



CASE STUDY

Software Manufacture

Facility at a glance

Name

Microsoft

Location

Seattle, WA USA

Facility size

40,000 ft² laboratory

Issue

A large capacity chiller is required 4 hours a day to meet the process load of the building. Then the remaining 20 hours of the day, the chiller is short cycling.

Solution

PhaseStor thermal storage system

Microsoft was able to reduce their maintenance cost by 50% and save 22% in energy cost by adding a PhaseStor thermal storage system.

Issues:

Microsoft has a process that requires a 200 ton chiller to meet a 190 tons per hour load for 4 hour then the load reduced to an average of 30 tons per hour the remaining 20 hours per day. This scenario was causing premature failure of chiller parts and wasting energy due to the short cycling. Short cycling occurs in compressor when a mechanical failure is causing the run times to terminate prematurely or if the chiller is grossly oversized. When the set point has not been achieved, it restarts shortly afterward, thus requiring more compressor 'ON' time to compensate. The short 2-5 minute bursts of ON and OFF time was damaging the chiller and wasting energy.

Solution:

After our analysis and discussions with the Microsoft engineers, the problem was solved by adding 300 ton hours of the PhaseStor thermal storage which allowed the chiller to run longer in its most efficient state.

Outcome:

The chiller went from cycling multiple times per hour during the off peak load to only two hours per day. The maintenance and repair cost were reduced by 50%.

Energy & Maintenance Savings Summary



Annual electric energy savings achieved by avoiding multiple starts and stops and reducing high maintenance cost.

Annual savings in electrical and reducing maintenance cost savings of \$75,450. The ROI was less than 3 years



PhaseStor thermal storage system can help with short cycling for chillers, boilers and shift peak demand load when electrical rates are at a premium.

People and ideas you can trust.