



National Grid

CONSULTATION DOCUMENT

CAP002

Paragraph 6.5.1

**The purpose of this document is to
consult on Amendment Proposal CAP002
with CUSC Parties and other interested
Industry members**

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Prepared by	National Grid

I DOCUMENT CONTROL**a National Grid Document Control**

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http://www.nationalgridinfo.co.uk/cusc/mn_consultation_index.html

c Distribution

Name	Organisation
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Panel Members	Various
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1.0 Executive Summary

- 1.1 Paragraph 6.5.1 of the CUSC deals with the energisation of embedded power stations by Distribution Companies and the necessity for the embedded power station to have entered into a Bilateral Agreement with National Grid.
- 1.2 National Grid believes that the paragraph is ambiguous in its interpretation and this may affect its ability to fulfil its licence and statutory duties. This issue existed prior to CUSC in the form of MCUSA 2.5.1 and it has simply been codified across.
- 1.3 National Grid submitted CUSC Amendment Proposal CAP002 to the Amendments Panel for consideration at their 9th November 2001 meeting. The Amendments Panel determined that CAP002 should be evaluated further by a Working Group and set Terms of Reference to review the Amendment Proposal and report back to the 22nd February 2002 meeting.
- 1.4 The Working Group evaluated the Amendment Proposal against the applicable CUSC objectives and delivered the Working Group report to the Panel on the 11th January 2002. The Amendments Panel acknowledged the work undertaken by the Working Group and agreed that they had satisfied the Terms of Reference and that National Grid should undertake wider Industry consultation.
- 1.5 This document initiates the wider industry consultation process and invites views on CUSC Amendment Proposal CAP002. The consultation closing date is 11th March 2002.

2.0 Introduction

- 2.1 This consultation document is issued by National Grid under the procedures specified in the Connection and Use of System Code (CUSC). It addresses issues associated with the Proposed Amendment of paragraph 6.5.1 of the CUSC.
- 2.2 Further to the submission of Amendment Proposal CAP002 (see Annex 1), and the subsequent evaluation by the CUSC Working Group, this document seeks views from industry members relating to the Amendment Proposal. Such an amendment will result in a change to paragraph 6.5.1 of the CUSC (as detailed in Annex 2).
- 2.3 This document outlines the discussions held by the Working Group and the nature of the CUSC changes that are proposed. Representations received in response to this consultation document will be included in National Grid's Amendment Report that will be furnished to the Authority for their decision.

- 2.4 This consultation document has been prepared in accordance with the terms of the CUSC. An electronic copy can be found on the National Grid website, at <http://www.nationalgrid.com/uk/indinfo/cusc>, along with the Working Group Report.

3.0 The Amendment Proposal

Background

- 3.1 The existing wording of paragraph 6.5.1 provides ambiguity as to the need or otherwise for a contractual agreement between unlicensed, embedded generation and National Grid. CAP002 is intended to resolve this long-standing ambiguity.
- 3.2 CUSC paragraph 6.5.1 was codified across from MCUSA 2.5.1, which was considered to be effective at vesting when the Generator Licence threshold was set at 10MW. However, the subsequent changes to the Generator Licence threshold to 50MW in 1995 and then to 100MW in 2000, meant the contractual relationship with National Grid required under MCUSA 2.5.1 and now under CUSC 6.5.1 is unclear.
- 3.3 Embedded Generators may have a material impact on the Transmission System and therefore National Grid believe that it is important for an adequate process to be in place to manage their connection. This should ensure that National Grid is able to fulfil its licence and statutory obligations to maintain a safe, efficient, co-ordinated and economical transmission system.
- 3.4 Amendment Proposal CAP002 was raised by National Grid to resolve these issues and make clear the obligations contained in paragraph 6.5.1. It was tabled at the Amendments Panel meeting on 9th November 2001, where the Panel set up a Working Group to consider the proposal further before proceeding to wider consultation by National Grid.

Description of Amendment Proposal

- 3.5 National Grid is required to ensure that the transmission system is compliant and safe prior to energisation of an embedded generator. CAP002 is intended to improve this process by ensuring that unlicensed power stations that may have a material effect on the transmission system are identified at an early stage to National Grid. By providing transparency, it will ensure that the transmission system is adequately designed to accept the connection of embedded generation regardless of licensing thresholds and avoid possible discrimination between parties.
- 3.6 The Amendment Proposal sets out a requirement on the Distribution Companies to notify National Grid of unlicensed, embedded power stations which are greater in size than certain thresholds. National Grid

has indicated two deminimis levels of embedded generation that may be material to ensure that there is consistency of approach across the industry and transparency to all Parties involved. The first level requires all generation connecting to the same voltage as the lower voltage side of the local supergrid connection point to be notified to National Grid. In most scenarios this will be 132kV and in general this voltage level will have the larger embedded generators connecting to it. The second level requires the Distribution Companies to notify National Grid of embedded generators which are connected at lower voltage levels if they are greater than 30MW registered capacity.

- 3.7 The Amendment Proposal also sets out requirements on National Grid to provide analysis of the proposed connection and a response to the Distribution Company within 28 days of receipt of details concerning the embedded generator and a proposed date of connection.
- 3.8 In general Embedded Generators will not have a material impact on the transmission system and therefore in most situations there is not a need to enter into an agreement with National Grid. Therefore the proposed amendment to paragraph 6.5.1 not only resolves the ambiguity but also removes the need for embedded generators, in the majority of cases, to have a direct contractual relationship with National Grid. This change provides a 'one stop-shop' arrangement to embedded generators and removes the need to sign onto the CUSC itself, the requirement to contact National Grid and reduces unnecessary interfaces.
- 3.9 The criteria and process outlined in the Amendment Proposal are intended to aid consistency of approach across the industry and transparency to both Distribution Companies and Embedded Generators.

4.0 Working Group Discussions

- 4.1 The Working Group considered the Amendment Proposal at length and considered three main areas: (i) procedural issues, (ii) technical arguments, and (iii) commercial implications for parties.

Procedural Issues

- 4.2 The basis of the Amendment Proposal is the concern raised by National Grid that unlicensed, embedded generation has no clear requirement to contact them prior to energisation due to the ambiguity of paragraph 6.5.1. With the changes in generation licence exemption levels this issue has become more significant and therefore it is important for this provision of information issue to be resolved. In particular, currently National Grid may or may not receive sufficient (if any) information about unlicensed, embedded generation that could have a material effect on the Transmission System.

- 4.3 There was general agreement within the Working Group that paragraph 6.5.1 requires clarification so that the process is more transparent for all parties and thus minimising requirements, expectations and information flows. It was agreed that the Amendment Proposal ensured that this defect was remedied.
- 4.4 National Grid accept that in most cases unlicensed embedded generators will not have a material effect on the transmission system and therefore on this basis the Amendment Proposal goes further. It removes the need for an agreement with National Grid (as originally envisaged in MCUSA 2.5.1) and proposes that unlicensed embedded generators do not need to contact National Grid directly. However, to ensure that the provision of information is achieved, so that the transmission system is adequate to accept the embedded connection, it is proposed that the Distribution Company provide this information.
- 4.5 It was agreed that the overall process proposed by CAP002 would simplify arrangements for embedded generators. Distribution Companies are required currently to provide information to National Grid regarding the proposed connection arrangement and necessary Distribution system data and therefore part of this could be a pass through of the generator data. This would ensure consistency of information provision.
- 4.6 However, the removal of any contractual agreement between National Grid and an unlicensed embedded generator means that the requirement to comply with the Grid Code will be effected. The Grid Code provisions for small and medium, embedded power stations, although limited are required, particularly for medium power stations and therefore it is important that alternative arrangements are put in place. National Grid have noted that they are proposing changes to the Grid Code to effect the previous provisions. With the proposed, revised contractual relationship this is likely to be managed through the Distribution Companies. This in turn may have a consequential impact to the Distribution Code and potentially the Distribution Companies' Connection Agreements.
- 4.7 Concerns were raised that the Amendment Proposal would give National Grid the perceived ability to delay a Distribution Company energising an embedded generator and that this would create uncertainty and be detrimental to competition. National Grid noted that the Amendment Proposal required them to provide a response within 28 days to a proposed embedded generator connection and therefore there should not be a delay.

Technical Arguments

- 4.8 The Working Group discussed the technical implications of the 30MW threshold detailed in the Amendment Proposal. Some members believed that setting the level for provision of information at 30MW would better facilitate the applicable CUSC objectives, whilst other

members argued that a threshold of 50MW would better facilitate the objectives than a 30MW level.

Fault infeed issues:

- 4.9 In practice generators infeed three to four times their rating into a fault. For a 30MW generator this would be 100-140MVA of fault infeed, compared with equipment rating of 3500MVA - which is the minimum rating at 132kV. (This equipment rating is still in use at over 25% of National Grid sites). This infeed is approximately 3% of rating, although in practice this may be lower due to impedance and is very much project specific. National Grid considers this to be significant as it generally screens sites above 95% of design rating to assess the need for reinforcement at 132kV and below. In these scenarios and where appropriate it will use the full design rating for the assessment of fault levels.
- 4.10 However, some Working Group members believed that although a 30MW generator could increase fault levels by 2-3% at a 132kV 3500MVA substation, connections at 132kV would be captured by the other notification threshold. So at lower voltages, once other transformer impedances are accounted for, a 50MW generator would have a similar effect to a 30MW generator. This view was not consistent with and was not supported by National Grid and a higher threshold level would potentially increase uncertainty in the evaluation of fault levels.

Transformer rating issues:

- 4.11 Standard supergrid transformer ratings are 240MVA and therefore a generator of 30MW will represent some 15% of potential loading. This is a significant amount in the design and development of a site and especially in the consideration of operational planning throughout the year when determining outage windows for maintenance. It is for these reasons that it is important to National Grid to be aware of such connections.

Thermal issues:

- 4.12 Thermal issues may arise more remote from the connection site on parts of the transmission system that have limited thermal capacity. This is particularly significant where there may be an interaction of two or more embedded generator proposals that collectively will have an effect and which may be across different Distribution Company licensed areas.

Commercial Implications

- 4.13 It was generally agreed within the Working Group that a 'one stop-shop' arrangement would simplify the connection process for embedded generators.

- 4.14 An issue was raised regarding the management of any dispute arising concerning work required by National Grid. If National Grid identify works on the transmission system that needed to be undertaken prior to connection of the embedded generator then these would be identified to the Distribution Company and the embedded generator would not have a right of recourse back to National Grid. National Grid confirmed that the existing position is similar in that any NGC Connection Works required are contracted between National Grid and the Distribution Company. In reality there was therefore no difference to the existing position and any dispute was likely to end in a tri-party discussion.
- 4.15 It was noted that the amendment proposal did not remove the ability for an embedded generator to have a direct agreement with National Grid. However, it was expected that due to the benefits of not signing onto the CUSC and the consequential requirements, such as becoming a BSC Party, smaller embedded generators were unlikely to choose this approach.
- 4.16 The Working Group members were aware that the process proposed by CAP002 may increase the administrative burden on Distribution Companies. However, the role of Distribution Companies in the process was essential and by increasing transparency in the process so that the Distribution Company provided the necessary information to National Grid may reduce errors and misunderstanding.
- 4.17 Some Working Group members felt that by establishing a threshold level within the CUSC, this would be seen as dictating what was viewed as 'material'. This may have an impact on embedded generators commercial position in negotiating connection terms.

Summary of Working Group Discussion

- 4.18 There was agreement in the group that the Amendment Proposal better facilitated the applicable CUSC objectives, but that this was subject to the deminimis level established. An Alternative Amendment was developed by the Working Group and is described in Section 5 of this document. There was no consensus within the Working Group as to the appropriate deminimis level, but it was noted that the arguments for 30MW were technical, whilst the arguments for 50MW were based on consistency issues with other industry documents.
- 4.19 There was no consensus within the Group as to which of the Amendment Proposal or Alternative Amendment better facilitated achievement of the applicable CUSC objectives.

5.0 Alternative Amendment

- 5.1 The Alternative Amendment was formulated as part of Working Group discussions and was supported by some members of the group. It is identical to the Amendment Proposal with the exception that the deminimis level is set at 50MW for lower voltage connecting embedded generators.
- 5.2 The purpose of the formulation of the Alternative Amendment is to better align the threshold levels proposed for the CUSC with definitions in other industry documents. It justifies this on the basis that it would be inconsistent to place requirements on licence exempt generators to comply with certain aspects of the commercial and regulatory regime from which they are currently exempt.
- 5.3 Supporters of the Alternative Amendment oppose the CAP002 deminimis level of 30MW and argue that it may set an industry limit where an individual embedded generator is deemed to have an effect on the system in its own right. The Grid Code equivalent concept of this effect is a Medium Power Station, which is 50MW or greater. If the threshold level is set at 30MW it may lead to an inconsistent appearance between the Grid Code and the CUSC. National Grid noted that the Grid Code requirements were not being changed by this proposal and that 6.5.1 dealt with the requirement to notify National Grid of a proposal. It was the impact from such a connection that 6.5.1 was intended to manage whereas the performance requirements of a generator were laid out in the Grid Code.

6.0 National Grid View

- 6.1 National Grid recommends that Amendment Proposal CAP002 is implemented to the timescales proposed on the basis that it better facilitates the applicable CUSC objectives as set out in paragraph 1 of Condition C7F to National Grid's Transmission Licence.
- 6.2 This is on the grounds that by removing the current ambiguity of paragraph 6.5.1 of the CUSC, National Grid will more easily be able to ensure that it meets its licence and statutory obligations to develop and maintain an efficient, co-ordinated and economical system of electricity transmission. It will also ensure that the provisions of the CUSC are transparent to all parties, are applied consistently and avoid discrimination against parties or classes of parties. Such information will also ensure that National Grid is able to more easily operate and develop the transmission system in a safe manner.
- 6.3 National Grid believe that the Alternative Amendment also better facilitates the applicable CUSC objectives. However, National Grid does not support the Alternative Amendment on the grounds that the

Amendment Proposal itself better facilitates the objectives above the Alternative.

7.0 View of Amendments Panel

7.1 The view of the Amendments Panel on the way forward for CAP002 is that National Grid should initiate a period of wider industry consultation. This is in order to seek views on the Amendment Proposal and Alternative Amendment as to whether the Proposal or Alternative better facilitates achievement of the applicable CUSC objectives.

8.0 Views Invited

8.1 National Grid is seeking the views of interested parties relating to this Amendment Proposal CAP002.

8.2 Please send your responses to this consultation document to National Grid by no later than close of business on **11th March 2002**.

8.3 Please address all comments to the following e-mail address:

emma.groves@uk.ngrid.com

Or alternatively, comments may be addressed to:

Emma Groves
Commercial Development
National Grid Company plc
National Grid House
Kirby Corner Road
Coventry
CV4 8JY

Annex 1: CUSC Amendment Proposal CAP002

Amendment Proposal Form

Those wishing to propose an Amendment to the CUSC should do so by filling in this “Amendment Proposal Form” that is based on the provisions contained in Section 8.15 of the CUSC. The form seeks to ascertain details about the Amendment Proposal so that the CUSC Panel can determine more clearly whether the proposal should be considered by a Working Group or go straight to wider National Grid Consultation.

The Panel Secretary will check that the form has been completed, in accordance with the requirements of the CUSC, prior to submitting it to the Panel. If the Panel Secretary accepts the Amendment Proposal form as complete, then he will write back to the Proposer informing him of the reference number for the Amendment Proposal and the date on which the Proposal will be considered by the Panel. If, in the opinion of the Panel Secretary, the form fails to provide the information required in the CUSC, then he may reject the Proposal. The Panel Secretary will inform the Proposer of the rejection and report the matter to the Panel at their next meeting. The Panel can reverse the Panel Secretary’s decision and if this happens the Proposer will be informed by the Panel Secretary.

The completed form should be returned to:

CUSC Panel Secretary
Commercial Development
National Grid Company plc
National Grid House
Kirby Corner Road
Coventry, CV4 8JY

Or via e-mail to:

CUSC.Team@uk.ngrid.com

(Participants submitting this form by email will need to send a statement to the effect that the proposer acknowledges that on acceptance of the proposal for consideration by the Amendments Panel, a proposer which is not a CUSC Party shall grant a licence in accordance with Paragraph 8.15.7 of the CUSC. A Proposer which is a CUSC Party shall be deemed to have granted this Licence.)

Proposers Name:

(Name of party making the proposal. An Amendment Proposal may be made by a CUSC Party, a BSC Party or by “energywatch”)

National Grid Company plc

Proposers Representative:

(The name of the person representing the Proposer (and their alternate) for the purposes of the Amendment Process)

Mark Cox (Mike Metcalfe)

Organisations Name and Address:

(Organisation on whose behalf the Amendment is proposed)

National Grid Company plc
National Grid House
Kirby Corner Road
Coventry, CV4 8JY

Capacity in which the Organisation Proposes to make an Amendment:

(i.e. CUSC Party, BSC Party, or “energywatch”)

CUSC Party

Description of the issue or defect which the proposed Amendment seeks to address:

(This should be in reasonable, but not excessive detail)

CUSC Clause 6.5.1 –

The existing wording of clause 6.5.1 provides ambiguity on the necessity for a contractual agreement between unlicensed, embedded generation and National Grid. As a consequence, National Grid is not necessarily made aware of all embedded projects which may have a material impact in advance of connection, and sometimes may only be informed post energisation. This impacts on National Grid’s ability to develop and maintain an efficient, co-ordinated and economical transmission system. The resulting impact may cause security issues on the transmission system, health and safety concerns and cause potential discrimination in generation.

The clause, originally as MCUSA 2.5.1, was effective as the requirement for a generator licence was set at 10MW at vesting and this enabled National Grid to be notified of all relevant embedded generators. However the subsequent changes to the licence exemptions for embedded generators to 50MW in 1995 and then again in 2000 to 100MW meant that the necessary contractual relationship with National Grid was unclear. Embedded generators <50MW can have a material effect on the Transmission system and yet may not always contact, or have a Use of System agreement with, National Grid due to the clause’s ambiguity. With the change to 100MW, more significant embedded generation may not necessarily be identified to National Grid with sufficient notice.

In 1998 National Grid highlighted this issue to OFFER after failure to get agreement from all signatories to change and clarify the existing MCUSA 2.5.1. In response OFGEM confirmed that it could find no evidence that National Grid had been unable to meet its duties to date, and were not satisfied that National Grid had fully explored all mechanisms to manage the connection of embedded generation. Modification to CUSC 6.5.1 will resolve this long-standing ambiguity.

Description of the proposed Amendment and of its nature and purpose:

(This should be in reasonable but not excessive detail)

Draft proposal for revised wording of clause 6.5.1:

*“Any **User** who owns or operates a **Distribution System** shall not **Energise** the connection between a **Power Station** of 30MW **Registered Capacity** or greater, or a **Power Station** (whatever its **Registered Capacity**) connected to the same voltage level as the LV side of the **Grid Supply Point** and its **Distribution System** by the same until the **User** has obtained from **NGC** a statement of the works (if any) required to the **NGC Transmission System** and any **User System** to accommodate that **Power Station** and **NGC** has confirmed to the **User** that those works have been completed.*

*When requesting such statement the **User** shall provide **NGC** with details of the **Power Station** and the proposed date of connection to the **Distribution System** and **NGC** shall provide a statement advising whether works are required together with where practicable an indication of those works within 28 days of request. The **User** shall notify **NGC** in the event that the date of connection changes and request a revised statement.”*

The revised clause now identifies unlicensed power stations that may have a material effect on the transmission system. This will enable both the Distribution Network Operators and the Embedded Generators to be clear of National Grid’s requirement and provide clarity and consistency. On request National Grid will consider the proposed Embedded Generation connection and provide a statement within 28 days to confirm if there is an impact on the transmission system based on the proposed connection date and generator parameters. National Grid will need to re-assess the impact in the event of the proposed connection date or scheme detail changing.

The revision will simplify the existing interface and contractual relationship between all parties by enabling unlicensed, embedded generators to have a single point of contact and single contractual relationship with the Distribution Network Operator and remove the need for an agreement with National Grid.

The revision will more easily enable National Grid to develop the transmission system in an efficient, co-ordinated and economic fashion and promote transparent competition in generation.

An indication of those parts of the CUSC which would require amendment in order to give effect to (or would be otherwise affected by) the proposed amendment and an indication of the nature of those amendments or effects:
(This should be given where possible)

Change to Clause 6.5.1 should not affect other sections of the CUSC.

Reasons why the Proposer believes that the proposed Amendment would better facilitate achievement of the applicable CUSC objectives as compared with the current version of the CUSC with background information in support thereof:

The change to clause 6.5.1 as described above would remove the existing ambiguity and make clear and transparent the impact of embedded generation on the transmission system. National Grid will then be able to more easily fulfil its duties to facilitate competition in generation and ensure that there is no potential discrimination. Awareness of all potential Users will also facilitate the development of the transmission system in an efficient and co-ordinated manner. Simplification of the contractual interfaces between parties will also reduce administration, in particular for the Embedded Generator and ensure improved connection processes.

An indication of the impact of the proposed Amendment on Core Industry Documents:

(This should be given where possible)

The removal of any contractual agreement between National Grid and an unlicensed embedded generator means that there will no longer be a requirement on them to comply with the Grid Code. It will therefore be necessary to ensure that alternative arrangements are put in place to ensure that the existing provisions in the Grid Code on small and medium embedded power stations are still enforced.

This may be achieved by amendments to the Distribution Code to add provisions equivalent to those existing within the Grid Code, which would be effected through bilateral agreements between the Distribution Network Operator and the Embedded Generator.

An alternative approach for the short term could be to change the Grid Code to put an obligation on the Distribution Network Operator to ensure that the existing provisions in the Grid Code relating to <100MW power stations connecting to their network remain enforced. It follows that possible subsequent changes to the Distribution Code could fulfil this obligation and also provide consistency and clarity.

Appendix 1 of this amendment form details parts of the Grid Code that relate to medium power stations that will need to be enforced. This is not intended to be an exhaustive list but to provide an indication of the key issues. Areas of

the Distribution Code and ER G75 are listed that may be considered for review.

An indication of the impact of the proposed Amendment on relevant computer systems and processes used by CUSC Parties.

(This should be given where possible.)

None identified

A statement to the effect that the Proposer acknowledges that on acceptance of the proposal for consideration by the Amendments Panel a Proposer shall grant a licence in accordance with 8.15.7 of the CUSC.

(A signature to this effect must be given by a proposer which is not a CUSC Party)

Appendix 1: Suggested areas for harmonisation of Technical and Information Requirements between Grid Code and Distribution Code

The Grid Code currently contains a large number of provisions impacting directly on Embedded Generation relating to both technical requirements and provision of information. The proposed CUSC Amendment is likely to necessitate changes to the Grid Code to permit the collection of much of this data by the Network Operator and also to ensure the continued technical performance of medium power stations. The key areas are detailed below:

Technical Requirements for 50-100MW Generators

Currently medium power stations are required to have a robust design and must be compatible with the technical requirements specified in the Grid Code. Medium power stations are likely to be connected at the same voltage level as that of the LV side of National Grid's supergrid transformers (mainly 132kV, 66kV or 33kV) and do form part of the integrated electrical system, which is required to ride through various disturbance conditions where system voltage and/or frequency deviate from nominal values. It is therefore crucial that these medium power stations stay connected and remain stable under various system frequency/voltage variations and must not exacerbate the system condition under such disturbances.

It is for these reasons that the Grid Code requires medium power stations to be designed to European/ International standards and also meet specific technical requirements to take into account the characteristics of the UK electrical system and, in particular, its needs for frequency control and overall stability. In accordance with these, a medium power station at commissioning and until decommissioning:

- ÷ Must be able to operate continuously within a system frequency range of 47.5 to 52Hz and for a period of at least 20 seconds each time the frequency is below 47.5 Hz but not less than 47Hz (CC6.1.3). Under system split conditions the plant is expected to be able to control the frequency below 52Hz (CC6.3.7(c)(i)).
- ÷ Must be capable of continuously maintaining its constant active power output for system frequency changes within the range 50.5 to 49.5Hz. However, for system frequency changes within the range 49.5 to 47 Hz any reduction in output power must not be greater than pro-rata with falling frequency, with the reduction in power output being no more than 5% for a system frequency drop to 47Hz. (CC6.3.3).
- ÷ Must be fitted with a fast acting proportional turbine speed governor and unit load controller or equivalent control device to be capable of providing frequency response under normal operational conditions (CC6.3.7(a)). The droop setting is generally required to be set between 3% and 5% (CC.6.3.7(c)(ii)). The speed governor, in co-ordination with other control

devices, must control the generating plant active power output with stability over the entire operating range of the Generating Unit (CC.6.3.7(b)).

- ÷ Must be fitted with a continuously acting automatic excitation control facility to control the terminal voltage without instability over the entire operating range (CC.6.3.8(a)).

National Grid's Requirements for Provision of Information

To enable National Grid to meet its Licence obligations, it requires information from embedded generating units and these requirements are detailed in the Grid Code. This information is to allow adequate design for the connection and on-going operation of the system.

- ÷ For all medium power stations and all generating units connected at the same voltage level as that of National Grid's supergrid transformer LV side: Provision of data currently specified in the Grid Code for medium power stations (i.e. Grid Code Planning Data, classed as DPD and SPD) to allow adequate design for connection and also the on-going operational data requirements to manage operational planning.
- ÷ For all power stations of capacities between 30MW and 50MW that are connected to a voltage level below that of National Grid's supergrid transformer LV side: Notification of the existence of all such generators and provide at NGC's request technical data if deemed necessary by National Grid. (This level of information is already required by the Distribution Code)

Impact on Industry Documents

It will be sensible to co-ordinate any changes to Grid Code and Distribution Code with changes to Engineering Recommendation G75 for power stations of less than 100MW. Below is a list of the clauses which may require modifications with the majority of these being minor ones:

Possible Required Changes to Grid Code:

In the Grid Code there are many clauses which refer to medium and small power stations and these potentially can be subject to some modifications. However, it is likely that a new blanket clause in the Grid Code will be added which will eliminate the need to modify many of the clauses in question. The relevant Grid Code clauses deal mainly with the provision of information and are:

PC.3.2(a), PC.3.2(b), PC.4.1(b), PC.4.2.4, PC.4.3.1, PC.4.3.1, PC.A.1.2(d), PC.A.1.12, PC.A.2.1.3, PC.A.2.2.2, PC.A.2.5.4, PC.A.3.1.2(a), PC.A.13.1.2(b), PC.A.3.1.3, PC.A.3.1.4(a), PC.A.3.1.4(b), PC.A.3.2.2(a), PC.4.2.3, PC.A.4.3.2, PC.A.5.1.2, PC.A.5.1.3, PC.A.5.1.4, PC.A.5.2.3, PC.A.5.3.1, PC.A.5.3.1(b), PC.A.5.3.1(c), PC.A.5.3.1(d)
CC.5.1, CC5.2(a), CC.5.2(b), CC.5.2(d), CC.5.2(f), CC.5.2(j), CC.5.2(l)
OC1.4.2, OC1.5.1, OC1.5.2, OC1.5.3

Possible Required Changes in Distribution Code:

The following clauses in the Distribution Code may require augmentation as discussed above:

DPC6.7 (re Telemetry)

DPC7.2 (re General Requirement for embedded generators)

DPC.7.3 (re Provision of Information)

DPC7.4 (re Technical Requirements for embedded generators)

Possible Changes in ER G75:

The following clauses may be modified (subject to current EA Review, OSG-SG7)

3.2 (re Compliance with Grid Code)

4.1, 4.2, 4.3, 4.4 (re Generating Unit Parameters)

Annex 2: Proposed Text to Modify CUSC

(A) Text to give effect to the Proposed Amendment

Conformed Version

- 6.5.1 Any User who owns or operates a Distribution System shall not Energise the connection between ~~any~~ a Power Station of 30MW Registered Capacity or greater, or a Power Station (whatever its Registered Capacity) connected to the same voltage level as the LV side of the Grid Supply Point and its Distribution System ~~nor permit the use of its Distribution System~~ by the same until the ~~person owning or operating the plant has where required completed the Use of System Application (Generators) and has entered into a Bilateral Agreement in the appropriate form (if any) with NGC and (if such person is not already a party to the CUSC) has where required entered into an Accession Agreement pursuant to this Section 6.~~ User has obtained from NGC a statement of works (if any) required to the NGC Transmission System and any User System to accommodate that Power Station and NGC has confirmed to the User that those works have been completed.
- When requesting such statement the User shall provide NGC with details of the Power Station and the proposed date of connection to the Distribution System and NGC shall provide a statement advising whether works are required together with where practicable an indication of those works within 28 days of request. The User shall notify NGC in the event that the date of connection changes and request a revised statement.

Clean Version

- 6.5.1 Any User who owns or operates a Distribution System shall not Energise the connection between a Power Station of 30MW Registered Capacity or greater, or a Power Station (whatever its Registered Capacity) connected to the same voltage level as the LV side of the Grid Supply Point and its Distribution System by the same until the User has obtained from NGC a statement of works (if any) required to the NGC Transmission System and any User System to accommodate that Power Station and NGC has confirmed to the User that those works have been completed.
- When requesting such statement the User shall provide NGC with details of the Power Station and the proposed date of connection to the Distribution System and NGC shall provide a statement advising whether works are required together with where practicable an indication of those works within 28 days of request. The User shall notify NGC in the event that the date of connection changes and request a revised statement.

(B) Text to give effect to the Alternative Amendment

- 6.5.1 Any User who owns or operates a Distribution System shall not Energise the connection between ~~any~~ a Power Station of 50MW Registered Capacity or greater, or a Power Station (whatever its Registered Capacity) connected to the same voltage level as the LV side of the Grid Supply Point and its Distribution System ~~nor permit the use of its Distribution System~~ by the same until the ~~person owning or operating the plant has where required completed the Use of System Application (Generators) and has entered into a Bilateral Agreement in the appropriate form (if any) with NGC and (if such person is not already a party to the CUSC) has where required entered into an Accession Agreement pursuant to this Section 6.~~ User has obtained from NGC a statement of works (if any) required to the NGC Transmission System and any User System to accommodate that Power Station and NGC has confirmed to the User that those works have been completed.
When requesting such statement the User shall provide NGC with details of the Power Station and the proposed date of connection to the Distribution System and NGC shall provide a statement advising whether works are required together with where practicable an indication of those works within 28 days of request. The User shall notify NGC in the event that the date of connection changes and request a revised statement.

Clean Version

- 6.5.1 Any User who owns or operates a Distribution System shall not Energise the connection between a Power Station of 50MW Registered Capacity or greater, or a Power Station (whatever its Registered Capacity) connected to the same voltage level as the LV side of the Grid Supply Point and its Distribution System by the same until the User has obtained from NGC a statement of works (if any) required to the NGC Transmission System and any User System to accommodate that Power Station and NGC has confirmed to the User that those works have been completed.
When requesting such statement the User shall provide NGC with details of the Power Station and the proposed date of connection to the Distribution System and NGC shall provide a statement advising whether works are required together with where practicable an indication of those works within 28 days of request. The User shall notify NGC in the event that the date of connection changes and request a revised statement.