Illinois Board of Boiler and Pressure Vessel Rules
Committee for review of the Boiler Safety Act – Traction Engine Boilers
Candlewood Suites, Springfield IL
Meeting Minutes December 6, 2011

OVERVIEW

Mr. Hoveke, Chairman of the Illinois Board of Boiler and Pressure Vessel Rules, appointed a committee and tasked the members with conducting a complete review of the Boiler and Pressure Vessel Act and Rules and Regulations specific to Traction Engine Boilers.

This is a report of the committee meeting held on Dec. 6, 2011 in Springfield IL. Attendees were as follows:

Committee Members:

George Galanes, Committee Chair, Board of Boiler and Pressure Vessel Rules
Harold Hacker, Board of Boiler and Pressure Vessel Rules
Lawrence Skalnik, Board of Boiler and Pressure Vessel Rules
Tom Runty, IHBA (Illinois Historical Boiler Association)
James Broadhead, IHBA

State of Illinois Representatives:

Ben Bailey, State of Illinois OSFM, Superintendent – Boiler Division
Mike Vogel, State of Illinois OSFM, Boiler Division
Clayton Novak, State of Illinois OSFM, Boiler Division
Tom Andryk, State of Illinois OSFM, Technical Advisor III
Alix Armstead, State of Illinois OSFM, Deputy General Counsel

Guests:

Dennis Christianson, IHBA
Aaron Whitworth, IHBA
Jeff Broadhead, IHBA
Jesse Jansen, IHBA

Mr. Galanes opened the meeting at 1pm. Mr. Bailey gave a brief history of the time line leading up to the formation of the committee following the review of the Boiler Safety Act and Rules and Regulations. This review was conducted in open session with all points of view considered during discussion.

Mr. Galanes read the current section of the Boiler and Pressure Vessel Safety Act specific to Traction Engine Boilers: ILCS 75/10; Section 10, (a) (3). Mr. James Broadhead inquired as to why the section refers to traction steam engine boilers and other boilers constructed before the effective date of the amendatory act in 1992. Mr. Bailey indicated some boilers were built prior to the effective date. Boilers after the effective date would be built to the code version in effect at the time of construction.

DISCUSSIONS

A short discussion followed on how to ‘flush out’ the rules in effect, comparing the sections to other States requirements specific to historical boilers, and how to address inspections and repairs. Currently Illinois follows the guidance of the NBIC, but the actions taken on an inspection cycle is a ‘gentlemen’s agreement’.

Mr. Galanes asked the IHBA members in attendance to give their views of the current system. Items cited were inconsistencies in inspections and code interpretations.

Mr. Galanes initiated a discussion on the qualifications and / or training of persons completing ultrasonic testing. The State or the owner can complete the testing. If the owner does the testing, the State inspector can verify the results. It was noted there are inconsistencies in the individual meters, calibration, transducers and individuals competing the testing.

Discussion then centered on the steps taken to complete hydro testing and how often it is conducted. This discussion led to a further discussion on the cycle of certificate inspections and inspection methods. It was noted the owners generally keep a folder, and the State has a detailed folder on all traction engines holding current certificates. Generally only two State inspectors are completing these inspections, although other State inspectors can complete them for efficiency.

Discussion also included the NBIC requirements for repairs and the assumptions made in the code for materials without certifications. Mr. Runty and Mr. James Broadhead indicated welded repairs are completed by an authorized repair shop with an AIA (Authorized Inspection Agency). This discussion also included the code definitions of pitting vs. wasted areas. It was pointed out the internal surfaces of these older boilers are not smooth.

Members of the IHBA are working with the subcommittee of the NBIC to further clarify or define requirements related to the mechanical integrity of historical boilers. A discussion was held on the determination of average thickness ('t') using readings obtained by owners or the State inspector versus a Level II UT technician and the cost. It was commented the current tables used for thickness calculations are based upon uniform thickness, not pitted areas as is common in historical boilers. Additional comment was made regarding the safety factor of 4 for stayed surfaces and safety factor of 5 for cylindrical surfaces commonly used in fabrication of these boilers. Mr. Galanes stated a safety factor should never be encroached upon. All in attendance agreed the Illinois committee for review of the historical boilers would not change any part of the NBIC as adopted. The IHBA will continue to work with the NBIC.

The incident involving an agricultural traction engine at Medina OH was reviewed.

On the issue of training, and the expertise of the operators, Mr. Runty offered there are good training programs in conjunction with the Pontiac show and the Edgarton School. Mr. Hacker indicated the NIULPE has a stationary engineer operating license. Mr. James Broadhead offered the owners do a fairly good job of policing themselves.

A short discussion was held on financial responsibility and liability. It was indicated to participate in sanctioned show, an owner generally has to be a member of that show which may include either general liability coverage as part of the participant fee, or as a separate fee. Limits of the coverage were not known, but it was noted Will County has a requirement of $5m. These are generally short term policies only for the duration of the show.

A discussion was held on the definition of a historical boiler, or steam traction engine. The definition used by the State of Minnesota was reviewed. It was decided, in consideration of the exemptions for hobby boilers as included in the Illinois Act, the current definition should suffice.

The time line for implementation of these changes was discussed. Due to the rule making process and the public comment period, it may take six months to a year. Mr. Runty commented that he and the other members of the IHBA in attendance will start to give the information to other owners of the equipment.

CONCLUSIONS

1 – Some form of training for persons using ultrasonic thickness meters should be initiated. This should reduce some of the variables currently found in this testing method. The depth and level of training is left to future discussion which should include consideration of cost and time of year as well as the intent to be assured the measurements used are accurate.

2 - It is recommended a section be added to the rules of the Illinois Boilers to include as below (subject to rewording):

(A) Owner responsibility for proper preparation of a historical traction engine boiler for inspection: The boiler must be off and cooled. All fly ash must be removed as well as fire grates. Hand holes must be removed for inspection as needed for the inspection method (not as many would be needed for VT (Visual Testing) versus UT (Ultrasonic Testing). The internal and external surfaces of the shell shall be prepared and cleaned of scale and debris appropriate for the method of inspection to be used.

(B) Sequence of two year certificate inspections:
In addition to initial internal and external visual inspection, a baseline full grid UT inspection per the NBIC will be conducted.

Certificate inspection two years following the initial inspection, the certificate inspection will consist of a hydro test of between 100% and 125% of the calculated MAWP, along with an external visual inspection both at rest and under pressure. The owner is to provide the pump, water, water temperature and expertise to safely complete the test; including proper protection from the elements as needed. A powered mechanical pump must have a safety relief device between the pump discharge and the boiler inlet. The State of Illinois will not be responsible for damage occurring as a result of the testing.

A certificate inspection two years following the hydro test will consist of a detailed internal and external visual inspection with spot check of approximately 10% UT coverage on all stayed and unstayed surfaces.

Subsequent certificate inspections will follow the cycle of hydro test and the visual examination with 10% UT testing.

As with any inspection, an inspector with due cause may require additional testing to assure the safety of the citizens of the State of Illinois.

(C) Non-certificate inspections: Historical or traction engine boilers are subject to a non certificate operational inspection under pressure at any time while in operation at an event attended by the general public.

3 – To address the expertise of the owner / operators the show organizers should continue to determine and require a sufficient level of training. This item may be further discussed in the future.

4 – The current definition for traction engine boilers and other boilers used solely for exhibition purposes will remain, but this may also be further discussed in the future.

Mr. Galanes stated the next meeting of the committee will be at 1pm on Tuesday afternoon, March 6, 2012, which is the Tuesday before the Boiler Board meeting in March.

As the meetings are conducted under the open meetings act, no private verbal or electronic discussions can be held.

Any suggestions for wording or clarification of the suggested above can be sent to the Secretary of the Boiler Board, Lawrence Skalnik via email Lawrence.skalnik@cna.com.

Mr. Galanes concluded the meeting by thanking all in attendance for the candid detailed discussions. The meeting was adjourned at approximately 4pm.

Respectfully submitted,

Lawrence W. Skalnik,
Secretary