

Public

GC0181 – Enhance the Effectiveness of System Incidents Reporting

Workgroup Number 6 – 05 May 2026

Online Meeting via Teams

WELCOME

Agenda

Topics to be discussed	Lead
Welcome	Chair
Timeline and objectives	Chair
Legal Text	All
Actions	Chair
AOB	Chair
Next Steps	Chair

Expectations of a Workgroup Member

Contribute to the discussion

Be respectful of each other's opinions

Language and Conduct to be consistent with the values of equality and diversity

Do not share commercially sensitive information

Be prepared – Review Papers and Reports ahead of meetings

Complete actions in a timely manner

Keep to agreed scope

Email communications to/cc'ing the .box email

Your Roles

Help refine/develop the solution(s)

Bring forward alternatives as early as possible

Vote on whether or not to proceed with requests for Alternatives

Vote on whether the solution(s) better facilitate the Code Objectives

CM0181 Objectives and Timeline

Timeline	Workgroups	Objectives
Workgroup 5	25 March 2026	Review actions and legal text
Workgroup 6	05 May 2026	Review Workgroup Consultation and legal text
Workgroup 7	28 May 2026	Approve Workgroup Consultation and legal text
Workgroup Consultation	05 June 2026 to 26 June 2026	
Workgroup 8	14 July 2026	Review Consultation feedback and legal text
Workgroup 9	11 August 2026	Finalise Report
Workgroup 10	01 September 2026	Agree ToR met /Workgroup Vote
Workgroup Report to Panel	16 September 2026	Panel sign off ToR
Post Workgroups		
Code Administrator Consultation	01 October 2026 to 02 November 2026	
Draft Final Modification to Panel	18 November 2026	
Final Modification to Ofgem	26 November 2026	
Implementation Date	10 Business Days after Authority Decision	

GC0181 Actions

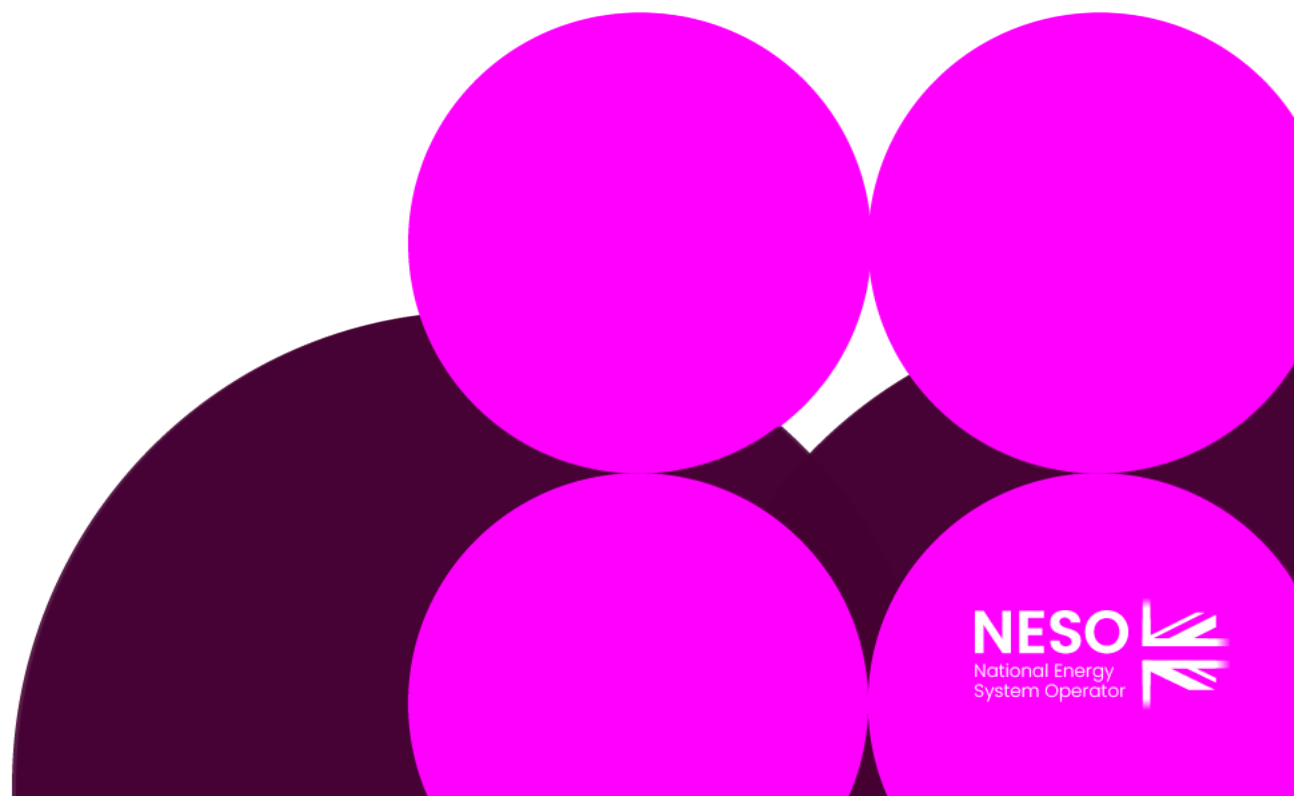
Action number	Workgroup Raised	Owner	Action	Comment	Due by
4	WG1	GW	Assess cost and workload implications for Transmission Owners (TOs) providing additional data.		WG2
28	WG4	MD	Create a process flowchart for the incident reporting process and a Gantt chart clarifying the steps and time allocations, including separation of working and waiting times.	See slides	WG5
29	WG4	MD	Explore whether there is a record of the total number of events initially investigated each month and obtain this data if possible.	See slides	WG5
31	WG4	FK/JSC	Define the degree or extent of the phase jump angle that qualifies as a significant event for inclusion in the legal text.	See slides	WG5
32	WG4	AG	Check whether auto-reclosures are reported in GC0151 and establish the teams and tools responsible for capturing this information	See slides	WG5
33	WG5	FK/JSC	Investigate and propose language or process changes to decouple the reporting period from the report production timeline, including automation opportunities, to enable more timely system incident reporting.	See slides	WG6
34	WG5	FK	Review and update references to PMU standards in relevant documents, ensuring alignment with the latest IEEE 2018 standard and STCP 2701 Appendix B, and recommend any necessary changes.	See slides	WG6

GC0181 Actions

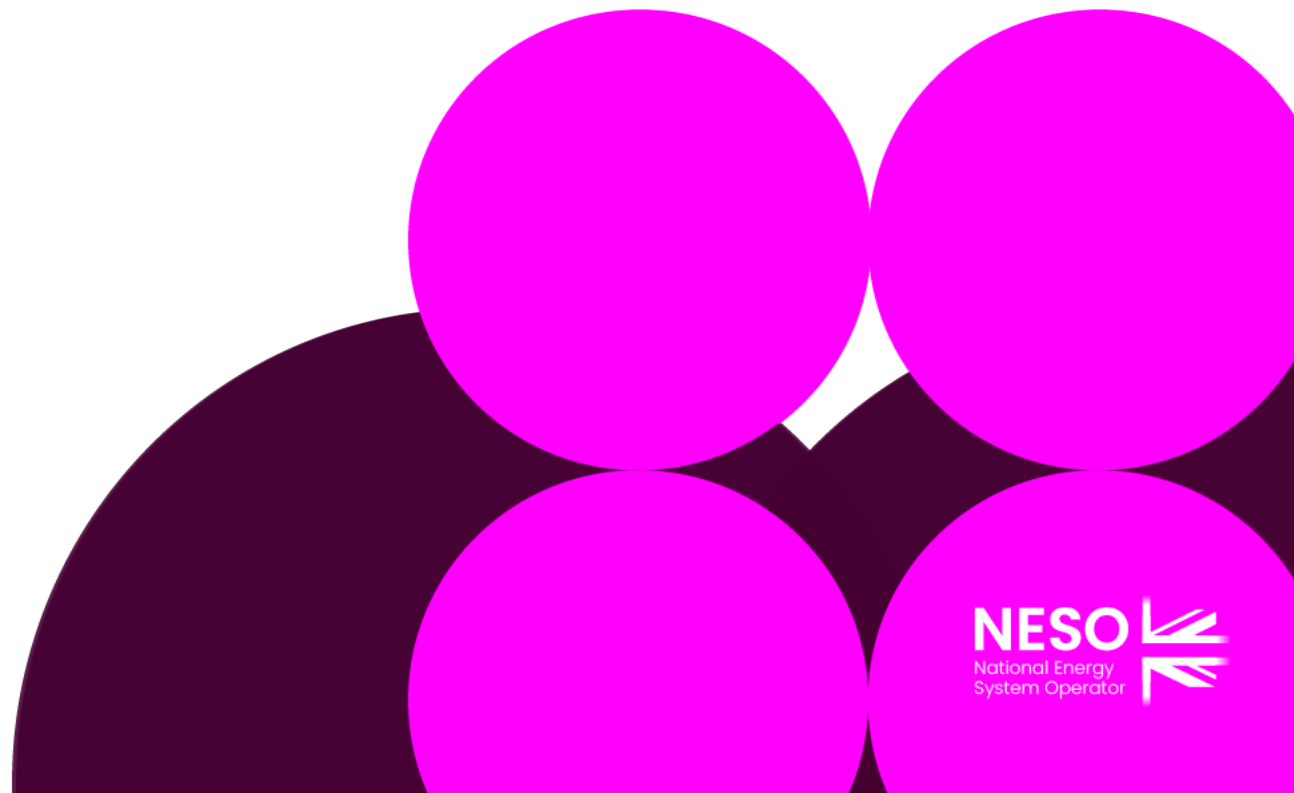
Action number	Workgroup Raised	Owner	Action	Comment	Due by
35	WG5	FK	Align GC0181 data requirements with STCP 2701 Appendix B and clarify if a modification to the STC is needed to codify information exchange from TOs to NESO and NESO out.	See slides	WG6
36	WG5	FK/JSC	Map current and planned PMU locations to restoration regions and provide a clear visual representation, including coverage of HVDC links and bootstraps, to ensure comprehensive system monitoring.	See slides	WG6
37	WG5	JSC	Research and provide an update on the availability and inclusion of time error data in system incident reports, referencing its operational importance.		WG6
38	WG5	FK	Contact EU TSOs to obtain information on any planned improvements to frequency data reporting and update the work group on future enhancements.	See slides	WG6
39	WG5	JSC	Confirm whether the OTF question regarding the correlation between double circuit faults and HVDC trips was addressed in today's OTF and share the findings with the Work group.	See slides	WG6
40	WG5	FK	Share the NESO edited legal text with the Proposer for review	See slides	WG6
41	WG5	AL	Provide written guidance on phase jump angle reporting, including a proposed significance threshold (12°) and supporting rationale to inform legal text		WG6

Legal Text

All



Actions



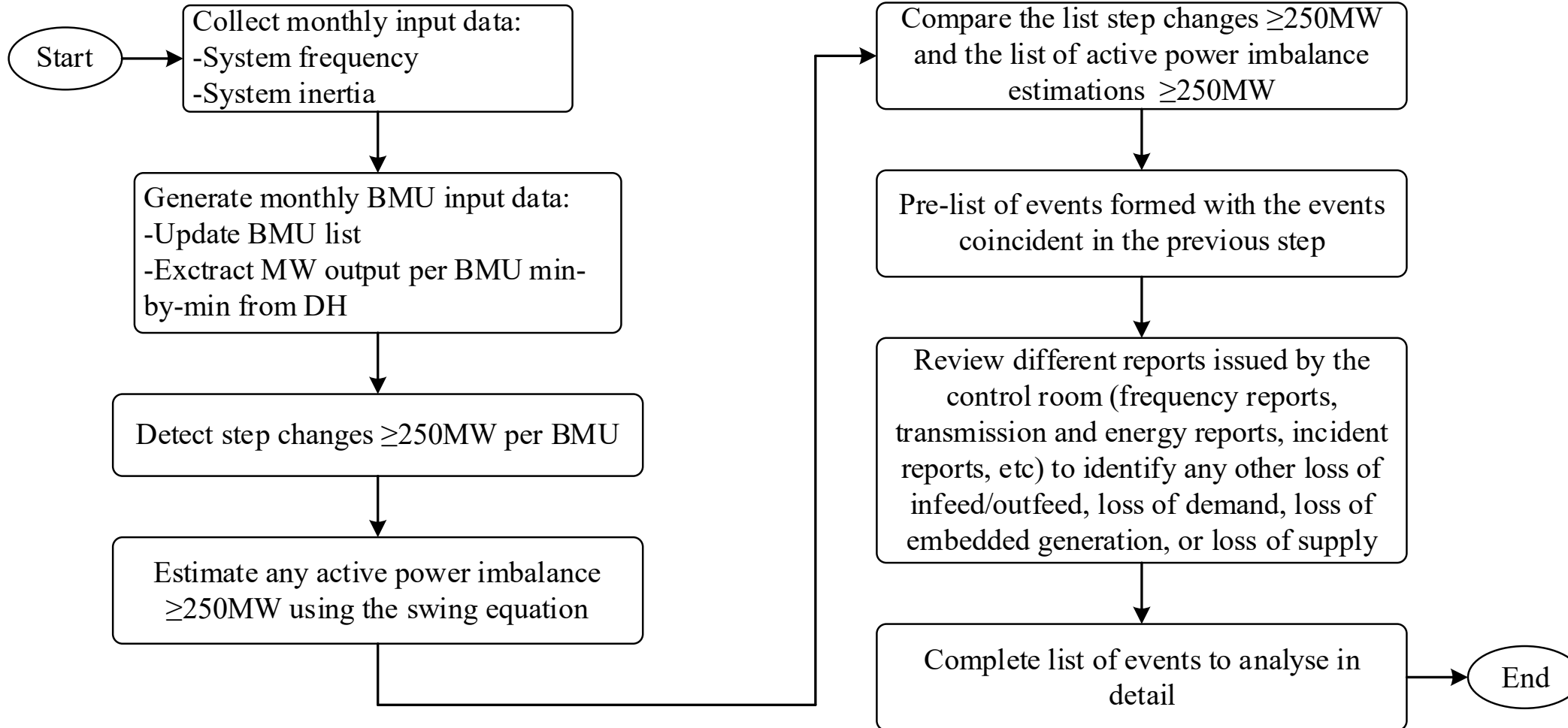
GC0181 Actions – NESO Response

Actions from WG5

Action 28 Raised at WG4 MD

Gantt chart has been created (which also demonstrates the process) and were shared during WG5

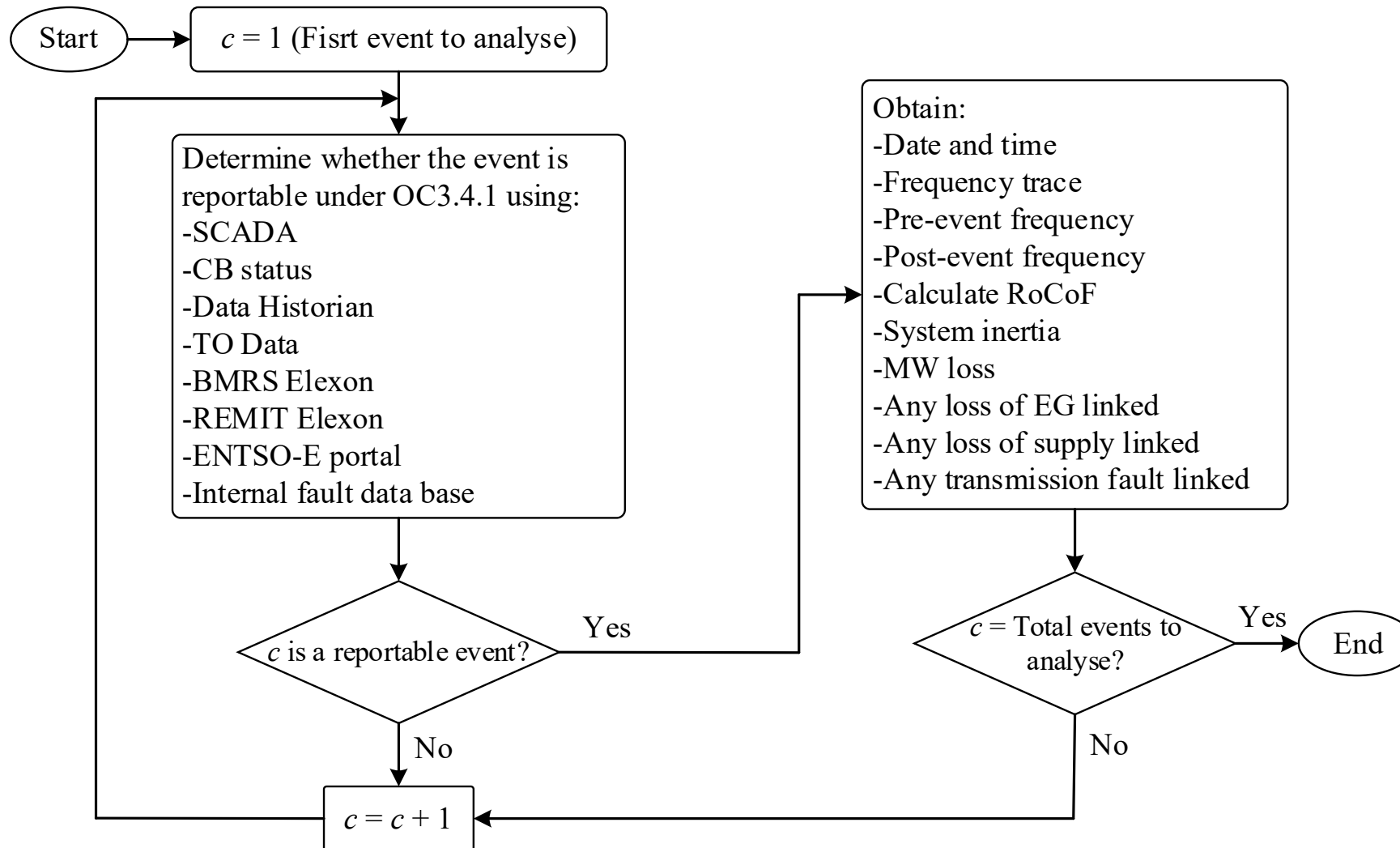
Create a process flowchart for the incident reporting process and a Gantt chart clarifying the steps and time allocations, including separation of working and waiting times.



Gantt chart has been created (which also demonstrates the process) and was shared during WG5

**Action 28 -
Raised at WG4
MD**

Create a process flowchart for the incident reporting process and a Gantt chart clarifying the steps and time allocations, including separation of working and waiting times.



Action 29**Raised at WG4
MD**

Explore whether there is a record of the total number of events initially investigated each month and obtain this data if possible.

Table shown on the right displays how many events are investigated each month.

Numbers within the left column (for each year), represent the total number of events identified by the algorithm combined with those manually identified from internal reports.

There were increased events in January and August 2024 due to storm 'Isha' and 'Lilian' respectively.

Various macros within excel are used to gradually narrow down the total events identified to only those events that warranted a one-by-one analysis (shown in bold).

For each event analysed, multiple sources are consulted including SCADA, Data Historian, Elexon BMRS, Elexon Remit, internal fault data bases, and the ENTSO-E portal.

Number of Events processed GC0105									
Month/Year	2024			2025			2026		
Jan	9106	140	8	679	47	15	501	84	16
Feb	758	33	6	821	44	11			
Mar	791	24	14	895	38	12			
Apr	783	33	8	553	25	8			
May	688	24	10	580	7	4			
Jun	901	29	13	782	39	15			
Jul	820	30	7	408	24	12			
Aug	5601	18	5	342	18	10			
Sep	900	38	10	766	18	11			
Oct	839	29	10	928	35	11			
Nov	833	44	7	951	35	11			
Dec	788	52	15	537	27	6			

Sourced from internal processes

Action 31**Raised at
WG4
FK/JSC**

Define the degree or extent of the phase jump angle that qualifies as a significant event for inclusion in the legal text.

At present, phase angle jump is not a parameter that is actively monitored within the system, and the GB Grid Code does not define thresholds or classifications for what would constitute a “significant” phase angle jump event from a system monitoring perspective.

Within the Grid Code, phase jump angle is instead considered in the context of **plant performance and compliance**, where the requirement is on the connecting party (generator/user) to demonstrate that their plant can **withstand and appropriately respond to phase angle disturbances** (i.e. ride-through capability), rather than on NESO to detect or classify such events in real time.

In practice, this means that phase angle jumps are not currently treated as reportable system events. Where there is a need for post-event analysis, particularly in cases where a unit is suspected to have tripped or not responded as expected, relevant data would be requested from the generator to assess compliance against their ride-through capability.

Action 31**Raised at
WG4
FK/JSC**

Define the degree or extent of the phase jump angle that qualifies as a significant event for inclusion in the legal text.

We recognise that there may be a view that monitoring phase angle behaviour could support improved visibility of system dynamics and contribute to the management of system stability, particularly in light of recent large-scale disturbances internationally. However, the effectiveness of such monitoring would depend on a clearly defined operational use case, including how the data would be interpreted and acted upon in real-time.

Looking ahead, with the future implementation of WAMS, there is potential to introduce **targeted and configurable monitoring** of phase angle behaviour at selected buses.

However, this would require:

- identification of buses of operational interest,
- definition of appropriate detection logic and thresholds, and
- alignment with real-time operational needs.

As such, any definition of what constitutes a “significant” phase angle jump event would need to be developed in the context of this future capability.

Action 32

Raised at
WG4
AG

Check whether auto-reclosures are reported in GC0151 and establish the teams and tools responsible for capturing this information

Pending clarification of requirement from the Proposer. Could be in the remit of GC0105 Report

Action 33

**Raised at
WG5
FK/JSC**

Investigate and propose language or process changes to decouple the reporting period from the report production timeline, including automation opportunities, to enable more timely system incident reporting.

Decoupling the report from the process which creates it seems unfeasible as most of the time will be taken up by the process

Action 34

**Raised at
WG5
FK**

Review and update references to PMU standards in relevant documents, ensuring alignment with the latest IEEE 2018 standard and STCP 2701 Appendix B, and recommend any necessary changes.

Review has been commenced with relevant NESO teams

Action 35

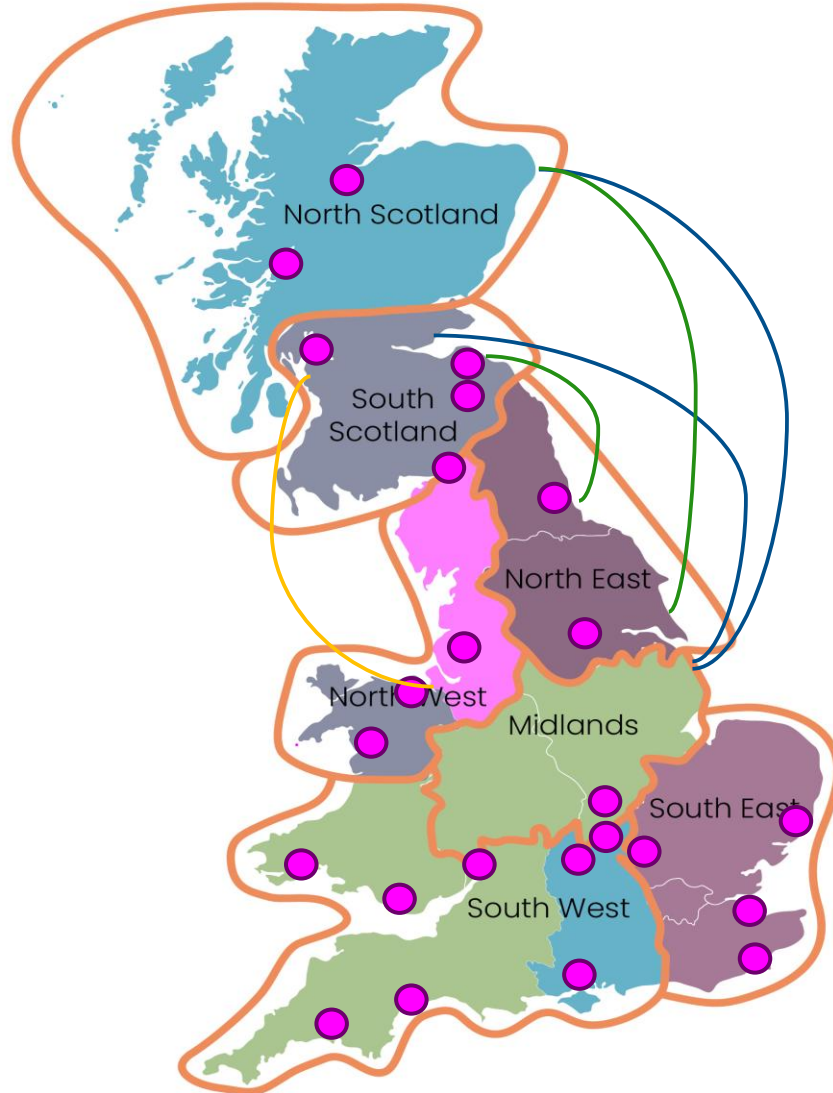
**Raised at
WG5
FK**






Align GC0181 data requirements with STCP 2701 Appendix B and clarify if a modification to the STC is needed to codify information exchange from TOs to NESO and NESO out.

GC0181 data (NESO-Out) will be provided via the Grid Code. Appendix B requirements are meant to be shared between TOs and NESO.

Action 36 – Raised at WG5 FK/JSC

Map current and planned PMU locations to restoration regions and provide a clear visual representation, including coverage of HVDC links and bootstraps, to ensure comprehensive system monitoring.



-  National Grid Electricity Distribution
-  UK Power Networks
-  Scottish Power Energy Networks (SP Manweb)
-  Scottish and Southern Energy
-  Northern Power Grid
-  Electricity North West

Action 37

**Raised at
WG5
JSC**

Research and provide an update on the availability and inclusion of time error data in system incident reports, referencing its operational importance.

BC3.4.3

The Company will endeavour (in so far as it is able) to control electric clock time to within plus or minus 10 seconds by specifying changes to **Target Frequency**, by accepting bids and offers in the **Balancing Mechanism**. Errors greater than plus or minus 10 seconds may be temporarily accepted at **The Company's** reasonable discretion.

Reporting is considered unnecessary. National control already perform this task to correct time error according to BC3.4.3

Engagement with NESO National Control SMEs is continuing on this issue.

Action 38

Raised at
WG5
FK

Contact EU TSOs to obtain information on any planned improvements to frequency data reporting and update the work group on future enhancements.

NESO held a discussion with EirGrid and ENTSOE on 16 April 2026. A summary of the discussion points can be found in the table below

1	Frequency of reporting	Moved to quarterly but it is still posing a challenge – Resources, data inconsistencies from different Parties (from e.g., Macedonia, Denmark)
2	Data sampling rate	TSOs have different arrangements. Finland does 10 samples/sec (10Hz), but most are doing 1 sample/sec
3	Area of coverage of frequency measurements	They consider 1 sampling point for all of the CESA (Swiss Grid does 6 months and Amprion, Germany does 6 months)
4	Improvements above and beyond	<ul style="list-style-type: none"> • Improvement in ICS methodology • widening area of coverage • Considering oscillations reporting

Action 39 Raised at WG5 JSC

Confirm whether the OTF question regarding the correlation between double circuit faults and HVDC trips was addressed in today's OTF and share the findings with the Work group.

In the System Incidents report <https://www.neso.energy/document/372136/download> for November 2025 there is a report of "Double circuit fault on the Coventry-Ratcliffe-on-Soar / Drakelow-Ratcliffe-on-Soar circuits on 17/11/2025 at 06:19" and "20251117-1 Trip of IFA BP2 17/11/2025 6:19:35 With an infeed loss of 975MW.

Can NESO confirm/answer the following please:

1. The exact times of the Double Circuit Fault and the IFA trip to the nearest millisecond to determine whether the Double Circuit fault preceded or followed the IFA trip?

*NESO does not have the timestamps in milliseconds for both events. It's important to note that these are two separate events that simply happened at similar times **but are not related.***

2. What phase jump angles was recorded at or close to the IFA connection at Sellindge and around the transmission fault?

Phase jump angle is not a parameter actively monitored within the system, so, unfortunately, NESO does not hold this specific information.

3. How much load (MVA) was being carried by the double circuit at the time of the fault?

Coventry-Ratcliffe-on-Soar: 260MVA approx.

Drakelow-Ratcliffe-on-Soar: 311 MVA approx.

4. Should NESO not be identifying such coincident events as part of the System Incidents reporting to help avert scenarios like the Iberian blackout of April 2025?

Although both events occurred close in time, they are not related events. The circuits tripped due to a persistent fault whereas RTE (French TSO) confirmed the reason for the IFA trip was a fault on the French side.

5. As the double circuit faults appear to be rare, when was the last double circuit fault reported and what was the cause and duration of this fault?

Even though double circuit faults are less probable, they are considered as credible contingencies under SQSS and hence they are considered in planning and operational timescales.

The most recent double circuit fault previous to the one discussed here is:

Errochty – Clunie North/ Errochty – Clunie South/ Clunie – Clunie PS North/ Clunie – Clunie PS South/ Clunie – Coupar Angus North/ Clunie – Coupar Angus South 132kV circuit on 14/08/2025 16:32:00

Cause: Lightning strike

Duration: 1 hour 47 min

Public

Action 40

Share the NESO edited legal text with the Proposer for review

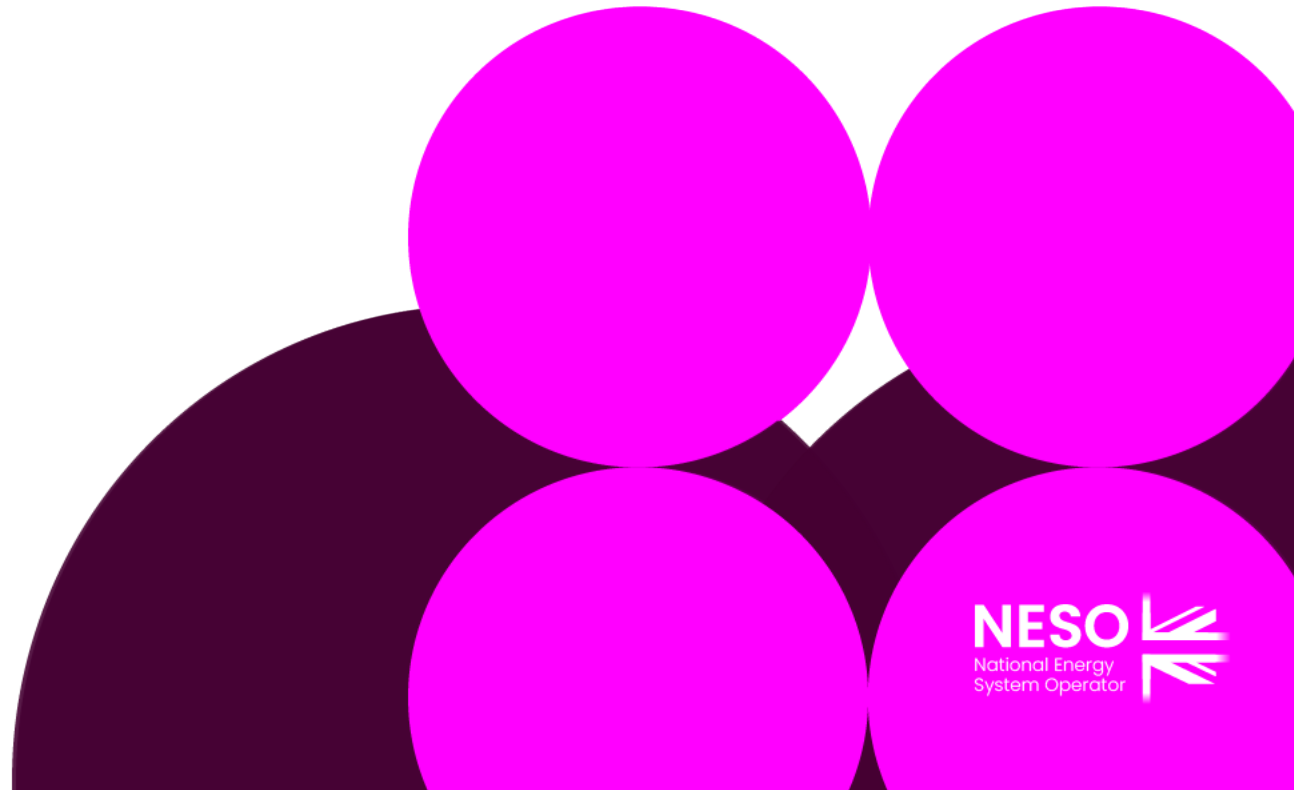
**Raised at
WG5
FK**

Shared with WG6 Papers



Any Other Business

Teri Puddefoot– NESO Code Administrator



Next Steps

Teri Puddefoot – NESO Code Administrator

