The “Damietta” Gas Power Station – Egypt

The Damietta power station is located in the North-East of Mediterranean Cost of Egypt, just beside of the Suex Channel .

It has been up-grated recently with an additional 500 MW of electric Energy production.

In this new power station phase Marly has installed 22 8” pumps and motors made in Super Duplex stainless Steel.

Those pumps are going to provide the cooling water to the new 4 Gas Turbines which are going to produce 125 MW per each turbine. The water is aspired from 22 wells which are located closed to the sea cost and then sea water or brackish water is pumped by the pumps.

Therefore with the energy produced by those new 4 turbines the total capacity of the power station will reach to the value of 900 MW.

In the above main picture the fourth new turbines are shown aligned with the other existing 4 turbines.

The Marly borehole pumps are of the model type “E8C/2R”, with the semi-axial impeller design and it is coupled with an 8” motor size 12 HP, made of stainless Steel Super Duplex grade.

The winding of the motors is of the re-windable execution and type “Pe2+Pa”.

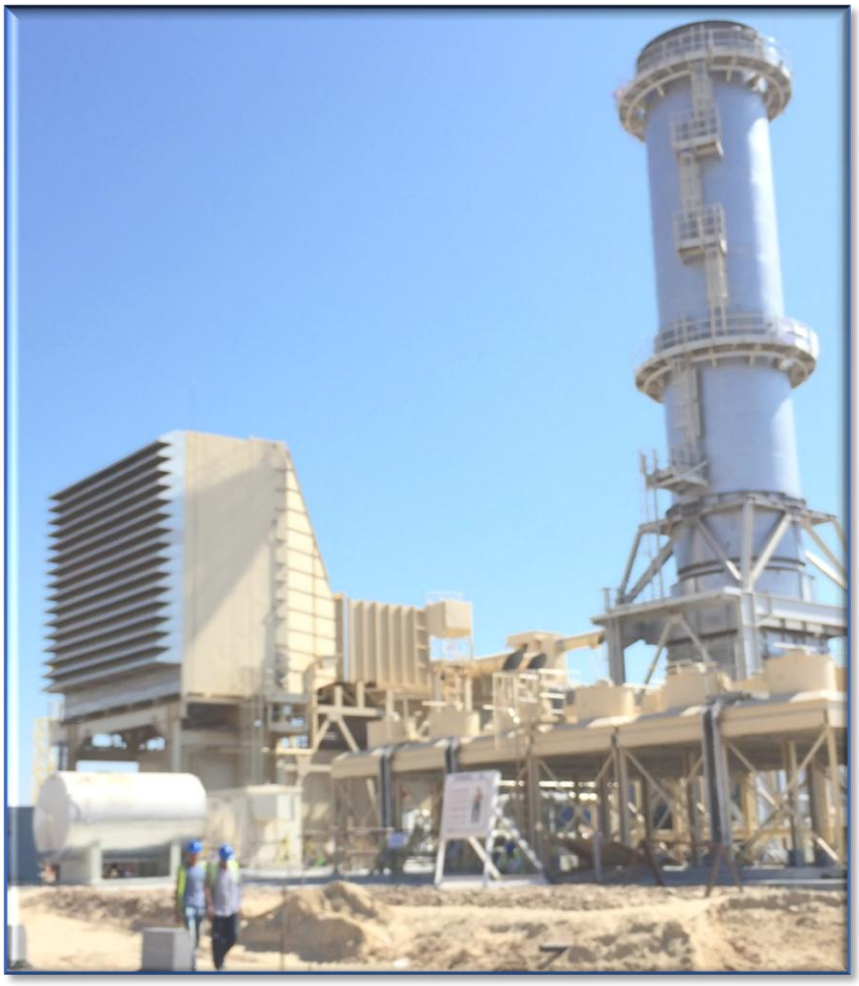
The pumps produce a flow of 80 m3/h with a total pressure of 30m, as said the liquid is sea or brackish water at average temperature of 35°c.

the scope of the pumps is to collect the water in the three main reservoirs which are here shown on the side.

The water once is collected it is treated from the RO plant in order to reduce the salt content and get the water not chemically aggressive for the turbines elements.

Then it is used as coolant for the heating exchangers of the turbines to keep controlled the turbine temperature itself.

After the cycle of the turbine cooling the water it is collected and re-used as irrigation water for the local agriculture plants.



Here following is shown the installation phases of the pumps in those 22 wells.

The depth of the well is about 170 m and each well has a double steel racket to prevent any well damage on the long terms time.

The pumps are installed at a level of -50 m, since the static water level is al -2m .

During the installation the pumps are equipped of electric probes in order to keep monitored the Dynamic level of the well water.

In this final picture it is shown the final phase ot testing and measuring the pump performance by the instrument installed in the temporary delivery pipe.

Those pumps will feed the reservoir with a total flow capacity of 1700 m3/h, working 24 hours per day . All electro pumps will be controlled by variable speed Driver (“VFD”) to grant an accurate control of the cooling water for the Turbines.