MINUTES

MEETING:	NATIONAL ENERGY MARKET OPERATIONS COMMITTEE | NEMOC
DATE:	Thursday, 7 December 2023
TIME:	10AM – 12.30PM (Sydney / Melbourne Time)
LOCATION:	AEMO – Norwest 2-4 Elizabeth Macarthur Drive, Bella Vista
TELECONFERENCE DETAILS:	Microsoft Teams By phone: +61 2 8318 0090,,449860738#

ATTENDEES:

NAME	COMPANY DEPARTMENT	NAME	COMPANY DEPARTMENT
Tjaart Van der Walt	AEMO *(Chair)*	Scott Partlin	CEC / Neoen
Danielle Freke	AEMO *(Secretariat)*	Gary Adkins	ElectraNet
Teresa Smit	AEMO	Verity Watson	ENA
Peter Brook	AEC	Alexandra Price	Powerlink
Hugh Ridgway	AEC / Alinta Energy	Ed Sellwood	Powerlink
Nigel Buchanan	APA	Jason King	TasNetworks
Martin Cavanagh	AusNet Services	Jennifer Hughes	Transgrid
Christiaan Zuur	CEC	Jason Krstanoski	Transgrid

GUESTS:

NAME	COMPANY DEPARTMENT	NAME	COMPANY DEPARTMENT
Darren Spoor	AEMO	Daniel Lavis	AEMO
Sujeewa Rajapakse	AEMO	Rajesh Nighot	AEMO

APOLOGIES:

NAME	COMPANY	NAME	COMPANY
Michael Gatt	AEMO	Glenn Springall	ENA / Energy Queensland
Ken Harper	AEMO	Emma Rogers	Powerlink
Tim Lloyd	AusNet Services		

1 WELCOME

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

2 PREVIOUS MINUTES AND ACTIONS REGISTER

- Previous meeting minutes (13 September 2023) were accepted with no changes made.
- Actions Register was reviewed and actions amended accordingly.

3 PRIORITISATION OF TOPICS – MEMBER FEEDBACK ON SCHEDULING SEPARATE MEETINGS OR WORKSHOPS:

All | Tjaart Van der Walt

- REZ Principles and Operations (ad hoc meeting arranged as per action item 33.6.2?)

- Tjaart said from AEMO's point of view REZ principles is the largest credible risk. That's probably our main focus –

what is manageable as the largest credible risk and from operations systems security, what is the largest risk we can manage through FCAS and the next one is reliability which is tricky as it's affected by factors such as LOR and QNI flow.

Jennifer suggested that it is worth briefing the EJPC on the principle of what goes into planning for REZs versus the ability to operate that at the end of the day. We need to have a collaborative approach at the next Joint NEMOC EJPC workshop on where the operational concerns are around REZs and how to influence the planners who are present at the EJPC.

ACTION – (1) Tjaart with the other NEMOC members to brief the planners at the next Joint NEMOC EJPC workshop on the principle of what goes into planning for REZs versus the ability to operate that at the end of the day.

- Implications of no longer having the OSM – existing manual scheduling processes

- The AEMC is proposing improvements to existing security frameworks, rather than an operational security mechanism (OSM), to support energy transition. Tjaart said following discussions with TNSPs, AEMO will be delivering the message to the AEMC that is very difficult to implement and we should do it through a staged system and the efficiency level doesn't seem very efficient if you have to contract and not market. We've tried contracting in certain regions for system strength and found it would be cheaper to direct. The challenge is how to make it economic with contracting and the second is how do you implement that in the power system.
- Christiaan asked a question around the transitional contracting of that entire package because the enablement for system strength is obviously problematic. Our view was intended to allow AEMO to actually procure contracts with those synchronous combinations that you need for stable operation and wanted to understand the operations perspective on those contracts. Tjaart said he will take this question on notice and will feed this back to David Scott.

ACTION – (1) Tjaart to ask David Scott on the operations perspective of procuring contracts with synchronous combinations and enablement for system strength.

- Hugh stated that a concern shared by a number of the generators around is how this is going to be managed by AEMO going forward, and with these changes that are proposed by the AEMC, and how it's going to be balanced between the need to contract or whether or not incumbents are just going to get directed because it's cheaper to direct in the short term than it is to contract over the long term. Tjaart said that's the challenge we have to work through contracting for efficiency and contracting for system security and reliability.

- System Security Responsibilities – SO – Regional System Operators

- Tjaart said the PSSWG is working on this which is the delegation to the TNSPs in the loss of communications and their responsibility to manage it and keep it in satisfactory state so the PSSWG is looking at what information is needed and what systems are needed.

- Existing processes to schedule NSCAS contracts and a run through of that from a Control Room Perspective

- Christiaan said this stemmed around enablement for system strength contracts, that NSCAS contracts are already enabled although there are a few of them but what we might expect under the expanded system security frameworks, so how it might be done in the future.

4 MEETING BREAK

5 WORKING GROUP UPDATES

5.1 NEM EMERGENCY COMMUNICATIONS WORKING GROUP (NEMEC WG) *DARREN SPOOR*

i. LONG-HAUL COMMUNICATIONS OPTIONS

- The estimated total cost for 2 x 400W HF radio system to install for testing one each at Brisbane control room and Tasmania is $250K. The Commonwealth has indicated a willingness to fund this trial. Powerlink has identified a proposed location. A future meeting is being established with TasNetworks.

ii. SHORT-HAUL COMMUNICATIONS

- The NEMEC discussed the requirements and options for short-haul communications within a region. The options have now been finalised and a draft version of the communications roadmap will be available to the NEMOC after this meeting.

iii. EMERGENCY COMMUNICATIONS

- The options to provide the Emergency Communication with Government Energy Departments will be considered at the next meeting.

iv. GOVERNANCE

- The NEMEC was established as a temporary working group, with the following objectives:

> **NEM Emergency Communications Working Group (NEMEC WG)**
>
> **1. Mission**
>
> To provide advice to the National Electricity Market Operations Committee (NEMOC) on matters relevant to the Emergency Communications of the National Electricity Market (NEM) transmission system.
>
> **2. Objective**
>
> The primary objective of the NEMEC WG is to:
>
> - Develop a NEM Emergency Communications Roadmap to achieve the requirements of the System Restart Communications Protocol
>
> Secondary objectives of the NEMEC WG are to:
>
> - Provide a forum for Transmission Network System Providers (TNSPs) and AEMO communications experts to discuss matters related to Emergency Voice and Data Communications.
> - Assist AEMO and the TNSPs in designing and maintaining reliable emergency communications.
> - Review and report on other communications issues as requested by the NEMOC.

- The NEM Emergency Communications Roadmap is nearing completion.
- NEMOC is requested to comment on either further refining the secondary objectives, or a planned closure of the working group.

v. MEMBER QUESTIONS AND DISCUSSION

- Consensus from the NEMOC members was that it will decide after it receives the NEM Emergency Communications Roadmap as to whether the NEMEC WG can be disbanded but the members felt although the Roadmap is essentially a vision it would be looking to the NEMEC WG to lead the implementation of the Roadmap.
- Ed proposed the NEMEC WG could put together an early stages procedure around the long haul communications HF trial to be handled through the control rooms.
- Tjaart will organise a representative to talk about AEMO's Cyber Defendable Core (CDC) Group at the next NEMOC Meeting. The CDC Group was established under SOCI to reach out to TNSPs and generators. The CDC Group looks at what do we need to keep the lights on in severe cyber events. From AEMO's point of view we need MS, the SCADA system, some type of dispatch system and we definitely need voice communications.

ACTION – (1) Darren to send to NEMOC the final version of the NEM Emergency Communications Roadmap and an early stages procedure of the long-haul communications HF trial. (2) Tjaart to organise a representative to talk about the CDC Group at the next NEMOC Meeting.

5.2 POWER SYSTEM SECURITY WORKING GROUP UPDATE (PSSWG) *DARREN SPOOR*

i. REVIEW OF POWER SYSTEM INCIDENTS

- The Power System Security Working Group (WG) reviewed the following events in detail:
    - Trip of both South East SVCs on 23 March 2023
    - Trip of MLTS bus on 29 May 2023
    - Trip of Armidale – Dumaresq at Armidale only on 29 August 2022

- Trip of Liddell – Tomago and Tamworth SVC on 7 April 2023
- Circuit breaker failure at Mortlake Power Station on 7 July 2023
- WEM distributed PV impacted by cloud on 10 November 2023

- A detailed review of non-credible contingencies identified that human error accounted for 9 of the 10 non-credible contingencies since the last meeting. Reviewable incidents will now be investigated with the support of a human factors questionnaire.

ii. MINIMUM SYSTEM LOAD (MSL)

- The PSSWG was briefed on the draft back-stop requirements in VIC for all new DPV units to have the ability to be curtailed from 1 July 2024.

iii. UPDATE TO THE NATIONAL ENERGY OBJECTIVES (NEO)

- It was agreed that there is no need for consideration of emissions for SRAS and RERT applications in real-time as this is already considered in the planning timeframe. The PSSWG agreed that a hierarchy applies in this instance, such that security and reliability exceed the requirements of the emissions objectives.

iv. REVIEW OF RECLASSIFICATION FRAMEWORK

- Definition of a Non-Credible Contingency Event:
  - The PSSWG approved a change to Section 7.2 of SO_OP_3715, where a non-credible contingency includes *"the trip of multiple generating units (except if the loss of the multiple generating units is already credible due to their network connection eg connected via a single line or transformer)"*.
- Bushfire Management:
  - The WG is reviewing the bushfire reclassification framework to assess how 'profiled easements' can be included. Note that the existing framework assumes there is no fuel load within the easement.
- Space Weather Management:
  - Further work is being conducted to develop a TNSP checklist of potential actions. This will be further refined at the next meeting.

v. LOSS OF COMMUNICATIONS BETWEEN CONTROL ROOMS

- The PSSWG has been reviewing the schedule of delegations to ensure there are mechanisms in place to account for a loss of voice communications with AEMO.
- The working group has also been coordinating on how to manage a loss of SCADA telemetry. Discussion points include locations to send staff to, and the availability of backup telemetry and alarms.

vi. FORWARD LOOKING PSSWG PRIORITIES

- Protocols for loss of communications (June 2024)
- Cloud cover for reclassification frameworks (June 2024 - subject to review)
- Space weather NSP checklist (November 2024).
- Supporting TasNetworks with their RPSS obligations (November 2023)
- Review non-credible contingencies to identify systemic risks to system security (ongoing).

vii. NEXT MEETING

- The next PSSWG meeting will be held on 23 February 2024.

viii. MEMBER QUESTIONS AND DISCUSSION

- Ed requested a copy of the human factors questionnaire as he thought human factors is subjective and Darren said the questionnaire was tabled at the PSSWG on behalf of the reviewable incident team and he will send him a copy.

ACTION – Darren to send Ed a copy of the human factors questionnaire.

- Tjaart asked regarding the forward looking PSSWG priority, protocols for the loss of communications, are you looking at what would be required from the TNSPs to maintain a satisfactory system state and expected time duration for this to happen – the specifics of managing the system?
    - Darren said this is being managed under the heading of schedule of delegations and much of the work is being led by Tasmania as they are ahead in this space with the RPSS obligations.
- In relation to the economic discussions around tripping of generation under oscillatory instability issues, Christiaan asked where things landed around when oscillatory instability was detected, how much generation to shed and when?
    - Darren said the requirement to develop the tripping settings was passed to the PSMRG. The conclusion from the PSSWG was the need to retain S5.2.5.10 and that is the ability to protect assets from very large oscillations.

5.3 OPERATIONS PLANNING WORKING GROUP (OPWG)

SUJEEWA RAJAPAKSE

i. SUMMER READINESS

- General discussion and exchange of summer readiness plans of AEMO and TNSPs. The OPWG also discussed TNSP hot-spot monitoring processes in place, as a part of this discussion.

ii. EMERGING OPERATIONAL ISSUES

a. OPERATION OF SEMI-SCHEDULED GENERATION

- The OPWG continued discussion on the options to manage power system security issues caused by large increases of semi-scheduled generation in dispatch intervals immediately following the dispatch intervals with semi-scheduled cap applied. After discussion the OPWG finalised its discussion paper on this topic, including a recommendation.

b. OBTAINING SYSTEM STRENGTH / MINIMUM FAULT LEVELS AT VARIOUS NODES OF THE POWER SYSTEM

- The OPWG continued discussion on system strength / minimum fault level requirements at various nodes of the power system under intact network and outage conditions as well as for resecuring following a contingency, via limit advice. TNSPs are developing several methods for operational management of system strength such as dedicated control schemes and the use of generation combinations including contributions from relatively smaller generation. This action is progressing.

iii. OPWG PRIORITIES AND TIMEFRAMES

1. Refine network outage planning process and introducing strategic improvements.
    - Publish EMS modelling, control schemes and limits advice timing requirements on AEMO website (completed by the target date of 23/6/2023).
    - Update and circulate AEMO Guidelines for Transmission Network Outage Planning for Summer 2023–2024 (finalised by the target date of 29 August 2023, to be circulated to the OPWG shortly).
    - Continue reviews of outage management practices (ongoing).
      The OPWG discussed updates to the outage management procedures clarifying the process and the timelines for AEMO to determine outages that are "Unlikely to Proceed" (UTP). Refer to the section on Presentations below for details.
2. Establish/refine operational processes for maintaining system strength and inertia of the power system.
    - Establish principles for the process (target date: end of 2023).
    - TNSPs to discuss processes for managing system strength at the TNSP/DNSP boundaries with DNSPs (target date: end of 2023). AEMO GM Systems Capability has undertaken to facilitate this task (update: the initial discussions have been completed, refer to item 3 above, target date: end of 2023).
3. Improvements to network rating advice by NSPs to AEMO.
    - Set up a sub-working group reporting to the OPWG consisting of AEMO/TNSP Operations and EMS/SCADA SMEs (completed on 3/4/2023).
    - Develop the scope and a plan to deliver a suitable system/process for NSPs to provide network ratings – end of 2023).
4. Streamline NSP advice of power system project information to AEMO (PSPR process)
    - Resolve IT issues experienced by TNSPs in submitting project information to the AEMO external SharePoint site (completed in March 2023).

- Monitor submission of PSPR information to AEMO (ongoing).

5. Address emerging operational issues impacting power system security.
    - The OPWG to recommend a suitable solution to manage system security issues arising from the dispatch of semi-scheduled generation (update: refer the item 3 above, the OPWG finalised the discussion paper on this topic including a recommendation for NEMOC endorsement in their December 2023 meeting).

iv. PRESENTATIONS

- Kiet Lee and Ryan Burge of AEMO clarified the proposed improvements to the operating procedure SO_OP_3718 – Outage Assessment, with regards to the operational communications with TNSPs, market advice and the associated timelines for outages that are Unlikely to Proceed. The OPWG agreed to the proposed process.
- Key learnings from South West Interconnected System (SWIS) north country outages in March 2023

  AEMO Manager – WA Power System Operations Paul Elliot briefed the OPWG on the series of disruptions to the SWIS North Country network which took place in March 2023. A combination of prior outages, challenges with voltage control as well as issues with market systems and inverter controls led to black out of the North Country area four times while islanded. The OPWG discussed learnings from this incident for the NEM and possible refinements to NEM processes. This discussion will continue in the next OPWG meeting.

v. NEXT MEETING

- Dates for OPWG meetings in 2024 are to be determined.

ix. MEMBER QUESTIONS AND DISCUSSION

- NEMOC members agreed that OPWG's proposed recommendation to manage a system security issue arising from the operation of semi-scheduled generation be allowed as an interim solution with a view to try to develop a longer term solution based around improved local generation forecasts and UIGFs.
- Hugh asked if this requires a rule change, to reconsider the definition of a semi dispatch interval under the rules around this?
    - Sujeewa said that would be a long-term solution but our interpretation of the rules is acceptable.

5.4 OPERATIONS TRAINING WORKING GROUP (OTWG) *DANIEL LAVIS*

- Last meeting held 14 November 2023, Brisbane.

i. OTWG TERMS OF REFERENCE (TOR)

- Discussions included confirming current membership as appropriate, limited to TNSP representatives, with guest members from DNSP and other participants as appropriate.
- The TOR will be reviewed and updated further by members ahead of the next meeting.

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

- Members were informed AEMO has executed a contract for the PSOT Pilot Project – development and delivery of 11 modules from the Foundational level of the PSOT Framework.
- Work has commenced in reviewing learning objectives and set up of project governance. Development work is about to commence, with testing of the first modules expected in February 2024. All modules planned to be ready by October 2024.
- Discussions were held regarding establishment of a newly formed Steering Committee, specific for the Pilot Project. It was agreed this will comprise 10 representatives: 2 x TNSPs, 2 x DNSPs, 2 x Generators, 2 x Thomson Bridge and 2 x AEMO.
- Further industry input and collaboration will occur by way of testing and validation of pilot modules as they are developed. Feedback provided to the Pilot Steering Committee for consideration. A major focus of the project and for consideration by the Pilot Steering Committee will be making recommendations on the delivery and publication mode of the pilot modules, setting the way for future developments. Other factors for consideration include pricing models, industry ownership and linkage to accredited courses.

PSOT Overviews and Demonstrations

- With the Pilot Project contract signed and as per previous requests by NEMOC representatives, AEMO intends to meet with the AEC and CEC in the new year, aiming to demonstrate newly developed modules in addition to presenting the PSOT Framework benefits and timelines.

iii. TRAINING COLLABORATION AND SHARING – POWER SYSTEM OPERATORS

AEMO's Operations Academy Program (OAP)

- AEMO presented an overview of its Operations Academy Program. This initiative was designed at the request of Michael Gatt – Chief Operating Officer, to develop Operations Support staff and provide greater awareness and understanding of the NEM Real Time Operations (RTO).
- Nine participants were selected from various supporting teams of the NEM Operations group. Aiming to develop a pipeline of talent for the NEM RTO and further build a support network for the team.
- Commencing in June 2023, OAP participants received a cut down version of the NEM Controller training, focusing on 10 key Operational elements. NEM Controller led master classes were held over a six-month period in addition to time in the control room and Dispatch Training Simulator. Competencies included Power System Principles & Responsibilities, NEM Market & Dispatch Functions and Introduction to Energy Management Systems (EMS). Participants were also invited to experience shifts in the NEM control rooms.
- Feedback indicates the OAP to have been a highly successful program. With unexpected mutual benefits for NEM RTO staff and participants in promoting understanding and awareness of the NEM RTO, the supporting teams, and SMEs, in addition to the skills and knowledge acquired. Due to this success, plans are in place for a second OAP in April 2024. With a vision to open the program more broadly across AEMO in the future, also with potential to invite registrations from external organisations.

Human Factors Training Program Proposal

- Findings in the GPSRR – July 2023 and AEMO's ROI Report – January 2021 to May 2023, indicate that there is a direct correlation between power system reliability and human factors causing errors.
- In response to recommendations outlined these in reports and in general support of AEMO's Operations staff health and wellbeing, AEMO initiated work to develop a package of Human Factors evaluation and training, tailored to our operations environments.
- In coordination with Macquarie University, a small group of Operations staff across AEMO's four control rooms will be surveyed to understand the risks, experiences and key topics to be built into a two-day workshop. AEMO will deliver individual evaluations to establish baseline for the learner in their operational context situational awareness and decision making abilities. The program aims to see improvements following the workshop.
- Workshops are being planned for the second half of 2024. The OTWG was invited to register their organisations interest in undertaking the evaluation and training in collaboration with AEMO.

iv. NEXT MEETING

The next OTWG meeting is planned for March 2024.

v. MEMBER QUESTIONS AND DISCUSSION

- Tjaart asked regarding the 100 controllers that you will be inviting to the human factors training two-day workshop, will that be open to TNSPs and generators too?
    - Daniel said yes and is open to whoever wants to be involved at this stage, and if the workshop is filled then more workshops will be held.

5.5 POWER SYSTEM MODELLING REFERENCE GROUP (PSMRG) *RAJESH NIGHOT*

i. KEY HIGHLIGHTS

- A face-to-face meeting was held in Brisbane on 16 November 2023 and a number of issues were discussed.

- Chairs of the below new sub-group/task force gave introductory presentations on details of the planned activities at the meeting.
    - DER and Load NEM Model Development: Working group chair Jenny Riesz presented on the following focus areas of the group:
        - PSSE model refinements under progress.
        - PSCAD models development under progress.
        - Development of UFLS PSSE models.
        - Integration of models to be planned to validate the performance of developed models.
        - New types of DERs are being studied.
    - Migration of NEM models from PSSE v34 to PSSE v36: Task force chair Ben Blake presented the below updates at the meeting:
        - AEMO will not be transiting to PSSE v35 and will directly transition from PSSE v34 to PSSE v36.
        - The transition will be focused on dynamic models, and modelling of generation capability curves will be considered separately.
        - There will be a 6-months' notice soon (this year or at the beginning of the next year), and 12 months transition.
        - Consistent with previous migrations, during the transition, proponents will be asked to provide PSSE v34 and PSSE v36 models.
- The below updates are available from ongoing working groups and task forces.
    - Transition from Mudpack to SSAT models: The transition of Mudpack to SSAT for synchronous machine models is progressing as planned. Testing of SSAT models for synchronous machines is likely to be completed by February 2024. SSAT Working Group chair Marina Delac is organising an Industry Session Powertech Workshop on submission small signal analysis models in February 2024. AEMC, NSPs, OEMs and consultants will be attending the workshop.
    - PSCAD version 5 improvements: AEMO has received MHI report with recommendation on PSCAD base case v3.2 simulation speed improvements. The MHI recommendations were presented by Genevieve Lietz at the PSMRG meeting. AEMO is planning to implement these recommendations in the next release of PSCAD base case v3.4. The review identified additional model quality and performance checks that should be undertaken by NSPs and AEMO as part of the connection process.
    - NEM Model Management Group: The following key updates were presented at the meeting.
        - Next PSCAD base case v3.4 release will be in PSCAD software version 5.0.2. The latest version of PSCAD software v5.0.2 has improved speed as compared to previous version 5.0.1.
        - AEMO will plan a meeting with each NSP to discuss Model Issues Reporting Page (MIRP). Through this interaction AEMO plans to improve PSSE and PSCAD NEM models. A total of 56 model issues were raised from 2022 to present and 10 issues were resolved. The region wise break-up of MIRP is provided below.

Region	Equipment Wise Break-Up				Total	Resolved
	Machine	Substation	DC link	Line		
NSW	12	1			13	3
QLD	15				15	1
SA	7				7	1
TAS	2		1		3	1
VIC	16			2	18	4

ii. REVIEW ACTION ITEMS

- The action item is referenced in "Item 2.0 NEMOC Minutes 13 September 2023".
- On 11 October Sujeewa Rajapakse from OPWG and Rajesh Nighot from PSMRG had a discussion on efficient methods for modelling power system outages.
    - **PSCAD OPDMS snapshot:** AEMO is in the initial stages of developing PSCAD OPDMS snapshot capability as part of the Operations Simulator project. A progress update on the Operations Simulator development was presented at the PSMRG Brisbane meeting. The Operations Simulator is a part of AEMO's Operations Technology Program which seeks to address the challenge of maintaining system security and reliability in an increasingly complex system. If this project is successful, then the downloaded PSCAD OPDMS snapshots will be useful in modelling power system outages.
    - **Simulation Speed:** The simulation speed is expected to increase significantly in the next release of PSCAD software version 5.1. It is expected that the improved simulation speed with aid in EMT contingency analysis capability to aid control room decisions. MHI is planning to release PSCAD v5.1 in Q2 2024.
    - **Resources:** Over the last months AEMO has organised advanced PSCAD training to increase the number of users. Similar initiatives can be taken by NSPs. The PSCAD training was organised by MHI-Canada.

iii. NEW MEMBERS

- Joshua Paoli from TasNetworks replaces James Lord.

iv. PRESENTATIONS

- Presentations at the 16 November 2023 PSMRG meeting in Brisbane included:
    - Transition from PSSE version 34 to version 36 by Ben Blake – AEMO
    - Recent experience with Solar Farm Oscillations by Kevin Paice – Powerlink
    - Response of BESS to NEM frequency disturbances and concerns that this may impact on the management of inter-regional power transfer within limits by Andrew Van Eyk – ElectraNet
    - Sub-synchronous oscillations in West Murray zone by Nilesh Modi – AEMO
    - Observations from Wallgrove BESS on its inertial/fast frequency response to different system events by Navid Aghanoori – Transgrid
    - Update from SSAT task force by Marina Delac – AEMO
    - Modelling issues related to the current R1 rule change – presentation and a short discussion by Ashok Kaniyal – AEMC
    - Update from NEM MMG sub-group by Rajesh Nighot – AEMO
    - Update from DER and Composite Load Modelling group by Jenny Riesz – AEMO
    - PSCAD version 5 improvements by Genevieve Lietz – AEMO

v. NEXT MEETING

- The next PSMRG meeting will be held in February 2024 and is planned to be face-to-face.

vi. MEMBER QUESTIONS AND DISCUSSION

- Tjaart asked regarding being able to download PSCAD OPDMS will that be shared with the TNSPs?
    - Rajesh said yes.
- Tjaart said that Rajesh has only taken over the group not too long ago and has steered the PRSMRG in the right direction. He added that it's good that the PSMRG has taken a collaborative approach with AEMO and TNSPs working together around modelling as a lot of our work is based on this modelling so it's important we get these models right.
- Tjaart asked will you also be seeking input on these models from the generators?
    - Rajesh said yes and this is being done through MIRP.
- Scott asked regarding the machine issues in the MIRP, do you know the commissioning date of when those generators entered the NEM because it could be the case that they are older or that the OEM is no longer in the market so how do you fix these problems?
    - Rajesh said yes we are looking into this and there will be engagement between AEMO and OEM.

6 SAFETY

- Tjaat said we all have a mutual safety responsibility; that AEMO, TNSPs and generators all carry out their work safely. Tjaart asked members if there are any safety issues to discuss then they can raise them. No safety issues were raised.

7 GENERAL BUSINESS

- Christiaan asked how close are we starting to get to requiring directions to be applied for minimum synchronous unit combinations?
    - Christiaan was advised that this is already happening in some jurisdictions and a directions report will be released early next year.
- Darren said he took an action earlier in the meeting to share some information about the human factors components, which he then presented to NEMOC and will circulate to members. It's a survey that will be sent to anyone involved in a reviewable event but the survey is of this form so we're looking at people factors, management factors, the work environment and additional factors. This was referenced at the PSSWG by Callan Masters and Luke Robinson's team doing investigations into reviewable incidents and this is an approach they may be taking to investigate human factors. This is in its draft form and feedback is welcome.
    - Ed said so then respectfully until it's defined on the purpose of the questions, I'll probably seek to not respond on account of liability and the protection for my organisation on the types of information transmitted. I am interested but it's what it creates in relation to what we're using it for to make sure it has the right effect, not the wrong impact.
    - Jennifer said it would be helpful for TNSPs to see visibility of trends, however it's about the commonality and the commonality in the lessons learned as opposed to a deep dive into what should be and remain confidential information.
    - Tjaart said we've given feedback, not supported by NEMOC.

ACTION – Secretariat will send the human factors questionnaire to members with the meeting minutes and Darren will pass on feedback to Callan Masters and Luke Robinson's team that the questionnaire is not supported by NEMOC.

- Members endorsed the following 2024 NEMOC meeting dates:
    - 10am-1pm AEDT Friday 15 March 2024 (F2F – Location TBD)
    - 1pm-4pm AEST Thursday 2 May 2024 (Virtual) *Joint EJPC-NEMOC workshop 10am-12pm AEST (Virtual)*
    - 9am-12pm AEST Wednesday 11 September 2024 (F2F – Sydney) *Joint EJPC-NEMOC workshop 12.30pm-3pm AEST (F2F – Sydney)*
    - 10am-1pm AEDT Thursday 12 December 2024 (Virtual)
- Tjaart made the comment that the WGs are getting a bit more direction and giving us the answers which is what we want after pointing them in the right direction. Jennifer and Christiaan both asked to see the TNSP and generator representation on the WGs. Christiaan thought it would be worthwhile to consider expanding the membership of the PSMRG to include generator representatives as the PSMRG's material modelling impacts and issues are for generators. Tjaart said that is a good idea and he will pass onto members who is represented on the WGs.

ACTION – Tjaart to pass onto members who is represented on the WGs and ask PSMRG to include generator representation.

8 MEETING CLOSE

- The meeting closed at 12.30pm.

MEETING / WORKSHOP	DATE
NEMOC MEETING No.35	10am – 1pm AEDT Friday 15 March 2024 (F2F – Location TBD)