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| Modification proposal: | Grid Code GC0108: EU Code: Emergency & Restoration: Black Start testing requirement¹ | | |
| Decision: | The Authority ² directs ³ that the proposed modification to the Grid Code be made | | |
| Target audience: | National Grid Electricity Transmission PLC (NGET), the Grid Code Review Panel, Grid Code users and other interested parties | | |
| Date of publication: | 21 November 2018 | Implementation date: | 18 December 2018 |

Background

Black Start is the procedure used to recover from a Total or Partial Shutdown of the National Electricity Transmission System (NETS) which has caused an extensive loss of electricity supply. The Black Start service is procured from power stations with generators that have the capability to start main blocks of generation from an on-site auxiliary generator, without reliance on external site supplies (Black Start Stations). Not all generators have, or are required to have, Black Start Capability. The Black Start service requires the Black Start Station to start up its main generator(s), carry out initial energisation of sections of the NETS and distribution network, and support sufficient demand to create and control a stable power island. The Black Start Station may be required to provide start up supplies to other power stations as system restoration progresses, and will eventually be required to synchronise to other power islands to restore the interconnected system. The restoration is initiated under the instruction of National Grid, who have an obligation under the Grid Code, CC.6.3.5⁴ to ensure that the NETS can be re-energised in the event of a Total or Partial Shutdown. National Grid is required, under Special Condition 4G of its Transmission Licence, to set out the strategy⁵ it will use to determine and procure Black Start Capability in an economic and efficient manner, in order to ensure system security.

The Emergency and Restoration Code⁶ ("E&R Code"), requires the System Operator to produce a system defence plan that can be enacted in the event of significant issues affecting the system. It also requires a restoration plan, detailing the actions to be taken to restore supply in the event that the system enters the Blackout state, as defined by Transmission System Operation Guideline⁷. Finally, the E&R Code details how defence and restoration capabilities should be tested for compliance. Some clauses in the E&R Code

¹ <https://www.nationalgrideso.com/sites/eso/files/documents/GC0108%20FMR%20Complete%20V3.pdf>

² References to the "Authority", "Ofgem", "we" and "our" are used interchangeably in this document. The Authority refers to GEMA, the Gas and Electricity Markets Authority. The Office of Gas and Electricity Markets (Ofgem) supports GEMA in its day to day work. This decision is made by or on behalf of GEMA.

³ This document is notice of the reasons for this decision as required by section 49A of the Electricity Act 1989.

⁴ CC.6.3.5 of the Grid Code states "It is an essential requirement that the National Electricity Transmission System must incorporate a Black Start Capability. This will be achieved by agreeing a Black Start Capability at a number of strategically located Power Stations. For each Power Station The Company will state in the Bilateral Agreement whether or not a Black Start Capability is required."

⁵ National Grid: Black Start Strategy 1 April 2018 to 31 March 2019:

<https://www.nationalgrideso.com/sites/eso/files/documents/Black%20Start%20Strategy%20Version%202%20April%202018.pdf>

⁶ Commission Regulation (EU) 2017/2196 of 24 November 2017 establishing a network code on electricity emergency and restoration:

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2017.312.01.0054.01.ENG

⁷ Commission Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation:

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017R1485>

relating to Black Start service testing frequency are different to current Great Britain (GB) practices as specified in the Grid Code Operating Code No.5 (OC5). GC0108 seeks to align the Grid Code with the testing requirements set out in the E&R Code.

The modification proposal

Following a code mapping review of the E&R Code undertaken by an industry review group on 31 January 2017, an amendment to the Grid Code was found to be necessary in order to align the Grid Code with the testing requirements set out in the E&R Code. Article 44 of the E&R Code requires that a restoration service provider (Black Start Station) shall execute a Black Start Unit Test at least once every three years. The Grid Code currently stipulates that a Black Start Unit Test may be required no more than once a year.

GC0108 proposes to amend Grid Code Operating Code OC.5.7.1 to align the required Black Start Unit Test frequency with the testing requirements specified in the E&R Code. It does so by inserting the following text to OC.5.7.1(b):

- *"The Company shall require a Generator with a Black Start Station to carry out a BS Unit Test on each Genset which has Black Start Capability within such a Black Start Station to demonstrate this capability at least once every three years."*

Other existing Black Start Unit Test requirements such as in OC.5.7.1(c)⁸ shall remain in effect. We note that the E&R Code refers to Black Start Unit Tests only, and therefore the existing GB requirements for Black Start Station Tests will remain in effect. The Black Start Station Test requirements are consolidated into a new clause OC.5.7.1(d).

Modification Development

GC0108 was proposed by National Grid and was submitted to the Grid Code Review Panel (GCRP) on 14 March 2018. On 22 March 2018 the GCRP decided that a Workgroup was not required for this modification and confirmed unanimously that the proposals met the Self-Governance Criteria⁹. A Code Administrator Consultation closed on 17 May 2018 and received four responses. The responses were broadly in support of the modification. One respondent was concerned that the GC0108 was not consistent with the E&R Code. We understand that this was due to a misunderstanding of the requirements of the E&R Code, and that the respondent now accepts that GC0108 is consistent with the Black Start Unit Test frequency as required by the E&R Code.

A GC0108 Draft Self-Governance Report was presented to the GCRP on the 28 June 2018. The Panel reviewed the Code Administrator Consultation responses within the Report and decided to retract their Self-Governance statement. The Draft Final Modification Report was presented for a second time to the Grid Code Review Panel on 18 July 2018. On 15 August 2018 the Panel made the decision to re-consult on the modification following the responses received during the initial Code Administrator Consultation phase under GR22.4 (ii). The legal text was updated following the responses received. This second Code Administrator Consultation closed on 12 September 2018 and received four responses. One respondent stated that they do not believe that GC0108 facilitates the operation of an

⁸ *"The Company may require a Generator with a Black Start Station to carry out a BS Unit Test at any time (but will not require a BS Unit Test to be carried out more than once in each calendar year in respect of any particular Genset unless it can justify on reasonable grounds the necessity for further tests or unless the further test is a re-test"*

efficient and economical transmission system due to the onerous testing requirements which will increase the cost for consumers. We agree with NGET's response which highlighted that GC0108 simply achieves alignment between European Law, as in the E&R Code, and the Grid Code and does not place any additional obligation upon Users¹⁰ who are already bound by the E&R Code requirements.

Grid Code Review Panel recommendation

On 27 September 2018, the GCRP agreed by majority vote that GC0108 better facilitates the applicable Grid Code Objectives and recommended that it should be implemented. We note that the Panel voted without view of a confidential response to the second Code Administrator Consultation, at the respondent's request that this not be disclosed. We have considered this response and understand it to be isolated to the particular circumstances of the respondent and to have little impact on GC0108.

Two Panel members noted that, in their view, GC0108 discriminates unduly between generators and interconnectors. We recognise that the E&R Code does stipulate Black Start requirements for interconnectors, however at present there are no interconnectors providing Black Start capability in GB and for this reason no Grid Code requirements relating to Black Start for interconnectors have been included. We understand that the intention underpinning GC0108 is the alignment of the Black Start Unit Test requirements set out in the Grid Code with those specified in the E&R Code, accordingly NGET propose to initiate a further Grid Code modification to account for interconnectors providing Black Start.

The Panel noted that a consultation respondent had expressed a desire for the modification to be progressed through a workgroup to improve engagement. The Panel were sympathetic to the suggestion but considered the modification to be a straightforward change and that engagement had taken place through the Grid Code Development Forum and the Black Start Task Group. The Panel noted this as a learning point for the future to ensure sufficient engagement, however agreed that it would not have changed the outcome.

Our decision

We have considered the issues raised by the modification proposal and in the Final Modification Report dated 11 October 2018. We have considered and taken into account the responses to the industry consultation on the modification proposal which are included in the Final Report¹¹. We have concluded that:

- implementation of the modification proposal will better facilitate the achievement of the objectives of the Grid Code;¹² and
- approving the modification is consistent with our principal objective and statutory duties.¹³

¹⁰ "Users" is defined in the Grid Code as "A term utilised in various sections of the Grid Code to refer to the persons using the National Electricity Transmission System, as more particularly identified in each section of the Grid Code concerned. In the Preface and the General Conditions, the term means any person to whom the Grid Code applies. The term User includes an EU Code User and a GB Code User."

¹¹ Grid Code proposals, final reports and representations can be viewed on NGET's website at:

<http://www2.nationalgrid.com/UK/Industry-information/Electricity-codes/Grid-code/Modifications/>

¹² As set out in Standard Condition C14(1)(b) of NGET's Transmission Licence, available at:

<https://epr.ofgem.gov.uk/>

¹³ The Authority's statutory duties are wider than matters which the Grid Code Panel must take into consideration and are detailed mainly in the Electricity Act 1989 as amended.

Reasons for our decision

We consider this modification proposal will better facilitate Grid Code objectives (iii) and (iv) and has a neutral impact on the other objectives.

(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

GC0108 requires Black Start Station's to carry out a Black Start Unit Test on each Genset within the Black Start Station with Black Start Capability at least once every three years. This is an increase in the Black Start Unit Test frequency which the Grid Code currently requires; no more than once a year. We consider that this will help ensure the resilience of the system, and therefore better promote the security of the NETS, thereby better facilitating this Grid Code objective.

(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.

GC0108 meets the obligations placed on the licence holder from the E&R Code. Whilst GC0108 achieves alignment between European Law (the E&R Code) and the Grid Code, it does not place any additional obligations upon Users who are already bound by the E&R Code requirements. We consider that stipulating the E&R Code requirements in the Grid Code makes it more accessible to Users and therefore better facilitates this Grid Code objective.

Decision notice

In accordance with Standard Condition C14 of NGET's Transmission Licence, the Authority hereby directs that Grid Code modification proposal GC0108: '*EU Code: Emergency and Restoration: Black Start testing requirement*' be made.

Peter Bingham
Chief Engineer, Systems and Networks

Signed on behalf of the Authority and authorised for that purpose