MEETING OUTCOMES

MEETING:	WEM Reform PSO Working Group – Meeting #2
DATE:	Friday 16 November 2018
TIME:	9:00 AM
LOCATION:	AEMO Offices, L45, 152-158 St George's Terrace, Perth

ATTENDEES:

Aditi Varma, PUO [AV]
Anlee Khuu, Jackson MacDonald [AK]
Clayton James, AEMO (Chair) [CJ]
Daniel Kurz, BlueWaters [DK]
Dean Frost, Western Power [DF]
Douglas Thompson, Western Power [DT]
Greg Ruthven, AEMO [GR]
Laura Koziol, RCP [LK]
Leon Kwek, AEMO [LKw]
Marc Hettler, Perth Energy [MH]
Matthew Fairclough, AEMO [MF]
Natalia Kostecki, AEMO [NK]
Oscar Carlberg, Synergy [OC]
Patrick Peake, Perth Energy [PP]
Paul Hynch, PUO [PH]
Shane Cremin, SSC Power [SC]
Stephen Eliot, RCP [SE]
Steve Gould, Eureka Electricity [SG]
Tessa Pittendrigh, AEMO [TP]
Wendy Ng, ERM Power [WN]

Review Minutes and Actions

No amendments to the previous minutes were recorded, and both actions raised at the last meeting (below) were completed, with no actions to carry forward.

Agenda Item	Action	Responsible
Meeting 1b – Item 2	Updated FOS paper to be circulated with abovementioned corrections	AEMO
Meeting 1b – Item 3	Recommendation 15 (Autonomous Islands) – Western Power to consider proposals and provide advice by 30 October	Western Power

FOS Update - Autonomous Islands

CJ presented the re-worked definitions for autonomous islands, which had been agreed to in Meeting 1b. No further changes were suggested.

Action: Update FOS discussion paper with revised definitions, and request publication on the RCP website, under PSO Working Group**.**

Introduction to Constraints

- Leon Kwek delivered an introduction to the Constraints project within WEM Reform (slide pack circulated to members prior to the session).
- It was questioned whether AEMO would be applying a safety margin within on top in delivering the constraint equation, following limit advice from Western Power. CJ advised AEMO due diligence would determine which framework to apply, and where margins are specified, determine what's reasonable, including how do they get reviewed. Having a margin may risk some efficiency trade off.

- It was noted the use of constraints, while complex with the number of formulas and variety of categories in the library, provides the ability to be more flexible and dynamic.
- LKw to circulate more detail on the dispatch engine, with focus on constraint formulation conventions eg. LHS/RHS .
- Members were requested to send any constraint questions through to the Power System Operations Working Group email (WARPSO@aemo.com.au) as they arise.

Actions: 1) Members to send any questions to PSO mailbox.
2) Circulate additional Constraints information to members

Operating States

A discussion Paper on Operating States was circulated to members prior to the meeting. CJ presented the key recommendations, noting it's an area of the rules that has needed review for some time.

A key issue for Operating States is that there are no real timeframes associated with them, and there will always be times that occur on a power system that require action. This work allows definition of an allocation of allowable time to react to a situation and return the system to where it needs to be.

Design Outcomes

There was general agreement to the proposed outcomes in the discussion paper. CJ advised awareness that there could be occasions where flow on implications are present.

With regards to allocating powers to AEMO to act, SE queried the wording 'not removed or diminished' and whether it would be reasonable to set the design outcome that existing AEMO powers are appropriate. NK suggested rewording to "ensure the system operator has reasonable powers as necessary to manage the reliability and security of the power system".

Action: Update design outcome wording for AEMO powers.

Recommendations

Recommendation 1 - Satisfactory and Secure

- Satisfactory Operating State - when everything is good
- Secure Operating State - when satisfactory and will remain so for the next contingency that occurs. The concept of 'technical envelope' was discussed, to illustrate technical requirements and variation between satisfactory and secure operating state.
- Stable/Stability is not currently defined in the WEM. Propose to replace 'normal' and 'high risk' with 'secure' and 'satisfactory' (refer slide 10).
- SG raised concern about replacing the wording "high risk" with satisfactory etc. High risk is readily understood, perhaps more intuitive than secure, stable, satisfactory. CJ noted that currently the WEM Operating states are very closely linked to dispatch advisory mechanisms, making it difficult to manage. Looking to decouple the connection and advise the market how it will operate in future state. In which case, appropriate wording can be used for identifying the meaning and implications of situations arising from the determination of operating states.
- Members noted the option to consider alternate terminology (risk/satisfactory) when reviewing the advisory framework.

- It was noted this recommendation is doing more than changing terminology, it's fundamentally changing the framework to allow for a layered approach to best manage operating states.

Recommendation 2 - Credible Contingencies

- It was noted that the definition of credible contingencies needs to allow for things that happen, eg. loss of intermittent loads, large swings in generation (e.g. embedded generation taking outside of limits, large movements in non-scheduled generation) and assess their impacts. Lots of things aren't necessarily registered but also have an impact on power system security. Also noting that it's important not to be too restrictive where a definition would prevent AEMO from acting to ensure the power system can be operated securely.

Recommendation 3 - Non-credible contingency event

- It was noted this classification should include the ability to re-classify as credible temporarily, have transparency and provide for review.
- The addition of non-credible contingency allows anything not on the credible list to be defined as non-credible, for example multiple transmission lines on the same tower going down imminently.

Recommendation 4 – Credible Contingency Reclassification

- Credible Contingency Reclassification provides the ability to re-classify a non-credible event as credible, and to document the process, a mechanism for AEMO to advise the market what has occurred, and the action being taken.
- WN asked whether under the current WEM Rules, a change of operating states empowers AEMO to take different actions; and how does that work in the proposed framework? CJ advised the framework needs to allow for this, and for being able to act in extreme events (see slide 15).
- SG suggested these alternatives to the following terminology:
    - Instead of credible, maybe "normal" or "likely"
    - Instead of non-credible, maybe "extreme"
    - CJ encouraged members to email alternative wording suggestions
- PP asked whether there would be a list of Non-Credible Contingencies. MF advised that there could be, but this would not be exhaustive.
- It was asked whether there can be a locational credible contingency. CJ advised, yes, for example where two transmission lines on the same tower are likely to fail at the same time in a particular part of the SWIS.

Recommendation 5 - Power System Security Principles

- Members discussed the framework's general principles and the difference between the power system state and publication of information. NK noted that publication needs thresholds. CJ advised that the proposed framework would increase the amount of information available to Participants and that pre-dispatch would provide information on contingencies and limits binding. PP noted that AEMO publishing event outcomes would be useful.
- Members discussed the proposed creation of definitions for:
    - Inertia
    - Inertia Requirements
    - Fault Level
    - System Strength Requirements
- CJ queries whether the definitions reasonable?

- DF noted there is both risk and reward present, for example, lack of inertia - what happens if we lose frequency and control?
- WN query whether the new definitions would replace the current emergency operating state? CJ confirmed that they wouldn't but that some changes were recommended in that area (discussed later in the presentation).
- LK – new definitions to be in the Market Rules or in the PSOP? Intention is to have core definitions in the Market Rules, however for the PSOP's to allow for more engineering related terms to be expanded to allow for future technology changes and changes in the way that the power system operates.

- CJ noted inertia requirements may come out of the Ancillary Services technical review and will be brought to the PSOWG for further discussions.
- PP requested information relating to security principles published on AEMO and ERA sites. Noted.

Recommendation 6 - Powers to Manage Power System Security

- Members discussed and agreed the need to ensure existing powers are maintained to manage Power System Security with the move away from normal and high risk operating states.
- AV asked how a 30-min return to secure operating state would work with 5-min dispatch? CJ advised there is recognition that human actions may be required for example:
  - contingency re-classification;
  - instructions to network operator;
  - recall/cancellation of outages.
- It was noted that conditions may exist where (generator) will advise market they are entering a period of elevated risk. Nothing to happen directly, but heightened state of risk is present that requires attention.
- Further examination of how overload capacity will play out in the market required and needs defining.

Recommendation 7 - Powers to Manage Emergencies

- Members agreed the approach to retain the overarching structure of the emergency operating state with clarified criteria, wording inconsistencies and defining greater detail in the PSO Procedure.

Recommendation 8 - Emergency Operating State

- Members discussed the recommendation for powers to manage power system security are maintained (and not diminished) during an emergency. Proposal to retain the last three dot points of the current Emergency Operating States as the first three are now captured in recommendation six.
- CJ noted further work around Ancillary Services and the market implications is required.
- Powers to manage emergencies
- The following additional powers in emergency operating state were raised as being considered for this area of the framework:
  - Consideration of how ancillary services will be covered from a market perspective
  - How will things like utilisation of overload capacity and outage recall be managed within the market if the event occurs
  - Currently a lot of scope in the WEM Rules to direct facility requirements but not clear on what obligations participants have
  - SG questioned the distinction between Participant and Rule Participant in the current WEM Rules, and whether the first two potential powers could be

merged? E.g. could directing to provide Ancillary Services also be potentially considered directing the participant to operate in a certain way.

- The question was raised about how emergencies will be managed when outside of AEMO jurisdiction for example:
  - EG. Police take over and operations are being directed externally
  - Triggers a constraint on how it's operated, could be an extended outage.

  CJ noted this could be treated as another type of constraint to be managed within the Operating States.

Recommendation 9 - Reliable Operating State

- There was general agreement that the 'Reliable Operating Standard' be created. Discussion will be picked up at a subsequent meeting as the matter is quite complex and time didn't permit.

Recommendation 10 - Power System Security definition

- Members agreed to the change in wording of the existing definition (refer slide 21)

Recommendation 11 - Equipment Limits

- Members discussed the proposed change to modify the definition of Equipment Limit to be less restrictive and not limited to Standing Data, which restricts dynamic and time-based values.
- SG challenged the use of seasonal limits, eg. for a cold day, what temperatures would apply?
- PP queried whether it is a long-term intention that more than just standing data is applied. CJ noted that the intent of the revised definition was to not limit to just standing data, but to allow more dynamic data to be provided
- PP queried whether in the future all standing data would be respected during dispatch, e.g. minimum loads. CJ commented that in some cases this may create restrictions on participants being able to place bids to have their facilities dispatched outside of what standing data shows (e.g. in situations where a higher maximum output is available). PP noted that a move to 5-minute bidding would significantly improve the situation currently for participants.
- It was noted that binding limits are a worthy of greater discussion, including how much value standing data provides. The trade-off between restricting dispatch to standing data and allowing dispatch outside of standing data makes sense in some cases and not others for example during commissioning testing.

General Discussion

Technical Envelope

- CJ presented an overview of the Technical Envelope, and advised it is an area to be considered under a separate discussion paper.

Dispatch Advisories

- Members noted the proposal to have Dispatch Advisory Mechanism separate to the Dispatch Instructions, noting it will have to be changed anyway, as currently references high risk etc

Dispatch Criteria

- Members noted that changes to the Operating State framework will also require elements of the Dispatch Criteria to be revised to ensure they align.

Other thoughts?

- MH queried potential compensation for cancellation of outages. CJ noted that it exists today and is to be reviewed in the Outages work.
- MH queried the timing for rolling out new operating states. CJ advised ideally as soon as possible, AEMO and PUO are working together to determine what work will be delivered in Tranche 1 and 2.
- OC enquired if Operating States go in ahead of full reforms (i.e. in Tranche 1), will there be implications for ancillary services? CJ advised it can be incorporated within the current AS framework.
- PP commended AEMO on the quality of the discussion papers prepared to date noting they have been informative and helpful.

Reminder to please send any questions or concerns to the PSO WG inbox.

Actions

Agenda Item	Action	Responsible
3	Circulate additional Constraints information to members	Leon Kwek
4	Update design outcome wording for AEMO powers	Clayton James

The Chair closed the meeting at 12:00pm.

Appendix – additional out of session comments provided by Noel Schubert

- Comment on Introduction to Constraints slides – question whether the Network Operator should have sole discretion, and identifying the need for transparency, checks and balances.
- Autonomous Islands slides – clarification provided on where Embedded Microgrids applies, i.e. where the network is owned and operated by a Network Operator (even though the Network Operator may contract some of the operation functions to others).
- Operating States paper:
    - Recommendation 2 – include "Intermittent Generation *output*" in the definition to add clarity
    - Reliable Operating state – clarification that the proposed definition seeks to avoid the system being declared "unreliable" for normal dispatch of demand side resources, e.g. intermittent loads or demand side management programs
    - Discussion on demand side definitions used in previous instruments which may be useful for the drafting:
        - Interruptible Load – having the ability to be interrupted without notification
        - Curtailable Load – having the ability be curtailed via direction, with appropriate timeframes