

For Immediate Release 08/25/2020

CONTROL TECHNIQUES MENTOR DRIVE CHOSEN FOR CLIFF RAILWAY PROJECT

Control Techniques has been chosen to provide a new DC system for a historic cliff railway project in Aberystwyth, UK.

Motor Control Warehouse, on behalf of Aberystwyth Cliff Railway, had a challenge to solve. The company realized the railway's control system was becoming harder to maintain due to components being made obsolete.

Constitution Hill, Aberystwyth, rises dramatically from the sea, providing spectacular and uninterrupted views of the town, Cardigan Bay, and on a clear day 26 mountain peaks spanning the length of Wales. A popular and relaxing way to enjoy this majestic panorama is to travel by train on the longest funicular electric cliff railway in Britain, which has been transporting visitors to the summit since 1896.

The original control panel was built in the 1980s and utilized Control Techniques' first-generation Mentor DC drive - the world's first variable speed drive to use a microprocessor in its control system.

Control Techniques' Mentor MP was central to the winning solution. Readily available, Mentor MP eradicates the previously experienced maintenance issues. Controlled stopping was implemented using a four-quadrant drive, and additional fail-safes to stop the motor under an emergency stop condition, including limit switches to improve safety in case of failure. The solution was further enhanced by





moving the safety circuit to a dual-channel, bringing the system up to date - now meeting SIL3 Category 1.

The new super modern control system has improved the operability of the 124-year-old railway system for both tourists and staff. The replacement system was fully implemented before the railway's annual seasonal opening. Amazingly, the original Mentor drive was still operational at the point when the old system was decommissioned, having completed approximately 200,000 round trips in its lifespan.

Gez Evans, Manufacturing Director of The Motor Control Warehouse, said: "Due to the advancement in technology, the railway sought to improve the safety of the system. From our investigatory work, we found the original safety circuit to consist of single-channel limit switches, emergency stops, and over speed detection devices - all wired in series with a basic latching circuit, on a single e-stop contactor.

"A single fault on any of the limit switches, E-Stops, Overspeed detection device, or E-Stop contactor could cause a catastrophic failure. Therefore, our main design objectives were to build a system comprised of readily available components, with several fail-safes in place to prevent a single component failure potentially causing a dangerous situation."

ENDS

Control Techniques, a Nidec Motor Corporation business, is a world leader in the design and production of electronic variable speed drives for the control of electric motors. Founded in 1973, the company has global headquarters in Newtown, Wales UK with the Americas headquarters in Eden Prairie, MN USA. Control Techniques has dedicated production and R&D sites globally, along with Automation Centers in 45 locations around the world.

For more information visit www.ControlTechniques.us

