

Case Study: Engine-Driven Refrigeration – Marigold Dairy Products
Location: Rochester, MN

Ice Cream Plant Pioneered Natural Gas Prime Movers



In addition to pocketing substantial energy savings, Marigold added to the benefit by capturing heat from the engine cooling systems for use in both pasteurization and daily CIP ("Cleaning in Place") needs.

Interest in natural gas-powered engines as prime movers for compressors has escalated in recent years. But the idea isn't strictly a 90s phenomenon.

Back in the mid-1960s, Marigold Dairy Products, Rochester, Minn., chose to drive their two-stage ammonia compressors with a series of Minneapolis-Moline engines converted to natural gas operation. The decision, driven by high electric power rates, has proved to be a wise one.

For more than 30 years, Marigold Foods of Rochester, Minn., has been powering its ammonia compressors with natural gas-fueled engines, saving thousands of dollars annually by avoiding high electric power rates.

"When electric rates dropped in the mid-80s," recalls Don Faust, president of Gartner Refrigeration, Marigold's contractor, "the company added a few electric motors to drive the compressors. But about three-quarters of their units are still driven by natural gas engines."

Even more impressive is the long service life of the original engines. "They modernized their compressors recently," Faust points out, "and added capacity with some Caterpillar engines using natural gas. But five of the compressors are still being driven by the converted Minneapolis-Moline engines installed more than 30 years ago!"