Minutes

Meeting name	Demand Control OC6 Workgroup
Meeting number	2
Date of meeting	1st February 2013
Time	10:00am – 14:00pm
Location	National Grid House, Warwick Technology Park, Gallows Hill, CV34 6DA

Attendees

Name	Initials	Company
Audrey Ramsay	AR	National Grid
Damien McCluskey	DMc	National Grid
Jason Bareham	JB	National Grid
Andy Walden	AW	National Grid
Paul Roebuck	PR	National Grid
Alan Creighton	AC	Northern Powergrid
Graeme Dawson	GD	RWE npower
David Mobsby	DM	Scottish and Southern Power Distribution
Dan Randels	DR	Electricity North West
Andy Dixon	AD	Scottish Power
Nigel Buckland	NB	Western Power
Bill D'Albertanson	BA	UK Power Networks
Lisa Waters (tele-con)	LW	Waterswye

Apologies

Name	Initials	Company
Steve Saunders	SS	UK Power Networks

1 Introductions/Apologies for Absence

1. AR provided an introduction to the group and described the agenda set out for the Workgroup meeting.

2 Main points of meeting

2. AW presented on Emergency STOR;

- National Grid's current tender volumes equate to around 6GW of which 2.8GW is presently contracted.

- GD stated that RWE npower have OCGTs that are manned for STOR service (like other large STOR providers). Fixed costs may increase as a result of making the assets available for a 24/7 STOR service however some of these additional costs would be absorbed in to an Availability Fee adjustment (8760 hrs v the existing 3860hrs). Some Demand Side Response assets would also be able to participate in a 24/7/365 scheme if DNO export permissions exist. Assets are located at a range of locations and therefore some may be suitable for location-specific events but would also have the potential to contribute to GB-wide events.

- Within the timescales suggested current availability in the market totals around 150MW/hr, far below the emergency requirement. Worst case scenario to be comparable with OC6 20% of overall demand is needed to cover all demand in an emergency situation.

- AW reinforced the point that this is an emergency situation and with STOR there is always a risk that the generation unit could fail and not deliver the required level of demand.

- It was agreed by the group present that STOR has potential to be part of the solution and the idea of emergency STOR is worth pursuing within other generation forums where National Grid participate, but not the whole answer for the demand control requirements of this Workgroup.

3. JB gave an overview to the Workgroup on February 2012;

- On Saturday 11th February 2012, approximately 3,500MW of generation losses occurred during the morning period.

- Mainly gas plants struggled to meet planned output, in part due to overnight temperatures falling to around -13C. Demand was above forecast, but within an operationally acceptable margin of error.

- Investigations have revealed that approximately 1350MW of the generation losses were directly attributable to the exceptionally cold weather, resulting in significant generation tripping out and not being available.

- Investigations have indicated that the level of Demand Control (implemented by Voltage Reduction) only reached approximately 60% of the expected 5% reduction, and took longer than expected to take effect.

- Throughout the period, system frequency remained stable and within operational limits.

- A question was asked as to whether National Grid issued stages with this emergency? JB answered that NGET went to Stage 2 demand control. The consensus around the table was that some DNOs were unclear on what actions to take when emergency warning messages are sent, highlighting the need to review the current processes. This may be due to the warnings and demand control instructions being issued at short notice in this case, and the rarity of instructing demand control.

- DNOs stated that Network Operators would be in a better position if they were made aware of these types of events much earlier i.e. advanced warning signals. This would allow them to be better prepared to respond and manage the event more effectively. JB said that warnings would be issued in advance where timescales permitted.

- During this event, the output from intermittent generation was stable. With the levels of intermittent generation continuing to rise, system volatility is likely to increase and may lead to an increased risk of events such as this occurring.

4. AR discussed ENCC processes for managing generation deficit;

   - All valid and feasible Bids and Offers accepted in the BM
   - All valid interconnector actions
   - GB Transmission System Warning – Notice of Insufficient System Margin
   - Erosion of Regulating Reserve
   - Maximum Generation Service instructed to relevant BMUs
   - Emergency Instruction to any other BMU able to provide additional MW
   - GB Transmission System Warning – High Risk of Demand Reduction issued
   - GB Transmission System Warning – Demand Control Imminent issued
   - OC6 Demand Control
   - OC6 Demand Disconnection

   - In an emergency situation problems arise when a Notification if Insufficient System Margin (NISM) has not been issued and the problems escalate very quickly [how long is the risk window – against where action needs to be taken].

   - Refining what Stage 1 & Stage 2 is going to give us (DNOs 3% not 5%)
     - Voltage Reduction = 3% demand reduction (5-12mins) within Stage 1
     - Voltage Reduction = 3% demand reduction (5-15mins) within Sage 2

5. JB talked around demand disconnection timescales. 5 minutes for full demand control implementation was preferred by the Electricity National Control Centre (ENCC) at National Grid. Significantly increasing this time period may lead to pre-emptive action such as demand control being taken at an earlier stage. Implementation starting within 5 minutes with full demand control achieved within 10mins may be an option, phased across DNOs. National Grid to discuss these implementation times further with the ENCC and AC to send through the data graphs.

6. DNOs general implications associated with demand disconnection was discussed. Debate centered on the implications that DNOs would face in light of demand disconnection occurring, but the first two of these don't apply when DNOs respond to an instruction from NG.

   - Financial penalties by Ofgem – incentive mechanism in place through the price control.
   - Guaranteed standard of performance – payment sent to customers if the outage is greater than 18hrs (£52 per customer) and influenced through political fallout, costs could potentially increase.
   - Reputational damage.
   - Legal obligations set out in the Grid Code.

7. DR presented on ENW's CLASS project.

   Section OC 6.5 of the Grid Code allows NGET to instruct Distribution Network Operators (DNOs) to reduce demand by up to 20% in four stages, or under certain circumstances up to 40% in 8 stages. Each stage is nominally 5% to be delivered within 5 minutes of instruction. This facility is normally only used under extreme conditions when all available sources of generation have been exhausted and the only option available to balance the system is to reduce demand.

   Demand reduction can be achieved either through voltage reduction or direct disconnection of loads. It has historically been assumed that the first two stages can be achieved through voltage reductions with a 3% voltage reduction providing a 5% demand reduction and a 6%

reduction providing a 10% demand reduction. Further demand reductions would require direct disconnection of demand.

3 List of Actions

8. **AW** to speak with Dave Preston & Mike Edgar around emergency STOR around what forum would be best to take this forward.

9. **National Grid** to explore what message warning systems are currently available within the control room, what emergency details we currently hold and what additional warning information could be made available to DNOs. Also find out whether EBS | IMS will be used for this in the future.

10. **National Grid** an action from the last meeting around annual refresher exercises on demand control. NGET and DNOs to potentially set up a new Workgroup to be used as a refresher exercise similar to that of 'Exercise Faraday'.

11. **National Grid** to investigate the timings of system warnings that are sent out to the DNOs. What trigger points are specified in the control room, how these levels increase in occurrence over the emergency period, and explore the feasibility of sending system warnings directly to DNO SCADA systems.

12. **National Grid** to have a discussion around Week 24 Data Submissions in relation to demand control to establish what information re Demand Control is readily available to Control Engineers.

13. **National Grid** to assess feasibility of using historical demand control provision to inform future demand control instructions

14. **GD** to report back on supplier impact in the event of a demand disconnection, what would be the financial loss for electricity supply businesses associated with the reduction in energy volumes.

15. **National Grid** to send out a link on how the ENTSOE Demand Connection Code facilitates demand side response measures across Europe.

4 Suggested ways forward

16. Actions will be dealt with by relevant parties prior to the next Workgroup meeting.

17. The Workgroup needs to draw this back to the scope of the 'Terms of Reference' and deliver a Workgroup report back to the GCRP.

5 Date of Next Meeting

18. Next meeting early April and will take place at NG House Warwick, or at a location nearby. The exact date will be confirmed at a later stage.