Grid Code Review Panel

GC0094 - Relevant Electrical Standards

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National Grid Electricity Transmission

Summary

Electrical standards contain the technical specifications, policies and procedures that must be complied with by all Users connected to or seeking connection to the Electricity Transmission System. These standards are owned by the Transmission Owners – National Grid for England & Wales and SHE Transmission and SP Transmission for Scotland.

Similar standards are owned by the Distribution Network Operators in England & Wales and Scotland which Users have to comply with if they wish to connect to the Distribution System.

In England and Wales the electrical standards owned by National Grid have been combined into a single Relevant Electrical Standards document. Extensive work has been carried out recently to make sure that this is up to date and that all changes have been appropriately reflected to industry following the change control process established under GCRP. The Scottish Transmission Owners have also sought to update their standards and SHE Transmission have produced an interface document setting out their general adoption of the RES with documented exceptions.

Industry have raised an issue regarding the regional differences in standards and inconsistency in how they apply to the Users at their connection points, advocating having a single set of GB standards wherever possible allowing for specific regional differences.

This paper has been written following presentation and discussion at the Grid Code Development Forum on 14 April 2016 which helped to consider the suggestions and develop a proposal for presentation to GCRP.

Users Impacted

High

Transmission Owners (including OFTOs and Interconnectors), Distribution Network Operators, Transmission System Users

Medium

System Operator

Low

None

Description & Background

The Relevant Electrical Standards in England and Wales and the equivalent Scottish electrical standards contain the technical specifications, policies and procedures that must be complied with by all Users connected to or seeking connection to the electricity transmission system. These standards seek to maintain an appropriate level of reliability and security for the transmission system. Users are required to meet these requirements for their equipment directly connecting to the transmission system.

The electrical standards are owned by the owner of the transmission assets. National Grid owns as the England & Wales Transmission Owner and SHE Transmission and SP Transmission own standards for their respective areas. There are a range of differences between the standards legitimately due to regional differences of which the main area is the treatment of 132kV

equipment as transmission assets in Scotland.

Furthermore, the Distribution Network has its own electrical standards for distribution system connected equipment. Each DNO has its own set of standards that Users connecting to their network has to comply with.

These differences and inconsistencies in the electrical standards cause difficulty for Users as it takes time and effort to check connection designs against each set. In addition, costs may vary based on these differences which can hinder investment decisions. Users also feel that there is a lack of transparency in the justification for the regional variations and the governance of the change process is inefficient.

With the potential introduction of new Transmission Owners (either as a result of onshore competition or the extension of offshore networks) in the future the application of these standards will become further complicated. Any new Transmission Owner may want to introduce new electrical standards for their network where there are current standards in place. This could further complicate the connection process and may lead to further increases in time and costs for new connections.

Proposed Solution

Through previous discussions at the GCRP and at the April 2016 GCDF it has been highlighted that there are several ways in which this issue can be resolved.

Below are the options proposed to resolve this issue:

- The Scottish TOs adopt the England & Wales standards (the RES) and create interface documents detailing any remaining differences. While a viable solution this does require work to keep up to date.
- Create a core set of standards for the Transmission System. This potentially leads to an inconsistency of application at 132kV.
- Undertake a wider review of the Transmission and Distribution standards together to create a core set of standards. These standards can be held by the Energy Networks Association (ENA). Variations to the standards will be subject to justification. This potentially solves the current issues and any future issues which may arise.

Through discussions held at the GCDF and with the ENA it is proposed that a joint GCRP/DCRP workgroup is set-up to review the electrical standards and the potential solutions with a view to create a set of core standards. Following the creation of a core standard the Grid Code and the Distribution Code would need to be amended appropriately to achieve consistent application across the Transmission and the Distribution systems.

Assessment against Grid Code Objectives

[Will the proposed changes to the Grid Code better facilitate any of the Grid Code Objectives:]

(i) to permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity;

The proposed solution will allow the System Operator / Distribution Network Operators to efficiently apply the requirements to the Users of the system through the Industry Codes.

(ii) to facilitate competition in the generation and supply of electricity (and without limiting the foregoing, to facilitate the national electricity transmission system being made available to persons authorised to supply or generate electricity on terms which neither prevent nor restrict competition in the supply or generation of electricity);

Proposed solution will assist the Users of the Transmission and the Distribution system during the connection process.

(iii) subject to sub-paragraphs (i) and (ii), to promote the security and efficiency of the electricity generation, transmission and distribution systems in the national

electricity transmission system operator area taken as a whole; and

Creation of a core set of standards would allow the most up to date standards to be applied for any new connections which would aid in more secure and reliable network across GB.

(iv) to efficiently discharge the obligations imposed upon the licensee by this license and to comply with the Electricity Regulation and any relevant legally binding decisions of the European Commission and/or the Agency.

Any potential future GB Regulation changes in the roles and responsibilities of the System Operator and Transmission Owners would be covered by this solution with respect to electrical standards

Impact & Assessment

Impact on the National Electricity Transmission System (NETS)

Positive in terms of providing Users more transparency during the connection process

Impact on Greenhouse Gas Emissions

NA

Impact on core industry documents

Electrical Standards documents, Grid Code, Distribution Code

Impact on other industry documents

NA

Supporting Documentation

NA

Recommendation

The Grid Code Review Panel is invited to:

[Progress this issue to Industry Workgroup pending further approval from the Distribution Code Review Panel]

This solution will have potential resource implication on ENA. The Panels will have to consider how ENA will be resourced in order to proceed with the development of these core set of standards.

Document Guidance

This proforma is used to raise an issue at the Grid Code Review Panel, as well as providing an initial assessment. An issue can be anything that a party would like to raise and does not have to result in a modification to the Grid Code or creation of a Working Group.

Guidance has been provided in square brackets within the document but please contact National Grid, The Code Administrator, with any questions or queries about the proforma at grid.code@nationalgrid.com .