NATURAL GAS COMPRESSOR COOLING

Project Background

Natural gas requires a transport system that utilizes compressor stations every 50-100 miles along the pipeline, enabling the system to maintain pressure so that the gas can be pumped from the extraction point to storage, treatment or usage points along the way. When a North Carolina natural gas compression station began to reach capacity because of inadequate cooling, the compression engineer researched solutions and recommended MicroCool.



The Challenge

In addition to three existing units, a natural gas distributor added two 4000+ hp units to increase capacity. However, the engineering specs for the new units did not account for days with higher local weather temperatures in addition to ambient heat produced by dark rock and pavement near the machinery site itself. As a result, the specified coolers and accompanying water jacket units were insufficient in providing cooling during hot days. This caused the engines to overheat when operating at maximum capacity in hot weather conditions.

Natural gas compression creates heat. During hot weather conditions, this heat is compounded which can strain the capacity of compressor cooling systems.

THE MICROCOOL SOLUTION

The MicroCool IBEX system was easily installed with no system downtime and plant production was maintained. The specified IBEX pump and nozzle system delivers fog around the air intake areas of the 11 ft. diameter fans cooling the immediate, surrounding air. The fog system is automatically activated when local temperatures reach 90°F (which easily translates to 100°F at the site's microclimate). Under these conditions, the fog system decreases temperatures by at least 10°F depending on evaporative conditions that day. An ancillary reverse osmosis system was installed to eliminate mineral dust and deposits from building up on the cooling system's coils, fan or shroud in order to maximize cooling efficiency.

Customer Concerns

- Engines overheating during hot weather
- Under-performing cooling system
- Low maintenance

The Result

- New units run cooler than older units with larger coolers due to fog's effective air cooling before reaching intake point.
- Fog can drop localized air temperatures 10°+ depending on evaporative conditions.
- Cooling fog increases cooling systems' capacity therefore increasing machinery uptime.
- Maintenance is minimal due to the use of a reverse osmosis system.
- MicroCool's IBEX system was easy to install with no production downtime.

MICROCOOL

A MeeFog Company

World leaders in fog and mist technology for cooling, humidification, air quality control

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IBEX Pump, Reverse Osmosis, and ROC Stainless Steel Nozzle data sheets available upon request.