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Your Ref:
Our Ref:
Direct Dial: 020 7901 7430
Email: steve.smith@ofgem.gov.uk

Date: 7 May 2008

Dear Colleague,

Impact of Larger Generating Units on GB Electricity Supply Frequency – Standards and Governance

We have received queries about the governance framework and regulatory process regarding the potential impact of larger generating units connecting to the GB transmission system on the frequency standards and how any additional costs would be treated. The purpose of this open letter is to provide clarification on the governance framework and regulatory process associated with these issues.

There are statutory limits and licence obligations that determine the frequency levels at which electricity is supplied in the interests of safety and system security.

Statutory Limits

The Electricity Safety, Quality and Continuity Regulations 2002 require the system operator to maintain the system frequency within the statutory limits between 49.5Hz and 50.5Hz, save in exceptional circumstances.

Changes to these limits can be authorised by the Secretary of State under Regulation 27 following application by any affected electricity distributor.

Licence Standard

Associated with this statutory obligation, the GB Security and Quality of Supply Standard (GBSQSS), which the transmission licensees are obliged by their licence conditions to comply with, sets out the following criteria:

- The Design of Generation Connection criteria: a single outage of generation circuit or busbar would not cause an infeed loss exceeding the normal infeed loss limit of 1000MW, and a double outage of generation circuits or transmission circuits would not cause an infeed loss exceeding the infrequent infeed loss limit of 1320MW. Customer choice for variation to the connection design necessary to meet such requirements is allowed within GBSQSS provided that no adverse impact is caused on other users in terms of security and costs.

- Operational criteria: for an outage of a loss of power infeed (which is defined to include a generating unit, a CCGT module, a boiler a nuclear reactor, or a DC link bi-pole), or an outage of any single circuit, any double circuit overhead line or busbar, Unacceptable Frequency Conditions must not arise. Unacceptable Frequency

Conditions are defined as the steady state system frequency falling outside the statutory limits 49.5Hz to 50.5Hz, or transient deviation outside the statutory limits by more than 60 seconds.

Changes to the GBSQSS (not relating to the statutory frequency limits) can be approved by Ofgem. The current version of the GBSQSS was introduced at the same time as the introduction of BETTA. Further details can be found on National Grid's website (http://www.nationalgrid.com/uk/Electricity/Codes/gbsqsscode/).

The governance of the GBSQSS is managed by the GBSQSS Review Group whose members include the three transmission licensees (National Grid Electricity Transmission, ScottishPower Transmission Ltd and Scottish Hydro Electric Transmission Ltd) and an observer from Ofgem. A request to review the GBSQSS may be made by any relevant interested person, including BERR. The GBSQSS Review Group will conduct the relevant analysis via industry working groups and carry out consultation with the industry, and then submit an Amendment Report to the Authority for approval.

Proposed changes to the GBSQSS

NGET indicated that generating units larger than the maximum infeed loss set out in the current GBSQSS could be connected to the transmission network and there were no insurmountable technical reasons to restrict this. However, NGET also indicated that the increase in frequency control costs in operating the network to accommodate an increase infeed loss could be significant. Based on current GBSQSS and commercial framework NGET was obliged to issue offers on a "customer choice basis" (i.e. with the generator being liable for additional costs associated with connection). However, subsequently work has been initiated to review the GBSQSS and any consequential impact to the commercial framework to resolve the appropriate treatment of costs in operating the network. This was incorporated into the GBSQSS Review Group work plan. Depending on the conclusion of this review, existing and future "customer choice" agreements would be modified accordingly.

A GBSQSS review request was raised by EDF in February 2008[1] (and formally discussed at the April 2008 GBSQSS Review Group meeting), aiming to increase the normal and infrequent infeed loss limits such that a generator of greater size can be connected to the GB transmission system under standard terms. An industry working group is being set up by the GBSQSS Review Group and expected to commence the review in June 2008, with an expected conclusion by June 2009.

Ofgem expects that the review of the impact of greater generating units on the GB transmission system will take into account all the relevant issues including:

- the appropriate level of risks to be covered in managing the system frequency within the statutory limits;
- the efficiency of transmission investment and operational measures to cover such risks; and
- potential impact on all users of the transmission network and ultimately consumers.

Given the significance of these issues, we expect to carry out an Impact Assessment after receiving the Amendment Report from the GBSQSS Review Group before making our decision on any potential changes. If an Impact Assessment was carried out any decision would be likely to take around 4 months from the date any report was submitted.

[1] http://www.nationalgrid.com/NR/rdonlyres/0951D356-E277-4E03-823E-A381FD008BA6/24946/Infeed_Loss_Limits.pdf

The Office of Gas and Electricity Markets
9 Millbank London SW1P 3GE **Tel** 020 7901 7000 **Fax** 020 7901 7066 **www.ofgem.gov.uk**

Other related changes

In addition to the review of the system planning and operational criteria, there may also be a need to review the current charging arrangements that determine how any additional frequency control costs are allocated between users of the transmission system. Any review and proposed changes would be likely to be to National Grid's Balancing Use of System Charging Methodology. National Grid would need to raise a proposal, consult with the industry and other interested parties and then submit a report to the Authority. The Authority would then have 28 days to approve or veto any proposed amendment. The Authority may decide that an impact assessment is required before reaching its decision. As explained above, if an Impact Assessment was carried out any decision would be likely to take around 4 months from the date any report was submitted.

It is important to note that in exercising their functions and taking any decisions both the Secretary of State and Ofgem will be subject to their principal objective and statutory duties.

Yours faithfully,

Steve Smith
Managing Director, Networks

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9 Millbank London SW1P 3GE **Tel** 020 7901 7000 **Fax** 020 7901 7066 **www.ofgem.gov.uk**