

ONTARIO'S NEW DIRECTIONS IN PUBLIC SAFETY DELIVERY

We have been advised that on May 5, 1997, the Ontario Ministry of Consumer and Commercial Relations (MCCR) officially delegated responsibilities to the Technical Standards and Safety Authority (TSSA) for the delivery of programs and services under public safety statutes administered by MCCR -- including the Boilers and Pressure Vessels Act and Operating Engineers Act. In fact, TSSA delivers safety programs in four main areas: elevating and amusement devices; hydrocarbon fuels and equipment; boilers and pressure vessels and upholstered and stuffed articles. Like ABSA, TSSA administers public safety programs and services under the statutes, while the authority for regulations and legislation remains with the Ontario government.

As a non-government organization that is self-funded and not-for-profit, the operational and financial affairs of the new Safety Authority are governed by a Board of Directors composed of representatives from industry, government and non-industry stakeholders -- so that business and public interests are represented in a fair and balanced manner.

This new Safety Authority has invited industry to play a greater role in the shaping of public safety policy and strategy through the creation of Industry Advisory Councils (IAC). These industry-led councils are responsible for identifying and bringing forward safety issues; developing policy and strategy for their specific sectors and providing feedback from, and facilitating communications with, their industry.

Mr. John Walter, formerly the Assistant Deputy Minister of MCCR's Technical Standards Division, will be directly responsible to the Board for the operational activities of TSSA in

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Left to right: Zhen Zhang, CBPVI/ Nine Best Wishes Ent.; Ken Lau, Chief Inspector and Administrator; Xueren Li, Director of CBPVI ; Brian Lade, Alberta Labour; Xueling Liu, CBPVI/ Nine Best Wishes Ent.

VISIT BY CBPVI DIRECTOR PRESSURE EQUIPMENT EXPORT TO CHINA

Mr. Xueren Li, Director of the Centre of Boiler and Pressure Vessel Research and Inspection (CBPVI), Ministry of Labour, Peoples' Republic of China (PRC), visited Edmonton as part of the CBPVI delegation's visit to North America. Mr. Li met with officials from Alberta Labour, ABSA, Alberta Federal and Intergovernmental Affairs and Alberta Economic Development and Tourism during which meetings issues relative to pressure equipment safety and trade between Alberta and China were discussed.

In conjunction with Mr. Li's visit, ABSA organized a meeting on July 25, 1997 to provide an opportunity for Alberta pressure equipment manufacturers to learn directly from

the CBPVI about the Chinese jurisdictional requirement with respect to pressure equipment destined for China. Time was allowed for the companies to ask questions. Among other issues, Mr. Li detailed the requirements of the "Implementation Regulations of Import Boiler and Pressure Vessel Safety Quality Licensing System" effective October 1, 1997. The regulations, first announced in 1995, require pressure equipment manufacturers to obtain a Boiler and Pressure Vessel Safety Quality Licence from the Ministry of Labour, PRC, before the product will be allowed to be imported into China. The pressure equipment categories include boilers, pressure vessels, pressure fittings, pressurized rail and road cargo tanks, and portable cylinders.

Mr. Li described the Safety Quality Licensing System from the introduction



of the regulations, application procedure, quality system content and assessment checklist to the issuance of the licence. The Safety Quality Licensing System is modelled on the ISO 9000 structure but also incorporates quality control requirements of ASME and CSA B51 Codes. Accordingly, he felt that organizations having either the Alberta/ABSA's CSA B51 manufacturers' authorization or a ASME code stamp authorization, would have little difficulty in meeting their requirements. Over and above the ASME/CSA requirements, the three major additional areas the existing manufacturers' manuals need to address would be (i) "Contract Control", (ii) "After Sales Service" and (iii) the implementation of the Chinese Quality Licensing Certification.

Mr. Li stated that applications for Quality Licensing may be made to the Safety Quality Licensing Office for Import Boiler and Pressure Vessel (SQLO) of the Ministry of Labour, The Peoples' Republic of China, 3# Ji Chang Nan 1 Lu, Chao Yang District, 100027 Beijing, China (Tel.: 86-10-64667225 and Fax 86-10-64665393). Mr. Li also reaffirmed the acceptance of ABSA's inspection under the Inspection Agreement between Alberta and China signed in 1993. He noted that the licensing survey/audit function remained solely with the Ministry of Labour, PRC and should not be confused with code construction inspection requirements. Mr. Li agreed that whenever requested by ABSA, CBPVI would be pleased to assist in clarifying to our manufacturers the quality licensing system and any other Chinese jurisdictional requirements. CBPVI would also be pleased to assist our manufacturers in contacting other Chinese government departments and/or officials.

The visit of the CBPVI delegation helped to clarify Chinese pressure equipment jurisdictional requirements to all concerned. Mr. Li and Alberta officials agreed to continue to promote the exchange of pressure equipment technology and trade and to cooperate in all areas of pressure equipment safety. The meetings also allowed for a continuation of the excellent working relationship between Alberta and China.

TESTING PRESSURE PIPING

The Design Survey Section often receives requests to waive hydrostatic test requirements for pressure piping.

The legislative requirements in the Design, Construction & Installation of Boilers and Pressure Vessels Regulations are as follows:

7(1) In accordance with section 5 of the Act, where a person intends to construct in Alberta for use in Alberta a pressure piping system, he shall submit to the chief inspector the drawings and information specified in subsection (2).

(2) The drawings, specifications and other information respecting a pressure piping system must be submitted to the chief inspector in duplicate and include: ... (f) the pressure pipe test procedure outlining the type, method, test media, test pressure, test temperature, duration and safety precautions..

58(1) Prior to the initial operation of any pressure piping system, the contractor shall ensure that the system is mechanically sound, leak free and complies with the requirements of this section.

(2) The contractor shall ensure that all safety precautions are observed when conducting any tests.

(3) All pressure pipe tests shall be conducted by the contractor in accordance with the pressure pipe test procedure specified in section 7.

(4) All pressure pipe tests shall be conducted using the hydrostatic test method, except as may otherwise be permitted in subsection (3).

Thus the primary option for pressure testing is a hydrostatic test. Under certain conditions, other tests may be substituted. The first option is a pneumatic test and, if that is not possible, the alternative test provisions of B31.3 may be considered.

When the design is submitted, if one of the other test options is desired, the designer is required to justify why a hydrostatic test is not practical. Ambient temperatures below freezing are not considered justification as

other test fluids such as methanol and glycol may be used at the lower temperatures. Some "reasons" that have been received and not accepted include: "no blind flanges available", "no pumps available", and "we did not have to test on the last job".

Before a pneumatic test will be approved as a test procedure, one of the many conditions requiring consideration is the stored energy calculation to determine the potential danger should the piping fail. Several designers have changed their opinion about doing a pneumatic test after determining the amount of energy they were dealing with and the consequences of a sudden release of this energy.

On occasion, a new piping system will be constructed and tested and a request will be received to waive hydrostatic testing on the "tie-in" welds. In certain circumstances, with proper controls and increased NDE, an acceptable option may be developed. The designer is required to document each particular situation on the design submission. As a minimum, Section 345.9 of ASME B31.3 which requires 100% radiography, liquid penetrant or magnetic particle examinations, flexibility analysis and sensitive leak tests, must be complied with. Because of legislative and safety requirements, easements are not granted lightly.

ASME AIA ACCREDITATION AUDIT

ABSA is pleased to advise that its Quality System was audited by the American Society of Mechanical Engineers (ASME) Audit Team for Authorized Inspection Agency (AIA) Accreditation early in July. The audit was successful, confirming ABSA's implementation of the ASME construction inspection program in accordance with the ASME QA-1 standard. We understand the Audit Team has recommended to the ASME the issuance of the Certificate of Accreditation. This accreditation is now required in order to provide Authorized Inspection services to ASME Code Stamp Holders.

GENERAL SUPERVISION OF HEATING PLANTS

"General Supervision" of heating plants is provided for in the Safety Codes Act, Engineers' Regulations, Section 2(3). Heating plants rated at 750 kW or less do not require supervision. In that situation, the owner or person in charge is held responsible for the safe operation of the boilers and pressure vessels.

In general, the requirements for "General Supervision" may be summarized as follows:

A. Heating plants exceeding 750 kW require general supervision by the holder of the appropriate Certificate of Competency to ensure the safe operation of the boilers and pressure vessels.

i. Heating plants rated at more than 750 kW to a maximum of 3000 kW require general supervision by a holder of an appropriate Certificate of Competency. This includes: Building Operator B, Building Operator A and Third Class, Second Class or First Class Power Engineer*.

ii. Heating plants rated at more than 3000 kW require general supervision by a holder of an appropriate Certificate of Competency. This includes the following: Building Operator A, Third Class, Second Class or First Class Power Engineer*.

*Note: A Fourth Class Power Engineer Certificate does not qualify the holder to supervise a heating plant.

B. The general supervision of a heating plant rated at more than 750 kW is defined as two general checks of the heating plant per day, while the building is occupied and the heating plant is in operation.

i. The intent of "general check" of a heating plant is observing, testing, maintaining and taking the appropriate action to ensure the safe and reliable operation of the heating plant in accordance with ASME Section VI.

ii. The intent of two general checks per day is defined as two per 24 hours. This usually means two

general checks during an 8 or 12 hour period. The checks are normally conducted at the beginning and the end of the 8 or 12 hour period. If the building is occupied on weekends or holidays, the general supervision clause applies.

iii. In the event the heating plant is in good working order and the building is not occupied on weekends or statutory holidays, the general supervision requirement may be waived for those days to a maximum of 96 hours.

Good working order is defined as a condition supported by documented evidence that the heating plant/equipment, associated instrumentation/safety devices have been operated, maintained and tested on an ongoing basis in accordance with ASME Section VI.

SAFE OPERATION AND CARE OF HEATING BOILERS

Further to the article on Heating Boiler Safety in the May 96 issue of Pressure News, we would like to remind our readers that the publication titled "Safe Operation and Care of Heating Boilers" is available.

The brochure includes information related to accidents, overheating, low water, controls, hazards, safety relief valves/precautions, general care and operation of hot water and steam boilers, owner responsibility, and certification.

The brochure will be useful to owners, operators, maintainers, and those involved in managing heating boilers, and is available free of charge through your nearest Alberta Boilers Safety Association Office.

Employment Opportunities

Visit the ABSA Internet e-mail address for current ABSA job opportunities.

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his capacity as President and CEO and will act as primary liaison between the Safety Authority and the Ontario government.

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PRESSURE WELDER'S CERTIFICATES OF COMPETENCY

A Certificate of Competency is issued to all candidates who have passed the required examination as prescribed in the Pressure Welders' Regulations. This Certificate permits the holder to engage in pressure welding subject to the limitations described on the performance qualification card held by him.

Please be aware that all Pressure Welders, when engaged in pressure welding activities or when being tested for the issuance of a performance qualification card, must have the Certificate of Competency in their possession as required by the Pressure Welders' Regulations. Also, quality control programs of companies involved in pressure welding activities address the verification of a pressure welder's qualifications and would require the checking of the welders' possession of the certificate of Competency.

The Pressure Welders' Regulations, Section 26(3), states that a Safety Codes Officer can require a pressure welder at any time to produce his Certificate of Competency for examination.

If a welder has lost or had the certificate destroyed, a duplicate may be issued by filling out the appropriate form and paying the prescribed fee of \$40.00. Please contact Donna Vandenbrink at 437-9100 or visit the ABSA Edmonton office @ #200, 4208- 97 Street if a duplicate certificate is required.

FURNACE EXPLOSIONS

Recent furnace explosions serve as a reminder that boilers must be maintained and operated in strict compliance with the manufacturers' recommendations. A furnace explosion is usually the result of ignition and instantaneous combustion of highly flammable gas, vapor, or dust that has accumulated in a boiler. The effect of the force from the explosion is often much greater than the boiler combustion chamber can withstand.

Minor explosions, commonly known as deflagration, puffs, flarebacks, or blowbacks, may suddenly blow flames from firing doors and observation ports. Anyone in the path of a flame, which might extend many feet, may be seriously burned. An increase in the intensity of the explosion would naturally increase the probability of a serious accident.

Furnace explosions may be avoided by taking reasonable precautions:

- Ensure that fuel inlet valves on nonoperating burners and ignitors are tightly closed and do not leak.
- Purge the furnace in accordance with the manufacturer's specifications each time before the first burner is ignited.
- Ensure that the ignitors, fuel regulating controls, and flame safeguards operate as required.
- Ensure that there are no contaminants in the boiler's fuel system.
- Ensure that the fuel/air ratio is in accordance with the manufacturer's specifications.
- Remove oil guns from idle burners after closing the oil and air or steam supply valves when shutting down oil burners. Drain and clean residual oil from the guns before storage.
- Never use the boiler's soot blowers to blow soot in a cold boiler.
- Ensure that limit and operating controls are in good working condition and are not "by-passed" or "jumped-out".

Proper operation, proper maintenance, and timely inspections are key elements in ensuring safe boiler operation.

Reprint Courtesy of
Boiler Safety Bureau
North Carolina Department of Labour

SAFETY ALERT BULLETIN PRESSURIZED CARGO TANKS

We have received a Safety Alert Bulletin from the US Department of Transport, that on Sept 8, 1996 in Sanford, NC, propane was released during delivery operations at a bulk storage facility. This occurred when the discharge hose of a MC 331 cargo tank became separated from its hose coupling at the storage tank inlet connection. The excess flow feature of the stop valve on the cargo tank did not function.

The MC 331 specification states that "Each internal self-closing stop valve and excess flow valve must automatically close if any of its attachments are sheared off or if any attached hoses or piping are separated."

In view of the very serious nature of the accident and its potential consequences, owners and operators must ensure that periodic inspection and testing of pressurized cargo tanks are carried out in accordance with the Design, Construction and Installation of Boilers and Pressure Vessels Regulations (Alberta Regulation 227/75 with amendments up to and including AR 294/94).

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