

ABSA THE PRESSURE NEWS

Alberta Boilers Safety Association

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DIRECTORY OF CERTIFICATES OF AUTHORIZATION NOW POSTED ON ABSA WEB-SITE

We are pleased to announce that a Directory of organizations whose Certificates of Authorization are current with ABSA, has now been posted on the Internet at ABSA's web site.

This service will allow users to generate a list of organizations who are currently authorized to undertake activities within the scope of the program described in the Certificate of Authorization issued by ABSA under the Safety Codes Act and the associated pressure-equipment-related Regulations. The site also include General Information on:

- 1 Who is required to register a Quality System (QS) program with ABSA?
- 2 Who is required to use the services of a registered Quality System certificate holder?
- 3 What should a user of the services of QS Certificate of Authorization holder check to ensure validity of the certification?
- 4 How to find a certified contractor (QS Certificate of Authorization holder)?

You are invited to browse our web site at <http://www.albertaboilers.com>, click on 'Quality Control Programs', then the 'Directory of QS Certificate of Authorization holders' and explore the possibilities.

Organizations holding a Certificate of Authorization are asked in particular to access the directory, input your Company Name - select 'All regions' - select 'All' and click on 'Submit' in order to review the details displayed on your organization to ensure the accuracy of the information posted. Please report any inaccuracies at (780)433-0281, Ext. 363 or chin@albertaboilers.com.

ACCIDENT - IMPACTING ON PRESSURE EQUIPMENT

In May of this year 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 caught fire. The heat of the fire melted sight glasses on overhead fuel day tanks. Oil pouring from these sight glasses added fuel to the fire after the engine had shut down. Due to 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 does remind 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 is 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.

VARIANCE Information Bulletin No. IB00-003

A variance to Section 38(3) of the Design, Construction and Installation of Boilers and Pressure Vessels Regulations (AR227/75 with amendments up to and including AR159/97) has been issued. Effectively immediately, and until further notice otherwise, Section 38(3) of AR227/75, the requirement to have the longitudinal shell seams located in the upper half of the vessel, is a requirement only for pressure vessels used for TC331 Highway Tanks and MC331/MC330 Cargo Tanks.

Please visit our web site www.albertaboilers.com for the full Information Bulletin or obtain a copy from your nearest ABSA office.

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

SHORT RADIUS ELBOWS AND RETURN BENDS

The pressure-temperature ratings for ASME/ANSI B16.28 Wrought Steel Buttwelding Short Radius Elbows and Returns, have changed as of the 1994 edition of this standard.

Some of the construction codes, which adopt various reference standards, now allow the use of B16.28 items at 100% of the pressure-temperature rating calculated for straight seamless pipe by the rules of the construction code.

The following table illustrates the current status for pressure-temperature rating in the most prevalent construction codes.

Edition or Addenda	Construction Code	Edition of B16.28 Accepted	Pressure-Temp. Rating (vs. seamless pipe) %
A99	ASME Section VIII, Div 1	1986	80% (100% possible see UG-44)
A99	ASME Section VIII, Div 2	1986	80% (100% possible see AD-623)
A99	ASME Section I	1994	100%
A99	ASME B31.1	1994	100%
99 Edition	ASME B31.3	1994	100% [see table 326.1 note 5]

It is important to note that the potential increase in pressure-temperature rating only applies to items manufactured to the 1994 Edition of B16.28, as stated in the Cautionary Note number 5 in Table 326.1 of B31.3: "Pressure rating of components manufactured in accordance with editions prior to the 1994 edition of this standard were derated to 80% of equivalent seamless pipe. This derating is no longer required for components manufactured in accordance with the 1994 Edition."

The 7th China International Exhibition on Boiler & Pressure Vessel Industry

The Ministry of Labour, Peoples' Republic of China, announced that the Seventh China International Exhibition on Boiler and Pressure Vessel Industry will be held in Shanghai, China on October 17-20, 2000. This could be a showcase for organizations in our industry not only to the Chinese market but also to participants from other countries. We understand exhibition space is still available and interested parties should contact Mr. She Yu or Mr. Sheng Gang of 2000 CHINA IBPI Beijing Office, 2# Building B610 Room, Xiyuan, Hepingjie, Chaoyang District, Beijing 100013, P.R. China, Tel: ++86-10-84272492, Fax: ++86-10-84273124, E-mail: cabpvi@cabpvi.org. In cooperation with the Centre of Boiler and Pressure Vessel Inspection and Research, China, a flyer on this subject is also available from the ABSA Head Office in Edmonton.

QUESTIONS AND ANSWERS

- Q. When hydrostatically testing a pressure vessel, a minute leak is detected that does not cause a discernable drop in the test pressure. Is it permissible to complete the test and subsequently repair the vessel without repeating the hydrostatic test?
- A. No. The final thing to be done to the vessel prior to the Authorised Inspector's signing the Manufacturer's Data Report (MDR) is the hydrostatic, or when applicable, the pneumatic test. The Authorised Inspector could not sign the MDR for a leaking vessel.
- Q. What thickness is to be used as the nominal thickness of the head when calculating the reinforcement of an opening in a formed head?
- A. The thickness that is considered the nominal thickness of the head for reinforcement calculations is the minimum thickness after forming. Note that this is the same thickness that is to be shown on the MDR as the head minimum thickness.
- Q. What thickness is to be used as the nominal thickness of a pipe shell when calculating the reinforcement of an opening in a pipe shell?
- A. The thickness that is considered the nominal thickness of the pipe shell for reinforcement calculations is the minimum thickness after deduction of the manufacturer's undertolerance. See UG-16(d).
- Q. Are there circumstances where a carbon steel base metal is exempt from impact testing, but the butt welds in that material must be impact tested?
- A. Yes. For MDMTs below -20 degrees F but not below -50 degrees F*, Categories A & B butt welds in Curves C & D materials must be welded with an impact tested welding procedure

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ABSA UPDATE SEMINAR

October 31-Calgary
November 2-Edmonton

One-day ABSA update seminars will be held in Calgary on October 31, 2000 and in Edmonton on November 2, 2000. The seminars will provide information that is of interest to personnel from pressure vessel manufacturers, owners/users, contract companies and the EPC community who have responsibilities related to pressure equipment design and quality control.

Topics to be presented include changes to the ASME Boiler and Pressure Vessel Code with the 2000 Addenda, common design inadequacies and recent ASME review findings. There will also be a general discussion session at the end of seminar.

As in other seminars and workshops organized by ABSA, you are requested to submit any questions that may involve some research time on any topic in the program to :

webmaster@albertaboilers.com

at least one week before the seminar.

Due to limited seating, we would suggest a maximum of 2 attendees per company. Seat allocation will be made on a first-come, first-served basis. You may obtain an application form from your nearest ABSA office or from the ABSA web site, www.albertaboilers.com. The deadline for registration is October 24 for Calgary, October 26 for Edmonton.

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regardless of thickness if the welding consumables used are not classified for at least the MDMT by the SFA specification. Production impact tests of such welds must also be performed. *ASME Section VIII-1 would set the lower limit at -55 degrees F, but CSA B51 requires impact testing below -50 degrees F.

AUDIT OF PRESSURE RELIEF VALVES SERVICING ORGANIZATIONS

The following is a Summary of Audit Results:

Under the Safety Codes Act, all setting, servicing and repairing of pressure relief valves (PRVs), similar to other activities undertaken in the pressure equipment industry, must be carried out by an organization which holds an Alberta Certification of Authorization to perform such work.

Beginning Nov. 1, 1999, in addition to the certification program implementation audits, ABSA commenced periodic audits of organizations holding certificates of authorization in three quality program areas. The programs selected are a) Pressure Relief Valve Servicing and Setting, b) Welder Performance Qualification Retesting and c) Piping Fabrication and Repairs. Selection of the programs for periodic audits is based on the reports received and incidents reported associated with the programs. It is ABSA's plan to conduct periodic audits on all the other remaining programs at a future date.

For the audit of the organizations undertaking setting, servicing and repair of pressure relief valves, our focus this year is on 1) witnessing set pressure testing and 2) verification of the testing procedures, equipment capabilities and capacity re-certification of reset valves.

Notification describing the scope of the audit is being mailed to the certificate holders one month prior to the audit. The certificate holders are asked to arrange for one pressure relief valve each for air and liquid mediums to be tested. These valves should be of the largest size and highest pressure permitted under the scope of their program. To date thirty-one audits in the PRV Servicing and Setting program have been completed. The results of the audits and observations may be summarized as follows:

1. "Set Pressure" as defined per ASME PTC 25:

There was considerable misunderstanding as to the proper definition of "set pressure" as defined in ASME PTC 25. Some organizations also did not apply the NB-18 correctly. Whenever such observations were made, we conducted a detailed review of the NB-18 and clarified the definitions per ASME PTC 25 with the concerned organizations

2. Testing of one air pressure relief valve and one liquid pressure relief valve for the set pressure as defined in NB-18 and the Manufacturer's published literature:

Liquid Pressure Relief Valves:

A few companies were attempting to test pressure relief valves for liquid service using air. On the other hand, deficiencies were found in other companies who did not have adequate facilities to conduct the test. As a result, 14 Corrective Action Reports were issued for the installation of proper liquid PRVs testing facilities and two organizations chose to remove liquid service testing from the scope of their programs.

Air Pressure Relief Valves:

Corrective Action Requests were issued for various system deficiencies that were found.

3. Capacity verification of pressure relief valves reset by the company:

A few companies were found to have supplied an incorrect 'New Capacity' in their report and valve Tag. In those cases, the owners were immediately contacted to rectify the situation.

We would like to note that some process plants use API standards for calculating pressure relief valve capacity. In most cases, the use of the API standard for this calculation may provide a more conservative value because of the

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consideration of orifice area. However, the API standard permits a higher Coefficient of Discharge 'K' than does the ASME Code. ASME limits the 'K' value to 0.878 maximum while NB-18 provides for the actual 'K' value for each type of valve. In the cases reviewed during our audits, the capacity calculations performed per API standards resulted in more conservative values than those calculated under NB-18 and therefore were found acceptable.

NB-18 specifies the procedure for capacity calculations per the requirements of the ASME Codes and therefore is a requirement for code stamped valves. In all cases where the API procedure had been used, the organizations were asked to verify the API capacity against NB-18 to ensure that the API capacities were higher than that permitted by NB-18. The companies were also asked to include the procedure in their program manuals.

We plan to complete audits on all the remaining certified PRV setting and servicing facilities by Oct. 31, 2000. An audit of each company certified to set and service PRVs will be conducted annually. Audit strategy will be established prior to the start of each year (Nov. 1 to Oct. 31) and will be based upon the reports from the users, incident reports and other items as necessary to ensure compliance with the Safety Codes Act, the Regulations and the adopted Codes and Standards.

AWS STANDARD WELDING PROCEDURE SPECIFICATIONS

The American Welding Society (AWS) publishes Standard Welding Procedure Specifications (SWPSs). A significant revision to ASME Section IX has just been made in the 2000 addenda that allows the use of acceptable AWS Standard Welding Procedures.

ASME Section IX introduced a new subsection identified as Article V which addresses SWPSs and the requirements for their adoption by an organization. Also, a new Appendix E lists the acceptable SWPSs.

It is important to note that only some construction Code sections (e.g. Sections I and IV) permit the use of SWPSs but this is not true for all Code Sections (e.g. Section VIII).

Before an organization considers adopting the use of an acceptable SWPS, a detailed evaluation should be undertaken. There are a number of requirements for the adoption of SWPSs as well as a number of restrictions for the production welds which specify a SWPS.

This subject is detailed in a special article on the ABSA web site. You are encouraged to visit the site for further details on how SWPSs may be used, particularly in the province of Alberta.

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