Balancing Principles Statement

Report for the period
1 April 2002 to
30 September 2002

November 2002

National Grid

CONTENTS

Executive Summary

National Grid has developed a Balancing Principles Statement (BPS) in accordance with Licence requirements to define the broad framework within which balancing action decisions are made.

The BPS is intended to help electricity market participants to understand actions National Grid may take to achieve the efficient, economic and co-ordinated operation of the transmission system. To assist with this we have also held regular industry forums where we have provided data, detailed explanations of our balancing actions and answers to questions raised by participants.

Our compliance with the BPS is subject to independent external review and reflected in this our second BPS report. This report covers a six month period only to permit alignment with Balancing and Settlement Code review periods.

This report demonstrates that throughout the period from 1 April to 30 September 2002, National Grid has operated the Transmission System in accordance with the guidelines set out in the Balancing Principles Statement. A statement from the external auditor (PricewaterhouseCoopers) accompanies this report and all issues raised by them are being progressed to maintain compliance in the future.

On Friday 26 April 2002, we utilised emergency assistance twice to provide 500MW of additional import at Sellindge from the French Interconnector.

There were no Demand Reductions, System Islanding, Black Start situations, NRAPM warnings, Involuntary Reductions or BMUs disconnected by Transmission system faults in this reporting period.

One hour gate closure (1HGC) was implemented on 2 July 2002 (1HGC go-live). Since that date, for the second half of this reporting period, the new arrangements have been working well with no significant problems encountered.

On most days, National Grid has had a requirement to procure Balancing Services ahead of the Balancing Window. Such pre-gate requirements are referred to as Pre Gate Closure BMU Transactions (PGBTs). These are described further in section 5 of this report and BPS section C9.

The National Grid Company plc

Balancing Principles Statement Report for the period – 1 April to 30 September 2002.

1. BPS Part A: Introduction

National Grid has developed a Balancing Principles Statement (BPS) in accordance with Licence requirements in order to define the broad framework within which balancing action decisions are made.

The BPS is intended to help electricity market participants to understand actions National Grid may take to achieve the efficient, economic and co-ordinated operation of the transmission system.

An overview of the BPS is contained in Appendix 1.

Our compliance with the BPS is subject to independent external review and reflected in this annual report. Appendix 2 of this report contains an opinion from the external auditors.

2. BPS Part B: General Principles

The BPS is written to be consistent with our Licence obligation to operate the system in an efficient, economic and co-ordinated manner.

In determining which balancing measures to employ, we take account of various sources of information. These include Balancing Mechanism Unit (BMU) data, our demand forecasts, our Transmission outage plan, actual system conditions and any other relevant data (Grid Code BC 1.4.2 (f)).

In certain circumstances, we may need to issue Emergency Instructions or Involuntary Reductions in order to preserve the integrity of the transmission system. These circumstances may include system events and situations involving the requirement for demand control, Negative Reserve Active Power Margin, Black Start, frequency response and communication failure. In these circumstances it may be necessary to depart from normal Balancing Mechanism operation in accordance with Grid Code BC2.9.

Throughout the period from 1 April to 30 September 2002, National Grid has operated the Transmission System in accordance with the general principles set out in the Balancing Principles Statement. We are permitted in certain circumstances to operate the system outside the normal principles of Balancing Mechanism operation (as described in the BPS), and specific occurrences are covered in more detail later in this report.

3. BPS Part C: Principles underlying Balancing Measures

There are a number of principles described in the BPS that underpin the measures National Grid will take to balance the system. The balancing measures include the acceptance of bids and offers, call off of Ancillary Service contracts and other services, and instruction of Emergency Actions and other Involuntary Reductions. These measures are called off in cost order unless this is not possible under circumstances described in Part C section 5. Part C also describes the treatment of BMUs disconnected by Transmission System faults.

We have used balancing measures in cost order wherever possible during this reporting period, with any exceptions being in line with the circumstances described in BPS Part C section 5 and of a non-material nature.

4. BPS Part D: Transmission Constraints and Reserve / Response

We employ a number of principles for the management of transmission constraints and response/reserve holdings. These include outage planning from year ahead to day ahead, security studies, constraint cost forecasting and negotiating Balancing Service contracts. BPS Part D also describes the calculation of response and reserve holding levels, allocation of holdings with due regard to cost, delivery dynamics and transmission constraints, and regaining levels of response holding following delivery.

We have managed transmission constraints and response/reserve holdings during this reporting period in line with the principles described in BPS Part D.

5. BPS Part E: Day Ahead and Within Day Balancing Processes

BPS Part E describes the Day Ahead and Within Day balancing processes – the Scheduling and Control phases. At the Day Ahead stage, this includes publishing day ahead demand forecasts, performing security studies, calculating reserve/response levels and calculating half hourly system plant margins. It also includes forecasting constraint costs, calling off Balancing Service contracts and revising the national and zonal margin data. Within Day, it includes releasing revisions to the demand forecasts and margin data to the Balancing Mechanism Reporting System, performing additional security studies, reassessing the need to call off Balancing Service contracts, and balancing the system minute by minute through the deployment of Balancing Services on an economic basis.

On 2 July 2002, National Grid implemented the change to 1 hour gate closure (1HGC). This was a seamless transition from the previous 3½ hour gate closure regime which had been operating for 15 months since NETA go-live. 1HGC has now been live for the past 3 months and no significant problems have been encountered.

On average we have undertaken around 2 Pre Gate Closure BMU Transactions (PGBTs) per day. Up to 30 September, we have agreed 185 PGBTs (average ~2 per day). This comprised 92 Buys – a total volume of 99GWh at an average price of £45/MWh and 93 Sells – a total volume of 182GWh at an average price of £2.4/MWh.

We have managed the Day Ahead and Within Day balancing processes during this reporting period in line with the principles described in BPS Part E

6. BPS Part F: Operational Security Standards

BPS Part F summarises the Operational Security Standards used by National Grid. We operate the system within these standards in order to maintain system security. The system is normally secured against certain specific "secured events" which are defined in Part F – for example the fault outage of a double circuit overhead line.

We have maintained system security in accordance with our Operational Security Standard during this reporting period. There have been no deviations from this Standard as it relates to loss of supply, deviations from statutory frequency limits, system instability or unacceptable overloading of apparatus, subject to the provisions and exceptions noted in BPS Part F. Loss of supply and frequency or voltage excursions outside statutory limits are reported separately in accordance with Special Condition AA2 of the Transmission Licence.

7. BPS Part G: Exceptions to the BPS

Infrequently, circumstances may arise which require us to operate outside the principles described in the BPS. The specific examples identified in BPS Part G are:-

(i) Black Start
(ii) system islanding
(iii) emergency Control Centre evacuation
(iv) communication problems
(v) circumstances where operating within the BPS would prejudice the safe and secure operation of the system
(vi) insufficient time available to balance the system in accordance with the BPS
(vii) where the BPS is inappropriate and awaiting modification.

Of these categories above, the only circumstances that have arisen have fallen into categories (iv), (v) and (vi). Actions were taken as described in the following subsections to ensure the safe and secure operation of the transmission system, to avoid breaching our statutory obligations or where insufficient time was available to employ alternative measures to achieve balancing.

7.1 Emergency Instructions

In certain circumstances, it may be necessary for National Grid to issue Emergency Instructions in order to preserve the integrity of the Transmission System and any synchronously connected external system. In such circumstances, it may be necessary to depart from normal Balancing Mechanism operation in accordance with BC2.9 of the Grid Code.

On Friday 26 April 2002, we utilised emergency assistance twice to provide 500MW of additional import at Sellindge from the French Interconnector.

At 11:48 hours, following more than 2000MW of cumulative plant losses throughout the morning, we used 500MW of positive emergency assistance by manual telephone instruction for fast reserve / operating reserve purposes.

Later in the afternoon, at 15:55 hours, we deployed a further 500MW of positive emergency assistance (together with 300MW of standing reserve) for constraint reasons. This additional generation was required to support the London group following the trip of the Coryton-Tilbury-Grain circuit and the coincident loss of 660MW of generation also within the group (Medway Power).

7.2 Demand Control

A situation may arise where there is insufficient active power generation available to meet demand, or there may be local operating problems on part of the transmission system. Under these circumstances, it may be necessary for Network Operators and National Grid to make provisions for the reduction of demand in accordance with Grid Code OC6.

No Demand Control instructions have been issued.

7.3 Negative Reserve Active Power Margin

In order to ensure system security, National Grid must always be able to schedule sufficient frequency responsive plant to contain system frequency against the largest credible loss of generation or demand. Under conditions of low system demand (particularly overnight demand troughs during summer weekends), the generation notified to us may not include enough plant capable of providing this response. Under these circumstances we would normally accept bids to desynchronise un-responsive plant and accept offers to replace this plant with more responsive generation.

However, in extreme cases, there could be an insufficient volume of bids available to reduce the level of unresponsive generation. In these circumstances, National Grid issues Negative Reserve Active Power Margin (NRAPM) warnings to the market to signal the shortage of responsive plant and request additional plant flexibility. If the NRAPM warnings have no effect, as a last resort National Grid could instruct plant to desynchronise under these NRAPM conditions in accordance with Grid Code section BC2.9.4.

No NRAPMs or instructions relating to NRAPM conditions have been issued.

7.4 Black Start / Islanding

Under extreme conditions (e.g. multiple circuit trippings during severe weather), parts of the Transmission System could become disconnected from the main system, or islanded. In addition, there could be a “partial shutdown” where all generation has ceased in an island, or a “total shutdown” where all generation has ceased and there is no electricity supply from external Interconnectors.

Grid Code section OC9 describes the implementation of recovery procedures following a total or partial shutdown (Black Starts), the re-synchronisation of islands and the Joint System Incidents Procedure which would apply under the above

circumstances. National Grid has Ancillary Service contracts with certain generators to provide a Black Start capability to re-establish supply following a partial or total system shutdown.

There were no occasions of system islanding, or partial or total shutdown. No Black Start services were called off.

7.5 Communication Failures

This subject is covered in both Grid Code BC2.9.7 and BPS Part B section 5(f). A communication failure is defined in the BPS as an "unplanned outage of the electronic data communication facilities or National Grid's associated computing facilities preventing normal Balancing Mechanism operation". Under these circumstances, National Grid will normally issue a "National Grid Computing System Failure Notification" as soon as it is reasonably able to do so. This will normally be issued via the Balancing Mechanism Reporting System and where possible will indicate the likely duration of the outage.

Our NETA systems achieved 99.81% availability (excluding planned outages) in this reporting period.

7.6 Involuntary Reductions

This subject is covered in BPS Part B section 6. Under certain exceptional circumstances, National Grid may need to instruct reductions in generation or demand before all valid and relevant Balancing Mechanism bids or offers have been accepted. This could be to preserve system response or reactive reserve levels, or as a result of automatic measures (e.g. the operation of an intertrip), or because communication problems prevent other relevant bids or offers being instructed. Involuntary Reductions include Demand Reduction and Disconnection referred to in Grid Code OC6.

There have been no Involuntary Reductions of Demand or Generation.

7.7 Treatment of BMUs disconnected by Transmission System faults

This subject is referred to in BPS Part C paragraph 6. In unusual situations, generation BMUs may become disconnected from the Transmission System following transmission system faults.

There were no occasions where a generation BMU became disconnected from the Transmission System following a transmission system fault.

8. BPS Part H: Incidences of Emergency Instructions, Involuntary Reductions and other significant events

The following table summarises the above reporting sections and compares this reporting period and the first year of NETA operation to the last year of the Pool:

Category	2000/2001 Pool	2001/2002 NETA	*April – September 2002
Emergency Instructions	0	2	2
Demand Control	0	0	0
NRAPM warnings	1	0	0
Black Start / Islanding	0	0	0
Communications Failures – Availability of NETA systems excluding planned outages	n/a	99.8%	99.8%
Involuntary Reductions	0	0	0
Generation Disconnection following a system fault	2	1	0

* 6 month transitional reporting period.

9. Future Reports

BPS reports are prepared by National Grid in accordance with the timetable set out in our Transmission Licence Special Condition AA4 section 7.

The first BPS report covered the first year of NETA operation from 27 March 2001 to 31 March 2002.

In future, reports will cover 12 month periods from 1 October to 30 September the following year. This will align with Balancing and Settlement Code review periods.

This second BPS report is therefore issued to cover the six month transition period from April to September between the first March-March report and future October to September reports.

For further information on this report please contact:

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Appendix 1 – Overview of the Balancing Principles Statement

I The Purpose of the Balancing Principles Statement

The BPS has been developed by National Grid to assist electricity market participants to understand our actions in achieving the efficient, economic and co-ordinated operation of the transmission system.

National Grid is required by Transmission Licence Special Condition AA4 sections 5 and 7 to establish and maintain a BPS to define the broad framework within which we make balancing action decisions.

II Changes to the BPS

The BPS is approved by OFGEM and may only be modified in accordance with the processes set out in Special Licence Condition AA4. The first approved BPS (version 1.0) was issued on 20 March 2001.

Where changes are required to the BPS in advance of the annual update then, subject to approval, a BPS supplement may be issued.

The latest version of the BPS is version 2.0 issued on 1 May 2002. This reflects the March/April 2002 consultations and has additional sections relating to Beyond the Wall and Pre-Gate Closure BMU Transactions (PGBTs).

III Further information

Copies of the BPS are available from National Grid on request. The most recent edition is available on the National Grid industry information website (www.nationalgridinfo.co.uk). Please use the following link:

http://www.nationalgrid.com/uk/indinfo/balancing/pdfs/Appendix-F-Final-Apr-Consultation-BPS.pdf

For further enquiries relating to the BPS, please contact:

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Appendix 2 – Review opinion by PricewaterhouseCoopers

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The Directors
National Grid Company plc
Kirby Corner Road
Coventry
CV4 8JY

22 November 2002

Our ref: PJQ/IDS

Dear Sirs

Report on compliance with the Balancing Principles Statement for the period 1 April 2002 to 30 September 2002 ("the Period")

1 We have reviewed the extent to which National Grid Company plc ("National Grid"), in its procurement and use of Balancing Services, has complied with the Balancing Principles Statement ("BPS") for the period 1 April 2002 to 30 September 2002. We have undertaken this review in accordance with the Terms of Reference, dated 8 February 2002, which have been agreed between National Grid and ourselves.

2 Unless the context otherwise requires, words and expressions defined in the BPS, which is a document prepared by National Grid pursuant to Paragraph 5 of the Special Condition AA4 of its Transmission Licence, have the same meanings in this report as in that statement. All references to the BPS refer to version 2.0 dated 1 May 2002.

Respective responsibilities of National Grid and Balancing Principles Statement Auditor

3 National Grid is responsible for taking all reasonable steps to ensure its compliance with the BPS, in respect of its use of Balancing Services. It is our responsibility, within the Terms of Reference, to review on a sample basis, the compliance of National Grid with the BPS in respect of the use of Balancing Services. This work is performed with a view to expressing an independent opinion as to whether any non-compliances with the BPS, which in aggregate we consider material, have come to our attention which would make us believe that National Grid has not complied with the BPS, in respect of Balancing Services

PRICEWATERHOUSECOOPERS

The Directors
22 November 2002

Basis of review and scope of work

4 We have planned and performed our review in accordance with our Review Approach which we have agreed with National Grid and which is set out in our document "Supplement to the Balancing Principles Statement report for the period 1 April 2002 to 30 September 2002" ("the Supplement") which we have sent to both National Grid and the Office of Gas and Electricity Markets ("Ofgem").

5 The Supplement provides a detailed description of the approach we have adopted to the review. In particular, it describes those aspects of Balancing Services that we have examined during our review and those which are outside the scope of this review. Our review included an examination, on a test basis, of both the Balancing Services procured and used by National Grid, and of the estimates and judgements made by National Grid in using Balancing Services. This report should be read in conjunction with the Supplement.

6 In reaching our conclusion we assessed the risk of a material breach of the way National Grid has used Balancing Services compared with the requirements of the BPS, whether caused by fraud or other irregularity or error, and determined the adequacy of procedures and controls established by National Grid to eliminate or reduce such risks.

Conclusion

7 Based on our review, nothing has come to our attention that causes us to believe that, for the Period, National Grid did not in all material respects procure and use the various aspects of Balancing Services covered by this review as described in the Supplement in accordance with the BPS.

Use of this report

8 This report is intended solely for the use of the Directors of National Grid and Ofgem. While we acknowledge that this report will be published on the National Grid website, this is for information purposes only and we do not intend that it should be relied upon by anyone other than the parties mentioned above.

9 The maintenance and integrity of the National Grid website is the responsibility of the directors of National Grid. The work that we carried out does not involve consideration of the maintenance and integrity and, accordingly, we accept no responsibility for any changes that may have occurred to this report since it was initially presented on the website.

PRICEWATERHOUSECOOPERS

The Directors
22 November 2002

10 This report has been prepared in the expectation that National Grid and Ofgem will have sufficient experience of Balancing Services to understand the issues raised without further background explanation and to evaluate the contents of this report in the context of the scope of our work.

Yours faithfully

PricewaterhouseCoopers
Chartered Accountants

PRICEWATERHOUSECOOPERS

National Grid Company plc
Balancing Principles Statement Review

Supplement to the Balancing Principles Statement report for the period 1 April 2002 to 30 September 2002

PRICEWATERHOUSECOOPERS

Supplement to our report on compliance with the Balancing Principles Statement for the period 1 April 2002 to 30 September 2002

1 We have reviewed the extent to which The National Grid Company plc ("National Grid"), in its procurement and use of Balancing Services, has complied with the Balancing Principles Statement ("BPS") prepared by National Grid pursuant to Paragraph 5 of the Special Condition AA4 of its Transmission Licence, for the period 1 April 2002 to 30 September 2002 ("the Period"). We have undertaken this review in accordance with the Terms of Reference, dated 8 February 2002, which have been agreed between National Grid and ourselves.

2 The results of our review for the Period have been communicated to both National Grid and to the Office of Gas and Electricity Markets ("Ofgem") in our main report ("BPS Report") which should be considered in conjunction with this Supplement.

Purpose of this Supplement

3 This Supplement has been prepared in conjunction with the BPS Report to provide additional details relating to the work performed in respect of the compliance by National Grid with the BPS.

4 This Supplement describes the review approach adopted by us in our role as the Balancing Principles Statement Auditor.

Use of this Supplement

5 This Supplement is intended solely for the use of the Directors of National Grid and Ofgem. While we acknowledge that this Supplement will be published on the National Grid website, this is for information purposes only and we do not intend that it should be relied upon by anyone other than the parties mentioned above.

6 The maintenance and integrity of the National Grid website is the responsibility of the Directors of National Grid. The work that we carried out does not involve consideration of the maintenance and integrity and, accordingly, we accept no responsibility for any changes that may have occurred to this report since it was initially presented on the website.

7 This Supplement has been prepared in the expectation that National Grid and Ofgem will have sufficient experience of Balancing Services to understand the issues raised without further background explanation and to evaluate the contents of this report in the context of the scope of our work.

Review approach

Objective and scope of the BPS Review

8 The BPS sets out, at a high level, National Grid's obligations and responsibilities in respect of the management of supply and demand over the national transmission network and has been written to be consistent with National Grid's licence obligation to "operate the licensees Transmission System in an efficient, co-ordinated and economical manner".

9 The objective of our review, as set out in our Terms of Reference, is to form an independent opinion based on our review work as to the compliance of National Grid, in all material respects, with the BPS in respect of the use of Balancing Services for the Period.

10 Condition C1 of National Grid's Transmission Licence defines Balancing Services as:

(a) "Ancillary Services;

(b) offers and bids made in the Balancing Mechanism; and

(c) other services available to National Grid, which serve to assist it in operating the Transmission System in accordance with the Electricity Act 1989 or the Transmission Licence and/or in doing so efficiently and economically."

11 The scope of our review covered:

(a) the receipt and validation (including application of default data) of Physical Notification ("PN") data;

(b) the consistency of demand and operational data provided to market participants during the Day Ahead and within day balancing processes to data used internally by National Grid and confirmation that the required timetable for the issue of this data has been met;

(c) the call off of Balancing Services in cost order during the day-ahead balancing process. Balancing Services to include Ancillary Services active power contracts only;

(d) the call off of Balancing Services in cost order during the within day balancing process. Balancing Services to include Ancillary Services active power contracts and accepted Bids and Offers in the Balancing Mechanism including Pre Gate Closure BMU Transactions ("PGBTs"); and

(e) National Grid's adherence to internal operating procedures for activities that impact the call off of Balancing Services during the day-ahead and within day balancing processes. For the avoidance of doubt, this includes internal operating procedures that relate to the management of transmission constraints and response/reserve holdings during the day-ahead and within day balancing processes.

12 For the purpose of clarity we note that, in assessing internal operating procedures relevant to the above activities, those aspects that involve engineering decisions that National Grid make are expressly excluded from the scope of our review, as agreed with National Grid.

13 In agreement with National Grid we have excluded from the scope of our review the procedures of National Grid which address the following activities described in the BPS:

(a) Emergency Instructions and Involuntary Reductions as described in the Grid Code for use in preserving system security in exceptional circumstances;

(b) operational planning activities undertaken prior to the Day Ahead stage;

(c) engineering decisions taken in the calculation of transmission constraints and response/ reserve holdings;

(d) engineering decisions made in the call off of Ancillary Services or acceptance of Bids and Offers in the balancing mechanism;

(e) the procurement of Balancing Services to provide services to external system operators via System-to-System Services;

(f) acceptance of arbitrage trades made within the Balancing Mechanism;

(g) the management and planning of transmission system outages; and

(h) the use of 'other services' as referred to in the definition of Balancing Services in paragraph 10 (c) above.

14 For the avoidance of doubt, it is not the responsibility of the BPS Auditor to:

(a) confirm that the BPS is consistent with legislation/statutory obligations;

(b) confirm that system security has been maintained at all times; or

(c) review the accuracy of forecast demand as prepared by National Grid compared to actual demand.

15 In interpreting the BPS, we have relied on our own interpretation of that statement. We are not legal advisors and have not taken independent legal advice and shall therefore have no responsibility to National Grid or Ofgem were a court to interpret or construe the BPS in a different way from us.

Call-off of Balancing Services in cost order

16 As described above, we are required, as part of our review, to assess whether Balancing Services have been called-off in cost order. Part C paragraph 5 of the BPS, recognises that under certain circumstances it may not be possible to call-off Balancing Services in cost order and lists these circumstances. We have discussed the interpretation of cost order with National Grid as it relates to our review and have agreed that we should apply the following assumptions to our review of the call-off of Balancing Services:

- Balancing Services called-off during the day ahead balancing process (Ancillary Services active power contracts) have been selected based on lowest cost over next 24 hour period.

- Balancing Services called-off during the within day balancing process (Ancillary Services active power contracts and accepted Bids and Offers in the Balancing Mechanism) have been selected based on lowest cost over the subsequent 'Gate Closure period' following the service being called-off. The term 'Gate Closure period' is defined as the length of time between Gate Closure for a given Settlement Period and the end of that Settlement Period.

- Where it is not possible to call-off Balancing Services in cost order, Part C paragraph 5 of the BPS states that National Grid may take account of the '*observed and declared dynamic operating characteristics of available generation and demand Balancing Services*'. During the course of our work we have assumed that the observed operating characteristics, are those characteristics observed by National Grid since NETA 'go-live' on 27 March 2001.

- We have assumed that PN data forms part of the '*observed and declared dynamic operating characteristics of available generation*'. As such, we have assumed that actions taken by National Grid to mitigate risks to the security of the Transmission network arising from abnormal PN data is within the scope of Part C paragraph 5 of the BPS.

Review approach

17 Our review approach consisted of the following, in respect of National Grid's use of Balancing Services:

(a) reviewing the computer systems and/or internal operating procedures that National Grid have in place that relate to the use of Balancing Services;

(b) testing on a sample basis to the extent we considered necessary, the ongoing operation of the relevant computer systems and/or internal operating procedures during the period subject to review; and

(c) testing on a sample basis to the extent that we considered necessary, the data processed by the relevant computer systems and/or internal operating procedures during the period subject to review.

18 We designed our testing to provide reasonable assurance that the call-off of Balancing Services during the period subject to review has been carried out in accordance with the sections of the BPS within the scope of our review.

19 In undertaking our review, we assessed the risk of a material non-compliance of the areas of the BPS within the scope of our review. In areas where we have identified specific risks, or where weaknesses have been identified in the operation of specific internal controls, these compliance tests have been supplemented by substantive tests of detail of the relevant underlying data.

20 For this review period we have treated the period immediately preceding and following the reduction of the Gate Closure period from 3.5 hours to 1 hour as a risk which we reviewed by performing appropriate tests.

21 We selected four Settlement Days for testing in the Period. The selection of the particular days reviewed was based solely on our assessment of risk. It represented a mixture of "normal" days and other days where we identified unusual factors (e.g. weekends, clock change days or days around a specific event) which, in our view, represented a risk as to compliance with internal operating procedures.

22 In respect of our review of accepted Bids and Offers in the Balancing Mechanism we selected and reviewed 24 half-hour periods within the four sample days selected per paragraph 21 above. Our selection of half-hour periods reviewed was weighted towards periods of high activity in the Balancing Mechanism and also where accepted Bids and Offers resulted in higher System Buy Prices or lower System Sell Prices.

23 Throughout our work, we continued to monitor developments that impact upon the call-off of Balancing Services and where we identified a resulting risk in respect of our review we assessed the risk and determined an appropriate response.

Materiality

24 We have planned and performed our review so as to be able to provide reasonable assurance that National Grid has used Balancing Services in all material respects in accordance with the BPS.

25 The assessment of what is material, and therefore what issues, if any, warrant inclusion in the BPS Report and this Supplement, is a matter of professional judgement. However, in applying this professional judgement, we have judged a failure on National Grid's part to comply with the BPS as being material if, in our opinion, a reasonable professional person, considering National Grid's adherence to the BPS in the round, would form a different view as to whether National Grid had complied with the BPS dependent as to whether or not the matter was disclosed to them. In applying this judgement we took into account the following factors:

(a) the extent to which the actual outcome would have been different had the principles set out in the BPS been applied;

(b) the surrounding circumstances at the time(s) of any failure to comply with the BPS;

(c) the aggregate impact in the period of any failure to comply with the BPS; and

(d) the relative significance of the particular provision of the BPS that we have failed to comply with.

26 Our work has identified a limited number of issues that, taking into consideration the above factors, we have assessed as being non-material and as such these matters have not been included in either the BPS Report or this Supplement.

More detailed description of review work undertaken

27 The review work that we have carried out can be divided into the main areas shown below.

Receipt and validation of Physical Notification data

28 Validation/accepted data:

- Sample tested accepted data items, confirming data complies with required validation rules;
- Reviewed validation controls built into file transfers (e.g. record counts, hash totals etc.); and
- Identified and sample tested key management controls over quality of data and, where relevant, sample tested any instances where validation rules have been overridden for a valid reason.

29 Default data:

- Sample tested data items that have been defaulted to check that the correct default data has been applied; and
- Sample tested defaulted data items to check that a valid PN data submission had not been made by the relevant market participant.

30 Incidents/exceptions:

- Reviewed a sample of incidents where electronic transfer had been interrupted and of the actions taken designed to prevent data files being lost/duplicated;
- Reviewed a sample of correspondence/help desk queries from market participants questioning rejection of a data file; and
- Sample tested rejected items to check that data was rejected for a 'valid' reason.

The consistency of data provided to market participants during the "day-ahead" and "within-day" balancing processes to data used internally by National Grid

31 Accepted items and controls:

- Sample tested data items to check that the data had been submitted to the Balancing Mechanism Reporting Agent ('BMRA') directory in the required timescales;
- Sample tested data items, reviewing evidence that procedures have been complied with (e.g. sign off of checklist, evidence of review and approval of value);

- Sample tested controls over input of data to SORT/SPICE (e.g. sign off of input, one-for-one checking); and

- Sample tested data items to check values reported to BMRA to data input sheets.

32 Incidents/exceptions:

- Reviewed a sample of any complaints/disputes raised by market participants to identify any that related to the late provision of data; and

- Reviewed a sample of operational log/fault log for IT systems to check for any system failures that had resulted in late delivery of data.

The call-off of Ancillary Services contracts in cost order during the "day-ahead" balancing process

33 Accuracy of data available:

- Checked for a sample of days that the list from which contracts had been selected agrees to a list of contracts in place at that time;

- Sample tested days to confirm that the assessment of the need for warming contracts had been carried out as required and documented in procedures;

- Confirmed evidence of management's review and approval of decision; and

- Sample tested warming contracts called, to check that the decisions had been made in accordance with documented procedures.

34 Analytical review:

- Sample tested warming contracts called, to check the cost of contract compared to others available that met geographical or constraint limitations.

The call-off of Balancing Services in cost order during the "within-day" balancing process

35 Accuracy of data available:

- Confirmed for a sample of days that the list from which Ancillary Services contracts had been selected agreed to a list of contracts in place at that time;

- Sample tested days to confirm that the assessment of the need for Ancillary Services contracts had been carried out as required and documented in procedures;

- Confirmed evidence of management's review and approval of decision;

- Sample tested Ancillary Services contracts called, to check that the decision had been made in accordance with documented procedures;

- Confirmed evidence of management's review and approval of decision; and

- Sample tested PGBTs issued to check that the decision to issue the PGBT had been taken in accordance with the documented procedures.

36 Analytical review:

- Sample tested Ancillary Services contracts that had been called to review cost of contract compared to others available that met geographical or constraint limitations;

- Sample tested Bids/Offers to check that the "operational plan" indicates that balancing measures had been required and that the Bid/Offer accepted met requirement stated in the plan;

- Sample tested Bids/Offers accepted to check the preparation of the "operational plan" that identifies the need for balancing measures and check that this had been prepared in accordance with documented procedures;

- Sample tested Bids/Offers to confirm whether accepted Bid/Offers had been the least cost of the Bids/Offers available. Where this was not the case, reviewed any explanation provided by National Grid control engineers and checked this explanation against the available information. We reviewed explanations provided by National Grid for instances where the least cost Bid/Offer was not accepted for reasonableness. We are not, by profession, engineers and our challenge on engineering decisions was therefore limited as to whether the explanation seemed to us reasonable;

- Reviewed evidence of authorisation/post-event review of decision by management;

- Reviewed analytically Bids/Offers accepted over the course of review period to seek to identify whether any Balancing Mechanism Units appeared to be selected more frequently than others;

- Sample tested the PGBTs issued to check that such an action was appropriate in view of the operational plan produced;

- Sample tested the PGBTs issued to check that a suitable number of PGBT Offers had been received by National Grid prior to the decision to select a specific generating unit, and that the PGBT issued formed part of the least cost solution, subject to constraints, and displayed no bias.

General IT Controls Testing

37 The majority of transactions regarding input and output of data are sent and processed electronically. Consequently, significant assurance over these procedures was obtained by reviewing the strength of the IT controls existing over these areas.

38 Our review focussed on the following in respect of controls over SPICE and SORT:

- security administration;

- software change control;

- logical access control;

- computer operations;

- contingency planning; and

- physical security.