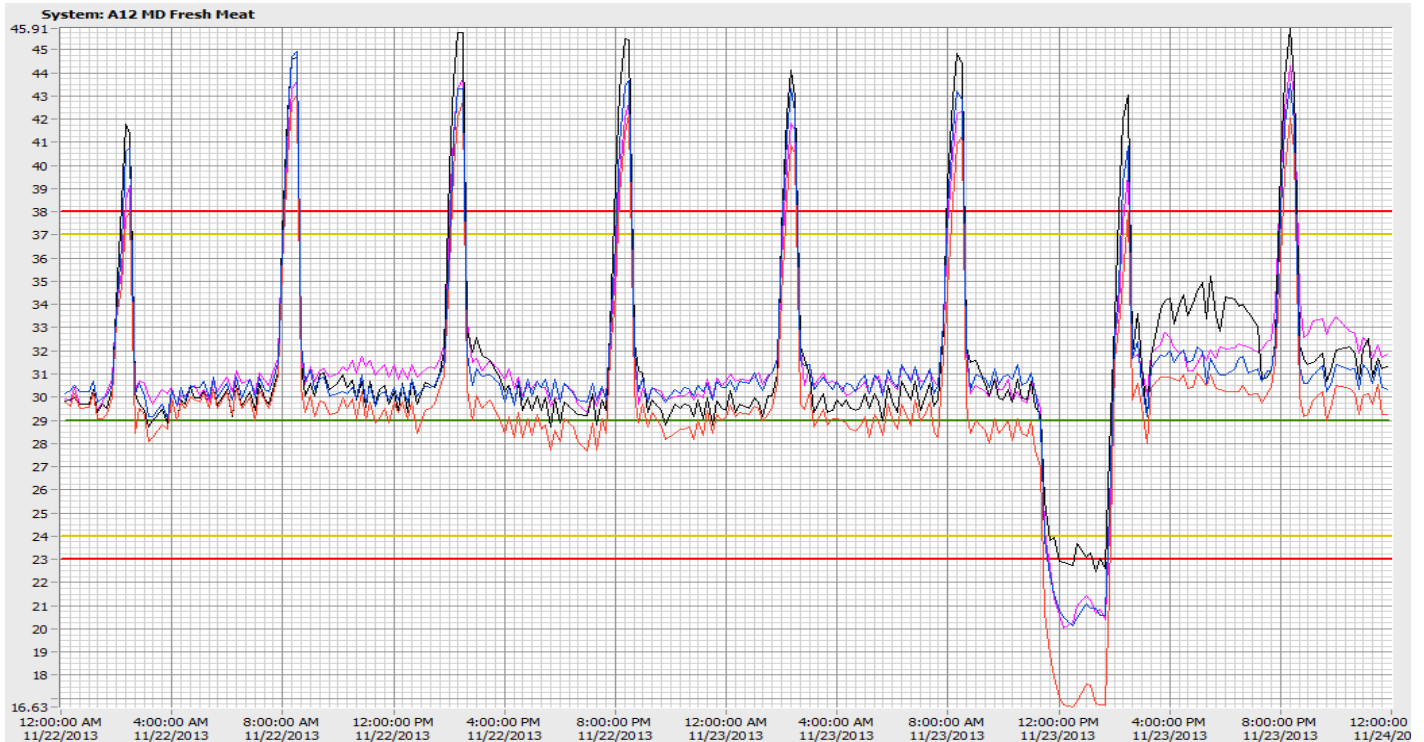


## CASE STUDY

# Thermostat Error



Picture: The graph shows 2 days of refrigeration operation.

This refrigeration system is for Fresh Meat with case temperature setpoint of 29°F. The compressor rack supplies five Fresh Meat cases. One day something happened!

The graph show 2 days of operation. There are 5 trend lines for the temperature for each of the 5 cases which are on the same system. The green line is the setpoint of 29°F. The yellow and red lines are the alarm markers of L and LL settings. Defrost runs every 6 hours.

**The Symptom:** At 11AM something happens in the system and all the temperatures dropped fast and reached the 24°F yellow alarm setting in only 30 minutes. Alarm was then automatically issued as email and sent to the maintenance team. Red alarm of the 23°F setting was sent 10 minutes later.

**The Analysis:** As temperatures drops the compressor and all other parts of the system are working. There is a single thermostat controlling the temperature for the system.

**The Problem:** Thermostat has problem; its contactors sticks closed indicating the temperature is steady above setpoint and more refrigeration is needed.

**The Cure:** Replace the Thermostat; remember to adjust the setpoint of the new thermostat to correct setting of 29°F.

**The Recovery:** The temperature was back to normal in 30 minutes.

*This VDVRM case study is from a serie 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.*