








Stage 4: Code Administrator Consultation		At what stage is this document in the process?
<h1>GC0105:</h1> <h2>System Incidents Reporting</h2>		<div><div>01</div><div>Proposal Form</div></div> <div><div>02</div><div>Workgroup Consultation</div></div> <div><div>03</div><div>Workgroup Report</div></div> <div><div>04</div><div>Code Administrator Consultation</div></div> <div><div>05</div><div>Draft Grid Code Modification Report</div></div> <div><div>06</div><div>Final Grid Code Modification Report</div></div>
Purpose of Modification: <p>This modification aims to rectify the identified defect which is: “the Grid Code Review Panel has previously received an annual report from the Electricity System Operator (the ESO) indicating system incidents and reporting unplanned outages of Interconnectors, load or generation connected to transmission or distribution networks. This annual report is important to industry and to the Grid Code Review Panel (the Panel) as it helps monitor the effectiveness of the technical requirements in the Grid Code and Distribution Code. In 2017 the ESO stopped providing the report”. The Modification aims to reinstate the report and at the same time to specify the content and timing.</p>		
	<p>The purpose of this document is to consult on this modification with respective Grid Code Parties and other interested industry members. Parties that wish to respond to this consultation should submit their responses to Grid.Code@nationalgrideso.com in accordance with section 9 of this document. Respondents should submit their responses by no later than 5pm on 9 December 2019, using the Code Administrator Consultation Response Pro-forma, which can be found at the following link under the ‘Industry Consultation’ tab: https://www.nationalgrideso.com/codes/grid-code/modifications/gc0105-system-incidents-reporting.</p> <div><div>Published on:</div><div>20 November 2019</div></div> <div><div>Length of Consultation:</div><div>15 Working days</div></div> <div><div>Responses by:</div><div>11 December 2019</div></div>	
	Low Impact: All users	
	<i>The Workgroup’s conclusions</i> <p>The Workgroup voted by a majority that the Proposer’s Solution better facilitates the Applicable Grid Code Objectives as opposed to the baseline or the Workgroup Alternative Grid Code Modification.</p>	

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Timetable

The Grid Code Review Panel has agreed the following timetable:

Modification Stage 1 (modification raised)	10 October 2017
Initial consideration by Workgroup	22 February 2018
Workgroup Consultation issued to the Industry	29 November 2018
Modification concluded by Workgroup	2 October 2019
Workgroup Report presented to Panel	29 October 2019
Code Administration Consultation Report issued to the Industry	20 November 2019
Draft Final Modification Report presented to Panel	19 December 2019
Modification Panel decision	19 December 2019
Final Modification Report issued to the Authority	Week commencing 6 January 2020
Decision implemented in Grid Code	10 working days after Authority decision (estimated to be week commencing 24 February 2020)

1 About this document

Executive Summary

This document is the GC0105 Code Administrator Consultation and it has been prepared in accordance with the terms of the Grid Code. An electronic copy of this document, the response proforma, and the GC0105 Modification Proposal Form can be found at the following link: <https://www.nationalgrideso.com/codes/grid-code/modifications/gc0105-system-incidents-reporting>. Further information about how to respond to this consultation can be found in section 9 of this document.

This document contains the discussion of the Workgroup, which formed in February 2018 to develop and assess the proposal. The Grid Code Review Panel (the Panel) reviewed the Workgroup Report at their Panel meeting on 29 October 2019. The Panel agreed that the Workgroup had met its Terms of Reference, the Workgroup could be discharged, and the modification should proceed to Code Administrator Consultation.

GC0105 was proposed by Element Power, which was subsequently acquired by Statkraft (the Proposer) on 10 October 2017. The modification proposal was submitted to the Panel for its consideration on 18 October 2017. The Panel decided to send the Original Proposal to a Workgroup to be developed and assessed against the Applicable Grid Code Objectives.

The Proposer raised the modification proposal due to an identified defect, defined below, in the Grid Code. The defect relates to the continued production of an annual report on system incidents by the ESO. The Proposer's Original Solution, put forward on 10 October 2017, was modified during the Workgroup process (9 Workgroup meetings, a consultation and bilateral discussions) to the Proposer's Solution in Section 3 below. The ESO proposed a Workgroup Alternative Grid Code Modification proposal (WAGCM) which is set out in Annex 4. As part of the work undertaken by the Workgroup, a Workgroup Consultation, which closed on 21 December 2018, was undertaken. The details of the outcome of the consultation can be found in Section 4 and the responses are detailed in Annex 5. The Workgroup has voted on the options and recorded their views in Section 6.

The ESO has published a report containing past frequency event data for the period 2018 and 2019, which can be found at the following web link: <https://www.nationalgrideso.com/document/156761/download>. At the time of issue of this consultation, annual reports have been published by the ESO. The publication of this report was delayed pending completion of the GC0105 Workgroup's work.

The 2017 incident report can be found at the following link:
<https://www.nationalgrideso.com/document/156081/download>

In this document the following terms are used:

Term/Acronym	Definition
Grid Code Review Panel (GCRP)	A Panel of elected and appointed individuals that make decisions in relation to proposed and ongoing Grid Code modifications.
National Grid Electricity System Operator (The ESO)	The Electricity System Operator for England and Wales
Original Proposal	This is the Modification Proposal as raised on 10 October 2017 and presented to the Grid Code Review Panel 18 October 2018.
Proposer's Solution	This is the Proposer's final solution (i.e. Modification) developed through the work of the Workgroup.
RoCoF	Rate of Change of Frequency Hz/s
SOF	System Operability Framework
System Operator Transmission Owner Code (STC)	A code that defines the relationship between the transmission system owners and the ESO.
STCP	System Operator Transmission Owner Code Procedure.
System Operation Guideline (SOGL)	The European Union System Operation Guideline
Workgroup Alternative Grid Code Modification (WAGCM)	This is the alternative proposal that has been raised by the ESO representative.

Background

GC0105 aims to amend the Grid Code to incorporate a Systems Incident Report that would be produced by the ESO. The Workgroup consulted on the Proposer's Solution and WAGCM and a total of four responses were received. These responses can be found in Annex 5 below.

Section 2 (Original Proposal) and Section 3 (Proposer's Solution) are sourced directly from the Proposer and any statements or assertions have not been altered or substantiated/supported or refuted by the Workgroup. Section 4 of the Workgroup Report contains the discussion by the Workgroup in relation to the Original Proposal, Proposer's Solution, and the work undertaken to reach its final form as presented in this report.

The Grid Code Review Panel (GCRP) detailed, in the Terms of Reference, the scope of the work for the GC0105 Workgroup and the specific areas the Workgroup should consider. The table below details these specific areas where the Workgroup have covered them.

The full Terms of Reference can be found in Annex 1.

Specific Area	Location in the report
Impact on system processes for the ESO ¹ and other users	Section 3 and 4 of the report
History of previous reports and consideration of previous reporting mechanism	Section 3 and 4 of the report
Benefits to system operator and users in helping to perform future policy	Section 3 and 4 of the report
Suitability/flexibility of report for future use	Section 3 and 4 of the report
Inclusion of 'SOF' scenarios and demonstration of what industry wants to do with the information	Section 3 and 4 of the report

2 Original Proposal

Defect

The Grid Code Review Panel (GCRP) has previously received an annual report from the ESO indicating system incidents and reporting unplanned outages of interconnectors, load or generation connected to transmission or distribution networks.

¹ NB legal separation of National Grid Transmission Owner and National Grid Electricity System Operator (the ESO) occurred on 1 April 2019. Therefore, this term of reference is deemed to relate to the Electricity System Operator. All references within this report which relate to current functions carried out by the ESO have been updated accordingly within this report to refer to the ESO.

This annual report is important to industry and to the GCRP as it helps monitor the effectiveness of the technical requirements in the Grid Code and Distribution Code. In 2017 the ESO stopped providing the report.

What

The ESO has produced System Incidents Reports for the GCRP on an approximate annual basis for approaching 20 years; however, the requirement to do so and the specification for the report have not been included in the Grid Code. The requirement for the ESO to provide this report to the GCRP needs to be enshrined in the Grid Code.

Why

The ESO has provided the report in the past. The report has been vital in monitoring the effectiveness of the Grid Code for example the risk of generation and consequently load disconnection as a result of high Rate of Change of Frequency (RoCoF) events. The reporting procedure was established in 1997 and was referenced in the ESO's February 2009 report on the load disconnection during the significant system incident occurring on 27 May 2008.

Under the new governance arrangements, the ESO has taken the view that the System Incidents Report is not mandated by the Grid Code and therefore may not necessarily be delivered. By putting the requirement into the Grid Code this defect will be rectified. Examples of reporting by EirGrid, FinGrid and the ESO at the Ops Forum are included in Annex 1.² Future reporting will help ensure that the Grid Code requirements are fit for purpose and will serve as an early warning if certain Grid Code requirements need to be reassessed as the transmission and distribution systems (together with the load and generation connected to them) changes as GB moves towards a low carbon economy.

How

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

3 Proposer's Solution

The Proposer's Solution which has developed from the Original Proposal through workgroup discussions, a consultation and several bilateral discussions, is to codify in the Grid Code a requirement for the ESO to produce a monthly report of incidents and frequency data for the GCRP. The report will be titled – **System Incidents Report** and contain the information detailed within the legal text in Annex 7.

4 Workgroup Discussions

The Workgroup convened nine times to discuss the issue, detail the scope of the proposed defect, assess the options for resolving the defect, assess the proposal in

² Annex 1 is the presentation (7 slides) from Element Power in October 2018.

terms of the Grid Code Applicable Objectives and review the responses to the Workgroup Consultation. The discussions and views of the Workgroup are outlined below.

First and Second Workgroup meetings

At the initial Workgroup meeting the Workgroup reviewed the reporting requirements that the Proposer had outlined in the Original Proposal³.

The ESO representative stated that they would be able to provide the majority of the proposed information. The other requirements as set out below were discussed by the Workgroup.

‘Significant event’

Whilst the Workgroup agreed on the reporting metrics to be used for each significant event report as listed at 2(a) to (i) in the Original Proposal, the ESO representative made representations about the scaling around fault reporting and specifically the proposed reporting threshold of 250MW in the Original Proposal. The ESO representative considered this too low to be considered as being a ‘significant’ event and suggested a higher 600MW threshold. A Workgroup Alternative Grid Code Modification (WAGCM) has been raised by the ESO which includes a number of differences compared to the Proposers Solution (see Annex 4).

Notification Obligations

The Proposer recognised the need for a pragmatic approach around how the ESO reports significant events to the distribution licence holders and network operators and how these parties respond to the data requests. The Proposer clearly stated that they are not seeking to introduce any new requirement for reporting by means of this proposal but are only seeking to use existing processes and channels to gather the relevant and available data. The Workgroup recognised the need to understand the extent of current reporting mechanisms and obligations in the Grid Code and Distribution Code to avoid the risk of duplication.

The Workgroup discussed the requirements of STCP 03-1 *Post Event Analysis and Reporting* which sets out how parties (namely the ESO and each Transmission Owner) liaise with each other in response to transmission system events, from occurrence through to joint investigations if necessary. The Workgroup discussed the potential need for a consequential change to the System Operator Transmission Owner Code (STC) requiring each Transmission Operator to provide the System Operator (the ESO) with the information it needs to produce the report. The Proposer stated that they did not want their Proposal to evolve to require consequential modifications having to be raised for other Codes. The Proposer noted that should any of the required information not be available (from the Transmission Owners) to complete the System Incidents Report, when the report is produced, then it should be noted by the ESO in the report as such and, should it be a reoccurring issue, then another modification could be considered and raised in the future to address it.

³ <https://www.nationalgrid.com/sites/default/files/documents/GC0105%20Modification%20Proposal.pdf>

When

The Workgroup were minded at this stage to specify that the first annual report should be produced within 12 months of implementation of GC0105 and thereafter on the anniversary of the first month after the first report.

The Workgroup discussed the forthcoming Workgroup Consultation, agreeing that it would be useful to understand what Industry members would use the proposed report for and whether the Workgroup has captured the correct items or whether additional items would provide value. These six questions posed to industry and the Workgroup's deliberation on the answers provided back by industry can be found later in this section.

Third Workgroup meeting

Given the length of time between the second Workgroup meeting (16 March 2018) and third Workgroup meeting (17 October 2018), at the third Workgroup meeting the Proposer provided the Workgroup with a recap about the modification. The Proposer stated that historically the ESO had produced a System Incidents Report which covered ex-feed losses and in-feed losses. This report was discontinued in 2017. The Proposer had requested that the report was continued as it contained useful information to industry. However, the ESO at that time decided not to continue with the publication of the report. Therefore, the Proposer raised this modification to compel the ESO to produce an annual report which included system incidents.

The Proposer confirmed that they did not want to be too prescriptive as to the content of the report to allow flexibility to the System Operator but that the report would bring clarity as to what was required in terms of the provision of information. In the event that the report does not meet industry's requirements, a further modification could be raised at a later date.

The ESO representative agreed that there was nothing in the Grid Code to compel the ESO to produce a System Incidents Report. The ESO representative stated that they will be raising a WAGCM (see Annex 4) in relation to the content of the proposed System Incident Report as there is a disagreement, between the ESO and others, about the content of the report. The areas of disagreement include:

- i. The level of the loss of in-feed and ex feed reported: the ESO believe this should be set to 600 Megawatts as their view is this is more proportionate than the current proposal of 250 Megawatts;
- ii. The availability of the report: the ESO believe this should be available to the GCRP and relevant parties rather than generally available due to security concerns; and
- iii. Whether a System Incidents Report is required: the ESO stated that the requirement of an annual report was historically more about regular assessment of the system incidents and therefore specifying an annual report within the Grid Code does not add value.

The Workgroup discussed the issue of security and concluded that if the information is made available to some members of industry it must be considered to be in the public domain. The Proposer informed the Workgroup that the previous report was in the public domain and therefore there were no competition concerns. The ESO

representative stated that further thought needed to be given to the publication of the report.

A Workgroup member queried what would happen in the event that a Transmission Owner failed to provide the requested information to the System Operator? The Proposer confirmed that in that situation, the ESO would need to specify this in the report.

The Proposer and the ESO representative both confirmed that in their proposals the System Operator would produce the report.

The ESO representative stated that they will incorporate as much of the Original Proposal / Proposer's Solution as possible into their WAGCM (See Annex 4) so that the differences between the options are minimal.

A Workgroup member stated that if the Proposer's Solution goes into the Grid Code, it will also require changes to be made to the System Operator Transmission Code (STC).

Fourth Workgroup meeting

Following the Workgroup Consultation, the Workgroup convened to discuss the consultation responses (set out in Annex 5) and whether the Proposer's Solution or the ESO's WAGCM needed to be amended in light of the consultation responses.

The Workgroup noted that there had been four responses to the consultation from Drax Power Limited, Northern Powergrid, the ESO and Scottish Power Generation Limited. The Workgroups discussion and observations are set out below:

Question 1: Do you believe that the Original Proposal⁴ better facilitates the Grid Code Objectives?

The Workgroup noted that three of the respondents provided an answer to this question.

The Workgroup discussed the ESO consultation response. A Workgroup member expressed that they did not believe the ESO response was legally robust, in terms of System Operator Guideline and Grid Code compliance, as the role of the System Operator is to enhance the transmission system operation and that transparency is one element of that. In response to the ESO position that they would provide the information related to system incidents voluntarily, the Workgroup member stated that codification is required due to the past actions of the ESO in withdrawing the 'voluntary' publication of the System Incidents Report (which brought about this GC0105 proposal).

The Proposer stated that they disagreed that the reason for the original report has passed and when they requested the ESO to provide the report, it declined to continue publishing the System Incidents Report.

It was further stated by a Workgroup member that the ESO's statement that looking at the technical detail was not part of the GCRP's role was incorrect as they do have a role

⁴ This is a standard question used within Workgroup consultations. The reference to the 'Original Proposal' here refers to the 'Proposer's Solution' as defined in this document.

that links to the implementation of the EU Network Codes and the Grid Code. Additionally, this position by the ESO, runs contrary to what has been previously stated by the ESO in public.

The ESO representative stated that their position was set out in the consultation response and he has nothing further to add. However, it is worth noting that the ESO has suggested alternative approaches to a code modification and has volunteered, following further consideration, to provide the requested information in the System Operability Framework, which would not necessarily need a code modification to deliver the requested information within the proposal.

A Workgroup member expressed concern that there would be a lack of certainty with this approach and whether the ESO would stop preparing the System Incidents Report again in the future (as they had done previously). Therefore, their view was that it was better to proceed with the modification to place an obligation on the ESO to ensure transparency.

A Workgroup member queried the statement in the ESO's consultation response about the reason for the historic System Incidents Report. The ESO representative stated that this is detailed in their consultation response and that this links to the GC0035 modification, which may contain further information about why the original System Incidents Report was produced.

Question 2: Do you support the proposed implementation approach?

The Workgroup noted that all four respondents provided a response to this question. All of the Workgroup consultation respondents agreed with the proposed implementation approach.

The Proposer stated that a date for the annual report needs to be fixed. He noted that the most important data is available over the summer and therefore he proposed the following:

- i. A data cut-off date of the end September for a given year;
- ii. Data is collated and processed in October for a given year;
- iii. A check, review and sign off of two weeks; and
- iv. Report published/sent to industry on or around 14 November of a given year.

The Workgroup agreed in principal that this sounded like a sensible solution should the Proposer's Solution or WAGCM be approved.

Question 3: Do you have any other comments?

The Workgroup noted that there were no consultation responses to this question.

Question 4: Do you wish to raise a Workgroup Consultation Alternative request for the Workgroup to consider?

The Workgroup noted that the ESO had already raised a WAGCM. There were no other proposal requests raised through the consultation.

Question 5: Do you agree that the proposed contents of an annual System Incident Report including the associated data on the National Electricity Transmission System

includes the necessary items and, if not, are there any items that you would include/exclude/amend?

The Workgroup noted that all four respondents provided an answer to this question.

A Workgroup member stated that the WAGCM suggests a threshold of 600 Megawatts rather than 250 Megawatts as stated in the Proposers Solution and this would run counter to a whole system approach, which is being developed via the ENA's Open Networks initiative as in the WAGCM, events between 600 Megawatts and 250 Megawatts that occur would not be visible to stakeholders.

A Workgroup member expressed support for a 250 Megawatts threshold as in their view, incidents reported at this lower threshold could have an impact on the network, particularly over the summer period, when demand on the transmission system maybe low, such as a sunny Sunday morning where, for example, demand is largely being serviced via embedded generation like solar Photovoltaics. Thus, for example, a 600 Megawatt event on the transmission system with demand of 60 Gigawatts (winter peak) might be said to be the equivalent of a 250 Megawatt event on a transmission system with 15 Gigawatts (summer lull) of demand.

The ESO representative stated that having reviewed the consultation responses, he is happy to lower the threshold, in the WAGCM, of when the report would be triggered from 600 Megawatts to 250 Megawatts to provide solution options that are as aligned as possible.

The Proposer stated that they have not been explicit regarding the exact details of the content of the System Incidents Report so that the ESO can decide the items to be included within the report.

A Workgroup member stated that they would like the minimum System Incidents Report requirements codified so that what needs to be provided is clear and these can be updated through the code modification process at a later stage as required.

Question 6: Do you agree that such a System Incident Report will be a useful report for industry to help improve system resilience?

The Workgroup noted that all four consultation respondents answered this question. It was further noted that the ESO was the only party to respond negatively to this question as their view was that codifying the content of the report would remove future flexibility and that any future changes would require an additional Grid Code modification to amend the content, but that an alternative solution, such as to publish the information in the System Operability Framework, would not need a modification to accommodate future changes.

A Workgroup member stated that the legal text should specify the minimum core requirements in the System Incidents Report and that the ESO could provide additional information in the report if they so wished. The report will also provide industry parties an opportunity to raise issues with the ESO and Ofgem on reported faults.

Question 7: Do you consider this to be a useful report for your purposes? If yes please provide, where possible, any examples of what you might use it for.

A Workgroup member expressed that they agreed entirely with Northern Powergrid's consultation response to this question. It was agreed that the information in the System

Incidents Report was required to move to a low carbon economy and ‘whole system’ future.

The Proposer agreed and stated that they agreed with Drax’s response as the transparency will provide an opportunity to link with the charging arrangements.

Legal Text Comments

In response to Northern Powergrid’s consultation response that the General Conditions may not be the most appropriate part of the Grid Code for the modification to sit, the Proposer suggested that a different approach to this could be to place it in Operating Condition 3, which is currently unused.

The Workgroup discussed the possibility of this also sitting in the Planning Conditions as a new PC.9. The Workgroup consensus was that the Operating Conditions were probably the most appropriate place for the legal text changes to be applied.

Fifth Workgroup meeting

The ESO representative informed the Workgroup that following internal discussions, they had made changes to their legal text that would ensure that an STC change would not be required and that any costs associated with the implementation of the modification would be minimal. The ESO representative invited the Proposer to work with them to review the changes and see whether they were comfortable to incorporate these changes into the Proposer’s Solution. It was agreed that the Proposer would consider the legal text amendments and confirm their position with the Workgroup.

Sixth Workgroup meeting

The Workgroup discussed some of the wording to be used to replace the term “for a given year” within the proposed solution. A Workgroup member stated that this had been raised in previous modifications and the ESO legal team had suggested some suitable wording. It was agreed that the ESO legal team should provide some suitable wording for this.

The Proposer stated that they were proposing to report on deviations from a target frequency range of between 49.9 – 50.1 Hz, as such occurrences, according to the Grid Code would be exceptional. The Workgroup supported this approach.

The Proposer informed the Workgroup that they had considered the ESO suggested changes to the Proposer’s Solution and decided not to incorporate them into their solution. The Proposer clarified that there seemed to be a misunderstanding of the intention of his modification by the ESO in relation to fault reporting.

The ESO re-iterated that part of the Proposer’s Solution would require a STC change. This would be raised at some point in the future should the Authority make a decision to implement the Proposer’s Solution. The Workgroup discussed the implications of this and the ESO representative stated that the affected part of the report would be omitted until the required code changes were made. The Workgroup were content with that approach.

Seventh Workgroup Meeting

The Proposer stated that the first System Incidents Report should include the data since the last report was published up to the date of the report. It was agreed that this needed to be reflected in the legal text for the modification.

The Workgroup discussed the Workgroup report and suggested some amendments. The Workgroup agreed that it would be helpful to see the report with all of the annexes inserted prior to the Workgroup vote.

The ESO representative had previously raised with the Workgroup that the Proposer's Solution, in its current form, would require an STC change. The ESO representative stated that the approach taken by the Authority recently had been to require all code changes to be submitted to it at the same time so that it could look at the changes holistically.

The ESO representative stated that their WAGCM would replicate what was previously provided by the ESO and his view was that the Proposer's Solution would require additional data that was not in the System Incidents Report that was historically produced.

The Workgroup discussed the draft legal text. The Proposer provided some changes to the legal text to ensure it reflected the intent of the Proposer's Solution. The ESO representative confirmed that they were content to use the same terminology in their WAGCM, where appropriate.

Eighth Workgroup Meeting

The Proposer highlighted two areas of his solution that he was considering amending. These were as follows:

1. To amend the proposed reporting frequency from annually to monthly; and
2. To amend the target frequency, which would result in an incident being reported from 50.00 +/- 0.05Hz and exceptionally 49.90 to 50.10.

Frequency of producing the System Incident Report

The Proposer stated that amending the reporting frequency would help the reporting systems at the ESO, the Transmission Owners and the Distribution Network Operators improve more quickly by having monthly repetition. In addition, it would be helpful to users, the ESO and Ofgem as it will enable detection warnings or danger signals to be highlighted earlier and therefore action can be taken sooner. The Proposer stated that they were minded to amend the legal text to report within 2 days of the month end.

A Workgroup member suggested that the Proposer may wish to consider the date of the GCRP and whether the report should be timed to coincide with the GCRP papers day to enable the monthly report to be presented in a timely manner as the current proposal does not align with the papers day.

The ESO representative confirmed that their WAGCM will retain an annual reporting obligation on the ESO rather than monthly as suggested by the Proposer.

A Workgroup member stated that they would like an event specific report straight after the event if it is significant, such as the recent blackout on 9 August 2019; this is what has happened in this case with a standalone report being produced.

Having considered the Workgroup's discussion, the Proposer confirmed that they were going to change the frequency of reporting to monthly (within 2 days of month end). They stated that they understood that there will be potentially a month delay between the data being available and the report being considered by the GCRP but that this is an improvement as this modification proposal was to originally to replace an annual report.

Target Frequency

The Proposer confirmed that the legal text will specify the frequency range rather than change the definition of Target Frequency in the Grid Code following advice from the Code Administrator that amending the Target Frequency definition was outside the scope of the identified defect.

The Workgroup discussed the range of target frequency suggested by the Proposer. The ESO representative stated that the closer the threshold are to the $f \pm 0.05$ Hz limits, the fewer incidents will be reported. The Workgroup agreed that it would like to consider the data in relation to how many incidents would be caught by different threshold values. The ESO representative agreed that they would look at this and report back to the Workgroup.

A Workgroup member highlighted that the biggest difference between the Proposer's Solution and the WAGCM was the MW reporting threshold. It was queried whether the ESO representative would consider aligning the MW in their alternative to match the Proposer's Solution. The ESO representative stated that once the final figures had been finalised by the Proposer, they would consider whether they wished to align this.

Blackout – 9 August 2019

The Workgroup discussed the blackout that occurred on 9 August 2019 and the implications and relevance of that event in relation to this modification.

The ESO representative stated that he did not believe there were direct links between the events of 9 August 2019 and this modification as the causes were a unique set of circumstances. A Workgroup member disagreed and stated that they believe that this modification is directly relevant to the blackout event and that the report may have helped.

The Proposer stated that in reading the information released in relation to the blackout event, there was reference to 1 second system frequency data that the ESO produce. The Proposer stated that they would like to consider inclusion of this data within the System Incident Report in the event that the requirement for this data is not already codified within the Grid Code. The ESO representative agreed to look at how the 1 second system frequency data is reported and whether this is contained within the Grid Code as a requirement.

Ninth Workgroup Meeting

The Proposer finalised their solution and confirmed that that based on the data provided by the ESO representative that they were going to use a target frequency of 49.7-50.3Hz.

The Workgroup finalised the Workgroup report and undertook a vote as detailed in section 6 of this report.

5 Comparison between the Proposer's Solution and the Workgroup Alternative Grid Code Modification

The following sets out the main differences between the Proposer's Solution and the WAGCM raised by the ESO:

Section	Subject	Proposer's Solution	WAGCM
OC3.1.1	High level report content	Incident Report and frequency data report	Incident Report only
OC3.4.1	Reporting frequency	Monthly	Annually
OC3.4.1 (a) (i)	Loss reporting	a loss of infeed or exfeed (import or export including generation, Demand and interconnection) of $\geq 250\text{MW}$;	a loss of Demand $\geq 250\text{MW}$, or a loss of either generation or interconnection of $\geq 600\text{MW}$;
OC3.4.1 (a) (ii)	Frequency excursions	a frequency excursion outside the limits 49.7-50.3Hz;	a frequency excursion reportable in accordance with The Electricity Safety, Quality and Continuity Regulations 2002 (49.5Hz-50.5Hz)
OC3.4.1 (a) (iii) A	Faults	a fault on the National Electricity Transmission System which could be linked to the known or reported tripping of 250MW or more	Not Applicable
OC3.4.1 (b) (iii)	Significant event frequency record interval	≤ 1 second	1 second
OC3.4.1 (c)	Event & data reporting additional detail	an outline of progress towards reporting events and associated data on the National Electricity Transmission System including: (i) three phase faults;	Not Applicable

		(ii) three phase to earth faults; (iii) phase to phase faults; (iv) phase to earth faults; (v) the associated voltage dips – durations and spreads; (vi) over-voltages; (vii) under-voltages; (viii) voltage dips of >50%; and (ix) lightning strikes.	
OC3.4.2	Communication of reporting, additional detail	notify all Electricity Distribution Licence holders and Network Operators of every Significant Event and request information to fulfil its duties in OC3.4.1.	Not Applicable
OC3.4.3	Monthly reporting timelines	(a) a data cut-off date of the end of each month for that reporting month; (b) data is collated, reviewed and processed in the subsequent two months for a reporting month; (c) System Incidents Report to be published at latest on the last working day of the second month after each reporting month (in other words the report for January would be published on the last working day of March, and so on) and submitted to the next regular Grid Code Review Panel. For the avoidance of doubt, if there are no incidents arising under OC3.4.1 (a)- (c) a System Incidents Report would, nevertheless, still be published stating that 'No System Incident occurred	Not Applicable – annual report specified: The Company shall prepare and publish the System Incidents Report annually. The report will be published and submitted to the Grid Code Review Panel in the November following a given year and included as part of the System Operability Framework (SOF) report

		in month [X]’.	
OC3.4.4	New section for frequency reporting	<p>The Company shall prepare and publish on the Website the “Historic Frequency Data” monthly, in a spreadsheet form, recording system frequency data at a maximum of one second intervals for the whole month in accordance with the following timescales:</p> <p>(a) a data cut-off date of the end of each month for that reporting month;</p> <p>(b) data is collated, reviewed and processed in the subsequent ten working days after the end of the reporting month;</p> <p>(c) Historic Frequency Data to be published on the eleventh working day after each reporting month (in other words the report for January would be published on the eleventh working day of February, and so on).</p>	Not Applicable
OC3.4.5	New section re providing historical reporting	<p>The Company will use best endeavours to provide a report or reports (based on either the historic reporting methodology, or on the Significant Incidents Reports methodology, or a mix of the two), on events for the period from 1 November 2017 until the first System Incidents Report pursuant to this Operating Code, such a report or reports to be made available within 4 months of implementation date of the modification.</p>	Not Applicable

6 Workgroup Vote

The Workgroup believe that the Terms of Reference have been fulfilled and GC0105 has been fully considered.

At the Workgroup meeting held 20 November 2018, the Workgroup agreed to support the proposed WAGCM which became the Workgroup Alternative Grid Code Modification.

During the Workgroup stage, this modification has been affected by quoracy issues i.e. the Workgroup meetings did not have the minimum number of required attendees (five Workgroup members) as set out in the Terms of Reference. Two Workgroup meetings, held on 18 February 2019 and 13 March 2019 respectively, were not quorate as required by the GC0105 Terms of Reference. However, the Workgroup meetings proceeded with four Workgroup members.

In order for this modification to be progressed and address the quoracy issues, a representative from Highview Power joined the Workgroup in advance of the Workgroup meeting held on 16 September 2019. They attended the final two Workgroup meetings held on 16 September 2019 and 2 October 2019 respectively.

At the Workgroup meeting held on 2 October 2019, the Workgroup undertook their vote against the Grid Code objectives in relation to the Original Proposal and the WAGCM. The Workgroup was attended by five Workgroup members, with four of the Workgroup members being eligible to vote (the final Workgroup member did not meet the attendance requirements of 50% attendance as set out in the GC0105 Terms of Reference).

Three Workgroup members voted that the Proposer's Solution is the best option, zero Workgroup members believed that the WAGCM is best and the baseline received one vote.

In conclusion, the Workgroup supported the Proposer's Solution as the best option.

The voting record is detailed below:

Vote 1 – does the Proposer's Solution or WAGCM facilitate the objectives better than the Baseline?

Vote recording guidelines:

"Y" = Yes

"N" = No

"-" = Neutral

Workgroup Member	Better facilitates AGCO (i)	Better facilitates AGCO (ii)?	Better facilitates AGCO (iii)?	Better facilitates AGCO (vi)?	Better facilitates AGCO (v)?	Overall (Y/N)
Guy Nicholson, Statkraft (Proposer)						
Proposer's Solution	Y	Y	Y	-	Y	Y
WAGCM	Y	Y	Y	-	Y	Y
<p>Voting Statement:</p> <p>I support the Original as the best option. As demonstrated following the blackouts on 9th August 2019, generator trips resulted from a transmission fault, therefore more effective monitoring of generator/infeed trips during transmission faults, as is called for by the Original, will be beneficial in identifying and preventing further 9th August type events. The Original has lower MW trip thresholds than the alternative which is important given the scenario where multiple generators/infeeds trip from the same event, as was the case on 9th August. 9th August demonstrates the possibility that customer disconnections can result from the near simultaneous loss of several smaller infeeds/ generators rather than just one large infeed/ generator. The Original has monthly reporting which will ensure that the systems, data capture and processing are in place and streamlined so that, for example, a system incident like the 9th August would be reported automatically through existing systems and processes rather than causing a major additional workload and disruption to the ESO (and others) as has been the case for the 9th August event.</p>						
Simon Sheridan, ESO Representative						
Proposer's Solution	-	-	-	N	N	N
WAGCM	-	-	-	-	-	N
<p>Voting Statement:</p> <p>The original proposal is looking to codify the requirement to continue producing a report on system incidents that originated in the need to inform a Grid Code workgroup dealing with RoCoF protection settings which is now completed. NGESO considered whether there was a continuing need to report this to the Grid Code panel and whether it should still be produced. However, in light of stakeholder feedback NGESO have suggested a solution to continue doing so as part of the SOF. The information that is being requested is mostly already available through existing reporting, for example the ENTSO-E reporting obligations in SOGL (Incident Classification Scale report) and via NGESO's licence requirements to report excursions from statutory limits (so statutory frequency 49.5-50.5Hz reporting).</p> <p>The original proposal significantly increases the scope of the report and the number of incidents that need to be reported by reducing the threshold at which a frequency deviation would be included. No benefit of producing the proposed more detailed report, which will lead to the ESO reporting more frequency events per year at additional cost to NGESO and the consumer, has been identified. Additionally, in light</p>						

of the Energy Code Review which highlights that the GB codes are already too extensive and complex, adding additional reporting requirements of this nature would appear to be heading in the wrong direction. Codifying requirements also reduces future flexibility and serves no purpose as NGESO have already committed to continuing to produce the existing report outside of the codes.

The WAGCM raised by NGESO is simply a codified version of the existing report, so is therefore less costly to provide, but this still adds no value over the baseline position.

NGESO therefore support the baseline while wishing to register that the WAGCM is preferable to the original proposal.

Garth Graham, SSE

Proposer's Solution	Y	Y	Y	Y	Y	Y
WAGCM	Y	Y	Y	N	N	N

Voting Statement:

The arbitrary cessation by the ESO of the publication of its 'System Incident Report' at the end of 2017 can, in retrospect, be seen as a detrimental step, which GC0105 Original seeks to rectify. As the BEIS commissioned investigation into the 9th August 2019 event has clearly identified, there has been increased volatility of frequency deviations within operational limits. However, this fact has not been visible to stakeholders in a similar way to how it had been when the 'System Incident Report' used to be published by the ESO up to the start of 2018.

This lack of information for stakeholders on frequency deviations within operational limits has, since the start of 2018, impeded stakeholders being able to raise any concerns they may have about such increase volatility; which, as the 9th August event attests, is a very important matter for the secure operation of the GB transmission system; with the ESO, the GCRP, Ofgem or the ESO Performance Panel.

The GC0105 Original and WACM will both rectify that core defect and thus be better in terms of Applicable Objectives (i), (ii) and (iii).

However, the Original by (a) having more detailed items within the 'System Incident Report' plus the information for those items being to a greater level of granularity and (b) being monthly as compared to annual reporting will better meet Applicable Objective (iv) as it will ensure that the ESO and Ofgem efficiently discharge the obligations in EU law imposed on them and in particular Article 4(1)(g) of SOGL, namely "ensuring and enhancing the transparency and reliability of information on transmission system operation;" especially as more detailed and more frequency (monthly) reporting in the Original will ensure enhanced transparency and reliability of information on the GB transmission system operation which the Baseline and WACM

would not achieve.

Furthermore, when compared to the WACM, the provision of more detail (as per (a) above) and increased frequency (as per (b) above) for the 'System Incident Report' will be better in terms of (i) developing, maintain and operating the GB transmission system in an efficient and coordinated and economic way; (ii) facilitating competition in generation and supply in terms of transmission system services; (iii) promoting the secure and efficient operation of the GB transmission system and distribution system; and (v) promote efficient administration of the Grid Code arrangements by having a regular (monthly) process, where the benefits of familiarity / regular repetition can be achieved, rather than an ad hoc (annual) process; especially in light of stakeholders recent regrettable experience with how the ESO has performed (poorly) when producing (under the CUSC) the infrequent 'Relevant Interruption Report'.

The monthly reporting proposed by the Original for the Grid Code reporting also closely aligns with the 30 day reporting period that the ESO is legally obliged by SOGL (see, for example, Articles 14(4), 15(9), 18(4), 20(3), 22(4)) to comply with in terms of reporting on similar (if not identical?) system incidents to those that would be captured in the Original 'System Incident Report'; all be it that those reports, required by SOGL, are more detailed and for Ofgem rather than stakeholders.

Alan Creighton, Northern Powergrid

Proposer's Solution	Y	-	Y	-	-	Y
WAGCM	Y	-	Y	-	-	Y

Voting Statement:

Agree that there is a need to have reporting of events on the transmission system that could help understand longer term trends associated with system incidents. The initial driver for the Modification Proposal was to re-establish the legacy reporting arrangements which could be expanded, as required, in the future. The Proposer's Solution goes further than the basic requirement, but does include some reporting aspects that seem desirable e.g. a common reporting threshold of 250MW for the loss of demand and generation, a frequency excursion trigger that is likely to capture some events, and formally capturing the current practice on monthly frequency reporting. However, the WAGCM's annual reporting cycle and lack reporting on transmission system incidents appears to be preferable, at this point in time. Summarising, there are positive aspects of both the Proposer's Solution and the WAGCM, but on balance the Proposer's Solution is probably the better of the two options.

Fernando Morales, Highview Power

NB: Not eligible to vote as attendance is less than 50% as set out on the Workgroup's Terms of Reference

Proposer's Solution	N/A	N/A	N/A	N/A	N/A	N/A
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WAGCM	N/A	N/A	N/A	N/A	N/A	N/A
Voting Statement: N/A						

Vote 2 – Which option is the best? (Baseline, Proposer’s Solution or WAGCM)

Workgroup Member	BEST Option?
Guy Nicholson	Proposer’s Solution
Simon Sheridan	Baseline
Garth Graham	Proposer’s Solution
Alan Creighton	Proposer’s Solution
Fernando Morales	N/A

7 GC0105: Relevant Grid Code Objectives

The assessment below is the Proposer’s view of how GC0105 meets the Grid Code Objectives.

Impact of the modification on the Applicable Grid Code Objectives:

Relevant Objective	Identified impact
(a) To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity;	Positive – because data would be reported which could indicate problems emerging due to the change of generation technologies.
(b) Facilitating effective 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);	Positive – because system incidents are generally not zero cost and identification of incidents could provide information for CUSC changes to better reflect such costs.
(c) Subject to sub-paragraphs (i) and (ii), to promote the security and efficiency of the electricity generation, transmission and	Positive – because security is threatened if events are not contained and the reporting sheds

distribution systems in the national electricity transmission system operator area taken as a whole;	light on the ongoing effectiveness of containment measures.
(d) 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	Neutral
(e) To promote efficiency in the implementation and administration of the Grid Code arrangements.	Positive – because the report has been provided in the past but has not been documented in the Grid Code and not been clearly specified.

The benefits of publishing a System Incidents Report 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 since 1997. The benefits are that the report will help ensure that the Grid Code requirements are fit for purpose and will serve as an early warning if certain Grid Code requirements need to be reassessed as the transmission and distribution systems (together with the load and generation connected to them) changes as GB moves towards a low carbon economy.

8 Implementation

The Proposer's view is that the costs of producing a System Incidents Report are already largely covered as the report has been produced on an annual basis since 1997 at an estimated cost of around £1000 per month (no more than £10,000). The proposal is that the requirement to produce a System Incidents Report should be implemented as soon as practicable as the ESO have made this report many times before. The monthly reporting that is now part of this proposal since 9th August 2019 blackouts could cost an estimated £10k to £100k per annum depending on the number of incidents.

It is proposed that the legal text changes to the Grid Code will be implemented within ten working days of an Authority decision.

In terms of the production of the report by the ESO⁵, its publication on the ESO's website will be done monthly. To ensure openness and transparency for stakeholders,

⁵ For the avoidance of doubt; given the current (March 2018) deliberations about the separation of the System Operation functions from the Transmission Owner parts of NGET; the obligation to produce the report will be placed upon the System Operation part of the separated business.

all system incidents for the period prior to⁶ the implementation of this proposal will be reported within 4 months of the first report.

9 Code Administrator Consultation: How to Respond

If you wish to respond to this Code Administrator Consultation, please use the response pro-forma which can be found under the 'Industry Consultation' tab via the following link:

<https://www.nationalgrideso.com/codes/grid-code/modifications/gc0105-system-incidents-reporting>

Responses are invited to the following questions:

1. Do you believe GC0105 better facilitates the Applicable Grid Code Objectives? Please include your reasoning.

2 Do you support the proposed implementation approach?

3. Do you have any other comments?

Views are invited on the proposals outlined in this consultation, which should be received by **5pm on 11 December 2019**. Please email your formal response to: Grid.Code@nationalgrideso.com.

If you wish to submit a confidential response, please note the following.

Information provided in response to this consultation will be published on National Grid's website unless the response is clearly marked 'Private and Confidential', we will contact you to establish the extent of this confidentiality. A response marked 'Private and Confidential' will be disclosed to the Authority in full by, unless agreed otherwise, will not be shared with the Grid Code Review Panel or the industry and may therefore not influence the debate to the same extent as a non-confidential response.

Please note an automatic confidentiality disclaimer generated by your IT System will not in itself, mean that your response is treated as if it had been marked 'Private and Confidential'.

⁶ The last report ref "PP8. ROCOF Previous Incidents Up to Oct 2017" submitted to the GCRP covered the period up to October 2017. Thus, the first report will cover the period from that date onwards.

10 Legal Text

The Legal text for the Proposer's Solution is contained in Annex 7 of this report.

The Legal Text to support the WAGCM is contained in Annex 8 of this report.

Annex 1: GC0105 Terms of Reference

Annex 2: Most recent System Incidents Report to GCRP in January 2017 ref ROCOF GCRP 15-16

Annex 3: Proposer Presentation to Workgroup October 2018

“Examples of reporting”

Annex 4: The ESO Proposed Workgroup Alternative Grid Code Modification (WAGCM)

The following proposed WAGCM below was raised by the ESO, this was subsequently voted upon by the Workgroup – see in particular Section 4 of this report for further details.

Annex 5: Workgroup Consultation Responses

Annex 6: Workgroup Attendance Register

The following is the attendance register for the Workgroup:

Name	Organisation	Role	22/02/17	16/03/17	17/10/18	14/01/19	01/02/19	18/02/19	13/03/19	16/09/19	02/10/19
Guy Nicholson	Statkraft	Proposer	Attended	Attended	Attended	Attended	Attended	Attended	Attended	Attended	Attended
Simon Sheridan	National Grid Electricity System Operator Representative	Workgroup Member	Attended	Attended	Attended	Attended	Attended	Attended	Attended	Attended	Attended
Garth Graham	SSE	Workgroup Member	Attended	Attended	Attended	Attended	Attended	Attended	Attended	Attended	Attended
Alan Creighton	Northern Powergrid	Workgroup Member	Attended	Attended	Attended	Attended	Attended	Attended	Attended	Attended	Attended
Isaac Gutierrez	Scottish Power	Workgroup Member	Attended	Attended	Attended	Attended	Attended	Absent	Absent	Absent	Absent
Fernando Morales	Highview Power	Workgroup Member NB joined the Workgroup in advance of the Workgroup meeting held on 16/09/19.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Attended	Attended

Annex 7: Proposer's Solution Legal Text

Annex 8: WAGCM Legal Text