RETROFITTING RECHARGES ELECTRICITY SUPPLY THROUGH A RELIABLE SOLUTION

Introduction

Stanwell Power Station is a highly-automated station recognised as one of the most efficient and economic coal-fired power stations in Australia. Owned by Stanwell Corporation Limited who, with an extensive power generation and energy infrastructure portfolio across Queensland, has a wealth of experience in the supply of energy.

The station is located approximately 23 kilometres south-west of Rockhampton, Queensland and is one of Stanwell's major operating sites.

With the capacity to generate 1460 megawatts using four power generation units, Stanwell Power Station supplies approximately 15 percent of Queensland's annual electricity demands by burning low sulphur black coal.

Constantly aiming to ensure a reliable, secure and affordable electricity supply, Stanwell Power Station has positioned itself as one of Australia's leading power generation sites, regularly distributing electricity to customers not only in Queensland, but throughout the country to the National Electricity Market.

Project Overview

After assessing the status of all equipment to ensure aspects were functioning at the optimum levels as part of a plant-wide upgrade, it was determined that the Stanwell Power Station required a replacement of their 415V Air Circuit Breaker (ACB) for Unit 415V Switchboard, and Ash and Dust 415V Switchboard.

The existing ACBs had been in service since the units at Stanwell were first commissioned in 1993 and were experiencing reliability issues due to aging component failure. As well as this, they were difficult to maintain due to the unavailability of spare parts and support from the OEM.

With safety and operational efficiency taking priority, the decision to retrofit the ACBs installed in the plant was made, and Stanwell saw NHP as the preferred choice to perform the services required for the upgrade.

The Solution

The NHP Service Team removed the legacy ACBs, retrofitting them with 2000A and 3200A Terasaki AR ACBs which incorporated the premium model AGR31C protection relay with integrated 3C over temperature protection. 3C over temperature protection is a breakthrough self-monitoring temperature system for checking the condition of the AR ACBs main contacts and conductive path and sets industry leading standards without compromise.

To assist with the retrofit, NHP used CAD designed Conversion/Upgrade Kits made specifically for NHP Terasaki ACBs. These kits are fully engineered, removing the need for onsite busbar bending and alteration. The kits come fully prefabricated to convert the new ACB connections to match the old ACB connections precisely, allowing fast and smooth integration within existing infrastructure.

NHP's compliance with the technical specifications of the existing ACBs and the added capacity for trusted technical support, maintenance and a reliable spare parts supply gave a quick and seamless installation with the right backup and on-site training.

Being the only authorised and trained Australian and New Zealand Terasaki distributor and service agent, NHP's Service Team have been specifically trained by Terasaki to deliver best practice services from concept design through to installation and after-sales service. On-site training was delivered to ensure the Stanwell electricians were well equipped for the new ACBs, demonstrating NHP's commitment to deliver industry-leading support.

"With a strong focus on minimising operational risks and enhancing personnel safety on the site, the ACB upgrade was embarked on to ensure any faulty or unreliable tripping and reset mechanisms which can often be associated with aging ACBs were resolved," said James Huf, NHP's Service Technician.

"Our Service Team are specifically trained in modernising protection systems with a future proof solution to increase overall system reliability and plant safety. We were confident in the retrofit product sourced from one of our global partners which we customised to the local standards and further tailored to Stanwell's needs," continued Huf.

With Stage 1 of the project now successfully completed, attention turns to the eventual completion of the remainder of Stanwell Power Station's onsite power generation units.

NHP looks forward to playing an important role to help shape and transform one of Australia's leading power stations as it continues to set the benchmark for efficient and reliable electricity generation into the future.

Project Fact File

Project: Stanwell Power Station Upgrade

Location: Stanwell, Queensland

Details: With safety and operational efficiency taking priority, the decision to retrofit ACBs installed in the plant was made, and Stanwell saw NHP as the preferred choice to perform the services required for the upgrade.

NHP Products/Services:

- Service, commissioning and on-site training
- Terasaki ACBs (AR220 (2000A 3 Pole) and AR332 (3200A 3 Pole))
- Legacy ACB to modern AR Conversion/Upgrade Kits
- Protection relays
- 3C over temperature protection