

# Stage 01: Modification Proposal

Grid Code

## GC0105: System Incidents Reporting

**Purpose of Modification:** The Grid Code Panel has previously received an annual report from National Grid indicating system incidents and reporting on links losses of load or generation on transmission and/or distribution networks. This report is important to industry and the Grid Code Panel to monitor the effectiveness of technical requirements in the Grid Code and Distribution Code.

### The Proposer recommends that this modification should be:

- proceed to Consultation

This modification was raised **10 October 2017** and will be presented by the Proposer to the Panel on **18 October 2017**. The Panel will consider the Proposer's recommendation and determine the appropriate route.



**High Impact:** *Insert text here*

None have been identified



**Medium Impact:** *Insert text here*

None have been identified



**Low Impact:** *Insert text here*

All Users

What stage is this document at?

|    |                                 |
|----|---------------------------------|
| 01 | Modification Proposal           |
| 02 | Workgroup Report                |
| 03 | Code Admin Consultation         |
| 04 | Draft Final Modification Report |
| 05 | Report to the Authority         |

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### Any Questions?

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## Timetable

The Code Administrator recommends the following timetable:

|   |                                      |
|---|--------------------------------------|
| Proposal presented to Grid Code Panel   | 18 October 2017                      |
| Code Administrator Consultation Report issued to the Industry (15 Working Days) | 31 October 2017                      |
| Code Administrator Consultation closes  | 21 November 2017                     |
| Draft Grid Code Self-Governance Report submitted/presented to Panel             | 6 December 2017<br>/14 December 2017 |
| Panel Determination Vote  | 14 December 2017                     |
| Final Grid Code Self-Governance Report published                                | 18 December 2017                     |
| Appeal window opens (15 Working days)   | 10 January 2018                      |
| Implementation (10 Working Days after closure of appeal window)                 | 25 January 2018                      |

## 1 Summary

### ***Defect***

National Grid has produced System Incident reports to the Grid Code Review Panel on an approximate annual basis for approaching 20 years; however the requirement to do so and the specification for the reporting have not been included in the Grid Code.

### ***What***

The requirement for National Grid in its role as GB System Operator to provide a report to the Panel needs to be enshrined in the Grid Code.

### ***Why***

National Grid has provided the report in the past. The report has been vital in monitoring the effectiveness of the Grid Code and in minimising the risk of a low frequency load disconnection. The reporting procedure was established in 1997 and was referenced in National Grid's February 2009 report on the load disconnection during the significant system incident occurring on 27<sup>th</sup> May 2008.

### ***How***

The Grid Code will be modified to codify the requirement on National Grid to produce the report.

## 2 Governance

### **This modification is proposed under Self Governance**

**Self-Governance** - The modification is unlikely to discriminate between different classes of Grid Code Parties and is unlikely to have a material effect on:

Existing or future electricity customers;

Competition in the generation, distribution, or supply of electricity or any commercial activities connected with the generation, distribution or supply of electricity,

The operation of the National Electricity Transmission System

Matters relating to sustainable development, safety or security of supply, or the management of market or network emergencies

The Grid Code's governance procedures or the Grid Code's modification procedures

### ***Requested Next Steps***

This modification should:

- proceed to Code Administrator Consultation

It was reported at Distribution Code Panel on 7/9/2017 that there had been distribution generation disconnections over the summer of 2017 as a result of transmission faults. This has not been reported to the Grid Code Review Panel. The critical period for such events can often be summer when system demand and inertia is low. Therefore the report should be presented to the Panel in October each year.

### 3 Why Change?

Under new governance National Grid has taken the view that the System Incident report is not mandated by the Grid Code and therefore will not be delivered. By putting the requirement into the Code this defect will be rectified. The report has been vital in monitoring the effectiveness of the Grid Code and in minimising the risk of a low frequency load disconnection. The reporting procedure was established in 1997 and was referenced in National Grid's February 2009 report on the load disconnection during the significant system incident occurring on 27<sup>th</sup> May 2008. Future reporting will help ensure that the Grid Code requirements are fit for purpose and serve as an early warning if certain Grid Code requirements are no longer fit for purpose.

### 4 Code Specific Matters

#### Technical Skillsets

Not applicable.

#### Reference Documents

*Summary Report for Significant System Events* as presented to the GCRP on 18 January 2017 and which reports on incidents during the period Dec 2015 to Nov 2016 can be located via the following link:

<http://www2.nationalgrid.com/UK/Industry-information/Electricity-codes/Grid-code/Panel-information/Meetings/2017/18-January-2017/>

An *updated report* (spreadsheet only and recording incidents over the same above period) was presented to the GCRP in March 2017 and can be located via the following link:

<http://www2.nationalgrid.com/UK/Industry-information/Electricity-codes/Grid-code/Panel-information/Meetings/2017/22-March-2017/>

### 5 Solution

NGET shall present to the October Grid Code Review Panel every year a report titled – **System Incidents Report** - containing the following information:

NGET shall present to the October Grid Code Review Panel every year a report titled – **System Incidents Report** - containing the following information:

1. A record of every significant event on the National Electricity Transmission System including the following events:
  - a. A loss of infeed or exfeed (import or export including generation, demand and interconnection) of 250MW or more.
  - b. A fault on the transmission network which:
    - i. Could be linked to the known or reported tripping of any Power Station, DC Converter or User System.
    - ii. the transmission system voltage changes by more than:
      - a. 400kV: > +/-5% for >15min
      - b. 275kV or 132 kV: > +/- 10% for >15min
  - c. Any known demand disconnected  $\geq$ 50MW from the National Electricity Transmission System or if notified to System Operator..
  - d. Any Demand Control action taken.
2. A report of each significant event with the following data as appropriate and available:
  - a. The time(s) in hh.mm.ss of the significant event and any potentially related occurrences.
  - b. Any known or reported loss of Embedded Power Station(s) with locations and ratings where available.
  - c. The frequency record (in table and graphical format) at  $\leq$ 1 second intervals for 1 minute before and after the incident.
  - d. The frequency (to 2 decimal places) immediately before the significant event.
  - e. The frequency (to 2 decimal places) immediately after the significant event.
  - f. The maximum rate of change of frequency recorded during the significant event over a specified time period e.g. 500ms.
  - g. The MW of all individual losses or trips related to the significant event.
  - h. Where possible the identity the Users and Network Owner of all losses or trips related to the significant event.
  - i. The location of any reported transmission fault on the network diagram and geographically.
  - j. The extent of any voltage dip associated with the significant event.
  - k. An estimate of system inertia in MWs before and after the event.
  - l. Any other data available that is of value to a clearer understanding of the significant event and its potential implications.

NGET shall :

- Present the data in a pdf report and in a spreadsheet.
- Maintain an area of the Grid Code web site with all historic System Incidents reports.
- Make the reports available more widely as appropriate.
- Notify all Electricity Distribution Licence holders and Network Operators of every significant event and request information to fulfil its duties in section 2 above.
- Maintain a statement showing how system inertia is estimated for Section 2k above.
- Provide an annual report outlining progress towards reporting events and associated data on the National Electricity Transmission System including:
  - three phase fault;
  - three phase to earth fault;
  - Phase to phase faults
  - Phase to earth faults
  - The associated voltage dips – durations and spreads.
  - Over-voltages;
  - Under-voltages
  - voltage dips of >50%;
  - lightning strikes.

## 6 Impacts and Other Considerations

**Does this modification impact a Significant Code Review (SCR) or other significant industry change projects, if so, how?**

No

### ***Consumer Impacts***

Consumers will benefit from this information and transparency by increasing the monitoring of system operation helping to maintain and improve security of supply.

## 7 Relevant Objectives

Impact of the modification on the Relevant Objectives:

| Relevant Objective  | Identified impact |
|---|-------------------|
| To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity | Positive          |

|   |                 |
|---|-----------------|
| <b>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)</b> | <b>None</b>     |
| <b>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</b>   | <b>Positive</b> |
| <b>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; and</b>  | <b>Neutral</b>  |
| <b>To promote efficiency in the implementation and administration of the Grid Code arrangements</b>   | <b>Positive</b> |

The benefits have been recognised by the industry and the Grid Code Panel over the years as this reporting has already been implemented on an annual basis under the Grid Code Panel since 1997. The benefits are that the report provides potential early warning to National Grid, Users and Panel Members if system incidents are causing or at risk of causing significant loss of imports or exports to/from the transmission system and allows Users and National Grid to propose changes to the Grid Code to reduce such risks.

## 8 Implementation

The costs are already covered as the report has been produced approximately annually since 1997 and is a minor cost estimated at around £1000 no more than £10,000 to produce and should be implemented immediately as National Grid have made this report many times before.

## 9 Legal Text

### Insert in General Conditions

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  - The associated voltage dips – durations and spreads.
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  - Under-voltages
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## 10 Recommendations

Panel is asked to:

- Issue this document to Code Administrator Consultation