Director’s Column

By Fargo Public Schools Maintenance & Operations
Director Jim Frueh

Maintenance & Operations – Innovation and Efficiency

Discovery Middle School was built in 1992 and finished in 1994. The main source of heating and cooling installed for the building was source heat pumps. I understand that this was the first large school in North Dakota to have such a heating/cooling system.

Fast forward to the present. Over the past 20 years of operation, those heat pumps have provided Fargo Public schools (FPS) with great and reliable service. The compressors and fan motors in the heat pumps are now reaching the end of their lifespan, and have begun failing. Starting in 2013, FPS Maintenance and Operations has initiated a planned replacement strategy to replace all of Discovery’s heat pumps. We have a total of 170 heat pumps in this building.

Presently we have installed 61 replacement units at Discovery, with another 12 currently awaiting installation. Our priority is the replacement of classroom heat pumps. These rooms are typically on the outside wall of the school and have windows, so they need to have a functioning heating/cooling system, as compared to an internal room in the school. We have 28 classrooms left to complete.

The heat pumps are connected to the building’s existing automation system. The new heat pumps are of the highest efficiencies. With the exception of a few smaller units, all of the heat pump compressors are two-stage, which allows for the most efficient use of electricity. The heat pumps have an EER (energy efficient ratio) rating of 26 to 30, which is extremely good. The old heat pumps carried 12 to 15 EER ratings. Each of these heat pumps also have an ECM (electronically commutated motor) blower motor. What this means is that the motor will draw less energy and will speed up and slow down as needed, thus saving as much energy as possible. We are looking forward to completing this upgrade project in the next two years.

I would personally like to thank all the people who are involved with these heat pump installations, from the FPS trades staff to the staff at Discovery Middle School. We are trying to do this maintenance project selectively, with minimal interference with the learning process and education experiences ongoing at Discovery.

We are certainly meeting our goal to install new heat pump units that will positively impact the energy use at the school and to improve the comfort of the students and staff in the building.