Project Profile

Aquatech Supplies Multiple Effect Distillation Units to Thermal Power Plant in Egypt

The Facility

This facility is the Abu Qir Thermal Power Plant in Egypt, Units 6 & 7 with 2 x 650 MW Gas/Oil Fired Units. The Egyptian thermal power plant needed a reliable source of pure water for the boiler feed and other uses.

Aquatech bid for this project in November 2008. The Letter of Award was issued in mid July 2009. The plant was delivered on time to the project site within 16 months from the award date.

Project Overview

The principal objective of this water treatment project was to provide environmental friendly energy with a reasonable price for the investment sector (industrial, agricultural or commercial) as well as the household sector. This objective is in line with the Ministry of Electricity and Energy policy of providing electrical energy to all consumers in the Arab Republic of Egypt.

The project consists of two 650 MW Steam Generators, and two Steam Turbines, Condensers and auxiliaries, and switchyard, etc. West Delta Electricity Production Company (WDEPC) invited sealed bids for design, fabrication; supply of the whole plant, delivery to site, technical assistance, off and on-site training, testing, start-up and commissioning of the Desalination Plant.

Scope of Service

Aquatech provided two Multiple Effect Distillation (MED) units with TVC, each producing 5,000 m^3/day (net) of water guaranteed at less than 5 ppm of total dissolved solids.

The MED system consists of designing, engineering, supplying material, fabricating, testing, and delivery to the site of 2 X 100% capacity MED with Thermal Vapor Compression (MED-TVC) units each of 5,000 m^3/day capacity.

The desalination system has all auxiliaries and components, pumps, valves, controls and other required accessories to form a complete and workable system in accordance with the specifications provided in the Purchase Order. The MED desalination system also includes electrical and control systems.

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Design Water Analysis

Parameters	
Total Dissolved Solids	37,500 mg/l
Conductivity	55,500 µS/cm
Chloride	22,000 mg/l
Total Alkalinity	140 to 160 mg/l as $CaCo_3$
pH	8 to 8.2
Water Temperature	16 to 26° C
Total Suspended Solids	50 to 80 mg/l
Oil and Grease	5 to 10 mg/l

Process Flow Diagram