

# ABSA THE PRESSURE NEWS

Alberta Boilers Safety Association

Volume 5, Issue 1, March 2000



## HAPPY 5TH BIRTHDAY ABSA



Five years ago, on April 1, 1995, the Alberta Boilers Safety Association was introduced to Albertans as we took on the challenge of a Delegated Administrative Organization. It was the first jurisdictional arrangement of its kind in North America and required the establishment of new offices, the set up of new computer systems, new benefit programs, mission and vision statements, policy and procedures manuals as well as a set of Bylaws to provide direction to the new organization. Staff who had worked for the Boilers Branch under Alberta Labour provided the foundation, complemented over the years with a number of highly skilled and professional people from industry.

Under the previous administration of the Boilers Branch, delivery of the programs and services was limited, due to overall budget constraints and cut-backs. As a Delegated Administrative Organization some of these constraints were changed and the challenge was to provide the appropriate level, quality and timeliness of service, at the same time looking for ways to optimize efficiency

and cost, all in an environment of regulatory enforcement. Our customers are telling us that we are getting closer to finding the right balance and we will continue to strive at getting better at what we do.

We feel that 5 years is an important milestone and would like to take this opportunity to thank our associates in Alberta Labour and now Municipal Affairs for their original vision and ongoing support. Our stakeholders and customers in industry have also been very patient and supportive and we appreciate the partnerships we have formed with many of you to promote pressure equipment safety in the province. We have a very close working relationship with the Boilers and Pressure Vessels Technical Council and we appreciate their ongoing commitment as well.

We would be remiss not to commend and thank ABSA's Board, management and staff who have participated in so many important aspects of delivering the programs and improving service to our customers. Our first 5 years of

operation have shown that everyone is committed and understands the challenges ahead. The very competitive environment in which many of our stakeholders operate will continue to challenge ABSA to look for ways to provide our programs in the most cost effective manner possible.

Many believe that Alberta has set the example of how pressure equipment safety programs can deal with the challenges presented to provincial jurisdictions to provide the public, businesses and industries with high quality, safe and cost effective support services.

We look forward to working with all of you to provide a high level of pressure equipment safety to the people of Alberta, now and in the years to come.

Happy birthday ABSA!

Gordon Campbell  
General Manager

## ALERT YALE 6" CLOSURES

R&M Energy Systems Canada Limited has advised us that Yale 6" Figure 500 closures manufactured from August 1994 to February 1996 may not fully comply with the material requirements of SA350-LF2. We understand these closures may fail when operated in excess of ANSI 600 pressure conditions (10.2 MPa or 1480 psi). Specifically, the heats of material used in the closure caps and hubs in question are identified by "heat codes" E4, K4, A5 and 95C for Caps and A5 and D5 for the Hubs. The "heat codes" are located on raised letters on the caps and are stamped on the hubs.

You are asked to review your plant equipment to ensure that should these closures be found, immediate action is taken. You may wish to contact R&M Energy Systems Canada Limited directly at 1-877-431-0302 or (780)-433-5076, and your nearest ABSA office. ABSA appreciates the cooperation of R&M Energy Systems Canada Limited in keeping us informed and addressing this matter.

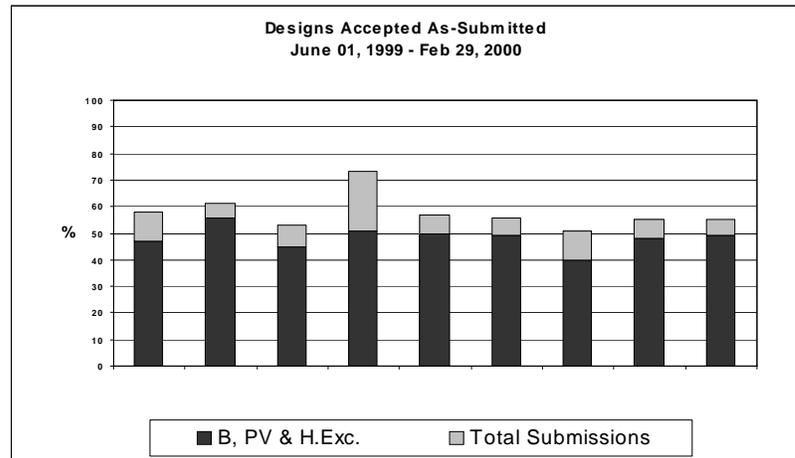
**Have you visited us on the Internet yet? - [www.albertaboilers.com](http://www.albertaboilers.com)**

## HAVE YOU MET



We are pleased to note that Dr. K. T. (Ken) Lau, our Chief Inspector and the provincial Administrator of pressure equipment safety is featured in an article in the National Board Winter 2000 Bulletin. The article describes Ken as one of the most traveled and credentialed members of the National Board who quips that life itself can be explained in pressure equipment terms. It goes on to say that Ken's passion for his work is only rivaled by his interest in a good auction sale. If you are interested in knowing more about Ken the article is posted on the National Board website at <http://www.nationalboard.org/members/ab-klau.html>.

## INDUSTRY SCORECARD



The stacked column chart above shows, on a monthly basis, the percentage of boiler, pressure vessel and heat exchanger designs that were accepted without comment or correction and the percentage of all designs and procedures that were likewise accepted without comment or correction. As can be seen, only about half of the boiler, vessel and heat exchanger designs have not necessitated some level of correction. When welding procedure specifications, piping submissions and other submissions are included, the percentage of items accepted as-submitted generally shows a significant increase.

We offer this industry-wide data as a benchmark against which manufacturers can compare themselves. How many of your designs are returned to you without having been challenged or commented on by Design Survey?

## NATIONAL BOARD - 69<sup>TH</sup> GENERAL MEETING IN CONJUNCTION WITH THE ASME CODE COMMITTEE MEETINGS TO BE HELD MAY 15-19, 2000 IN TORONTO, CANADA

This year, the 69<sup>th</sup> Annual General Meeting of the National Board will be held in Toronto, Ontario, Canada. The conference will be held in conjunction with the ASME International Boiler and Pressure Vessel Code Committee meetings on May 15-19, 2000. The theme of this year's conference is Safety is No Accident.

The annual general meeting of the National Board will feature keynote speakers who will present important current boiler and pressure vessel safety issues while providing a venue for meetings of jurisdictional, code committees and industry people involved in pressure equipment.

Jerry Lewis, the renowned humanitarian/entertainer, will open the conference. Feature eminent speakers will make presentations on various aspects of pressure equipment safety including progress in Europe in pressure equipment standardization and proposed inspection and testing requirements; pressure relief options, critical inspection and assessment of old vessels; violation tracking; erosion corrosion wear evaluation, boiler feedwater pipe failure, .. etc. In addition, numerous ASME Boiler and Pressure Vessel Code committees meetings will also be held during the week including the ASME Section I, III, IV, V, VIII, etc as well as the ASME Boiler and Pressure Vessel Main Committee. Please note that all National Board and ASME technical committee meetings are open to visitors.

Since this is the first time the National Board General Meeting is to be held in Canada in over a decade, this provides an opportunity for our industry representatives and all those interested in the National Board and the ASME Code activities to attend the function without having to travel out of Canada to do so. Anyone interested in attending should visit the infoLink! Page on the website of the National Board <http://www.nationalboard.org> where detailed conference information is available as well as online registration. You may also contact the National Board directly at (614) 888-8320 or Fax (614) 888-0750.

## SOME SIGNIFICANT ASME BOILER & PRESSURE VESSEL CODE 1999 ADDENDA CHANGES

The following is a summary of **some** significant changes, either in the 1999 Addenda to the ASME Boiler and Pressure Vessel Code or items resulting from this addenda, that will be of particular interest to pressure equipment manufacturers. It is important to note that this article is only a selection of items and each manufacturer should be reviewing all of the Addenda for possible impact to their activities.

### Design Issues

For new construction to a design registered prior to A99 where the material thickness and pressure remain the same, the calculations require verification that they meet A99 requirements in accordance with the written quality control system. However, revision to the registered design is not required. Under these circumstances (same material thickness, same pressure) the hydrostatic test may also remain at the current value. For Code Case 2290 designs, provided that A99 did not require any other changes to the design, there would not be a requirement for re-registration. There must obviously be a clear revision on the drawing noting the change from 2290 to A99, and there must be evidence that the calculations have been checked and approved against A99.

### A99 Items: Section I

PG-99: Revision in response to reduction of design factor on ultimate strength. PG-99 changed to specify that at no time during the hydrostatic test shall any part of the boiler be subjected to a general primary membrane stress greater than 90% of its yield strength (0.2% offset) at test temperature. PG-99.1 hydrostatic test pressure remains at 1.5 times MAWP shown on the data report and stamping.

### A99 Items: Section IV

HG-330.3: Revision to increase the minimum size of manhole openings to reflect current practice, **to 12 X 16 inches**, from 11 X 15 or 10 X 16 inches.

HG-520.3: Prior to this Addenda Section IV did not have a data report supplementary sheet. By providing a standard form in Section IV for this purpose it will assist in consistency of documentation of Section IV boilers. Related revisions were made to HLW-601.3 and Appendix L new form added.

HG-605(b) and HG-613(b): Revisions rectify a conflict between requirements in HG-605(b), HG-613(b) and HG-710.3 for multiple boiler installations. Wording that related to commonly connected boilers is removed. New wording is clear in that each individual boiler shall be protected from over-pressure (steam boiler) or over-temperature (hot water boiler) by two pressure or temperature operated controls.

### A99 Items: Section V

T-140: The adoption of the ASNT Central Certification Program (ACCP) document gives those Code sections that directly reference Article 1 for the qualification of NDE personnel another option to be in accordance with the Code, aside from SNT-TC-1A and ANSI/ASNT CP-189. The re-write of T-140(a) clarifies the intent.

### A99 Items: Section VIII, Division 1

UG-20(b): MDMT must now be specified at the (largest) MAWP. See also new UCS-160. Additional MDMT s, if any, will be required on the nameplate.

UG-99 & UG-100: see opposite page. There will likely be more instances where the test pressure is stress-corrected due to design temperature, as the stress values with A99 drop off at lower temperatures (e.g. SA-516-70 starts to drop above 500 degrees F. In addition to the higher test pressures due to design temperature, as before A99, the hydrostatic test may be higher than 1.3 times MAWP if the design factor is higher than 3.5 (lower than maximum allowable stress values used).

UW-35: heading on centre column of table revised to show that this weld reinforcement measurement applies to all circumferential butt welds, not just in pipes and tubes. Category B

and C butt welds gain an additional allowance as compared to previous provisions (if they were previously considered as Other Welds ).

UCS-66(b): introduction of new rules [addition of UCS-66(b)(1)(b)] for flange, cover, tubesheet and flat head MDMT determination down to -55°F. To do this for items that are in primary bending stress, a pressure ratio is introduced in lieu of the stress ratio or the thickness ratio used for components stressed in general primary membrane tensile stress. New term MAP (Maximum Allowable Pressure) has been introduced. Provisions are introduced [UCS-66(b)(1)(c)] for a flange attached by welding, to have an MDMT reduction [from that determined by UCS-66(a) or (c)] by the same amount as the nozzle neck or shell to which it is attached. The neck or shell MDMT reduction is based on coincident stress ratio calculations.

UCS-67(a)(2): Change of wording for classified consumables from 55F, to, not warmer than the MDMT by the applicable specification.

### A99 Items: Section VIII, Division 2

AM-218.3, Fig. AM-218.4, and AM-218.4(g): The revision to AM-218.3 and Fig. AM-218.4 is to make changes identical to those made in Division 1, UCS-66(b) and Fig. UCS-66.2. The changes to AM-218.4(g) incorporate the same changes made to UCS-66(i) for impact test qualified materials.

### A99 Items: Section IX

As a result of a request to clarify the meaning of P-No. #X Metals, the revision deletes P-#X Metal references from Section IX and replaces them with the actual P-Numbers being referenced.

QW-484 [WPQ Form]: There are several changes in this form. The form is now suitable, without additions, for SAW welding operators qualification tests.

## EXPORTING A VESSEL?

Are you bidding to construct a vessel for another jurisdiction? Do you know the rules that apply for that jurisdiction? If you don't, the consequences could be expensive.

Recently, an Alberta manufacturer built a vessel to be installed in the USA. The vessel was Code stamped and was sent on its way. The manufacturer, however, neglected to ascertain what other rules applied in the state where the vessel was to be installed. In this case, as would be the case for most US states, registration with the National Board of Boiler and Pressure Vessel Inspectors was a state requirement.

We received a call from the Director of the Boiler Safety Division in the destination state to say that the vessel could not legally be used in his state, since it did not have a National Board number. Now, the purchaser is not in a position to accept the vessel and the manufacturer may have to refund the purchase price of the vessel.

Can you afford the cost and embarrassment of such a blunder?

One good source of information on the requirements of various jurisdictions in North America is the National Board web site, [www.nationalboard.org](http://www.nationalboard.org), which has links to many of the jurisdictions.

## BUYING A USED BOILER? - BEWARE -

If you are contemplating buying a used boiler from outside Alberta, you should be aware that the boiler must be registered in Alberta and an inspection/certification permit must be obtained. To register a boiler means that the boiler design must meet the Canadian regulations. In quite a lot of cases boilers manufactured outside of Canada cannot be registered unless corrective action is taken.

An item that might fail to meet Canadian regulations is the boiler's inspection opening(s).

Regarding the boiler's inspection opening, B51-97 §6.3.5 requires that manholes be a minimum of 16 ID or 12 x16 (inside) oval. Older ASME Section I or IV boilers may only have 15 ID or 11 x15 oval manholes which would fail to meet our requirements.

Replacement of an under-size manhole is a must, just as UT thickness measurements of the main pressure parts is. The cost of such things must be borne in mind when considering the purchase of a used boiler from outside Alberta.

Similar considerations apply to pressure vessels from outside Alberta.

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