



Client: UCO Steel  
Consultant: MEEB, Bahrain  
Location: Ras al Door, Bahrain  
Reff. No.: BAH/2018/06/02/01

## 003 - RETROFIT & SERVICING OF MEDIUM VOLTAGE PANELS

### Background

The project was originally started in year 2010 by the client, UCO Marine and was, after a couple of years abandoned. In year 2018, it restarted and the condition of the Medium Voltage equipment was very bad as it was not moth bled. Extreme heat and dusty weather taken its toll on the equipment and was definitely disdained for extensive servicing. The factory also required additional 1000kVA load while the existing load was 2000kVA. The 2000kVA existing load was to feed the main motors and the utilities of the factory disdained to produce 10,000 tons of steel rebar every month. The additional 1000kVA was expected to feed the induction furnace that was to be used for the melting of the scrap steel.

### Case Study

In this project, critical additional load permissions were obtained from the EWA (Electricity Directorate) with the support of the engineering consultant, MEEB, Bahrain. At the first stage, the existing equipment was brought back to service by servicing the two existing outgoing and one incomer, all rated at 600A, 11kV, medium voltage equipment. A shutdown of the supply from the EWA was carried out. The draw-out units of the VCB's (vacuum circuit breaker) after great difficulty as they were completely jammed with dust and moisture. The withdrawal part were then cleaned to remove all dust and other particles completely serviced with dry air, aresole, and thoroughly cleaned. Insulation at 15kV was tested. All contacts were cleaned and all internal parts were also cleaned, inspected, and tested at operating voltage. The additional VCB column was added and the whole MV switchboard was tested, commissioned, and energised in accordance with the Electricity Directorate rules and regulations.

