Control Telephony Electrical Standard

A Summary of Reponses to the Recent Consultation C/06

Introduction

1. National Grid has recently consulted with Authorised Electricity Operators (C/06) regarding the introduction of a new Electrical Standard which would describe in more detail the technical interfaces and support requirements for Control Telephony. The consultation followed on from GCRP Paper GCRP06/14 “Proposed Electrical Standard Document – Control Telephony” and outlined the two distinct elements to the proposals (Appendix A):

   - Introduction of the Control Telephony Electrical via the Governance of Electrical Standards as detailed in GC.11 of the Grid Code.
   - Formal changes to paragraph CC.6.5.5 of the Grid Code which would be implemented when approval and direction from the Authority was received.

2. It was the formal changes to the Grid Code that form the basis of Consultation Document C/06 Control Telephony Electrical Standard. However as the two issues were clearly interlinked, views on the content of the Electrical Standard were also invited as part of Grid Code Consultation Document C/06.

3. Nine responses to consultation C/06 were received. This paper aims to summarises these responses and describe the next steps in the process.

Summary of Responses

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

   **Secured Supplies Backup**

5. Four respondents questioned the requirement for Users to provide 48 hours of secured backup supplies*. The preferred duration indicated by respondents being either 24 hours (due to economic reasons) or 72 hours (to align with Black Start pan-industry Working Group recommendations).

6. National Grid continues to believe that 48 hours of backup supplies are required. This duration will provide sufficient contingency to ensure the continuous functioning of the Control Telephony equipment in the event of a major mains power failure. In National Grid’s view 24 hours of back up supplies would not provide an adequate safeguard to manage a changeable and unpredictable event such as Black Start. National Grid, in accordance with its licence obligations, must ensure that all aspects of the GB Transmission System are robust enough to deal effectively with any security of supply issue which may affect the system.
7. National Grid acknowledges respondents concerns regarding the potential financial cost which may be incurred for the provision of 48 hours backup secured supplies for the control telephony system. For Users who are directly connected to the GB Transmission System, the power source for the backup supplies will in the majority of cases be obtained from a National Grid’s substation. For Embedded Power Stations, National Grid acknowledges that Users will have to provide their own power source for the secured backup supplies (subject to the conditions in paragraphs 11 and 12 below), which may have financial implications.

8. Regarding the 72 hours of backup supplies as recommended by the Black Start pan-industry Working Group, National Grid acknowledges that it may be appropriate to review the relevant clauses of the Electrical Standard when the recommendations of the Working Group have been formalised.

Retrospectivity and Applicability

9. Four respondents sought clarification regarding the retrospectivity and applicability of the new Electrical Standard. It is the intention of National Grid that the standard will apply retrospectively to all Users to ensure that all existing Users and associated equipment comply with the new standard.

10. National Grid acknowledges the concerns regarding the lack of a transitional period which would facilitate an efficient transition to the new standard. To mitigate industry concerns, National Grid will incorporate a transitional date of 27th October 2008 within the standard in order to allow Users time to comply with the new provisions.

11. The standard will also be amended to address the applicability of the Secure Supplies provisions in order to provide additional clarity to Users and to ensure that the provisions are not overly onerous to certain subsets of Users.

12. The Secure Supplies provisions will not apply to Non Embedded Customers and may, at the discretion of National Grid, be reviewed for all other Users, if there is

(a) No material impact on the Black Start process and/or
(b) No economic justification to impose certain aspects of the standard e.g. on the grounds of the age of a Power Station

Green Phones

13. One respondent sought clarification regarding the number of green phones that would be provided at a Network Operator Control Centre which is required to participate in Local Joint Restoration Plans (LJRPs) and has more than one Black Start Power Station. The respondent highlighted from an ergonomic point of view and operator workload, under stress conditions, that more than two green phones may be counterproductive.
14. In this scenario, National Grid would complete an assessment of the number of simultaneous calls required to be made from the Network Operator Control Centre to implement the LJRPs. The number of green phones provided will equate to the number of simultaneous calls. To improve ergonomics, minimise desk clutter and operator confusion, the User may opt to terminate the Control Telephony lines on their telephony system.

**Justification for Changes**

15. One respondent questioned the need for the introduction of a Control Telephony Electrical Standard. It has been highlighted at both the industry and government level that Control Telephony is an integral element of the Black Start process. It is therefore important and appropriate that the Control Telephony System meets a specified standard which would be robust enough to remain operational even at times of extreme GB Transmission System strain.

**Clarificatory Changes**

16. National Grid acknowledges and accepts minor suggested changes to the Electrical Standard which will improve the clarity of the Standard:

- Section 7 – paragraph amended to state that where a Network Operator Control Centre participates in the LJRP, then Green Phones ‘will’ be used for the process. Currently the text states that Green Phone ‘may’ be used which is inconsistent with Section 10.
- Introduction Section – section amended to provide addition information on the purpose and scope of the Electrical Standard.

17. National Grid acknowledges and has incorporated minor suggested changes to the proposed legal text for CC.6.5.5 which will provide additional clarity to the provisions. These changes will be included in the Report to the Authority for Grid Code Consultation C/06.

**Way Forward**

18. 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.

19. 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 has circulated alongside this summary, a revised version of the Control Telephony Electrical Standard in line with comments received and National Grid’s views given in this paper.

20. Should the GCRP be able to reach a broad consensus regarding the content of the new Electrical Standard at its November 2006 meeting, National Grid would proceed in line with GC.11 of the Grid Code and
formally incorporate the new Electrical Standard for Control Telephony (applicable in NGET’s Transmission Area only) into the Grid Code, subject to the implementation date being specified and agreed by GCRP.

21. Given that the establishment of the new Electrical Standard is linked to the formal Grid Code proposals set out in consultation document C/06, it is National Grid’s recommendation that the implementation date for the Electrical Standard should be the same with the date specified in the direction letter for the formal changes to the Grid Code, should the Authority approve the amendment.

22. 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 and noting any areas of disagreement. National Grid would then send this document to the Authority as its proposed Electrical Standard for Control Telephony.
Appendix A: GCRP Paper GCRP06/14 “Proposed Electrical Standard Document – Control Telephony”

Grid Code Review Panel

Proposed Electrical Standard Document – Control Telephony

Overview

1. Control Telephony is a highly resilient private telephony network used to carry Control Calls for both the day to day management of the Electricity Transmission System and for contingency or emergency purposes including Black Start.

2. The entire network is resilient to complete loss of mains electricity, and will continue to operate normally following a mains power loss. There is no reliance on the PSTN which may suffer congestion during power blackouts or other events affecting the general public.

Proposal

3. The Grid Code requirements and high level functionality for Control Telephony are described in CC.6.5. It is proposed to introduce a new Electrical Standard in accordance with GC.11 of the Grid Code which would describe in more detail the technical interfaces and support requirements for Control Telephony.

4. The inclusion of the new standard would necessitate consequential changes to CC.6.5.5 of the Grid Code which will be subject to industry consultation and determination by the Authority.

5. Site specific details pertaining to Control Telephony will continue to be specified in the Bilateral Agreement in accordance with current practice.

6. The proposed Electrical Standard on Control Telephony is available as an appendix to this paper alongside the subsequent changes to CC.6.5.5.

Way Forward

7. GCRP are invited to consider the proposed Control Telephony document and provide comments at the meeting on 20th July 2006.

8. Subsequently, if there is broad consensus at the Panel Meeting, National Grid would propose to initiate a short industry wide consultation on the associated changes to CC.6.5.5. The Control Telephony document will be included in the Consultation Document as an appendix.

9. National Grid would propose that if GCRP were to agree to adopt the attached document on Control Telephony as a new Electrical Standard,
such adoption would only take place subject to any Authority approval of the consequential proposed changes to CC.6.5.5.

10. If there is no broad consensus, National Grid would propose to establish a working group to discuss the proposed Electrical Standard in greater detail.
### Appendix B: Responses to Consultation Document C/06

<table>
<thead>
<tr>
<th>Response ID</th>
<th>Name of AEO</th>
<th>Name of Respondent</th>
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<tbody>
<tr>
<td>C/06_British Energy</td>
<td>British Energy</td>
<td>John Morris</td>
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<tr>
<td>C/06_Centrica</td>
<td>Centrica</td>
<td>Mark Manley</td>
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<tr>
<td>C/06_Central_Networks</td>
<td>E.ON – Central Networks</td>
<td>Simon Pett</td>
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<tr>
<td>C/06_EON</td>
<td>E.ON</td>
<td>Claire Maxim</td>
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<td>C/06_Magnox</td>
<td>Magnox Electric</td>
<td>David Ward</td>
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<td>C/06_RWE</td>
<td>RWE</td>
<td>John Norbury</td>
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<td>C/06_SAIC</td>
<td>ScottishPower’s Energy Wholesale Business</td>
<td>Gary Henderson</td>
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<td>C/06_SPT</td>
<td>SP Transmission</td>
<td>Alan Michie</td>
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<tr>
<td>C/06_WPD</td>
<td>Western Power Distribution</td>
<td>Tony Berndes</td>
</tr>
</tbody>
</table>
From: Morris John [mailto:john.morris@british-energy.com]
Sent: Friday, September 15, 2006 2:23 PM
To: Duffield, Mark
Cc: Capener John; Ray Matthew; White Simon (Renfrew)
Subject: Grid Code Consultation - C/06: Control Telephony Electrical Standard

By email

TO: Mark Duffield
   Electricity Codes
   Commercial Frameworks
   National Grid House
   Warwick Technology Park
   Gallows Hill
   Warwick

Dear Mark,

Thank you for the opportunity to comment on Grid Code consultation C/06: Control Telephony Electrical Standard. This response is on behalf of British Energy Generation Limited, Eggborough Power Limited and BE Power & Energy Trading Limited.

BE is supportive of moves to increase transparency of technical requirements that are common to all Users required to comply with The Grid Code. The proposed changes to The Grid Code text would seem to be appropriate to identify this new Electrical Standard. I do have a few queries relating to the proposed wording for the Control Telephony Electrical Standard as follows.

- The existing Electrical Standard, the RES, is prefaced in the Introduction with clarification on the applicability of the standard in relation to already installed plant and equipment. It is not clear whether the intent is to apply the telephony standard retrospectively where existing facilities fall short of the standard. From the point of view of ensuring control telephony resilience for Black Start there may be a case to enhance facilities to meet the minimum standard. Individual Users should not be liable for additional costs if this is deemed appropriate.

- In relation to the above it is important that there is joined up thinking with respect to resilience of the control telephony to deal with a Black Start situation. I believe that current installations have only been designed for 24 hour mains independence whereas the proposed standard requests 2 days endurance. Is two days consistent with the recommendations of the Energy Emergencies Executive following the Black Start Review and Exercise Programme?

- It is not clear how many green phones might be provided at a Network Operator Control Centre which is required to participate in LJRP's. Paragraph 7 and 10 suggests a minimum of two green phones are supplied for contact with the ENCC and for use in a Black Start situation. If the NOCC has more than one BS power station to contact could this result in more than two green phones? From an ergonomic point of view and operator workload under a stress considerations, more than two green phones may be counter-productive. Maybe some simple single line diagrams of the configuration of phones and lines would be illustrative here.

I trust you find the comments useful, if you have any queries please do not hesitate to contact me.

John Morris
Transmission & Trading Arrangements
BE Power & Energy Trading
Dear Mark,

Grid Code Consultation – C/06 Control Telephony Electrical Standard

Centrica welcomes this opportunity to comment on this consultation document. Centrica has some concerns regarding the proposed changes to the control telephony and seeks further clarification in respect of the Uninterruptible Power Supply (UPS).

Centrica would like to understand why this proposal has been raised and the justification for proposing these changes to the existing baseline. The consultation document does not provide any explanation as to why these changes are being sought or the additional benefits provided when compared with the current baseline. Centrica is seeking further information in this area.

Centrica cannot foresee any additional benefit associated with this proposal and believe if approved will result in Centrica incurring additional costs without providing any added benefit. The cost of installing auto start diesel generators and holding sufficient fuel reserves for 2 days continuous running is significant. This is without the additional costs involved in building the requisite infrastructure to support such a commitment.

Furthermore many of the stations within the Centrica portfolio require power supplied from the Transmission or Local Distribution network to synchronise. So National Grid (NG) would be able to contact the station yet the station would be incapable of generating or responding to any NG issued instructions until the network was again operational. Centrica can understand the rationale of proposing this change to stations with Black Start contracts but questions the value of such a change from an industry wide perspective.

The electrical standard contained within Appendix B of the consultation document appears to be lacking detail in respect of the equipment required to make the stations compliant. The information provided is insufficient as Centrica is unable to ‘spec’ the work required to meet the new standard from the information provided. Centrica would also like to see included within the existing baseline a requirement for NG to liaise with the station prior to
a site visit to undertake work on the Green Phone. There needs to be a notice period prior to the visit to allow risk assessments and manpower considerations to be fully considered to prevent visits impacting on normal station operation.

In conclusion Centrica is opposed to the proposed change as there appears to be no justification for the proposed change from an operational or cost perspective. The proposal increases the cost burden on Centrica stations without providing any tangible benefits.

If you have any questions regarding this response please ring me 0208 734 8693.

Yours sincerely,

Mark Manley
Commercial Manager
Mr Mark Duffield  
Electricity Codes  
Commercial Frameworks  
National Grid Electricity Transmission plc  
National Grid House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

Friday, 15th September 2006

Dear Sir

Proposed Control Telephony Electrical Standard

Central Networks welcomes and supports the industry’s increased attention to resilience and emergency preparedness that the proposals in the consultation document reference C/06 aims to achieve. However, there are points where we would welcome further clarification and they are detailed further in this letter.

The modification is to the Grid Code, but it is not clear whether the electrical standard will apply retrospectively, or whether the application is only for new “Users”. If the document is to apply retrospectively we feel there needs to be a period of transition of potentially 24 months to allow the enhanced systems to be agreed with NGET and, where required enhanced generation backup to be installed.

The proposed standard requiring secure supplies to possess the ability for at least two days continuous running, without refuelling, will potentially require financial investment by Central Networks at three of our four main operational sites and it should be noted that Central Networks will have to absorb these costs as they were not included within the regulatory price controls.

Section 7 explains the presentation of Normal and Emergency Control Calls at Network Operator Control Centres, but in due course we will require clarification from NGET as to which site the Emergency Calls from Central Networks are routed to. At present we liaise with both Wokingham and Warwick and the document suggests that Emergency Control Calls are directed only to the ENCC, and makes no reference to the National...
Operations Centre at Warwick. This may be correct, but for the avoidance of
doubt we would want to confirm this before changing our internal phone
system.

Section 7 explains that where a Network Operator Control Centre
participates in the Local Joint Restoration Plan then the ‘Green’ phones
‘may’ also be used for the Black Start process. However, section 10 does not
appear to provide this flexibility, explaining that separate Trunk Lines and
‘Green’ phones will be provided where communication with a Black Start
Power Station and the ENCC is required. The optimum design would appear
to be as explained in section 10, but clarification of NGET’s expectations in
this area would be welcomed as Central Networks has three LJRPs’s split
between our two Network Management Centres.

In summary Central Networks welcomes and supports the proposed
amendment to the Grid Code. I trust this response is helpful, but please do
not hesitate to contact me if you wish to discuss any of the points raised.

Yours faithfully

[Signature]

Simon Pett
System Operations Manager
Mr Mark Duffield
National Grid Electricity Transmission plc
National Grid House
Warwick Technology Park
Gallows Hill
Warwick, CV34 6DA

Monday 18th September 2006

Dear Mark,

C/06 – Control Telephony Electrical Standard

Thank you for the opportunity to comment on the proposed changes to the Grid Code regarding the Control Telephony Electrical Standard. This response is on behalf of E.ON UK plc, Enfield Energy Centre Ltd and Cottam Development Centre Ltd.

We welcome the move of the technical specification of the National Grid communications system into the Electrical Standards, and support the associated Grid Code change. We believe that this change means that the Control Telephony requirements are clear at an early stage of project development.

If you have any queries, please do not hesitate to contact me.

Yours sincerely

Claire Maxim
Lead Contract Manager
-----Original Message-----
From: david.m.ward@magnox.co.uk [mailto:david.m.ward@magnox.co.uk]
Sent: Wednesday, August 30, 2006 3:21 PM
To: Duffield, Mark
Subject: Grid Code Consultation C/06

Mark Duffield
Electricity Codes
Commercial Frameworks
National Grid Electricity Transmission plc
National Grid House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA

(By email)

Mark

Grid Code Consultation Paper C/06 Control Telephony Electrical Standard

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.

I welcome the introduction into the Grid Code or the associated documents of anything which makes necessary requirements clearer and more visible. Consequently I support this proposed change in general.

My understanding is that the new electrical standard captures what was the existing practice in most cases, and as a consequence the adoption of this new standard will not require any retrofit work at any of our sites. If you are able to confirm that this is the case, then I am happy to support the proposed Grid Code Change and the new electrical standard without any reservations.

I think I may have spotted a small typographical error. In the definitions section of the new standard, the definitions of “Control Telephony” and “Digital Trunk” are identical. I think they are should not be. Please correct this.

I hope my comments are helpful

Regards

David Ward

Magnox Electric Ltd
Berkeley Centre
Berkeley
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United Kingdom

Phone:  +44 (0)1453 813631
Fax:     +44 (0)1453 812845
Mobile:  +44 (0)789 906 4052
Email:   david.m.ward@magnox.co.uk
19th September 2006

Dear Mark

GRID CODE CONSULTATION DOCUMENT
CONTROL TELEPHONY ELECTRICAL STANDARD C/06

Thank you for the opportunity to comment on the above consultation paper. The following comments are provided on behalf of RWE Trading GmbH, RWE Npower plc, Great Yarmouth Power Ltd, Npower Cogen Trading Ltd, Npower Commercial Gas Ltd, Npower Direct Ltd, Npower Ltd, Npower Northern Supply Ltd, Npower Yorkshire Ltd and Npower Yorkshire Supply Ltd.

RWE is currently supportive of Grid Code changes that serve to increase the transparency of the obligations placed on Users. We are also generally supportive of the approach to create a new standard relating to Control Telephony. However, we have a number of comments in relation to both the proposed changes to the Grid Code and the text of the new standard.

Grid Code Changes

The proposed changes to CC.6.5.5. are given as follows:-

Generic Detailed information on Control Telephony facilities and suitable equipment requirements applicable in England and Wales is provided in the Electrical Standard for Control Telephony in the Annex to the General Conditions. Where additional information, or information in relation to Control Telephony applicable in Scotland, is requested by Users, this will, where possible, be provided by NGT upon any such request for Individual User application will-be-provided by NGT upon request.
"Electrical Standard for Control Telephony" - The proposed change to the General Conditions refers to the new standard as "Control Telephony Electrical Standard". It is suggested that the same term be used in both CC.6.5.5 and the GC.

Insert "identified" before "in the Annex to the General Conditions" since the text of the Standard is not contained in the General Conditions.

Substitute "Control Telephony facilities and suitable equipment requirements" with "the technical interfaces and support requirements for Control Telephony" for consistency with the text of the Standard.

Suggest that "Generic" be deleted - the entire Grid Code is a generic document

Suggest that to help clarify the 2nd sentence - remove first three commas and delete "upon any such request".

Proposed Control Telephony Electrical Standard

Clarity within the document the applicability of the requirements in respect of existing sites. We would not, for example, expect the Standard to apply retrospectively.

Definitions – Secure Supplies. Substitute “2 days” with “24 hours”. 24 hours is normally considered to be the maximum period for which standby / emergency power supplies would be designed to operate for. It would make no economic sense for Users to install power supplies to operate beyond 24 hours solely to meet the requirements of control telephony.

Introduction – It may assist clarity if selected text contained in paragraphs 10.1, 102 and 10.3 of the Consultation Document were included within the Standard, for example:

The new Electrical Standard describes in detail the technical interfaces and support requirements for Control Telephony in order to give Users background and technical information regarding the Control Telephony systems that National Grid may choose to install at a User’s Site.

The Standard also allows Users to understand the requirements of the Control Telephony System should a User decide to amalgamate its own telephony system with the National Grid provided Control Telephony system.

The Standard will only contain generic information pertaining to Control Telephony. There still may be occasions where additional obligations relating to Control Telephony will be required on a site-specific basis. Such site specific details pertaining to Control Telephony will be specified in the Bilateral Agreement

I trust that you will find the above comments helpful. If you wish to discuss any points further please do not hesitate to contact me.

Yours sincerely

John Norbury
Network Connections Manager
Mark Duffield  
Electricity Codes  
Commercial Frameworks  
National Grid Electricity Transmission plc  
National Grid House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA  

Ref: GC C06  
Date: 17th September 2006  
Tel No: 01386 445028  
Email: smc.duffield@saic.com

Dear Mark,

Consultation Response for C/98: Control Telephony Electrical Standard

ScottishPower welcomes the opportunity to provide comment on the above consultation on the introduction of a Control Telephony Electrical Standard. This response is submitted on behalf of ScottishPower’s Energy Wholesale Business which includes Scottish Power Generation Ltd, ScottishPower Energy Management Ltd and CRE Energy Ltd.

ScottishPower’s Wholesale Business is supportive of this change to the Grid Code as it further clarifies the site telephony arrangements and requirements for affected users.

I trust that you will find these comments helpful. Nonetheless, should you require further clarification of any of the above, please do not hesitate to contact me.

Yours sincerely,

Gary Henderson

SAIC Ltd.

For and on behalf of - ScottishPower’s Energy Wholesale Business which includes ScottishPower Generation Ltd, ScottishPower Energy Management Ltd and CRE Energy Ltd.

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Registered Office: SAIC Ltd., 99 Shelton Street, Manchester, M1 1LF
Registered in England Reg No. 1090331
www.saic.com
From: Michie, Alan [mailto:Alan.Michie@sppowersystems.com]
Sent: Tuesday, September 19, 2006 4:22 PM
To: Duffield, Mark
Subject: Grid Code Consultation - C/06: Control Telephony Electrical Standard

Mark

On behalf of SP Transmission, I have no comments to make on this consultation.

Regards

Alan Michie
Transmission Technical Manager

Regulation, Energy Networks

Tel: 01698 413466
Fax: 01698 413056
Mobile: 07753 624777
From: Berndes, Tony [mailto:tberndes@westernpower.co.uk]
Sent: Tuesday, September 19, 2006 7:35 PM
To: Duffield, Mark
Subject: RE: Grid Code Consultation - C/06: Control Telephony Electrical Standard

Mark,

Sorry for late response - I’ve noticed a formal response was this was not put in hand.

WPD has no real issues with the proposals other than the comment below raised by our Control Room Manager.

- page 8 (Definitions section - Secure Supplies) mentions a minimum 2 day endurance for back up supplies. Following the pan-industry work with Black Start that period should be considered a minimum of 72 hours. Control Manager has informally discussed this with NG’s Emergency Planning section.

Best regards,

Tony Berndes
Primary System Design Manager
Western Power Distribution
Tele: 0117 933 2101
email: tberndes@westernpower.co.uk