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NEW ABSA ONLINE LEARNING PLATFORM

ABSA has launched a new online learning platform, with the intent of making some of its seminars and other learning materials available on an on-demand basis.

Initial online offerings include a conversion of ABSA's Pressure Equipment Safety Legislation seminar, which provides a thorough introduction to the Safety Codes Act, the Pressure Equipment Safety Regulation, and other related regulations; a conversion of the AB-528: Requirements for Reduced Supervision seminar; and new material related to changes introduced in the 2020 Edition of the ASME B31.1 Power Piping Code, in lieu of ABSA's 2020 Alberta Code Update seminar that was cancelled last October.

This new system is intended to make learning more convenient and accessible, providing users with the ability to work through material at their own pace, and at a time and location of their choosing. The learning management system is available at lms.absa.ca. ❖

NEW DOCUMENT FOR ENGINEERED COMPOSITE SYSTEMS

In recent years, industry has expressed an interest in using engineered composite systems to restore the structural integrity of pressure equipment that has been subject to service-induced deterioration or external mechanical damage. In response to this demand, ABSA has undertaken an extensive review of the literature and collaborated with industry to author a new document, *AB-539: Engineered Composite Systems for Pressure Equipment Alterations*, establishing provisions and requirements for the use of composite materials for pressure equipment alterations. This document was created in consultation with the public, with Owner-User organizations, with engineered composite system industry stakeholders and subject matter experts, and in collaboration with the Technical Safety Authority of Saskatchewan.

While engineered composite systems are not new to industry, until now there have been no provisions for their use for alterations to pressure equipment in Alberta. This new document closes this gap and will assist industry in developing and obtaining approval for safe repair and alteration procedures making use of composite materials, so that equipment owners can take advantage of the unique properties of these materials. The document provides valuable guidance and clarification on the use of several established industry standards, and in some cases establishes additional requirements to account for their implicit assumptions and limitations.

The document has now been published and is available on ABSA's website at www.absa.ca. ❖

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CAUTION

Previous issues of The Pressure News may contain information which is outdated or no longer valid. Please be cautious when using information from old articles.

A YEAR IN REVIEW: ABSA'S RESPONSE TO COVID-19

With more than one year having passed since the commencement of the COVID-19 pandemic public health measures, most people have had to modify the way they conduct their business and personal activities to accommodate the new and evolving concerns that the pandemic has introduced. Over the past year, ABSA has made a variety of modifications to the way it does business, accommodating the concerns of the public health crisis while still keeping its stakeholders happy and enabling itself to pursue its mandate of administering pressure equipment safety programs for the province of Alberta. Some of ABSA's adaptations have included:

- **Inspection:** Shop inspections, field inspections, and audits were initially considered for deferral, but are now being conducted either on-site after a job safety analysis is conducted, or remotely via mobile video teleconferencing.
- **Design Survey:** Design surveyors began to review designs remotely from their homes. The transition was facilitated by the electronic submission and electronic stamping procedures initiated in recent years and went smoothly from the start. Procedures have since been enhanced with the establishment of the 'CRN Online' web portal.
- **Seminars:** Seminars were initially cancelled, but are now being conducted remotely via video teleconferencing, in a limited capacity. The 2021 in-person Alberta Code Update Seminar, scheduled to be held this October, was cancelled, but a seminar about outlining the changes to ASME B31.1 has been made available on ABSA's new online learning website.
- **Examination and Certification:** Power engineer and welder examinations were cancelled for a brief initial period, but have since resumed with a significantly increased number of sitting times in order to accommodate for reduced exam room capacity due to physical distancing requirements.

Although vaccines are now beginning to be made available and some degree of 'normal' is again in sight, ABSA's offices remain closed for the time being, and most staff are working from their homes. Although you may not be able to meet with your ABSA representative in person, they can be contacted in the usual manner by telephone or email, and other types of meetings can be facilitated using online meeting software as needed. ❖

EVOLUTION OF INSPECTION METHODS

Like many other organizations, in response to the COVID-19 pandemic, ABSA has taken advantage of the opportunity of the circumstances to evaluate and evolve its policies and procedures to accomplish its goals in an environment with a different set of practicalities than the one it is used to operating in. ABSA's inspection department in particular has had the opportunity to break new ground by conducting a significant number of inspections remotely, using mobile video teleconferencing software. It is admittedly the case that until this time last year, many in the industry may not have given serious consideration to the possibility of conducting regulatory inspections remotely using a live video feed. It has been said, though, that "necessity is the mother of invention," and in this case the necessity being considered is the need to maintain public safety by ensuring that pressure equipment is manufactured, operated, and maintained in a safe and standardized manner.

Overall, remote inspection activities have been reasonably straightforward and successful. Most modern phones and tablets are capable of supporting a live video connection, and the software used to facilitate the connection is widely available and supported on many common software platforms. Participants have found that the inspection activities feel substantially similar to inspections carried out in person, as the live video connection provides them with the ability to engage in real-time, face-to-face interaction. Although initial scheduling of inspection appointments has generally been easier due to a reduction of required travel time, problems have occurred when a reliable internet connection turned out not to be available for the inspection, particularly for remote sites. In some cases, Authorized Inspectors have not been able to complete a remote inspection due to connectivity issues, and appointments for in-person site visits have had to be made on short notice, in all cases causing at least some level of delay.

It is too early to tell to what extent remote video inspection technologies will be adopted for more permanent use when they are no longer needed to meet public health guidelines with respect to the COVID-19 pandemic. For some inspections, this could in part be dependent on the specific circumstances and on the availability of suitable remote inspection devices and adequate internet connectivity. For equipment that is required to be built strictly to the ASME Code and marked with the ASME Certification Symbol, the continued use of remote inspection technologies could depend on the establishment of code provisions for their use, or on the continued extension of ASME QAI-1 Code Case 6, which has basic remote inspection provisions, but imposes limitations to cases where the Authorized Inspector is actually prohibited from being physically present due to the pandemic. ❖

REGISTRATION OF GAS TURBINE AUXILIARY PIPING SYSTEMS AS FITTINGS

CSA Standard B51 allows an assembly of piping components with an aggregate volume up to 42.5 liters to be registered as a category 'H' fitting. In some cases, separate registration of a piping subassembly simplifies the design registration and procurement processes, particularly when the subassembly is complex in nature and is designed and manufactured by a third party. By having the subassembly pre-registered as a fitting, the Owner does not need to provide the same level of detail when they register it as a part of their pressure piping system, and can reduce the risk of having significant questions come up during the registration process.

Gas turbine auxiliary piping systems are an example of systems that by their nature are very complex and heavily reliant on the design of the interconnected turbine – the system comprising the turbine and its auxiliary piping is typically designed as a whole in a highly iterative process that can be sensitive to changes. Extensive past experience has shown that registration of these systems tends to be more straightforward for the turbine manufacturer to accomplish than for the Owner. In some cases, it has been deemed warranted to permit registration of these types of subassemblies as category 'H' fittings or as Alberta Limited Designs (ALDs), even when the 42.5 liter volume limitation is exceeded. The result has been a more modularized review process: turbine manufacturers have been able to obtain a single registration for a design that could then be reused many times for separate installations, and Owners have been more easily able to obtain registration for their piping system as a whole, as often they have not been in a position to justify or modify the detailed designs of these subassemblies.

In the past, this approach has been considered for gas turbine auxiliary piping systems because of their design complexities and the unusual sensitivities they exhibit to changes. Some situations are unusual, and careful attention to the administrative requirements of the design registration process can make things more straightforward for both the submitter and the reviewer. In some cases, special considerations can be made to more specifically accommodate to a given situation, effectively increasing the level of safety achieved by reducing the administrative barriers to regulatory compliance. If you encounter an unusual situation related to an anticipated design submission or to a series of related design submissions, or if you encounter a situation in the shop or field that does not seem straightforward, it is worth considering whether your situation could benefit from a preliminary conversation with an ABSA Safety Codes Officer. Please consider in such situations to contact your ABSA representative ahead of time, as many situations are unique and can benefit from some advance planning and case-by-case consideration. ❖

'QUALITY PLAN' REGISTRATION FOR EPE INSTALLATION PROCEDURES

A new revision of ABSA document 'AB-521: *Requirements for Engineered Pressure Enclosures*' is expected to be published in the coming weeks and will establish new provisions for expedited registration of 'RRIMR' installation procedures based on a 'quality plan' approach similar to what is currently allowed for some types of pressure vessel and pressure piping submissions.

AB-521 was originally published in 2016, formally establishing requirements for the design, fabrication, installation, and removal of engineered pressure enclosures. Sometimes known as 'leak boxes', these are defined by AB-521 as being enclosures "used for containing a leak or reinforcing existing pressure equipment for a limited time until a proper repair or alteration is carried out." Since 2016, AB-521 has provided guidance as to the registration of enclosure designs, and established requirements related to registration of installation procedures. Due to the nature of their intended use, these fittings often need to be designed, manufactured, and installed on short notice in order to quickly contain a leak without having to remove equipment from service.

The 'quality plan' approach for design registration is an approach developed in the recent years for the expedited registration of certain simple types of submissions based on an additional design review carried out by the submitter before making the submission. Details of the extension of the 'quality plan' program to engineered pressure enclosure installation procedures will be provided in Annex A of the new AB-521 revision when it is published. ❖

INTERNATIONAL PRESSURE EQUIPMENT INTEGRITY ASSOCIATION

Some readers are accustomed to gathering in Banff early each year to attend the International Pressure Equipment Integrity Association's annual conference. Although a physical gathering was not possible this year due to the pandemic, what has typically considered to be only a conference has been expanded into an association membership with year-long benefits.

Although IPEIA staff and volunteers are still working to expand the benefits of membership, there have already been several well-attended online presentations, including a special regulatory panel session where attendees were able to hear from representatives of ABSA and other western-Canadian jurisdictional organizations, and a keynote presentation discussing the current economic climate and identifying some of the related challenges that might be expected in the medium- or long-term.

Although some of the presentations have already taken place, they are available online for the future enjoyment of registered IPEIA members, and there is still a variety of live online presentations scheduled to take place on a monthly basis throughout the rest of the year. More information about the association and the benefits of membership can be found on their webpage at ipeia.com. ❖

NEW EDITIONS OF CODES AND STANDARDS THIS YEAR

Several new editions of the technical codes and standards adopted by the Pressure Equipment Safety Regulation are expected to be published in the coming months. ASME follows a two-year publication cycle for its ASME Boiler and Pressure Vessel Code, and revised editions of all sections are expected, along with a new '2020' edition of the ASME B31.3 Process Piping Code.

In accordance with rules established by the Safety Codes Act, codes and standards that are declared in force by the Pressure Equipment Safety Regulation generally come into force "on the first day of the month following the expiry of 12 months after the date on which the amendment or replacement is published," unless the Minister establishes that it will not come into force, or establishes an alternative date. When new code editions are published, ABSA undertakes a review to ensure that there is no unexpected content. This review is used to make recommendations to the Pressure Equipment Sub-Council and ultimately to the Minister as to whether intervention could be required with respect to its coming into force. These reviews also generate learning material for ABSA's annual Alberta Code Update Seminar, which helps industry to keep up to date with changes published in new code editions.

ABSA maintains a list of codes and standards adopted by the regulation on its website, which includes details of current mandatory editions, and mandatory enforcement dates for recently published editions. The list can be found at www.absa.ca, by navigating to the 'About Us' menu, choosing 'ABSA Information', and then 'Acts, Regulations and Codes'. The list of documents is then found in the 'Codes and Standards Currently In Force' dropdown box near the bottom of the page. ❖

UPDATE ON THE MODERNIZATION OF CSA B51

ABSA is continuing to participate in a major nation-wide project to modernize Canada's national pressure equipment code, CSA Standard B51, Boiler, pressure vessel and pressure piping code. As discussed in last June's issue of The Pressure News, this is a major project involving the participation of several major Canadian pressure equipment owners, manufacturers, and provincial jurisdictional organizations. Being a national code that is adopted into law as required by individual provinces, CSA B51 offers a unique opportunity to establish a layer of harmonization of pressure equipment requirements between Canadian provinces, ultimately providing a better experience for code users with interests in multiple Canadian jurisdictions.

The CSA B51 Technical Committee has recently approved a completely new working structure for the code, and several subcommittees have been working to establish inspection and conformity assessment requirements that can be implemented uniformly across the country. Work is also underway to investigate alternative publication technologies that could potentially make the code more interactive and usable by those who depend on it.

CSA B51 runs on a five-year publication cycle, with its next scheduled publication in 2024. It is expected that this project will be substantially complete by that time, with the result being a significantly reorganized and modernized 2024 edition. Future updates on the status of this project will continue to be provided as they become available. ❖

SOPEEC UPDATE: MULTIPLE CHOICE EXAMINATIONS

As discussed previously in The Pressure News, the Standardization of Power Engineer Examinations Committee (SOPEEC) has been directed by the Association of Chief Inspectors to work towards the conversion of all 1st- and 2nd- class power engineer examinations from long-answer to multiple-choice format. As of January 1, 2021, the converted '2B2' second-class power engineering examination has been rolled out, and the committee is proceeding with conversion of '2B1', with expected completion by January of 2022. In subsequent years, work will proceed with the conversion of the '2A' series of papers.

SOPEEC is aiming to convert one examination question bank per calendar year, as the conversion process is a substantial amount of work. Each examination question bank is comprised of hundreds of questions, and a significant amount of effort is put into ensuring that the questions are of a high quality and generated at the appropriate level. Each question is assessed as to its level of difficulty, subjected to editorial review, and then subjected to validation by a review committee with members from different jurisdictions across the country. Questions are then continually vetted through regular use, and their continued inclusion is reconsidered as needed if there is evidence that they do not meet a suitable standard for clarity, accuracy, and consistency.

Further information about the examination conversion process and other questions related to power engineer examinations can be directed by email to ABSA's SOPEEC Coordinator, Mr. Tom Leming, at leming@absa.ca. ❖

DOCUMENTS ISSUED BY ABSA

The following documents issued by ABSA are linked below, and available on our website at www.absa.ca.

2020-12-22 – *AB-535: Requirements for Alteration Design Registration Based on Fitness for Service Assessments, Edition 2, Revision 1* was issued with minor editorial revisions throughout.

2021-03-16 – *IB21-001: Reference Syllabus for Welding Examiner and Welding Examiner in Training*, was issued to provide notification of a revision to the *AB-94: Welding Examiner Syllabus*.

2021-03-18 – *AB-539: Engineered Composite Systems for Pressure Equipment Alterations, Edition 1, Revision 0*, was issued to establish provisions and requirements for alterations to pressure equipment using composite materials.

Other documents have been updated with editorial and other minor changes. ❖

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