

OFFSHORE FOOD STORAGE UPGRADE

Workscope

Stork's Heating, Ventilation, Air Conditioning and Refrigeration (HVACR) team were contracted to carry out a detailed equipment survey and report of a galley walk-in-chill and walk-in-freezer refrigeration plant on a client's South Caspian Sea asset.

Following the issues and environmental impact highlighted within the survey report, Stork was awarded the contract to design, procure and commission a new fully compliant refrigeration plant.

Solution

The asset was originally installed with Zone 2 hazardous area compliant air cooled refrigeration plant, which operated on HCFC R404A refrigerant.

With the impending phase out of HCFC refrigerants due to high GWP and in line with F-Gas Regulations EN 378, Stork's HVACR department were tasked with designing a compliant refrigeration system with lower GWP refrigerant in mind. The existing refrigeration plant did not have full redundancy capabilities. Therefore Stork's HVACR department designed a fully compliant refrigeration package for the chill and freezer rooms to have full duty / standby - one duty refrigeration

system and one standby refrigeration system for both chill and freezer rooms. Bespoke control panels were also designed and manufactured to account for this application.

Due to the asset's space constraints, the air cooled condensing units supplied were fully dressed within 316L stainless steel chassis and, to account for the harsh marine environment, condenser coils were Cu/Cu (copper) were applied with a C5M coating specification.

Results & Benefits

- A full system back-up redundancy was incorporated to be triggered upon a system failure, ensuring no loss of products.
- Option to operate 'standby' a system was installed, to be used whilst loading the chill and freezer rooms, which results in retaining product temperature and freshness.
- Compliant low Global Warming Potential (GWP) refrigerant.
- Extended life expectancy of refrigeration equipment.
- Less downtime resulting in faster installation by use of innovative pipe jointing materials.

Project information

Type of Facility: Fixed offshore installation.

Industry: Upstream oil and gas.

Site Location: South Caspian Sea.

Safety: Zero Lost Time Incidents

Project Efficiencies: 30%

