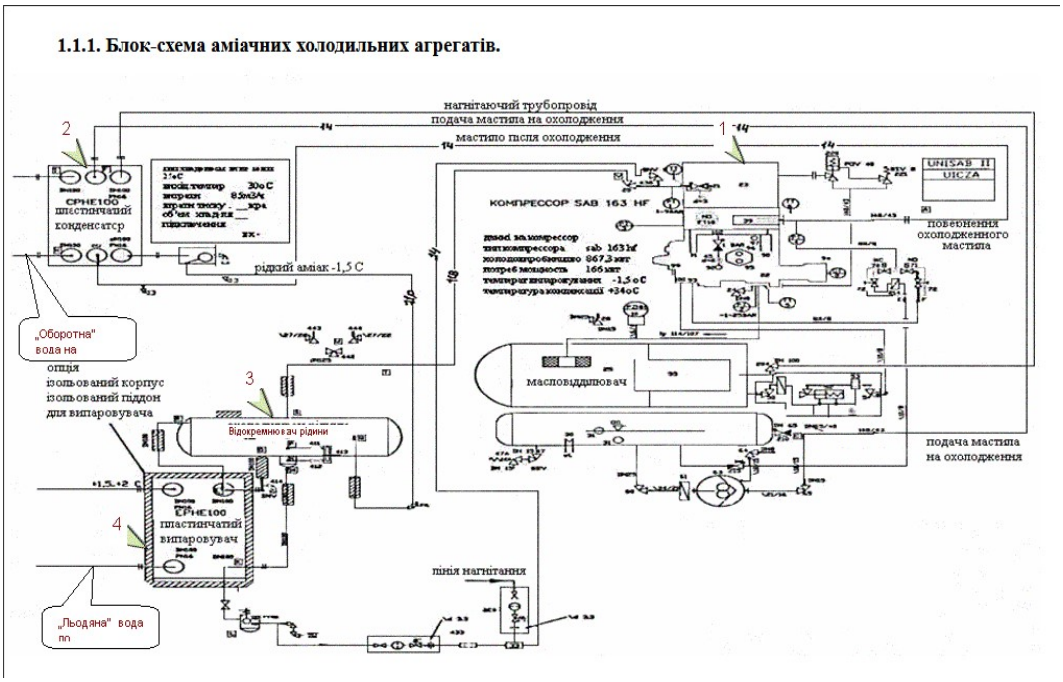
Characteristics of the Refrigeration Station

Main Hazards and Equipment Characteristics



1. Characteristics of the refrigeration station.

The refrigeration station (CS) is a part of the compressor and mechanical workshop.

It is located on the territory of OJSC “APRMP” in a separate brick building (18.0×12.0×6.0 m, built in 2004), surrounded by:
• North – 40–50 m: main production building
• South – 40 m: fence and warehouse buildings
• West – 25 m: container storage
• East – 15 m: boiler room

The CS includes:
– 2 ammonia refrigeration units (AXA type “RAS163 HF-A”)
– “Ice” water pumps (for evaporators and consumers)
– Recirculating water pumps and tanks (60 m³ and 20 m³)
– Switchboard room and ventilation chambers
– Cooling tower “VXT-N510” (on the 2nd floor)
Each group of pumps has a reserve.

Each AXA chiller is a hermetic system containing 80–85 kg of ammonia.

1.1 Main hazards of the refrigeration plant (brief)

Fire safety category: “A”, fire resistance degree: II.
Ammonia vapors in contact with oily fabrics may cause explosive mixtures.

High ammonia concentration can lead to respiratory arrest; at 15–28%, even a static spark can cause an explosion.
Refrigeration equipment operates under high pressure (up to 2.6 MPa).

1.2 Equipment characteristics (brief)

The CS is equipped with two YORK “RAS163 HF-A” ammonia units.
Each operates automatically without continuous staff presence.
Main parameters are displayed on a computer in the boiler room.
Monitoring and safe operation are ensured by duty operators working in three shifts.