

A “GREEN” APPROACH TO FREEZER DEFROST

MALISKO ENGINEERING was chosen to design a system to control the hot gas defrost cycle on an industrial spiral freezer for a national baked goods facility. The piping and valves required to facilitate the hot gas defrost cycle were already in place prior to Malisko’s involvement on the project, but the valves were never wired and the system was never fully commissioned. The downtime incurred for the lengthy hot water defrost cycle was becoming a hindrance to production, so the decision was made to go forward with automating the more efficient hot gas defrost system.



Advantages of Hot Gas Defrost:

- Hot Gas Defrost is very efficient as heat is directly delivered where the ice has built up on the coils
- Hot liquid defrosting, which was previously used, requires an external heating source
- Hot Gas Defrost does not require an external heating source because the heat is already present in the system
- During the Hot Gas Defrost, the freezer acts as a secondary condenser dispersing the heat otherwise dispersed in the cooling media
- Using “Hot Gas” as an alternative defrost method leads to plant water savings and increased productivity

Our Design Approach:

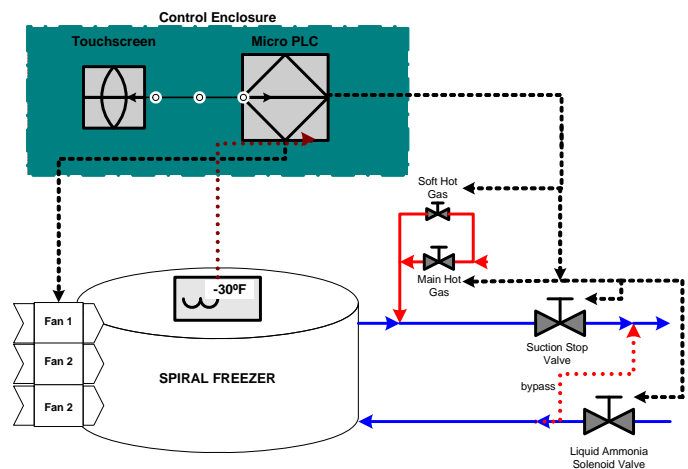
- The plant project team required a system that would integrate seamlessly into the existing Freezer Control System
- Our engineers specified additional I/O hardware and developed electrical schematics to wire the defrost valves
- The original freezer PLC program was modified to include the new defrost I/O along with the new “hot gas” defrost sequencer
- Hot Gas Defrost HMI screens were added to the existing operator interface, including advanced password-protected maintenance screens

Startup:

- Malisko Engineering coordinated the electrical installation and checkout through a very tight window during weekend production
- The Freezer was returned to service within 1 shift, and normal production resumed

The Malisko Impact:

- The new Hot Gas control system proved successful on the first run
- The Plant was delivered a robust solution integrated seamlessly into the existing system
- Anticipated project payback is less than 1 year due to decreased water/energy usage and decreased equipment downtime



For More Information, please contact:

Warren Perry – Business Development Manager

Phone: 303.776.2466

Email: wperry@malisko.com

Website: www.malisko.com