

CASE STUDY

PRODUCT: Modulair™ GLYCOL COOLING SYSTEM

APPLICATION: GAS TURBINE LUBE OIL COOLING

FACILITY: (2) X 27 MW GAS TURBINE POWER PLANT



A major international combustion turbine manufacturer installed two **27 MW gas turbine power generation** packages for a utility in Michigan. The turbine manufacturer faced the difficult task of **cooling 140 DEG F turbine oil** with **-20 DEG F ambient air** at typical design winter conditions in Michigan. The use of **-20 DEG F ambient air** could result in excessive cooling of the turbine oil, which would lower its viscosity below desirable levels.

To **control the lube oil temperature** within the desired range, a **Modulair™ System** was selected to provide an intermediary glycol cooling loop between the bearing oil and the varying ambient air temperatures. The **Modulair™ System** includes two **dry air coolers**, an integrated **dual pumping skid** and the necessary **pipng manifolds** to connect all three components. The system is designed to cool 543 GPM of 50/50 water/glycol from 140 DEG F to 122 DEG F. (4,554,000 BTU/HR) with 95 DEG F ambient air.

Each **Modulair™** dry air cooler includes an **aluminum plate fin coil block** with **copper tubes** and **carbon steel pipe headers**. The **direct connected fan motors** are easy to service and avoid the use of fan belts and their associated operating problems. A draw through fan arrangement was selected to avoid the icing problems which can occur when forced draft fans and motors are located underneath the an air cooler. In forced draft fan situations, snow and ice can melt on the warm fin surface and run down on to cold metal fan blades. Ice can build up on the blades and fan rings, obstructing fan rotation and damaging fan motors. The **Modulair™ System** also includes a **pre-engineered dual pumping skid** and interconnecting **pipng manifold** set. Each pump is designed for 543 GPM at 165 ft head, and includes wiring to one common NEMA junction box.

The **Modulair™ System** was **shipped complete** and delivered to the job site on time, meeting the customer's **tight delivery requirements**.

Modulair™ glycol cooling systems are manufactured exclusively by **Colmac Coil Manufacturing, Inc.**, Colville, WA, USA.