

Summary of Meeting and Actions

Meeting Name	Black Start Working Group
Meeting No.	5
Date of Meeting	Wednesday, 25 th July 2007
Time	10:00am – 3:15pm
Venue	B1-1, National Grid House, Warwick

This note outlines the key action points from the fifth meeting of the Black Start Working Group.

1) Apologies for Absence

Apologies were received from Claire Maxim (E.ON), Campbell McDonald (SSE Generation), John Morris (British Energy), Phil Nicholson (Central Networks) and Malcolm Taylor (AEP).

2) Minutes of Last Meeting

The draft minutes of the Grid Code Black Start Working Group meeting held on 27th June 2007 were APPROVED, subject to minor amendments and will be accessible from the Grid Code Website.

The Working Group agreed that it would be beneficial to clarify whether existing contracts e.g. reserve contracts, would still be valid during a Black Start event, National Grid to investigate and report back to the Working Group.

Action: National Grid

3) Longshadow Exercise

The Working Group received an update from National Grid (DB), on the outcomes/initial learning points from the Longshadow Exercise.

The Working Group was informed that the governance arrangements with in the industry documents (Grid Code & BSC) generally coped well with the Longshadow scenario. Nevertheless, the Working Group noted that during a Black Start event, communication with National Grid, DNOs and Generators is crucial in ensuring an effective, efficient restoration of the GB Transmission System. It is highly desirable for all industry participants to understand what would be expected of them in the event of a Black Start, and insofar as this Working Group can improve that clarity through Grid Code amendments then this would be valuable.

At a forthcoming AEP session (date to be confirmed), National Grid will presenting their findings from the Longshadow Exercise and outline/explain the relevant Grid Code obligations which Users would be expected to adhere to.

The Working Group accepted that the BSC Panel had a role in ensuring that there was sufficient clarity regarding the compensation procedures, creditworthiness of Users and the role of Suppliers in the event of a Black Start, which may require BSC Panel to consider amendments to the BSC.

The Working Group noted that the interaction between the electricity and gas network was important in getting the system back-up and running and ensuring that neither network was impeding each other.

The Working Group was informed that the Department of Business, Enterprise and Regulatory Reform would be producing a report outlining the findings of the Longshadow exercise.

4) Local Joint Restoration Plans (LJRP) Exercise Requirements

The Working Group noted and discussed the draft legal wording for the LJRP exercise requirements which would be incorporated within OC9.4.

Summary of Meeting and Actions

Working Group comments on the draft wording would be incorporated into the revised text which will be circulated to group members for discussion and approval at the next meeting.

Action: National Grid

5) Zonal Restoration Plans

National Grid presented a summary of proposals regarding Zonal Restoration Plans. This captured and built upon the previous Working Group discussions. The Working Group was informed that the associated provisions did not contradict the provisions included within the Scottish's LJRP. The Working Group noted that the Scottish LJRP were inclusive of the zonal restoration phase.

Zonal Phase Definition

The Working Group noted that it may be beneficial to have a definition for the zonal phase such that it can be differentiated from the LJRP phase. The proposed definition was discussed, it was noted that the wording may have to refer to 'power station' rather than 'generator' such that it is reflective of the correct terminology.

The Working Group discussed whether there should be provisions outlining when the zonal phase ended. It was acknowledged that it may be difficult to specify when the zonal phase ended as there may be overlaps between the various stages of a Black Start event as illustrated by figure 1.

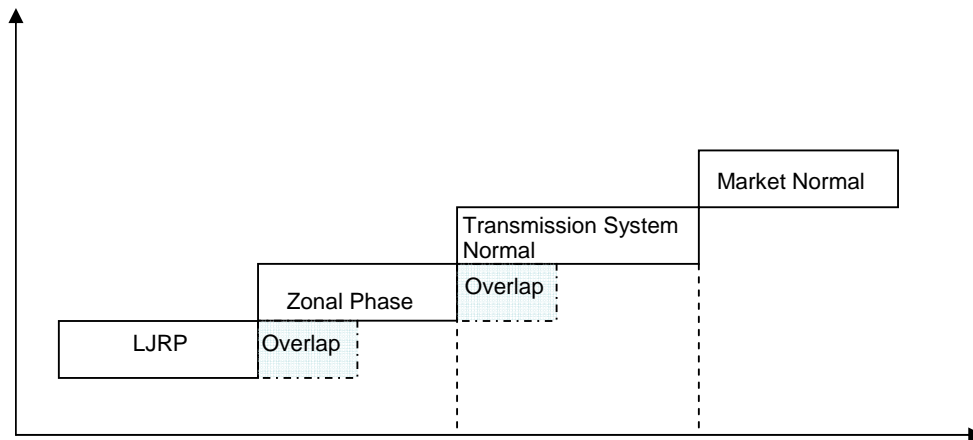


Figure 1

The Working Group noted that it may assist User clarity if the Grid Code clearly defined that various phases on a Black Start event:

- Power Islands Restoration (via LJRP)
- Zonal Restoration
- System Operational (Technical Criteria)
- Market Reconvened

The Working Groups discussed what was exactly meant by 'Transmission System Normal'

Objectives and Issues

The Working Group noted that a successful phase would be one where the networks are restored 'back to normal' as efficiently and effectively as possible. NG informed the group that it was therefore important for National Grid, DNOs and Generators to share their knowledge of the processes and issues of the Black Start restoration.

Summary of Meeting and Actions

The Working Group discussed whether there should be obligations with the Planning Code and Connection Conditions sections of the Grid Code to facilitate this data exchange.

The Working Group was informed that during the zonal phase normal operational standards may not be appropriate or possible to be held, with the system possible operating outside normal voltage and frequency standards. The Working Group discussed whether the Grid Code should specify target operational standards in the event of a Black Start.

The Working Group noted that it was likely that all embedded generation or variable output generation would need to be kept off the system until National Grid and DNOs agreed it was acceptable for such to connect. It is likely that any embedded generation or viable output generation that remains connected, following a large shutdown, may need to be shutdown to enable the power islands to be expanded with less risk of further system collapse.

The Working Group discussed whether it would be appropriate to place an obligation on the DNOs to keep embedded generation or variable output generation off the system until National Grid and DNOs agreed it is acceptable for such to connect.

NG informed the Working Group that during the later stages of the zonal plan, National Grid and the DNOs would need to discuss how demand management will be handled.

National Grid Specific Issues

NG informed the Working Group that National Grid would be responsible for the zonal phase. National Grid priorities during this phase would be:

- Expansion of power islands to get more synchronised generators connected.
- Energise skeletal GB Transmission System as quickly as possible
- Strategically restore demand as more generation becomes available on the system

DNOs Specific Issues

NG informed the Working Group that National Grid would be looking to the DNO to provide forecasting demand profiles and for the DNOs to have the ability to disable and/or change the frequencies of the Low Frequency Relay settings.

SS, PW and DB informed the Working Group that it would be very difficult for the DNO to provide forecasting demand profiles for the power islands, primary due to the way the information is assimilated e.g. information available for the DNO's network and at the primary and grid sites. DNOs do not readily have forecast demand profiles at the Bulk Supply Point Level and it would be a time consuming and labour intensive activity to obtain the information. The Working Group noted that the power islands may cross DNO network boundaries, making the forecasting of demand profiles more difficult. DNOs preference would be for a target demand profile from National Grid.

NG informed the Working Group that the forecast demand profiles would become important during the later stages of zonal restoration, when dispatching switches from a demand to a generation emphasis. Lack of an accurate forecast demand profile may result in National Grid carrying more generation reserve such that it could respond to unexpected fluctuation in the demand profile.

It was agreed that National Grid and DNOs would work together such that a forecast demand profile could be established for the power island.

SS, PW and DB informed the Working Group that in some installations the DNO would be able to disable their Low Frequency Relays but it would be problematic and time consuming to alter the setting as in some instances this could only be done manually.

Summary of Meeting and Actions

Generators Specific Issues

The Working Group noted that all generators will be required to be available to synchronise as soon as possible after a partial or total shutdown. The Working Group discussed whether generators should be obligated to provide information resulting to their availability and capability following the loss of all external supplies.

NG informed the Working Group that generators would be expected to operate in frequency sensitive mode during a Black Start restoration. The Working Group noted that there are various different modes in which the demand will be increased with the power islands. This could mean the generators either being instructed to:

- Accept a block load
- A specified target MW value
- A frequency control instruction

The associated draft legal text will be presented for discussion at the next Working Group meeting.

Action: National Grid

6) Back to Normal Principles

The associated draft legal text will be presented for discussion at the next Working Group meeting.

Action: National Grid

It was noted that any provisions incorporated into the Grid Code regarding 'back to normal' obligations, may necessitate consequential changes to the STC.

7) Timeline

The Working Group noted and agreed to a slightly revised timeline for the progression of Grid Code changes as outlined below:

- 15th February 2007 GCRP Meeting - Panel agreed to the establishment of the Working Group
- 15th November 2007 GCRP Meeting - Present Working Group recommendations
- December 2007 Consultation document issued for proposed Grid Code changes
- February 2008 Send report of proposed changes to the Authority
- April 2008 Authority approves Code changes for implementation

The Working Group was informed that a draft version of the Working Group Report would be available at September's meeting for discussion/review by members.

Action: National Grid

The Working Group noted that the Executive Emergencies Community (E3C) Electricity Task Group would be informed of the slightly revised timescales for proposing and implementing (subject to Authority approval) the Grid Code changes relating to Black Start governance.

Action: National Grid

8) Next Meeting

The meeting scheduled for 23rd August 2007 will be cancelled and the next meeting of the Working Group will take place on Monday, 24th September 2007 at National Grid House, Warwick, commencing at 10am.

Future Meeting

- Tuesday, 23rd October 2007, National Grid House, Warwick

Summary of Meeting and Actions

Appendix 1 – Working Group Attendance

Members Present:

Jonny Hosford	JH	Chairman
Lilian Macleod	LM	Secretary
Steve Argent	SA	Ofgem
David Briggs	DB	Central Networks
Nilton Green	NG	National Grid
Allan Macleod	AM	Scottish Power Transmission Ltd
John Norbury	JH	RWE
David Osborne	DO	Scottish Hydro-Electric Transmission Ltd
Steve Saunders	SS	EDF Energy
Paul Ward	PW	United Utilities

Apologies:

Campbell McDonald	CMcD	SSE Generation
Claire Maxim	CM	E.ON UK
John Morris	JM	British Energy
Phil Nicholson	PN	Central Networks
Malcolm Taylor	MT	AEP

Apologies:

Duncan Burt	DB	National Grid
-------------	----	---------------