ABSA THE PRESSURE NEWS

Alberta Boilers Safety Association

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Certification of In-Service Pressure Equipment Inspectors Information Bulletin IB02-002

A directive on the certification of In-Service Pressure Equipment Inspectors was issued by Dr. K.T. Lau, Administrator and Chief Inspector on February 12, 2002. The directive explains the new certification system that has been introduced to promote the application of consistent and appropriate inspection standards for assessing the integrity of in-service pressure equipment.

Certification of In-Service Inspectors under the new program becomes mandatory January 1, 2003. Certification is mandatory for persons who have been assigned responsibility under their employer's Pressure Equipment Integrity Management (Owner/User Program) quality system to :

a) perform the duties of chief inspector or equivalent, or

b) certify pressure equipment, or

c) approve repair reports, inspection reports, inspection procedures, inspection and test plans and other documents as specified in the quality system, or

d) act as owner's inspector for owner/user program certified repairs .

The certification process to obtain an In-Service Inspectors Certificate of Competency includes an evaluation of the candidate's education, experience and qualifications. Most candidates are also required to pass an examination on pressure equipment safety legislation.

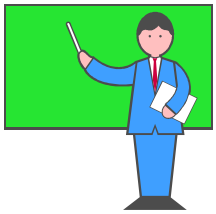
Please visit our web site www.albertaboilers.com for the full information Bulletin. Alternatively, copies are available from your nearest ABSA office. For information on how to obtain certification, please visit the certification web page: www.albertaboilers.com/E&Cprogram/InserviceInsp.htm.

Heating Boilers and National Board Inspection Code Seminars

ABSA is pleased to partner with National Board of Boiler and Pressure Vessel Inspectors to host a one day seminar on Heating Boilers and one day seminar on the National Board Inspection Code in Edmonton and Calgary.

The speakers scheduled are Chuck Walters, National Board Assistant Director of Inspectors and Robert Schueler, National Board Senior Staff Engineer.

Heating Boilers Seminar



The Heating Boilers seminar is for Owners, Installers, Power Engineers, Operators, Manufacturers, Repair Firms, Maintenance Contractors and Inspectors. The seminar will benefit personnel involved with Heating Boilers in promoting safety, accident prevention, efficient operation and effective maintenance. The seminar will be held April 15 in Edmonton and April 18 in Calgary.

National Board Inspection Code Seminar

This seminar is for inspectors only (any inspector). It covers the main parts of the National Board Inspection Code ANSI/NB-23. The inspectors will benefit by having a better understanding of the National Board Inspection Code and Historical Boilers. The seminar will be held April 16 in Edmonton and April 19 in Calgary.

Seminar Information

Seminar fee is $100/day plus GST. The fee includes lunch, refreshments and all materials. Registration fee is nonrefundable. Seating is limited and will be filled on a first-come, first-served basis. ***April 16 and 19 seminars are formulated for inspectors (any company/agency inspector)***. If you wish to attend, please register by **April 5, 2002.**

For more information about the seminar and the registration form, please visit the ABSA web site or contact ABSA.

Have you visited us on the Internet yet? - www.albertaboilers.com

Failure of a Hot Oil Heater

During the early fall of 2001, an explosion occurred involving a hot oil heater (of NONCODE construction) installed at a gas processing complex. The plant had been shut down to facilitate the installation of three newly constructed (larger capacity) reboilers for the de-ethanizer, de-propanizer and de-butanizer towers, of the fractionation unit.

These re-boilers are heat exchangers that use a heating medium to provide the necessary energy transfer for "re-boiling" product. This facilitates the separation of the distillates into the differing product constituents of ethane, propane and pentane plus (raw gasoline).

The operation function of these units is such that the tube side is flooded with heating oil media the shell side is connected to the product within the tower, which is being "re-boiled" to distill into its constituents. This separation within the differing towers is done through a function of both temperature and pressure control on each. The hot oil and the product never normally contact with each other.

After the shutdown was completed to facilitate the re-boilers' change-out, the oil heater was re-started by establishing a flame to heat up the media. Control was then transferred to the plant distributed control system, located within the control room. The heating oil circulation was established by starting up the pumps allowing flow through the heater and the towers' re-boilers. Shortly after startup, an explosion occurred allowing a breach of the oil furnace from the end of the furnace "barrel" (where the fired "U-Tube" is attached). The shell of the heater was then propelled into the boot section of the de-propanizer tower and upon deflecting off the tower base, knocked over the propane accumulator. Propane product released to atmosphere from the accumulator vessel, ignited resulting in a second explosion and ensuing fire ball. Damage from the second explosion traveled the length of the gas treating and the gas compression buildings.

The ensuing accident investigation determined that hydrocarbon had migrated into the heating oil. From the warm up of the contaminated heating oil, rapid expansion of the hydrocarbons within the shell of the non-code heater vessel resulted in the catastrophic failure.

As a result of this incident ABSA recommends that organizations with similar equipment develop a formal written procedure for the start-up of heating oil furnaces. Items that should be addressed include the monitoring of heater shell belly temperature, control of the heat loading on the furnace which will regulate the temperature gradient in the process (and will by nature demonstrate any abnormalities). The control transfer process (to DCS or remote control location) shall also be addressed.

National Board - 71st General Meeting

This year, the 71st Annual General Meeting of the National Board will be held in Colorado Spring, Colorado in conjunction with the ASME International Boiler and Pressure Vessel Code Committee meetings on April 29 - May 3, 2001.

Feature eminent speakers will make presentations on various aspects of pressure equipment safety. 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 visit the infoLink! Page on the website of the National Board www.nationalboard.org or call the National Board directly at (614)888-8320 or Fax (614)888-0750.

Alert
Air Compressor with Air Receiver Tank

Over 450,000 portable air compressors are being recalled by a manufacturer. A consumer alert has been issued on this subject and full details of the alert is available on our web-site www.albertaboilers.com/IB&Index/default.htm.

WARNING
Internal Vessel Cleaning and Maintenance

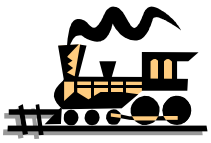
There are many hazards when internally cleaning a vessel, two of them being working in a confined space and working in the presence of explosive mixtures.

An accident occurred in Central Alberta in the spring of 2001, when a 3-phase separator was being internally cleaned using hot water. Prior to entry into the vessel, LEL (Lower Explosive Limit) and H_2S levels were checked and found acceptable. Once the cleaning process started, the hot water being sprayed on the vessel wall coating released hydrocarbons from the coating of the vessel. This caused an increase in the LEL to an explosive limit and an increase in the H_2S Levels. The vessel was evacuated, but then one individual re-entered to retrieve tools and equipment left inside. A defective explosion-proof light ignited the hydrocarbon vapors causing an explosion and fire. There were six workers in the vicinity who suffered burns ranging from 1st to 3rd degree.

As with most accidents it takes a series of timed events to cause the final unplanned event. In this case any one of a number of events could have been eliminated and this accident would not have occurred.

When working inside a vessel, consideration must be given to proper cleaning procedures, purging and ventilation along with strict adherence to confined space entry procedures.

Steam Powered Locomotives And Tractors



Last year, July 29, 2001, in Medina Ohio, a steam powered tractor exploded. The results were five fatalities and 48 injured.

This is the time of the year when hobbyists and museum operators make plans for the summer. It is a very exciting time, but unfortunately safety may sometimes be compromised.

An annual inspection of all traction and locomotive boilers using the ABSA guideline and National Board guideline is mandatory. This inspection must be followed by an inspection by your local ABSA Safety Codes Officer. To reduce the risk of harm to people, never operate a locomotive or traction engine boiler unless it has been thoroughly inspected. To help protect public safety in Alberta, it is mandatory for a certified power engineer to be in charge of the operation of these boilers.

Following the Medina, Ohio explosion there were four recommendations that should be considered whenever these units are placed into operation:

- Keep the public away from operating display boilers.
- Proper water treatment is a must.
- The boiler must be in constant attendance by a qualified person once it is fired.
- Proper boiler layup procedure must be followed prior to fall storage period.

Locomotives and traction engines are amazing machines and very entertaining to operate or to see in operation, but unfortunately they are also one of the most dangerous. The stored energy in steam should always be a concern.

Exemption
Vessels Operating at 103 kPa or less

A pressure vessel operating at, and with pressure relief valves set at, a pressure not exceeding103 kPa (psi) may be exempt from the Safety Codes Act and regulations. **Form AB-85, Request for Exemption**, has been introduced for requesting exemption for these pressure vessels even though they may be designed for more than 103 kPa. Note should be taken that the exemption is for pressure vessels and is not applicable to boilers or thermal liquid heaters.

The form, AB-85, must be completed and submitted by the owner for all exemptions for vessels operating at 103 kPa or less. The owner must be able to provide verification that the operating pressure cannot exceed 103 kPa. The Safety Codes Officer reviewing the request may require that the owner provide certification by an engineer that the design of the overpressure protection provides the needed protection.

It is the responsibility of the owner to ensure that the overpressure protection is maintained and controlled so that the vessel pressure cannot exceed 103 kPa. The result of not doing this may be an accident with serious consequences as described in the article “Over-Pressure Protection Must be There” in The Pressure News, June 2001.

Form AB-85 is available at www.albertaboilers.com under “ABSA Forms”.

Repair and Alteration Report
(ABSA Form AB-40)

A revised form AB-40, Boilers and Pressure Vessels Repair and Alteration Report, as well as a Guide for Completing Form AB-40, has been posted on our website www.albertaboilers.com.

The revised AB-40 includes a new entry for a description of defects that will provide information for ABSA to compile statistics on the causes of failures. Also, the spaces on form AB-40 now bring up a comment box that gives direction on the information required. The rest of the changes are largely editorial.

The Guide for Completing Form AB-40 describes the information required for completing each item of Form AB-40. It is available in the Forms section of the ABSA website under AB-40.

Always use forms from the ABSA website to ensure that you are using the current revision.

Pressure Equipment
Safety Legislation Training Seminar

ABSA is preparing a training seminar on pressure equipment safety legislation. The purpose of the seminar is to promote knowledge and understanding of the legislated requirements in Alberta.

The 3-day seminar will cover the Safety Codes Act, Regulations and CSA B51 in detail. The seminar will include an overview of adopted codes and standards, Safety Codes Council, Boiler Technical Council, government, the National Board, American Petroleum Institute, accident investigations, construction, repair and alteration of pressure equipment, change of ownership, quality systems, design registration, welding, in-service inspections and pressure equipment integrity management programs.

The seminar will be part of the initial training program for ABSA staff and will be open to personnel employed in the pressure equipment industry. The seminar is expected to be available to the public during the last week of May 2002. We will publish details on our website as soon as arrangements have been finalized.

Proper Location of Pressure Equipment

An incident occurred when an oil filter on a gas compressor package failed and sprayed oil about. The hot oil hit the engine turbocharger and caused a fire. Heat of the fire melted site glasses on overhead fuel day tanks. Oil pouring from these sight glasses supplied fuel for the fire after the engine had shut down.

Fortunately, with the proper operation of the Emergency Shut Down controls and the quick action of the Operator in extinguishing the blaze, there were no injuries and most equipment was undamaged.

This reminds us that a significant part of vessel inspection and placement should focus on the vessel's surroundings. While proper design, construction and operation usually leads to a long and safe vessel life, improper placement next to other equipment, chemicals, flammable materials, etc. may lead to a premature failure. Fire can weaken the vessel materials; chemicals may cause severe corrosion and failure before the next scheduled inspection; inadequate structural supports can lead to failure of nozzles or connecting piping; vibration or failure of adjacent equipment may damage the vessel. These are just a few of the possibilities.

Another point for consideration; accidents involving pressure equipment must be reported to the Administrator as soon as possible after the accident. This is required even if the accident was not caused by the pressure equipment involved, as was the case with this incident. Details of what information is required in this report are listed in Section 18 of the Administrative Items Regulation of the Safety Codes Act (www.qp.gov.ab.ca/documents/regs/1994_083.cfm).

Notice

Please visit ABSA's website for the 2002 holidays and scheduled examination dates.

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