SQSS Review Panel – Modification Proposal

REVIEW OF OFFSHORE INFEED LOSS

Date Raised: January 2012

A Panel Paper by the GB SQSS REVIEW GROUP SECRETARY ON BEHALF OF THE THREE TRANSMISSION LICENSEES (SHETL, SPT & NGET)

Summary

The NETS SQSS criteria for the connection of offshore generation allows for generation capacities up to the defined Infrequent Infeed Loss Limit to be connected by a single radial cable. Consideration is currently being given to extending this offshore criterion so that it is applicable to an offshore interconnected network, with the standards allowing for losses up to the Infrequent Infeed Loss Limit for the loss of any offshore cable. The combined probability of losing a large onshore generator and the probability of losing offshore generation due to a cable fault may increase the frequency of losses up to the Infrequent Limit such that they become "normal" events.

Whilst offshore cable faults are relatively rare, there is the possibility of several cables suffering faults at similar times, for example due to an anchor being dragged across parallel cables. Such an event may cause a loss of generation above the Infrequent Infeed Loss Limit, leading to widespread defensive load shedding.

Users Impacted

Onshore and Offshore Transmission Owners and System Operator.

Description & Background

The aim of this working group is to determine and make recommendations on the following:

- Are future losses of generation between the Normal and Infrequent Loss Limits likely to be sufficiently frequent to be normal?
- If this is the case, what are the implications of this and how should these implications be managed?
- What is the likelihood of a multi-cable loss and what would be the impact of this?
- Should mitigation measures against multi-cable losses be required and if so, what should they be?

In order to address these questions, the working group shall consider the following:

- HVDC converter fault rates from around the world.
- Offshore cable fault rates from around the world.
- Current thinking on what is "normal" and what is "infrequent".
- The impacts on security and costs of a higher number of infrequent losses.
- The impacts on security and costs of losses greater than the infrequent limit.
- The costs and benefits of cable fault mitigation measures.
- The costs and benefits of HVDC converter fault mitigation measures.

Proposed Solution

The solution will be determined through due consideration of the above questions.

Assessment Against SQSS Objectives
(i) facilitate the planning, development and maintenance of an efficient, coordinated and economical system of electricity transmission, and the operation of that system in an efficient, economic and coordinated manner; The proposals will determine the optimum design and connection criteria for the offshore transmission system, taking into account security of the system, costs…etc… ***(ii) ensure an appropriate level of security and quality of supply and safe operation of the National Electricity Transmission System;*** The proposals will determine the optimum design and connection criteria for the offshore transmission system, taking into account security of the system, costs…etc… ***(iii) facilitate effective competition in the generation and supply of electricity, and (so far as consistent therewith) facilitating such competition in the distribution of electricity;*** N/A ***(iv) facilitate electricity Transmission Licensees to comply with their obligations under EU law.*** N/A

Impact & Assessment
Impact on the SQSS Chapter 7 may be reviewed and amended as a result of this modification proposal. ***Impact on the National Electricity Transmission System (NETS)*** N/A ***Impact on Greenhouse Gas Emissions*** N/A ***Impact on relevant computer systems*** N/A ***Impact on core industry documents*** Unknown ***Impact on other industry documents*** Unknown

Supporting Documentation
Have you attached any supporting documentation No If Yes, please provide the title of the attachment:

Recommendation
The SQSS Review Panel is invited to: Progress this issue to a Workgroup for further analysis and discussion