



Steam on demand

EHV-Weidmann's specialty papers plant saves big money by replacing underground distribution with skid-mounted generators

A straight line, so it's said, is the shortest distance between two points. And in some instances it's demonstrably the most economical. Consider, for example, EHV-Weidmann Industries' recently acquired plant in Framingham, Mass., where skid-mounted steam generators replaced steam-tunnel delivery from an on-campus power plant to the manufacturing plant. The resulting savings have been "tremendous," says Facilities Manager J. Peter Keany.

Weidmann, a division of Switzerland's Wicor Group AG, is a global supplier of specialty papers and boards used as insulation in transformers for power generation and electrical distribution. Worldwide customers include transformer manufacturers such as GE and Siemens, and electric utilities. The insulation will be found in transformers for electrical substations, toy trains and every size in between, Keany says.

EHV-Weidmann purchased the Framingham facility, a 97,000-sq.-ft. plant and production equipment, from Avery Dennison in 2001. Included was an 800-ft. tunnel that carried steam at 125 psi from a nearby power plant still operated by Avery Dennison.

Weidmann purchased steam

from the power plant to process its creped papers, for drum-drying and for in-plant water heating. The uninsulated, zigzag tunnel, about 4 ft. by 4 ft. in size, is 8 ft. below grade and housed 4- and 6-in. lines. Leakage year-round was to be expected. It soon became apparent, however, that tunnel delivery was a frustrating combination of steam loss, pressure fluctuation and maintenance difficulty.

Get another system

The solution was obvious: get another steam delivery system. The problem: choosing the right one. The challenge was fielded by a selection committee consisting of Keany, Vice President and General Manager Jeff Goolgasian, Process Engineer George Tihalis and Plant Manager Wally Mahoney.

For two months the team considered replacement options and delved into the technicalities and economies of steam boilers and steam generators. They explored equipment online, visited other plants, and spoke with those responsible for steam supply. The team's criteria were simple, Keany says. The winning candidate had to offer a small footprint, and low installation and operating costs.

And it had to bring steam to high pressure in a short time.

Connecticut-based John Elliott, a regional manager for Clayton Industries, says his company received an order in February 2002 for two Clayton EG-125-1 steam generators mounted on a single structural skid, together with a feedwater system, feedwater chemical treatment equipment, water softeners and a blow-down system. "In other words," Elliott says, "we delivered a boiler room on a skid."

Completed before delivery

Clayton built the generators at its El Monte, Calif., headquarters, then shipped them to a company plant in Cincinnati where accessory equipment, including connecting pipes and valves, was assembled on the skid and wiring was completed. Elliott says this alternative is preferable to configuring equipment at a customer's site where conditions are less controlled.

When the generators arrived in Framingham in June, the assembly was rolled into its new home: a small, converted storeroom adjacent to the manufacturing floor. The Clayton system's minimal space requirement was a major consideration, Keany says.

Local contractor Fraser Engi-



What Works

neering, Newton, Mass., hooked up the system's natural gas supply and installed combustion air ventilation, exhaust ducts and make-up water supply, then brought 460 V power to the skid control box. Fraser then rearranged the steam header in the plant. Just a few weeks after its arrival, the new system was ready to perform. And, Keany says, it is generating savings, as well as steam.

On and off

Keany says a notable advantage of the steam generators versus a steam boiler is their ability to cycle up and down extremely fast. This

makes it easy to accommodate Weidmann's always changing production schedules. The old boiler/tunnel system operated 24/7, he remarks, producing steam even when the plant didn't need it. And leaks, in effect, "heated the parking lot."

Keany estimates that the Clayton generators save Framingham from 10% to 15% line loss and thermal loss per hour and handle the plant's needs with ease. Monday morning startups are no problem, he adds, because the generators reach 125 psi in a matter of minutes.

The cost per 1,000 lbs of steam

was reduced 50%, and Weidmann also enjoys additional savings through a special contract with Amerada Hess, a bulk supplier of natural gas. Based on Weidmann's estimates of its needs, the arrangement locks in price for up to two years. This alone reduces cost by as much as \$20,000 per year, Keany says. The company pays a local gas utility only normal transportation charges.

Now that economical steam generation is assured, the situation leaves Keany with one perplexing problem. "What the heck," he asks, "are we going to do with that tunnel?" ❧