; though the installer is responsible to ensure all local and municipal permitting requirements are met.

Interpretation: BI07-06
Subject: Continued Service of Existing Vessels
Date Issued: July 10, 2007

Purpose: To establish the proper status of the objects that existed in the Memphis Jurisdiction prior to June 1, 1995, this Rule Interpretation is requested.

Background: June 1, 1995 the State of Tennessee Boiler Inspection Division assumed responsibility for inspecting all boilers and pressure vessels in commercial and industrial locations within the city limits Memphis, TN. Memphis Code Enforcement forfeited jurisdiction when it no longer employed an inspector holding a National Board commission to inspect boilers and pressure vessels. Prior to that moment, per T.C.A. 68-122-105, all boilers and pressure vessels in the City of Memphis were exempt from the boiler law, Title 68, Chapter 122 and the Board of Boiler Rules 0800-3-3.

Our request is specific for “boilers” or “pressure vessels” that were originally designed, installed, and operated in the City of Memphis jurisdiction prior to the adoption of the Tennessee Laws, Rules and Regulations:

Inquiry (1): Will the State of TN Jurisdiction accept all **standard** boilers and pressure vessels, installed in the City of Memphis, prior to June 1, 1995 and allow continued operation of such pressure retaining items?

Reply (1): Yes

Inquiry (2): Will the State of TN Jurisdiction accept all **non-standard** boilers and pressure vessels, installed in the City of Memphis, prior to June 1, 1995 and allow continued operation of such pressure retaining items?

Reply (2): Yes, provided...

- 1) the pressure retaining item has been in continuous operation since its installation prior to June 1, 1995;
- 2) the pressure retaining item has been registered with the Tennessee Boiler Inspection Division;
- 3) there is documentation of the pressure retaining items operation history and inspection prior to registration;
- 4) the pressure retaining item has successfully passed inspection by a Tennessee commissioned boiler inspector, and received a Tennessee Certificate of Inspection.

Inquiry (3): For the purpose of categorization, will the accepted **non-standard** objects be considered “TN Special” vessels?

Reply (3): Yes, provided that all future repairs and alterations to the pressure retaining item are handled per Board Interpretation BI04-22.

Interpretation: BI07-10
Subject: Magnetic Water Level Indicators
Date Issued: March 7, 2007

Statement of Need: ARISE Incorporated is requesting, on behalf of its clients, a ruling by the Tennessee Board of Boiler Rules to allow for the use of Magnetic Water Level Indicators on power and heating boilers, in lieu of classic armored tubular or flat glass gage glasses, as required by Sections I (Power Boilers) and Section IV (Heating Boilers) and 0800-3-3-.05(8) of the Tennessee Board of Boiler Rules.

Background: ASME Section I, PG-60.1 requires that all boilers having a fixed water level (steam and water interface) shall have at least one gage glass, which is defined as a transparent device that permits visual determination of the water level. Additionally, PVG-10 requires that gage glasses shall be of the flat glass type with forged steel frames. Section IV (Heating Boilers), Part HG-603 requires that each steam boiler shall have one or more water gage glasses attached to the water column or boiler. Some ARISE Clients have inquired as to whether it would be acceptable to replace a traditional tubular or flat gage glasses with a magnetic water level indicator. The reason for their desire to do so include:

- Magnetic level indicators are less susceptible to breakage and leakage than traditional tubular or flat armored gage glasses
- The level indication in a magnetic fluid level indicator, if properly maintained and regularly tested, is much more defined than the fluid level in a traditional gage glass
- For systems in which a hazardous fluid, such as Dowtherm A, are used, magnetic fluid indicators provide an improved degree of safety to personnel and the environment, over traditional gage glasses

Inquiry: May a magnetic fluid level indicator be installed on a power or heating boiler, in lieu of a traditional sight glass, provided that it is installed in accordance with the requirements of the governing ASME Code Section, Manufacturer's requirements and the requirements of 0800-3-3-.05(8) of the Tennessee Boiler Rules and is regularly tested and inspected in accordance with the manufacturer's maintenance requirements to ensure its accuracy?

Reply: No; only sight glasses and indicators that are listed and approved in the applicable section of the ASME Code are authorized to be used on boilers installed and operated in Tennessee.