

## Minutes

<b>Meeting name</b>	Demand Control OC6 Workgroup
<b>Meeting number</b>	3
<b>Date of meeting</b>	10 <sup>th</sup> April 2013
<b>Time</b>	10:00am – 14:00pm
<b>Location</b>	National Grid House, Warwick Technology Park, Gallows Hill, CV34 6DA

## Attendees

<b>Name</b>	<b>Initials</b>	<b>Company</b>
Audrey Ramsay	AR	National Grid
Damien McCluskey	DMc	National Grid
Jason Bareham	JB	National Grid
Andy Walden	AW	National Grid
Alan Creighton	AC	Northern Powergrid
Sally-Anne Willetts	SW	RWE npower
Nigel Buckland	NB	Western Power Distribution
Bill D'Albertanson	BA	UK Power Networks
Peter Bolitho	PB	Waters Wye Associates

## Apologies

<b>Name</b>	<b>Initials</b>	<b>Company</b>
David Mobsby	DM	Scottish and Southern Power Distribution
Steve Cox	SC	Electricity North West
Andy Dixon	AD	Scottish Power

## 1 Introductions/Apologies for Absence

1. AR kicked off the meeting by going through the agenda and summarised the minutes from the previous meeting on the 1<sup>st</sup> February 2013.

## 2 Main points of meeting

- 2 JB provided an update to the group following internal discussions around voltage reduction/demand reduction requirements. The Electricity National Control Centre (ENCC) at National Grid view remains that the 5 minute timescale from instruction by National Grid is still a requirement based on being able to stabilise and secure the National Electricity Transmission System in emergency situations. This is due to the initial time required to analyse incidents and instigate manual actions which would take 5 minutes, leading to a total time of 10 minutes. Timescales greater than 10 minutes from an initial incident were considered to place the System at an unacceptable risk.
- 3 JB stated that the origin of requirement for demand control to be implemented within 5 minutes can not be confirmed, but it is suspected that 5 minutes comes from the same root as 5 minute reserve, in that it's the point where you can reasonably expect manual action to be taken following on from primary response (10 seconds) and secondary response (30 seconds to 30 minutes) to ensure that the frequency can be brought back within operational limits (in this case when there is no more reserve). AC wondered whether it would be possible for National Grid to work more closely with DNOs as an incident unfolded such that the 'voltage reduction' tool could be applied earlier and enable voltage reduction to be delivered through a longer notice period, resulting in the required frequency response.
- 4 SW questioned the implications for the settlement period as consumption would be profiled a year ahead and could cause re-distributional effects. JB answered that Elexon would have to be asked how this would be settled, but Demand Control should be categorised as an emergency action that was only implemented on rare occasions. SW questioned if all suppliers called a Triad a 3% reduction could occur, would this be sufficient and if it was would demand control need to be raised. JB stated that very few Customer Demand Management (CDM) actual notifications are received on a daily basis, but the demand forecast submitted to the market on the day takes into account previous historical triad reduction.
- 5 NB provided an update to the Workgroup on the current process that Western Power Distribution use to receive and deliver demand control instructions;
  - Receive a phone call from National Grid's control room
  - Initiate Voltage Reduction
  - Demand Control happens so infrequently that control engineers may not be familiar with the implementation processes which, together with a lack of clarity from National Grid, could lead to delays in implementation.
- 6 BA mentioned since the last meeting UK Power Networks have reviewed their process and believe that in all three networks, if multiple scripts are used to implement voltage reduction, all could meet the 5 minute requirement. AR posed the question whether all DNOs follow the same process. Given that there are training exercises for Black Start, it seems reasonable to run training exercises for Demand Control and that this would be an opportunity to rationalise and harmonise the procedures used by the DNOs and National Grid. National Grid plan to run a refresher exercises on demand control, and a potential option is to set up a new Workgroup to develop a refresher exercise similar to that of 'Exercise Faraday'.
- 7 AR was interested to understand what can actually be delivered within the technical limitations of the DNOs infrastructure. AC explained that the actual implementation time at the substation depended on the time taken for the first and subsequent tap change operations and the number of transformer tap operations required to deliver the 3% and 6% voltage reduction. The initial tap change operation typically takes 120s with subsequent operations taking say 10-20 seconds. To deliver a 3% voltage reduction two taps could be required.. AC suggested that a good way forward could be DNOs to review the information that had been collated in December 2010 (which was used to prepare GCRP paper pp11/02) taking into account any improvements in implementation time as indicated by BA. Further information could be obtained by instigating a

national test to establish the existing DNOs capability (in terms of timing and demand reduction achieved).

- 8 AC explained that the historic expectation was that a 3% voltage reduction would achieve a demand reduction of approximately 5% and that a further 3% voltage reduction would deliver a total demand reduction of 10%, however recent tests suggested that this level of demand reduction is optimistic.
- 9 It is clear from the information provided by the DNOs that voltage reduction would expect to be implemented over the course of several minutes, eg BA expressed that at 5 minutes UK Power Networks are probably hitting 80%. It would seem reasonable to aim to achieve a defined level of voltage reduction implementation (eg 80%) within a defined period as it could be prohibitively expensive to achieve a guaranteed 100% delivery in a defined period. The industry needs to strike a pragmatic balance between the cost of delivery and value to National Grid. AR agreed and recognised that the Workgroup needs to consider the balance between spending money to meet the existing requirement of the Grid Code, or changing the Grid Code to come more into line with current capabilities.
- 10 The Workgroup discussed the merits of an educational process with a familiarisation of Demand Control implementation procedures to identify where any improvements could be made prior to any national testing. DNOs and National Grid could therefore make any necessary changes before a formal exercise took place.
- 11 The Workgroup discussed an option of explicitly separating the Voltage Reduction and Demand Disconnection elements of the present OC6 obligation such that these services could be called upon separately by National Grid depending on the rate at which a system incident occurs; Voltage Reduction could be used in a slower developing incident (as this would take longer to implement and deliver a less certain demand reduction), whereas Demand Disconnection could be used in a rapidly developing incident (as it would be implemented quicker and deliver a more certain demand reduction – although customer supplies would be interrupted). On the basis that the two voltage reduction stages are likely to deliver say 3% demand reduction each, to maintain the existing OC6 functionality of 20% demand reduction, this would require three 5% Demand Disconnection stages. In summary:

VR Stage 1 – 3% Voltage Reduction

VR Stage 2 - 3% Voltage Reduction

DD Stage 1 - 5% Demand Disconnection

DD Stage 2 - 5% Demand Disconnection

DD Stage 3 - 5% Demand Disconnection

the Grid Code could be changed to reflect such an arrangement

- 12 AR raised the possibility of both DNOs and National Grid reviewing current procedures for managing a system event (rather than implementing a demand reduction instruction which is discussed earlier), such that DNOs could be made more aware of an unfolding incident so that they were better prepared to respond to a demand reduction instruction if it was issued. AC asked whether National Grid could share the document that is used to DNOs which is used in this situation. AW suggested that this document should be very high-level and include process diagrams to clearly define procedures and management approvals.
- 13 AR recognised that internal work is needed to improve the way National Grid inform DNOs of demand control procedures and will look into organising a test control instruction, improving training procedures, and a communications exercise to test current procedures.
- 14 AW mentioned that SHETD do not carry out voltage control only demand control so there would need to be some flexibility within the Grid Code to accommodate this and changes would also be required to the week 24 data.

### 3 List of Actions

- 15 **National Grid** to review how the European Code LFCR (Load Frequency Control and Reserve) of 0.02Hz deviation within a 10minute timescale would impact this Workgroup.
- 16 **National Grid** to circulate a draft Workgroup report with suggested Grid Code changes which would be circulated to the Workgroup prior to the next meeting

### 4 Suggested ways forward

- 17 Actions will be dealt with by relevant parties prior to the next Workgroup meeting

### 5 Date of Next Meeting

- 18 Next meeting will take place on the 30<sup>th</sup> May 2013 at National Grid House, Warwick.