



National Grid

A REPORT TO THE AUTHORITY

**Pursuant to Paragraph 2 of Condition 7 of the
Transmission Licence.**

Proposed Grid Code Modification

**Proposed changes to the Grid Code associated with
the Clarification of Phase Unbalance terms and
change of Company name.**

**The purpose of this document is to assist the Authority in its
decision of whether to implement the proposed
Grid Code Modification**

Consultation Paper Ref	G/02
Issue	1
Date of Issue	21 st December 2002
Prepared by	National Grid

DISTRIBUTION

Name	Organisation
Authority	Ofgem
Grid Code Review Panel Members	Various
National Grid Industry Information Website	

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1. Paragraph 2 of Condition 7 of the Transmission Licence granted to National Grid Company plc ("National Grid") provides that National Grid shall, in consultation with authorised electricity operators liable to be materially affected thereby, periodically review the Grid Code and its implementation. That paragraph also requires National Grid, following such review, to send to the Authority:-
 - (a) a report on the outcome of such review;
 - (b) any proposed revisions to the Grid Code as National Grid (having regard to the outcome of such review) reasonably thinks fit for the achievement of the objectives set out in sub-paragraph (b) of Condition 7 of the Transmission Licence; and
 - (c) any written representations or objections from authorised electricity operators (including any proposals by such operators for revisions to the Grid Code not accepted by National Grid in the course of the review) arising during the consultation process and subsequently maintained.
 2. National Grid has just completed a review of the Grid Code. This review relates to the clarification of percentage terms used in the Connection Conditions associated with Phase Unbalance. In addition a housekeeping change is proposed to update National Grid's company name. Attached as Appendix A are the proposed revisions to the current Grid Code Glossary and Definitions, Connection Conditions and OC5 (shown in typed form with the deletions crossed through and additions double underlined).
 3. The proposed changes to the Grid Code were discussed at the Grid Code Review Panel on 5th September 2002 and it was agreed that National Grid should issue a Consultation Paper.
 4. National Grid, in accordance with its obligations under its Transmission Licence, consulted those authorised electricity operators listed in Appendix B by circulating to them Consultation Paper G/02, which was dated 6th November 2002 and which contained the proposed amendments to the Grid Code. A copy of Consultation Paper G/02 is attached to this Report as Appendix C. National Grid also placed a copy of the Consultation Paper on its website to ensure its wide availability.
 5. Comments were invited from all such authorised electricity operators by 6th December 2002. National Grid has received responses from 4 authorised electricity operators. All respondents supported the proposed changes. National Grid has responded to each of them and no further changes were identified as a result of the responses.
 6. The proposed revisions to the Grid Code are, as indicated above, set out in Appendix A to this Report. By way of summary, the proposed changes are described below :-

Background

- 6.1 The Grid Code makes reference to Phase Unbalance in Connection Conditions CC.6.1.5(b) & CC.6.1.6. However the definition of Phase Unbalance is not clear from the Grid Code text.
- 6.2 In addition since 21st October 2002 National Grid is known as 'National Grid Company plc' not 'The National Grid Company plc'. This affects the Definition of NGC in the Glossary and Definitions only.

The Proposed Changes

- 6.3 It is proposed that the definition for Phase Unbalance set out in the Electricity Association Engineering Recommendation P29 "Planning Limits for Voltage Unbalance in the UK for 132kV and Below" should be added to the Grid Code Glossary
- 6.4 The addition of this definition would then require clarification of the text related to Phase Unbalance in CC.6.1.5, CC.6.1.6. and OC5.5.3
- 6.5 It is further proposed that the Definition of NGC in the Glossary and Definitions is amended to reflect the current company name 'National Grid Company plc'.
- 6.6 The effect of the proposed changes on other core industry Documents, the CUSC and the BSC has been considered and no associated changes have been identified.
7. As indicated above, having regard to the outcome of the review described in this Report, National Grid proposes the revisions to the Grid Code set out in Appendix A, which revisions we reasonably think fit for the achievement of the objectives referred to in sub-paragraph (b) of paragraph 1 of Condition 7 of the Transmission Licence. In view of this, National Grid would be grateful if the Authority would approve the revisions pursuant to paragraph 3 of Condition 7 of the Transmission Licence.
8. Given the logistic exercise of organising replacement pages to reflect the changes required by your letter of approval, I would be grateful if you would contact me prior to issuing any letter specifying an effective date, in order to seek to ensure that the date is consistent with any other Code changes which may then be approved or be close to being approved.

SIGNED BY

For and on behalf of The National Grid Company plc
21st December 2002

Appendix A

(a) New definition to be added to the Glossary and Definitions

Phase (Voltage) Unbalance

The ratio (in percent) between the rms values of the negative sequence component and the positive sequence component of the voltage.

(b) Extract from the Connection Conditions

CC.6.1.5....

(b) Phase Unbalance

Under **Planned Outage** conditions, the maximum ~~negative phase sequence component of the phase voltage~~ **Phase (Voltage) Unbalance** on the **NGC Transmission System** should remain below 1% unless abnormal conditions prevail.

CC.6.1.6

Under the **Planned Outage** conditions stated in CC.6.1.5(b) infrequent short duration peaks with a maximum value of 2% are permitted for ~~phase unbalance~~ **Phase (Voltage) Unbalance**, subject to the prior agreement of **NGC** under the **Bilateral Agreement**. **NGC** will only agree following a specific assessment of the impact of these levels on **NGC** and other **Users Apparatus** with which it is satisfied.

(c) Extract from OC5 Text

OC5.5.3 Test and Monitoring Assessment

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Phase Unbalance	CC6.1.5 (b)	The measured maximum negative phase sequence component of the phase voltage <u>Phase (Voltage) Unbalance</u> on the NGC Transmission System should remain below 1%.
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(d) Extract from the Glossary and Definitions – proposed housekeeping change associated with National Grid Company name change.

NGC ~~The~~ National Grid Company plc.

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APPENDIX B - AEO Distribution List for Consultation Paper G/02

24 Seven
 Accord Energy Limited
 AES (for Partington Ltd)
 AES Drax Power Ltd
 AES Indian Queens Power
 Alcan Aluminium UK Ltd
 Allied Steel & Wire
 Angelsey Aluminium
 Atlantic Electric & Gas Ltd
 Atmel North Tyneside Limited
 Barking Power
 BNFL + Magnox Electric Ltd
 BP Chemicals Ltd
 British Gas Generation Ltd (Centrica KL + Centrica PB)
 British Gas Trading Ltd (3th Floor North)
 Burlington Resources (Irish Sea) Ltd
 Celtpower Ltd
 Commercial Electricity Supplies Ltd
 Corby Power Ltd
 Coryton Energy Co Ltd
 Cottam Power Ltd
 Derwent Co-Generation Limited
 East Midlands Electricity
 ECOTRICITY
 Electrabel S.A.
 Electricity Direct (UK) Ltd
 Energy Power Resources Limited
 Enron Direct Ltd + Enron Gas & Petrochemical Trading
 Entergy-Koch Trading Ltd
 Fibrogen Ltd + Fibropower Ltd + Fibrothetford Ltd
 First Hydro Company
 Fortum Direct Ltd
 Great Yarmouth Power Limited
 Grovehurst Energy Ltd
 Humber Power Ltd
 Immingham CHP Ltd
 Innogy + Innogy (Cogen Trading) Ltd + npower
 Keadby Development Ltd
 Killingholme Power Ltd
 London Electricity plc
 London Power Networks
 Manweb Services (Imperial Park)
 Medway Power Ltd

Morgan Stanley Capital Group Inc
 Northern Electric Supply Ltd
 Pentex Oil and Gas Ltd
 Railtrack plc
 Regional Power Generators Limited
 Rocksavage Power Company Ltd
 Saltend Cogeneration Co Ltd
 Scottish & Southern (North Tynemouth)
 Scottish and Southern Energy plc
 Scottish Power plc
 Seabank Power Ltd
 SEEBOARD Power Networks
 Sheffield Heat and Power Ltd
 Slough Energy Supplies Ltd
 South Coast Power Ltd
 SP MANWEB plc
 SSE Energy Ltd
 Sutton Bridge Power Ltd
 Thameside Energy Park Ltd
 TXU Europe

UK Electric Power Ltd
 Unit Energy Limited
 Utility Link Ltd
 Western Gas Ltd
 Williams Energy Marketing & Trading Europe Ltd
 Yorkshire Electricity plc (supply)

ABB Equity Development Co Ltd
 AEP Energy Services UK Generation Ltd
 AES Barry Limited
 AES Fifoots Point Ltd
 AES NEW ENERGY LTD (UK)
 Allied Domecq (Holdings) PLC
 AMERADA
 Aquila Energy Supplies Ltd
 Atmel
 Baglan Generating Ltd + Baglan Operations Ltd
 BIZZENERGY LIMITED
 BOC Limited
 British Energy Generation Ltd
 British Gas Plc
 BritNed Development Ltd
 Canatx Energy Ventures Ltd
 Cinergy Global Power (UK) Ltd
 Conoco Global Power Developments UK Limited
 Corus UK Ltd
 Cottam Development Centre
 Damhead Creek Ltd
 Dynergy UK Ltd
 Economy Power Ltd
 Edison First Power Ltd
 Electricite de France
 Emerald Power Generation Ltd
 Enfield Energy Centre Ltd
 Enron Teesside Operations Ltd
 Fellside Heat & Power Ltd
 First Hydro Company
 Fleetwood Power Ltd
 GPU Power Networks (UK) Ltd
 Greenwich Energy Trading Ltd
 Heartlands Power Ltd
 ICI Chemicals & Polymers Ltd
 INEOS Chlor Energy Ltd
 Jade Power Generation Ltd
 Keadby Gen Ltd + HE Cogen Ltd + HE Energy Ltd
 Lakeland Power Ltd
 London Electricity Services Ltd
 London Underground Ltd
 Maverick Energy Ltd
 Midlands Gas Ltd + OwnLabel Energy Ltd + Severn Trent Energy Ltd
 Northern Electric Distribution Ltd
 Norweb Energi Ltd
 PowerGen UK plc + PowerGen CHP Ltd
 Rassau Power Ltd
 Renewable Energy Co
 Rugeley Power Ltd
 Savage Land Ltd
 Scottish & Southern Energy
 Scottish Power Generation Ltd
 Scottish Power Energy Retail Ltd
 SEEBOARD Energy Ltd
 Sempra Energy Europe Ltd
 Shell Gas Direct Limited
 SMARTESTENERGY LTD
 Southern Electric Power Distribution plc
 Spalding Energy Company Ltd
 Statnett SF
 Teesside Power Ltd
 TotalFinaElf Gas and Power Ltd
 TXU Europe Merchant Generation + Shotton CHP Ltd + Citigen (London) Ltd
 UKAEA
 United Utilities
 Wainstones Power Ltd
 Western Power Distribution
 Yorkshire Electricity Group plc (distribution)
 Zest4 Ltd

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APPENDIX C

Consultation Paper G/02



National Grid

CONSULTATION DOCUMENT

**Proposed changes to the Grid Code associated with
the Clarification of Phase Unbalance terms and
change of Company name.**

**The purpose of this document is to consult on the above Grid Code
Modification Proposal with authorised electricity operators liable to be
materially affected by the proposed changes**

Consultation Ref	G/02
Issue	1
Date of Issue	6 th November 2002
Prepared by	National Grid

DOCUMENT LOCATION

National Grid website:

http://www.nationalgridinfo.co.uk/grid_code/mn_consultation_papers.html

DISTRIBUTION

Name	Organisation
AEO's	Various
GCRP Members/Alternates	Various
Interested Parties	Various
National Grid Industry Information Website	

A. Introduction

1. National Grid Company plc ("National Grid"), in accordance with its obligations under paragraph 2 of Condition 7 of the Transmission Licence, believes that the time has come to review, in consultation with authorised electricity operators liable to be materially affected thereby, the Grid Code and its implementation in certain respects.
2. This review is concerned with the clarification of percentage terms used in the Connection Conditions associated with Phase Unbalance. The proposed changes to the Grid Code were discussed at the Grid Code Review Panel meeting held on 5th September 2002 and Panel members agreed that National Grid should issue a Consultation Paper. In addition a housekeeping change is proposed to update National Grid's company name.
3. Following receipt of comments from those authorised electricity operators which it has consulted by this Paper, National Grid intends, in accordance with paragraph 2 of Condition 7 of the Transmission Licence, to send to the Authority :-
 - (a) a report on the outcome of its review, including this consultation process;
 - (b) the proposed revisions to the Grid Code which National Grid (having regard to the outcome of such review) reasonably thinks fit for the achievement of the objectives of the Grid Code referred to in subparagraph (b) of paragraph 1 of Condition 7 of the Transmission Licence; and
 - (c) any written representations or objections from authorised electricity operators (including any proposals by such operators for revisions to the Grid Code not accepted by National Grid in the course of the review) arising during the consultation process and subsequently maintained.
4. The report will also be made publicly available on National Grid's website.
5. The revisions to the Grid Code proposed by National Grid and sent to the Authority then require approval by that body and will, if approved, come into force on such date (or dates) of which you will be notified by National Grid, in accordance with the Authority's approval.

B. DESCRIPTION OF THE PROPOSED AMENDMENTS AND THEIR EFFECTS

6. Background

- 6.1 The Grid Code makes reference to Phase Unbalance in Connection Conditions CC.6.1.5(b) & CC.6.1.6. However the definition of Phase Unbalance is not clear from the Grid Code text.
- 6.2 In addition since 21st October 2002 National Grid is known as 'National Grid Company plc' not 'The National Grid Company plc'. This affects the Definition of NGC in the Glossary and Definitions only.

7. Proposed Changes

- 7.1 It is proposed that the definition for Phase Unbalance set out in the Electricity Association Engineering Recommendation P29 "Planning Limits for Voltage Unbalance in the UK for 132kV and Below" should be added to the Grid Code Glossary.
- 7.2 The addition of this definition would then require clarification of the text of CC.6.1.5 and CC.6.1.6 related to Phase Unbalance.
- 7.3 Further the text of OC5.5.3 would also require minor modification. However this is currently the subject of a Report to the Authority as a result of Consultation paper D/02 and the modifications to OC5.5.3 proposed in this Consultation Paper G/02 would be valid only in the event that the proposed OC5 changes are approved by the Authority.
- 7.4 It is further proposed that the Definition of NGC in the Glossary and Definitions is amended to reflect the current company name 'National Grid Company plc'.
- 7.4 The proposed Grid Code changes are described in Appendix 1.

C. COMMENTS

8. National Grid would be grateful to receive your comments on, or any suggestions you may have in relation to, these proposed amendments to the Grid Code. Comments would be welcomed and should be sent to National Grid by **Friday 6th December 2002**. The comments will be reviewed and responded to and National Grid will then prepare its report to the Authority.
9. Unless otherwise marked as confidential any responses containing objections to the proposals which are maintained will be published on our website in the copy of the Report to the Authority referred to in paragraphs 3 and 4.
10. Your formal responses may be:-

Posted to: Mr David Payne
Commercial Codes
Network Strategy
National Grid Company plc
National Grid House
Kirby Corner Road
Coventry
CV4 8JY

Faxed to: 024 7642 3298 Emailed to: david.payned@uk.ngrid.com

Appendix 1

(a) New definition to be added to the Glossary and Definitions

Phase (Voltage) Unbalance

The ratio (in percent) between the rms values of the negative sequence component and the positive sequence component of the voltage.

(b) Extract from the Connection Conditions

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(b) Phase Unbalance

Under **Planned Outage** conditions, the maximum ~~negative phase sequence component of the phase voltage~~ **Phase (Voltage) Unbalance** on the **NGC Transmission System** should remain below 1% unless abnormal conditions prevail.

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Under the **Planned Outage** conditions stated in CC.6.1.5(b) infrequent short duration peaks with a maximum value of 2% are permitted for ~~phase unbalance~~ **Phase (Voltage) Unbalance**, subject to the prior agreement of **NGC** under the **Bilateral Agreement**. **NGC** will only agree following a specific assessment of the impact of these levels on **NGC** and other **Users Apparatus** with which it is satisfied.

(c) Extract from proposed OC5 Text (subject to approval by the Authority of OC5 changes described in Consultation Paper D/02)

OC5.5.3 Test and Monitoring Assessment

.....

Phase Unbalance	CC6.1.5 (b)	The measured maximum negative phase sequence component of the phase voltage <u>Phase (Voltage) Unbalance</u> on the NGC Transmission System should remain below 1%.
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(d) Extract from the Glossary and Definitions – proposed housekeeping change associated with National Grid Company name change.

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