ANATOMY OF A MRI INSTALLATION

Background...
A large hospital with a high patient load sought ultra-reliable cooling for multiple MRIs. With MRI downtime being unacceptable, the cooling system demands for consistent performance and control are most importance.

Solution...
ArcticChill deployed a rooftop air-cooled fully redundant chiller with automatic fail-over, flow status panels, a City Water Switchover Panel.

Results...
MRIs are operated 24x7 with no downtime from loss of cooling.

Reliable and Consistent Patient Loads...
The cost to acquire, maintain and staff the medical imaging systems is extensive and the quality of the results in terms of equipment uptime and service costs are dependent on the equipment operating temperatures staying within fairly tight parameters. Loss of cooling can result in downtime. The higher cost however is the loss of diagnostics capability and revenue when the OEM equipment is not treating patients, therefore, few installations will rely on just the utility chilled water - there is too much at risk and known instances where the utility delivery will likely be out of the required operating range of flow, pressure, temperature and/or cleanliness. The cost of the chiller becomes very small compared to inadequate cooling.

- Full system redundancy assures chiller uptime.
- Two chillers within one frame share common tank and water piping.
- Pumps and controls are redundant. If one unit fails, the other takes over and water in tank is at correct operating temperature.
- Automatically switches over to city water cooling if cooling water cannot be delivered to MRI.
- Status panels have accurate flow-meters and annunciation of faults.
- Redundant systems can be stacked as shown to the right, or side by side as shown below.

Rugged, low noise semi-hermetic compressors are contained within lined compartments to reduce compressor noise.

Acoustical materials are designed to significantly attenuate low and high-octave band sounds. Fan plenum areas as well as entire cabinet can be lined with the materials.