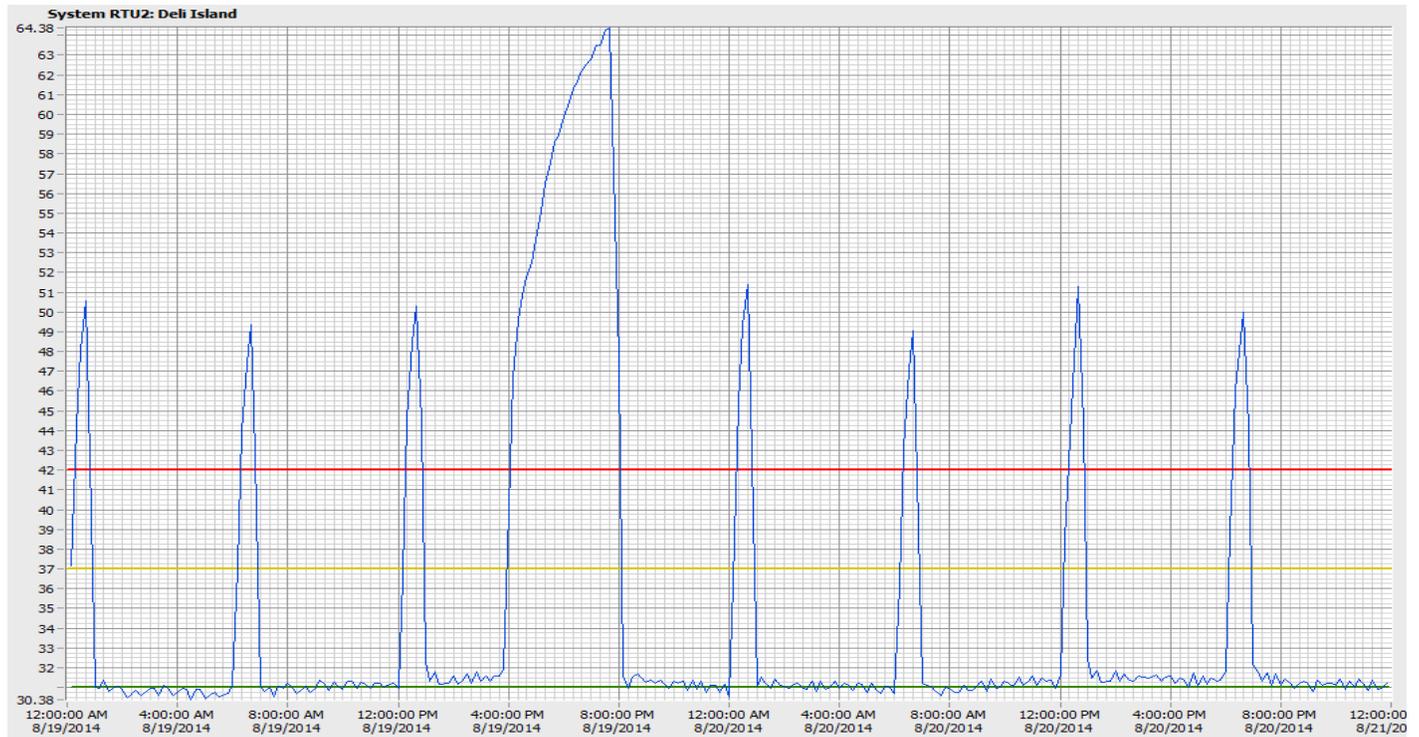


CASE STUDY

Compressor Error



Picture: The graph shows 2 days of defrost operation.

This refrigeration system is serving a Deli Island. One day something happened!

The graph shows 2 days of operation. Blue trend line is the temperature of the Deli Island. The green line is the setpoint of 31°F. The yellow and red lines are the markers of High and HighHigh alarm settings. Defrost runs every 6 hours.

The Symptom: At 4PM the temperature rises from 31.5°F to 42°F in only 20 minutes and up to 64°F in little more than 3 hours.

The Analysis: Cooling power is missing. As the Deli Island is served by a single compressor it was checked first.

The Problem: The compressor was without power. The problem was a loose wire at the main power relay. A compressor built to run on 3 phase electrical power will not run on only two phases and therefore the compressor stops when one power wire is missing. As the screws were loose it was only a matter of time before the first wire lost contact and the compressor stopped.

The Cure: Fasten the loose wire. Fasten all other screws on that relay and check for other loose electrical connection.

The Recovery: Once the problem was found and fixed, and the compressor ran again the temperature was down to normal in 20 minutes.

Note: A loose wire in electrical power system may cause fire. Be careful to tighten all connections at regular intervals as part of preventive maintenance

This VDVRM case study is from a series of real-world examples from refrigeration systems monitored by VDV Refrigeration Monitoring system. The purpose of this serie is to bring forward actual problems, its effect on refrigeration temperatures, how the problem was detected and how the refrigeration system recovered.