



Contents

- 01: Executive Members List & Event Sponsors
- 02: High Liner Foods Tour
- 03: Shaw Brick Tour
- 04: Student Recognition Awards
- 05: Lobster Dinner
- 06: Annual Golf Tournament
- 07: Other Announcements

Executive Members

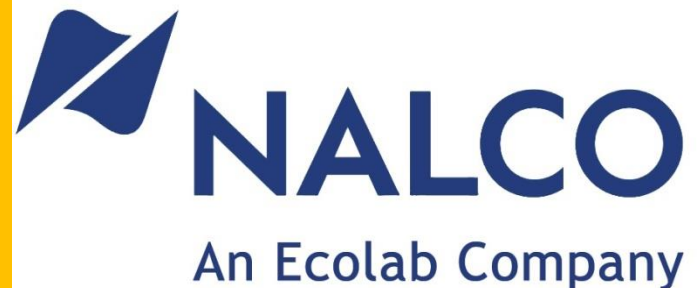
As of March 2019

Past President	James Reid, PE
President	David Horne, PE
1st Vice President	Clayton White, PE
2nd Vice President	(Temporarily Vacant)
Secretary	Josh Surette, PE
Treasurer	Taylor Bezanson, PE
Financial Reviewers	Michael Gillis, PE Brian Lavers, PE
Area Director	Blair Saulnier, PE
Provisional Area Director	Richard Deveau, PE
Area Rep.	Earl McMullin, PE
Alt. Area Rep.	Danny Wagner, PE
Warden	Ryan Hobb, PE
Asst. Warden	David Pickering, PE
Student Representatives	Sarah Lumsden, PE Shelby Wyatt



WEBSITE: nipe.ca/branch/nova-scotia/

Event Sponsors



High Liner Foods Tour

May 18, 2019



May's General Meeting and Tour was held at **High Liner Foods** and hosted by *Dave Pickering* as seen in center of photo. The Lunenburg plant found at Battery Point, formerly known as National Sea Products has been around since the 1960s and is popularly known for its fish sticks, but handles a wide range of various other frozen fish and cheese products.

To sustain proper cooking methods from frozen to cooked to frozen again, High Liner Foods incorporates a rather large ammonia refrigeration system capable of freezing large quantities of product well below zero in under 30 minutes. This is accomplished by keeping spiral freezers at around -30°F but have known to reach -40° .

In addition to process refrigeration, they also incorporate 3 very large cold storages ranging in temperatures of -5 to -10°F . The ammonia refrigerant is also used for non-freezing purposes such as chilled water, HVAC systems, and cool storage areas.

The interesting part of this operation is the use of a complex method of juggling appropriate compressors and the function of a multi-two

stage system. It was state-of-the-art design when first installed, but far from obsolete, this design is still mimicked to this day and still among the largest of refrigeration plants in the Maritimes.

Handling aging equipment with installation of the new, a new design is currently being implemented into the existing structure as seen in the next photo.



This little bit of equipment here, as being shown by Mr. Pickering, is a single pump installed into the matrix of the high-pressure refrigerant liquid system. As the intermediate compressors are normally run at high discharge pressures to have appropriate saturation temperatures for liquid cooling, this pump will allow them to reduce the discharge pressures to a more energy efficient level. Although it is only functional on a seasonal basis, it is expected to increase savings, provide a little more safety and have a greener impact.

Also, among duties of refrigeration, High Liner's power train consists of two firetube boilers and one watertube boiler, which can be used to burn waste oils, such as used up fryer oil and mechanical lubrication oils. Steam is used for mainly heating and hot water processes.

A big thank you to **Dave Pickering** for hosting a wonderful tour of his facilities.



Shaw Brick Tour

June 11, 2019



This month's tour was split up into two parts in which the first segment was a thorough walkthrough of Shaw's compressed natural gas (CNG) system provided by **Heritage Gas Ltd.**, led by **Josh Surette**.

Trailers, like the one shown below, would be transported to Shaw by truck, unhitched at a loading dock and carefully hooked up to the CNG pressure reducing station. These trailers carry 300 MBtu with operating pressures of around 1000 Psig.



At the loading dock reducing station, the CNG knocks down to about 250 Psig and is then piped down to a secondary reducing station where it is further decreased to 80 Psig. This large reduction in pressure creates a substantial refrigeration effect, requiring a small glycol boiler to bring it back up to proper operating temperatures. This boiler is self-sustaining with the CNG supply. Afterwards, the CNG is distributed to the facilities where there is a final trimming of pressure to 40 Psig as required.

Later through the day, **Kevin Jodrey** took over the tour and led us through one of the brick production facilities. **Shaw Bricks** is the last truly Canadian owned brick manufacturer and has been in business since 1861. It is also known for making some of the best bricks in the world with very low absorption rates making them especially suitable for freeze-thaw climates like that of Nova Scotia. The brick/water percentage over a 24-hour period, a ratio which is used for measuring such qualities, of 0.5% is reached through a fine-tuned process carefully regulated by the operator.

The kiln that we toured alongside of has a capacity to hydraulically push through 31 carts, each carrying **3700 to 8600** bricks weighing at about 4 lbs. a brick. The photo below shows one such cart with its brick arrangement just entering the kiln.



Before the bricks are loaded into the kiln, they have to undergo a drying process due to their moisture content to a critical 18.5% ratio, and heated to about 300°F. The pusher would take about 62 hours to feed one cart from the beginning to end but may vary due to organic/inorganic components. Space temperatures can reach as high as **1911°F** and burner temperatures of about **2411°F**. Temperature is a very critical process variable, just another 25°F more and the brick would start to melt. There is a total of 69 burners, 54 on bottom and 15 on top, arranged to provide the appropriate temperatures as the brick



undergoes its curing process through the various step-up and step-down heat spaces along the kiln. Oxygen intake is controlled to adjust for color of the brick and reaches speeds of 60km/hr at the stack.



Periodically, a brick is pulled from one of the hotter spots of the furnace to check for deformities, densities, granules and other characteristics to ensure for a high-quality product. One brick can be



seen in the right photo, just pulled out of the furnace and covered with a safety guard in the off chance the brick was to burst due to the rapid cooling.



And with this, the IPE wishes to show gratitude to *Kevin Jodrey* and *Josh Surette* for taking their own personal time to give us a pleasant, pedantic tour.

Student Awards

Akerley Campus



The IPE Maritime Branch Achievement Award presented to Peter Aina (right) of the Akerley Campus by Clayton White (left)



The IPE Maritime Branch Achievement Award presented to Cody Latreille (right) of the Akerley Campus by Clayton White (second from left)



Marconi Campus



The IPE Maritime Branch Achievement Award presented to JB Arsenault (left) of the Marconi Campus by Blair Saulnier (right)



The IPE Maritime Branch Achievement Award presented to Colin Penny (left) of the Marconi Campus by Blair Saulnier (right)

2019 Lobster Dinner

July 27, 2019



This year's lobster dinner was once again hosted at the Shore Club in Hubbards, NS, graciously sponsored by **SUEZ Water Technologies and Solutions**, and once again a thank you to the Shore Club for hosting a fabulous meal and for providing great service.

A party of 24 attended the event this time around and some stayed afterwards for the Mellotones band after the dinner for great live entertainment.

Once again, thank you to SUEZ who have helped make this possible.





2019 Golf Tournament

August 14, 2019

Luck would have it that this year's Golf Tournament was hosted by brilliant weather once again at the *Greenwood Golf Course*. Little to no breeze and perfect blue skies made divot digging that much more enjoyable.



In this photo, Josh is taking a few practice swings, warming up for the first tee-off for his group. Best Ball Rules were applied, same as prior years, which allow the team of 3 or 4 to shoot off from whoever's ball comes closest to the flag without penalty. Golf Carts were gratefully supplied by **AEM, Advanced Energy Management LTD.**



After the 18 holes, the 8 teams, consisting of 30 players in total, gathered at the club house for a BBQ steak and salad meal, made possible by our dinner sponsor, **Nalco, An Ecolab Company**. Over dinner, scores were tallied up and winners were announced with a wide selection of prizes donated by various companies attending the event. Each team was announced and everyone was able to walk away with a prize and a belly full. **This year's winners with a -5 on the front and a -5 on the back, Dave Horne, David Goodwin, Neils Keyser, and Scott Leblanc!**

Once again, a big thank you to our Sponsors:





Other Announcements

Upcoming Events

The 2019 Power Engineers & Plant Maintenance Educational Forum

November 13th, to November 14th 2019

Best Western Plus

15 Spectacle Lake Dr., Dartmouth, N.S

Formerly known as the Chief's Conference, this year there has been a change of accommodations so please take note of the new location in the address above. Registration is at 11:00am but it is a good idea to fill a registration form out early so that you can reserve a seat and send it to us by email (below). To request for a form please contact Danny Wagner or request by email:

ipe.maritimes.mailing@gmail.com

The 2019 Annual General Meeting and Election of the 2020 Executive Officers

November 26th, 2019, 6:30pm

Dooly's Burnside

121 Ilsley Ave, Dartmouth, NS

All IPE members are encouraged to attend for discussion and the election of the 2020 executive officers. Appetizers will be supplied.

Note from Editor:

For all of those who wish to submit an article into the quarterly newsletter or would like to add an event pertaining to Power Engineering or the IPE, please feel free to contact us at:

ipe.maritimes.mailing@gmail.com