

PAVING THE WAY TO A SAFER CONSTRUCTION INDUSTRY

Introduction

Quarry products form part of the essential raw ingredients used to manufacture building products and materials that are used in the construction of residential and commercial buildings, as well as roads and new infrastructure every year.

Boral is a leading provider of construction materials in Australia, including quarry products, and also supplies certain building products across Asia and North America.

Boral's Montrose site, which includes quarrying facilities, a concrete plant and an asphalt plant, has provided materials to help Melbourne's metropolitan areas grow for almost 60 years.

The Montrose site recently underwent an Air Circuit Breaker (ACB) upgrade with the help of SS Electrics and NHP Electrical Engineering.

As part of their preventative maintenance regime, Boral conducted an electrical safety audit of the Montrose Quarrying operation which identified a potential arc flash risk when the current switchgear was operated. The potential consequences of an arc flash not only included damage to switchgear, conductors, switchboards and the overall installation but more importantly the potential risk of serious harm to personnel in the area.

Project Overview

The solution required the isolation of personnel from the vicinity of the switchgear while operating the switchgear, as well as a reduction of the switchgear's arc-fault current potential when personnel are required to work in close proximity of the switchgear.

To implement a hazard control retrofit, Boral appointed SS Electrics as the contractor for the project. SS Electrics, who specialise in industrial and commercial electrical projects were engaged to assist with the design, specification, removal and installation of the Terasaki ACBs.

Boral Montrose is a key contributor to Boral's overall production of construction materials in Victoria. As such, it was critical to minimise downtime and loss of production. To ensure maximum personnel protection, the design encompassed remote operation of switchgear via a local control station located outside of the switchroom adjacent to the access door. This in itself does not necessarily reduce the likelihood of an arc flash event but removes the people from the hazard.

The Solution

The measures taken to reduce the risk of an arc flash in Boral's Montrose switchroom included the installation of NHP's Terasaki TemPower2 Air Circuit Breakers featuring an advanced arc flash energy reduction system which can extinguish an arc in less than 30ms. This technology can significantly limit the amount of let-through energy delivered to an arcing fault, potentially reducing the damage to critical switchgear and the arc blast danger to people working in the switchroom.

To ensure complete customer satisfaction, NHP's Service department worked with SS Electrics to fully commission the new Terasaki TemPower 2 ACBs. This included NHP conducting an AS 3000 compliant protection setting selectivity study, of which the trip unit setting was configured on-site and tested for accuracy and function.

"NHP has been the exclusive distributor and service agent for Terasaki circuit breakers since 1979, uniquely we have a specialist manufacturing workshop just to build Terasaki ACBs at our Victorian National Manufacturing Center. Our Service team know the Terasaki ACB inside and out and they have been specifically trained by Terasaki to deliver best practice services for efficient and reliable operation," Andrew Rofe, NHP's Business Development – Sales.

The collaboration between local Australian companies to cater to Boral's needs at Montrose while executing a rapid installation proved to be successful. Working within Boral's existing switchroom at Montrose, the switchboard modernisation solution was customised and designed according to relevant Australian standards and recognised industrial practices.

"Confidence for a quick and seamless installation was instilled from a long standing relationship between Boral and NHP. Throughout the partnership, we have received unfaltering service, support and quality, and this project was no different," commented Ross Outen, Boral's Production Manager – Quarries.

NHP, alongside SS Electrics, is proud to help keep Boral's operations safe with innovative technology and reliable service.

Project Fact File

Project: Boral Montrose Upgrade

Location: Melbourne, VIC

Details: SS Electrics and NHP provided a solution to isolate personnel from the vicinity of Boral's switchgear whilst operating the switchgear and to reduce the switchgear's arc-fault current potential when personnel are required to work in close proximity of the switchgear.

NHP Products/Services:

- Terasaki TemPower2 Air Circuit Breakers
- Arc flash energy reduction system
- AS 3000 compliant protection setting selectivity study
- Remote operation of ACBs
- Service and commissioning

