Resource
Data Management

Foodstuffs Install First NZ Waterloop Solution

FOREWORD

Foodstuffs NZ

One of New Zealand's largest and most thriving businesses, Foodstuffs is a 100% New Zealand owned and operated organisation, made up of two regional cooperatives. As an organisation, they have exceptionally high standards and view themselves as an integral member of each one of the communities in which they operate.

Protecting the environment is central to their ethos and was a primary consideration when looking to implement a new refrigeration control solution in their Fresh Collective by New World store, in Alberton.

THE PROJECT

Committed to bringing their customers fresh food every day the Fresh Collective store in Alberton looked to retrofit their chiller and freezer display cabinets, with a solution that maximised energy efficiency. While also having minimal disruption to store operations and customer service delivery.

The logical approach was to create a system using all of the latest technologies including electronic expansion valves, modulating condenser control, inverter compressors and smart control over the water pump system and dry cooler to ensure that energy consumption was reduced as much as possible.

Waterloop solutions use a closed water circuit to transfer heat away from individual cabinets or cold rooms — a highly-efficient, stable and environmentally friendly option, compared to commercial refrigeration systems. It was an obvious choice.

Foodstuffs North Island's General Manager of Property Development, Lindsay Rowles, said the move underscores the company's commitment to making its stores more environmentally sustainable. "The installation of water loop refrigeration at Fresh Collective Alberton is a continuation of our leadership in sustainable refrigeration," said Rowles. "In 2006 we installed the first glycol-cooled fridge system into a New Zealand supermarket, followed by the first transcritical carbon dioxide system in 2012."

THE SOLUTION

The new Alecto product offered by Resource Data Management (RDM) was a good fit. A variable speed driven, multi-refrigerant condensing unit range, designed and manufactured by Hawco, using an Intuitive controller, it presented a compact solution that would be quick to install, minimising disruption to store operations.

The first of its kind in New Zealand, the solution was designed and installed by Auckland Company EcoChill, with a specific brief to minimise environmental impact. EcoChill's Managing Director, Matthew Darby, said that it was the first time EcoChill had installed water loop technology into a retail setting.

"One of the things that make this a big deal is that the total quantity of refrigerant used, being around 90% less than a standard system. This is quite an achievement. I'm also proud of the speed at which we completed the installation – eight weeks from start to finish. Which isn't long when you're not only installing new chillers and freezers, but also introducing new technology into a retail environment," said Darby. "Overall, this has been a fantastic opportunity to continue working with Foodstuffs, delivering yet another refrigeration first in New Zealand and assisting with its sustainability strategy."

Other technical features include RDM controls which drive the latest in horizontal variable speed scroll compressors, electronic expansion valves, EC fan motors, and speed controlled circulation pumps. All of which maximise energy use reductions. The RDM control system is also designed to alert store staff if a chiller or freezer isn't performing at its optimum. This ensures any problems are picked up before there is stock damage or other issues.

BENEFITS

The significant benefit, which also fulfilled Foodstuffs core objective, was that the solution protected the environment. Utilising the water loop system reduced the refrigerant charge by approximately 90%, compared to a conventional centralised pack system. This also presents a considerable benefit to the long-term operating costs, as synthetic refrigerants are increasing in price substantially.

"As well as saving on electricity, the new water loop system contains a refrigerant that has less than half the global warming potential of standard synthetic refrigerants." And "The design also means in future that we can transition more easily to a natural refrigerant, which is our preferred option long-term. Additionally, it means our chillers and freezers are quieter and can more easily be moved around our stores. You can see why it made commercial sense to move in this direction."

Lindsay Rowles, Foodstuffs.

RDM PRODUCTS INSTALLED

- DMTouch, as the control system front-end, to facilitate remote access of operating data.
- Intuitive AI/AO TDB controllers for water loop cabinets.
- BACnet connectivity for water circulation pump control and visibility.
- Intuitive 2xVO TDB for control of Dry cooler.
- Energy Features – Temperature Performance I indicators (TPI) and Energy Monitoring.