

System Performance

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Topics Covered

- ◆ **Supply and Demand**
- ◆ **Frequency Performance**
- ◆ **Transmission Constraints**
- ◆ **System Warnings**
- ◆ **Manifest Errors**

Supply and Demand

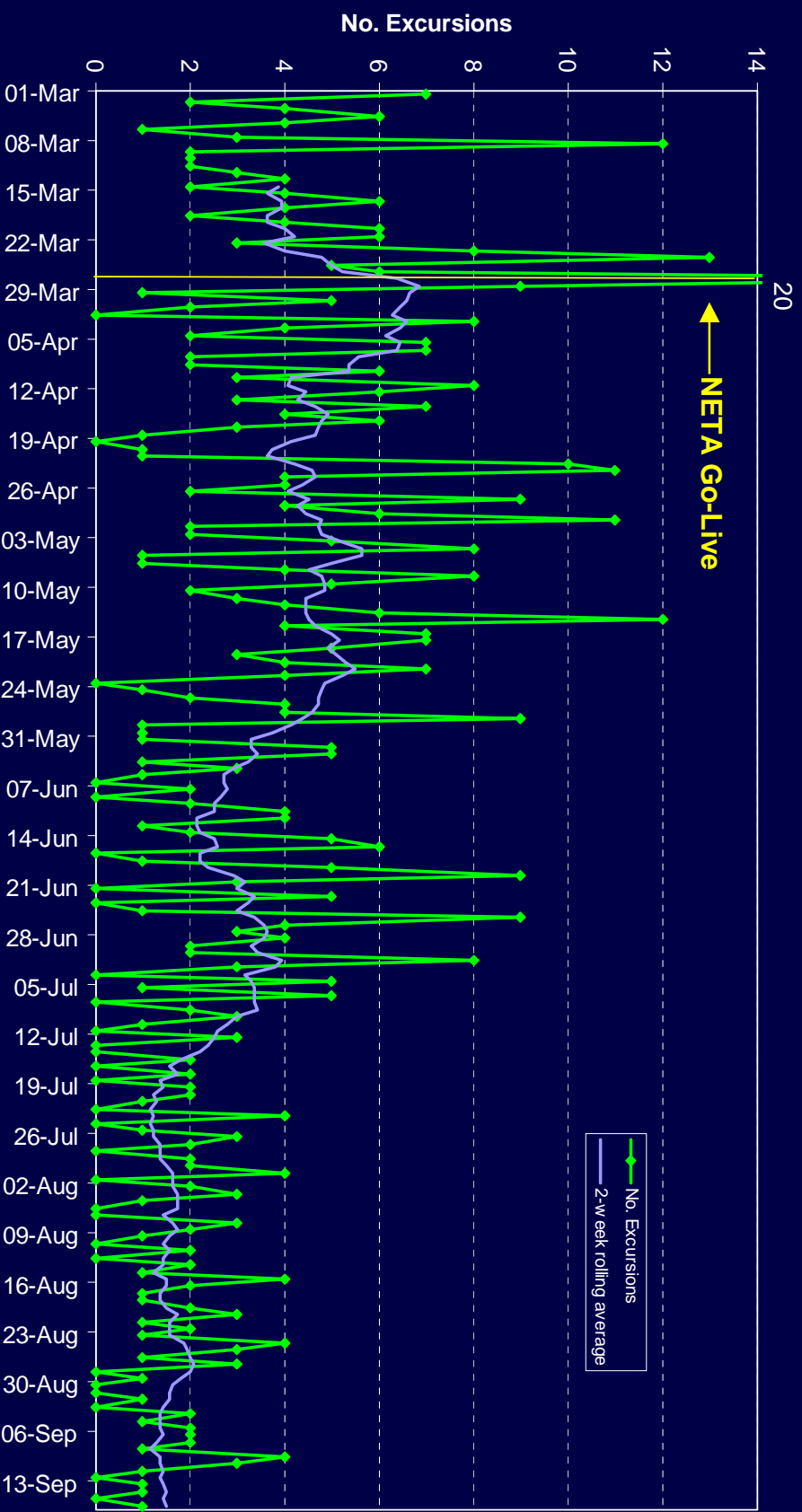
- ◆ **System Margin**
 - ◆ **Continues to be generally good**
- ◆ **System Warnings**
 - ◆ **Insufficient System Margin**
 - 27th & 28th June (Air conditioning)
 - ◆ **Risk of System Disturbance**
 - 4th July (Thunder storms over S Wales)
- ◆ **Emergency actions**
 - ◆ **500MW generation**
 - 14th September (3 minute silence)

Frequency Performance

- ◆ **Statutory Limits ($\pm 0.5\text{Hz}$)**
 - ◆ **No excursions**
- ◆ **Operational Limits ($\pm 0.2\text{Hz}$)**
 - ◆ **Low level of daily excursions**

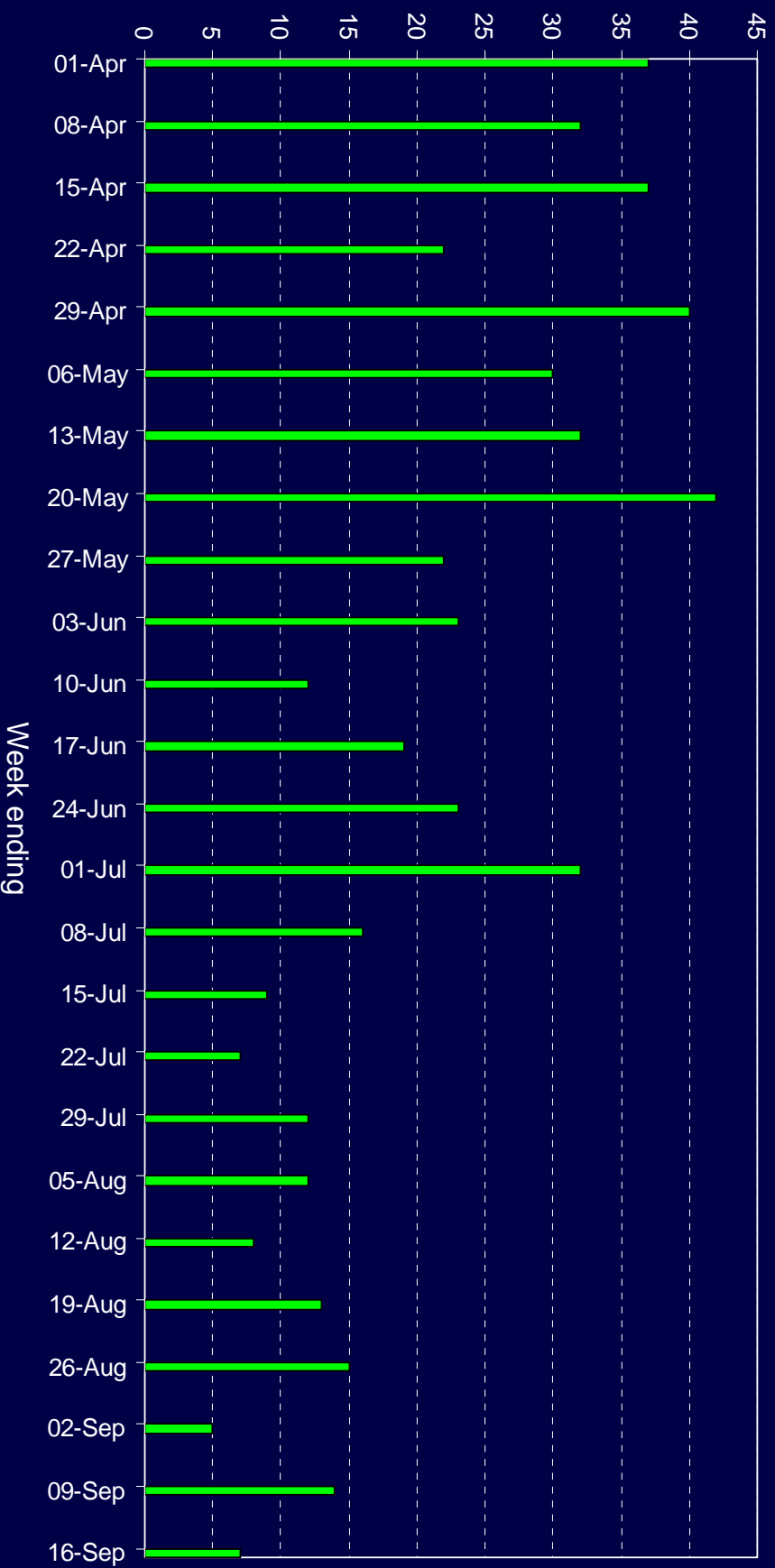
Frequency Performance

Excursions Outside Operational Limits ($\pm 0.2\text{Hz}$)



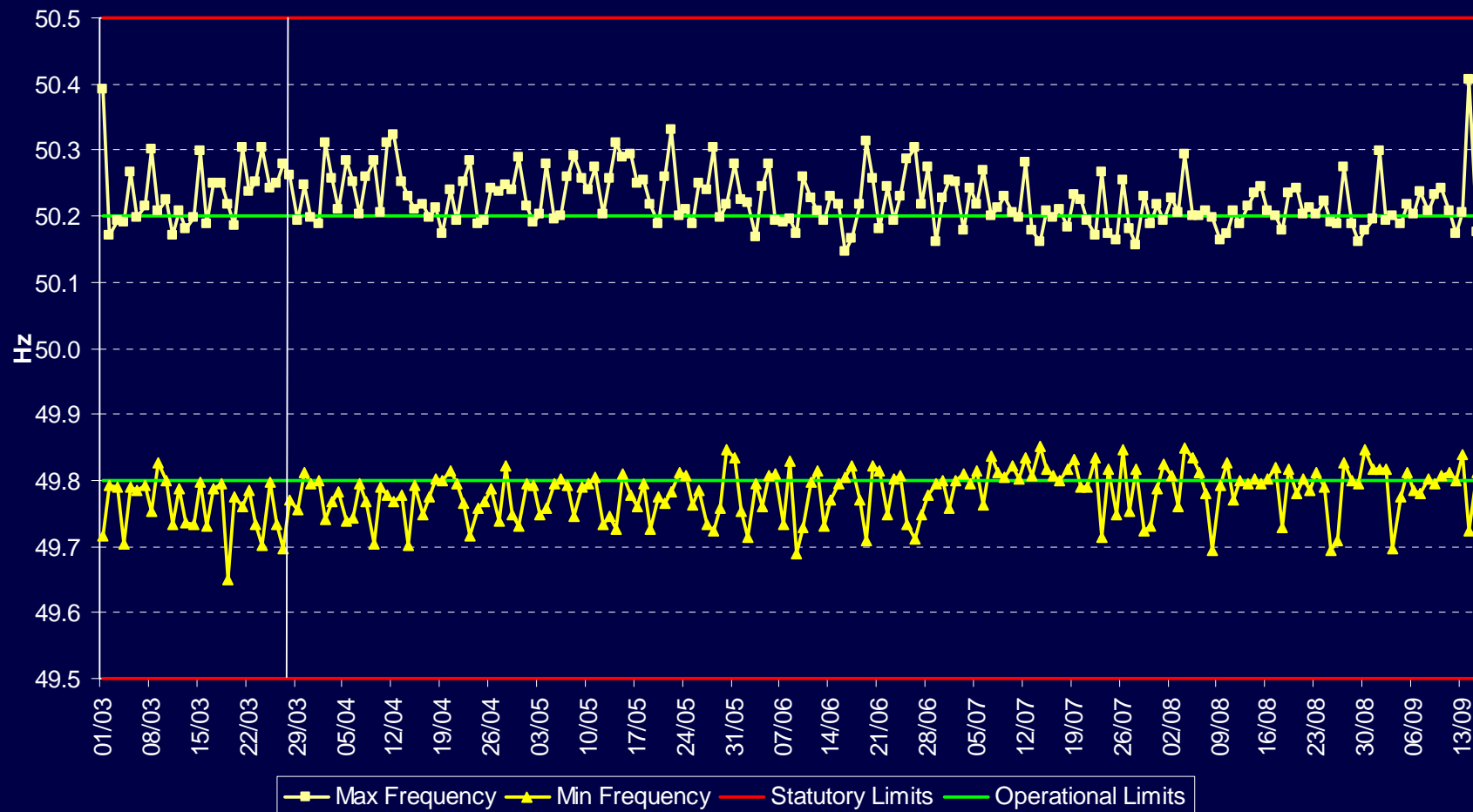
Frequency Performance

No. Excursions by Week



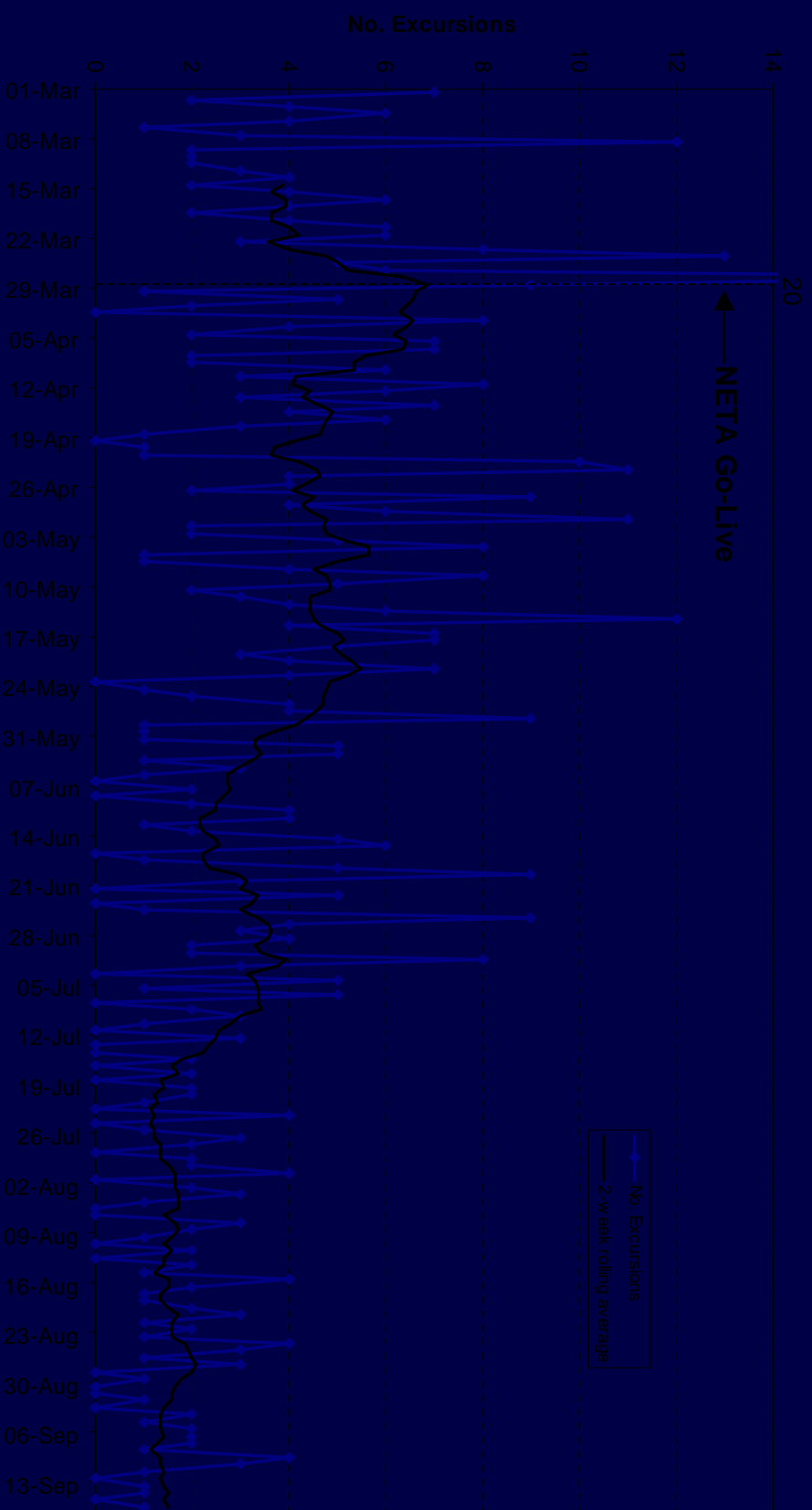
Frequency Performance

Daily Frequency Extremes



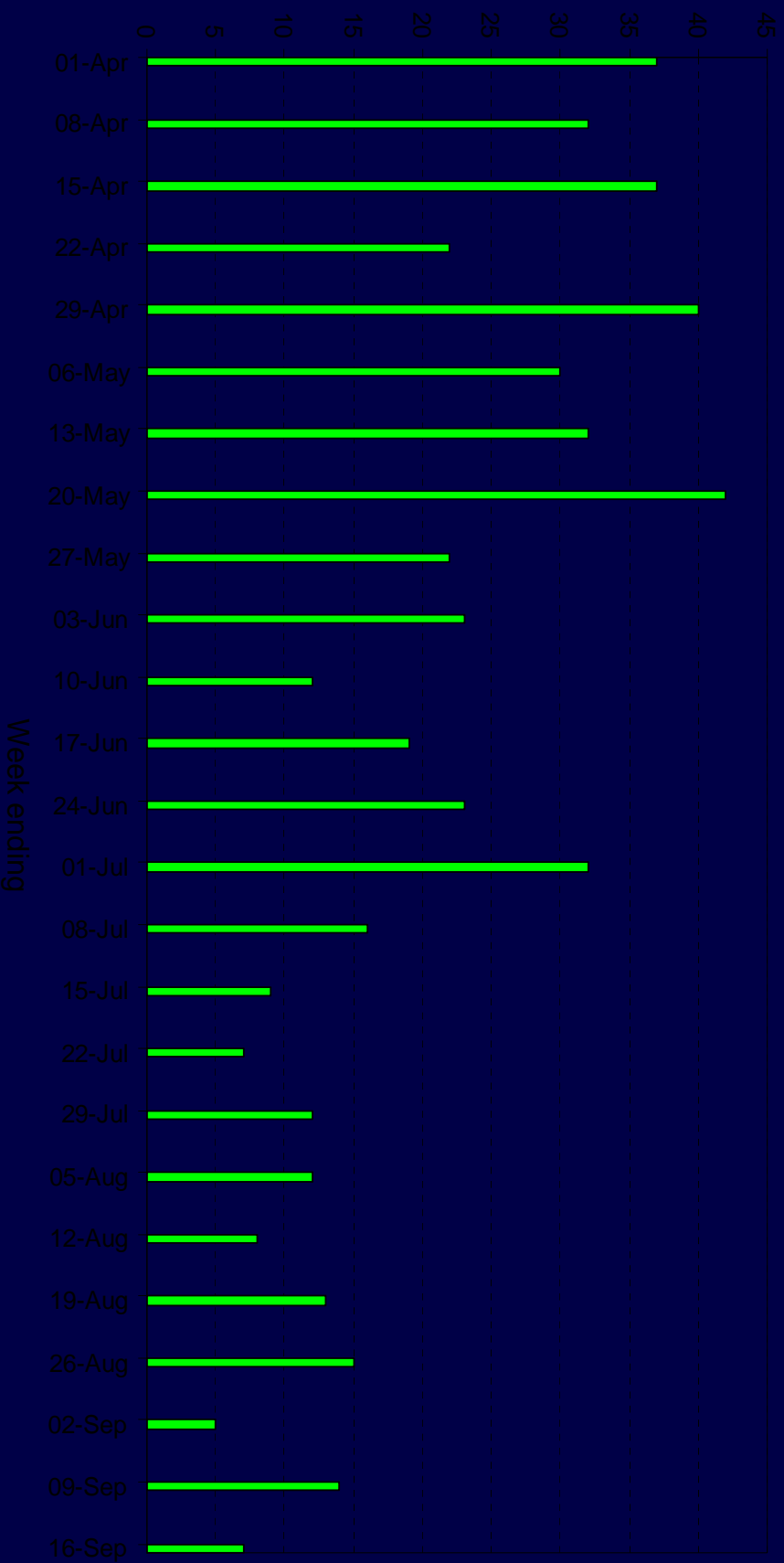
Frequency Performance

Excursions Outside Operational Limits ($\pm 0.2\text{Hz}$)



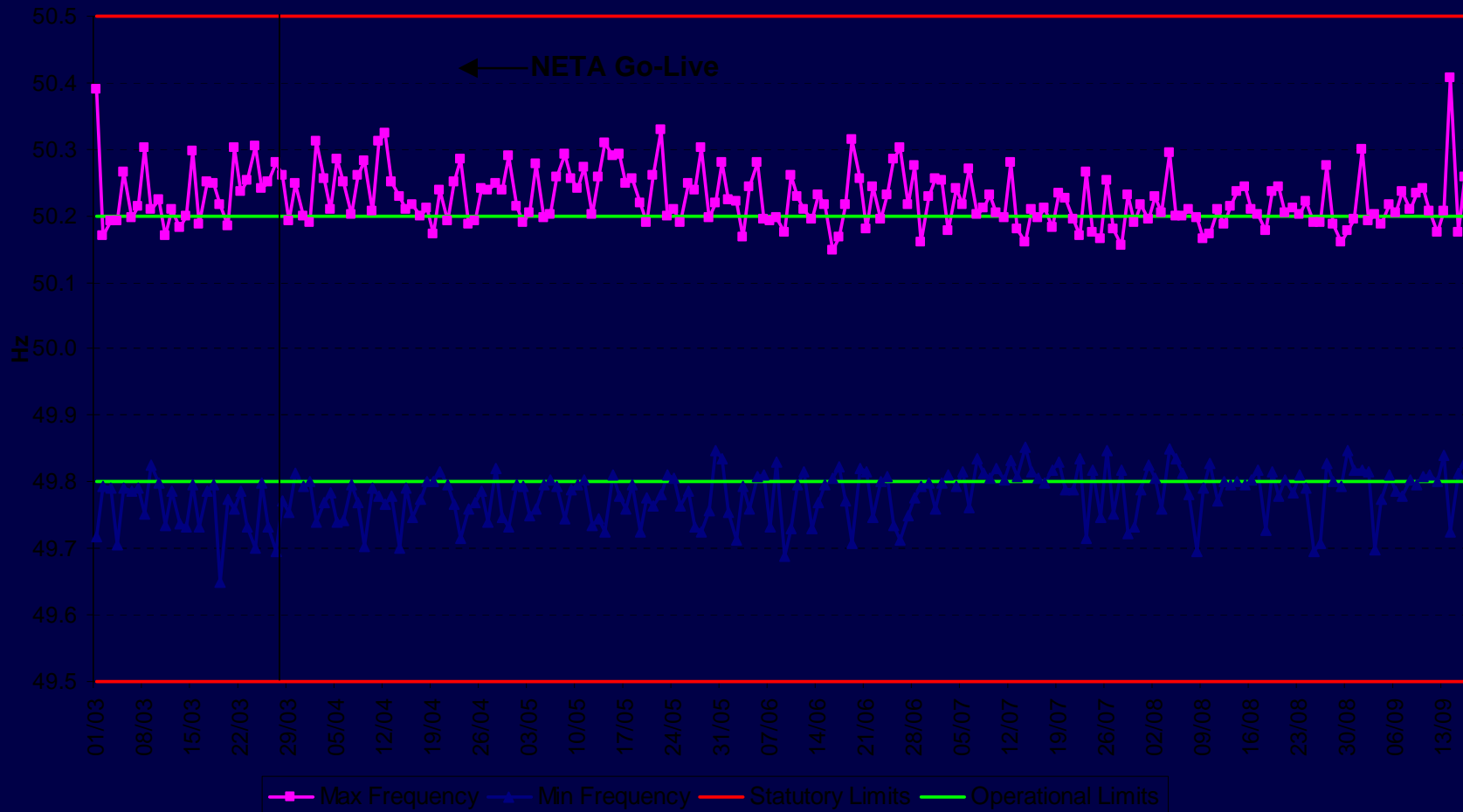
Frequency Performance

No. Excursions by Week



Frequency Performance

Daily Frequency Extremes



Transmission Constraints

- ◆ **Number of boundaries investigated**
 - ◆ **No change since NETA**
- ◆ **Number of active constraints**
 - ◆ **Reduced by change in generation pattern under NETA**
 - ◆ **Not significantly affected by Foot & Mouth Disease**

System Warnings

- ◆ **Grid Code section OC7.4.8**
- ◆ **Four types**
 - ◆ **Inadequate System Margin**
 - ◆ **High Risk of Demand Reduction**
 - ◆ **Demand Control Imminent**
 - ◆ **Risk of System Disturbance**
- ◆ **Sent by fax and/or phone**
- ◆ **Action required by recipients**

Inadequate System Margin

- ◆ **Consequence**
 - ◆ **If System Margin does not improve then Demand reduction may be necessary**
- ◆ **Action Required**
 - ◆ **Ensure current MEL is maintained**
 - ◆ **Review MEL and advise of additional MW capacity**
 - ◆ **Suppliers advise of additional Demand Control available**

High Risk of Demand Reduction

- ◆ **Consequence**
 - ◆ **Possibility of Demand reduction**
- ◆ **Action Required**
 - ◆ **As for Insufficient System Margin**
 - ◆ **Specified Network Operators & Non-Embedded Customers prepare Demand reduction arrangements**

Demand Control Imminent

- ◆ **Consequence**
 - ◆ **Possibility of Demand reduction within 30 minutes**
- ◆ **Action Required**
 - ◆ **Specified Network Operators & Non-Embedded Customers prepare to receive Demand reduction instructions from National Grid**

Risk of System Disturbance

- ◆ **Consequence**
 - ◆ **Risk of, or widespread system disturbance to whole or part of National Grid system**
- ◆ **Action Required**
 - ◆ **Warn operational staff**
 - ◆ **Maintain Plant and/or Apparatus to withstand the anticipated disturbance**

Cancellation

- ◆ **System Warnings will be cancelled for one of the following reasons:**
 - ◆ **Circumstances have changed so the Warning is no longer relevant**
 - ◆ **The period identified on the Warning has expired**
- ◆ **National Grid only issues System Warnings for genuine generation shortfalls or risks of disturbance**

Manifest Errors

- ◆ **Four manifest errors since last forum**
 - ◆ **3rd July - period 13**
 - ◆ **4th September - period 43**
 - 2 BOAs issued, so 2 manifest errors
 - ◆ **17th September - period 35**

Tuesday 3rd July - Period 13

- ◆ **Dinorwig 2 issued with BOA to start immediate pumping**
- ◆ **BOA issued on basis of BMU telemetry**
- ◆ **National Grid software, unaware of self-despatch to this state, introduced NDZ**
- ◆ **OFFER bought at £5000/MWhr instead of BID at –£200/MWhr**
- ◆ **BMU pumped as originally intended**
- ◆ **Software modification awaiting release**

Tuesday 4th Sept - Period 43

- ◆ **Several large TV pickups during celebrity edition of popular quiz show**
- ◆ **Dinorwig 3 had been used for frequency control in the half hour up to 2100hr**
- ◆ **Quiz show over-ran and BMU instructed again for frequency control after 2100hr**
- ◆ **OFFER price changed from £145/MWh to £5000/MWh**
- ◆ **Software modification awaiting release**

Summary

- ◆ **System has remained secure**
- ◆ **Frequency excursions outside operational limits now at a low level**
- ◆ **Fewer active transmission constraints under NETA so far**
- ◆ **System Warnings require action**