



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), DECEMBER 2, 2009
TENNESSEE ROOM - FIRST FLOOR
220 FRENCH LANDING DRIVE
NASHVILLE, TENNESSEE**

- I. CALL TO ORDER - (17) - Chairman Lunn called the meeting to order at 9:00 a.m.
- II. INTRODUCTIONS AND ANNOUNCEMENTS - (25) - Board members present: Eddie Lunn; Dr. Domenic Canonico; Dr. Glen Johnson; Eugene Robinson; Ed Vance; and Brian Morelock. Department of Labor & Workforce Development employees in attendance: Arthur Franklin; Gary W. Cookston; Sydné Ewell; Audrey Eslie Rogers; Deborah Rhone; Dan Bailey; Neil Jackson; and Carlene T. Bennett. Guests present: Tracy Coates; Greg Kelley; Ernest Hudgins; Leonard Vaughen; James Dulworth; Jeff Fox; Mandy Conner; John Comer; Aaron Siegel; Rick Shipkowski; Jim Smelcer; James Neville; and Joe Iwanyszyn.

(42) - 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.

(68 & 150) - Brian Morelock asked for a moment of silence for Charles Blakeman (Blake) Neville, Jr., P.E. who passed away suddenly on October 21, 2009. Chairman Lunn said Blake was a regular attendee and an integral part of the Board of Boiler Rules meetings. He had a great impact and was involved in the development of the variance guidelines. He was a true person of character and integrity who will be greatly missed. Blake's son, James Neville, was in attendance and a moment of silence was observed.

- III. CONFLICT OF INTEREST STATEMENT AND ANNUAL CONFLICT OF INTEREST DISCLOSURE - (56) - Conflict of interest statements and annual Conflict of Interest Disclosures were completed by Board members. Chairman Lunn reminded Board members to verbally disclose conflict of interest with agenda items prior to discussion.
- IV. ADOPTION OF THE AGENDA - (61) - Eugene Robinson made a motion to adopt the agenda. Dr. Canonico seconded the motion. The vote was taken and the motion carried.
- V. APPROVAL OF THE SEPTEMBER 2, 2009 MEETING MINUTES - (90) - Brian Morelock made a motion to approve the minutes as written. Dr. Canonico seconded the motion. The vote was taken and the motion carried.
- VI. CHIEF'S REPORT - (99) - Interim Chief Rogers' report covered the period of July-September, 2009.
- Eight-thousand eight-hundred thirty-four (8,834) combined inspections.
 - One-thousand three-hundred forty-seven (1,347) combined delinquents.
 - One-hundred and three (103) violations found / Forty-three (43) uncorrected violations.
 - Six (6) quality control reviews performed.
 - One (1) boiler variance inspections performed. The company failed the variance inspection but it will be resubmitted and reinspected at a later date.
 - Three (3) individuals sat for the National Board Commission examination on December 3rd and 4th. This is the final National Board exam administered by the State of Tennessee. The National Board has selected a private company to administer exams electronically at various locations across the state beginning January 1, 2010.

VII. OLD BUSINESS

Item 09-11 - (176) - Rick Shipkowski, Deputy Director, State of Tennessee, Office of Homeland Security (OHS) to discuss potential vulnerability of industrial boilers due to lack of security access requirements for internet connected computer monitoring systems. This item was held over from the September, 2009 meeting and by coincidentally was agenda item 09-11. Mr. Shipkowski was contacted to look into the potential weaponization of boilers by adversaries. The Boards concern about boilers was sent to the Homeland Infrastructure Threat and Risk Analysis Center (HITRAC). Mr. Shipkowski said the OHS and the Department of Homeland Security (DHS) is looking for this type of assistance from industrial experts who perceive a potential vulnerability that could lead to severe consequences. The DHS defines risk as threat vulnerability and consequence. DHS analysis shows there are certainly potential vulnerabilities with boilers and the consequences are significant. What they did not find, however, was a threat at this point. Threat as defined by DHS is intent plus

capability. The capability to use a boiler as an improvised explosive device is clearly there. Looking at all the intelligence data though, there has been no specific threat at this time to use boilers as a weapon. Because of the Board's interest in the subject, it has been raised at a national level and HITRAC is monitoring law enforcement suspicious activity reports and overseas conversations to see if that changes. The largest potential vulnerability is the control systems for these boilers. There is a very large cyber security threat to the nation and DHS initial analysis indicates that is where the vulnerability would be right now. Adversaries could take over industrial control systems from what is known as supervisory control and data acquisition (SCADA) systems. They have shown interest in gaining controls of SCADA systems such as large scale nuclear plants, large scale electrical systems. As a result, there are pretty good safeguards in place for those systems. Those safeguards are probably not in place at local information control systems for large boilers in the state. Mr. Shipkowski said it would be up to the Board to determine if more stringent security measures should be in place although he could not recommend that at this point. He expressed his appreciation that the Board brought this potential threat to the attention of authorities. At the national level, once the threat was perceived, they were also appreciative of it being brought to their attention.

Chairman Lunn commented that concern should be not for electronic and data access security only but also for the mechanical security of the relief valve itself. It is a mechanical device which could easily be tampered with by an enlisted person on a navy vessel. If that were to happen on a carrier, there would be internal damage and certain carriers that use steam based catapults would not be able to launch their devices. Chairman Lunn said the reason the navy hasn't experienced a boiler incident is that, in his opinion, navy boiler personnel are the best. The immediate past Director of the National Board was navy.

Dr. Canonico asked if the OHS is more interested in terrorism as opposed to a lone deranged individual. Mr. Shipkowski replied that a lone deranged individual is certainly harder to detect. He went on to say that there have been more domestic terrorism arrests in Tennessee than foreign terrorism arrest. While OHS looks at the full spectrum of the threat, they look at the ones that would cause the greatest threat to the citizens and critical infrastructure. He said the biggest threat is complacency, he urged everyone to stay alert and report any suspicious activity to the OHS since the greatest deterrent to terrorism is involved citizens.

VIII. NEW BUSINESS

Item 09-13 - (398) - Review a request and documentation from Delight Products Company, 1200 Industrial Drive, Springfield, Tennessee, for a variance to Boiler Attendant Rule, Paragraph 0800-03-03-.04(22). Chairman Lunn verbally expressed a conflict of interest with this agenda item. James Neville and Maintenance Engineer Josh Parker presented this item to the Board. The plant operates two (2) high-pressure boilers which are operated on demand twenty-four

(24) hours per day, seven (7) days per week, furnishing high-pressure steam for cooking, forming and process. The boiler room is approximately one-hundred and ten (110) feet from the remote station. Alarms are made via hard wired circuit to the remote station. A qualified boiler attendant will be on campus at all times. There are multiple technical classifications for boiler attendants which are listed in Appendix G of the manual. In the event of an alarm the controller will shut down the boiler and signal the remote station personnel who will follow emergency procedures outlined on page ten (10) of the manual.

- Dr. Canonico: Page five (5); Section three (3); Item one (1) - Will the Boiler attendant contact the remote station once each day or once each shift? Mr. Neville replied once each day. Mr. Morelock pointed out that in the *Guidelines For Computerized Remote Monitoring Of Boiler Systems (Rev. 6- April 15, 2009)* which is located on the website, it states on Page five (5) of five (5); Section D(a)-Remote Boiler Monitoring Personnel Duties/Responsibilities: "*Duties on a day-to-day basis. These shall include, at the beginning of each shift and in cooperation with a boiler attendant/operator, a test of the systems, boiler, remote monitoring, and communications...*", so this function should be performed at the beginning of each shift.
- Dr. Canonico: Page five (5); Section one (1); mentions the "Production Supervisor" but it is not listed on Appendix D-1. Mr. Neville responded that they were listed in the Organization Chart as Shift Supervisors. Mr. Morelock commented the text and the wording of the organization chart should match.
- Dr. Canonico: Page eight (8); Section three (3)-Emergency Duties; Item three (3); gender reference should be changed to (s)he. Also, the second "HE" in the sentence could be omitted.
- Dr. Canonico: Appendix A-1; identify what asterisked information is related to on that page.
- Mr. Morelock: Said although not mandatory, it would be helpful for the distance from the boiler to the remote monitoring station be shown on Figure One (1)-Site Plan.
- Mr. Morelock: The job descriptions in Appendix G are well written but if boiler monitoring systems are implemented, then the additional job requirements would need to be added to the job descriptions.
- Mr. Morelock: Page eight (8); Item six (6); "Boiler Attendant shall return to the boiler room every four (4) hours..." That applies to the variance guidelines as well as Rule 0800-03-03-.04(22). In the past Blake Neville included that in some places in some versions, Mr. Morelock asked that the appropriate paragraph be added consistently to future manuals. Also reference the appropriate rule in instances where the manual mentions the boiler attendant must attend the boiler every twenty (20) minutes. Some variance manuals have the rule references and some don't, just be consistent.

- Mr. Robinson: Page four (4); Section VI; should read: "The boiler cannot be restarted from the remote station *and* the shutdown switch..." Replace the word "but" with "and".
- Mr. Robinson: Page five (5); Section 1; second sentence should read: "These personnel control production and *who has* immediate access to all..."
- Mr. Robinson: Page eight (8); Item six (6); remove "similar to" from second line.
- Mr. Robinson: Page six (6); Section IV; third sentence in Item two (2); It is unclear if "**THE PERSON ON DUTY AT THE REMOTE STATION...**" is the monitor or the attendant, please clarify. During discussion, it was established that it should be the "Production Supervisor" which will be changed to Production Supervisor 1st Shift, Production Supervisor 2nd Shift, and Production Supervisor 3rd Shift and that Appendix D-1 would be changed to reflect these job titles. Dr. Canonico asked if the "Supervisor" would be the individual sitting at the alarm system and Mr. Parker replied yes.
- Mr. Robinson: Page eight (8); Item seven (7)/Normal Daily Duties reads "Boiler Attendant" but Item two (2)/Emergency Duties reads "the attendant", please clarify and be consistent.
- Neil Jackson asked if all variances should be using the new revised variance guideline. Mr. Morelock said all new variances should use the revised guidelines and as existing variances are renewed they will also be held to the new guidelines. This is a new variance request so the new guidelines should be met.

A motion was made by Brian Morelock to approve the variance contingent upon the requested revisions being made, upon verification of operating procedures and acceptance by Interim Chief Rogers. Dr. Canonico seconded the motion. The vote was taken and the motion carried with Chairman Lunn abstaining.

Item 09-14 - (801) - Review a request and documentation from Cookeville Regional Medical Center, 1 Medical Center Boulevard, Cookeville, Tennessee, for a variance to Boiler Attendant Rule, Paragraph 0800-03-03-.04(22). Chairman Lunn verbally expressed a conflict of interest with this agenda item. James Neville and Joe Iwanyszyn, Director of Plant Facilities, presented this item to the Board. The facility operates two (2) high-pressure boilers on demand twenty-four (24) hours per day, seven (7) days per week, furnishing high-pressure steam for space heating, potable water heating, sterilizers and humidification. The distance between the boiler room and the remote station is approximately one-thousand (1,000) feet. Alarms are made via hard wired circuit to the remote station. A qualified boiler attendant will be on campus at all times. There are multiple technical classifications for boiler attendants which are listed on page seven (7) of the manual. In the event of an alarm the controller will shut down the boiler and signal the remote station personnel who will follow emergency procedures outlined on page ten (10) of the manual.

- Dr. Canonico: Had the same comment about this item as he did on agenda item 09-13 with regard to Page five (5); Section three (3); Item one (1), boiler attendant should contact the remote attendant at the beginning of each shift instead of once per day.
- Dr. Canonico: Page five (5); Section one (1)-Remote Station Personnel; makes reference to Appendix G for job descriptions and job duties, but there is no boiler operator listed. It's difficult to know who is responsible for the boiler. Brian Morelock noted that in the job description position summary it says "Performs boiler watch..." which probably needs to be more descriptive. Dr. Canonico said it is still unclear who the boiler attendant is at any given time. Mr. Iwanyszyn said the supervisor is responsible for selecting someone to take the lead. Mr. Morelock requested the manual be revised to state who is responsible for testing the boiler at the beginning of the shift and if there is an alarm, who will respond to it as the boiler attendant. Chairman Lunn said in past variances multitasking was presented but typically it was labeled as a boiler attendant with other duties, not reversed, as this is being presented. The Board asked that the Boiler Attendant Procedures be revised to clearly state who the boiler attendant is at all times.
- Mr. Morelock: Said the cover letter and cover sheet should address the request for a variance and also needs to have a physical address, phone number, and contact person.
- Mr. Morelock: Appendix D, Organization Diagram does not show the PBX Switchboard Operators, he asked that they be added.
- Mr. Morelock: Suggested the latest Boiler Variance Guide and Checklist be used to update the manual. One of things asked on that checklist is how the computerized remote monitoring system prohibits unauthorized access. That issue needs to be addressed, whether it is password protected or protected by some other means.
- Mr. Morelock: In Appendix G some of the job descriptions include "boiler watch" but that needs to be expanded and clarified. For the remote monitoring personnel, there is no mention in their job descriptions that they have remote monitoring duties.
- Mr. Morelock: Page eight (8), Section III Procedures-Normal Daily Duties; Items two (2) and six (6) should have verbiage inserted from Page nine (9), Item two (2) which references "Tennessee Boiler and Unfired Pressure Vessel Inspection Law, Rules and Regulations paragraph 0800-03-03-.04 (22)".

A motion was made by Brian Morelock to approve the variance contingent upon the requested revisions being made, upon verification of operating procedures and upon acceptance by Interim Chief Rogers. Ed Vance seconded the motion. The vote was taken and the motion carried with Chairman Lunn and Dr. Canonico abstaining.

Item 09-15 - (1121) - Review a request and documentation from Middle Tennessee Medical Center, 1700 Medical Center Parkway, Murfreesboro, Tennessee, for a variance to Boiler Attendant Rule, Paragraph 0800-03-03-.04(22). Chairman Lunn verbally expressed a conflict of interest with this agenda item. James Neville and Jeff Fox, Facilities Director, presented this item to the Board. The facility operates three (3) high-pressure boilers on demand twenty-four (24) hours per day, seven (7) days per week, furnishing high-pressure steam for space heating, potable water heating, dietary equipment, sterilizers and humidification. The distance between the boiler room and the remote station is approximately five-hundred (500) feet. Alarms are made via hard wired circuit to the remote station. A qualified boiler attendant will be on campus at all times. There are multiple technical classifications for boiler attendants which are listed on page seven (7) of the manual. In the event of an alarm the controller will shut down the boiler and signal the remote station personnel who will follow emergency procedures outlined on page ten (10) of the manual.

- Dr. Canonico: Had the same comment about this item as he did on agenda item 09-13 & 09-14 with regard to Page five (5); Section three (3); Item one (1), boiler attendant should contact the remote attendant at the beginning of each shift instead of once per day.
- Dr. Canonico: Page five (5); Section one (1)-Remote Station Personnel; makes reference to Appendix G for job descriptions and job duties, but there isn't a boiler operator listed. Dr. Canonico pointed out that it is unclear who the boiler attendant is at any given time. Mr. Morelock said the manual should be revised to clearly state who is responsible for testing the boiler at the beginning of the shift and if there is an alarm, who will respond to it as the boiler attendant.
- The Board asked for a larger site plan. This will be beneficial since the manual will be used to train new employees, for annual training of existing employees and for inspections.
- Mr. Morelock: Suggested that they use the latest Boiler Attendance Variance Rules, Guidelines and Checklist (Rev. 6-April 15, 2009) to update the manual.
- Mr. Morelock: Page eight (8), Section III Procedures-Normal Daily Duties; Items two (2) and six (6) should have verbiage inserted from Page nine (9), Item two (2) which references "Tennessee Boiler and Unfired Pressure Vessel Inspection Law, Rules and Regulations paragraph 0800-03-03-.04 (22)".
- Eugene Robinson: On Appendix A, the TENN. No. should be filled in when revising the manual.

A motion was made by Eugene Robinson to approve the variance contingent upon the requested revisions being made, upon verification of operating procedures and upon acceptance by Interim Chief Rogers. Brian Morelock seconded the motion. The vote was taken and the motion carried with Chairman Lunn abstaining.

Item 09-16 - (1328) - Review a request and documentation from St. Mary's Medical Center of Campbell County (a part of Mercy Health Partners), 923 E. Central Avenue, LaFollette, Tennessee, for a variance to Boiler Attendant Rule, Paragraph 0800-03-03-.04(22). Chairman Lunn verbally expressed a conflict of interest with this agenda item. Leonard Vaughen presented this item to the Board on behalf of Condon E. Radford, Regional Plant Facilities Leader for Mercy Health Partners, Knoxville, Tennessee. The facility operates two (2) boilers on demand twenty-four (24) hours per day, seven (7) days per week. The boilers are used to provide steam for sterilization, humidification, space heating and domestic water heating. The distance between the boiler room and the remote station is approximately three-hundred and sixty (360) feet.

- Dr. Canonico: Text on B-18 refers to "ER RECEPTION" but A-15 is labeled "ED REGISTRATION". Mr. Vaughen said these are the same area but they have been labeled with two different names. Dr. Canonico asked that it be consistent.
- Dr. Canonico: Page C-36-1; Normal Duties-Item three (3) states that the boiler will be tested "once per day-shift" but according to Guidelines for Computerized Remote Monitoring of Boiler Systems (Rev. 6 - April 15, 2009), Page five (5) of five (5), Section D, Subsection (a) states: "at the beginning of each shift". Mr. Vaughen said he would make the change so that it is performed at the beginning of every shift.
- Eugene Robinson: First block of Legend on Page C-31 should read "Responsibility in Overseeing Training Requirements are Met *for* Training Engineering and Security Personnel". Mr. Robinson asked that the Legend specify who is responsible for training remote monitoring personnel. Mr. Vaughen said the Operations Manager is the person responsible and he would list that duty in the second block of Legend.
- Eugene Robinson: Page C-25-1, Normal Duties, add item to include filling out the Daily Boiler Room Log shown in C-36-2. Also on Page C-25-1 under Normal Duties, Item one (1) should be "once per shift" instead of "once per day-shift".
- Dr. Canonico: E-Appendix Contents list four (4) job descriptions but it is unclear who is responsible. Mr. Vaughen said engineering is available twenty-four (24) hours per day, seven (7) days per week. The job descriptions listed will act as backup. Mr. Morelock asked that the manual be worded clearly to define who the primary boiler attendants are, that they have training and training records. State if other job descriptions are to be included in an emergency situation. Mr. Lunn asked if the security guard is in the remote monitoring category. Mr. Vaughen replied that the title of the person at the ED RECEPTIONIST is a Health Care Access Associate and not a security guard. Mr. Morelock said on C-25-1, Minimum Qualifications, the first sentence should read: "The remote station will be continuously staffed by Health Care Access Associates." That will clearly define who the remote monitoring personnel are, then include that in their job descriptions.

- Mr. Morelock: C-36-1 is the Boiler Attendant Procedures and A-14 is the Boiler Fireman/Engineering Technician Normal Operations. Combine the documents and clearly define who the boiler attendants are and what their job responsibilities will be.
- Mr. Morelock: Annual training should be addressed in C-25-1. Also, on C-25-1, last sentence of the Training Section says that "The training is to be facilitated by their supervisor..." Since you are addressing the remote monitoring personnel and the boiler attendant, the supervisor could be the Operations Manager or the Chief Engineer so this needs to be clarified. Make sure that the organization chart and the terminology in the manual matches.
- Mr. Morelock: Log of All Manual Holders should be labeled as C-32. Also, that document lists "Fireman" as a manual holder but it should be made clear if this is the boiler attendant.
- Mr. Morelock: Boiler Attendant Procedures, Normal Duties, Item two (2) on C-36-1 should be clarified when the document is combined with A-14 as previously stated.
- Mr. Morelock: Boiler Attendant Procedure, Normal Duties, Item three (3) on C-36-1 second sentence should include the rule reference of Paragraph 0800-03-03-.04 (22).

A motion was made by Eugene Robinson to approve the variance contingent upon the requested revisions being made, upon verification of operating procedures and acceptance by Interim Chief Rogers. Ed Vance seconded the motion. The vote was taken and the motion carried with Chairman Lunn and Dr. Canonico abstaining.

Board Discussion: Discussion ensued about the burden being placed on the office of the Chief Boiler Inspector to ensure that revised manuals include all the changes requested by the Board. The Board felt that since meetings are held quarterly, it was burdensome to ask the companies to revise the manual and resubmit it to the Board. Once the Board approves a variance request, an Inspector must review the manual and verify the actual operating conditions before implementation of the variance by the company. It was determined that a process should be developed to outline what the Board expects and what is to be included in the manuals. The Board decided to add an agenda item to the March 3, 2010 Board of Boiler Rules meeting to discuss the manual submission and revision process.

Item 09-17 - (2439) - Review a request and documentation from St. Mary's Medical Center (a part of Mercy Health Partners), 900 East Oak Hill Avenue, Knoxville, Tennessee, for a variance to Boiler Attendant Rule, Paragraph 0800-03-03-.04(22). Chairman Lunn verbally expressed a conflict of interest with this agenda item. Leonard Vaughen presented this item to the Board on behalf of Condon E. Radford, Regional Plant Facilities Leader for Mercy Health Partners, Knoxville, Tennessee. The facility operates three (3) boilers on demand twenty-

four (24) hours per day, seven (7) days per week. The boilers are used to provide steam for sterilization, humidification, space heating and domestic water heating. The distance between the boiler room and the remote station is approximately five-hundred twenty-five (525) feet.

- Mr. Morelock: In the Boiler Attendant Procedures on C-36-1, the first sentence lists the Boiler Attendant as Boiler Fireman and Senior Maintenance Mechanic then A-14 outlines the Boiler Fireman Normal Operations. Combine the documents and clearly define who the boiler attendants are and what their job responsibilities will be.
- Mr. Morelock: Make sure the terms on C-25-1 concerning the supervisors and personnel are clearly defined and agree with what is on the organization chart. Clarify first sentence under Minimum Qualifications to specify who will be responsible for staffing the remote station.
- Mr. Morelock: In the second sentence, in the next to the last paragraph on B-18, clarify who will staff the emergency shutdown panel.
- Mr. Morelock: Item nineteen (19) on the Checklist for Attendant Variance Request refers to page C-38, which doesn't exist.
- Mr. Morelock: Item twenty (20) on the Checklist for Attendant Variance Request states that the "room is secured at all times". Mr. Morelock asked if the equipment was password protected. Mr. Vaughen replied that at this time, it was not. Mr. Morelock said the Board would not tell him how to secure the equipment, simply that it needs to be secured. Mr. Vaughen asked if a locked door would be considered secure. Mr. Morelock asked who had keys to the door and Mr. Vaughen said engineering, who serves as the boiler attendant.
- Mr. Morelock: In the Remote Monitoring Personnel section of the Checklist for Attendant Variance Request it outlines how the training will be performed, that information could be added to C-25-1.
- Mr. Morelock: Boiler Attendant Procedure, Normal Duties, Item three (3) on C-36-1, second sentence, should include the rule reference of Paragraph 0800-03-03-.04 (22).
- Dr. Canonico: Page C-36-1; Normal Duties-Item three (3) states that the boiler will be tested "once per day-shift" but according to Guidelines for Computerized Remote Monitoring of Boiler Systems (Rev. 6 - April 15, 2009), Page five (5) of five (5), Section D, Subsection (a) states: "at the beginning of each shift". Mr. Vaughen said he would make the change so that it is performed once per shift. Also, Page C-25-1 under Normal Duties, Item one (1) should be "once per shift" instead of "once per day-shift".

A motion was made by Dr. Johnson to approve the variance contingent upon the requested revisions being made, upon verification of operating procedures and acceptance by Interim Chief Rogers. Ed Vance seconded the motion. The vote was taken and the motion carried with Chairman Lunn abstaining.

Item 09-18 - (2747) - Review a request and documentation from Covenant Health and LeConte Medical Center, 742 Middle Creed Road, Sevierville, Tennessee, for a variance to Boiler Attendant Rule, Paragraph 0800-03-03-.04(22). Chairman Lunn verbally expressed a conflict of interest with this agenda item. Ernest Hudgins and Mandy Conner presented this item to the Board. This new facility will operate two (2) boilers on demand twenty-four (24) hours per day, seven (7) days per week. The boilers are used to provide steam for domestic hot water, sterilization and heating. The boilers are located on the main floor and the remote monitoring station is on the second floor, approximately six-hundred (600) feet away.

- Mr. Morelock: The manual states that the boiler will be tested "once each day" but according to Guidelines for Computerized Remote Monitoring of Boiler Systems (Rev. 6 - April 15, 2009), Page five (5) of five (5), Section D, Subsection (a) states: "at the beginning of each shift". Mr. Hudgins said the manual would be revised.
- Dr. Canonico: Page nine (9) list job positions that may be classified as the boiler attendant. The boiler attendant job appears to be secondary; the list should specifically identify who is the boiler attendant. Ms. Conner said under the Sr. Facility Services Technician is maintenance staff that would be a super user for the boiler; they would be the boiler attendant. All the other jobs listed are for contingency purposes only; there isn't a boiler attendant job description per se. Mr. Morelock said that the manual should clearly state who is responsible for attending the boiler in the day to day operation and who is responsible for providing back up in an emergency. He pointed out that the organizational chart lists Boiler Attendant under Plant Engineering. It also shows that the Boiler Attendant could be the Security Dispatcher or the Corporate Security Manager. Page nine (9) says the Boiler attendant could be the Facility Services Technician or the Sr. Facility Services Technician, which aren't shown on the organizational chart at all. Chairman Lunn asked who Deputy Inspector would ask for when he shows up for the inspection. Ms. Conner said the Sr. Services Technician. Mr. Morelock said that person isn't showed on the organizational chart at all.
- Mr. Morelock: Emergency Procedures on page twelve (12) should be on a colored or tabbed page for easy access.
- Mr. Morelock: The organizational chart lists the person responsible for the manual, the variance, and for keeping the manual current but that position is shown as an interim manager position. Ms. Conner said a new person would fill the position, beginning in January. Mr. Morelock asked that the manual be revised to reflect the name of this new person. Mr. Rogers stated that when changes are made to the manual, those changes must come across his desk.
- Mr. Morelock: Appendix A-1 should include National Board numbers and Tennessee Numbers.
- Mr. Morelock: Page four (4) and five (5) is the same as page seven (7) and eight (8).

- Mr. Morelock: It would be beneficial to show the distance from the boiler to the remote monitoring station on the site plan.
- Mr. Morelock: Page two (2), Section two (II), Item two (2) makes reference to Appendix A but it should be Appendix B.
- Mr. Morelock: On page ten (10), Procedures-Normal Daily Duties, Item two (2), sentence two (2) should make reference to the rule reference similar to what is shown on page eleven (11) in item two (2).

A motion was made by Brian Morelock to approve the variance contingent upon the requested revisions being made, upon verification of operating procedures and acceptance by Interim Chief Rogers. Dr. Johnson seconded the motion. The vote was taken and the motion carried with Chairman Lunn and Dr. Canonico abstaining.

Item 09-19 - (20 / tape 2) - Review a request and documentation from Nuclear Fuel Services, Inc. (NFS), 1205 Banner Hill Road, Erwin, Tennessee, for a variance to Boiler Attendant Rule, Paragraph 0800-03-03-.04(22). Chairman Lunn verbally expressed a conflict of interest with this agenda item. Tracy Coates presented this item to the Board. NFS currently has an existing variance which was originally issued in February, 1990. The newly submitted revision pages are for changes in control system hardware with no procedural changes to current operations. The Board took no action on this agenda item since the variance hasn't changed. This type of request requires the company to schedule and pass an inspection with the Department and provide a complete manual (Rev. #4/October 19, 2009) for their review.

Item 09-20 - (332 / tape 2) - Review a request and documentation from Lochinvar Corporation, 300 Maddox-Simpson Parkway, Lebanon, Tennessee, for a variance to install and conduct field test installation(s) of unapproved ASME prototype boilers at, as of yet, unnamed commercial jobsites in the Nashville area. Jim Smelcer, Engineer Manager and John Comer, OneBeacon America presented this item to the Board. Approximately every three (3) to five (5) years Lochinvar develops new products to introduce into the marketplace and they would like to be able to field test them. At this time, a process does not exist within the State to allow such test to be performed.

- Dr. Canonico asked why the company didn't "H" stamp the prototype boilers as they are manufactured. If the boiler is being built in an accredited facility, it is eligible to be "H" stamped if built to Section IV. Mr. Smelcer said the company has an "H" stamp and the design is there but the agency would not allow the prototype boiler to be stamped on the bases that the quality manual wouldn't address automation, training and welding procedures or material selection. Mr. Morelock stated that this is new technology not covered by Section IV today. Dr. Canonico asked if the company would ask ASME for a code case or rewrite of Section IV. Mr. Smelcer said they didn't think they had a reason for a code case in this design.

- Mr. Morelock pointed out that the Rules of the Tennessee Department of Labor and Workforce Development, Division of Boiler and Elevator Inspection, state:
0800-3-3-.03 Administration.
 - (1) Construction Standards.
 - (a) No boiler or unfired pressure vessel shall be installed for operation in the State unless it is designed, constructed, inspected, stamped, and installed for the desired pressure and temperature in accordance with the provisions of this Chapter, the applicable section of the ASME Code, and other applicable law.
 - (b) Boilers and pressure vessels shall bear the National Board stamping and the manufacturer's NB number as registered with the National Board. A copy of the Manufacturer's Data Report signed by the manufacturer's representative and the National Board commissioned inspector employed by the third party inspection agency shall be filed with the Chief Inspector when the boiler or pressure vessel is shipped into this State for installation.
 - (3) "Tennessee Special" Boilers and Pressure Vessels. If a boiler or pressure vessel is of special design, or one that cannot bear the ASME and National Board stamping, details of the proposed construction (including shop drawings) shall be submitted to the Chief Inspector. Approval for construction and installation as a "Tennessee Special" boiler or pressure vessel must be obtained from the Board *before* (emphasis added) construction is started.

Mr. Smelcer stated that the company was unaware of the "Tennessee Special" procedure; however, Lochinvar wishes to continually keep in the design mode so this information may be helpful in the future. He said due to confidentiality concerns, limited information is being presented at this meeting but more could be furnished during the inspection process. The Board pointed out that it must review the request in a meeting open to the public according to T.C.A. §8-44-101. Mr. Smelcer expressed his hope that industry and the State could find a way to work together to find a way to allow proto-type testing without exposing confidential design elements. Chairman Lunn asked if Lochinvar would receive consideration from the test sites that would receive installation of a proto-type boiler and Mr. Smelcer responded that they would not. Chairman Lunn said the Board and the Department would like to support progress and development but are bound by rules and laws. Dr. Canonico made a motion to decline Lochinvar's request to install. Eugene Robinson seconded the motion. The vote was taken and the motion to decline carried unanimously.

Item 09-21 - (820 / tape 2) - Eemax Inc., Oxford, Connecticut representative to address Board seeking a variance for the installation of electric tankless water heaters. Aaron Siegel, Vice President of Sales and Marketing, Eemax Inc. presented this item to the board. The variance is requested for products manufactured that have commercial capacities over the 200,000 BTU range which are perceived under the boiler classification. Since these units are not storage

vessels, Mr. Siegel felt a lot of the applications of that particular standard are not applicable to this product. Chairman Lunn asked Mr. Siegel what regulation he is requesting the Board issue a variance on. Mr. Siegel said the water heaters comply with Underwriters Laboratories code UL499, Section 27 - Pressure Vessels and Parts Subject to Pressure. This code states that if the pressure vessel having an inside diameter of more than six (6) inches, shall be certified by the National Board of Boiler and Pressure-Vessel Inspectors and marked with an ASME code symbol. Eemax modules have a maximum inside diameter below six (6) inches and the maximum module heat output is 10.67 kW at maximum voltage. This converts to 36,427 BTU/Hr, which is below the 200,000 BTU/Hr limit per vessel. He felt that many of the tank standards are being applied to a tankless product. Dr. Canonico said if the company asked and received an interpretation on ASME Section IV for their product, that might serve their needs. If ASME released them from Section IV then they could build it without a stamp. Eugene Robinson asked if their twelve (12) module unit was stamped. Mr. Siegel said no, since they fall under the criteria for the rating. Eugene Robinson pointed out that the company is assessing the BTU of one module at a time instead of cumulative BTU. Chairman Lunn said former Chief Boiler Inspector Toth's letter of May 23, 2006 directed to the Tennessee Deputy Boiler Inspectors on the subject of inspection of instantaneous water heaters is still binding and explains why the Deputy Inspector rejected the unit. Mr. Siegel feels as though many of the assumptions are not applicable to this new technology. The letter may have had more or less to do with gas tankless water heater technology and not the electric tankless water heater technology. Brian Morelock said the concern is that other than the UL standard that tells you how to test it, what determines acceptable material for construction; welding techniques; thickness of the tube; manufacturer markings; certified welder or person to assemble the product to provide a safe design, there is no information on any of that. Mr. Siegel said that is what UL does, make sure they are in compliance with all safety standards that the unit is built to. Mr. Morelock said that this is a water heater, tankless or not, the only thing the Boiler Board can speak to is the Tennessee regulations and laws it has been given. It defines what a boiler is, what a water heater is and this is like trying to place a round peg in a square hole. He recommended the company take Dr. Canonico's advice and get an established body to say this product does not fall into ASME Section IV. Mr. Toth's letter indicated that he discussed this topic with Chiefs from other states and Canada and they indicated: "*that these types of water heaters would be and are regulated in their states and provinces*". It is the Board's opinion that a verdict was issued in 2006 and at this time there has been no evidence presented that would result in the Board overturning that ruling.

Item 09-22 - (1350) - Discussion of NFPA formal interpretation reference 4.6.3.2.5.2, F.I., No.: 85-01-1. A motion was made by Dr. Johnson to postpone this agenda item until the March 3, 2010 meeting. Eugene Robinson seconded the motion. The vote was taken and the motion to postpone carried unanimously.

- IX. RULE CASES & INTERPRETATIONS - (1389) - There were no rule cases and interpretations.
- X. (1390) - Three (3) applicants sat for the National Board Commission Examination on December 2nd and 3rd.
- XI. (1394) - The next Board of Boiler Rules Meeting is scheduled for 9:00 A.M. (CST), March 3, 2010 at the Department of Labor & Workforce Development office building located at 220 French Landing Drive, Nashville, Tennessee.
- XII. ADJOURNMENT - (1399) - Dr. Canonico made a motion to adjourn. Brian Morelock seconded the motion. The vote was taken and the motion carried with the meeting adjourning at 1:46 p.m.