



CASE HISTORY

Colloid-A-Tron® prevents scaling caused by hard water in a Poultry processing plant in Lima, Peru

CUSTOMER: RICO POLLO S. A. C.

CATEGORY: Arequipa-Perú

APPLICATIONS: Food

ACTIVITY: Poultry Processing

RICO POLLO S. A. C. is a leading company in the rearing and then processing of poultry and pork, located in Arequipa, south of Peru at 2300 metres above sea level. For the processing and conservation of their products they use ice water plants, ice producers, refrigeration and freezing chambers, there are several screw compressors for low, medium and high temperature in the machine room, these use Ammonia gas (R-717) as a cooler, the high pressure and temperature compressed gases end up in an evaporative condenser, This new THETRACORP condenser, (model CE1000) has a capacity of 1'200,000 Kcal /hr with TC=+35°C, where it changes its gas state to liquid due to the extraction of heat by spraying water over the condenser tubes inside the tower. In the design of the condenser there are a number of significant innovations; amongst them:



The Colloid-A-Tron Unit can be seen in the picture above between two flanges

The whole of the outer structure of the water tank at the base of the tower is made of polyester resin reinforced with glass fiber, which provides a longer life use in comparison with galvanized iron outer structures, it can be completely disassembled all its bolts are

manufactured out of stainless steel. It comes with closed electric three phase motors (protection IP 55), directly attached to axial type helixes made out of propylene with static and dynamic balancing for silent operation , the motors work at different speeds, thanks to a temperature transmitter which sends the signal to a frequency modifier , increasing or reducing the motors' speed depending on the cooling demand, this way keeping the condensation temperature constant during both day and night disregarding changes in ambient temperature.



A 5" Colloid-A-Tron® scale prevention unit (seen as a blue length of pipe between the two flanges in the picture above) was supplied and installed, for the treatment of 140,000 liters of water per hour to prevent scaling caused by hard water, this Colloid-A-Tron ® has been working since March of 2007 with satisfactory results preventing calcium incrustation. The evaporative condenser uses well water for its supply this has a total hardness of 278 mg/l or ppm CaCO₃. The Colloid-A-Tron® uses no electricity and has no moving parts .. it takes nothing from the water .. only neutralizes calcium carbonate so that it does not form hard scale.

ONGOING PROBLEMS

RICO POLLO previously had serious calcium incrustation problems, they have a YORK evaporative condenser, which, due to repeated chemical cleaning with acids (to remove the calcium incrustation) damaged the tube blocks by making perforations on them making the condenser unusable. This year, the company will repair the damaged YORK condenser by installing new blocs of tubes, and, based upon their experience with the effectiveness of the Colloid-A-Tron ® Treatment in the new condenser they will install another Colloid-A-Tron® unit in the refurbished YORK evaporative condenser for the treatment of the recirculation water.

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