

VersaCold Cools Down Rising Energy Costs with EnerNOC Demand Response

World's largest cold storage network enrolls sites in Canada and the U.S.



Industry:
Cold Storage



Locations:
Ontario, Canada
Pennsylvania, USA



DR Strategy:
Curtailment only



Annual Payments:
Approximately
\$160,000



Program:
OPA DR3 PJM Emergency
Load Response Program
(ELRP)



Energy Reduction Strategy:
Temporary equipment shutdowns and temperature adjustments

The Big Picture

VersaCold is a world leader in temperature-sensitive food handling, with an extensive network of 120 temperature-controlled warehouses and distribution centers in the U.S., Canada, Argentina, Australia, and New Zealand. It also offers refrigerated transportation and other related services. VersaCold serves as a comprehensive, reliable partner to its thousands of customers—from processing to freezing and storing raw ingredients to total inventory management.

VersaCold began exploring demand response (DR) in 2007, looking for creative ways to reduce its energy consumption and costs. VersaCold evaluated multiple demand response providers, but quickly zeroed in on EnerNOC, attracted by its proven experience and ability to accommodate VersaCold sites across Canada and the U.S.

A growing number of VersaCold facilities participate in EnerNOC DR, including nine sites in Ontario and three

in Pennsylvania. During DR dispatches, these facilities reduce energy use temporarily by shutting off or adjusting refrigeration, turning off compressors and battery chargers, and making other minor operational changes. While these changes have virtually no effect on the food stored in VersaCold's facilities, they enable major energy reductions totaling more than 3.2 megawatts (MW). These reductions generate approximately \$160,000 in annual payments from EnerNOC.

Reducing Consumption and Costs

Cold storage leader VersaCold is a major energy user. In fact, energy is one of its highest expenses, second only after labor. Its many refrigerated storage warehouses are energy-intensive facilities, thanks to chillers and other heavy-use equipment, which keep stored food—from poultry to vegetables to ice cream—at optimal temperatures. However, these heavily insulated facilities are able to maintain their low temperatures for hours. They

offer the potential for major temporary energy reductions, without affecting stored food, making them ideal for participation in demand response.

VersaCold leaders were aware of the potential of demand response, and saw it as a natural complement to its other efforts to reduce energy demand and consumption, as well as environmental impact. “We’re always looking for ways to reduce consumption and costs, to reduce our carbon footprint, and to ensure sustainability,” says Ted Royals, director of engineering for eastern North America at VersaCold. “We saw demand response as another strategy to help us manage and reduce our energy use—and to get paid for our efforts.”

VersaCold selected EnerNOC as its DR partner in 2008, initially enrolling three of its Pennsylvania sites (Lancaster, York, and Malvern) to participate in EnerNOC – PJM Emergency Load Response. It quickly expanded the roster to include multiple sites in the

“EnerNOC came highly recommended. And we appreciated the fact that their programs involved no upfront costs. EnerNOC was clearly a win-win for us.”

—Ted Royals,
Director of Engineering for Eastern North America

province of Ontario, becoming the first customer in the province to enroll in the EnerNOC Demand Response – Ontario program.

EnerNOC worked closely with VersaCold to evaluate its many sites and develop customized DR strategies for each facility, which vary in terms of size, design, equipment, and other factors. “In general, we’re able to adjust our room temperature set points, operating pressures, and other factors so that we can cycle off various energy-intensive pieces of equipment,” says Royals. “We may not completely shut down, but we reduce the amount of refrigeration temporarily.”

VersaCold facilities receive notification of DR dispatches via email and phone. “EnerNOC does a fabulous job making sure our sites are well-notified,” says Royals. The collaboration continues during the dispatch, with real-time coaching and advice that helps each facility achieve its committed energy reductions.

For example, during a recent DR dispatch in Ontario, an analyst in EnerNOC’s state-of-the-art Network Operations Center (NOC) in Boston noticed that one VersaCold facility wasn’t trending in the right direction. Timely follow-up with the engineering room led to over-performance during the rest of the dispatch, and ultimately a larger payment from EnerNOC. “When

necessary, EnerNOC stays with our facilities throughout the dispatch and follows up after, ensuring that we learn from every dispatch,” says Royals.

During implementation, EnerNOC installed monitoring equipment and enabled its energy intelligence software (EIS) at each facility. During DR dispatches, EnerNOC’s energy intelligence software gives VersaCold facilities personnel the ability to track their energy reductions in real time. “They can go to the application, look at their baseline and current use, and determine whether they need to make any other adjustments,” says Royals. Each facility retains control of how it achieves its energy reductions, a key element of the success of the program.

“During dispatches, our facilities vigilantly monitor energy reduction levels, as well as the storage room temperature,” says Royals. “Having local control is very important to us, since each facility is unique.”

EnerNOC’s energy intelligence software plays a key role during dispatches. “EnerNOC’s software is extremely helpful,” says Bob Simpson, chief engineer at one of VersaCold’s Toronto facilities. “We can see exactly where we are in terms of meeting our commitment. And EnerNOC stays in touch with us and helps get us where we need to be.” Simpson reports that his facility exceeded its commitment

during each DR dispatch, thanks to a clear energy reduction plan and assistance from EnerNOC.

The Results

Through temporary adjustments in its refrigeration, VersaCold is able to reduce its energy use by more than 3.2 MW across a dozen facilities in Canada and the U.S. Each facility contributes reductions appropriate to its size and baseline energy use, ranging from approximately 300 to 825 kilowatts. This major energy reduction helps stabilize the electrical grid during periods of high demand.

The food stored in VersaCold’s facilities is not affected by DR dispatches, since these dispatches are temporary. Stored materials are carefully monitored during dispatches. VersaCold facilities always retain the option to restart refrigeration equipment if necessary.

The Benefits

EnerNOC’s ability to enroll multiple facilities in Canada and the U.S. efficiently and effectively is a critical benefit to an organization of VersaCold’s size and scope. As a DR leader, EnerNOC was able to provide skilled personnel and proven best practices for reducing energy consumption at VersaCold’s cold storage facilities. As a result, the entire process— from enrollment to implementation to actual DR dispatches—is seamless for VersaCold.

Other benefits that EnerNOC DR brings to VersaCold include:

Significant Payments

Participation in EnerNOC DR results in estimated annual payments of

more than \$160,000—funds that go directly to participating facilities. “We pass along the earnings directly to the facilities that make the cuts,” says Royals. “It gives sites more of an incentive to achieve even greater energy reductions.” Royals also points out that in addition to these payments, VersaCold also benefits financially by using less energy— during dispatches and beyond.

Ease of Participation

The number of DR dispatches varies by region, and is defined clearly in the program details. Per the terms of the EnerNOC Demand Response – Ontario program, enrolled facilities may experience as many as 25 dispatches per year, making it a particularly demanding program. EnerNOC streamlines participation in this program by ensuring that dispatches go smoothly. EnerNOC’s ongoing communication, coaching during dispatches, and responsive follow-up help make it easy for VersaCold sites to participate in demand response.

In-House Control

During DR dispatches, VersaCold facilities personnel retain control over their equipment and facilities. They

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can select the equipment most appropriate for adjustment or shutdown. And they can restart refrigeration equipment based on conditions within their facilities.

Community Support

By reducing its use of energy and other resources, VersaCold also passes along benefits to the many communities where “EnerNOC does a fabulous job making sure our sites are well-notified. When necessary, EnerNOC stays with our facilities throughout the dispatch and follows up after, ensuring that we learn from every dispatch.” Ted Royals, Director of Engineering for Eastern North America its facilities are located. By participating in EnerNOC DR, VersaCold helps protect local communities from brownouts and blackouts. It also helps keep electricity

prices affordable for businesses. Participating in EnerNOC DR is just one example of VersaCold’s wide-ranging commitment to corporate responsibility.

The Future

VersaCold relies on EnerNOC as its partner for demand response. It continues to evaluate its facilities on a regional basis in areas where EnerNOC DR programs are offered. “When an area becomes eligible for DR, EnerNOC works with us to see what kind of revenues we might be able to generate by participating,” says Royals. “We take a careful look at all opportunities and determine whether we can participate. EnerNOC continues to communicate and collaborate with us on an ongoing basis, and help ensure that we succeed with demand response.”