

# Geothermal Heating And Cooling Systems

## *Saving from the ground up*

According to the Department of Energy, geothermal technology is the most energy-efficient and environmentally clean space-conditioning system available today. In addition, geothermal systems have the lowest life-cycle cost of any HVAC system.

Gulf Power Company promotes these systems by providing a **\$400/ton** (fully closed loop geo system) or **\$200/ton** (hybrid closed loop geo system) incentive for commercial facility applications. For more information, call Gulf Power today at 1-877-655-4001.

To qualify for the **\$400/ton** or **\$200/ton** incentive the geothermal heat pump must meet the minimum efficiency of 13.0 EER at 86° entering water temperature (ARI / ISO 13256 Performance Data) and nominal water flow of 3.0 gallons per minute per ton.

To qualify for **\$400/ton** or **\$200/ton** incentive the closed loop geothermal installation must meet specific **installation guidelines**. This Incentive is only for complete system installations consisting of both **NEW EQUIPMENT** and **NEW LOOPS!** A Gulf Power Company Energy Consultant will perform a final inspection to ensure that all installation guidelines are met.

All participants must be willing to have an existing commercial facility energy audit or new commercial facility plan review completed to address proper HVAC sizing, proper installation and other conservation measures.

Commercial projects with a total tonnage above 50 tons are subject to having their incentive offer based upon a cost effectiveness analysis performed by Gulf Power.

## *Benefits at a Glance*

**Energy Savings** - Customers can cut heating and cooling costs in half. Add optional hot water units to save even more.

**Comfort** - Constant temperatures are easier to maintain with geothermal systems.

**Low Maintenance** - Few or no outdoor components make repairs less likely.

**Durability** - Closed loop systems lie underground, protected from harsh weather.

**Quiet** - Enjoy your facilities' outdoor environment without disturbing mechanical noises.



# Commercial Geothermal Heat Pump

## *Installation Guidelines*

Job specifications and installation guidelines are as follows:

- Must be closed loop geothermal heat pump.
- The geothermal heat pump must meet the minimum efficiency of 13.0 EER at 86° entering water temperature (ARI / ISO 13256 Performance Data) and nominal water flow of 3.0 gallons per minute per ton.
- Pressure and temperature (P/T) ports shall be installed on all loop systems.
- All piping for loop shall be PE 3408 polyethylene pipe with heat fused joints.
- Exposed polyethylene pipe shall be insulated with minimum 3/8 inch armafex or equivalent to prevent condensation and potential moisture damage to surrounding materials.
- All loop piping is to be pressure tested above ground prior to placing in bore holes or trench.
- All vertical bore holes are to be grouted/sealed at surface penetrations or in accordance with standard water management requirements.
- Equipment shall be sized according to Manual N or equivalent load calculation procedure.
- Loop contractor guarantees that loop temperature will not exceed design condition of 100 degree entering water temperature during normal cooling operations.
- Unit should be set on sound deadening/vibration isolation pad.
- Equipment contractor should provide manufacturer letter of certification to install ground source closed loop heat pumps.
- Loop contractor should provide manufacturer letter of certification in heat fusion, design (sizing), and installation of ground source closed loop systems.
- Ducts should be visually inspected for leakage. Any visible problem areas or leakage points should be repaired or sealed.

