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*Total Solution for all your Control Needs*

## General Electric Corporation

Fairfield, CT



***ELIMINATED OIL & NUISANCE TRIPS !  
ELIMINATED COMPRESSOR FAILURES !***



*Total Solution for all your Control Needs*

## General Electric Corporation

### Site Location:

- General Electric Corporate Headquarters
- Training Conference Center, Fairfield CT

### Concerns:

- Several compressor failures over the years
- Service calls for continuous nuisance trips
- No visible oil in old compressor sight glass
- Low oil amount visible in new compressor
- Unable to rotate lead compressor

### Equipment:

- Two (2) Dunham-Bush Chillers PCWX-210 (21yrs old)
- Two (2) Vertical Screws per chiller
- Flooded Evaporators
- Flash Tank with ball valves
- Each chiller had only one (1) LLS
- Water cooled condenser with stand alone head PSI control

### Steps Taken:

- Install MCS microprocessor control system
- Adjust flash tank ball valves until discharge superheat was  $> 20^{\circ}$  F
- Drain off excess oil that was added over the past 21 years

### Results:

At start up, the MCS controller revealed the basic problem as low discharge superheat. Because the MCS controller monitors all critical areas, it saw that the discharge superheat was less than  $5^{\circ}$  F on both compressors and the discharge temperature was about  $100^{\circ}$  F. This low temperature resulted in oil migration from the compressors, causing repeated compressor shutdowns and failures.

Adjustments were made to the ball valves on the flash tank bringing the discharge temperature to approximately  $130^{\circ}$  F and the discharge superheat to approximately  $25^{\circ}$  F. These changes brought the oil that had migrated to the condensers back to the compressors. The excess oil in the compressors was then removed. The MCS controller also setup the compressors to rotate leads for more even wear and longer life.



Dunham-Bush Chiller with MCS Controls in a door mount application at G.E. Corporate Head Quarters.

