

# HEATEC BULLETIN

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## Electric power station relies on Heatec heater

AEP Pro Serv installed a Heatec heating system at the Ceredo Electric Generating Station in West Virginia. The system heats natural gas that serves as fuel for turbine engines that produce electricity. The system heats the gas from 50 to 115 degrees F.

Heating natural gas prevents ice formation when its pressure is reduced for the burners of the turbines. Eliminating ice is extremely important because ice can cause numerous problems such as clogging fuel lines or freezing control valves. Even small ice particles in the fuel can cause extensive damage to turbine engines. Heating the natural gas to prevent ice formation eliminates these potential problems.

The system consists of an 11.7 million Btu/hr thermal fluid heater, a heat exchanger, an expansion tank and a control panel. The thermal fluid utilized in this application is a non-flammable mixture of water and ethylene glycol. It is heated to 300 degrees F in this closed loop system. A 150 gallon expansion tank for the thermal fluid is mounted on the heater.

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Remotely mounted control panel

Heated thermal fluid passes through the heat exchanger where the natural gas is heated. A 3-way modulating control valve regulates the flow of thermal fluid into the heat exchanger. As gas temperature changes, the control valve modulates the flow of thermal fluid to automatically control it at 115 degrees F.

The heater has an economizer mounted in its exhaust stack. It utilizes heat from the exhaust gasses, (heat that would otherwise be wasted), to increase efficiency of the heater. The gasses heat serpentine coils inside the economizer, transferring heat to thermal fluid flowing through the coils. The economizer boosts the heater's thermal efficiency to 90%.

A spark arrestor is also mounted in the exhaust stack. Any sparks in the exhaust gasses are eliminated before exhaust is released into the atmosphere. Eliminating all possible ignition sources provides an extra measure of safety at facilities using natural gas.

The heater's control panel is remotely mounted. It is made of fiberglass to prevent rust and corrosion. It is insulated and has two 500 watt heaters to maintain a proper ambient temperature for the controls.



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