



ALBERTA CHIEF
POWER
ENGINEERS
EDUCATION
CONFERENCE

2020 Update

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Committee Update

It was a sad time through 2020, the loss of our conference in October, the loss of one of our committee members, John McLay to cancer, and the lack of socialization has added to our frustration during this time. The committee is attempting to continue its commitment to Power Engineering, Chief Power Engineer development and further education with our first Virtual session on January 26th. This will hopefully be the first of several presentations and we look forward to adding this technology to our future conferences to increase participation and engagement. We continue to plan for the 2021 conference in Edmonton on October 27th and 28th at the Delta hotel. We miss the opportunity for discussions, reuniting with old friends and colleagues, as well as the exceptional technical presentations we have had in the past. Please keep the date available for the conference, if Covid continues to challenge us in 2021 we are hoping that technology will let us move forward and provide a great conference.

Until we can be together again, please stay safe, have a happy holiday and we look forward to 2021! Thanks so much to our sponsors for the past and continued support, we ask that you consider them in your business dealings where you can.

Sincerely,
the Alberta Power Engineering Education Conference Committee

ABSA Update

The Alberta Chief Power Engineers Education Conference Committee is excited to announce our first Webinar. We are pleased to have Tom Leming, Lead Examiner and John Siggers, Examinations & Certification Manager, both from ABSA, giving an update.

January 26, 2021 @ 3:00 pm MST

To register email: admin@acpeec.ca and you will be sent an invite closer to the date

Agenda:

- What's new with ABSA since the last ACPEEC Conference
- Information Bulletins
- Assisting Power Engineer Training Programs during COVID
 - Adjustments to programs
 - Experience adjustments
- Examinations strict protocols
- Examination proctoring with remote monitoring by Examiners
- Update with SOPEEC/ACI
 - 2B2 examination converted to multiple-choice
- Online Examination Study

Sponsors

Our sponsors over the past five years have been critical to the success of the annual Chief Power Engineer Education Conference. 2020 was an extremely difficult year on individuals and businesses in our province. The committee is appreciative of all of the sponsorship it has received over the years and looks forward to continued partnerships that will allow us to provide valuable conferences moving forward.

This year, when we decided to postpone the conference, several sponsors reached out and asked if there was anything we could do to keep the communications going. The idea of sending out this information brochure was developed and I am happy to say that the following seven sponsors stepped up to help us out to make this possible.

1. Silverback Steam & Heating Rentals
2. Purolite
3. TES Group Inc.
4. ESG Filtration Ltd.
5. Suez
6. Centrix Control Solutions
7. Aircom Instrumentation Ltd.

These sponsors donated a total of \$4700.00 together to participate in the brochure and 100% of this was donated to the United Way. The donation was split across Alberta regions so that the benefits would support all areas in which we live and work.

The Alberta Chief Power Engineer's Education Committee would like to thank these sponsors for stepping up in a difficult year as well as all of our past sponsors and we look forward to having everyone back in 2021.

Thank you for everything you do.



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TRAILER & SKID MOUNTED STEAM BOILERS

Available steam boiler rentals - skid mounted and/or Trailer mobile steam boiler packages from 60hp-1,000hp (2.0mmbtu/hr-33,475mmbtu/hr). Our steam boiler packages come with heat exchangers, water treatment and dual fuel burners options. Flow rates through exchangers can range from (500LPM- 132GPM) – (10,000LPM-2,641GPM)

FRAC/FLUID HEATERS

Trailer mounted and/or skid option 40' - 53' (40mmbtu/hr). Available in CNG, LNG and Propane. Units are able to flow fluid through them at rates of (500LPM – 132GPM) – (12,000 LPM – 3,170 GPM)

PORTABLE HEAT EXCHANGERS

Skid and Trailer units

HOT WATER BOILERS & GLYCOL BOILERS

Available from 4,000,000mmbtu/hr – 16,000,000mmbtu/hr

THERMAL FLUID HEATERS, 50' SKID AND/OR TRAILER MOUNTED 12MMBTU/HR - 18MMBTU/HR

12mmbtu/hr flow rate: (2271LPM-600GPM) - 18mmbtu/hr flow rate: (3,406LPM – 900GPM). Capable of flowing up to (7000LPM – 1,849GPM) through the heat exchanger without pressure drops. Our thermal fluid heaters are rated for (750f at 225psi). Some heat exchangers are capable of running (400f at 300psi) with flow rates of (4500LPM – 1,188GPM)

TRAILER-MOUNTED SATURATED BOILERS

Our trailer-mounted boilers are ready to move at moment's notice. Our rental boiler packages include simple controls, low NOx emissions and high fuel efficiency.

- 40,000lbs/hr - 85,000lbs/hr steam capacity
- 150psig -725psig operating pressure
- Natural gas, #2 fuel oil, and/or constant value refinery gas

Additional available steam boiler equipment:

- Feedwater System/Deaerator
- Backup Feedwater Pump
- Natural Gas/#2 Oil/Propane Fuel
- Steam Pressure Reducing Stations
- Gas Pressure Regulating Stations
- Economizers
- De-Superheaters
- Mobile SCR systems (5-9 ppm NOx)

TRAILER-MOUNTED SUPERHEATED BOILERS

With our help, we have access to North America's largest fleet of medium to high pressure superheated boilers is at your disposal.

- 30,000lbs/hr to 75,000lbs/hr steam capacity
- 350psig design with operating ranges from 125psig to 325psig
- 750psig design with operating ranges from 350psig to 675psig
- Maximum superheat temperature of 750F

Additional available steam boiler equipment:

- Feedwater System/Deaerator
- Backup Feedwater Pump
- Natural Gas/#2 Oil/Propane Fuel
- Steam Pressure Reducing Stations
- Gas Pressure Regulating Stations
- Economizers
- De-Superheaters
- Mobile SCR systems (5-9 ppm NOx)

PACKAGED WATER TUBE BOILERS

We have packages available for even the largest boiler systems, ready to ship by truck or rail.

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- Saturated and superheated steam
- Pressures as high as 1,025psig
- Maximum superheat temperatures of 900F



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Purolite's Shallow Shell technology – or SST® – is designed to improve softening and demineralization performance. Our R&D and manufacturing teams perfected an advanced resin bead structure to increase regeneration efficiency, reduce leakage and fouling, and conserve rinse and dilution water so that systems run better, with less expense and enhanced performance.

- Requires 15% less regenerant chemicals to achieve equal or better operating performance
- Provides up to 50% savings in rinse and dilution water
- Reduces leakage by over 20% at same regenerant dosage as traditional resin

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Industrial Applications

- Softening
- Demineralization
- Condensate polishing
- Organic traps
- Organic fouling control
- Potable water applications

Oil and Gas Applications

- Water treatment for fracking and drilling fluids
- Water treatment for bitumen recovery

Pulp and Paper Applications

- Mill wastewater treatment
- Metals recovery



Purolite Tanker Delivery Service for Problem-free, On-Time Resin Delivery



Purolite's Dedicated Fleet of Tanker Trucks can Hold up to 800 ft³ of Ion Exchange Resin

Bulk deliveries provide an efficient, cost-effective delivery option for many customers. The use of our trucks for transport and delivery enables faster, cleaner, more efficient loading — which translates into cost savings.

Our highly skilled customer service team and technical operators coordinate every detail of your shipment, making materials management easy, efficient and safe.

Plus, our broad coverage area throughout North America ensures that your deliveries will be hassle free and on time.

Benefits of Purolite Tanker Service

- **Fast loading** – we can load up to 800 ft³ of new resin in under two hours
- **Reduced downtime** – less time loading means more time in service
- **Save labor costs** – limited labor is required to load the resin directly into a live vessel
- **Clean, direct transfer** – eliminates drum handling and potential for slippery, hazardous wet floors
- **Eliminate disposal costs** – since this is a bulk transfer there is no packaging disposal
- **Alleviate space and storage issues** – no warehousing or storage of resin is required prior to loading
- **Problem-free delivery** – we can load resin directly to live vessels—even if they are hard to access or don't have adequate space to stage equipment

Resin types available:

- Demineralization resin
- Produced water softening resin
- Standard water softening resin
- Condensate polishing resin
- Organic trap resin
- Shallow Shell™ Technology high-efficiency resin



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- ◆ Combustion Technology Integrator
Burners | Fuel Trains | BMS | Controls

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Working to A Higher Code

- Performance Under Pressure -



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CAPABILITIES & SERVICES

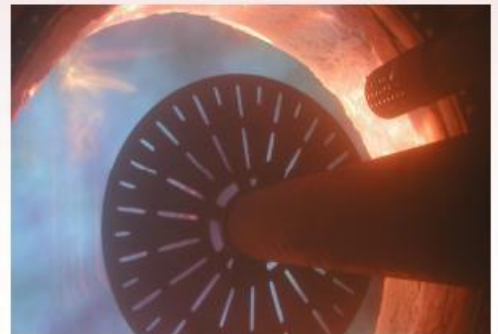
- OTSG'S -

Steam Generator Improvements

- **Increased throughput:**
 - Rerates, design upgrades on gas and water side
- **Improved convection section:**
 - CF refractory, alloy tube supports, improved sealing
- **Upgraded burner performance:**
 - ULNOx burners, low O₂, alternate fuels including H₂
- **Improved steam sampling:**
 - Real time steam/water samples, better steam quality control and sampling safety
- **Alternate pressure parts:**
 - Dimpled or rifled tubes, improved alloys, condensing economizers

Specialized Mechanical Services

- ✓ Thermal Energy for Steam & Power
- ✓ Focus on Fired Pressure Equipment
- ✓ Offer Subject Matter Expertise
- ✓ Provide Engineered Based Solutions
- ✓ Support All OEM/Equipment Brands
- ✓ Concentrate On ASME Code Space
- ✓ All Types of Steam Generators:
 - OTSG's
 - OTHRSG's
 - Package Boilers
 - Field Erected Boilers
- ✓ All Types of Heaters:
 - Direct Fired Heaters
 - Thermal Fluid Heaters
 - Waste Heat Recovery Units



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Spartan



Case study

Section I Liquid Overpressure Protection for Economizers and Thermal Fluid Heaters

Faster Start-Up

30%

Faster Ramp & 1st pass yield⁽¹⁾

Cost of Ownership

\$2K - \$6K

Per PRV Repair⁽¹⁾

Operating Cost Savings

\$50K

Per PRV Repair⁽¹⁾

⁽¹⁾ Savings vary by application and start-up process.

The Right Valve for the Right Application

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BHCN-1900-2900-LA-CS-34575-0420 04/2020

Until 2017, ASME B&PVC only addressed steam as the relief media in Section I applications. However, valves installed on economizers and thermal fluid heaters are known to relieve on water as the process fluid.

THE CHALLENGE

Steam valves are not designed to relieve in liquid applications, resulting in a rapid opening/closing known as **'chatter', which induces premature wear and seat leakage.**

Without the proper trim, each overpressure event can yield **valve damage**, and invoke **interrupted start-up down time for service repair.**

THE SOLUTION

The 2017 Edition of ASME B&PVC Section I expanded coverage to allow overpressure protection of economizers and thermal fluid heaters using **liquid-certified valves** sized at **10% accumulation.**

The **Consolidated™ 1900 spring-loaded and 2900 pilot-operated safety relief valves** are now Section I certified for these liquid applications. Upgrade your 1900/P, 2900-40 or, in many cases, competitor steam valves with drop in replacement of the 1900 LA1 or 2900 LA1 **without piping modification.**

In addition, the **2900 LA1 and 2900-40 valves now feature a heavier inconel main valve spring for closing force stability** during low pressure start-up conditions, and a **pilot line snubber to dampen rapid pressure transients**, such as water hammer, that often occur during start-up.

Consolidated
1900/P Series



Consolidated
1900 LA1 Series



Consolidated
2900 LA1 Series



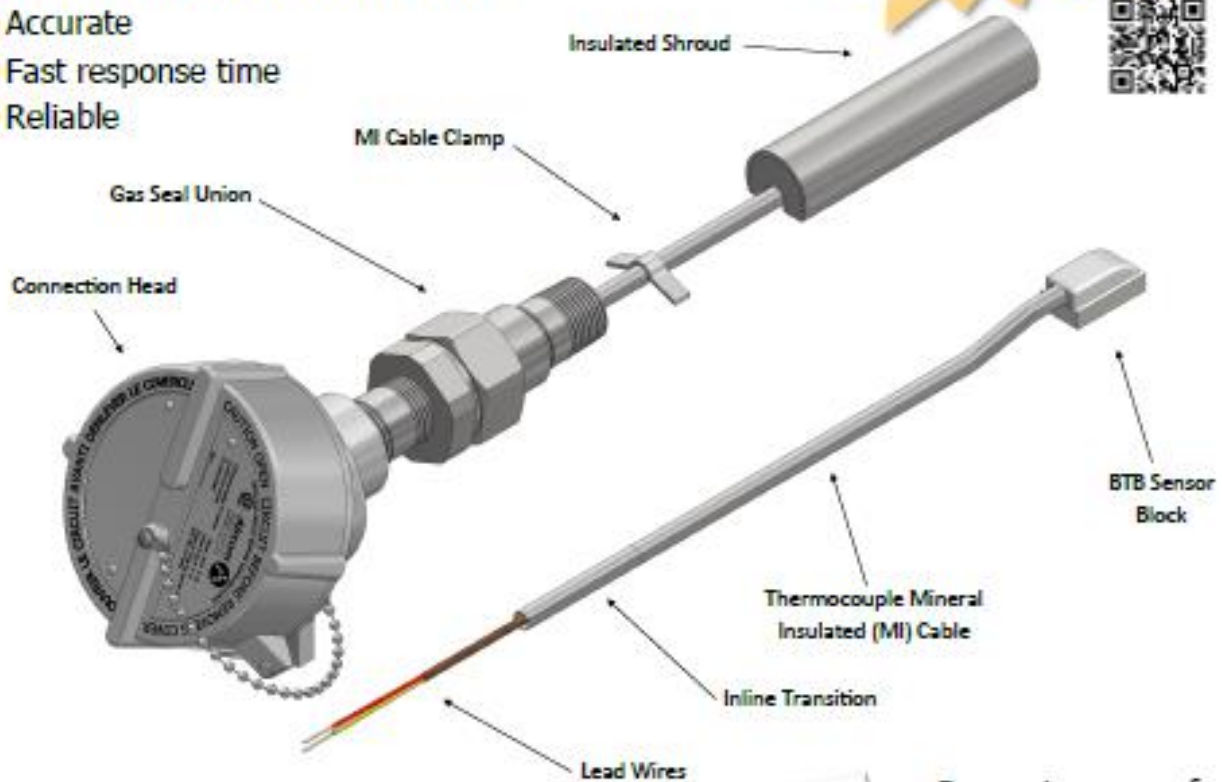
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Request a copy of the research study we carried out with the University of Alberta



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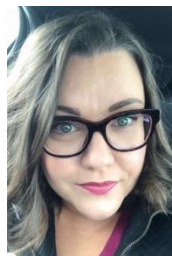


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