

# The Optimal Upgrade

The Chemours Company and Stellar replace an end-of-life ammonia-based refrigeration system with a new ice rink design using Opteon™ XP10 refrigerant.



Opteon™

## THE CHALLENGE

Ice rinks across North America are facing similar challenges: managing aging rink infrastructure, complying with evolving regulatory requirements, and evaluating the environmental impact of facility operations—all while remaining financially sound. Whether a rink chooses to upgrade or replace their existing system, rink owners and operators need to become educated on viable solutions that can meet their existing needs, with a particular focus on proven, next-generation ice-making systems, and refrigeration infrastructure that are safe, energy-efficient, and economically viable.

## THE SITUATION

The Panthers IceDen is a 125,000 square-foot, multi-use community ice rink facility that serves as the official practice location of the NHL® Florida Panthers®, while also hosting local club and recreational hockey teams and figure skaters. The facility, located in hot and humid southern Florida, had an aging rink with an ammonia-based ice-refrigeration system that was due for an upgrade or replacement.

When the Panthers made the decision to completely replace one of the three ice sheets, they selected Stellar to remove and reconstruct the old mezzanine floor pad and to head up the engineering, design, and installation of the new refrigeration system.



## THE SOLUTION

The Panthers chose to replace their ammonia system due to cost and safety concerns. Their old system required costly maintenance that added to the facility's already increasing annual operating expenditures. Ammonia management anxieties from operating their old ammonia-based ice plant fueled their desire for a more practical system that would allay those safety concerns while serving the facility for years to come. Stellar chose the Chemours Company as the ideal partner to collaborate on the installation of a new, high-tech rink ice plant design, utilizing Opteon™ XP10 (R-513A), the official refrigerant solution of the NHL®.

### The Process

First, a temporary refrigeration system was provided to minimize disruptions to the operations of the facility during construction. Then, the existing ammonia refrigeration system that had served two of the ice sheets—including the mezzanine pad—was removed. It was replaced with an innovative design that used an air-cooled system manufactured by Trane® and powered by Opteon™ XP10 (R-513A). The Panthers IceDen's new ice rink, created

and designed by Stellar, includes the first installation of the ICE360 RC-7000 controller—providing the latest in rink automation capabilities. Since starting up in the Spring of 2021, the facility has been pleased with the performance of the new refrigeration system.

*Stellar and Chemours provided a state-of-the-art, proven refrigerant solution that checked all the boxes for our needs—reliability, safety and system efficiency—which equate to reduced overall operating and maintenance costs. We look forward to providing a superior on-ice experience.*

**Keith Fine**, Florida Panthers IceDen  
General Manager



## WHY OPTEON™ REFRIGERANT?

Opteon™ XP10 (R-513A) is an HFO-blend that offers excellent energy efficiency both from a fluid perspective but also as a critical component to make the most advanced ice building refrigeration systems perform at their peak. It is versatile enough to be used in both new and retrofitted systems—offering the optimal balance of properties for many facilities, and potentially resulting in lower total cost of ownership, enhanced performance, decreased overall system energy consumption, and balanced environmental sustainability considerations. Opteon™ XP10 (R-513A) has significantly less global warming potential compared to traditional HCFC and HFC legacy refrigerants like R-22 (~65% less), and R-507 (~84% less).

### Opteon™ XP10 offers an optimal solution for many applications including:

- ✓ Ice plant refrigeration systems
- ✓ Medium-temperature commercial and industrial direct-expansion (DX) refrigeration
- ✓ Medium-temperature circuits of hybrid cascade systems
- ✓ Air conditioning and heat pumps
- ✓ Centrifugal chillers
- ✓ Direct-expansion (DX) chillers

*“Chemours was excited to partner with Stellar to deliver a next generation refrigeration solution using the latest ice rink technology to our customers and the broader sports community. Opteon™ refrigerants represent innovation in the industry, and it was the best solution for everyone.”*

**Chuck Allgood**, Chemours,  
Thermal & Specialized  
Solutions Technical  
Service Fellow



### Opteon™ XP10 Refrigerant Properties

ASHRAE Number	R-153A
Safety Classifications	A1 (nonflammable low toxicity)
Ozone Depletion Potential	0
Global Warming Potential (AR5)	573

*“We were pleased to provide the Florida Panthers organization with the latest and greatest in ice rink design, offering a state-of-the-art system to meet the needs of the Club.”*

**Randy Theen**, PE, Stellar, Vice President



[optforbetter.com/nhl](http://optforbetter.com/nhl)



## A PARTNERSHIP SUPPORTING RINKS ACROSS NORTH AMERICA

The Chemours Company and NHL® partnership continues to thrive by working with customers to help educate owners, operators, and the broader sports community about the long-term benefits of using an innovative refrigerant solution that has environmental advantages compared to legacy refrigerants like HCFC-22, R-507, and HFC-134A. Professional and community ice rinks across North America choose Opteon™ refrigerants to achieve the highest levels of performance, reliability, and safety.



Stellar is a fully-integrated design, engineering, construction, refrigeration, and mechanical services firm that offers the HVACR industry a range of self-performed services, including planning, design, refrigeration, and total operations and maintenance.



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