WEM RULES

IMS INTERFACE MARKET PROCEDURE – NETWORK OPERATORS AND AEMO

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~~VERSION RELEASE HISTORY~~

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Version	Effective Date	Summary of Changes
1.0	13~~/10/~~ October 2017	New IMS Interface Market Procedure (as per Procedure Change Proposal AEPC_2017_07), including references to ICCP, communications standards and voice communications with the Network Operator.
2.0	~~15/06/2018~~1 July 2019	Revision to remove sections to PSOP: Communications and Control and reformatting, as detailed in Procedure Change Proposal AEPC_2018_05.

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1. PROCEDURE OVERVIEW

1.1. Relationship with the WEM Rules

1.1.1. This IMS Interface Market Procedure – Network Operators and AEMO (**Procedure**) is made in accordance with clauses 2.36A.1 and 2.36A.5 of the Wholesale Electricity Market Rules (**WEM Rules**).

1.1.2. References to particular WEM Rules within this Procedure in bold and square brackets **[Clause XX]** are ~~current as of 27 March 2018. These references are~~ included for convenience only~~,~~ and are not part of this Procedure.

1.1.3. References to particular Technical Rules within this Procedure in bold and curly braces **{Clause XX}** are current as of 1 December 2016. These references are included for convenience only~~,~~ and are not part of this Procedure.

1.2. Interpretation

1.2.1. In this Procedure:

(a) terms that are capitalised, but not defined in this Procedure, have the meaning given in the WEM Rules;

(b) to the extent that this Procedure is inconsistent with the WEM Rules, the WEM Rules prevail to the extent of the inconsistency;

(c) a reference to the WEM Rules or Market Procedures includes any associated forms required or contemplated by the WEM Rules or Market Procedures;

(d) unless the context requires otherwise, references to AEMO include AEMO in its System Management capacity; and

(e) words expressed in the singular include the plural ~~or~~and vice versa.

1.2.2. In addition, the following defined terms have the meaning given in ~~Table 1~~Table 1.

Table 1 Defined ~~terms~~Terms

Term	Definition
Energy Management System (EMS)	A system used to monitor and control elements of the SWIS in real time.
Geographical Information System (GIS)	A system used by AEMO to display geographical data about physical assets (such as network and generator assets).
Information Management System (IMS)	~~System~~A system for AEMO and the Network Operator to provide each other with information.
Inter Control-Centre Communications Protocol (ICCP)	A communications protocol used to send and receive SCADA messages between different EMS installations (typically located within different organisations).
~~Saturable Reactor (SR)~~	~~A device used to manage reactive power on the power system.~~

Term	Definition
~~Static VAR Controller (SVC)~~	~~A device used to manage reactive power on the power system.~~
~~State Estimator~~Model Upload Website	~~A function of an EMS that uses telemetered SCADA data as its input to produce (in real-time operational timeframes) a consistent, error-minimised estimate of the power system state to provide substitutes for telemetered data that are unavailable or erroneous. The substitutes for telemetered data are primarily used for contingency analysis, and stored for further operational analysis.~~ AEMO's portal to upload large files located on AEMO's website.~~The substitutes for telemetered data may also be used to provide indications of operational quantities to power system controllers.~~
~~GIS~~	~~A Geographical Information System used by AEMO to display geographical data about physical assets (such as network and generator assets).~~
Overload Rating~~Transmission Circuit Limit~~	~~A limit as per the WEM Rules~~ **~~[Clause~~**Temporary ratings provided to AEMO under clause **2.28.3A(a)(~~iii~~)** ~~[~~v) of the WEM Rules that ~~is applied to~~ are higher than the ~~operation of a~~ Transmission Circuit Limit to which the transmission circuit ~~in the SWIS caused by~~can be loaded for a maximum allowable overload period and provided to AEMO via the ~~load capability of the lowest rated component of the transmission circuit.~~Network Operator's EMS as per the PSOP: Network Modelling Data.
Power Factor (PF)	A measure of active and reactive power.
~~Energy Management System (EMS)~~PowerFactory	~~A system~~Software used ~~to monitor and control elements~~in modelling of the ~~SWIS in real time.~~Power System.
Power System Model	Data representing components of the SWIS that can be used by the Power System Modelling and Analysis Tool to analyse how the SWIS will operate. The model data required by AEMO is in DigSILENT PowerFactory format.
~~Supervisory Control And Data Acquisition (SCADA)~~	~~Network Operator systems to acquire data from remote devices. AEMO accesses this information via the EMS, which enables AEMO to supervise and control the power system from a remote location.~~
Power System Modelling and Analysis Tool	Power system grid modelling and analysis software used by AEMO to model the SWIS and analyse ~~it to determine~~ how it will operate under various conditions. AEMO uses DigSILENT PowerFactory for this purpose.
Saturable Reactor (SR)	A device used to manage reactive power on the power system.
Security Constraint	Security constraints ~~as per~~provided to AEMO under clause **2.28.3A(a)(iv)** of the WEM Rules ~~**[Clause 2.28.3A(a)(iv)]**~~ that create Security Limits due to there being technical limits on the operation of the SWIS as a whole, or on a region of the SWIS, necessary to maintain Power System Security, including both static and dynamic limits, and including limits to allow for and to manage contingencies.
State Estimator	A function of an EMS that uses telemetered SCADA data as its input to produce (in real-time operational timeframes) a consistent, error-minimised estimate of the power system state to provide substitutes for telemetered data where it is unavailable or erroneous. The substitutes for telemetered data are primarily used for contingency analysis and stored for further operational analysis. The substitutes for telemetered data may also be used to provide indications of operational quantities to power system controllers.
Static VAR Controller (SVC)	A device used to manage reactive power on the power system.

Term	Definition
Supervisory Control and Data Acquisition (SCADA)	Network Operator systems used to acquire data from remote devices. AEMO accesses this information via the EMS, which enables AEMO to supervise and control the power system from a remote location.
Transmission Circuit Limit~~Overload Rating~~	~~Temporary ratings as per~~A limit provided to AEMO under clause 2.28.3A(a)(iii) of the WEM Rules ~~[Clause 2.28.3(a)(v)]~~ that ~~are higher than~~ is applied to ~~the Transmission Circuit Limit to which the~~ operation of a transmission circuit ~~can be loaded for a maximum allowable overload period and provided to AEMO via~~in the SWIS caused by the ~~Network Operator's EMS as per~~load capability of the ~~PSOP: Network Modelling Data.~~ lowest rated component of the transmission circuit.

1.3. Purpose and application of this Procedure

1.3.1. This Procedure describes requirements for:

(a) the arrangement by which Network Operators and AEMO must (subject to a limited exception[1]) provide each other with information under the WEM Rules; ~~and~~

(b) the communications and control system requirements necessary to enable AEMO to remotely monitor the performance of a Network~~.~~; and

(c) transitional requirements between AEMO and Western Power.

1.3.2. This Procedure applies to:

(a) AEMO in providing information ~~needed by~~to Network Operators under the WEM Rules;

(b) Network Operators in providing information ~~needed by~~to AEMO under the WEM Rules;

(c) AEMO and Network Operators in remotely monitoring the performance of Networks;

(d) all Networks forming part of the SWIS; and

(e) (where relevant) Scheduled Generators, Non-Scheduled Generators, Demand Side Programmes~~, Dispatchable Loads~~ and Interruptible Loads connected to ~~those~~the Networks specified at step 1.3.2(d) of this Procedure.

1.4. Associated documents

1.4.1. ~~The following Market Procedures (available on the Market Web-site[2])~~Table 2 indicates documents that provide background information to this Procedure~~:~~.[3]

~~**Table 1 Background Procedures**~~

Table 2 Relevant background information

Reference	Title	Location
~~N/A~~	~~PSOP: Monitoring and Reporting Protocol~~	~~AEMO Website~~

[1] An alternative arrangement under the WEM Rules **[Clause 2.36A.2]** applies in situations where this Procedure is "inadequate" to enable AEMO or a Network Operator to comply with an obligation to provide information to the other under the WEM Rules. The alternative arrangement applies until this Procedure is amended to address the inadequacy.

[2] ~~Available at: http://aemo.com.au/Electricity/Wholesale-Electricity-Market-WEM/Procedures.~~

[3] AEMO documents are available on the Market Web Site at: http://aemo.com.au/Electricity/Wholesale-Electricity-Market-WEM/Procedures.

Reference	Title	Location
SO_OP_WA_3802	Power System Operation Procedure (PSOP:): Communications and Control Systems	AEMO Website
SO_OP_WA_3803	PSOP: Dispatch	AEMO Website
SO_OP_WA_3807	PSOP: Network Modelling Data	AEMO Website
SO_OP_WA_3808	PSOP: Power System Security	AEMO Website
N/A	Technical Rules for the South West Interconnected Network	ERA Website
N/A	Any other Market Procedures (including ~~Power System Operation Procedures~~PSOPs) referred to in ~~Table 5 of~~ this Procedure	AEMO Website

2. TRANSFER OF INFORMATION

2.1. General

2.1.1. ~~There are a number of WEM Rule obligations that require provision of information between a Network Operator and AEMO, such as Outage Plans submitted by Network Operators under the WEM Rules [Clause 3.18.5B].~~ This Procedure addresses data-related information transfers[4] for which specific arrangements are not prescribed in other Market Procedures (including Power System Operation Procedures) or in the WEM Rules. ~~Table 4 identifies some of the other information transfer requirements that are prescribed in other Market Procedures (including Power System Operation Procedures).~~

2.1.2. Transitional arrangements in place until the expiry of the services agreement between AEMO and Western Power dated 24 October 2016, as amended from time to time (**Services Agreement**), are described in step 3.

~~2.1.2.~~2.1.3. Contact details for information to be provided by email or telephone are as published on the AEMO website for the relevant role, as specified in this Procedure.

2.2. Provision of Information

2.2.1. ~~Table 3~~In general, AEMO needs information to assess the impacts of events that are occurring, or that may occur, to cause the SWIS to operate outside the Technical Envelope for each SWIS Operating State.

~~2.2.1.~~2.2.2. Table 3 describes:

(a) categories of information that must be provided;

(b) the format, form and manner in which that information must be provided;

(c) the time by which such information must be provided (where the WEM Rules do not ~~provide~~specify a timeframe); and

(d) ~~the~~ for information purposes only, a sample of relevant WEM Rule references[5].

~~In general AEMO needs information for it to assess impacts of events that are occurring, or that may occur, to cause the SWIS to operate outside the Technical Envelope for each SWIS Operating State. This requires all network information on Western Power's EMS and other systems and tools to be made available to AEMO.~~

2.2.3. Where ~~Table 3~~Table 3 refers to accessing a system or a tool at all times, this reference is to be read as being subject to that system or tool being available for use (~~e.g.~~that is, not on outage).

[4] ~~This Procedure provides details of the information that must be exchanged and the communications and control systems required by Network Operators and AEMO to enable the SWIS to be operated in a secure and reliable manner. Access to Western Power's ICT systems is addressed in a Services Agreement between Western Power and AEMO. After the end of the Services Term in the Services Agreement, Western Power will no longer be obliged to provide access to the nominated ICT Services at the agreed Service Levels. However, after the end of the Services Term, Western Power will continue to provide all the required data in this Procedure to AEMO in the agreed format, form, manner and timeframe.~~

[5] ~~The WEM Rule references in Table 3 are intended for information purposes only; they are not intended to be a full and complete listing.~~

2.2.2.2.4. Where ~~Table 3~~Table 3 refers to ~~Western Power's~~the Network Operator's Power System Model, this reference is to the provision of modelling information files in PowerFactory format that can be loaded ~~within~~into AEMO's Power System Modelling and Analysis Tool, containing modelling information that ~~Western Power~~the Network Operator is able to share with AEMO.

2.2.5. The data requirements for the ICCP are specified in the PSOP: Communications and Control Systems.

Table 3 Information ~~Requirements~~[6]requirements

Category	Format, Form, Manner, Timeframe	WEM Rule reference(s)
Real-time SCADA data	~~Access to Western Power's EMS at all times~~Provided via AEMO's ICCP or in accordance with transitionary measures indicated in Table 6.	2.13.6, 2.13.7, 2.13.9A, 2.13.9B, 2.15.6A, 2.16.2, 2.16.7, 2.30B.3, 2.35.1, 2.35.2, 2.36.6, 3.2.2, 3.2.4, 3.3, 3.4, 3.5, 3.8.1, 3.21.3, 7.6, 7.6A, 7.10.4, 7.11.5, 7.13.4, 7A.3.7, 7A.3.7A, 7A.3.9, 7B.3.6, 7B.3.8, 7B.4
Transmission network and connection point modelling data	(a) Provided via AEMO's ICCP, in accordance with transitionary measures indicated in Table 6, or in the manner agreed between AEMO and the Network Operator. ~~(a) Access to Western Power's EMS at all times~~ (b) ~~Access to Western Power's~~the Network Operator's Power System Model: • ~~on~~where there is a material change, the latest model and associated files available uploaded to AEMO's ~~model upload website~~Model Upload Website no later than 5 Business Days (or as otherwise agreed by AEMO) prior to a network element being added, removed or modified. • the latest model and associated files available uploaded to AEMO's ~~model upload website~~Model Upload Website on request from AEMO within 5 Business Days (or as otherwise agreed by AEMO) prior to the network changing.	2.13.6, 2.13.7, 2.13.9A, 2.13.9B, 2.15.6A, 2.16.7, 2.27.19, 2.28.3A, 2.36.6, 3.2.2, 3.2.4, 3.3, 3.4, 3.5, 3.18.2, 7.6, 7.6A, 7.10.4, 7.11.5

~~[6] The format, form, manner and timeframe in this Procedure will be revised as AEMO's systems transition away from Western Power's systems over time.~~

Transmission network and connection point topology	(a) ~~Access~~Provided via AEMO's ICCP, in accordance with transitionary measures indicated in Table 6, or in the manner agreed between AEMO and the Network Operator. ~~(a) Unless otherwise agreed between AEMO and the Network Operator, access~~ to ~~Western Power's EMS at all times~~ (b) ~~Access to Western Power's~~the Network Operator's Power System Model: • ~~on~~where there is a material change, the latest model and associated files available uploaded to AEMO's ~~model upload website~~Model Upload Website no later than 5 Business Days (or as otherwise agreed by AEMO) prior to a network element being added, removed or modified. • the latest model and associated files available uploaded to AEMO's ~~model upload website~~Model Upload Website on request from AEMO within 5 Business Days (or as otherwise agreed by AEMO~~)~~). ~~(c) Access to Western Power's GIS systems at all times.~~ ~~(d)~~(c) Periodic electronic file transfer~~,~~ (via email or uploaded to AEMO's Model Upload Website or another method as agreed between AEMO and the Network Operator), within timeframes suitable to the end use requirements of the data, containing current transmission network geographic topology including: • Geographic coordinates of all 66kV, 132kV, 220kV and 330kV substations in the SWIS. • Geographic coordinates of all 66kV, 132kV, 220kV and 330kV transmission line structures in the SWIS. The file referred to in this paragraph must be ~~emailed~~provided to ~~System Management Operations using the contact details on AEMO's website (or sent as otherwise agreed), per~~AEMO in accordance with the following timeframes: • Full list as soon as practicable after this Procedure commences. • ~~On change~~Where there is a change to the information specified in this section, no later than 5 Business Days (or as otherwise agreed by AEMO)	2.13.6, 2.13.7, 2.13.9A, 2.13.9B, 2.15.6A, 2.16.7, 2.27.19, 2.28.3A, 2.35.2, 2.36.6, 3.2.2, 3.2.4, 3.3, 3.4, 3.5, 3.18.2, 7.6, 7.6A, 7.10.4, 7.11.5

Category	Format, Form, Manner, Timeframe	WEM Rule reference(s)
	after a network element has been added, removed or modified. • An updated file on request from AEMO within 5 Business Days (or as otherwise agreed by AEMO~~)~~).	
Historical SCADA data	~~Access to Western Power's historical SCADA data systems at all times~~Provided for a period of 7 years in accordance with clause 10.1.2 of the WEM Rules via AEMO's ICCP, in accordance with transitionary measures indicated in Table 6, or in the manner agreed between AEMO and the Network Operator.	2.13.6, 2.13.7, 2.13.9A, 2.13.9B, 2.15.6A, 2.16.2, 2.16.7, 2.30B.3, 2.36.6, 3.2.2, 3.2.4, 3.3, 3.4, 3.5, 3.8.1, 3.21.3, 4.10.1(e)(iv), 4.26.5, 4.28A.2, 6.13.1, 6.15.3, 6.17, 7.1, 7.6, 7.6A, 7.10.4, 7.11.5, 7.12.1, 7.13.1, 7.13.2, 7.13.4, 7A.3.7, 7A.3.7A, 7A.3.9, 7B.3.8, 7B.4, 10.5.1(y)
SCADA control	~~Access to Western Power's EMS at all times, noting that AEMO does not require control of Western Power equipment including equipment for voltage control.~~Real-time control provided via AEMO's ICCP	2.35.2, 2.36.6, 3.12.1, 7.6, 7.6A, 7.8.1, 7B.3.6, 7B.4
~~Equipment Limit~~Network Operator security data	~~(a) Access to Western Power's EMS at all times~~ ~~(a) Access to Western Power's limit management systems at all times~~Dynamic data provided via AEMO's ICCP, in accordance with transitionary measures indicated in Table 6, or in the manner agreed between AEMO and the Network Operator. (b) Static limit information and equations provided via email or uploaded to AEMO's Model Upload Website.	~~2.36.6,~~ 3.2.~~2, 3.3, 3.~~4~~, 3.5, 7.12.1~~
Areas of the SWIS not designed to be operated to the relevant Technical Code	Electronic list of current exclusions, emailed to ~~System Management Operations using~~ the contact details on AEMO's website (or sent ~~as~~via a method otherwise agreed by AEMO), ~~per~~in accordance with the following timeframes: • Full list as soon as practicable after this Procedure commences. • ~~On change~~Where there is a change to the information specified in this section, no later than 5 Business Days (or as otherwise agreed by AEMO) after an exemption has been added, removed or modified. • On request from AEMO within 5 Business Days (or as otherwise agreed by AEMO~~)~~).	3.2.5(e)

Category	Format, Form, Manner, Timeframe	WEM Rule reference(s)
Investigation data	~~(a) Access to Western Power's EMS at all times~~ ~~(b) Access to Western Power's historical SCADA data systems at all times~~ For matters relating to the power system: ~~(c)~~(a) Provision of protection and disturbance information on request within a reasonable timeframe. ~~(d)~~(b) Provision of ~~Western Power~~Network Operator design information on request on a case-by-case basis within a reasonable timeframe (e.g. drawings, settings, configuration data, etc~~.~~).).	2.13.6A, 2.13.8, 2.13.9C, 2.13.9D, 2.13.12, 3.8
Operational telephones	~~Either:~~ For communications solely between the Network Operator and AEMO control rooms, or communications between AEMO and Rule Participants, either: • access to ~~Western Power's~~the Network Operator's operational voice systems at all times; or • connection of ~~Western Power's~~the Network Operator's operational voice systems to AEMO's operational voice systems at all times. Access to historical telephone records for a period of 7 years in accordance with clause 10.1.2 of the WEM Rules – through either: • access to ~~Western Power's~~the Network Operator's historical telephone records system ~~at all times~~; or • provision of telephone records on request within a reasonable timeframe~~, noting that access to historical telephone records pertaining to its field or control room conversations are confidential, and are to be provided by Western Power only if required by regulatory bodies~~.	2.35, 2.36.6

Category	Format, Form, Manner, Timeframe	WEM Rule reference(s)
~~Security~~Network Operator impacts on Facility Equipment Limits	~~Access to Western Power's EMS at all times~~ Electronic list of current special protection schemes or special network operating instructions to maintain SWIS security, emailed to ~~System Management Operations~~AEMO using the contact details on AEMO's website (or sent via a method as otherwise agreed by AEMO), ~~per~~in accordance with the following timeframes: • Full list as soon as practicable after this Procedure commences. • ~~On change~~Where there is a change to the information specified in this section, no later than 5 Business Days (or as otherwise agreed by AEMO) after the list has been materially modified. • On request from AEMO, within 5 Business Days (or as otherwise agreed by AEMO~~)~~.	2.36.6, 3.2.2, 3.3, 3.4, 3.5, 7.12.1
Network Operator protection and disturbance systems	(a) On request from AEMO, the Network Operator to provide information, via email or uploaded to AEMO's Model Upload Website within reasonable timeframes, from its protection and disturbance systems to allow AEMO to view and extract design and disturbance information (as available). (b) Where specified, high speed monitoring data (e.g. fault records) files to be uploaded to AEMO periodically, or made available for AEMO to download on demand.	2.36A.5, 2.35.3, 3.8.1

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1.1.1 Table 4 provides additional details about the required level of access for each of the systems identified in Table 3.

Table 2 Additional System Details

System	Details
Western Power's EMS	For all users specified by AEMO – access to displays and tools in order to: (a) monitor the transmission network through real-time telemetry and State Estimator output including: – transmission network connectivity – transmission network equipment status – transmission network parameters (including MW, MVAr, amps, kV, PF, tap position) – status of transmission network voltage management devices (e.g. capacitors, reactors, SVCs, SRs) – associated calculated values (b) monitor and control generation plant registered in the market (c) monitor and control system frequency (d) monitor transmission network outages (e) monitor transmission fault levels (where applicable) (f) view transmission network limits (g) monitor the status of special protection schemes (h) monitor the status of the communications and secondary equipment associated with the transmission network (i) monitor the status of the EMS (j) perform and store system security studies
Western Power's historical SCADA data systems	Access to tools and interfaces that allow AEMO to retrieve historical information recorded from Western Power's EMS. This includes historical SCADA data and historical SCADA events.
Western Power's limit management systems	Access to tools and interfaces that allow AEMO to view transmission network equipment limits and perform temporary re-ratings (as available).
Western Power's protection and disturbance systems	On request from AEMO, Western Power to provide information within reasonable timeframes from its protection and disturbance systems to allow AEMO to view and extract design and disturbance information (as available). Where specified, high speed monitoring data (e.g. fault records) files to be uploaded to AEMO periodically, or made available for AEMO to download on demand.
Western Power's GIS systems	Access to tools, systems and data that represent geographical details for Western Power's network, including the location and details of structures, conductors, cables, transmission substations, power stations and distribution connected market participants (as well as details of those components). On expiry of the Services Agreement, Western Power will provide periodic GIS data transfers to AEMO as per the PSOP: Network Modelling – Network Operators and AEMO within reasonable timeframes indicated in this Procedure to ensure currency of information for which it is utilised.

~~2.2.3.~~2.2.6. ~~Table 5~~Table 4 identifies other information transfer requirements that are captured in the WEM Rules and Market Procedures (including Power System Operation Procedures).

Table 4 References to other Market Procedures and WEM Rule requirements

Information	Market Procedure(s)/Rule Requirement(s)
Loss Factors	Market Procedure – Determining Loss Factors
Network Modelling Data	Power System Operation Procedure – Network Modelling Data
Equipment Limits	(a) Power System Operation Procedure – Network Modelling Data (b) Power System Operation Procedure – Power System Security
Facility Technical Compliance Testing Information	Power System Operation Procedure – Commissioning and Testing
Security Limit Information	Power System Operation Procedure – Power System Security
Load Shedding Plans	~~In~~Made in accordance with clause 3.6 of the WEM Rules ~~**[Clause 3.6]**~~
System Restart Information	Data and information provided under procedures developed in accordance with clause 3.7.1 of the WEM Rules ~~**[Clause 3.7.1]**~~
Ancillary Service Information	Power System Operation Procedure – Ancillary Services
Network Outage Information	Power System Operation Procedure – Facility Outages
Consequential Outage Information	Power System Operation Procedure – Facility Outages
Commissioning Information	Power System Operation Procedure – Commissioning and Testing
Expected Transmission Network Capabilities	Market Procedure – Undertaking the LT PASA and Conducting a Review of the Planning Criterion
Information to Support Applications for and testing of Reserve Capacity	(a) Market Procedure – Certification of Reserve Capacity (b) In accordance with the WEM Rules **[Clause 4.25.2]**
Network Control Service Information	In accordance with clause 5.3A of the WEM Rules ~~**[Clause 5.3A]**~~
~~**Estimation of Non-Scheduled Generator Quantities**~~	~~**Power System Operation Procedure – Dispatch**~~
Voice Communications	(a) **Power System Operation Procedure – Dispatch** (b) **Power System Operation Procedure – Communications and Control Systems**

~~2.2.4.~~2.2.7. ~~Table 6~~Table 5 describes the information that is to be provided by AEMO to a Network Operator, in order to assist in fulfilling its Network Operator obligations under the WEM Rules.

~~2.2.5.~~2.2.8. ~~Where Table 6~~Table 5 refers to accessing a system or a tool at all times, this reference is to be read as being subject to that system or tool being available for use (e.g. not on outage).

~~Table~~ 5 Network Operator Information Requirements

Information	Form, Manner, Timeframe	WEM Rule reference(s)
Generator planned availability	Access to generator planned availability, classified as Public or Rule Participant Network Restricted, via AEMO's website or the same information provided via an agreed system interface ~~to SMMITS (or an equivalent system)~~ at all times	3.18.5D
Network Outage acceptance and approval information	Access to SMMITS Network Outage portal at all times	3.18, 3.19
Load forecast information	Access to load forecast information published each day, available on the AEMO website	3.16.9, 3.17.1, 7A.3.21, 10.5.3
Network Control Service ~~Settlement Information~~settlement information	Quantities required under clause 5.9.2 of the WEM Rules ~~**[Clause 5.9.2]**~~ to be provided by AEMO via email to an address specified by the Network Operator, by 5:00PM on the Invoicing Date for Non-STEM Settlement Statements for that Trading Month	5.9

3. ~~PROVISION OF DATA ON~~ TRANSITIONAL DETAILS

3.1. General

~~1.2~~ This section sets out transitional arrangements that apply to AEMO and Western Power until the expiry of ~~services agreement~~

~~2.2.6.~~3.1.1. ~~On expiry of the relevant services provided in~~ the Services Agreement ~~between AEMO and Western Power, access for AEMO to a number of Western Power's systems and tools will be removed. AEMO will require mechanisms for data transfers from Western Power's systems to enable it to determine information on the operation of the SWIS[7]. The data required by AEMO will be sourced from Western Power's systems and tools as described in Table 3 in this Procedure~~.

~~2.2.7.~~3.1.2. After the expiry of the Services Agreement, Western Power ~~and AEMO must ensure that the required systems interfaces and data communications mechanisms are operational in time for removal of~~will no longer be obliged to provide access to ~~each Service.~~the nominated ICT systems.

3.2. ~~In accordance with clauses 2.28.3B~~Information and ~~2.28.3C of the WEM Rules, AEMO may require additional data or data from other~~ICT systems required on a transitional basis

~~2.2.8.~~3.2.1. Table 6 specifies Western Power ~~systems or tools~~information and ICT systems, and the required level of AEMO access to ~~ensure~~ that information and those ICT systems for each of the ~~SWIS is operating~~categories identified in ~~a secure and reliable manner.~~Table 3, until the expiry of the Services Agreement.

~~[7] Some possible alternative mechanisms may include but are not limited to the following:~~
- ~~routine transfers of EMS and Power System Model based positive, negative, and zero sequence data;~~
- ~~routine transfers of EMS, Power System Model, and GIS based network topology information;~~
- ~~routine transfers of Power System Model and EMS based Security Constraint information;~~
- ~~routine transfers of Western Power limit management systems based Transmission Circuit Limits and Overload Ratings;~~
- ~~routine transfers of network equipment short circuit current capabilities; and~~
- ~~transfers of telemetry data in real-time timeframes via the ICCP link;~~

~~as required on occurrence of network changes. In this case AEMO would define data templates for publication and use by Western Power.~~

Table 6 Transitional ICT system details

Categories	Transitional ICT system	Details
Real-time SCADA data, Transmission network and connection point modelling data, Transmission network and connection point topology, SCADA control, Western Power Security Equipment Limit data, Investigation data, Western Power impacts on Facility Equipment Security Limits	Western Power's EMS	For all users specified by AEMO – access to displays and tools in order to: (a) monitor the transmission network through real-time telemetry and State Estimator output including: • transmission network connectivity • transmission network equipment status • transmission network parameters (including MW, MVAr, amps, kV, PF, tap position) • status of transmission network voltage management devices (e.g. capacitors, reactors, SVCs, SRs) • associated calculated values (b) monitor and control generation plant registered in the SWIS (c) monitor and control system frequency (d) monitor transmission network outages (e) monitor transmission fault levels (where applicable) (f) view transmission network limits (g) monitor the status of special protection schemes (h) monitor the status of the communications and secondary equipment associated with the transmission network (i) monitor the status of the EMS (j) perform and store system security studies
Historical SCADA data, Investigation data	Western Power's historical SCADA data systems	Access to tools and interfaces that allow AEMO to retrieve historical information recorded from Western Power's EMS. This includes historical SCADA data and historical SCADA events.
Western Power Security Equipment Limit data	Western Power's limit management systems	Access to tools and interfaces that allow AEMO to view transmission network equipment limits and perform temporary re-ratings (as available).
Transmission network and connection point topology	Western Power's GIS systems	Access to tools, systems and data that represent geographical details for Western Power's network, including the location and details of structures, conductors, cables, transmission substations, power stations and distribution connected Market Participants (as well as details of those components).
Investigation data	Western Power's DisplayStation32	Access to tools, systems and data that allow AEMO to obtain fault and investigation data.
Operational telephones	Western Power's BT Phones	Access to historical telephone records, for communications solely between the Network Operator and AEMO control rooms, or communications between AEMO and Rule Participants, for a period of seven years in accordance with clause 10.1.2 of the WEM Rules.