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NEW OIL AND GAS REPRESENTATIVE ON ABSA'S BOARD OF DIRECTORS



Mr. Mark Demchuk



Ms. Pamela McIntyre

We would like to take this opportunity to thank Mark Demchuk for his significant contributions and valued leadership as he steps down from his role on ABSA's Board of Directors, having served two terms. Mark was selected by a nominating committee in July 2012 to be an industry representative for pressure equipment manufacturing. He provided leadership and governance to the Board, serving as both vice-chair and chairperson during his terms. He will be replaced by Pamela McIntyre.

Pamela's appointment to ABSA's board for a 3-year term starts on July 1, 2018. She was selected by a three-member nominating committee consisting of a current board member, a member-at-large, and the Assistant Deputy Minister of Public Safety for Alberta Municipal Affairs.

Pamela is a professional engineer and currently holds the position of Senior Vice-President, Safety, Risk Management and Innovation, with CNRL in Calgary, Alberta.

She will be joining current board members Robert Emmott (Industry Representative), Neil Fassina (Education Representative), Alejandro Carvallo (Industry Representative), and Michelle Colleton (Minister's Appointee, General Public Representative). We look forward to the industry insight and strategic guidance that Pamela will bring to ABSA. ❖

AMENDMENT TO THE POWER ENGINEERS REGULATION

Interested parties should take note that the Power Engineers Regulation was amended at the end of April. Some of the amendments made include changes to the rules for required supervision of some plant types, and changes to some of the rules for qualification, examination, and certification of power engineers.

A summary of the changes has been published on our website in a document entitled [Amendment to the Power Engineers Regulation AR 85/2003](#), under the heading 'News'. ❖

ALTERNATIVE RULES FOR REINFORCEMENT VESSEL OPENINGS

Up to and including the 2015 edition, Section VIII-1 of the ASME Code provided alternative sets of rules for the reinforcement of openings in cylindrical and conical shells in Appendix 1. These rules were provided as an alternative to the default rules found in Paragraph UG-37. Code users were permitted to use the alternative rules under certain conditions as a method to justify opening designs, and they sometimes provided a more economical design than the default method. The alternative rules, however, were significantly more complex, and relied on the code user's understanding of the underlying design principles and their limitations.

As the date is approaching beyond which use of the new 2017 code edition becomes mandatory, it must be noted the paragraphs containing these alternative rules have been *removed* from Appendix 1. They are therefore no longer available as options for the alternative design of openings.

There may be situations in which the use of a code edition permitting these rules may still be justified, such as in cases of pre-existing purchase contracts. Users are reminded that in such cases, the use of these rules relies on a strong understanding of the underlying principles, and that their application is subject to the stipulations and limitations discussed in [Information Bulletin IB15-006](#), available on our website. ❖

PRECAUTIONS WARRANTED FOR SA-105 AND GRADE 91 STEEL

In recent years, several ASME code-listed materials have been subjected to increasing levels of investigation as attention has been drawn to their potential for poor performance under certain circumstances. In particular, some forged products made from SA-105 steel have shown poor toughness properties at moderately low temperatures, and a creep-strength-enhanced ferritic material known as Grade 91 steel has been shown to have lower creep-strength properties at very high temperatures than what was previously thought.

SA-105 is a material specification commonly used for standard pressure flanges and other forged components, and commonly permitted by construction codes for use to a minimum temperature of -29°C without impact testing. Although it has historically been understood to have suitable properties at this temperature, incidents have become increasingly common over the last several years in which some SA-105 components have been shown to exhibit low-temperature embrittlement at a much higher temperature than expected. Investigations have shown that the brittle behavior can be related to problems with chemistry, microscopic grain structure, manufacturing processes, and improper heat treatment after forging. Since this material specification does not require impact testing of parts to prove their toughness, components that are too brittle for use at moderately low temperatures are not identified and rejected.

Conversely, Grade 91 creep-strength-enhanced ferritic steel is a material grade permitted by several material specifications. It is particularly sought after for its ability to remain strong at very high temperatures and for its resulting suitability for specialized boiler applications. Recent investigations, however, have shown that this material has not performed as well as has been expected.

Code changes are expected for the 2019 Edition of the ASME Code to address concerns with respect to both of these materials. In the case of SA-105, it is expected that Section VIII-1 will place additional limitations on its use without impact testing. In the mean time, please refer to ABSA's [Information Bulletin IB16-018](#) for further information relating to these issues. In the case of Grade 91 materials, allowable stress levels are expected to be reduced at some temperatures by up to 19%.

Although such code changes can normally be expected to apply only to new construction, the improper use of these materials in some circumstances can present a major safety risk. ABSA is currently working with an industry task group to assess the risks involved in the continued use of Grade 91 materials in existing equipment, and to determine what monitoring and maintenance may be required to ensure that such equipment can continue to be operated safely, especially in cases where repairs or alterations are made. Equipment manufacturers and purchasers are reminded that the pressure equipment construction codes that are declared in force by Alberta regulation represent minimum statutory requirements. Code compliance does not itself alleviate them from professional responsibility or legal liability with respect to proper design and construction. Interested parties are thus encouraged to be proactive when using these materials, by making additional considerations beyond what is required by the current code edition. ❖

AMMONIA REFRIGERATION AND ICE ARENA SAFETY - A FOLLOW-UP

Since the accidental death of three workers in a British Columbia skating rink facility in October of last year and the publication of a related article in our December 2017 issue of The Pressure News, there have been concerns expressed with respect to the potential risks associated with ammonia-based refrigeration systems in ice arenas in Alberta.

In the general case, recreational ice arena facilities using ammonia refrigeration systems that are properly designed and well-maintained are safe. Ammonia is present only in an isolated, closed-loop refrigeration system where typically it is used to cool a brine solution, and the brine solution is then circulated under the ice sheet to maintain the required ice temperature. Brine is not hazardous and does not contain ammonia; the use of ammonia is limited to the cooling system in the mechanical room.

During normal operation, ammonia is not consumed by the process or released in any way. It is used in a simple self-contained refrigeration cycle, being expanded from a liquid to a gas to remove heat from the brine, and then being pressurized to force it to re-condense into a liquid at another location, depositing the unwanted waste heat where it can dissipate into the surrounding environment. If an ammonia leak occurs, it is generally limited to the mechanical room and does not occur in an area where recreational users of the facility are likely to be present.

To do our part to help ensure the safety of Albertans working at or using these facilities, ABSA is committed to visiting all ice arena facilities in our province during this calendar year. Facilities will be visited whether or not they require registration. As mentioned in our December article, it is important for operators and facility owners to note that there are safety requirements which fall outside of ABSA's jurisdiction. Owners are encouraged to contact their local municipalities for guidance on other applicable facility requirements – Information Bulletin [IB17-022: Authority Having Jurisdiction for CSA B52](#) is published on our website and may serve as a helpful guide for those looking for further information. ❖

SUMMER LAY-UP FOR BOILERS

Due to our cold climate, heating boilers are a necessity of life in Alberta. Unexpected boiler failure or downtime during the winter months can be more than a simple inconvenience: freezing temperatures can cause damage to property or endanger life. Some boilers are not required to operate during warmer periods, and owners and operators should consider properly “laying up” these boilers for the summer months. Proper lay-up of a boiler can provide an opportunity for inspection and preventative maintenance, and allows the owner to save money by reducing corrosion and fouling, increasing the boiler's efficiency and reliability and extending its useful service life.

Two of the most common lay-up methods include wet lay-ups and dry lay-ups. Each has its own advantages and disadvantages – a wet lay-up involves filling the boiler with treated water, which could allow a rapid start-up if one might be required, but it requires more monitoring of the laid-up boiler, and severe damage could occur if the boiler is subjected to freezing conditions.

For further reading and some basic instructions pertaining to wet and dry lay-ups of boilers, an excellent article, [Lay-Up of Heating Boilers](#), by Robert Ferrell, is available on The National Board's website at <http://www.nationalboard.org>. ❖

SELF-ADHESIVE 'A'-NUMBER LABELS FOR EQUIPMENT IDENTIFICATION

'A' numbers are serialized identification numbers that are assigned to individual pressure vessels and boilers, issued by ABSA in order to identify and track equipment through its life cycle. In the past, they have generally been hard stamped onto the equipment in a conspicuous location, typically on the equipment's nameplate or adjacent to other code-required markings. In some instances, ABSA inspectors have found that hard stamping equipment in the field can be impractical or unsafe, often due to difficulties in accessing an appropriate location, or due to hazards associated with hard-stamping equipment while it is in service.

In order to reduce the risks associated with access difficulties or stamping pressurized components, ABSA has developed and issued self-adhesive 'A'-number labels for use as an alternative to hard stamping. These labels have 'A' numbers pre-printed on a material that has an extended operating temperature range and good weather resistance, and they can be easily applied to a suitable surface. The labels have been issued for use in the field only, at the sole discretion of the Safety Codes Officer.

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REVISED FIRED PROCESS HEATER OPERATOR'S SYLLABUS REVISION IMPLEMENTATION

A new database of examination questions and an associated examination syllabus have been developed for the Fired Process Heater Operator's Certificate of Competency. The new examination question bank and syllabus have been approved by the Administrator for use in Alberta and are now available on our website.

With the changes that were made to this examination, both the old and new syllabi will be kept available for a period of time. For this period of overlap, candidates are being given the choice as to which syllabus their exams will be based on. The existing syllabus for this examination will expire on January 1, 2019, and from that time, examination candidates will be required to write the exams based on the new syllabus only. ❖

2018 ACPEEC DATE

The Alberta Chief Power Engineers Education Conference Committee is holding its 4th annual conference at the Delta Hotels by Marriott Edmonton South Conference Centre on November 7, 2018. Some of the topics for this year's conference include water treatment, assessing competencies for power engineers, and engineering pressure enclosures. A pre-conference networking event will be held in the hospitality suite the preceding evening.

Chief Power Engineers and persons in charge of a power plant, heating plant, or thermal liquid heating system are invited to attend and can invite one other person to bring along with them. Approved power engineering training providers are also invited to attend, such as representatives from colleges and institutes that teach power engineering.

ABSA will be presenting a pre-conference seminar, "AB-528: Requirements for Reduced Supervision of Power Plants, Thermal Liquid Heating Systems, and Heating Plants," on the afternoon of November 6.

Please email admin@acpeec.ca for information about conference registration or sponsorship, or visit our website to register for the pre-conference seminar. ❖

CODE UPDATE SEMINAR

The pressure equipment business is ever-changing, as are the governing codes and standards used by our industry. Each year in October, the ABSA Code Update Seminar is made available in several locations across Alberta to give industry an opportunity to learn about recent changes to adopted codes and other relevant topics. The seminar is prepared and delivered directly by ABSA's technical experts, and always provides excellent opportunities for learning and networking.

Although the 2018 seminar is still in its initial planning stages, dates and venues have already been set. The seminar will be presented in Edmonton on October 11th, in Calgary on October 18th, and finally in Red Deer on October 25th.

For more information and to register, please visit our website at <http://www.absa.ca>.

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