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– Denny Allen, ORDA Manager



Historic Herb Brooks Arena at Lake Placid Olympic Center Switches to Genetron Performax® LT

Meets Requirements for Ice Quality, Consistency and Reliability

THE CHALLENGE

The global phaseout of ozone-depleting refrigerants like R-22 has made them expensive. The Olympic Regional Development Authority (ORDA), which manages the world-renowned Herb Brooks Ice Arena in Lake Placid, NY, wanted to replace its R-22 with a more cost-effective solution. Reliable performance, minimal equipment changes, and long-term regulatory compliance were required from the new refrigerant.

THE SOLUTION

After evaluating alternatives with Mollenberg-Betz, the arena's refrigeration equipment contractor, ORDA selected Genetron Performax® LT (R-407F) as the best “drop-in” alternative to R-22. Not only does it meet the cost-performance criteria, but it's also non-ozone-depleting and has a lower global-warming-potential (GWP).

A Reputation To Protect

The iconic, 80,000-square-foot arena was home to the famous 1980 Olympic “Miracle on Ice” match where the United States defeated the Russian hockey team 4-3 before going on to beat Finland 4-2, winning the gold medal and forever memorializing the site.

Today, the Olympic Regional Development Authority (ORDA) oversees the three indoor rinks and speed skating oval along with other winter competition venues and area ski destinations. From the beginning, the inside ice surfaces at the Olympic Center have been powered by Frick refrigeration equipment using R-22 to cool ethylene glycol, which is then piped in a loop through six independently controlled expansion chillers – featuring two 500 HP and four 200 HP compressors.

“We take pride in the reputation of the Herb Brooks Arena and other rinks at the complex, which together provide a huge economic engine for the area. To sustain that reputation and the economy, a primary goal is to meet expectations for ice quality throughout the year,” said Denny Allen, ORDA manager. “To meet that goal—given aging equipment, growing maintenance costs and changing regulations – required us to take a step back to make the right decisions for the future.”



The Refrigerant Face-Off

ORDA turned to its long-time contractor for recommendations on how to replace R-22 with a more cost-effective alternative. Mollenberg-Betz, formed in 1910, has a refrigeration division that specializes in serving a variety of U.S. and global customers, and is ORDA's contractor of choice for rink maintenance in Lake Placid.

Key ORDA criteria for a new refrigerant included:

- Performance close to R-22, but more cost effective
- Easy retrofit as a drop-in replacement with minimal equipment changes
- Lower global warming potential (GWP) than R-22 for long-term regulatory compliance

According to Bob Miller, Mollenberg-Betz manager, their goal was to operate closely to R-22 and reduce costs while upgrading decades-old parts at the same time. "Since we were already replacing the R-22, we felt significant efficiencies could be achieved by replacing electromechanical controls and other key parts as part of a larger retrofit project."

After ruling out a few high-GWP options like R-404A and R-507 due to aggressive phase-out schedules, impending service bans and compatibility issues, Miller consulted with Honeywell for additional recommendations. "We had worked with Honeywell on previous retrofits and were confident they could help us pick the best solution for this ice rink

application," he said. "And that solution turned out to be Genetron Performax® LT, which is also known as R-407F."

The Retrofit Zone

ORDA and Mollenberg-Betz started the retrofit project by tackling the two chillers servicing the Herb Brooks Arena. Because the project also involved equipment upgrades unrelated to the refrigerant switch — such as new microprocessors, water-cooled condensers and other improvements to the compressors — they were able to start up the refreshed system within two months.

"This equipment had not been taken apart in a while, so it was good to spruce it up to improve efficiency and extend its life," said Matt Smith, Mollenberg-Betz technician. "In parallel, we replaced R-22 with Performax LT, which was very easy to work with just as expected."

The team had to change out the O-rings and seals, but that was anticipated since Performax LT is an HFC, not an HCFC. "Overall, it was a simple switch because it is so close to R-22," commented Tom Borden, ORDA refrigeration technical manager. "The conversion was a lot faster and cheaper than other alternatives that would have required new equipment and major capital investments."

According to Borden, it also helped that the Honeywell technical representative made two trips to the job site to help



ensure a smooth conversion and answer any questions. “This helped us deliver results, create a very positive experience for ORDA and earn their trust in the system,” he said. “We anticipate the remaining conversions will go even faster.”

A Big Win

The two refreshed chillers are performing the same if not better than the remaining R-22 chillers, as far as reaching the desired temperatures. “We received great customer service, experienced an easy transition with no big surprises, and are very comfortable with the performance of Performax LT,” Allen said. “As a result, we plan to switch out the remaining four chillers over the next year or two to realize even greater efficiencies.”

Those efficiencies will start to make an impact over time in refrigerant savings and reduced operational costs related to planned equipment upgrades. “We’re doing the right thing for this facility and moving in the right direction,” Allen said. “I give a lot of credit to our great partner Mollenberg-Betz, who put in a lot of hard work to make this project a success, and also to Honeywell for giving us the extra support.”

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— Tom Borden, refrigeration technical manager, ORDA

Genetron Performax® LT: The Ultimate Check

ORDA approved the proposal to use Genetron Performax LT due to the product’s unique ability to check every one of their boxes for cost performance, including:

- ✓ **Performance close to R-22, but more cost effective**
 - Proven to outperform popular R-22 retrofit alternatives in refrigeration applications
 - Industry-leading efficiency with a mass flow that matches R-22 for retrofits
 - Best capacity match to R-22 in low- and medium-temperature refrigeration applications
 - Ability to maintain positive superheat, protecting expensive compressors
- ✓ **Easy retrofit as a drop-in replacement with minimal equipment changes**
 - No thermal expansion valve changes or adjustments, eliminating most retrofit costs
 - Approved for use with major compressor manufacturers
 - Improved energy efficiencies compared to other HFCs
- ✓ **Lower GWP than R-22 for long-term regulatory compliance**
 - GWP of 1674* versus 1760 for R-22, and lowest GWP among all R-22 alternative refrigerants for commercial refrigeration
 - Non-ozone-depleting
 - Nonflammable (ASHRAE A1) for safer, seamless integration
 - U.S. EPA SNAP-listed and UL listed
 - Lower discharge temperature than R-22, reducing compressor wear and lubricant breakdown

*Per IPCC Revision 5

Contact Honeywell

To learn more about the benefits of Honeywell refrigerants for your next project, call 1-800-631-8138 or visit www.honeywell-refrigerants.com.

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