

PP9 1200 MW COMBINED CYCLE POWER STATION



PROJECT NAME	PP9 1200 MW COMBINED CYCLE POWER STATION
LOCATION	RIYADH
CLIENT	SCECO CENTRAL/RAYTHEON
CONSTRUCTION PERIOD	56 MONTHS

MAC was entrusted by Raytheon Engineers & Contractors, as sub-contractors to Saudi Arabian General Electric to carry out the electro-mechanical, erection works for SCECO Central's PP9 1200 MW Combined Cycle Power Plant.

This project consists of the grassroots construction of a 1200 MW Combined Cycle Power Plant, the first in Saudi Arabia not installed on the sea shore and utilizing air for cooling purposes. The Electro-mechanical construction project involved over 5.5 million man-hours with a sustained peak load of direct manpower of 705 plus 115 indirect labor and supervision totalling 820 men. All personnel were accommodated and catered for in MAC's camp adjacent to the job site. Full life support facilities were provided and involved substantial logistics because of the location of the job site 60 KM East of Riyadh and 400 KM from MAC's Headquarters.





The scope of work included erection of:

- 8000 tons of prefabricated structural steel, pipe racks and platforms.
- Fabrication and installation of ducts and stack assemblies for Gas Turbine Bypass systems and Boiler Exhaust Stacks including prefabrication of site.
- 16 GE Frame 7 Gas Turbines and Auxiliaries (50 MW each);
- 4 GE Steam Turbine and Auxiliaries (100 MW each);
- 16 Heat Recovery Steam Generators (supplied by CMI of Belgium) and with their Auxiliaries, which were built to ASME Standards.
- 4 Air Cooled Condensers (supplied by GIA of San Diego, California).
- Water Treatment Plant and piping network (supplied by Aquatech).
- Crude Oil and Diesel Oil Storage Tanks Piping and I & C connections.
- Fuel Treatment Plant (supplied by Howe-Baker).
- Fuel Unloading and Metering Station.
- Nitrogen Plant.
- Hydrogen Plant.
- Fabrication and installation of 3750 tons above ground pipe work up to 20" in diameter, that included Chrome-Molybdenum, Stainless Steel and



Carbon Steel. Preheat, Post Weld Heat Treatment and NDT, including Dye Penetrant and Gamma-Ray examinations.

- 15,250 instrument loops and equipment including full control room equipment with Foxboro Distributed Control System.
- Electrical works consisting of:
 - Four 24KV ISO Phase Bus Ducts;
 - Sixteen 15KV Non-Segregated Bus Ducts;
 - Underground cable duct banks.
 - Aboveground cable trays and conduits.
 - 620 km of Instrument Cables;
 - 440 km of Control Cables;
 - 290 km of Power Cables;
 - 64 Switchgears & Motor Control Centers.
- Insulation of all equipment and piping, including fabrication and installation of cladding work; involving 35,000 sq.m. of insulation of equipment and 15,000 sq.m. of insulation of piping.
- Painting of all steel work, equipment and piping; involving about 100,000 sq.m. including sandblasting and priming on site of steel work and all site fabricated piping.



MAC Construction