



The project involved the renewal of 21 new VMAG 25 high voltage circuit breakers (HVCB's), associated busbar supports, bus section through wall bushing and voltage transformers within each busbar chamber. The interface between the existing Alstom Micom Protection relays and VMAG 25 CB was modified and re-commissioned to ensure compatibility and correct tripping functionality.

Contract Details

Commenced August 2011
Completion January 2012
Client Babcock Rail / NWR

Location

East Coast Main Line York FS
 Hare Park TSC
 Colton Junction TSC

Principal Works

- Installation of new VMAG-25kV Circuit Breakers, through wall bushings, Voltage Transformers, isolators.
- Testing and Commissioning installed HV Equipment.
- Level A / B switching, isolation and earthing engineers.
- Cross Boundary National Grid testing of Incoming feeder circuits.
- Entry into service testing

Over the past few years, surface partial discharge was detected within the high voltage busbar chambers of York feeder station. It was suspected that this occurred due to the poor environment conditions around York feeder Station.

Routine testing indicated that the insulation levels of the switchgear had deteriorated below acceptable levels at York feeder station.

As part of a program to upgrade the HVCB's and gain strategic spares Network Rail chose to replace the existing HV Circuit Breakers at three GEC MK2 substations, York FS, Hare Park TSC, and Colton Junction TSC with new HSS VMAG 25 CB's.

WJ Project Services with its proven track record for supporting and delivering different works on the Network Rail infrastructure were engaged to undertake the isolation and earthing in order to carry out the renewals and commissioning of the new VMAG 25 circuit Breakers.

Detailed switching schedules were produced to allow a rolling

changeover program that minimised outage times of each circuit being renewed to keep alternate feeding arrangements to the shortest possible timescale. On completion of each site all test result files were compiled ready to be included within the hand back package.

Installation, Testing and Commissioning of the new HV equipment included:

- Installation of the new Circuit Breakers and other associated HV equipment.
- Installation of the interface wiring between the new VMAG 25 CB to the existing plant and protection scheme.
- SCADA end to end tests;
- Protection relay testing
- Function and Interlocking testing;
- HV Pressure testing;
- Ductor testing of Busbars
- CT / VT wiring / Polarity testing;
- LV wiring testing;
- Cross Boundary Testing for the incoming feeder circuits at York FS.