

# Heat Recovery Steam Generator (HRSG) Support for Smelter

MAVERICK provided HRSG support for the largest aluminum smelter complex in the Middle East.

## Objective

MAVERICK was contracted to support the startup of HRSGs for the power block on the largest aluminum smelter complex in the Middle East in Abu Dhabi, United Arab Emirates. The MAVERICK team's role was to tune the HRSG control system and provide support to the personnel on site.

## Results

The largest aluminum smelter complex in the Middle East was started successfully with no issues related to the HRSGs. The plant operates with a net zero power import. The smelter reached full production before the commissioning was completed on the HRSGs, and there were no interruptions in production of more than a couple hours until the completion of the power blocks.

## Solution

This is the largest aluminum smelter complex in the Middle East generating 2000MW of power to produce 750,000 tons of aluminum per year.

The plant is configured with two interconnected blocks consisting of two gas turbines and a steam turbine. Each of the gas turbines has a diverter damper installed allowing simple cycle operations as required.

All four HRSG systems were tuned over the course of a two-week period to provide maximum stability and performance as quickly as possible.

The MAVERICK team held a close relationship with the engineering team and strong knowledge of the process controls which enabled them to assume the role of the lead controls team on site for the HRSG and DCS system. This resulted in an improved startup sequence that allows the units to start automatically through a power management interface.



This project upgraded the control system from Mark VIe GE ToolboxST V3.6.7C to the newer version. This process was completed over the course of several weeks to maintain full production on the smelter.

The MAVERICK team modified the designed software and tuned the plant load control to match the plant load with the smelter demand to minimize the imported and exported power to the point that the facility has a net zero power import.

### The MAVERICK Difference

The field team's in-depth knowledge of the process along with a direct relationship with the engineering teams for the project allowed for quick solutions and improved performance.



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