



Safety Codes Council

MINUTES OF THE SECOND PRESSURE EQUIPMENT SUB-COUNCIL MEETING OF 2019, WITH SPECIAL MEETING

DATE: March 14, 2019

TIME: 9:00 a.m. to 3:04 p.m.

LOCATION: Safety Codes Council Office, Edmonton

PRESENT: Henry Hau, Chair
Mike Clancy
Robert James
Marvin Kossowan
Todd Loran
Billy Lee, Vice Chair
David Miller, Vice Chair
Tony McWhannel
Nyssa Moore
Izak Roux (arrived at 9:45 a.m.)
Jacques St-Onge
John Wolff
Danielle Woroniuk

Alberta Boilers Safety Association
Djordje Srnic, Robin Antoniuk, John Siggers, Jason Reinhard

Alberta Municipal Affairs
Allan Hantelmann

Safety Codes Council
Susan Rossmann, Kathryn Derkach, Gerry Baron

REGRETS: Greg Gaudet, Geoff Kutz, Dr. Magdi Ghobrial

GUESTS: Richard Walmsley, AWOC; Matt Yamuch, AWOC for Working Group Meetings

RECORDER: Sandi Orr

2019 MEETINGS: May 2, June 20 – Special, September 5, October 24 – Special, December 5

2019 CONFERENCE: May 29 to 31, 2019

1. Meeting Opening

The Chair called the meeting to order at 9:00 a.m. and a round table introduction was held. Working Group meetings were held from 10:30 a.m. to 1:45 p.m.

1.1. Agenda Adoption

Mike Clancy / Todd Loran moved that the agenda be adopted, as circulated; CARRIED

1.2. Adoption of Minutes

The minutes were reviewed and the following correction was made to 3.1 – Page 4:

- ~~Pressure Equipment~~ **Power Engineers** Working Group

David Miller / Billy Lee moved to adopt the minutes of January 10, 2019, as corrected; CARRIED

2. Matters for Decision

2.1. Nomination of Nathan Bartley / Nick Marx to represent the Contract Chief Inspectors industry segment for a term ending January 31, 2022

The discussion regarding the nominations was held in camera. The nominations were included in the portal and given due consideration based on their knowledge and experience.

Nyssa Moore / Mike Clancy moved to recommend to the Board the appointment of Nathan Bartley to the Pressure Equipment Sub-Council to represent the Contract Chief Inspectors industry segment for a term ending January 31, 2022, effective immediately; CARRIED

2.2. Gr. 91 Materials Document

A proposal for the Management of Grade 91 Materials in existing pressure equipment, submitted by the Grade 91 Material Joint Industry and ABSA Task Group, was included in the portal and reviewed.

The task group recommends that requirements be established for an engineering assessment of affected pressure equipment, to be carried out by a competent engineer representing the pressure equipment owner, with the aim of establishing ongoing inspection and monitoring requirements to ensure the pressure equipment's continued integrity. These extra measures are then used as a basis to justify continued operation at the higher allowable stress levels permitted by the original construction codes. The task group also recommends that requirements be established for repairs, alterations, and fitness-for-service assessments of such pressure equipment, based on known issues and best practices for Grade 91 steel. It was noted that there are specific provisions in Alberta pressure equipment legislation to establish such requirements.

An overview was provided of what is being learned now about Grade 91 materials in existing equipment, equipment being built to the current code and the need to have a monitoring system

in place to ensure the equipment remains safe to use. An overview was provided on where failures are being found. It was clarified that this guideline will only be for existing equipment as all new installations will need to follow the new ASME Code.

The recommendations include the creation of a new AB-500 document that should establish:

- A requirement for an engineering assessment of affected pressure equipment, in which a competent engineer investigates the pressure equipment's condition and determines the extent and frequency of inspections required to ensure its continued integrity and safe operation
- Minimum requirements and additional recommendations with respect to the engineering assessment and periodic integrity assessments of affected pressure equipment, based on known problems that Grade 91 materials may exhibit
- Supplementary requirements for the integrity management systems of owners of affected pressure equipment
- Supplementary requirements for repairs to affected pressure equipment
- Supplementary requirements for alterations of affected pressure equipment
- Supplementary requirements for the use of fitness-for-service principles for affected pressure equipment

A thorough review of the document will be conducted during this morning's Working Group meeting. The goal is to have the requirements in place by July 1, 2019.

After the Working Group meeting, the following motion was brought forward:

John Wolff / Marvin Kossowan moved that the Pressure Equipment Sub-Council accept the recommendation of the In-Service Inspections Working Group to support the proposal of The Management of Grade 91 Materials in Existing Pressure Equipment for Continued use at the Allowable Stress Levels Permitted by the Original Construction Codes, Notwithstanding the Reduction of Allowable Stresses Expected to be Published in ASME Section II-D, 2019 Edition and request that the Pressure Equipment Administrator consider the creation of an AB-500 series document for publication; CARRIED

2.3. Refrigeration Plant Recommendations

The Power Engineers Working Group report was included in the portal and reviewed. The short and long-term goals were presented as a means to ensure public safety with respect to the operations of mechanical refrigeration systems containing ammonia.

It is believed that the focus should primarily be on systems that are within public occupancy facilities. A brief update was provided regarding the visits to community rinks throughout Alberta that was done this past year by ABSA.

AB-615 ABSA Guidelines for Care and Operation of Mechanical Refrigeration Systems Containing Ammonia was reviewed and believed to be a simple and effective process. It was suggested that ABSA could review compliance of these guidelines.

It was suggested that the recommendations be forwarded to the other affected disciplines (building, electrical, and potentially plumbing) for potentially a joint recommendation to the Technical Coordinating Committee.

Izak Roux advised of a discussion held at the last TCC meeting regarding the authority of SCOs. An SCO in one discipline is not to ignore safety issues that may be within the jurisdiction of another discipline but if they don't feel comfortable addressing it or the issue is outside of their delegation of powers, they should refer the matter to an SCO in that discipline. It was suggested the establishment of a communication protocol between SCOs be considered.

This led to a discussion regarding CSA B52 and the potential need of identifying what disciplines are responsible for enforcing which portions of the Standard. It is believed that Pressure Equipment SCOs are capable of enforcing CSA B52 requirements but the process, requirements, communication and cooperation should be established by disciplines involved (e.g. pressure equipment, building, electrical, and potentially gas and plumbing). Further discussion was held regarding the requirements within the Building Code and the focus being on the structure and the use of occupancy.

The absence of a requirement for an assessment of existing equipment was brought into question and will be discussed at this morning's working group meeting.

After the Working Group meeting, the following motion was brought forward:

David Miller / Izak Roux moved that the Pressure Equipment Sub-Council accept the Power Engineers Working Group proposal that the following short-term recommendations be forwarded to the Fire, Electrical, Building and Plumbing sub-councils for information and if the feedback is acceptable then this recommendation should be taken to the Technical Coordinating Committee as a motion during the fall session.

- 1. For owners of ammonia refrigeration plants > 10kW, who have an ABSA approved integrity program for the operation of pressure equipment, these refrigeration systems need to fall under this program to ensure both adequate operation and maintenance of these systems is performed.**
- 2. For owners who do not have an ABSA approved integrity program for the operation of pressure equipment then AB-615 should become mandatory and not a guideline. AB-615 is a simple but effective document that outlines the basic requirements of operating a mechanical refrigeration system containing ammonia. One addition to AB-615 that is recommended is that any time the refrigerant is found in the brine or when the refrigerant equipment fails and releases the refrigerant to the atmosphere this must then be reported to an ABSA SCO and a monitoring and repair plan must be put into place immediately. For the short term this would not mandate any specific certification or supervision requirements for the operation of these facilities and it is something that all owners could implement in a short time period with minimal impact to their operations.**

And to revise AB-615 to include the following:

- **5 i) Perform pressure equipment integrity inspection at a minimum every 5 years**
- **7 d) Report any leak in the pressure equipment, including evidence of ammonia in the brine, to an ABSA SCO; CARRIED**

The working group will continue working on long term recommendations.

An overview was provided on the process of this recommendation moving forward to the other sub-councils and how the Council will help manage this. Concern was expressed regarding the lack of documented responsibilities by discipline and it was suggested that the start of the conversation between disciplines will likely assist in sorting out jurisdictions.

2.4. Review of CSA B51-19

A comparison of changes between CSA B51-2014 and CSA B51-2019 was included in the portal and reviewed. It was clarified that this document will not be published until the end of March, 2019. The Codes and Standard, Design Survey/Registration and New Inspection Working Group has received the draft and will be recommending its adoption once the Standard is published.

2.5. Review of CSA B52-18

A comparison of changes between CSA B52-2013 and CSA B52-2018 was included in the portal and reviewed. Further discussion was held during the Codes and Standards Working Group meeting.

Izak Roux / Billy Lee moved to adopt CSA B52-2018 with Annex B as normative and to request ABSA to update IB 15-004 to include an explanation of Annex B being normative; CARRIED

3. Review Matters Arising/Action List

	Item	Action	Date	Responsible	Status/Update
1.	Power Engineers Continuing Education	Provide updates from AIPE about potential continuing education for Power Engineers. UPDATE: Discussions continue to be held for continuing education for their members. If the intent would be for all Power Engineers, this would have to move forward through AMA.	Sep 7/17 2.1.	Hau	Ongoing
2.	Stress Values for Gr. 91 Materials	Both PESR working groups to begin discussions re. the implications of the proposed change for lowering allowable stress values for Gr. 91 materials to identify concerns and recommendations to address the concerns.	Sep 7/17 3.2.	Wolff / Gaudet	Item 2.2. on this agenda, Completed, remove from action list

3.	Low Carbon Steel	Continue to monitor the low-carbon steel project.	Feb 1/18 3.	Srnic	Nothing new to report
4.	BC Fernie Arena Incident	It was agreed that the Power Engineers Working Group will work with ABSA and AMA to create a one-page summary/action list for review by the sub-council before presenting it to the TCC. Members will be provided 4 days to review the document and provide any additional feedback.	Jan 10/19 3.1.	Miller/All/ Council Administration	Item 2.3. on this agenda, Completed, remove from action list
		Contact information from the Refrigeration Industry Promotion Committee will be provided to the Power Engineers Working Group Chair.	Jan 10/19 3.1.	Council Administration/ Miller	Completed, remove from action list
5.	Working Groups	All Working Group Chairs were reminded to post the working group meeting dates in the portal as all PESC are welcome to attend. NEW ACTION: WG Chairs to add dates to the Council Calendar	Jan 10/19 3.2.	Miller / Lee / Gaudet / Kutz	Ongoing
6.	Code Review CSA-B51 & CSA-B52	The PESR – Codes and Standard, Design Survey/Registration and New Inspection Working Group was asked to begin working on reviewing the changes to CSA-B51 and CSA-B52 codes right away so that these can be completed prior to the ASME codes being published.	Jan 10/19 3.4.	Gaudet	Items 2.4. and 2.5. on this agenda. Item 2.4 accepted by WG. It will be brought to PESC for endorsement after B51 is published. Item 2.5 is complete and can be removed from action list.
7.	Certification Differences across Provinces	It was suggested that a presentation regarding certification differences be provided at a future meeting and that consideration be given for a letter supporting AMA's position. UPDATE: Background provided, a presentation will be provided by the Department of Labour on trade issues at a future meeting.	Jan 10/19 3.3.	Hantelmann	Ongoing

Section VIII, Division 2 Working Group to be removed from the portal as this has been rolled into the Codes and Standard, Design Survey/Registration and New Inspection Working Group.

[Council Administration]

4. Matters for Discussion

4.1. Working Group Reports

The list of working group members will be included in the portal and on the meeting agenda.

[Council Administration]

4.1.1. Power Engineers Working Group

The Power Engineers Working Group met from 10:30 a.m. to 12 noon as part of the special meeting. It was reported that a brief discussion was held regarding plant supervision and communication. The majority of the meeting was spent on the refrigeration plant recommendations and the motion presented under 2.3.

4.1.2. Pressure Welder Working Group

The Pressure Welder Working Group met from 10:30 a.m. to 12 noon as part of the special meeting. Highlights were provided from their meeting on February 5, 2019:

- An update was provided on B Pressure, C ticket and tack welders, as well as Welding Examiner certifications
- An update was provided on ASME Code Case 2945 regarding the use of multiple process welding procedures in Section VIII, Division 1 and 2
- An update was provided regarding the awareness on Sec VIII Div.1 Section UG 84 (h) (2) regarding the requirements for vessels constructed to the rules of PART UCS
- IB18-020 has been issued to provide a detailed interpretation for the Welders Regulation regarding Grade “C” pressure welder certification
- AWOC has performed a 3-column document review for the pressure welders regulations

During today’s working group meeting, AWOC provided a presentation regarding their past, present and future of AWOC and their goal to streamline processes. In discussion following the presentation, concerns were expressed related to the AWOC proposals.

4.1.3. PESR – Codes and Standard, Design Survey/Registration and New Inspection Working Group

The PESR Codes and Standard Working Group met from 12:30 to 1:45 p.m. as part of the special meeting. The following was reported:

- A meeting was held in January and the CSA B51 changes were reviewed
- CSA B52 was reviewed today and recommended for adoption in Alberta (motion presented under 2.5.)
- With ASME Codes being published in July 2019, this will have to be reviewed for potential impacts

4.1.4. PESR – In-Service Inspections Working Group

The PESR In-Service Inspections Working Group met from 12:30 to 1:45 p.m. as part of the special meeting. It was reported that the majority of the meeting was spent on the Grade 91 proposal and the motion presented under 2.2.

4.2. Pressure Equipment Codes Automatic Adoption

A document was included in the portal as information, listing all related codes and standards affecting the pressure equipment industry, the new edition publication date and the automatic in force date in Alberta.

4.3. TCC Report

Izak Roux reported the following items from the Technical Coordinating Committee:

- The TCC Chair was elected for a one-year extension
- Izak Roux presented the initial discussions from the Power Engineers Working Group
- Issues with using elevators as stairs
- Enforcing maintenance of the building envelope

4.4. AMA Report

The Technical Advisor reported that the 3-column document is in progress.

4.5. ABSA/Administrator's Report

Djordje Sronic reported the following on behalf of the Administrator:

Summary of Accident Reports (Jan.11, 2019 – Mar. 14, 2019)

Date Reported	Injuries	Fatalities	Description	Loss of Containment
2019-02-25	0	0	The bodies of two steam-jacketed process valves failed. The damage was caused by condensate that had accumulated in the valve bodies and froze due to failure of the associated steam traps.	Yes
2019-02-12	0	0	Product froze in an air cooled heat exchanger tube due to low ambient temperature (-40C) and reduced flow. Freezing resulted in rupture of the tube which was revealed when the ambient temperature increased sufficient to melt the frozen product.	Yes
2019-02-12	0	0	A valve bonnet separated from the body releasing product. The failure was the result of freeze damage which occurred after maintenance work had been completed and the system was left without adequate insulation.	Yes

2019-02-12	0	0	Operators noticed process fluid dripping out of the insulation on a pressure piping system. Once the insulation was removed a pinhole leak was found in the piping at a weld. The system was shut down for repairs.	Yes
2019-02-11	0	0	Two air cooled heat exchangers sustained extensive freezing damage and were removed from service.	Yes
2019-02-11	0	0	A tube leak was discovered in a boiler economizer. The boiler was shut down repaired and leak tested.	Yes
2019-02-11	0	0	A loss of containment occurred in a process piping system due to a crack at the toe of a weld joining an 8" branch connection to a 14" pipe.	Yes
2019-02-10	0	0	A leak was discovered at a welded connection in a boiler economizer tube.	Yes
2019-02-10	0	0	A leak was discovered in a steam condensate line. The heat tracing system had failed resulting in freezing damage and loss of containment.	Yes
2019-02-10	0	0	Operators detected hydrocarbon leaking from an air cooled heat exchanger. The process was safely shutdown and the equipment isolated and purged for inspection. The leak was caused by freezing.	Yes
2019-02-09	0	0	Ammonia leaking from a fitting in the piping system resulted in evacuation of an ice area.	Yes
2019-02-06	0	0	Ammonia leak contained to mechanical room at an arena triggered an alarm and resulted in evacuation of the building. The source of the leak was an instrumentation connection near the compressor.	Yes
2019-01-26	0	0	Following startup of a compressor unit a small readily contained fire occurred due to leakage at a loose fitting.	Yes
2019-01-24	0	0	Small bore piping on a compressor package developed a through wall crack. Inadequate support and vibrations is believed to be the cause of this failure.	Yes
2019-01-24	0	0	A leak occurred in a fitting in a process piping system due to impingement of steam injected into the process.	Yes
2019-01-22	0	0	A deadleg in a steam condensate piping system failed due to freeze damage as a result of failure of the heat tracing system.	Yes
2019-01-21	0	0	A pressure piping system developed two through-wall leaks due to impingement of steam and process materials.	Yes
2019-01-21	0	0	An operator detected a hydrogen sulfide leak and shut the plant down. The source of the hydrogen sulfide was later determined to be a pinhole leak in a nozzle on a pressure vessel.	Yes

2019-01-19	0	0	Operations personnel detected process gas leakage from a piping system. The plant was safely shut down with no further consequences.	Yes
2019-01-18	3	0	A gas leak resulted in an explosion and fire in a compressor skid.	Yes
2019-01-15	0	0	A newly designed valve pass plate was installed into a valve and the flow pattern through the pass plate caused an erosive stream to the upper portion of the spool which led to the failure.	Yes
2019-01-14	0	0	A tube in an air cooled heat exchanger failed due to freezing, causing the compressor to trip.	Yes
2019-01-14	0	0	Vertical air receiver sustained a crack at the weld to vessel interface, where the compressor base is welded to the head of the vessel. The unit was taken out of service.	Yes
2019-01-14	0	0	A steam leak was discovered on a steam header. Probable cause of the leak is a fatigue crack at a support weld.	Yes

Information Bulletins issued by the Administrator (Jan.11, 2019 – Mar. 14, 2019)

- No IBs issued in this period.

CSA B51

- New Edition is rescheduled for the end of March, 2019.

CSA B52

- New Edition is issued.

ASME

Preparation for the 2019 Edition

- Based on the February 2019 Code Committee Week meetings, the preparation for the 2019 edition is progressing in accordance with the plan.

Major changes expected to be introduced in 2019 edition of the codes

- New Section XIII – Overpressure protection will not be issued (informative) in 2019. The issuance of Section XIII has been postponed for 2021.
- Section I
 - o Reduction of Gr. 91 allowable stresses (up to 19%)
- Section IV – Minimum thickness requirements will be reduced. The issue can be code cases that reduce the minimum thickness even further than minimum thickness in the code.
- Section VIII Standards Committee
 - o Major scope changes (rewrite) will not be published in 2019
 - o U-2(g) will be revised and Code Case 2695 will be incorporated in the Code
 - o UG-84 will be revised

- UCS-66 will be revised (SA-105 will be curve A)
- Code Case 2945 for Multiple Process Welding Procedures requirements was issued. The Code Case allows transition period for the implementation of rules in UG-84(h)(5) and 3.11.8.3(g)
- Task Group on Fired Treaters had the first meeting. The goal of TG is to develop new Appendix in Section VIII, Div. 1
- NB provided the report of the most commonly used Code Cases. The suggestion is to include them in the code rules.

Task Group was formed for ANDE Certification for BPV and piping programs

- Task Group had their first meeting in Feb. 2019.
- Robin Antoniuk is member of this Task Group

TOMC

TOMC had a meeting but it did not have specific items for report to PESC.

4.6. Council Updates

The following report was provided:

- New Code of Conduct will be signed when term is renewed
- The Building and Fire 'Micro' Distilleries working group is looking for a contact from this sub-council in case questions arise pertaining to the pressure equipment
- Starting in September 2019, agendas will be posted 2 weeks in advance of the meeting
- The conference is coming up from May 29-31, 2019
- The annual matrix review will be added to the September agenda
- The sub-council was reminded of Dr. Sauer Award nominations
- Sub-council members were encouraged to take the appeals training
- There may be no AMA representation at the May 2019 meeting because of the upcoming election and meeting minutes will not be posted until after the election

5. Meeting Finalization

5.1. Meeting and Agenda Feedback

Izak Roux was thanked for his many years of service on the Pressure Equipment Sub-Council.

5.2. Next Meeting

The next meeting was reconfirmed for Thursday, May 2, 2019 at 9:00 am at the Council office.

5.3. Meeting Adjournment

The meeting was adjourned at 3:04 p.m.

--- NEW ACTION ITEMS ---

3. Review Matters Arising/Action List

WG Chairs to add dates to the Council Calendar on the portal. [Miller / Lee / Gaudet / Kutz]

Section VIII, Division 2 Working Group to be removed from the portal as this has been rolled into the Codes and Standard, Design Survey/Registration and New Inspection Working Group.

[Council Administration]

4.1. Working Group Reports

The list of working group members will be included in the portal and on the meeting agenda.

[Council Administration]

--- MOTIONS ---

1.1. Agenda Adoption

Mike Clancy / Todd Loran moved that the agenda be adopted, as circulated; CARRIED

1.2. Adoption of Minutes

David Miller / Billy Lee moved to adopt the minutes of January 10, 2019, as corrected; CARRIED

2.1. Nomination of Nathan Bartley / Nick Marx to represent the Contract Chief Inspectors industry segment for a term ending January 31, 2022

Nyssa Moore / Mike Clancy moved to recommend to the Board the appointment of Nathan Bartley to the Pressure Equipment Sub-Council to represent the Contract Chief Inspectors industry segment for a term ending January 31, 2022, effective immediately; CARRIED

2.2. Gr. 91 Materials Document

John Wolff / Marvin Kossowan moved that the Pressure Equipment Sub-Council accept the recommendation of the In-Service Inspections Working Group to support the proposal of The Management of Grade 91 Materials in Existing Pressure Equipment for Continued use at the Allowable Stress Levels Permitted by the Original Construction Codes, Notwithstanding the Reduction of Allowable Stresses Expected to be Published in ASME Section II-D, 2019 Edition and request that the Pressure Equipment Administrator consider the creation of an AB-500 series document for publication; CARRIED

2.3. Refrigeration Plant Recommendations

David Miller / Izak Roux moved that the Pressure Equipment Sub-Council accept the Power Engineers Working Group proposal that the following short-term recommendations be forwarded to the Fire, Electrical, Building and Plumbing sub-councils for information and if the feedback is acceptable then this recommendation should be taken to the Technical Coordinating Committee as a motion during the fall session.

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place immediately. For the short term this would not mandate any specific certification or supervision requirements for the operation of these facilities and it is something that all owners could implement in a short time period with minimal impact to their operations.

And to revise AB-615 to include the following:

- 5 i) Perform pressure equipment integrity inspection at a minimum every 5 years**
- 7 d) Report any leak in the pressure equipment, including evidence of ammonia in the brine, to an ABSA SCO; CARRIED**

2.5. Review of CSA B52-18

Izak Roux / Billy Lee moved to adopt CSA B52-2018 with Annex B as normative and to request ABSA to update IB 15-004 to include an explanation of Annex B being normative; CARRIED

WORKING GROUP MEMBERS

PESR In-Service Inspections, Repairs & Alterations, and PEIM Program Working Group

Geoff Kutz, Greg Gaudet, Grant Peuramaki, Jacques St-Onge, John Wolff, Todd Loran, Henry Hau and Nyssa Moore

Support: Robin Antoniuk, Allan Hantelmann

PESR Codes & Standards, Design Registration and Shop Inspections Working Group

Greg Gaudet, Dr. Magdi Ghobrial, Billy Lee, David Miller, Marvin Kossowan, Tony McWhannel and Izak Roux. The following support was reconfirmed: Mike Poehlmann and Djordje Sronic.

Industry Representatives: Eric Madsen, Shell Canada; Jim B. Seale, Seale Engineering; Neil McKay, Cesco; Shawn Morrison, M5 Engineering; Simon Yuen, Suncor Energy; Trevor Seipp, Becht Engineering; and Kelly Bell, Cenovus Energy

Power Engineers Working Group

David Miller, Mike Clancy, Todd Loran, John Wolff, Grant Peuramaki, Henry Hau, Tony McWhannel

Industry Representative: Mike Lyne (Suncor)

Support: Mike Poehlmann, Tom Lemming, John Siggers, Allan Hantelmann

Pressure Welders Working Group

Billy Lee, Ward Wagner, Jacques St-Onge, Marvin Kossowan, Magdi Ghobrial, Nyssa Moore, Geoff Kutz, Izak Roux

Industry Representation: Matt Yarmuch, AWOC

Support: Jason Reinhart, Robin Antoniuk, Allan Hantelmann

Bold - Chair