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GENERATING NITROGEN ON SITE CUTS COSTS

The system was installed with zero capital investment

By Trey Donze

When a world leader in adhesive manufacturing wanted to reduce its monthly nitrogen costs without having to make an upfront capital investment, it contacted Air Technologies (www.aircompressors.com), a leader in providing compressed air and nitrogen as a utility service.

The manufacturer uses nitrogen to blanket the production tanks, keeping oxygen from reacting with the product. Nitrogen also is used in the packaging process to keep the product from hardening in the package. The facility is fed from a nitrogen pipeline running along the back of the property. The nitrogen enters the building at a pressure of 115 psig with a purity of 99.99%. The gas is then regulated down to a maximum pressure of 55 psig, with the majority of the users requiring 40 psig.

A nitrogen generation system that could provide 106 cfm would be adequate to handle the plant's nitrogen base load. Any additional nitrogen load could be supplied from the facility's existing nitrogen pipeline. The plant's engineers determined that a purity of 99% was adequate for blanketing and packaging purposes.

The Utilities Service group at Air Technologies developed the nitrogen system. Air Technologies' DirectAIR Compressed Air Utility Service has been providing "over the fence" compressed air to more industrial customers than anyone else in the United States. These unmanned compressed air generation sites are owned, operated, monitored, and maintained by Air Technologies to provide a continuous supply of 100% reliable clean dry air. With more than 150 years of combined operation without a single continuous hour of low air pressure at its DirectAIR sites, Air Technologies knew that providing nitrogen would be an easy transition. It engineered a complete system to provide the required 99% pure nitrogen at 80 psig to the plant, which will never see a maintenance or rental bill. Also, the Air Technologies system is more energy efficient than the previous nitrogen system. The monthly bill is based only on the measured nitrogen consumption.

An exclusive ManagAIR control system monitors and controls the onboard equipment as well as compressed air pressure, flow, dew point and nitrogen pressure, flow and purity. Should any equipment or performance abnormality occur, ManagAIR contacts the DirectAIR operations team for immediate response. The system can be accessed remotely and corrective action taken.



The nitrogen system was delivered completely assembled and ready to run in a custom-engineered modular facility, which is erected just outside the plant's battery limits.

"We received quotes from five companies," says the company's Lean Manufacturing Engineer. "Air Technologies offered the best value. Additionally, we've dealt with them in the past, as they maintain our plant air compressors. And, we found them to be professional and responsive to any issues we might encounter. Also, the ManagAIR software provided savings in our compressor operation as well as insight into how our compressors are running. We hoped to have the same insight into how the new nitrogen system is running."

The system was delivered completely assembled and ready to run in a custom-engineered modular facility, which is erected just outside the plant's battery limits. The module secures the equipment from tampering and is engineered to provide a suitable operating environment for the equipment year round.

The electrical, foundation, rigging, and piping installation was included in the DirectAIR nitrogen monthly fee to keep the plant's capital outlay at \$0. The system can grow with additional capacity that might be added in the future. Another module can be installed at any time.

The total operating cost, including the monthly DirectAIR fee and electrical operating costs, is lower than the previous nitrogen cost. In the end, the plant got the latest technology and reduced monthly operating costs without spending a nickel. The manufacturing engineer says, "In a recession year, any opportunity to save money with no capital costs is very attractive." ☺

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