

SAIF CORP. {SALEM, OREGON}



SAIF Corp. receives a 15% reduction in energy usage by installing a high efficiency chiller.

BY THE NUMBERS

488,734 annual kWh savings = energy to power 29.9 homes for one year

\$ 303,500 total project costs
\$ 41,125 yearly operational cost savings
\$ 97,600 total program incentives
\$ 205,900 net owner cost

THE PLAN

- ☑ Install new high efficiency chiller to maximize energy savings and reduce utility costs
- ☑ Maximize incentives available from The Energy Trust of Oregon

"The folks at Trane did a great job replacing our chiller and updating our chilled and condenser water systems at our main office in Salem Oregon. Trane engineered and coordinated the replacement of one of our chillers in a very tight location in our basement, provided new drives for the condenser and chilled water systems and redesigned the piping of the chilled and condenser water loops to work with the new higher efficiency chiller. Trane also was the main driving force in working with the Energy Trust of Oregon in helping us to recoup some costs in performing the upgrades to the building HVAC systems leading to lower operating costs and shorter payback times. We are very pleased with the timeliness and the way the work was performed. Everyone involved with the project was very professional and courteous and we look forward to the next project and working with Trane again."

~ Dwayne Smith - Facilities Supervisor, SAIF

SAIF corporation on High Street is a 5-story building with 1 sub-grade floor (120,000 ft²) of all office space. The building areas are served by one large built up VAV AHU with floor VAV boxes for the zones. The two chillers are located in the basement and the cooling tower is located on the roof. Heating water is provided by two boilers.

The building was modeled using Trane Trace 700™ analysis software to determine the energy savings between the existing equipment and the proposed new equipment. The analysis focused on two main points; first, replacing one of the existing chillers with a new high efficiency rotary screw chiller, second, convert both the condenser water and chilled water pumping from constant volume to variable volume flow.



TRANE OREGON PROJECT CAPTAIN

Stan McIntyre - slmcintyre@trane.com

TEAM MEMBERS

SAIF Corp.

TraneOregon

Energy Trust of Oregon, Inc.

SUCCESS IS IN THE DETAILS

- × Existing chiller changed out with a new high efficiency Trane screw chiller
- × Condenser water and chilled water converted to variable flow to increase the overall plant efficiency. The existing 3-way chilled water control valves were replaced with two way valves. A new chilled water bypass line with a control valve was installed to ensure that the operating chiller would have the proper minimum flow through the chiller barrel. The condenser water pumps are controlled by the chillers refrigerant head pressure. This saves energy by pumping only the water required by the machine to match the load of the building. VFD's were added for control of the two chilled water pumps and two condenser water pumps.
- × BACnet controls to interface with Johnson Controls

TRANE OREGON ENERGY SERVICES

We are committed to help buildings operate at maximum efficiency to reduce environmental impact. Achieving maximum building efficiency is accomplished by owning efficient equipment, maintenance of that equipment and a dedicated focus on energy management systems and monitoring.

- × Securing you energy rebates and incentives
- × Energy Audit Services
- × Performance Contracting
- × Turnkey Equipment and Control Retrofits

NUTS, BOLTS AND SOFTWARE

Trane high efficiency 250-ton RTWD water-cooled chiller
Bacharach refrigerant monitor
Belimo control valves with DDC actuators
4 Trane Danfoss VFD's
Onicon flow meter

COMPLETION DATE

March 2010

PROUD ALLIANCES

Trade Ally of
EnergyTrust
of Oregon, Inc.



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