

Relevant Electrical Standards

A Summary of Responses to the Recent Consultation GES/1/05

Introduction

- 1 National Grid has recently consulted with Authorised Electricity Operators (GES/1/05) regarding a change under the Governance of Electrical Standards. The consultation followed on from GCRP Paper 04/29 “Technical Standards and the Grid Code” (attached at Appendix 1) and proposed that the following documents be amalgamated under a single document:
 - The Electrical Standards that fall under the Governance of Electrical Standards
 - Other Electrical Standards that are referenced by one or more of the Electrical Standards that fall under the Governance of Electrical Standards
 - Other standards/procedures identified in GCRP Paper 04/29
- 2 Four responses to consultation GES/1/05 were received. This paper aims to summarise these responses and describe the next steps in the process.

Summary of Responses

- 3 The responses that were received from Authorised Electricity Operators are attached at Appendix B the key issues raised were as follows:

Applicability across Great Britain	One respondent (Magnox) requested that it be made clearer throughout the entire document that the consolidated document only applies within England and Wales One respondent (BE) queried whether the document should in fact be applied across GB unless there is an over-riding reason why a regional difference should exist.
Retrospectivity	Three respondents (RWE, Magnox & WPD) requested that the consolidated document be clear on its applicability to new and existing plant and that the precedence of CC.6.2.1.2 be established clearly within the document. One respondent (RWE) queried how the existing Bilateral Agreements that refer to NGTSSs should be interpreted following any introduction of the consolidated document.
Other Standards	One respondent (RWE) requested that the Testing procedures be removed Three respondents (RWE, BE & Magnox) requested that other procedures/standards commonly quoted in Bilateral Agreements also be included within the consolidated document One respondent (BE) requested that requirements such as those quoted within the Grid Code for Control telephony also be included within the consolidated document. The same respondent also queried whether the consolidated document should also refer to standards relating to operational resilience under Black Start conditions.
Clarification of CC.6.2.1.1	One respondent (Magnox) asked that the consolidated document be referenced by CC.6.2.1.1

Codification of Obligations	Two respondents (WPD & RWE) sought an assurance from National Grid that no new technical obligations had been incorporated within the document and that it represented only a codification of the existing NGTS obligations. Another respondent (BE) noted that it would have been useful if a matrix could have been provided that summarised the relationship between the existing NGTS numbers and the sections of the consolidated document.
Inclusion of "Guidance Notes"	Two respondents (RWE & WPD) requested that the "Guidance Notes" included be removed or included as "Associated Documents". The respondents thought that while useful their incorporation in the consolidated document could mean that they become erroneously interpreted as standards that Users must comply with.
National Grid Name	One respondent (RWE) requested that all references to "National Grid" (or similar) be replaced with references to "NGET"
Applicability to User Assets	One respondent (WPD) queried the suitability of the RES to User owned assets where the User has the responsibility for maintaining the assets throughout the asset's life.
Further changes to content of Document	One respondent (WPD) provided several further detailed comments regarding clauses in each of the sections of the consolidated document.
Working Group	One respondent (RWE) suggested that a Working Group be set up to examine the changes put forward in the document.

Views of National Grid:

Applicability across Great Britain	The intention of the work undertaken by National Grid following on from GCRP Paper 04/29 was to consolidate only the standards applicable in England & Wales into a single document. National Grid believes that this should continue to be the case and to that end will amend the next draft of the document to make this clear and unambiguous.
Retrospectivity	National Grid will clarify within the RES document that it applies only in accordance with the existing provisions in CC.6.2.1.2. Existing equipment will continue to be subject to the standards applicable at the time of commissioning.
Other Standards	At this stage only those standards/procedures quoted within the original GCRP paper 04/29 have been included within this draft of the consolidated document. Given the need to achieve consensus for each change, National Grid would recommend an iterative approach to be taken regarding future changes. Namely that a consolidated document based upon the suggestions of GCRP 04/29 should be implemented first then further changes taken forward as necessary.
Clarification of CC.6.2.1.1	National Grid will examine whether CC.6.2.1.1 needs clarification.
Codification of Obligations	The consolidated document has been produced entirely in accordance with the proposals put forward in GCRP 04/29. A matrix that noted which NGTS maps to which section of the consolidated document was provided with the GCRP paper 05/18.

Inclusion of “Guidance Notes”	National Grid does not intend that the Guidance Notes included within the document should be compulsory requirements. Rather they are included mainly as a knowledge sharing exercise and as examples of how Users may fulfil certain requirements. National Grid proposes to leave all Guidance Notes within the document but that they clearly be highlighted as “not forming part of the RES document”.
National Grid Name	National Grid will update the document such that “NGET” is used throughout.
Applicability to User Assets	The purpose of the RES document is to facilitate the secure and reliable operation of the Transmission System in England and Wales. Thus any equipment that is installed within the busbar protection zone meet the relevant standards at the time of commissioning. The RES document is not intended to prescribe how assets must be maintained throughout their lifetime.
Further changes to content of Document	Again National Grid would recommend any further changes taken forward at a later date following any implementation of the consolidated document.
Working Group	National Grid believes that a consolidated document based substantially on its current form (noting the comments above) can be implemented without recourse to a Working Group. Should other more complex future changes be taken forward then a Working Group may be appropriate at that stage.

Next Steps:

- 4 Under the terms of General Condition 11 of the Grid Code, when considering changes under the Governance of Electrical Standards before such changes can be implemented there must be a broad consensus of opinion. In the absence of such broad consensus the changes must be referred to the Authority for a decision.
- 5 In light of this National Grid would propose that the above consultation responses are discussed by the GCRP. In order to facilitate this discussion National Grid intends to circulate a revised version of the RES document in line with comments received and National Grid’s views given in this paper.
- 6 Should the GCRP be able to reach a broad consensus regarding the form of a consolidated document at its November meeting, National Grid would then proceed in line with the change proposals previously brought to the GCRP and replace the existing NGTSs applicable in England and Wales under the Grid Code with the consolidated document agreed by the GCRP.
- 7 Should the GCRP not be able to reach broad consensus on a consolidated document, National Grid would propose that it would prepare a consolidated document reflecting views of the GCRP where it considers them appropriate. National Grid would then send this document to the Authority as its proposed replacement for the existing NGTSs applicable in England and Wales under the Grid Code.

Appendix A: GCRP Paper 04/29:

Technical Standards and the Grid Code

21 October 2004

Introduction

NGT has undertaken and is undertaking a number of initiatives that show a commendable desire to enhance the transparency of its dealings with other members of the electricity industry. In line with this goal, this note highlights some additional standards that could be added to the existing list of electrical standards that are now contained in an annex to the General Conditions of the Grid Code.

1. Grid Code Background: Under CC6.2.1.2 (b) NGC is required at all times to maintain a list of those Technical Specifications and additional requirements which might be applicable under CC.6.2.1.2 and which may be referenced by NGC in the Bilateral Agreement. NGC shall provide a copy of the list upon request to any User. NGC shall also provide a copy of the list to any new User upon receipt of an application form for a Bilateral Agreement for a new Connection Point.

The NGTS / procedures listed below have been specified in one or more recent Connection Offer(s) issued by NGC as a User requirement contained in Appendix F to the Bilateral Connection Agreement. As such they have a material impact on Users.

In accordance with the procedure set out in Grid Code General Conditions 11, it is proposed that the following NGTS are included within Electrical Standards (a) of Annex to the General Conditions.

2. NGTS for Inclusion:
 - a. NGTS 3.1.2: Earthing requirements, including short-circuit withstand current and rise of earth potential.
 - b. NGTS 3.7.6: Requirements for the User's interface with the NGC substation synchronising system, including the provision of voltage measurements.
 - c. NGTS 3.24.1 (Communications) and 3.24.68, 3.24.69, 3.24.70 and 3.24.71 (System Monitor): Specification for the supply and installation of system monitoring equipment.
 - d. NGTS 3.24.72, NGTS 3.9.11: Details of the Operational Metering Summator (OMS) to be complied with for the provision operational metering.
 - e. NGC Transmission Procedure 106: Standard applied to the commissioning of protection systems
 - f. A number of the above NGTS contain a requirement to comply with other NGTS. We suggest these "embedded" NGTS are identified and similarly listed as Electrical Standards
3. Way Forward: If there are other standards or procedures that NGC think should be included, we suggest that these are added by NGC to the list and the inclusion taken in one go. However, we would not wish to delay inclusion of these standards and procedures and would suggest it does not need any more than someone quietly trawling through to check.

Appendix B: Responses to Consultation GES/1/05

Response ID	Name of AEO	Name of Respondent
GES/1/05_RWE	RWE npower	John Norbury
GES/1/05_WPD	Western Power Distribution	Phil West
GES/1/05_Magnox	Magnox Electric	David Ward
GES/1/05_BE	British Energy	John Morris

Mr D Payne
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17th October 2005

Dear David

**Grid Code Consultation Document GES/01/05 - Draft Issue 1.1 29th September 2005
Proposed Relevant Electrical Standards Document (RES)**

Thank you for the opportunity to respond to the above Grid Code consultation. The following response is provided on behalf of the following CUSC Parties within RWE: RWE Npower plc, Npower Cogen Limited, Npower Cogen Trading Limited, Npower Direct Limited, Npower Limited, Npower Northern Limited, Npower Northern Supply Limited, Npower Yorkshire Limited, Npower Yorkshire Supply Limited.

RWE welcomes the proposal to incorporate the National Grid Technical Specifications (NGTS) that may be specified as a requirement in bilateral connection / embedded generation agreements into a single document (RES) under the governance of the Grid Code. However, it remains our preference for non-site specific technical requirements to be specified in the Grid Code. Accordingly, an appropriate balance needs to be struck between obligations in the Grid Code and those that are included in the RES, such that a "2nd tier Grid Code" is not created.

As discussed at the September GCRP, one of our main concerns lies with the lack of clarity regarding the process for implementing the RES requirements on the various categories of Users. In the absence of any such process, we suggest that the following principles should apply to the implementation of the RES, which should be set out within the RES:

- (a) New Users would be required to comply with the RES to the extent that they would be applicable.
- (b) Existing Users would be required to comply with those aspects of the RES corresponding to those NGTSs that they are currently obliged to comply with. Clarification is required of the status of NGTS post RES, given that bilateral agreements will continue to reference these NGTSs.
- (c) Existing Users not subject to NGTSs would not be obliged to comply with the RES.

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- (d) Compliance with the RES would not be retrospective, in accordance with the principles established under Grid Code CC.6.2.1.2

In recognition of the above, we suggest that appropriate text be introduced within the body of the Grid Code which sets out how the RES would be implemented. In addition, requirements contained in the RES that it "must be complied with by all Users" should be amended accordingly.

Regarding the content of the proposed RES, it would be extremely helpful if NGET would provide an assurance that the various requirements specified in the document have not changed from those stated in the current versions of the corresponding NGTSS. On the assumption that there are no new obligations introduced into the RES, our general comments on the content of the RES are as follows: -

- (a) It is stated in the introduction that the RES only applies "to User equipment that is located, electrically or physically within the zone covered by National Grid's substation busbar protection". However, it must also be recognised that, in addition to the technical requirements applying within the busbar protection zone, the RES should also contain to the fullest extent possible the technical obligations that may be required of Users under a bilateral connection or embedded generation agreement. For example, NGET may require embedded generation to comply with certain technical requirements via the bilateral embedded generation agreement, where the generating unit is connected to the DNO's network and therefore outside of NGET's busbar protection zone.
- (b) The RES should not include any of the proposed policy and guidance notes. Whilst these notes may be helpful under certain circumstances, their inclusion in such a standards document under the governance of the Grid Code would be both inconsistent with Grid Code and detract from the clarity of the technical obligations that Users are required to comply with. In many instances the "policy" requirements appear to be confused with the technical requirements that the User must comply with, e.g. Section 2 - Management of rise of earth potential at new and refurbished towers and it is unreasonable to require Users to comply with "policies". If considered necessary, such policies and guidance notes could be published as "Associated documents".
- (c) Testing and compliance requirements should be removed from the RES and be addressed via Grid Code OC5.
- (d) Other typographical amendments should be made, such as substituting "National Grid", "National Grid UK Transmission", and "National Grid, Asset Strategy - Asset Policy" etc with "NGET"; removal of the specific copyright provisions since the RES will presumably be subject to the Grid Code copyright provisions.

I trust that you will find the above comments helpful. Given the length of this document and the numerous changes that are likely to be required it may be appropriate to convene a working group to review the detail of the proposed drafting. In the meantime, if you wish to discuss any matters further in relation to this please do not hesitate to contact me.

Yours sincerely

John Norbury
Network Connections Manager

BY E-MAIL 27-10-05

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Our ref

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Date

GES/1/05

27th October 2005

diw

Dear David

GRID CODE CONSULTATION – Proposed Relevant Electrical Standards Document

I am replying for Western Power Distribution (WPD) to the above consultation, and have some brief high level comments which follow, together with a number of detailed comments which are included in the attached “comments” sheet.

High level comments

1. The consultation stated - “National Grid clarified that whilst this exercise sought to codify the relevant electrical standards, the net effect of the exercise did not alter existing National Grid policies. (In other words, whilst it is proposed to remove some standards through this exercise, and to add others which were not previously listed directly, this is predominantly a codification exercise. No variations to the content of any of the actual standards that it is proposed to list have been made.)” . Whilst this statement is noted, in any consultation it ought to be the norm that all changes and deletions are identified; what we have in this composite document is a mixture of old and new and short of a word by word review of all the previous documents it is difficult to identify changes.

2. WPD share the concern about “retrospectivity” of this document. Whilst NGT state that there is no “intention”, WPD would object to any retrospective application. Having been previously involved with GC Technical Standards review, I well remember the detailed discussion of issues surrounding extensions and modifications eg bay changes at existing substations and those surrounding the re-use / re-location of existing equipment. These are captured in CC 6.2.1.2., and nothing in the Proposed Relevant Electrical Standards Document shall be permitted to modify that.

3. WPD have concern over the inclusion of “Guidance Notes” (Part 5, Sections 21 22 and 23) within a GC referenced document. No matter that they are referred to as “Guidance”, experience elsewhere has shown that they become interpreted as “requirements”; indeed in this instance even the section numbering could lead to that conclusion. The inclusion of such “Guidance” (e.g. Section 22) could theoretically place NGT under legal risk for activities for which they would not otherwise have a direct responsibility.

4. At the time of production of the Grid Code, NGC had a more prominent maintenance activity in relation to Users equipment at joint use sites than is now the case. Given that responsibility for life time care of User assets rests with the User, the extent of detailed specification requirements covering equipment which NGT does not and will not own or have a maintenance responsibility is questionable, especially so at single User sites where the User owns the busbar. The level of detail sought is in many respects equivalent to that applicable to a Competition in Connections scenario where a DNO is being requested to adopt ownership, which is not the case here.

I attach overleaf a sheet with further comments; in some cases these relate to aspects which are contained in the presently GC referenced NGTS document.

If you have any queries please give me a call.

Yours sincerely

[PJW]

Philip West
Policy Manager

Member	Clause/ Subclause/ para / figure	Type of comment (General / Technical/ Editorial)	COMMENTS
WPD	1	G	<p>“The User shall demonstrate that its equipment connected to the GB Transmission System is fit for purpose, complies with statutory and Grid Code requirements and that it meets the manufacturers stated performance characteristics and the requirements of the User specifications contained within these Relevant Electrical Standards”.</p> <p>“In accepting the Connection Conditions, Users connecting to the GB Transmission System are required to comply with these requirements.</p> <p>This clause has the appearance of applying retrospectively and of contradicting GC CC 6.2.1.2 and cannot be accepted in that context.</p>
WPD	1.1	T	<p>“This can be taken to mean that the User shall ensure that only type-registered equipment is connected within the zone (physical and electrical) covered by National Grid’s substation busbar protection system”.</p> <p>There is a recognised switchgear assessment process undertaken by ENA, to which NGT are party. It should not be necessary to repeat an assessment for User equipment which has passed through the ENA process. Equipment which has passed the ENA process and with which the User is satisfied, should not be subject to additional NGT requirements.</p>
WPD	1.3	T	<p>The clause makes reference to” relevant National Grid Technical Requirements, Operational Procedures, related Health, Safety and Environmental policies and National Grid legal obligations” - . It would be helpful to understand, in demonstrating the need for particular requirements of the registration process, what obligations NGT believes it carries in respect of Users equipment</p>
WPD	1.5.3 also 12.5.1	G	<p>The phrase “connected directly to the GB transmission system” is all encompassing – it could be taken to imply a DNO cut out in a house, as it is connected to the GB transmission system – what is meant by “directly”? Where is the demarcation line – is it intended to be within the busbar protection zone?</p>
WPD	2.2	E	<p>All EA Technical Spec references should now be ENA references</p>
WPD	4.2.3	E	<p>Noting that the most recent legislation listed is the ESQCRs 2001(sic), it would be prudent to check that the listed legislation has not been superseded or relevant new legislation added The ESQCRs are 2002, not 2001 (SI 2002 No 2665).</p>
WPD	4.5.1	T	<p>The required time constant should simply be that it meets the duty requirements of the installation; that might mean that a 60ms t.c. could in some situations be adequate where 45ms was too low, but not requiring 135ms. It should also be noted that 135ms is not an IEC recognised rating (120ms being the highest). Calling for 135ms where a lower t.c. could be perfectly acceptable can add to cost, delivery and reduce available manufacturer options.</p>

Member	Clause/ Subclause/ para / figure	Type of comment (General / Technical/ Editorial)	COMMENTS
WPD	4.6.2	G	“Products supplied for installation on the GB Transmission System or property, and owned and operated by or on behalf of National Grid, shall comply with all relevant UK Health and Safety and Environmental legislation” – Whilst not disagreeing that such a requirement would be common for Users equipment, it is valuable to highlight that this clause echoes the issue raised in WPD’s general comment 4 contained in the covering letter, relating to excessive detail on equipment for which NGT will not have responsibilities to own or operated.
WPD	4.6.2	T	New EU requirements on fluorinated gases are of some relevance here – no intentional releases to atmosphere, end of life recovery, inventories. Ofgem already require annual data along lines of proposed EU requirements.
WPD	5.2	G	As a requirement placed on Users for equipment which NGT will neither own or operate, it is necessary to have clarity over responsibilities and with that, which party shall determine the relevant specifications. Users may take different approaches to mitigating the same hazards and it would be inequitable for NGT to impose their solution on equipment which they do not own or operate.
WPD	5.12	T	This clause may be in conflict with clauses 2.2 and 7.2 which make reference to EA (sic) ENA TS 41-24
WPD	5.13	G	Some of these requirements are excessive, especially where NGT will not own or operate the equipment – eg (g) “Each cabinet, cubicle or kiosk shall carry a label identifying <u>all</u> of the equipment contained within it.” (I am not aware that NGT actually do this on equipment which they own)
WPD	Fig 2	E	Ref should be to ENA TS 43-08
WPD	5.21.7	T	NGT Safety Rule requirements are not applicable to Users employing their own Safety Rules – as documented in site responsibility schedule – hence consequential actions will not follow
WPD	6.2.1	T	It is not appropriate for NGT to dictate the asset life or maintenance aspects of User owned equipment – see also 7.2.19
WPD	6.2.2	T	Given clauses elsewhere relating to designing out potential hazards, it appears (unless I have missed a clause somewhere !) that NGT have not included a requirement for pressure relief devices on other than GIS equipment. This is surprising . In February 2005, when assessing a breaker design of a type purchased by NGT, the maker stated (possibly incorrectly) that NGT only sought pressure relief on a site specific basis, and none had been requested on the most recent NGT installation.
WPD	7.2.12	T	It is not understood why NGT are calling for gates <u>not</u> to be bonded to their supporting posts. This appears to create a safety hazard and contrary to normal requirements relating to step and touch potentials. (contrast with 7.2.17)
WPD	8.2.1	G	The reference to ISO 14001 is out of kilter with other sections and does not appear to relate to a direct technical GC requirement on Users
WPD	9.2.12	T	Wiring colours on User equipment shall match ENA TS 50-18 requirement. – those are understood to differ from NGT
WPD	12	T	User owned circuit breakers having rating adequate for the installation and compliant with ENA TS 41-37 should be accepted.

Duffield, Mark

From: david.m.ward@magnox.co.uk
Sent: 28 October 2005 18:20
To: Payne, David - NGT House
Subject: Fw: Grid Code Consultation Document GES/01/05

To David Payne
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(By email)

David

Grid Code Consultation Document GES/01/05 -

Draft Issue 1.1 29th September 2005 Proposed Relevant Electrical Standards Document (RES)

This email is the formal response of Magnox Electric Ltd to the above consultation paper. Magnox Electric Ltd is part of the British Nuclear Group, which is the new name for part of BNFL. My comments are not confidential.

Since Magnox Electric is not planning new connection points, nor are we planning to install new equipment within busbar zones at existing connection points, this new document is unlikely to have any direct effect on us. Also, the consultation contains a statement that this new document does not seek to add to or change the requirements that existed previously under in the existing NGTS. As a consequence, I do not have any concerns with the technical detail of the requirements.

But I do have two concerns with this new document, firstly to do with its applicability, and secondly to do with what it does not contain.

My primary concern is one of clarity of the applicability of the standards within this document. I think this probably requires some adjustment to the wording of the Grid Code or of the new document

For example, within the document it states

“Users connecting to the GB Transmission System are required to comply with these requirements”,

while elsewhere it says

“This document applies only to connection agreements where the User is connected/connecting to an extant National Grid substation or where the connection will be to a new substation that is being constructed by National Grid.”

The first sentence implies it would apply to transmission connections in Scotland, while the second sentence implies that it would not. Which is it?

I note that National Grid confirmed at the last Grid Code panel meeting that “there was no intention to seek to use this exercise to impose new standards on currently compliant plant.” However there is nothing within the document that I could spot which says that it is not retrospectively applicable to plant installed before it was written. It would be clearer if the introduction stated this.

The consultation document does not propose any wording changes to the Grid Code to specifically refer to this new standards document. I know that the Grid Code Connection Conditions did not previously specifically refer to the NGTS, but that was a lack of clarity that should be remedied. I do not regard it as acceptable that the requirement to comply with the standards document should only be specified in the Bilateral Agreement. If the standards are of general applicability, then the obligation to comply with them should be spelled out clearly in the Grid Code. I believe that John Norbury made exactly the same point in discussion at the Grid Code Panel, My interpretation of the current CC 6.2.1.2 (a) (i) and the assurance given at the Grid Code meeting, is that the new standards document would not apply to plant installed before 1999.

My interpretation of CC6.2.1.1 (a) (ii) is that the phrase “relevant Technical Specification and any further requirements identified by NGET” means this new standards document. If so, this paragraph should specifically say so.

I am not clear how to interpret CC.6.2.1.2 (a) (iii) and (iv). I think the underlying intent of the Grid Code words is that replacement plant or re-used plant has to comply with the specifications/standards that were applicable at the time it was originally designed/purchased, so the new relevant electrical standards would not apply to such replacement or reuse until many years in the future. But in the consultation document you state “However, where work was taking place on existing plant, it would be expected that the new arrangements would be applied in accordance with the more detailed provisions set out in Grid Code Connection Conditions CC.6.2.1.2.” which appears to contradict this.

My secondary concern is that the new standards document does not include some technical requirements which are routinely included Bilateral Agreements . For example the technical requirements for generator excitation systems and turbine governors are generally similar in all new connections. Hence these common technical requirements should be specified in a similar electrical standards document. This does not mean that I reject this document, but that I regard its publication as a first step to getting all the technical requirements of connection to be brought into the open.

I hope my comments are helpful

Regards

David Ward

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Magnox Electric Ltd is a part of British Nuclear Group

----- End of message

Duffield, Mark

From: Payne, David - NGT House
Sent: 09 November 2005 13:05
To: Duffield, Mark; Hyde, John
Subject: FW: Grid Code - Governance of Electrical Standards Consultation
Importance: High

-----Original Message-----

From: Morris John [mailto:john.morris@british-energy.com]
Sent: 09 November 2005 13:00
To: Payne, David - NGT House
Cc: Capener John
Subject: Grid Code - Governance of Electrical Standards Consultation GES/1 /05
Importance: High

To David Payne
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(By email)

David,

Apologies for this late response on behalf of British Energy. I would like to make the following comments and observation on the draft RES.

1. British Energy is generally supportive of the move to combine technical requirements imposed on Users, currently spread across many NGTS into a single conformed document for clarity and ease of use.
2. In the introduction it states 'The Relevant Electric Standards apply to User equipment that is located, electrically or physically within the zone covered by National Grid's substation busbar protection'. This is consistent with CC.6.2.1.2. but is it not the case that other classes of users may be asked to comply in some respects with this standard ?
3. As noted at the GCRP these requirements apply to the transmission system in NG geographic area. It would assist Users of the GB transmission system if these requirements applied on a GB basis unless there is some overriding reason why regional differences should exist. An example of where anomalies might occur is if a new user connected into the Scotland-England Interconnector circuits.
4. In the time allowed it has not been possible to review the requirements and correlate these with existing NGTS. It would have been useful to have a cross reference matrix identifying the original NGTS from which each section was derived. It does appear that certain sections have been included that are not currently one of the 18 NGTS listed in the Grid Code. For example Section 5 Substation Auxiliary Supplies has the same title as NGTS 2.12 and Section 6 Ancillary Light Current Equipment the same title as NGTS 2.19. Lest we forget the history behind this, a JWG identified 18 National Grid Technical Standards (NGTS's) which imposed significant material obligations on Users. Of the 154 NG Technical Specifications, these 18 were defined as Technical Specifications in

09/11/05

accordance with CC6.2.1.2 hence the RES proposal is now effectively embracing more standards than originally envisaged, suggesting materiality where none was previously anticipated.

5. A further question arose at the GCRP concerning other technical matters which appear to be common in BCA Appendices, such as generator and excitation control system functional specifications. If there are common requirements then these should ideally be included in the Grid Code, but if there are optionalities these might usefully be included within this standard.

6. There are requirements alluded to in the Grid Code, such as CC6.5.4/CC.6.5.5 on control telephony, which if considered inappropriate to include in full in the Grid Code might also be included transparently within the standard based on the level 3 NGTS that exist if the logic of inclusion is sound, taking account of my comment in 4 above.

7. I am involved in the Black Start task group and there has been an identification of resilience of systems for loss of a.c. particularly relating to SCADA, supporting communications and telephony. Should not these requirements be embodied within the standard as well (I can only find reference to 6 hours resilience for tripping supplies in 8.3.2) ?

I am happy for these comments to be made public.

Regards

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