New steam station equipment saves 3 million gallons of water each year

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The Syracuse University Steam Station is now a lot greener when it comes to water. The plant recently installed two new air compressors that will cut its water use by three million gallons a year. The energy-efficient equipment will also save on electricity. These savings will lower the steam station's compressed-air costs by as much as 57 percent per year, and allow the new equipment to pay for itself in about 11-12 years.

One new air compressor was installed at each of the plant's two boiler houses. At any given time, the plant is running one air compressor while the other compressor is standing by as backup. Compressed air is necessary for adjusting the various controls, dampers and valves that help run the boilers.

"Our new compressors are far more efficient, reliable and quieter than the 40 year-old equipment they replaced," says Tom Reddinger, SU's director of steam operations. "We've also got a more modern, automated compressed air system that now makes it easier to monitor and adjust day-to-day operations."

Because the motors that run the new compressors are air cooled, they don't need a steady supply of water to cool them like the old compressors' motors did. This slashes more than 8,200 gallons of water discharges per day into the county's sanitary sewer system. Not having to use and dispose of all this water is good for the environment.

The steam station's air compressor upgrades also add a new level of operating sophistication, thereby increasing reliability. "These compressors have lead-lag controls that allow the idle standby compressor to automatically start up and take over if a malfunction occurs with the primary one," says Kevin Lang, steam station operations and maintenance supervisor. "We now have a lot more useful information, too. We can monitor vital parameters such as moisture content, or dew point, and make adjustments based on trends or alarms."

A comprehensive compressed-air system assessment conducted by an outside firm gave Reddinger the necessary confirmation that new air compressors would deliver cost, operational and environmental benefits. The new equipment was seamlessly installed without any downtime to steam production thanks to well-planned and coordinated efforts. A National Grid energy efficiency incentive program helped fund part of the project.

SU's *Steam Station* produces steam around the clock, 365 days a year for heating most main campus buildings and running SU's Chilled Water Plant turbine for air conditioning in many main campus buildings. The steam is also used for domestic hot water production, sterilization,

cooking, humidification and other campus building operations. Some steam is sold to neighboring businesses SUNY College of Environmental Science and Forestry, Upstate Medical University, Crouse Hospital and the Syracuse VA Medical Center for heating and other uses.