Control Room difficult day

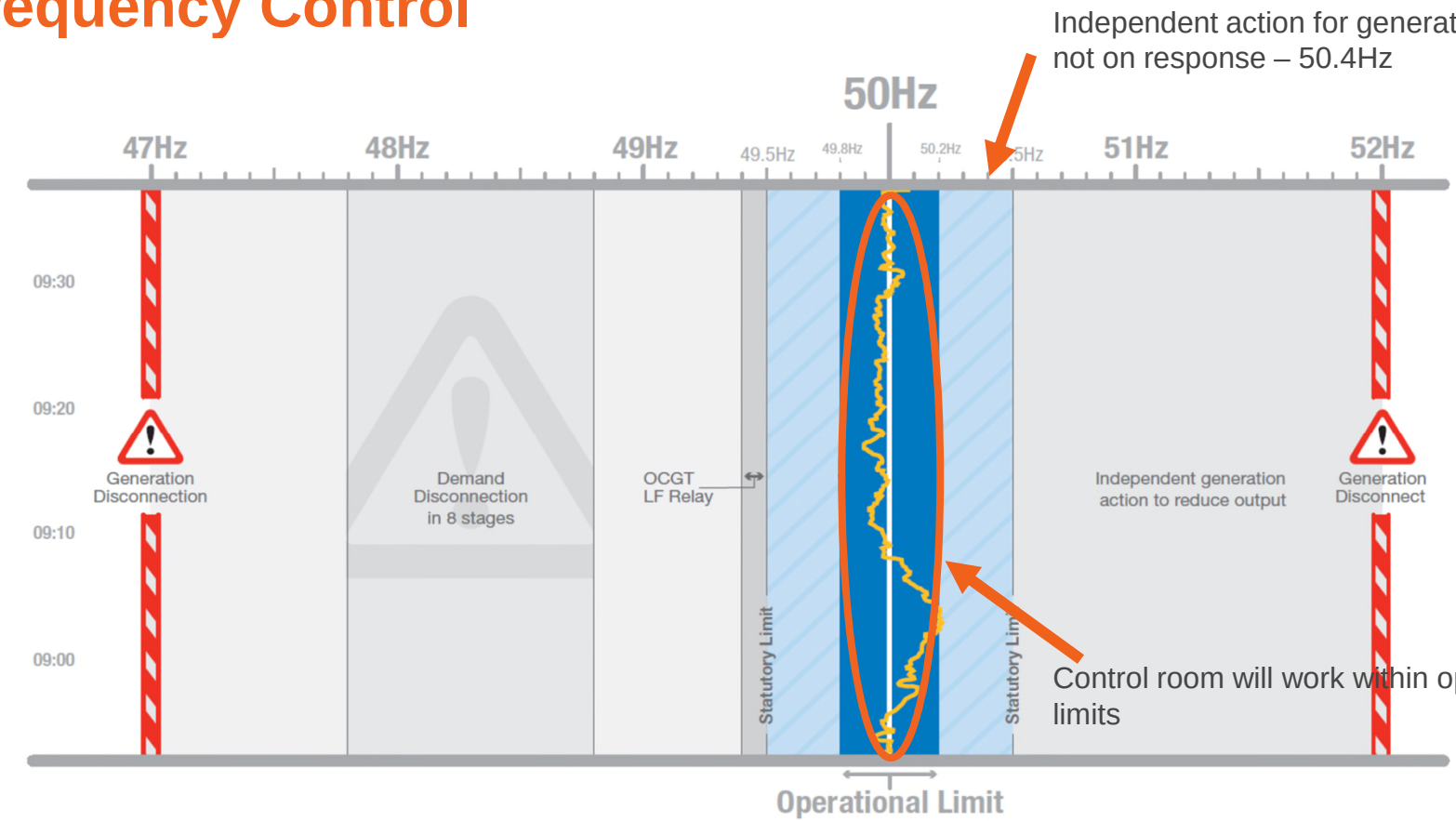
Gavin Brown
National Control

nationalgridESO

High frequency event over evening period on 4th February 2019

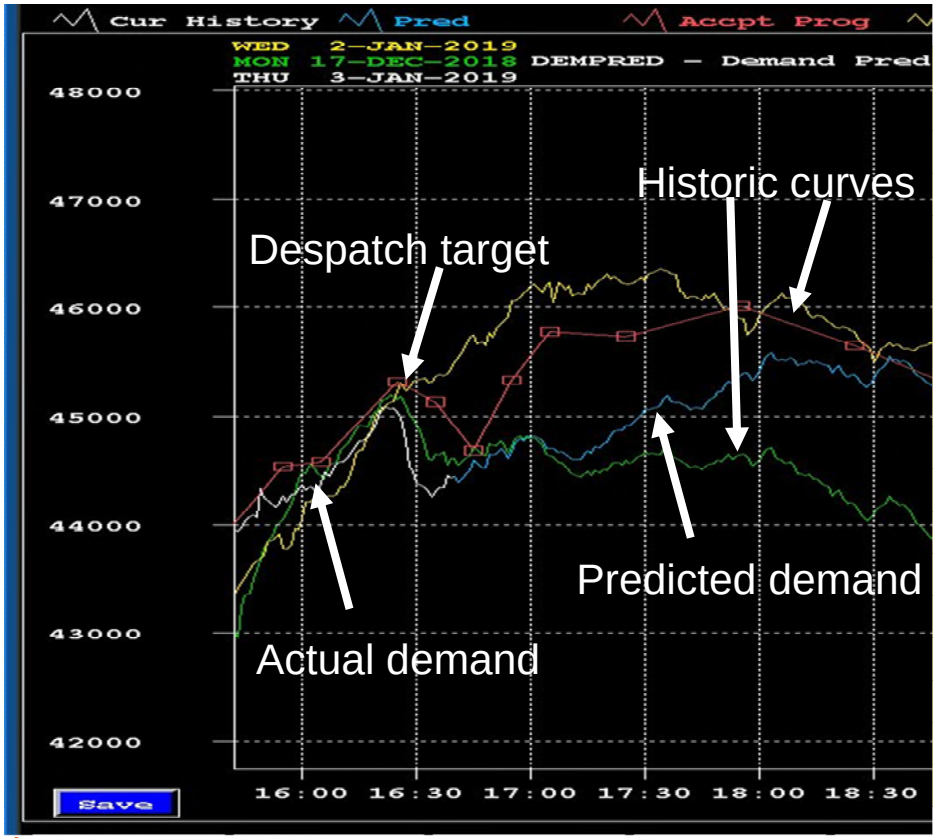
- Context of day – what we would normally expect/what standards do we work to?
- What were our expectations?
- Events of the day and actions taken
- Consequences and next steps

Frequency Control



nationalgridESO

Frequency control – demand prediction and despatch



- Historic curves and demand prediction used to drive where generation/demand is despatched
- Curves chosen based on a number of factors
- BMUs despatched on a number of factors

nationalgridESO

Triad and customer demand management

Triad formal definition:

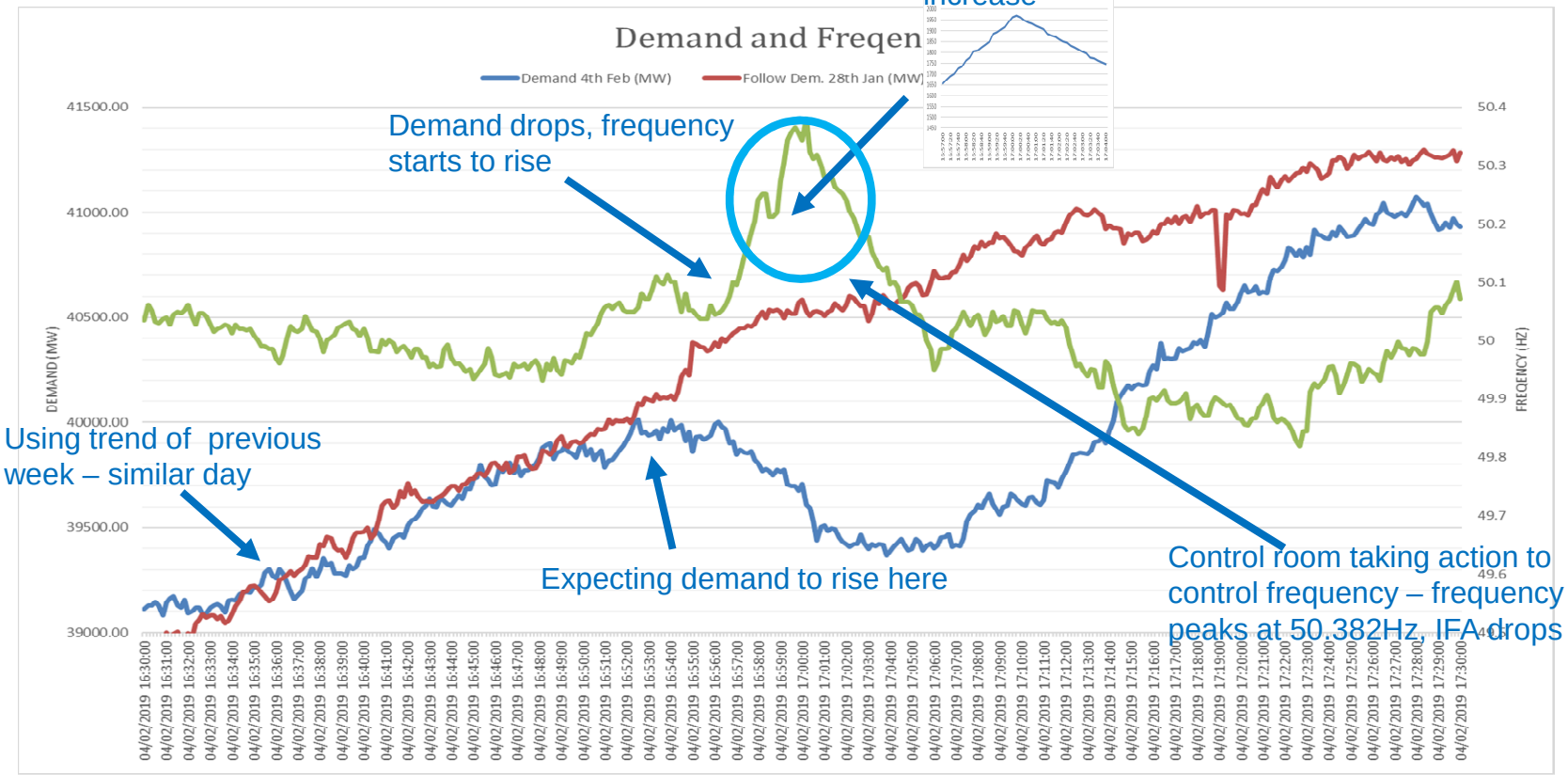
- *The Triads are the three half-hour settlement periods of highest demand on the GB electricity transmission system between November and February (inclusive) each year, separated by at least ten clear days. National Grid uses the Triads to determine TNUoS demand charges for customers with half hourly meters.*
- Hence we expect the demand during peak periods to change when Triads are predicted!
- **Customer Demand Management (CDM)**
- Grid code requires suppliers to notify NGESO of any customer demand management > 12MW (5MW in Scotland) by 1100hrs each day

- **Price related demand management**
- No code obligations to notify

What were our assumptions?

- Customer Demand Management - no CDM was notified to the ESO
- Based on history we anticipated that the demand response/CDM would be similar levels and timings to the previous Monday (28/1/19) which incorporated some demand response – approximately 1500MW.
- No significant demand throw off expected at 1700hrs – as per 28/1/19 curve
- Wind predictions was slightly ahead of forecast (200MW) but not significantly ahead
- We anticipated a change in interconnector transfer
- Increased frequency response was scheduled to manage uncertainty

4th February 2019



nationalgridESO

Consequences

- Higher system risk – system frequency reached close to levels when ‘uncontrolled’ action would potentially take place (50.382Hz)
- Inefficient balancing actions
  - More uncertainty over demand meant higher levels of frequency response held to manage risk
  - Short term balancing actions based on dynamics rather than cost
  - Longer term balancing decisions based on more uncertainty

- A better understanding how the demand is affected over this period by CDM/price related demand effects would mitigate the above

Next steps

ESO needs to develop better understanding of demand response to prices. Asks:

- Notification of CDM (as per grid code)
- Any information of actions affecting your demand

Mutual benefit

- More efficient scheduling of plant in longer timescales
- More efficient despatch in real time

Will lead to:

- Cheaper actions in real time and hence lower balancing costs
- Less system risk

To help us take this issue forwards please contact our Energy Forecasting team at **Demand.Forecasting@nationalgrid.com**

Finally - Any queries about control room operations ?

- We want to increase transparency in real time decision making process
- NETS status report will be on ESO website daily from April 1st.
- We have created an email box for operational enquiries
    - Box.ENCCEnquires@nationalgrid.com
- Normal operational interface channels of course remain unchanged