SERVICE LEVEL PROCEDURE:

METERING DATA PROVIDER SERVICES

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1. INTRODUCTION

1.1. Purpose and Scope

This Service Level Procedure (Procedure) is made in accordance with clause 7.16.6 of the NER.

This Procedure has effect only for the purposes set out in the NER. The NER and the *National Electricity Law* prevail over this Procedure to the extent of any inconsistency.

1.2. Definitions and Interpretation

The Retail Electricity Market Procedures – Glossary and Framework:

(a) is incorporated into and forms part of this document; and

(b) should be read with this Procedure.

1.3. Related Documents

Title	Location
Retail Market Procedures – Glossary and Framework	TBC
Metrology Procedure: Part A	http://www.aemo.com.au/Electricity/Policies-and-Procedures/Metrology-Procedures-and-Unmetered-Loads/NEM-Metrology-Procedure
Metrology Procedure: Part B	http://www.aemo.com.au/Electricity/Policies-and-Procedures/Metrology-Procedures-and-Unmetered-Loads/NEM-Metrology-Procedure
Metering Service Provider Compliance Assessment and Deregistration Procedure	http://www.aemo.com.au/Electricity/Policies-and-Procedures/Retail-and-Metering/Metering-Service-Provider-Accreditation-and-Registration-Procedure
Metering Service Provider Accreditation Procedure	http://www.aemo.com.au/Electricity/Policies-and-Procedures/Retail-and-Metering/Metering-Service-Provider-Accreditation-and-Registration-Procedure
MSATS Procedures	http://www.aemo.com.au/Electricity/Policies-and-Procedures/Market-Settlement-and-Transfer-Solutions
NMI Procedures	http://www.aemo.com.au/Electricity/Policies-and-Procedures/Retail-and-Metering/National-Metering-Identifier-Procedure
~~MDM File Format~~	

2. OBLIGATIONS

2.1. Metering Data Services

Each MDP must:

(a) provide *metering data services* in accordance with the NER, procedures under the NER and relevant Jurisdictional codes and policies;

(b) establish, maintain and operate a *metering data services database;*

(c) ensure that *metering data* and relevant CATS Standing Data is kept confidential and secure in accordance with NER obligations and only provided to persons entitled to have such access~~ in accordance with the NER~~;

(d) undertake the collection, processing and delivery of *metering data* and Meter Alarm occurrences~~, through the processes for which the MDP has been accredited and engaged~~;

(e) comply with all directions from AEMO to fulfil any obligation under this Procedure; ~~and~~

(f) co-operate in good faith with *AEMO*, all *Registered Participants,* MPs and MDPs;~~.~~ and

(g) ~~I~~in regard to *connection points* that are affected by a RoLR Event, or where a Jurisdiction has requested AEMO to undertake End User transfers, the MDP must:

~~(h)~~(i) *assist* AEMO and *Registered Participants* with the management of transfers;

~~(i)~~(ii) process and deliver *metering data*; and

(iii) update the *metering register* and relevant CATS Standing Data.

2.2. Use of Sub-Contractors

Where an MDP engages a sub-contractor to perform any of the obligations specified within the NER or this Procedure, the MDP:

(a) must ensure that auditable processes are in place to certify that all work performed by the sub-contractor complies with the NER and this Procedure.

(b) ~~The MDP~~ remains liable for all acts and omissions of any of its sub-contractors.

(c) must have policies and procedures for assessing the sub-contractor's capability and competency where an MDP engages a sub-contractor to provide opinions and interpretations of technical information, and must provide the authorisation for the sub-contractor to provide the opinion and interpretation;

(d) must provide AEMO, upon request, with any information pertaining to the sub-contractor that AEMO reasonably considers necessary for the discharge of the MDP's responsibilities under the NER; ~~and~~

(e) must notify AEMO immediately if the MDP elects to engage or change a sub-contractor for the delivery of any part of the services for which the MDP is accredited and subject to AEMO's assessment of the notification~~:~~;

(f) ~~the MDP~~ may be required to undertake an accreditation review to approve the engagement or change of a sub-contractor; and

(g) where practicable, ~~the~~any accreditation review may take place as part of the next scheduled MP audit.

~~In the event a MDP elects to engage or change a sub-contractor for the delivery of any part of the *metering data services* the MDP must notify AEMO immediately.~~

~~Subject to AEMO's assessment of the notification:~~

~~(a) an MDP may be required to undertake an accreditation review to approve the new systems or processes;~~

~~(b) where practicable, the accreditation review will take place as part of the next scheduled MDP audit; and~~

~~(c) the scope and timing of the accreditation review will be assessed on a case-by-case basis between AEMO and the MDP.~~

2.3. Specific obligations for MDP - Category D

Each MDP - Category D must:

(a) undertake Validation, Substitution and Estimation of *metering data* in accordance with ~~the~~ Metrology Procedure: Part B;

(b) provide *metering data services;*

(c) manage the relevant CATS Standing Data for all *connection points* for the entire period for which they have responsibility in MSATS;

(d) manage the registration of *connection point* Datastreams in accordance with the timeframes specified in the MSATS Procedures;

(e) ensure registered details of the *connection point* are fully recorded in the MDP's *metering data services database*;

(f) ensure *metering* details and parameters within the *metering data services database* are correct such that the *metering data* is accurate;

(g) facilitate the timely commissioning and registration of the *metering installation*;

(h) establish and maintain a *metering register* in their *metering data services database* in support of AEMO's obligation under clause 7.12.1 of the NER and in accordance with this Procedure; and

(i) ~~only~~ de-activate Datastreams in MSATS only:

(i) where the *NMI* has been abolished and there is no continued *metering data* being recorded for the *connection point*;

(ii) where the *connection point* has moved within an *embedded network* and is not a *child connection point*;

~~(ii)~~(iii) where the supply of electricity has been *disconnected* at the service fuse; or

~~(iii)~~(iv) in accordance with section 5.

The MDP must ensure that information in the *metering register* is:

(j) registered in cooperation with the MC, the MP and, where necessary, any other MDP or MP associated with the transfer of a *connection point*;

(k) provided on request to respective persons entitled to have access to the data in accordance with clause 7.15.5(c) of the NER;

(l) communicated to other ~~respective~~ MDPs having the right of access as a result of the transfer of a *connection point*; and

(m) populated with the applicable details listed in the clause S7.1 of the NER with the exception of:

(i) S7.1.2(b)(5), (6) & (7) of the NER; and

(ii) S7.1.2(c) of the NER for *metering installation* types 4A, 5 (including VICAMI Meters), 6 and 7.

Where the *metering installation* includes the measurement of *reactive energy,* the MDP must store this *metering data* with the *metering data* in respect of *active energy* in the *metering data services database.*

The MDP must ensure that where there is a change of MDP Role for a wholesale or *generation connection point* ~~the~~ any 's~~S~~pecial s~~S~~ite' -list (as contemplated by clause 7.8.12 of the NER) is referenced. If the *connection point* TNI is included in the 'special site' list, the MDP must first seek AEMO approval to provide *metering data services* for these Sites.

2.4. Specific obligations for MDP - Category C

Each MDP - Category C must:

(a) establish and administer a *metering data* collection services system;

(b) undertake Validation in accordance with sections 8.1~~7.2~~ and ~~7.3~~8.2 of the Metrology Procedure: Part B; and

(c) provide *metering data services* which relate to the collection and transfer of *metering data* and the management of relevant CATS Standing Data for all *connection points* for the entire period for which they have responsibility in MSATS.

3. SERVICE REQUIREMENTS FOR MDPS – CATEGORY D

3.1. System Requirements

Each MDP must maintain and operate a *metering data services database* to facilitate the:

(a) collection of *metering data*;

(b) processing, calculation, Validation, Substitution and Estimation of *metering data*;

(c) delivery of *metering data* and *metering register* data to AEMO and *Registered Participants* ;

(d) assignment and version control of Roles for *connection points* and the ongoing synchronisation with MSATS;

(e) commissioning of each *metering installation* into the MDP's *metering data services database*;

(f) loading of *metering data* provided in MDFF files relating to Meter Churn; and

(g) storage and archiving of *metering data* and Validated *metering data* from each *metering installation.*

Each MDP must maintain and operate a *metering data services database* that provides a full audit trail and version control capability. This functionality must be applied to:

(h) *metering data*;

(i) relevant CATS Standing Data;

(j) assigned data quality flags;

(k) Substitution and Estimation types;

(l) Meter Alarms;

(m) *metering register* information;

(n) the delivery of *metering data* to *Registered Participants*, AEMO, ENMs and other MDPs; and

(o) the mapping of all *metering* Datastreams (including logical metering Datastreams).

Each MDP must maintain, operate and monitor a system that supports the detection of system or process errors. These exception reports must include but not be limited to:

(p) missed reads and missing intervals of *metering data* within the *metering data services database*;

(q) long term Substitutions and Estimations;

(r) *metering data* errors and data overlaps;

(s) Validation, relevant CATS Standing Data or *metering register* errors;

(t) failed batch processing, database errors and hardware failures;

(u) the capture of file syntax errors, failed and rejected *metering data* deliveries;

(v) status management of collection interfaces;

(w) status management of *B2B e-Hub* and MSATS interfaces; and

(x) status management of *metering installation malfunctions*.

3.2. Collection process requirements

~~The~~ Each MDP must use reasonable endeavours to ensure Actual Meter Readings and occurrences of Meter Alarms, are collected for all *connection points* for which they have responsibility for *metering data services* in MSATS.

~~The~~ Each MDP must operate a process that:

(a) records and logs faults and problems associated with the reading function of *meters*. The process must record and log, but is not limited to, any:

(i) access problems;

(ii) *metering installation* security problems;

(iii) *metering installation* faults;

(iv) read failures; and

(v) *metering installation* time synchronisations errors.

(b) supports the MC, the MP, or both in the rectification of any *metering installation malfunctions* or problems associated with the reading function of *meters*.~~; and~~

~~(c) provides notification of any *metering installation malfunction*, to the MC and the MP, in accordance with clause 7.3.7 of the NER, so that repairs can be affected in a timely manner.~~

On request by the FRMP, ~~the~~ an MDP must use reasonable endeavours to carry out a Special Meter Reading or~~,~~ Final Reading ~~or Estimated Reading~~ within three *business days* of the receipt of the request unless an alternative timeframe has been agreed.

3.3. Specific Collection Process Requirements for Metering Installations ~~Type~~with Remote Acquisition of Metering Data ~~1, 2, 3 and 4~~

Each MDP must be capable of initiating a remote reading where *metering data* is missing, erroneous or has failed Validation.

Each MDP must operate and maintain a process that:

(a) initiates an alternative method to collect *metering data* where *remote acquisition* becomes unavailable; and

(b) provides a ~~reading event~~ log detailing successful reading events for each *metering installation*, or alternatively an exception report of failed Meter Readings.

3.4. Specific Collection Process Requirements for Manually Read Metering Installations ~~Type 4A, 5 and 6~~

~~The~~ Each MDP must:

(a) develop and maintain a reading schedule in accordance with the Metrology Procedure: Part A;

(b) maintain reading routes with particular attention to any specific access requirements and hazard information;

(c) use reasonable endeavours to ensure that *metering data* is collected at a frequency which is at least once every three months;

(d) ensure that Scheduled Reading Date lists and programmed reading equipment is provisioned, updated and maintained;

(e) ~~subject to section 6.2,~~ use reasonable endeavours to ensure that the *metering data* is collected within two *business days* prior to or two *business days* subsequent to the Scheduled Reading Date; and

(f) ensure that all *metering data* collected and any fault reason codes associated with a reading failure are transferred to the *metering data services database* within one *business day* of the data being collected or attempted to be collected from the *metering installation*.

3.5. Metering Data Processing Requirements

Each MDP must have a process to:

(a) confirm and utilise the Roles for *connection points*;

(b) assign and store the date/time stamp of when the *metering data* was entered into the MDP's *metering data services database*;

(c) ensure that, in accordance with Metrology Procedure: Part B ~~and MDFF~~ all *metering data* is stored in the *metering data services database* with the correct:

(i) quality flag;

(ii) Substitution or Estimation type code (where applicable); and

(iii) Substitution or Estimation reason code (if applicable).

(d) check the *metering data services database* for missing *metering data* and overlaps; and

(e) notify AEMO and the *Registered Participants* for the *connection point* whenever any Substitutions or Estimations are carried out. ~~This notification is to be achieved by the allocation of the appropriate Substitution or Estimation codes to the *metering data* and delivery of that *metering data* within the MDM Data File or MDFF file.~~

Where an MC or a MP informs an MDP of a situation that may cause *metering data* to be erroneous, the MDP must identify and Substitute any erroneous *metering data*.

Where any *Registered Participant* or ENM for the *connection point*~~*FRMP*~~ disputes *metering data*, the relevant MDP must investigate, and, if necessary correct the *metering data* in accordance with the Metrology Procedure: Part B.

~~The MDP must operate in accordance section 5.~~

Where a Meter Alarm has occurred, the MDP must process the occurrence of the Meter Alarm along with the *metering data* as part of the Validation process in accordance with the Metrology Procedure: Part B.

Each MDP must use reasonable endeavours to load *metering data* in an alternative format provided by an MP where there is a communications, reading or *metering installation malfunction* that prevents the normal collection of *metering data* from a *metering installation*.

Each MDP must have a process to aggregate *interval metering data* for a *connection point* into a 30-minute interval net Datastream prior to delivery to AEMO as required by the MSATS Procedures, MDM File Format and Load Process and NMI Procedures.

3.6. Specific Metering Data Processing Requirements for Metering Installation Types 1, 2, 3 and 4

Each MDP must be able to undertake simple cumulative or subtractive processes to manage complex metering configurations. Typically the system must support:

(a) an A+B+C or A-B-C aggregation configuration;

(b) Validation capability for standard partial or *check meter connection points* which incorporate a simple comparison of single Datastream of *metering data* to a single Datastream of *check metering data* within an acceptable tolerance; and

(c) the calculation of the average of the two Validated data sets for *metering installations* where the *check metering installation* duplicates the *metering installation* and accuracy level. The average of the two Validated data sets must be delivered to *AEMO* and *Registered Participants*.

3.7. Specific Metering Data Processing Requirements for Special Sites

Subject to an MDP's level of accreditation and system capability to manage *interconnectors, transmission connection points, generation connection points* and cross boundary/border supply points between *distribution* or *Local Retailer* regions, ~~an~~ each MDP must:

(a) perform *transformer* and or line loss compensation algorithms , to compensate for losses between the *metering point* and the *connection point*;

(b) perform calculations of Datastreams for the requirements of each 'special site' (as contemplated by clause 7.8.12 of the NER);

(c) perform nodal *check metering data* Validation and Substitution;

(d) undertake SCADA data Validation and Substitution for *generation connection points*;

(e) manage logical *meters* and nested logical *metering data* calculations;

(f) handle threshold test variances to equations such as the use of 'If Then Else' statements; and

(g) perform any combination of the above.

Each MDP must ensure that any algorithm in support of a logical *NMI* is accepted by the MC, AEMO and FRMP before being used.

3.8. Specific Metering Data Processing Requirements for Metering Installation Type 7

Each MDP must store Inventory Tables, Load Tables and On/Off Tables in the *metering data services database.*

Each MDP must ensure:

(a) Inventory Tables are updated with any changes provided by the LNSP or MC;

(b) On/Off Tables are correct and compliant with details specified in the Metrology Procedure Part B; and

(c) Load Tables are correct and in agreement with details in the Load Tables for Unmetered Devices, as published by *AEMO*.

Each MDP must ensure that ~~L~~load ~~T~~lables, Inventory Tables and On/Off Tables are complete and correct.

Each MDP must ensure the Inventory Table, Load Table and On/Off Table are versioned for metering data calculations.

Each MDP must ensure that all *calculated metering data* is Validated and processed into ~~*trading intervals*~~TIs.

3.9. Specific Metering Data Estimation Requirements for Manually Read Metering Installations and Calculated Metering Data ~~Types 4A, 5, 6 and 7~~

Each MDP must have a process for the creation of *estimated metering data* for types 4A, 5, 6 and 7.

To meet *metering data* delivery requirements, this process must either:

(a) create individual blocks of *estimated metering data* on a daily basis; or

(b) create a single block of *estimated metering data*

(i) from the current reading event to a period beyond the ~~Next Scheduled Reading Date~~NSRD for types 4A, 5 and 6; or

(ii) from the current calculation event to a period beyond the next scheduled calculation event for type 7.

3.10. Delivery Performance Requirements for Metering Data

Each MDP must ensure only Validated metering *data* is delivered to AEMO, ~~n~~New MDPs and *Registered Participants.*

Subject to any agreement to the contrary as contemplated by section 8.1, each MDP must:

(a) deliver to AEMO, the New MDP when there has been a Meter Churn and *Registered Participants* all Actual Meter Readings that passed Validation within two *business days* of the Actual Meter Readings being received into the *metering data services database*;

(b) Substitute, Validate and deliver to AEMO, the New MDP when there has been a Meter Churn and *Registered Participants* the *substituted metering data* within two *business days* of the Actual Meter Readings being received into the *metering data services database* and failing Validation; and

(c) Substitute, Validate and deliver to AEMO, the New MDP when there has been a Meter Churn and *Registered Participants* the *substituted metering data* within two *business days* of the receipt of any fault reason codes associated with a reading failure or failed interrogation event, into the *metering data services database*.

Subject to any agreement to the contrary as contemplated by section 8.1, each MDP must Validate and deliver to AEMO, the New MDP when there has been a Meter Churn and *Registered Participants* all *substituted metering data* within two *business days* of the *metering data* being Substituted.

For ~~*metering installations*~~ type 4A, 5, 6 and 7 *metering installations*, subject to any agreement to the contrary as contemplated by section 8.1, the MDP must Validate and deliver to AEMO~~, the New MDP when there has been a Meter Churn~~ and *Registered Participants* all *estimated metering data* within two business days of the *metering data* being Estimated.

~~The~~ Each MDP must provide *metering data* to the relevant FRMP within two *business days* of receiving a completed notification of a change of FRMP, including *estimated metering data*, for a type 4A, 5, 6 or 7 *metering installation*.

~~The~~ Each MDP must ensure that all failed Validations are reviewed promptly such that:

(a) where the initial review of the failed Validation identifies that the Actual Meter Readings are~~is~~ valid, deliver the Actual Meter Readings to AEMO, the New MDP when there has been a Meter Churn and *Registered Participants* within two *business days* of the *metering data* being received into the *metering data services database*; and

(b) where further information is required to Validate the Actual Meter Readings, and the receipt of such information identifies that the Actual Meter Readings are~~is~~ valid, deliver the Actual Meter Readings to AEMO, the New MDP when there has been a Meter Churn and *Registered Participants* within two *business days* of the *metering data* passing Validation.

~~The~~ Each MDP must deliver *metering data* that has passed Validation to *AEMO* for the periods specified in the *timetable* for all *connection points* that the MDP is nominated in MSATS, for the specified weekly periods:

(c) to a quantity level of at least 98% complete *metering data* for all settlement weeks;

(d) to a quality level of at least 98% 'actual' or 'final', for periods specified as four monthly and six monthly revision settlement weeks only; and

(e) by 5pm on the *day* specified in the *timetable*~~*Data Delivery Calendar*~~ for the relevant settlement week.

Subject to any agreement to the contrary as contemplated by section 8.1, ~~the~~ each MDP must ensure that all *metering data* is delivered to AEMO, the New MDP when there has been a Meter Churn and *Registered Participants* for the full period of any retrospectively created Datastreams within two *business days* of that Datastream becoming active in MSATS.

Subject to any agreement to the contrary as contemplated by section 8.1, ~~the~~ each MDP must:

(f) deliver *metering data* to the New MDP when there has been a Meter Churn in accordance with this Procedure by delivering the *metering data* via a method and in the format agreed;

(g) deliver *metering data* to *Registered Participants* in accordance with this Procedure by delivering the *metering data* to the *B2B e-Hub* in the MDFF or via a method and in the format agreed; and

(h) deliver *metering data* to AEMO in accordance with this Procedure by delivering the *metering data* to the MDP's MSATS inbox in the MDM Data File.

The MDP must notify AEMO and affected *Registered Participants* immediately upon the identification of any operational delays which impact on normal expected *metering data* delivery.

3.11. Delivery of Metering Data for Prudential Purposes

AEMO may request an MDP to provide *metering data* f~~F~~or the purposes of assessing one or more *Market Participant's* ability to meet its *prudential requirements*. ~~,~~If AEMO ~~may~~ sends a request~~s~~ to an MDP by 10am the day before the *metering data* is required, ~~to provide *metering data* by 10am the *day* before the *metering data* is required,. T~~the MDP must deliver the requested *metering data* to AEMO by 8am on the *day(s)* specified, as follows:

(a) for Type 1, 2, 3 and 4 *metering installations* for the *days* nominated by AEMO:

(i) 90% complete set of Validated and accepted *interval metering data* recovered from the metering installation for *connection points* that relate to wholesale market boundary and *generating unit connection points* (these relate to *connection points* identified in MSATS as WHOLESAL, GENERATR and INTERCON); and

(ii) 80% complete set of Validated and accepted *interval metering data* recovered from the *metering installation* for all other *connection points*.

(b) for Type 4A, 5, 6 and 7 *metering installations* for the *days* nominated by AEMO, 80% complete data set of Validated *metering data* for all *connection points*, consisting of *interval metering data, accumulated metering data*~~actual~~, *substituted metering data* or *estimated metering data*.

3.12. Interface Requirements

Each MDP must establish and maintain business interfaces to:

(a) MSATS for the management of *connection point* updates, notifications, objections, reports, relevant CATS Standing Data, data requests and delivery of *metering data* to the *metering database*;

(b) the *B2B e-Hub* for the interface with *Registered Participants*, ~~other LNSPs~~, MPs and for the delivery of *metering data* to *Registered Participants* and other MDPs; and

(c) other technologies such as email, facsimile, phone and internet for the general management of information and alternative delivery of *metering data* to *Registered Participants*.

Each MDP must maintain a MarketNet connection for the purposes of communication and file transfer with MSATS.

Each MDP will be provided with an inbox and outbox directory on the MSATS file server, which must be used for the transfer of files to and from AEMO via MarketNet and manage the appropriate directories in accordance with the MSATS Procedures.

Each MDP must interface with MSATS either via the browser or a batch interface, or both, using the market aseXML file format in accordance with the related documentation and schemas.

Each MDP must manage any batch file transfers to MSATS in accordance with the MDM Procedures.

~~The~~ Each MDP must ensure:

(d) all transmitted messages comply with the requirements of the aseXML message format; and

(e) v~~V~~oice communications with AEMO, *Registered Participants*, MPs and other MDPs are to be undertaken between 9:00am and 5:00pm on business days except under exceptional circumstances.

The MDP must work with AEMO in the provision of *metering data* and CATS Standing Data files to AEMO and *Registered Participants* via alternative means in emergency situations where normal processes cannot be utilised.

4. SERVICE REQUIREMENTS FOR MDPS - CATEGORY C

4.1. System Requirements

Each MDP **-** Category C must maintain and operate a *metering data* collection services system to facilitate:

(a) the receipt of reading requests and associated information including reading routes, registers, passwords, last read data, Scheduled Reading Date, type of reading required and other information as agreed from time to time with a MDP - Category D;

(b) the management of Meter Reading schedules;

(c) the collection of *metering data* from the *metering installation* and the occurrences of any Meter Alarms as agreed with a MDP - Category D;

(d) Validation of *metering data* relevant to the collection process in accordance with section 8~~7.2 and 7.3~~ of the Metrology Procedure: Part B;

(e) the transfer of *metering data* in a format agreed with the relevant MDP - Category D;

(f) the storage and archiving of collected *metering data*;

(g) system monitoring and exception reporting; and

(h) the prompt notification of a *metering installation malfunction* to the MDP - Category D so that repairs can be affected in a timely manner.

Each MDP **-** Category C must ensure the *metering data* collection services system provides a full audit trail.

Each MDP - Category C must maintain a process for the recording and logging of faults and problems associated with the reading function of *meters*. The process must log any:

(i) access problems;

(j) *meter* security problems;

(k) *meter* faults;

(l) read failures; and

(m) other information as agreed with the MDP - Category D.

4.2. Metering Data Collection and Transfer Requirements

Each MDP **-** Category C must:

(a) use reasonable endeavours to ensure Actual Meter Readings are collected for all *connection points* for which they are responsible;

(b) use reasonable endeavours to ensure the *metering data* is collected from *metering installations* type 4A, 5 and 6 within two *business days* prior to and two *business days* subsequent to the Scheduled Reading Date;

(c) ensure that all *metering data* collected and any fault reason codes associated with a reading failure or access problems are transferred to the *metering data services database* within one *business day* of the *metering data* being collected or attempted to be collected from the *metering installation*;

(d) inform the MDP - Category D immediately upon identification of an inability to collect or transfer *metering data* in accordance with the timeframes specified above;

(e) ensure that all access issues are communicated to the MDP - Category D;

(f) ensure that the *meter* time of all type 4A and 5 *metering installations* is synchronised to *Eastern Standard Time* through the collection process within the accuracy requirements of the NER;

(g) ensure for type 4A and 5 *metering installations*, the MDP – Category D is informed, through an agreed method, where the Meter Reading process failed to synchronise the *metering installation* time with *Eastern Standard Time;* and

(h) ensure for time of use type 6 *metering installations*, the MDP – Category D is informed, through an agreed method, where the meter time is not synchronised to *Eastern Standard Time*.

~~The~~ Each MDP - Category C must process and provide details of each Meter Alarm occurrence along with the affected *metering data* to support the Validation process in accordance with the Metrology Procedure: Part B and as agreed with MDP - Category D.

5. METER CHURN DATA MANAGEMENT

5.1. Meter Churn Scenarios

Meter Churn can result in a change to the configuration of *metering data* recorded by a *metering installation*. This change in *metering data* may result in an alteration to the MDFF or MDM Data File.

Each MDP must comply with the MDFF requirements when constructing the MDFF file associated with Meter Churn events for all scenarios.

The s~~S~~ections below~~5.1.1, 5.1.2, 5.1.3 and 5.1.4~~ detail the requirements that each MDP must comply with for the management of *metering data* and the construction of the MDM Data File following a Meter Churn when a *metering installation* is changed from:

(a) a type 6 *metering installation* to a new type 6 *metering installation* (Scenario 1);

(b) a type 6 *metering installation* to a type 1, 2, 3, 4, 4A, or 5 *metering installation* (Scenario 2);

(c) a type 1, 2, 3, 4, 4A, or 5 *metering installation* to a type 6 *metering installation* (Scenario 3); or

(d) a type 1, 2, 3, 4, 4A, or 5 *metering installation* to a new type 1, 2, 3, 4, 4A, or 5 *metering installation* (Scenario 4).

Scenario 1:

The MDP must have a process to ensure that:

(a) the final Accumulation Meter Reading(s) from the removed type 6 *metering installation* is applied at the end of the *day* prior to the Meter Churn;

(b) the start reading(s) for a new type 6 *metering installation* is applied at the start of the *day* of the Meter Churn*;*

(c) *Estimated metering data* is provided for any Datastreams made active as a result of the Meter Churn; and

(d) Redundant Datastreams are made inactive in MSATS as a result of Meter Churn.

Figure 1 provides an overview of this scenario:

Figure 1 Scenario 1 – type 6 replaced with a new type 6

Scenario 2:

(a) The MDP must have a process to ensure that:

(i) the final Accumulation Meter reading(s) from the removed type 6 *metering installation* is applied at the end of the *day* prior to the Meter Churn;

(ii) the *meter data* for the new type 1, 2, 3, 4, 4A, or 5 *metering installation* commences at the start of the *day* ~~on the day~~ of the Meter Churn; and

(iii) *Estimated metering data* is provided for any Datastreams made active as a result of the Meter Churn, for a new type 4A or type 5 *metering installation*.

(b) The MDP related to the new *metering installation* must have a process to ensure that the *metering data* for the period of the Meter Churn *day* between the start of the *day* and the commissioning of the new *metering installation* is provided as zeroes with a quality flag of F.

(c) The MDP must make the Datastream inactive in MSATS for the removed *meter* with an effective start date of the Meter Churn *day*.

Figure 2 provides an overview of this scenario:

Figure 2 Scenario 2 – type 6 Metering Installation replaced with a new Interval Meter

Scenario 3:

For Jurisdictions where reversion from a type 1, 2, 3, 4, 4A, or 5 *metering installation* to a type 6 *metering installation* is permitted, the MDP must have a process to ensure that:

(a) the final reading(s) from the removed type 1, 2, 3, 4, 4A, or 5 *metering installation* ceases at the end of the *day* of the Meter Churn;

(b) the *metering data* for the period of the Meter Churn *day* between commissioning of the new *metering installation* and the end of the *day* of the Meter Churn is provided as zeroes with a quality flag of F;

(c) the start reading(s) for the new type 6 *metering installation* is applied at the start of the *day* following the *day* of the Meter Churn; and

(d) the Datastream for the removed *meter* is made inactive in MSATS with an effective start date of the day following the Meter Churn day.

Figure 3 provides an overview of this scenario:

Figure 3 Scenario 3 – Interval Meter replaced with a new type 6 Metering Installation

Scenario 4:

(a) ~~The~~ Each MDP must have a process to ensure that:

(i) the Final Reading(s) from the removed type 1, 2, 3, 4, 4A, or 5 *metering installation* is collected up to the removal of the old *metering installation* on the *day* of the Meter Churn;

(ii) the *metering data* for the new type 1, 2, 3, 4, 4A, or 5 *metering installation* commences at the start of the *day* of the Meter Churn;

(iii) the MDP*,* related to the new *metering installation,* must obtain *metering data* for the period of the Meter Churn *day* between the start of the Meter Churn *day* and the removal of the old *metering installation* from the MDP related to the old *metering installation*;

(iv) the MDP related to the new *metering installation* must combine the *metering data* from the old *metering installation* and the new *metering installation* for the day of Meter Churn*.* The MDP related to the new *metering installation* must deliver *metering data* for the whole *day* of Meter Churn;

(v) where Meter Churn results in a change to the recording of *metering data* from 15 minute to 30 minute intervals, the 15-minute intervals of *metering data* from the start of the Meter Churn *day* until the commissioning of the new *metering installation* are to be aggregated to form *interval metering data*;

(vi) where Meter Churn results in a change to the recording of *metering data* from 30 minute to 15 minute intervals, the 15-minute intervals of *metering data* from the commissioning of the new *metering installation* to the end of the Meter Churn *day* are to be aggregated to form 30-minute *interval metering data*;

(vii) *estimated metering data* is provided for any Datastreams made active as a result of the Meter Churn*,* for a new type 4A or type 5 *metering installation*;

(viii) where Meter Churn results in a Datastream being made active, the MDP related to the new *metering installation* must provide *metering data* from the start of the *day* to the commissioning of the new *metering installation* by providing zeroes with a quality flag of F;

(ix) where Meter Churn results in a Datastream being made inactive, the *MDP* related to the new *metering installation* must provide *metering data* from the commissioning of the new *metering* installation to the end of the *day* by providing zeroes with a quality flag of F; and

(x) the MDP related to the new *metering installation* must create final *substituted metering data* for the period between the existing *metering installation* being removed and the commissioning of the new *metering installation*.

(b) Where the MDP is changing as a result of the Meter Churn, each MDP must have a process to ensure that:

(i) for the removal of *metering installations* type 1, 2, 3, or 4 ~~*metering equipment*~~*,* the ~~old~~ MDP for the *connection point* immediately before the Meter Churn must provide the new MDP with the final *metering data* from the removed *metering installation* in accordance with section 6;

(ii) for the removal of type 4A or type 5 *metering installation*, the ~~old~~ MDP for the connection point immediately before the Meter Churn must provide the new MDP with the final *metering data* from the removed *metering installation* within 25 *business days* of receiving the *meter* change notification from the MP*;*

(iii) where *metering data* is not available for the whole *day* of Meter Churn, the new MDP must Substitute the *metering data* in accordance with the Metrology Procedure: Part B*,* for the *day* of Meter Churn until Actual Meter Readings become available. This ensures continuity of *metering data* for the *day* of Meter Churn; and

(iv) the MDP Role change in MSATS is effective on the *day* of Meter Churn.

(c) Where the MDP is changing as a result of the Meter Churn:

(i) the ~~old~~ MDP for the connection point immediately before the Meter Churn must provide *substituted metering data* in accordance with the Metrology Procedure: Part B with a quality flag of 'S' and a reason code of 37 (meter under churn) in the MDFF until the new MDP becomes the MDP in MSATS; and

(ii) the new MDP, when it becomes the MDP in MSATS, must provide Actual Meter Readings for the period of Substitution in paragraph (c)(i).

Figure 4 provides an overview of this scenario:

Figure 4 Scenario 4 – Interval Meter replaced with a new Interval Meter

6. SYSTEM ARCHITECTURE & ADMINISTRATION

6.1. Metering Data Archival and Recovery

~~The~~ Each MDP must have retrieval mechanisms that allow the *metering data* (both that which is available online and archived) retained in its *metering data services database* under clause 7.10.2 of the NER to be accessed**,** recovered, re-evaluated and delivered in agreed timeframes to AEMO and *Registered Participants*.

6.2. Data Backup

All *metering data* and *metering register* information must be backed-up at a minimum on a daily basis and held in a secure environment.

6.3. Disaster Recovery

~~The~~ Each MDP must ensure that a disaster recovery plan is established and in place to ensure that in the event of a system failure, its IT system**s** can be returned to normal operational service within two *business days*.

The MDP must ensure that the disaster recovery plan is:

(a) up to date with all documentation showing revisions; and

(b) witnessed and dated at least annually by the MDP as being current for the systems and processes in place.

Where ~~the~~ an MDP adopts a disaster recovery plan that has a complete 'fail-over' system approach, the disaster recovery plan must be subjected to a test annually that facilitates a full 'fail-over' to the recovery system.

Where the MDP adopts a disaster recovery plan that has a segmented system approach, the disaster recovery plan must:

(c) detail the interfaces and relationships between system segments;

(d) be established for each individual system segment;

(e) be tested annually with evidence retained to show disaster recovery for each individual system segment; and

(f) have, for each individual system segment, a procedure that clearly details the process to establish a return to full operation.

Expected evidence to support disaster recovery plan testing should include, but not be limited to:

(g) a test plan of the fail-over;

(h) results of the fail-over including timing;

(i) system logs indicating fail-over and recovery; and

(j) logs or notations evidencing resumption of MDP operations.

If a system failure occur**s**, the MDP must ensure that:

(k) its *metering data services database* is restored to operational service within two *business days*; and

(l) all processing and delivery backlogs of *metering data* to AEMO and *Registered Participants* is completed within the same two *business days* in section 6.3(k) ~~8.3.6(a)~~.

The MDP must at its earliest opportunity notify *AEMO* of any failure where the MDP has a requirement to implement its disaster recovery plan.

6.4. System Administration and Data Management

The *metering data services database* must be operated and administered by an MDP to facilitate:

(a) controlled access to systems and data using unique identification and passwords for each user;

(b) the restriction of access to the underlying database tables to nominated system administrators;

(c) the restriction of *Registered Participant* access to *metering data* and relevant CATS Standing Data provided via reports, based on the relationships defined in the *metering register* and in accordance with clause 7.15(c) of the NER; and

(d) a minimum of 95% system availability (i.e. hardware and systems downtime do not exceed a maximum of 438 hours per annum).

~~The~~ Each MDP must maintain full audit trails and version control of *metering register* information, *metering data* and relevant CATS Standing Data for a minimum of seven years so that any data output produced by the system can be re-produced from source data.

6.5. Non-public telecommunications networks

The use of a non-public *telecommunications network* for the collection of *metering data* by a**n** MDP is subject to approval by AEMO.

Each MDP must provide, to the reasonable satisfaction of AEMO, information demonstrating that the use of the non-public *telecommunications network* enables the MDP to meet the NER, *metrology procedure* and this Procedure, which must include, but not be limited to:

(a) obtaining and maintaining compliance with the relevant recognised technical standards and licensing authority requirements;

(b) obtaining and maintaining appropriate software licences to operate the non-public *telecommunications network*;

(c) the implementation and nature of security controls for the ongoing operation and management of the non-public *telecommunications network*;

(d) available bandwidth that supports the collection and management of *metering data*;

(e) disaster recovery provisions related to:

  (i) non-public *telecommunications network* redundancy; and

  (ii) time synchronisation of *metering installations* operated through the non-public *telecommunications network*.

(f) processes for the commissioning of *metering installations* and provision for commissioning failure management;

(g) installation and maintenance of the non-public *telecommunications network*, including:

  (i) compliance with relevant safety standards and work practices;

  (ii) compliance with telecommunications technical standards; and

  (iii) training and skill requirements of installation and maintenance personnel.

7. QUALITY CONTROL

7.1. Scheduled Audits

Each MDP must undertake all services in a manner that is auditable, and must support scheduled reviews of their *metering data service database*, processes, procedures and systems.

AEMO will undertake periodic certification reviews to a negative assurance level of the MDP's *metering data service database*, processes, procedures and systems to assess the MDP's compliance with the NER, Procedures under the NER and this Procedure.

All scheduled reviews will be through a centralised review process established by AEMO and will be undertaken at the MDP's cost.

Where a review is conducted under this Procedure, the MDP must, at its cost, provide all reasonable assistance including making databases, equipment and premises available for inspection, making personnel available for questioning, and providing copies of any data or information as requested.

Scheduled reviews of the MDP's system will be as follows:

(a) the first audit to be nominally within six months after accreditation;

(b) subsequent audits will be nominally six monthly; or

(c) at AEMO's discretion, at twelve month intervals based on previous satisfactory audit reviews of the MDP.

AEMO must provide the MDP a minimum of:

(d) 30 *business days'* notification prior to a scheduled review; and

(e) 15 *business days'* notification for the provision of any specific data requests as part of the audit.

7.2. Other Audits

Audits may be undertaken at any time by AEMO in accordance with the NER and may be carried out following a request from a *Registered Participant*.

Where an audit of a *metering installation* is conducted by AEMO under clause 7.9.3(e) of the NER, and *metering data* must be obtained from the MDP in support of this audit, the MDP must provide the *metering data* within two *business days* of AEMO's request.

~~The~~ Each MDP must assist AEMO with reasonable requests for the provisioning of *metering data* and relevant CATS Standing Data information relating to *connection points* that are part of the *market* audit process of AEMO, MCs, MPs and MDPs.

7.3. Corrective Action

Each MDP must take corrective action on any reported instances of non-compliance identified by AEMO or through the MDP audit process.

Where an MDP becomes aware that incorrect *metering data* has been delivered to AEMO and *Registered Participants*, the MDP must provide corrected *metering data* to all affected parties within one *business day* as required by clause 7.11.3 (e) of the NER.

AEMO may request corrective action where errors or omissions are found within the *settlements* process and such requests are to be actioned as a priority by the MDP.

Where the MDP cannot deliver the corrected *metering data* in the timeframe specified above, the MDP must advise AEMO and agree on an alternative delivery time.

7.4. Non-Compliance and De-Registration

The Service Provider Compliance Assessment and Deregistration Procedure shall be used by AEMO in any assessment of a non-conformance or breach by a**n** MDP with the NER, any procedure authorised under the NER or this Procedure.

Subject to the assessed breach level, actions that may be taken by AEMO if the MDP has failed to take corrective action include:

(a) loss of accreditation;

(b) deregistration from categories of accreditation;

(c) suspension from operation in the *NEM*;

(d) other applied limitation or level of restriction; or

(e) any combination of the above.

7.5. Review of Accreditation

AEMO may require an MDP to review its accreditation and subsequently apply for re-accreditation including~~e~~:

(a) where an MDP has been de-registered and seeks re-registration;

(b) where a MDP has been suspended from providing services under certain categories and seeks to have the suspension lifted;

(c) subsequent to changes to the NER, procedures under the NER, or Service Level Procedures. This is likely to apply in instances where changes to the NER have been made or new versions of the *metrology procedure* have been issued that require significant functional system, process or procedural changes to be made by MDPs;

(d) significant changes or upgrades to an MDP's existing systems, *telecommunications network* or a system platform change to any part of the *metering data service database*. The MDP must apply and be re-accredited prior to implementing the changes into their production environment and accepting or transmitting any market transactions, in accordance with the Metering Service Provider Accreditation Procedure;

(e) organisational mergers and acquisitions; and

(f) under circumstances relating to section 2~~5~~.2.

8. ADMINISTRATION

8.1. Bilateral Agreements

A *Registered Participant* may request an MDP to:

(a) provide *metering data* in an alternative format;

(b) deliver *metering data* by an alternative method;

(c) deliver *metering data* in an alternative timeframe;

(d) provide any other *metering data services*; or

(e) any combination of the above.

A *Registered Participant* may request an MDP to not provide or deliver any *metering data* to the *Registered Participant* as required by this Procedure.

There is no requirement for an MDP to implement system changes and processes to facilitate bilateral agreements.

Any acceptance by an MDP to deliver *metering data* to a *Registered Participant* in accordance with any agreement contemplated by section 8.1 or acceptance to not provide any *metering data* in accordance with such an agreement must not impact on *metering data* delivery to AEMO or any other *Registered Participant* for the *connection point(s)* concerned.

Any bilateral agreement established between a *Registered Participant* and an MDP must be in writing and made available to AEMO upon request for audit purposes.

8.2. Quality Systems

Each MDP must operate and retain a quality system that meets clause S7.3.3 of the NER to the satisfaction of AEMO, which is at least equal to a quality accreditation to the ISO9001 or ISO9002 standards.

8.3. Disputes

If a dispute arises between an MDP and AEMO, a *Registered Participant*, an MP or any other MDP in relation to the provision of *metering data services* or this Procedure, the process detailed clause 8.2 of the NER shall apply.