

MINUTES

MEETING:	NATIONAL ENERGY MARKET OPERATIONS COMMITTEE NEMOC
DATE:	Friday, 23 June 2023
TIME:	9AM – 12PM (Sydney / Melbourne Time)
LOCATION:	Online / Microsoft Teams
TELECONFERENCE DETAILS:	Microsoft Teams By phone: +61 2 8318 0090,,782582807#

ATTENDEES:

NAME	COMPANY DEPARTMENT	NAME	COMPANY DEPARTMENT
Tjaart Van der Walt	AEMO (<i>Chair</i>)	Christiaan Zuur	CEC
Alexis Bowman	AEMO (<i>A/Secretariat</i>)	Laurent Francisci	CEC/Neoen
Michael Gatt	AEMO	Gary Adkins	ElectraNet
Ken Harper	AEMO	Verity Watson	ENA
Teresa Smit	AEMO	Emma Rogers	Powerlink
Ben Skinner	AEC	Jason King	TasNetworks
Naresh David	AEC/Energy Australia	Jennifer Hughes	Transgrid
Tim Lloyd	AusNet Services		

GUESTS:

NAME	COMPANY DEPARTMENT	NAME	COMPANY DEPARTMENT
Alexis Bowman on behalf of Daniel Lavis	AEMO	Nilesh Modi	AEMO
Darren Spoor	AEMO	Rajesh Nighot	AEMO
Harmohan Singh	AEMO	Sujeewa Rajapakse	AEMO

APOLOGIES:

NAME	COMPANY DEPARTMENT	NAME	COMPANY DEPARTMENT
Glenn Springall	ENA (DNSP Rep) Energy QLD	Jason Krstanoski	Transgrid

1 WELCOME

- Tjaart welcomed members to the meeting and noted the apologies.

2 PREVIOUS MINUTES AND ACTIONS REGISTER

- Previous meeting minutes (9 December 2022) were accepted with no changes made.
- Actions Register was reviewed and actions amended accordingly.

3 DEEP DIVE DISCUSSION – UPDATE ON GRID REFERENCE STUDIES AND SA MINIMUMS PRESENTATION Nilesh Modi

[SA Minimum Synchronous Generator Requirements Presentation](#)

- Nilesh presented on SA Minimums, Included in the discussion:
 - Approach to minimum units – four synchronous condensers in operation.
 - The SA requirement of at least one large synchronous generator for grid reference.

- o Managing ramping events.
- o Frequency control and no impact on system frequency if the SA synchronous generator requirement moves from two units to one unit when SA is interconnected.
- o Network protection adequacy.
- o Voltage control – minimum number of reactive power control devices required to be online together with one large synchronous generator in the Adelaide Metropolitan region.
- o Status of work – updates provided for tasks including voltage control, protection system changes, transient stability, system strength, power system damping.
- o Next steps – assessing technical requirements, updating constraints and operating procedures, AEMO will advise market at least two weeks prior to implementation of limits.

i. MEMBER QUESTIONS AND DISCUSSION

- Nilesh confirmed that only two units to one unit is being assessed. The potential of going from one to zero or two to zero have not been assessed yet.
- Nilesh advised that there are no concrete plans to carry out the appropriate scale test. We need to work with ElectraNet and proponent if we want to carry out this type of test. In collaboration with ElectraNet, we are determining which part of the network can be used to carry out this testing, without affecting customers or the security of the power system. A report was published on the AEMO website listing the microgrids, however testing a large-scale system is something that still needs work. The bottle neck is voltage control. The concept of grid reference would only be relevant when there is no synchronous generator, which is further in the future.
 - Tjaart added that the NEMOC will play a part in the future testing, by gathering information about the tests, about the risks and then we can also hand tasks to relevant work streams to ensure we are aligned and get all input from all DNSPs and generators at the NEMOC.
- Nilesh discussed that the outcome of the RIT-T should provide sufficient voltage control capability in the Adelaide Metropolitan region, however it is difficult to predict what the outcome of the RIT-T will be. In consideration of this, there is a process in place that looks at filling gaps such as these.
- Nilesh confirmed that RoCoF had been considered, with consideration to non-credible separation.
- Ben asked if below 600 megawatts of SA demand, those two synchronous units that are required to be online, do they have to be in the Adelaide area? Nilesh confirmed that it must be the Adelaide metropolitan area and 275kV.
- In relation to going from two to one is envisioned for the end of September 2023. The RIT-T process is longer and will need to be confirmed and reported back to the NEMOC. Nilesh further confirmed that presently we need two Adelaide 275kV generators online, but post September, below 600 megawatts would only need one unit online.
 - Ken added clarification that it depends on some other conditions that are very difficult to meet, in terms of being able to re-secure within 30 minutes.
- Nilesh summarised that there are two aspects: the first is running a secure system and the second is re-securing the system following a credible contingency, within 30 minutes. It is understood that re-securing within 30 minutes is very difficult because if we do not have the large 275kV units, which can re-synchronise in 30 minutes online, then there may be a wait of three to four hours to bring the unit online. If we do go to one unit, that can only occur if there is another 275kV connected generator available in that 30 minutes.
- Discussion held about misalignment between Planning Standards and Operational Standards:
 - o Clarification and alignment of the Rules Framework for Planning and the Rules Framework for Operations.
 - o Could Planning consider taking a more Operational view with their work?
- Grid Reference Study – timeframes for practical testing of the concept? Understanding what a Grid Reference Service means will inform system strength frameworks, along with a lot of the work happening on the grid, operational security mechanisms etc.

**ACTION – (1) Nilesh to investigate and report back to the NEMOC on predicted timelines for the RIT-T outcome.
 (2) Nilesh to provide information on the Grid Reference Study – timeframes for practical testing of the concept.**

Understanding what a Grid Reference Service means will inform system strength frameworks, along with a lot of the work happening on the grid, operational security mechanisms etc.

ACTION – (3) NEMOC to raise at the next EJPC workshop – Clarification and alignment of the Rules Framework for Planning and the Rules Framework for Operations – as there is misalignment.

4 WORKING GROUP UPDATES

4.1 NEM EMERGENCY COMMUNICATIONS WORKING GROUP (NEMEC WG) *HARMOHAN SINGH*

i. UPDATE – NEMEC WG

- Harmohan provided an update, as per the NEMEC WG submission in the meeting pack.

ii. PRIORITISATION OF WORKSTREAMS FOR THE NEMEC WG

- NEMEC WG – while the WG updates describe what is currently happening, the NEMOC requires an overall roadmap or plan of what is being addressed and what the outcome should be.
- The NEMEC should also look at the linkages between other business areas, for example the PSSWG is working on some emergency comms tasks, but this should also be given to the NEMEC WG and both groups should be working together on that type of plan.
- Communications Reliability Requirements – we have a system, however we need to identify who needs to be part of the system and how they are going to be part of the system. For an alternate – ie SRAS Resources, TNSPs, Generators – who should be included. This is part of the NEMEC scope.
- What problems have we fixed and if there are any residual risks that we are still carrying with the proposed solution?
- Does the span of this cover the resilience that is built into some of the participant's internal networks – communications between point-to-point centres from there, emergency communications then need to be carried within internal networks. A hard-wired emergency network that links several sites.
- System Restart Communications Protocol – Yearly review cycle.
- ACTION – (1) Harmohan to develop a draft overall roadmap or plan for the Emergency Communications – including long-haul, short-haul and the function of them – overall plan for communications and the solutions for the communications, not just the solutions – to be sent to NEMOC members prior to the next NEMOC meeting. (2) Harmohan to add the implementation of a standard review cycle for the System Restart Communications Protocol, at the next NEMEC WG meeting. (3) Harmohan to provide an update to NEMOC on What problems have we fixed and if there are any residual risks that we are still carrying with the proposed solution?

4.2 POWER SYSTEM SECURITY WORKING GROUP UPDATE (PSSWG)

DARREN SPOOR

i. UPDATE – PSSWG

- Darren provided an update, as per the PSSWG submission in the meeting pack.

ii. PRIORITISATION OF WORKSTREAMS FOR THE PSSWG

- NER Clause 5.2.510 – AEMO Consultation regarding Schedule 5.2 – WG concluded a need for protection schemes to be included still in the NER clause and that further studies were required to defeat the cause and effect and to propose appropriate settings and thresholds that could be applied across the NEM.
- The basis of this decision is effectively that manual intervention via TNSP or generator control rooms is not deemed to be effective for managing system security. There are no measures to manage that other than through compliance with the existing requirements in that rules clause.
- Recommendation to NEMOC is that the reference for ongoing work could be passed to the PSMRG for comment to see whether any protection grading options can be proposed for implementation.
- AEC Membership in PSSWG – Henry Gorniak has been informally participating in the group for the past year. He is retiring in September and has asked if another AEC member can participate in the group permanently – specifically to discuss generator request issues?

- Protected Event Revocation and the work being done to change the protected events framework – should that go through the NEMOC – it directly impacts the way we operate the system? Ken provided an update from the Reliability Panel and advised that the application to revoke the protected event came from Luke Robinson’s team in Operations.

ACTION – (1) Darren to seek permission from the PSSWG to have the relevant section of the Minutes with some additional information around the cost benefit, which could be shared further and more widely than the NEMOC. (2) Ben to propose a nomination to replace Henry Gorniak as an AEC representative on the PSSWG, when he retires in September and forward details to Darren.

4.3 OPERATIONS PLANNING WORKING GROUP (OPWG)

SUJEEWA RAJAPAKSE

i. UPDATE – OPWG

- Sujeewa provided an update, as per the OPWG submission in the meeting pack.

ii. PRIORITISATION OF WORKSTREAMS FOR THE OPWG

- Tjaart discussed that AEMO now refers to it as Seasonal readiness and it is mostly aligned with what the NEMOC envisioned. The NEMOC also wants the OPWG to review the system restoration process. Regarding agility and improvement of planned outage management. Look at a probabilistic way of looking at outages – the overall way we look at outages and outage planning from an industry perspective. Can we change it? Are improvements needed to current processes? That we see distinct events as 100% probability of credible contingency when we do outage planning should be reviewed.
- Review the System Restoration Process.
- Improvement of Planned Outage Management – how we manage the risk? How can this be done better – thinking outside the box, probabilistic outage assessments etc. Overall way we look at outages and outage planning from an industry point of view.
 - We need to improve current processes – that we see distinct events as 100% probability of credible contingency when we do outage planning. Should we review that?
 - Think about the big issues impacting TNSPs and generators currently and in the future and how will we manage them.

4.4 POWER SYSTEM MODELLING REFERENCE GROUP UPDATE (PSMRG)

RAJESH NIGHOT

i. UPDATE – PSMRG

- Rajesh provided an update, as per the PSMRG submission in the meeting pack.

ii. PRIORITISATION OF WORKSTREAMS FOR THE PSMRG

- Tjaart discussed that the overall problem is to get consistent modelling across the NEM and SWIS – this should be the prime directive of the PSMRG. Consistent standards for modelling and policies around modelling, providing advice on what we should be modelling out into the future.
- Christiaan asked about access to the open EMS snapshots to facilitate effective modelling at different points in time. Currently it is very difficult to access data. Is that to be covered off in this group?

ACTION – (1) To be added to next NEMOC meeting agenda – Access to modelling data and when it should be provided – should this be part of the PSMRG?

4.5 OPERATIONS TRAINING WORKING GROUP (OTWG)

i. POWER SYSTEM OPERATOR TRAINING FRAMEWORK (PSOT) – PILOT PROJECT

This phase of the project includes engaging a provider to develop the initial pilot suite of courseware (11 modules) as part of the PSOT. In consultation with industry via the PSOT Steering Committee and will be undertaken in three Stages:

STAGE ONE: GOVERNANCE

Determine governance processes for The Project, including establishment of a sub steering committee, identification of SME reviewers, scope and productions schedule for the development.

STAGE TWO: DESIGN AND DEVELOPMENT

Design and development of the pilot suite of content, completed in two segments:

- i. Verify and validate needs analyses and course aims for module content against initial data in the PSOT Framework.
- ii. Operationalise content through a scheduled program of work that covers course design, asset development, graphical design, module mapping against relevant accredited modules, course acceptance and approvals.

STAGE THREE: MANAGEMENT

Delivery and management of content, to be implemented in three phases: a. Launch completed content b. Test analysis and modifications, c. Launch pilot eLearning platform, ongoing maintenance and support.

It is envisaged that the Pilot will be ready for industry by the end of 2023.

ii. OTWG MEETING PLANNED FOR MID JULY – WORKSTREAM PRIORITIES

- To progress with the Pilot development and establish a sub-Steering Committee – specifically for the pilot development phase of the project, that can provide strategic advice to Thomson Bridge and make recommendations for final approvals.
- Review and update the ToR for both the OTWG and Steering Committee.
- We have a couple of presentations from participants planned to further our sharing and collaboration of current control room practices, as well as training practices and needs.
- Continuing focus of the OTWG, PSOT Steering Committee and PSOT project is to address the impacts and needs to achieve NEM 2025 Objectives.

iii. PRIORITISATION OF WORKSTREAMS FOR THE OTWG

- Ben asked if in the second half of this year they would be very keen for Alexis/Dan to do an advertising spiel to their membership.
- Jason asked about the link between the PSOT Framework and current accredited training available and if learners who are looking to undertake any or part of the curriculum, need to be at a particular accreditation level?
 - Alexis advised that the PSOT Framework is industry accredited and has been developed to align with and more importantly, support current accredited training. Furthermore, when learners undertake accredited training, the expectation is to have pre-existing knowledge and exposure to the concepts they are learning. The PSOT Framework assists with filling these potential knowledge gaps. On the other hand, for learners who have already completed accredited training, the PSOT Framework can be utilised to assist with applying their knowledge in their role, in real time. The framework can also serve as a form of refresher training, or as an introduction into the world of real time operations.
- Tjaart asked for projected timelines – it is envisioned that the agreement will be signed around 30 June 2023 and subsequently the pilot modules delivered by the end of 2023.

ACTION – (1) Alexis/ Dan to contact Ben and Christiaan in the latter part of 2023, to arrange a visit to AEC and CEC, to promote the PSOT Framework and pilot modules.

5 SAFETY

- No safety issues were discussed.

6 GENERAL BUSINESS

- Tjaart discussed that the NEMOC should maintain the frequency of the meetings/ working group updates and then have specific identified meetings if required, as per the suggestion from Jennifer.
- Jennifer agreed on the importance of discussing REZ, however is concerned that if the discussion is left to the next NEMOC meeting, we may miss the boat on some of the decisions currently being made.
- Tjaart discussed how AEMO envision REZs will be managed.
- Emma asked if there is a need to schedule a specific meeting on it and she will share a pack they have on how Powerlink think they will operate.
- Christiaan noted that System Restart should also be included in the planned discussions.
- Tjaart asked for feedback on having two-hour sessions to discuss each of these topics or we can have a one-day session or two-day session even to discuss all of them. That's up to us to decide how we want to address these or if there's more urgent than other ones, we can have it sooner or later.
- Ben asked to include a topic about existing processes to schedule NSCAS and how they operate – potentially from an operations point of view, not a planning perspective.
- Tjaart confirmed that the following topics will be distributed to members to review and prioritise, then confirm if they have a meeting on each, or cover them all in one meeting:
 - Implications of no longer having the OSM – existing manual scheduling processes
 - Load Shedding
 - REZ Principles and Operations
 - System Security Responsibilities – SO – Regional System Operators
 - System Restart
 - Existing processes to schedule NSCAS contracts and a run through of that from a Control Room Perspective
- Tjaart advised that the list of 6 topics will be distributed to members to review and prioritise, then confirm if they have a meeting on each, or cover them all in one meeting.
- Jennifer advised that Transgrid published their System Security Road map – a document outlining what they think they are going to need to do to be able to operate reliably, securely and the actual operational capability that is required for that. Could be good reference material – [Transgrid's System Security Roadmap](#).

ACTION – (1) Members to prioritise topics and provide feedback on whether they require a two-hour meeting or workshop.

7 MEETING CLOSE

- The meeting closed at 12pm.

MEETING / WORKSHOP	DATE
NEMOC MEETING No.33	9am – 12pm AEST Wednesday 13 September 2023 (AEMO Office – L22 Boardroom, 530 Collins Street, Melbourne F2F)
NEMOC & EJPC Workshop No.8	12.30pm – 3pm AEST Wednesday 13 September 2023 (AEMO Office – L22, 530 Collins Street, Melbourne F2F)