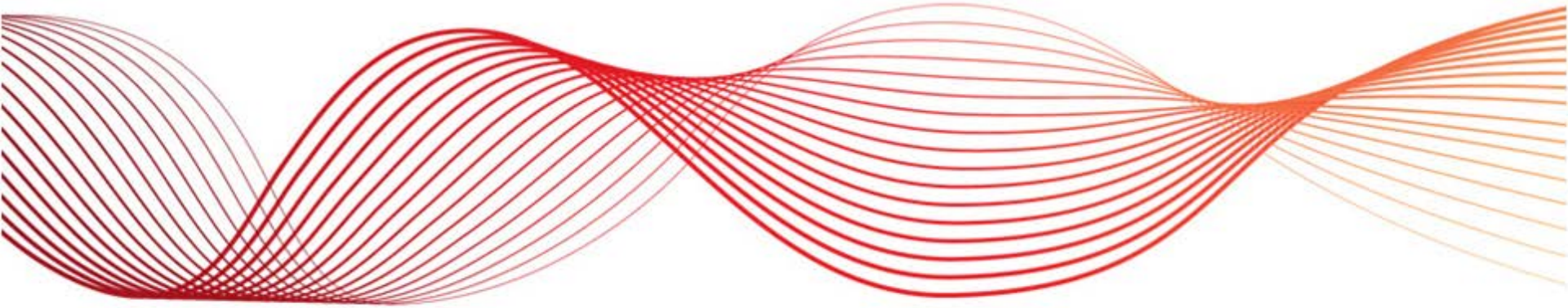
OPERATIONAL SYSTEMS OVERVIEW



OPERATIONAL SYSTEMS OVERVIEW – GRID SYSTEMS (SCADA)

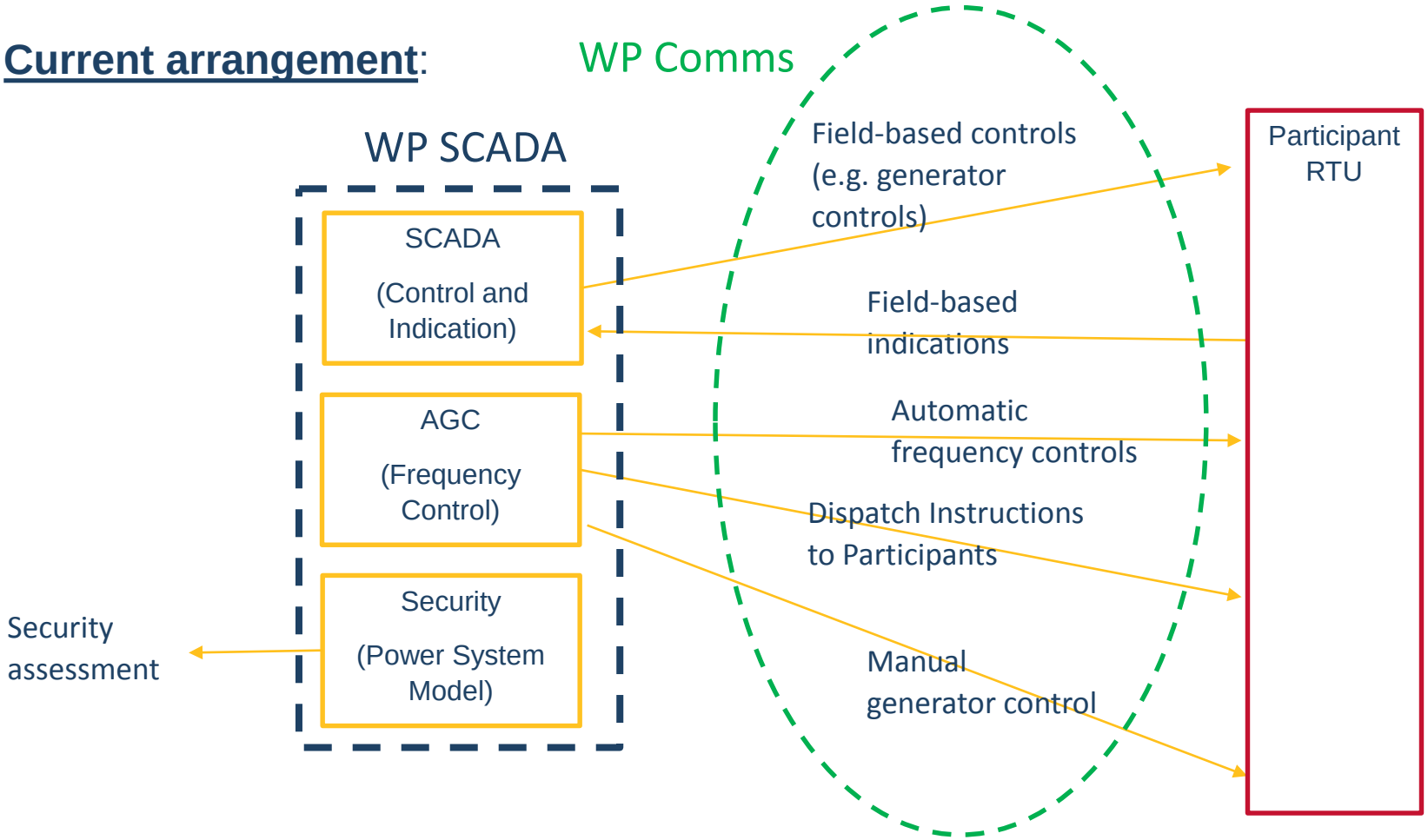
- AEMO uses an Energy Management System with functionality similar to that used by Western Power (and other TNSP's). It is a GE system called e-Terra.
- The e-terra provides the following key functionality
  - SCADA telemetry and controls
  - AGC for frequency control
  - Network models for state estimation, contingency analysis, fault level analysis and voltage stability analysis
  - Dispatch instruction implementation
  - Constraint automation in dispatch timeframe
  - Data for 5-minute dispatch forecasts
  - Historical data retention for compliance monitoring (and settlement where SCADA data is used instead of metered data)

OPERATIONAL SYSTEMS OVERVIEW – GRID SYSTEMS (SCADA)

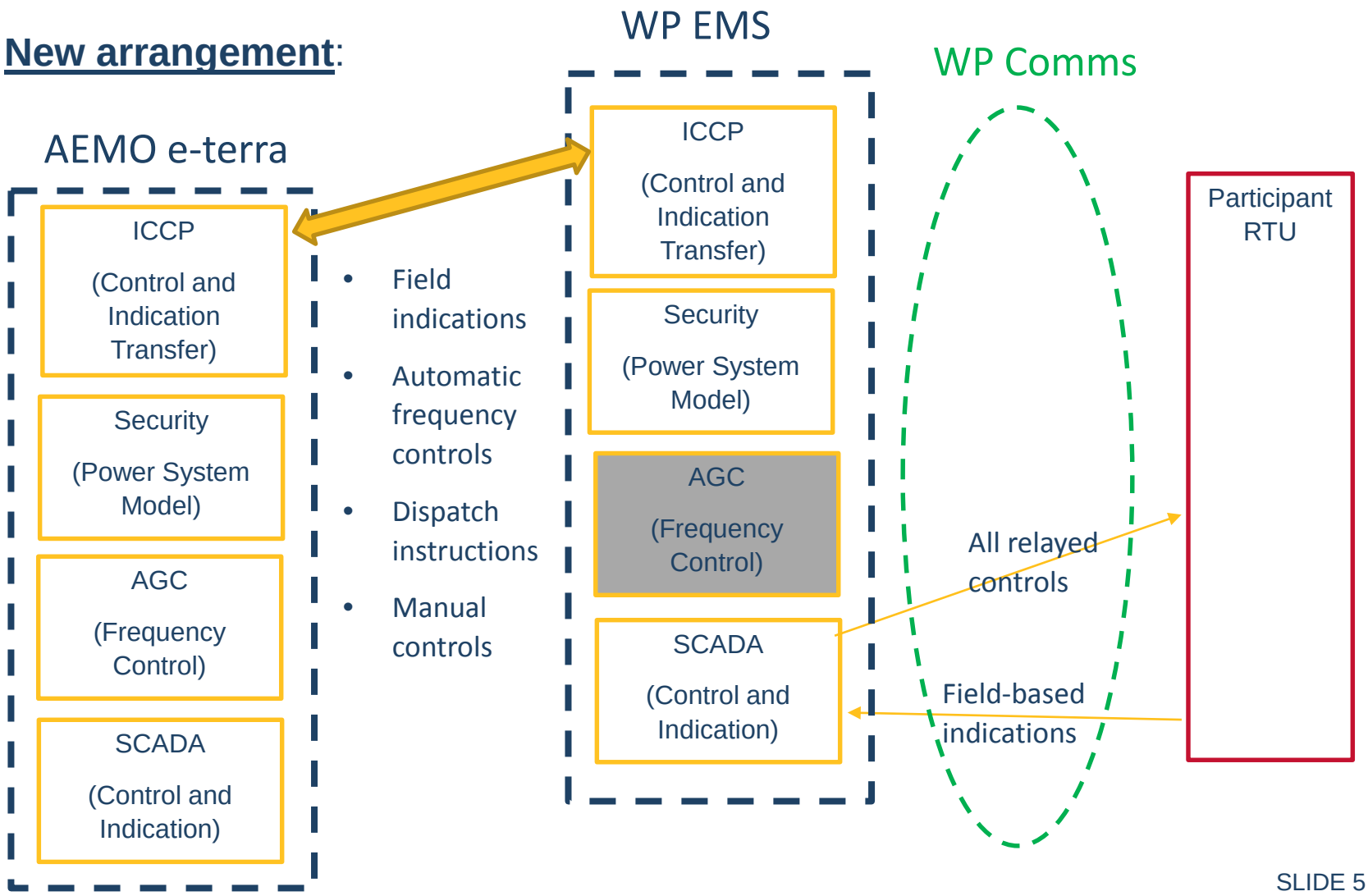
- The existing RTU connections to the Western Power SCADA systems will remain in place, and a new link between the Western Power control system and the AEMO e-terra will be established (ICCP link).
- This will allow for dispatch instructions to be re-directed from the e-terra system, out through the Western Power SCADA and to participant facilities without having to re-commission RTUs and communications links to AEMO.
- Ownership and management of the RTUs and field connections will remain the responsibility of Western Power. Ownership of the ICCP link will be AEMO's.
- AEMO and Western Power will create a shared data library to map and manage all the necessary SCADA points between systems.

OPERATIONAL SYSTEMS OVERVIEW – GRID SYSTEMS (SCADA)

Current arrangement:



OPERATIONAL SYSTEMS OVERVIEW – GRID SYSTEMS (SCADA)



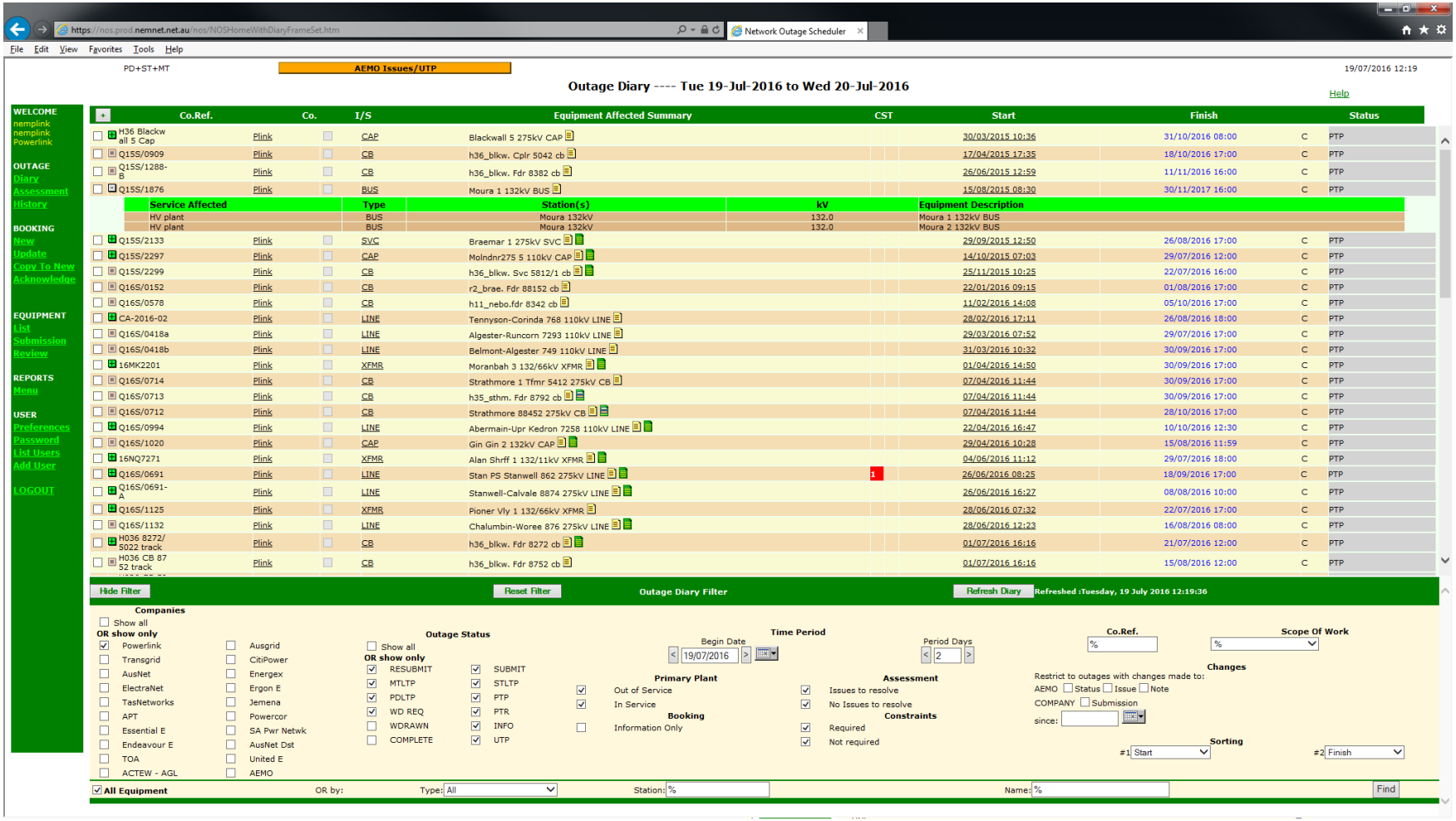
OPERATIONAL SYSTEMS OVERVIEW – OUTAGE SYSTEMS

Network Outages

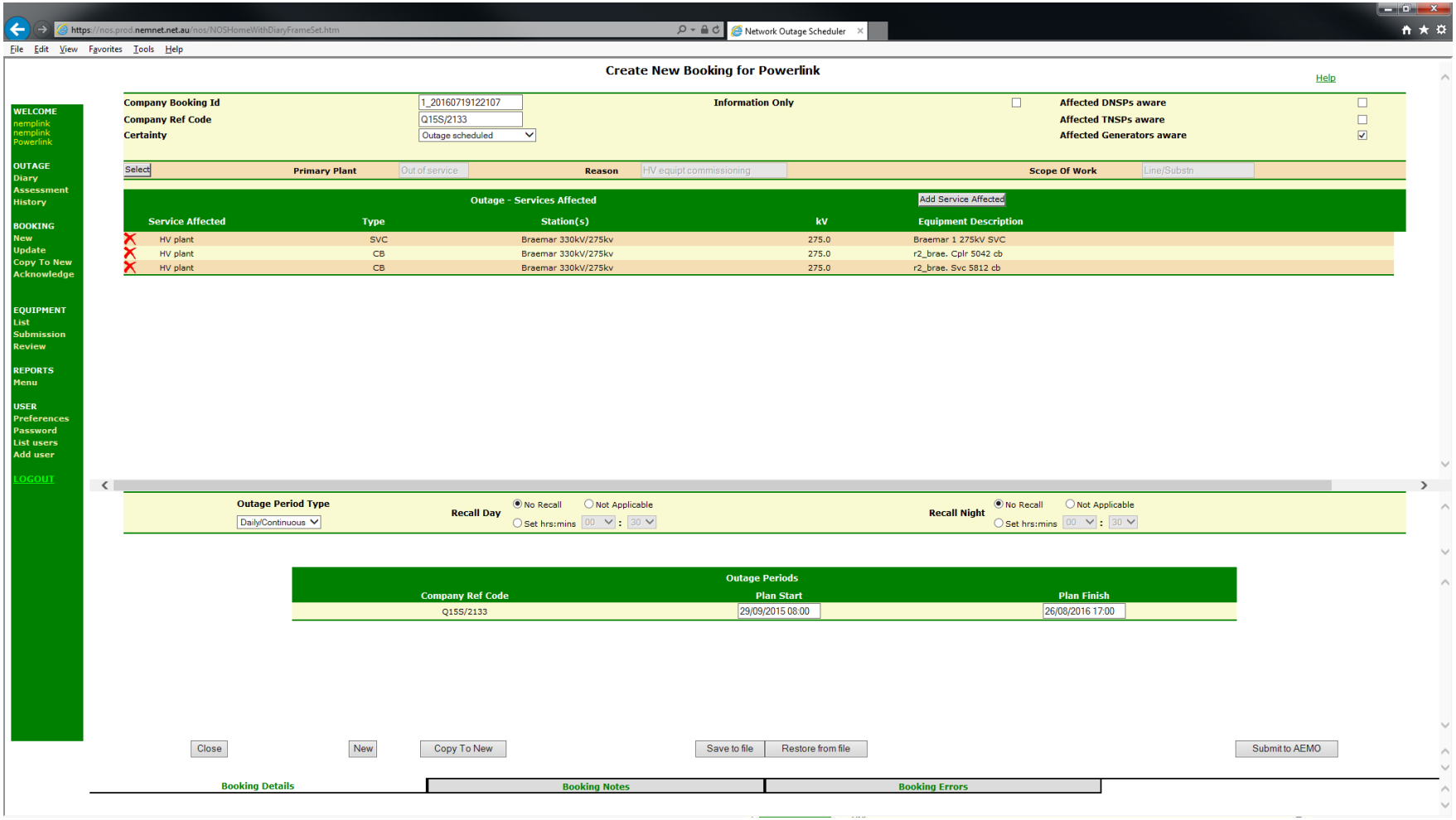
- Network Operators will be able to submit network outage requests through the Network Outage Scheduler (NOS).
- Access is provided through MarketNet, either via a web portal, or via a B2B mechanism.

The network outage assessment rules have not yet been finalised by the PUO, AEMO's current understanding is that there is likely to remain a similar submit/approve approach to the existing WEM arrangement, although the terminology may change to align more with NEM concepts.

OPERATIONAL SYSTEMS OVERVIEW – OUTAGE SYSTEMS



OPERATIONAL SYSTEMS OVERVIEW – OUTAGE SYSTEMS



OPERATIONAL SYSTEMS OVERVIEW – OUTAGE SYSTEMS

Generator Outages

The generator outage principles and rules have not yet been finalised by the PUO, however current policy positions are that there will remain a requirement for generator participants to lodge outage requests in the WEM and for AEMO to approve or reject those requests.

- AEMO is currently considering options for which systems would best suit generator outage processing, options include
  - Modifying the NOS to incorporate generator outage requests
  - Modifying the bidding portal to allow for outage requests
- The solution will need to allow for participants to record outage data at the appropriate temperature (based on Reserve Capacity rule requirements)
- The solution will need to allow for Forced Outages to be lodged
- The solution *may* involve participants entering “available capacity” figures, as opposed to “outaged MW” figures as is currently the case

OPERATIONAL SYSTEMS OVERVIEW – OTHER SYSTEMS

- Forecast systems (to be discussed later in this presentation)
- PASA systems (ST and MT)
  - Reports to be published via MarketNet to participants, as well as on the public AEMO website (forecast processes to be discussed later in this presentation)
- Pre-Dispatch data
  - Reports to be published via MarketNet to participants every 30 minutes
- Demand Side Management dispatch
  - *The rules around DSM dispatch have not yet been finalised by the PUO, however indications so far are that a Non-Balancing Dispatch Merit Order will still be used and so AEMO will need to build the appropriate mechanisms to display this to the operator and allow them to dispatch programs in the necessary order.*
- Other control room user interfaces to support dispatch, reporting and compliance monitoring

OPERATIONAL SYSTEMS OVERVIEW

- May we please ask for any feedback on the items presented above:
  - Information clarity
  - Content
- Any key items that you would like us to focus on for additional information?