Press Release

PROMOTioN
PROGRESS ON MESHED HVDC OFFSHORE TRANSMISSION NETWORKS

The National HVDC Centre

On 22nd August 2019, The National HVDC Centre in Great Britain was pleased to lead the demonstration of how multi-terminal HVDC Grids can be protected; this demonstration was undertaken as part of the PROMOTioN project.

Context

One of the challenges for developing the DC multi-terminal grids of the future, is how to protect the system in the event of a fault, so that only the faulty components are isolated rather than having to isolate the whole DC grid. Such protection requires intelligent electronic devices to monitor the grid and quickly detect and identify faults.

As part of the PROMOTioN Project two such devices have been developed and here at The National HVDC Centre we have the responsibility of demonstrating how these devices will work in practice (within a simulated environment).

Demonstration Event

On 22nd August 2019, The National HVDC Centre in Great Britain was pleased to lead the demonstration of how multi-terminal HVDC Grids can be protected. The event successfully brought together project partners from the PROMOTioN project with the purpose of demonstrating HVDC protection implementation. This was done by using real-time simulation to test protection hardware integrated within a simulated model of an HVDC Grid; combined with direct current circuit breaker (DCCB) real-time simulation models. The protection hardware used were two intelligent electronic devices (IEDs): one was developed in PROMOTioN Work Package 4; and the other provided by Mitsubishi Electric Europe, which is developed by its parent company Mitsubishi Electric Corporation (centre of picture).

Beyond this event further testing will be undertaken to assess the performance of the protection system and to investigate the interoperability of the different components. This will culminate in a public demonstration event next year (at The National HVDC Centre).

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PROMOTioN Project

The testing is being performed as part of the PROMOTioN project, which has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 691714. The PROMOTioN project aims to tackle technical, regulatory, financial and legal challenges to the implementation of HVDC transmission networks. The PROMOTioN project works towards increasing the confidence in future HVDC networks. Demonstrating that novel HVDC protection methods are suitable for future power systems is a core part of the project, and real-time testing of protection strategies and HVDC relays are an important aspect within this.

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The National HVDC Centre

The National HVDC Centre is a simulation and training facility, supporting the integration and successful operation of all HVDC schemes connecting to Great Britain's (GB's) Grid Network; using state-of-the-art simulators to model and resolve potential issues in real-time before they impact on the delivery (or operation) of HVDC projects, to ensure the integrity and security of the GB Network.

The Centre is Great Britain's real-time testing facility for HVDC schemes and a National hub for HVDC knowledge exchange, expertise and innovation; it is part of Scottish and Southern Electricity Networks, in collaboration with Scottish Power and National Grid, funded through Ofgem's Electricity Network Innovation Competition.