

A Control Room Demonstration Suite (CoRDS) to Assess the Control Room Management Requirements of Active Distribution Networks

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Abstract

The operating philosophy of distribution networks is transitioning from passive to active, and a significant amount of projects are underway looking at the impacts of the connection and operation of distributed generation (DG) and active network management (ANM) schemes. This research is concerned with the impacts of active distribution networks in the control room, and early studies have proved that an increasing volume of SCADA alarms is one of a number of issues that must be addressed in order that control rooms are equipped to manage networks with large penetrations of DG and ANM schemes.

In order to assess the management requirements of control rooms in future, a Control Room Demonstration Suite (CoRDS) was developed in collaboration with a UK distribution network operator (DNO). The CoRDS is assembled from common control room components including an offline version of ENMAC, a widely used distribution management system (DMS), simSCADA and power system analysis software. The main objectives of this work are to assess

- The development of ANM scheme interfaces in a DMS
- The behaviour of ANM schemes in response to a broad range of network events and conditions
- The level and nature of interaction of control engineers with ANM schemes
- Different levels of DG and ANM scheme deployment and the impact this has on the developed control room interfaces to ANM schemes

A short presentation will present the CoRDS system, any early results from these investigations, and the impacts this will have on distribution control rooms. A discussion regarding possible pathways towards preparedness for control rooms will also be included.