



**STATE OF TENNESSEE
DEPARTMENT OF LABOR AND WORKFORCE DEVELOPMENT
BOARD OF BOILER RULES
220 FRENCH LANDING DRIVE
NASHVILLE, TENNESSEE 37243
(615) 741-2123**

MINUTES

**QUARTERLY MEETING OF THE STATE OF TENNESSEE
BOARD OF BOILER RULES, 9:00 A.M. (CST), JUNE 2, 2010
TOSHA HEARING ROOM - FIRST FLOOR
220 FRENCH LANDING DRIVE
NASHVILLE, TENNESSEE**

- I. CALL TO ORDER - Chairman Lunn called the meeting to order at 9:00 a.m. (CST).
 - II. INTRODUCTIONS AND ANNOUNCEMENTS - (24) - Board members present: Eddie Lunn; Dr. Domenic Canonico; Eugene Robinson; Dr. Glen Johnson; Brian Morelock; and Ed Vance. Department of Labor & Workforce Development employees in attendance: Arthur Franklin; Gary Cookston; Sydné Ewell; Eslie Rogers; Carlene T. Bennett; Sam Chapman; Neil Jackson; and Deborah Rhone. Guests present: Glenn Condon; Jamie Daniel; Mark Tate; Sheldon Light; and Rick Sutherland.
- (34) - Assistant Administrator Cookston announced that:

- In the event of a natural disaster or emergency, building security personnel would direct attendees to a safe place inside the building or ask them to evacuate to the parking lot toward the Rosa Parks side of the building.
- (42) - There is an update on SB2697/HB2817 - The bill was passed and signed by the Governor on May 11, 2010. This bill was introduced by the insurance companies and the department came out in opposition but the Senate and the House passed it and the Governor signed it.
- (51) - He publicly thanked those who contributed to the Tennessee Department of Labor & Workforce Development / International Association of Workplace Professionals (IAWP) flood relief fund. Approximately twenty-six (26) to thirty (30) people who work for

the department have been identified as being significantly affected by the flood.

- III. CONFLICT OF INTEREST STATEMENT - (67/80) - Conflict of interest statements were completed by Board members. Chairman Lunn reminded Board members to verbally disclose their conflicts of interest with agenda items prior to discussion.
- IV. ADOPTION OF THE AGENDA - (111) - Mr. Morelock made a motion to adopt the agenda. Mr. Vance seconded the motion. The vote was taken and the motion carried.
- V. APPROVAL OF THE MARCH 3, 2010 MEETING MINUTES - (101) - Dr. Canonico made a motion to adopt the minutes as written. Mr. Morelock seconded the motion. The vote was taken and the motion carried.
- VI. CHIEF'S REPORT - (117) - Interim Chief Rogers report covered the period from January-March 2010.
 - Nine-thousand one-hundred twenty-seven (9,127) combined inspections.
 - Three-thousand twenty-three (3,023) combined delinquents.
 - One-hundred eleven (111) violations found / thirty-four (34) uncorrected violations.
 - Six (6) quality control reviews performed.
 - One (1) boiler variance inspection performed.

(135) - Interim Chief Rogers distributed a boiler variance request manual submitted by Mountain States Health Alliance. This manual was delivered to his home on Saturday, May 29th. The company asked that their request be added to the June 2nd agenda. They have been informed that requests must be submitted forty-five (45) days prior to the meeting. The company asked that their manual be distributed to the Board members and placed on the agenda for the September 15th meeting. Interim Chief Rogers felt he should advise the company to seek professional assistance in the development of their manual. He said Mountain States Health Alliance will be added to the September agenda but the Board will be advised if the company wishes to cancel the request or if new manuals are submitted. The Board suggested that the company be directed to the website for the Guidelines for Computerized Remote Monitoring of Boiler Systems; Boiler Attendant Variance Rule; Checklist for Attendant Variance Requests, and the list of Frequently Asked Questions (FAQs).

VII. OLD BUSINESS

10-04 - (193/1239) - Discussion of the System Operation Manual submission process:

Dr. Canonico made a motion to postpone discussion until the end of the New Business items. Mr. Robinson seconded the motion. The vote was taken and the motion carried.

- Revision to the Checklist for Attendant Variance Requests to include the following information:
 - * Need for company boiler training to be completed before the initial variance inspection is performed - This was added to item number twenty-nine (29) by revising it to state: *"This training shall also be provided and properly documented prior to the variance inspection for a new variance request or a renewal request."*
 - * Question on whether a company representative should be present at the quarterly meeting of the Board of Boiler Rules when their System Operating Manual is being considered - This was added to item number three (3) on the Checklist by revising it to state: *"Does it confirm that a company representative will be present at the quarterly meeting of the Board when the variance request is being considered?"*
 - * Need for a summary of changes page on revisions to an existing manual - This was added to item number nine (9) revising it to state: *"Renewal requests require a revision page in the System Operating Manual to show a summary of changes."*
 - * Requiring an example of the boiler log in the manual - Proposed wording of newly created question thirty-nine (39) to state: *"Does the Manual include an example of the boiler log used during operation under the variance?"* With this addition, former questions thirty-nine (39), forty (40), and forty-one (41) were renumbered as forty (40); forty-one (41), and forty-two (42).
- Frequently Asked Questions (FAQs) document will be changed to include newly added question fourteen (14) which reads as follows: *"When will the variance request process be considered complete? When payment for the variance inspection is confirmed and when the Chief Inspector issues the authorization letter."*

Dr. Canonico made a motion to approve the recommended changes to the Checklist for Attendant Variance Requests and the Frequently Asked Questions (FAQs) document. Mr. Vance seconded the motion. The vote was taken and the motion carried.

VIII. NEW BUSINESS

10-05 - (212) - Review a request from FKC Co., Ltd., Port Angeles, Washington, for exemption from American Society of Mechanical Engineers (A.S.M.E.) Code construction for "screw presses". These presses are manufactured and sold primarily for industrial and municipal sludge dewatering applications. No Board member expressed a conflict of interest with this agenda item. No company representative was present at the meeting.

- Mr. Morelock stated that the request is for an exemption from A.S.M.E. Code. Included for review were letters from other states stating that the screw presses were, in their opinion, exempt from A.S.M.E. Code construction. He suggested that the company consider the three (3) options:
 - Meet the exemptions outlined in T.C.A. Title 68-122. For instance, if the internal volume of the screw is less than five (5) cubic feet or if the pressure is less than fifteen (15) psig then either case would exempt it from Tennessee law;
 - The Board isn't familiar with the pressure vessel construction code of the Japanese government so if it isn't designed to A.S.M.E Code then it would need to be regulated as a Tennessee Special and the design reviewed by the Board to make sure it is safe;
 - The vessel can be built to A.S.M.E. Code.
- Dr. Canonico said it should also be suggested to the company that it would be beneficial for them to have a representative present to answer any questions the Board might have.

Dr. Canonico made a motion that granting an A.S.M.E. Code exemption falls outside the Board's jurisdiction. Mr. Morelock seconded the motion and added that the company would need to comply with one of the three (3) options listed in the discussion. The vote was taken and passed unanimously.

10-06 - (323) - Review a request from Woodbridge Foam Fabricating, Inc., 1120 Judd Road, Chattanooga, Tennessee, designating their ATL foam reticulation machine currently in operation as a Tennessee Special pressure vessel. No Board member expressed a conflict of interest with this agenda item. Glenn Condon, Plant Manager; Jamie Daniel, Plant Technical Support; Mark Tate, Corporate Engineering Group; and Sheldon Light, P.E., HPD Consulting Engineers, LLC presented this agenda item to the Board.

- The Woodbridge Group has been operating at its Chattanooga location since 1986 with the joint venture of Woodbridge Foam Partners (WFP) in operation since 2007; it employs approximately twenty (20) people. The company produces polyurethane foam for a number of markets and has secured approximately thirty (30) customers in the United

States. This partnership is focused on producing specialty foams currently being made in Europe.

- Mr. Daniel gave a presentation which showed some of the products currently being produced by the company. The process converts chemicals into foam blocks approximately two-hundred (200) feet long. These foam blocks are cut into shorter pieces which are put inside a reticulation chamber. The reticulation chamber is used to remove the cell membrane that makes up part of the urethane foam so that the size of the cells can be controlled. The foam is placed in the chamber and through a controlled explosion that can reach pressures up to 145 psi for a millisecond; it removes the cell membrane and converts foam with various cell sizes to foam with very open cells for mostly filtration applications. WFP purchased its equipment from ATL Schubs, a German company. ATL fabricated the chamber and the electrical devices to A.S.M.E. and AD-Merkblatt standards, inspected and certified by German TÜV. Similar equipment has been used for a decade by the company, mostly in Europe, which is why the equipment was chosen for use in Chattanooga. When the equipment was purchased, WFP paid extra for ATL to design it to A.S.M.E. standards. ATL indicated they had but at the time of construction ATL did not have A.S.M.E. certification. Through an oversight when the equipment was installed, it was not registered with the State of Tennessee. Recently, when WFP looked into upgrading the equipment, the company realized it did not have the proper certification and registration. The company has been working since December, 2009 to correct the situation.
- The Board confirmed that WFP had been operating without Tennessee approval since 2007.
- Dr. Canonico asked if the company had an A.S.M.E. "U" stamp. Mr. Tate said the manufacturer ATL does have one now but did not when the equipment was purchased. He added that WFP does not have an A.S.M.E. "U" stamp at all.
- Dr. Canonico noted that the vessel had a Poland stamp. Mr. Tate said ATL had the chamber fabricated in their Poland facility and the program logic and other devices were added in their Germany headquarters.
- Mr. Morelock asked if ATL had provided an A.S.M.E. certificate of compliance when the device was originally built. He said a code stamp isn't necessary if a letter is provided stating that it was designed to A.S.M.E. Code for the purpose of obtaining TN Board approval of the reticulation machine as a Tennessee Special pressure vessel. The German TÜV calculations section of the manual speaks to the A.S.M.E. calculations that were done but since ATL did not have a certified stamp at the time, no certification was provided. Mr. Morelock said A.S.M.E. has many sections and asked if it was designed to A.S.M.E. Section VIII, Division 1. Mr. Tate said that the documentation from ATL states that it was. Mr. Morelock said WFP paid for those

calculations but what ATL provided was not the calculations needed if it was designed to A.S.M.E. Section VIII, Division 1. WFP should have a set of calculations from A.S.M.E. Section VIII, Division 1, Appendix 13. Mr. Morelock asked if there was any way that the WFP could get those calculations. Mr. Tate replied that ATL stated that the calculations provided is all they have for WFP.

- Mr. Morelock said he didn't know if they were correct but the stress values shown are reasonable. He would let Dr. Canonico speak to the materials used since that is his forte. The only thing that concerned him was that the bolts referenced in the model are different than the ones in the material test report. One says 42 CrMo 4 and the other says 26 CrMo 4. He went on to say that Tennessee law states it must be built to A.S.M.E. Code and National Board stamped or be approved as a Tennessee Special. WFP is tasked with showing the Board that the German calculations meet or exceed the requirements of A.S.M.E. Code to be a Tennessee Special and was designed to A.S.M.E. Section VIII, Division 1. The Board needs those calculations to show that the stress values are within the guidelines of Appendix 13.
- Dr. Canonico said WFP needs to identify what the materials are like as far as A.S.M.E. is concerned, either SA specs or A specs. He said there appeared to be a lot of materials and some aren't killed. He said it did appear that it had good toughness but since the manual was in German or Polish it was difficult to understand.
- Mr. Morelock said on the Finite Element Analysis (FEA) modeling the nomenclature is not explained with a key or a guide so it was difficult to know what the numbers really mean. Assumptions can be made on what the numbers represent as far as stress levels but it's not clear when you are at S, $1\frac{1}{2}$ S, or 3 S from looking at the model. He said the stress levels he looked at were reasonable but in looking at the FEA model of the vessel itself on page eight (8) you don't know how refined the mesh is; or what ratings are considered within this model as far as the hydraulic cylinders or the clamping forces; or how the model is supported. From a simplistic calculations standpoint, the vessel looks fine. It's not that it's an unsafe vessel but it's just the fact that WFP needs to show the Board that it meets or exceeds A.S.M.E. Code. Mr. Tate stated his understanding is that the report in hand was from the German Board. What is needed is for all the detail information that ATL sent to the German Board for the base calculations.
- Mr. Morelock said this vessel was built in 2006 but the referenced A.S.M.E. Code on page twelve (12) is the 2003 version. He could not understand why ATL didn't use that version for their calculations. In granting a Tennessee Special, a record is needed showing clearly the requirements of a Tennessee Special with a design at least as good or better than the equivalent A.S.M.E. Code design.

- Dr. Canonico said there are a lot of material specifications but he is unfamiliar with them. He would like to have a better definition of what they are, for example, what exactly is: S355J2G3? Mr. Morelock said he found some of the materials online available in other countries but when you go to the United States link there is no direct equivalent A.S.M.E. material.
- Mr. Morelock stated that the requirements of a Tennessee Special pressure vessel are located in Rule 0800-3-3-.03, Paragraph 3 and 5 and repair and alteration requirements are contained in Boiler Interpretation BI04-22. If it was a typical pressure vessel and WFP needed to make a repair, they could get a firm with an R stamp to come in and do those repairs. If the vessel is registered as a Tennessee Special, all repairs must go through the Chief Boiler Inspector. If an alteration is deemed significant, then it would have to come back before the Board at one of their quarterly meetings.
- Dr. Canonico said there is a comparison of SA 515 Gr 70 to S 355 J2 G3 but in the table the yield strength shown is for SA 515 Gr 60, 60-80 versus 70-90.
- Mr. Morelock asked at what temperature the vessel is operated. Mr. Tate said in a millisecond the ambient temperature can go to two-thousand (2,000) degrees. Chairman Lunn asked what creates the burst and Mr. Tate replied, "hydrogen and oxygen". He also said that with their combustion calculations; the initial maximum allowable gas pressure would never reach over 145 psi even for a microsecond. There is a relief valve directly on top on the chamber but its never been necessary to use it.
- Chairman Lunn asked if the reticulation process is a critical process performed at the Chattanooga operation or if there is a product produced that doesn't have to be reticulated. Mr. Condon confirmed that it is a critical process for WFP.
- Neil Jackson said when looking at design requirements the company should look at all of A.S.M.E. Section VIII but particularly at U-22 Loading. Mr. Morelock confirmed that the vessel was indoors and noted that wind loading wouldn't apply but certainly the seismic load should be considered.
- Mr. Morelock said the company has the information to accomplish what they need to do. They just need to put it in a format that the Board can understand and clearly show that it does satisfy A.S.M.E. Section VIII, Division 1.
- Assistant Administrator Cookston said the Chairman could call a special meeting if the company gets the required information. Chairman Lunn stated his willingness to call that meeting and noted that the request should be submitted through Interim Chief Rogers.
- Sydné Ewell, Legal Counsel read T.C.A. Title 68-122-112: *"It is unlawful for any person, firm, partnership or corporation to operate a boiler under pressure in this state without a valid inspection certificate."*

The operation of a boiler without such inspection certificate, or at a pressure exceeding that specified in such inspection certificate, constitutes a Class C misdemeanor on the part of the owner, user, or operator of the boiler. Each day of such unlawful operation is a separate offense."

- Chairman Lunn said that WFP is in violation of T.C.A. Title 68-122-112 which is a Class C misdemeanor and discussion should end until the company complies with the law. Assistant Administrator Cookston said the company could be fined fifty-dollars (\$50) a day for everyday they have operated in violation of the law. The administration will consult with legal counsel on the appropriate steps to be taken from this point. Interim Chief Rogers presented the company with a red tag for the vessel and until corrections are made no further operation of the pressure vessel involved shall be permitted.

Dr. Canonico made a motion to postpone this agenda item until the September 15, 2010 meeting. Dr. Johnson seconded the motion. The vote was taken and the motion carried unanimously.

- IX. RULE CASES & INTERPRETATIONS - (1681) - There were no rule cases and interpretations.
- X. (1683) - The next Board of Boiler Rules meeting is scheduled for 9:00 a.m. (CST), WEDNESDAY, September 15, 2010 at the Department of Labor & Workforce Development office building located at 220 French Landing Drive, Nashville, Tennessee.
- XI. ADJOURNMENT - (1775) - Dr. Canonico made a motion to adjourn. Dr. Johnson seconded the motion. The vote was taken and the motion carried with the meeting adjourning at 10:46 a.m. (CST).