GRID CODE

CONSULTATION DOCUMENT

Proposed Changes to Operating Code OC1 – Demand Forecasting

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/03
Issue	1
Date of Issue	21 August 2003
Responses required by	**22nd September 2003**
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 updating of Operating Code OC1 to more fully reflect current Demand Forecasting processes. The proposed changes to the Grid Code were discussed at the Grid Code Review Panel meeting held on 22nd May 2003. Panel members agreed that National Grid should issue a Consultation Paper.

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 sub-paragraph (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 Grid Code OC1 is primarily concerned with Demand forecasting for operational purposes. In order to match generation with Demand for electricity it is necessary for NGC to undertake Demand Forecasting. It is also necessary to undertake Demand Forecasting of Reactive Power.

6.2 National Grid has carried out a review and identified areas of Grid Code OC1 that would benefit from change and/or updating to clarify the existing provisions and more fully reflect current practice.

7. Proposed Changes

7.1 The proposed changes can be summarised as follows:

- OC1.1 Introduction – clarification that National Grid undertakes Demand Forecasting based on historical information collected from operational metering as well as information furnished by Users.

- OC1.2 Objectives – clarification that the information provided enables NGC to produce Demand forecasts in the Operational Planning Phase as well as other timescales and also to facilitate provision of certain demand data by NGC in accordance with the Grid Code.

- OC1.4.2(a) – Data required by NGC in the Operational Phase – clarification that data is required from Users generally, to be consistent with the rest of OC1.4.2.

- OC1.5.4 – Clarification of the relationship between BM Unit Data and Customer Demand Management and the requirement for Suppliers to notify NGC in the Programming Phase of Customer Demand Management taken into account in BM Unit Data.

- OC1.6.1 Factors taken into account – recognition that station demand may be taken into account and recognition that anticipated market prices are no longer a factor.

- OC1.6.2 - clarification that NGC retains records of the use of mathematical models for the preceding 12 months.

- Other general text changes for to improve ease of reading.

7.2 The proposed changes are indicated in the change marked version of OC1 attached as an appendix to this paper

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 **22nd September 2003**. 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: David Payne
Commercial Frameworks, Industry Codes
National Grid Company plc
National Grid Transco House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA

Emailed to: david.payne@uk.ngrid.com

This page left intentionally blank.

Appendix

OPERATING CODE NO. 1

Based on Revision 8

DEMAND FORECASTS

OC1.1 INTRODUCTION

OC1.1.1 **Operating Code No.1** ("**OC1**") is concerned with **Demand** forecasting for operational purposes. In order to match generation output with **Demand** for electricity it is necessary to undertake **Demand** forecasting. It is also necessary to undertake **Demand** forecasting of **Reactive Power**.

OC1.1.2 In the **Operational Planning Phase**, **Programming Phase** and **Control Phase**, **Demand** forecasting shall be conducted by **NGC** taking account of historical **Demand** information collected by **NGC** from operational metering, ~~**Demand** forecasts furnished by **Network Operators**~~ the factors referred to in OC1.6.1 and in certain circumstances, furnished by **Generators**, who shall provide **NGC** with information in the form set out in this **OC1**. The data supplied under the **PC** is also taken into account.

~~OC1.1.3 In the **Programming Phase** and **Control Phase**, **NGC** will conduct its own **Demand** forecasting taking into account information to be furnished by **Suppliers**, **Network Operators** and by **Generators** and the other factors referred to in OC1.6.1.~~

OC1.1.~~4~~3 In this **OC1**, the point of connection of the **External Interconnection** to the **NGC Transmission System** shall be considered as a **Grid Supply Point**. **Reactive Power Demand** includes the series **Reactive** losses of the **User's System** but excludes any network susceptance and any **Reactive** compensation on the **User's System**. **NGC** will obtain the lumped network susceptance and details of **Reactive** compensation from the requirements to submit data under the **PC**.

OC1.1.~~5~~4 Data relating to **Demand Control** should include details relating to MW.

OC1.1.~~6~~5 **OC1** deals with the provision of data on **Demand Control** in the **Operational Planning Phase**, the **Programming Phase** and the **Post-Control Phase**, whereas **OC6** (amongst other things) deals with the provision of data on **Demand Control** following the **Programming Phase** and in the **Control Phase**.

OC1.1.~~7~~6 In this **OC1**, Year 0 means the current **NGC Financial Year** at any time, Year 1 means the next **NGC Financial Year** at any time, Year 2 means the **NGC Financial Year** after Year 1, etc.

OC1.1.~~8~~7 References in **OC1** to data being supplied on a half hourly basis refer to it being supplied for each period of 30 minutes ending on the hour and half-hour in each hour.

OC1.2 OBJECTIVE

The objectives of **OC1** are to:

OC1.2.1 ~~enable the provision of data to **NGC** by **Users** in the **Programming Phase**, **Control Phase** and **Post-Control Phase**~~ enable **NGC** to produce **Demand** forecasts in the **Operational Planning Phase, Programming Phase** and **Control Phase** taking the factors listed in OC1.6.1 into account and making use of data provided by **Users** and that held by **NGC**; and

OC1.2.2 ~~provide for the factors to be taken into account by **NGC** when **Demand** forecasting in the **Programming Phase** and **Control Phase**~~ facilitate ultimately the provision of **Demand** forecasts to **Users** in accordance with the Grid Code.

OC1.3 SCOPE

OC1 applies to **NGC** and to **Users** which in this **OC1** means:-

(a) **Generators**,

(b) **Network Operators**, and

(c) **Suppliers**.

OC1.4 DATA REQUIRED BY **NGC** IN THE **OPERATIONAL PLANNING PHASE**

OC1.4.1 (a) Each **User**, as specified in (b) below, shall provide **NGC** with the data requested in OC1.4.2 below.

(b) The data will need to be supplied by:-

(i) each **Network Operator** directly connected to the **NGC Transmission System** in relation to **Demand Control**; and

(ii) each **Generator** with respect to the output of **Medium Power Stations**.

OC1.4.2 (a) Data

By calendar week 28 each year each ~~**Network Operator**~~**User** will provide to **NGC** in writing the forecast information listed in (c) below for the current **NGC Financial Year** and each of the succeeding five **NGC Financial Years**.

(b) Data Providers

In circumstances when the busbar arrangement at a **Grid Supply Point** is expected to be operated in separate sections, separate sets of forecast information for each section will be provided to **NGC**.

(c) **Medium Power Station** Output and **Demand Control:**

For the ~~specified~~ time of the annual peak half hour **NGC Demand**, as specified by **NGC** under PC.A.5.2.~~2~~3, ~~the output of **Medium Power Stations** (whether **Embedded** or not) and forecasts of **Demand** to be relieved by **Demand Control** on a **Grid Supply Point** basis giving details of the amount and duration of the **Demand Control**.~~

(i) the output of **Medium Power Stations** (whether **Embedded** or not); and

(ii) forecasts of **Demand** to be relieved by **Demand Control** on a **Grid Supply Point** basis giving details of the amount and duration of the **Demand Control**.

OC1.5 DATA REQUIRED BY **NGC** IN THE **PROGRAMMING PHASE**, **CONTROL PHASE** and **POST-CONTROL PHASE**

OC1.5.1 **Programming Phase**

For the period of 2 to 8 weeks ahead the following will be supplied to **NGC** in writing by 1000 hours each Monday:

(a) ***Demand Control:***
Each **Network Operator** will supply MW profiles of the amount and duration of their proposed use of **Demand Control** which may result in a **Demand** change of 12MW or more (averaged over any half hour on any **Grid Supply Point**) on a half hourly and **Grid Supply Point** basis;

(b) ***Medium Power Station** Operation:*
Each **Generator** will, if reasonably required by **NGC**, supply MW schedules for the operation of **Medium Power Stations** on a half hourly and **Grid Supply Point** basis.

OC1.5.2 For the period 2 to ~~12~~ 14 days ahead the following will be supplied to **NGC** in writing by 1200 hours each Wednesday:

(a) ***Demand Control:***
Each **Network Operator** will supply MW profiles of the amount and duration of their proposed use of **Demand Control** which may result in a **Demand** change of 12MW or more (averaged over any half hour on any **Grid Supply Point**) on a half hourly and **Grid Supply Point** basis;

(b) ***Medium Power Station** Operation:*
Each **Generator** will, if reasonably required by **NGC**, supply MW schedules for the operation of its **Medium Power Stations** on a half hourly and **Grid Supply Point** basis.

OC1.5.3 **Medium Power Station** Output:
Each **Generator** will, if reasonably required by **NGC**, supply **NGC** with MW schedules for the operation of **Medium Power Stations** on a half hourly and **Grid Supply Point** basis in writing by 1000 hours each day (or such other time specified by **NGC** from time to time) for the next day (except that it will be for the next 3 days on Fridays and 2 days on Saturdays and may be longer (as specified by **NGC** at least one week in advance) to cover holiday periods);

OC1.5.4 Other Codes
Under **OC6** each **Network Operator** will notify **NGC** of their proposed use of **Demand Control** (which may result in a **Demand** change of 12MW or more), and under **BC1**.**4.2 (f)**, each **Supplier** will notify **NGC** in writing, of their proposed use of **Customer Demand Management** ~~(which may result in a **Demand**~~

~~change of 12MW of more)~~ ~~in this timescale~~ which has been taken into account in the preparation of **BM Unit Data**.

OC1.5.5 **Control Phase**

OC1.5.5.1 ***Demand Control:***

Under **OC6**, each **Network Operator** will notify **NGC** of any **Demand Control** proposed by itself which may result in a **Demand** change of 12MW or more averaged over any half hour on any **Grid Supply Point** which is planned after 1000 hours, and of any changes to the planned **Demand Control** notified to **NGC** prior to 1000 hours as soon as possible after the formulation of the new plans;

OC1.5.5.2 ***Customer Demand Management:***

(a) Each **Supplier** will notify **NGC** of any **Customer Demand Management** proposed by itself which may result in a **Demand** change of 12MW or more averaged over any half hour on any **Grid Supply Point** which is planned to occur at any time in the **Control Phase** and of any changes to the planned **Customer Demand Management** already notified to **NGC** as soon as possible after the formulation of the new plans.

(b) The following information is required on a **Grid Supply Point** and half-hourly basis:-

(i) the proposed date, time and duration of implementation of **Customer Demand Management;** and

(ii) the proposed reduction in **Demand** by use of **Customer Demand Management**.

OC1.5.6 **Post-Control Phase**

The following will be supplied to **NGC** in writing by 0600 hours each day in respect of **Active Power** data and by 1000 hours each day in respect of **Reactive Power** data:

(a) ***Demand Control:***

Each **Network Operator** will supply MW profiles for the previous calendar day of the amount and duration of **Demand** reduction achieved by itself from the use of **Demand Control** of 12MW or more (averaged over any half hour on any **Grid Supply Point**), on a half hourly and **Grid Supply Point** basis.

(b) ***Customer Demand Management:***

Each **Supplier** will supply MW profiles of the amount and duration of **Demand** reduction achieved by itself from the use of **Customer Demand Management** of 12MW or more (averaged over any half hour on any **Grid Supply Point**) on a half hourly and **Grid Supply Point** basis during the previous calendar day.

OC1.6 **NGC** FORECASTS

OC1.6.1 The following factors will be taken into account by **NGC** when conducting **NGC Demand** forecasting in the **Programming Phase** and **Control Phase**:

(a) Historic **Demand** data (this includes **NGC Transmission System** ~~losses~~**Losses**).

(b) Weather forecasts and the current and historic weather conditions.

(c) The incidence of major events or activities which are known to **NGC** in advance.

(d) Anticipated interconnection flows across **External Interconnections**.

(e) **Demand Control** of 12MW or more (averaged over any half hour at any **Grid Supply Point**) proposed to be exercised by **Network Operators** and of which **NGC** has been informed.

(f) **Customer Demand Management** of 12MW or more (averaged over any half hour at any **Grid Supply point**) proposed to be exercised by **Suppliers** and of which **NGC** has been informed.

(g) Other information supplied by **Users**.

(h) Anticipated **Pumped Storage Unit** demand.

(i) ~~the sensitivity of **Demand** to anticipated market prices for electricity~~Station demand.

(j) **BM Unit Data** submitted by **BM Participants** to **NGC** in accordance with the provisions of **BC1** and **BC2**

OC1.6.2 Taking into account the factors specified in OC1.6.1 **NGC** uses **Demand** forecast methodology to produce forecasts of **NGC Demand**. ~~A written record of the use of the methodology must be kept by **NGC** for a period of at least 12 months.~~ A record of the use of mathematical models for the preceding 12 months will be kept by **NGC**.

OC1.6.3 The methodology will be based upon factors (a), (b) and (c) above to produce, by statistical means, unbiased forecasts of **National Demand**. **NGC Demand** will be calculated from these forecasts but will also take into account factors (d), (e), (f), (g), (h), (i) and (j) above. No other factors are taken into account by **NGC**, and it will base its **NGC Demand** forecasts on those factors only.

< End of OC1 >