Castleton University

About 5 years ago, we purchased the REALice system for Spartan Arena, Home of the Castleton University Spartans. We were having issues with slow ice -- primarily due to high calcium in our well water. Our staff decided that we needed to look at ways to improve our ice quality. We investigated purchasing the REALice system by sending our operations manager, who is a world class speed skater, to Iowa State where they had the only other REALice system in North America. He spoke to the employees and different skating groups. They all raved about quality of the ice. After skating on the ice himself, he provided the same positive report. We decided to purchase the REALice system.

It took us less than an hour to plumb the system. By switching from hot water to cold water, we were able to remove three hot water heaters and one of our three boilers. The ice set point was raised from 19 degrees to 22/23 degrees. Our compressors dropped from running a total of 22-24 hours down to 11-13 hours a day. The best part was that our ice greatly improved. We put in a new fitness center in the arena that summer that runs about 100 hours a week so we could not fully calculate the savings due to REALice. Even with the new fitness center, the building ran less electric year over year. We estimate that we are saving about $12,000 to $15,000 per year on our ice package.

Currently, we keep our ice about 1 inch thick. Since purchasing REALice, we have not broken through the ice even once. It is a very solid, durable surface. We maintain the ice by resurfacing and then laying mop water, until empty, on the ice in the Olympia after the last event of the day. Prior to our first event in the morning, we dry shave the ice to remove any impurities that have settled during the night and then do a cut and lay water, again with the water remaining in the Olympia, afterwards. This seems to set the ice up well for the day. With the REALice system, we keep the covered mode at 26 degrees from the end of the last event to one hour prior to the next day's event. Very rarely will the ice surface ever reach 26 degrees so the compressors will not come on from the last event to the 1st resurface the next day.

One hour prior to our first event of the day, we drop the setpoint to 23.5 degrees. We resurface the ice during this hour to take advantage of the compressors already coming on for the lower setpoint adjustment. This setpoint stays consistent for the remainder of the day unless we have college or high school games. For those games, we set the temperature to 21.5 degrees about 2 hours before the event. It is important to understand our facilities ambient temperature fluctuates between 25 to 40 degrees in normal conditions and 35 to 55 degrees during college and high school games. Our biggest challenge is making sure the ice does not get too brittle because of the low temperatures and the low humidity that we experience in the building. What we have found interesting is even when we reach a dryer ice and lower dew point than what we can control, the REALice surface is still excellent and when the fine snow starts to slowly build on the ice the puck moves even faster.

Recently, Rick Owen from Alta-West out of Alberta, Canada updated our control panel to provide better feedback to monitor our package. We made some great kilowatt hours savings just by better understanding our system. Our package is running between 500 and 1000 kWh per day with the compressors running only a total of 5-11 hours per day. The REALice system has helped reduce the calcium buildup on our equipment and on the ice. The savings have been tremendous and our ice quality is fantastic.

If you have any questions, feel free to contact Spartan Arena Director, Steve Wolf at 802-779-5766.