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# Code Administrator Meeting Summary

Workgroup Meeting 5: Enhance the Effectiveness of System Incidents Reporting

**Date:** 25 March 2026

## Contact Details

Chair: Jess Rivalland, [jessica.rivalland@neso.energy](mailto:jessica.rivalland@neso.energy)

Proposer: Guy Nicholson, [guy.nicholson@statkraft.com](mailto:guy.nicholson@statkraft.com)

## Key areas of discussion

The Chair welcomed Workgroup members to the meeting and shared details of the agenda advising today session would be focusing on updating actions and reviewing legal text. Click [here](#) to view the slide pack for the meeting.

## Actions

The Chair reviewed the status of actions assigned to various members, including data provision, phase jump presentation (to be shared as background) and the closure of actions related to legal text and data guidelines, with the Workgroup consensus on which actions to close or keep open.

### **Action 17 – Confidentiality, Cost, and Data Sharing with Transmission Owners**

NESO’s SME noted that two Transmission Owners (TOs) are generally open to sharing data but have raised concerns regarding commercial sensitivity and liability. One Transmission Owner has not yet provided a specific response on confidentiality. Despite these concerns, all Transmission Owners currently supply data to NESO according to existing agreements.

The TOs were unable to provide concrete cost estimates for system changes, with one consulting Transmission Owners were not able to provide definitive cost estimates for the proposed system changes. One is currently seeking input from their internal teams, while another indicated they would prefer to wait until further PMU deployment before estimating costs. Overall, there is a general understanding that the resource requirements may be substantial, but specific details are still uncertain.

The Workgroup reviewed the requirements outlined in STCP 27-1, which obligate TOs to provide incident-related information to NESO. Members discussed whether these procedures should be further formalised or automated, aiming to enhance efficiency and ensure the process remains robust and adaptable for future needs.

### **Action 18 – PMU Technical Specifications and Standards Alignment**

The action owner clarified that Phasor Measurement Units (PMUs) installed across the network come from different manufacturers, but all are required to meet established minimum standards—specifically, IEEE C37.118–2005. This standard ensures PMUs report at a rate of 10

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frames per second for 50 Hz systems and defines acceptable limits for measurement errors in frequency, phase angle, and harmonic distortion.

A Workgroup member highlighted that Appendix B of STCP 27-1 specifies the need for higher update rates specifically, 25 Hz and the collection of post-event waveform data. The member questioned whether TOs are deploying Class P or Class M PMUs and recommended that the Workgroup request more detailed information regarding the actual equipment installed to ensure compliance with these requirements.

The Workgroup recognised that the referenced IEEE standard from 2005 is now outdated, as a newer 2018 version is available. It was agreed that recommending an update would help ensure alignment with current best practices and regulatory requirements.

### **Action 23 - PMU Deployment, Regional Coverage, and Data Confidentiality**

NESO's Representative outlined the current approach to mapping PMU installations across Grid Supply Point (GSP) zones. Each zone is equipped with two PMUs to ensure redundancy and reliability. Frequency measurements from these PMUs will be consolidated into five regional values for system monitoring. However, the specific alignment of these regions with restoration areas has not yet been finalized and will require further clarification.

A Workgroup member identified possible gaps in PMU coverage, especially near HVDC links and offshore wind farm connection points. The member requested that Transmission Owners confirm their future installation plans to help ensure the system is comprehensively monitored.

NESO's SME explained that, although certain site-specific details must remain confidential, the primary concern centres on sharing sensitive data such as manufacturer and model information rather than general Grid Supply Point (GSP) locations. The SME assured the group that all non-confidential information will be made available whenever possible.

### **Action 24 International Benchmarking of Frequency and Incident Reporting**

NESO's Representative noted that EirGrid, Energinet, and Fingrid release frequency data at different intervals, usually with a delay of one to two months. Additionally, ENTSO-E requires data submissions from Transmission Operators (TOs) on a quarterly basis, along with annual public reports. Most TOs do not currently report as frequently as proposed in the UK.

NESO's Representative committed to regularly informing the Workgroup about any updates or advancements in international practices. Consequently, the Workgroup resolved to close the current action and initiate a new one dedicated to monitoring ongoing improvements.

### **Action 25 Cost and Feasibility of System Incident Reporting**

NESO's SME estimated that preparing the report would require one additional full-time employee, with an annual cost between £180,000 and £200,000. However, the SME stressed that factors such as limited data availability, the need to prioritise resources during incidents, and the requirement for complete data from TOs make weekly reporting impractical. As a result, monthly reporting is considered the most reliable minimum frequency.

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The Proposer recommended separating the timing of incident reporting from the timeline for publishing full reports. This approach would allow incidents to be flagged promptly, even if comprehensive reporting requires additional time. Meanwhile, other Workgroup members emphasised the importance of using adaptable language in the legal text to support ongoing process improvements and the integration of automation.

Members of the Workgroup recommended enhancing automation for both data extraction and report preparation. NESO's SMEs acknowledged that automating the extraction of PMU data is feasible; however, the process of analysing this information and combining it with fault recorder data still demands manual effort. This is particularly important when handling complex incidents, where human expertise is required to ensure accurate integration and interpretation.

### **Action 28 Process Flow, Event Filtering, and Reporting Logic**

NESO's Representative presented Gantt charts that compared the current reporting process with an optimised, best-case scenario. These charts demonstrated that the majority of tasks occur in sequence, and that adding more staff or increasing automation would only slightly shorten the overall timeline. This is primarily because much of the process depends on waiting for data from Transmission Owners, which introduces unavoidable delays.

NESO's SME explained that thousands of potential events are initially flagged each month, narrowed down using macros and manual checks to a smaller set for detailed analysis, with only a subset ultimately reported; the Workgroup members requested clearer documentation of each filtering step and its alignment with Grid Code OC3.

Workgroup members noted the importance of including embedded generation loss and DNO data in the process flow, with NESO SMEs agreeing to update the Gantt chart to reflect these steps and improve transparency.

### **Action 30 Phase Jump Angle Monitoring and Reporting**

NESO's SME clarified that phase jump angles are not currently monitored but will be configurable in WAMS, with detection focused on selected buses and event-based thresholds to avoid spurious reporting.

NESO's SME explained that, at present, phase jump angles are not actively monitored. However, monitoring capabilities will soon be available within the Wide Area Monitoring System (WAMS), allowing for configurable settings. Detection will focus on specific buses, and event-based thresholds will be used to minimise unnecessary or false reports.

A Workgroup member suggested starting with a 12-degree threshold based on historical data, while the Proposer emphasised the need for a pragmatic, best-efforts approach to reporting, adjusting thresholds as more data becomes available.

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The Workgroup agreed to use the Grid Code term 'phase jump angle' for consistency and discussed the need to align guidance documents and compliance requirements with formal Grid Code modifications.

### **Action 32 Auto-Reclosure Reporting and Definition of Reportable Faults**

NESO's SME clarified that auto-reclosure events are reported only when they are linked to detected fault currents. Incidents involving maloperations or equipment failures are excluded from reporting. The relevant data is gathered from TOs and carefully verified before being included in official reports.

Workgroup members advocated for more precise definitions of reportable faults, suggesting that voltage versus time profiles exceeding generator ride-through requirements should trigger reporting, to better address risks of cascading failures.

## Next Steps

The Chair provided a clear summary of all current and newly assigned actions. It was also confirmed that the next meeting on 28 April will start with a dedicated review of the draft legal text.

## Actions

For the full action log, click [here](#).

Action Number	Workgroup Raised	Owner	Action	Status	Date due by
04	WG1	GW	Assess cost and workload implications for Transmission Owners (TOs) providing additional data.	Open	Ongoing
25	WG4	JSC	Provide more detailed cost data from NESO to confirm whether the placeholder figure of £50,000 per annum for weekly reporting is sensible.	Closed	WG5
26	WG4	JSC	Provide an example of a previous incident with attached PMU data to demonstrate how PMU data could be used in system incident reporting, once operational PMU data is available.	Closed	WG5
27	WG4	JSC	Update the incident reporting tables for weekly and monthly	Closed	WG5

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			incidents to include a complete record from 2022 to 2025, using available public data.		
<b>28</b>	WG4	FK	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.	Open	WG5
<b>29</b>	WG4	FK	Explore whether there is a record of the total number of events initially investigated each month and obtain this data if possible. Consider providing a spreadsheet extract	Open	WG5
<b>30</b>	WG4	AG	Consult with SMEs to clarify how phase jump angles, which are location specific, should be handled and reported in the legal text.	Closed	WG5
<b>31</b>	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.	Open	WG5
<b>32</b>	WG4	AG	Check whether auto-reclosures are reported in GC0151 and establish the teams and tools responsible for capturing this information.	Open	WG5
<b>33</b>	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.	Open	New

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<b>34</b>	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.	Open	New
<b>35</b>	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.	Open	New
<b>36</b>	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.	Open	New
<b>37</b>	WG5	JSC	Research and provide an update on the availability and inclusion of time error data in system incident reports, referencing its operational importance.	Open	New
<b>38</b>	WG5	FK	Contact EU TSOs to obtain information on any planned improvements to frequency data reporting and update the work group on future enhancements.	Open	New
<b>39</b>	WG5	JSC	Confirm whether the OTF question regarding the correlation between double circuit faults and HVDC trips was addressed in today's OTF and	Open	New

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			share the findings with the Work group.		
<b>40</b>	WG5	FK	Share the NESO edited legal text with the Proposer for review	Open	New
<b>41</b>	WG5	AL	Provide written guidance on phase jump angle reporting, including a proposed significance threshold (12°) and supporting rationale to inform legal text	Open	New

## Attendees

Name	Initial	Company	Role
Jess Rivalland	JR	Code Administrator	Chair
Deborah Spencer	TM	Code Administrator	Technical Secretary
Guy Nicholson	GN	Statkraft	Proposer
Alice Siri	AS	Ofgem	Authority Representative
Andrew Larkin	AL	Sygensys	Observer
Frank Kasibante	FK	NESO	NESO SME
Jesus Sanchez Cortes	JSC	NESO	NESO SME
Mathew Chandy	MC	EDF Energy	Workgroup Member
Matthew Dixon	MD	NESO	Alternate
Tim Ellingham	TE	RWE	Workgroup Member