HVAC Testing Facility Achieves As-Needed Cooling With CO_2

FACTS

Segment: Specialty Refrigeration

End-User: HVAC Manufacturer

Goals:

- Simulate extreme outdoor temperature conditions inside an environmental test chamber to field test outdoor HVAC water chillers
- Improve efficiency within the entire corporate manufacturing facility where the test chamber is located

Challenges:

- Designing a system that can sustain temperatures of -5°F or 30°F, as well as withstand temperatures up to 140°F when shut off during high-temperature simulation
- Satisfying the cooling load of the heat rejection from the chillers as efficiently as possible

SOLUTION:

The Hillphoenix team spent weeks with the end user exploring all the system requirements and necessary transitions. This research, combined with years of experience with CO_2 systems, enabled our engineers to design the ideal system to handle the level of variation this application required. Rather than relying on a gas cooler, this system integrates with the building's existing closed-loop chilled-water system to drive efficiency.

EQUIPMENT:

- 200-ton low-temp (-15°F) and medium-temp (20°F) transcritical CO_2 system
- Indoor rack

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