



Queensland Alumina Ltd (QAL) 11kV Outdoor Stainless Steel Switching Cubicles

Project Overview

Queensland Alumina Ltd (QAL) have throughout their plant in Gladstone Queensland, a number of 11kV outdoor switching cubicles designed to distribute their 11kV network. The harsh environment of an alumina plant and the fact that they are situated right on the coastline, has demanded the application of very robust and long life materials to be used in their construction.

i.power solutions has over the last 4 years been involved with a replacement program of the existing cubicles with a more durable stainless steel version.

Description of Works

The entire cubicle is constructed entirely from 3mm stainless steel. All operating handles and fixings associated with the cubicles are supplied in stainless steel.

The cubicles are made up of incoming and isolator fuse switch combinations. Cable entry is via the top and provisions are made for multiple cable entries up to 185mm² with stainless steel glands. The roof section is designed to accept additional panels to extend the switchboard in either direction and maintain the specified IP rating of IP65.

The main busbars are tinned copper and rated at 630A with all isolating switches a maximum 630A rating. The fuse combinations are then rated for the transformer rating at the end of the feeder. Fuse sizes range from 16A to 200A. Physical isolation is provided by barriers to allow changing of the fuse elements safely while the isolator is in the open position.

Each isolator fuse switch combination is fitted with a mechanically interlocked earth switch for cable earthing. At each incoming panel the main busbars are fitted with a non-ganged hook stick operated earthing switch used only for maintenance purposes.

The LV section contains control and protection of the internal light and anti-condensation heaters installed in each panel.

The cubicles are ideal for this application and are a very cost effective solution for the distribution and protection of transformers throughout any plant.

