



Independent Pricing and Regulatory Tribunal  
New South Wales

# Electricity networks reporting manual – Safety management systems reporting



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## Amendment record

Issue	Date issued	Amendments made
ENRM - original	10 June 2016	First release of final Reporting Manual.
ENRM v2	September 2016	Amendments to customer installation requirements in accordance with the Electricity Supply Amendment (Advanced Meters) Act 2016. Various further amendments unrelated to safety management systems reporting.
ENRM v3	November 2016	Inclusion of Ms Catherine Jones as a Committee member.
ENRM v3	December 2016	Various amendments, unrelated to safety management systems reporting.
ENRM v4	May 2017	Addition of Ms Deborah Cope as a Committee member, replacing Ms Catherine Jones. Various further amendments unrelated to safety management systems reporting.
ENRM – Safety management systems reporting	October 2017	Separate Reporting Manuals published Inserting Chapter 1 -The purpose and status of this reporting manual. Minor wording changes to improve clarity.



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# 1 The purpose and status of this reporting manual

This Reporting Manual and other Reporting Manuals are issued by IPART. IPART will review and amend these Reporting Manuals from time to time.

Licence conditions for the licensed Electricity Network Operators (ENOs) require that the licence holder complies with any Reporting Manuals issued by the Tribunal.<sup>1</sup> Although no regulatory requirement to comply with a Reporting Manual exists for non-licensed ENOs, IPART expects that all ENOs will comply with the Reporting Manuals where applicable to their specific reporting obligations. Each document may not apply to all ENOs, and this is specified where relevant.

The reporting requirements specified in these Reporting Manuals do not replace any requirements identified in licence conditions, legislation, statutory instruments or codes that apply to ENOs. Compliance with Reporting Manuals is required in addition to, not in substitution for, compliance with other applicable obligations.

The information gathered through the reporting arrangements outlined in this document will allow IPART to:

- ▼ determine whether ENOs are consistently and effectively meeting statutory obligations,
- ▼ identify immediate risks and long term trends, and
- ▼ identify trends that signify emerging issues across the industry with a view to developing safety measures or supporting industry safety initiatives where appropriate.

A review of the reporting requirements will be conducted periodically to accommodate any changes to statutory requirements and licence conditions.

IPART has also issued Audit Guidelines to guide networks on how to maintain compliance with their obligations.

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<sup>1</sup> *Schedule listing ministerially imposed licence conditions for distribution network service providers*, licence condition 7; the *Transmission Operator's Licence under the Electricity Supply Act 1995 (NSW)*, issued by the Minister for Industry, Resources and Energy, 7 December 2015, condition 11, p 7; the *Schedule of Ministerially imposed licence conditions for the operator of a transacted distribution system* issued to the Ausgrid Operator partnership on 1 December 2016, condition 14; and the *Schedule of Ministerially imposed licence conditions for the operator of a transacted distribution system* issued to the Endeavour Energy Operator partnership on 7 June 2017, condition 14.

## 2 Safety Management Systems

IPART requires that performance reporting provides sufficient information for IPART or members of the public to assess an ENO's performance against its safety management system. The minimum reporting requirements identified in this reporting manual replace those previously published by NSW Trade and Investment (now New South Wales Department of Industry).

Each ENO is required to publish annually the results of its performance measurements against its safety management systems (see Clause 10, *Electricity Supply (Safety and Network Management) Regulation 2014* (NSW)).

Reporting requirements outlined in this document apply to all ENOs with assets in NSW, that is:

- ▼ Ausgrid
- ▼ Endeavour Energy
- ▼ Essential Energy
- ▼ TransGrid
- ▼ Sydney Trains
- ▼ Metro Trains Sydney
- ▼ Directlink
- ▼ Lord Howe Island
- ▼ ActewAGL Distribution (ACT)
- ▼ Ausnet Services (Victoria)
- ▼ PowerCor (Victoria), and
- ▼ Energy Queensland (Queensland).

### 2.1 Timing and lodgement

The annual performance report is to align with the financial year and cover the period of 1 July up to and including 30 June of the following year.

A notification is to be submitted to IPART on or before 31 August following the financial year covered by the report. The notice shall confirm that the report has been completed and a copy of the report shall be attached to the notice. Annual performance reports are to be submitted to IPART via the [energy@ipart.nsw.gov.au](mailto:energy@ipart.nsw.gov.au) email address.

Any content in the report that has not been exempt from public release is to be published on the ENOs website by 30 September.



## 2.2 Content

Annual performance reports are to contain details of compliance with the ENOs Electricity Network Safety Management System (ENSMS) as well as performance measures for the ENOs electricity network.

The summary of compliance reporting elements are:

- ▼ safety and reliability of the network
- ▼ formal safety assessment reviews and residual risks
- ▼ safety risk management actions, and
- ▼ compliance with directions from IPART.

The summary of performance measures are:

- ▼ network asset failures
- ▼ target asset failure rates
- ▼ encroachment on network assets
- ▼ unauthorised access to network assets, and
- ▼ customer safety reporting.

Full details of reporting requirements are included in the annual performance report template in Appendix A.

## 2.3 Exemptions to public release of reporting information

Where an ENO seeks to be exempt from the publication of information in accordance with this manual, an exemption request is to be submitted to IPART. This request is to itemise all reporting metrics for which an exemption is requested. The request must describe for each item, why the Tribunal should consider an exemption from publication of that information.<sup>2</sup> The request may also outline for any item, other reasons why the exemption is sought.

IPART will provide a written response to the request either agreeing or disagreeing with each item in the request and the justification for each decision.

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<sup>2</sup> Note that IPART has obligations under the *Government Information (Public Access) Act 2009* (NSW) to make certain information publicly available.





## Appendices



## A Annual performance reporting - ENSMS

This section of the report is to provide general information about the Electricity Network Operator's (ENO's) performance of their Electricity Network Safety Management System (ENSMS) implemented in accordance with the *Electricity Supply (Safety and Network Management) Regulation 2014* and Australian Standard AS 5577<sup>3</sup>.

*[This template provides the base level of information required by IPART. The ENO may add any information or commentary as they see fit to supplement this base information.]<sup>4</sup>*

### A.1 Safety and reliability of the network operator's network

#### A.1.1 Programs and activities undertaken to maintain or improve the safety and reliability of the network operator's network

*[The ENO is to use this section to provide a brief description of any programs, initiatives and activities implemented to promote the safety and reliability of the electrical network outside of a business as usual context (eg, trials of new technologies, asset management systems and maintenance procedures).*

*These descriptions are to include a reference to hazard assessments that have identified the 'at risk' elements targeted by the program or activity.*

*The descriptions are to identify whether the program is a new or ongoing program.*

*Where a program is ongoing, the description will outline any reviews undertaken to verify its effectiveness and appropriateness.]*

**Table 1 Non-compliances relating to the safety and reliability of the electricity network**

Identified non-compliances	Actions against non-compliances	Progress of actions

*[The ENO is to use this table to provide a summary of non-compliances within the ENSMS (as opposed to non-compliances or defects on the network) relating to safety and reliability of the electricity network identified through audits, reviews, safety assessments and incident investigations. Additionally, any actions identified to address the non-compliances are to be identified and the*

<sup>3</sup> AS5577 – Electricity Network Safety Management Systems.

<sup>4</sup> Bracketed sections are to provide guidance for the Network Operators. These sections are to be deleted and replaced by the Network Operator in accordance with that guidance.

progress tracked. This table will cover non-compliances identified within the year for which the report relates, any non-compliances addressed within this year and any non-compliances outstanding from previous years.]

**A.2 Advice to the public about hazards associated with electricity in relation to the network operator’s network**

**A.2.1 Programs and activities undertaken to promote the public knowledge and understanding of electrical network safety hazards**

*[The ENO is to use this section to provide a brief description of programs and activities implemented to promote the public knowledge and understanding of electrical network safety hazards.*

*These descriptions are to include a reference to hazard assessments that have identified the ‘at risk’ groups targeted by the program or activity.*

*The descriptions are to identify whether the program is a new or ongoing program.*

*Where a program is ongoing, the description will outline any reviews undertaken to verify its effectiveness and appropriateness.]*

**A.2.2 Management of bushfire risk relating to electricity lines and other assets of the network operator’s network that are capable of initiating bush fire**

**Programs and activities undertaken to maintain or improve the management of bushfire risk associated with the network operator’s network.**

*[The ENO is to use this section to provide a brief description of programs and activities implemented to promote the safe management of bushfire risk associated with the electricity network.*

*These descriptions are to include a reference to hazard assessments that have identified the ‘at risk’ groups and elements targeted by the program or activity.*

*The descriptions are to identify whether the program is a new or ongoing program.*

*Where a program is ongoing, the description will outline any reviews undertaken to verify its effectiveness and appropriateness.]*

**Table 2 Non-compliances relating to the management of bushfire risk associated with the electricity network**

Identified non-compliances	Actions against non-compliances	Progress of actions

[The ENO is to use this table to provide a summary of non-compliances within the ENSMS (as opposed to non-compliances or defects on the network) relating to the management of bushfire risk identified through audits, reviews, safety assessments and incident investigations. Additionally, any actions identified to address the non-compliances are to be identified and the progress tracked. This table will cover non-compliances identified within the year for which the report relates, any non-compliances addressed within this year and any non-compliances outstanding from previous years]

### A.2.3 Bushfire risk management report

[The ENO is to attach the bushfire risk management report of the previous bushfire season. The ENO may provide any relevant commentary relating to this report.]

## A.3 Contextual Information

### A.3.1 Deviation from standards

[Where an ENO has deviated from established internal or external standards, codes and guidelines, they are to list these deviations. Each deviation is to be accompanied by an explanation as to why safety it is at the same level or superior to what would be achieved under the standards.

*This list is to include deviations in the system as well as stand-alone site instances.]*

**Table 3 Deviations from standards**

Deviation description	Justification

*[The deviation description is to outline what the deviation was and whether it is a system or site specific deviation.]*

### A.3.2 Significant community infrastructure

For the purposes for incident reporting over the previous financial year, [ENO] considered the following to be significant community infrastructure:

▼ [list pieces of significant community infrastructure]

[ Examples of significant infrastructure are:

- ▼ Peer group A1, A2, A3 and B hospitals.
- ▼ Road tunnels on motorways that have emergency evacuation systems.
- ▼ Rail and air transport systems where travel is affected.
- ▼ Events and buildings where greater than 5000 people could be affected by an outage.
- ▼ Other community infrastructure determined by the Network Operator to be of National, State or Regional significance.

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*The network operator should consider the community they serve and the risks to that community as a result of the loss of infrastructure when determining whether a piece of infrastructure is to be voluntarily included in their list.]*

## **A.4 Formal safety assessment reviews and residual risks**

### **A.4.1 Classification of risk levels**

*[The ENO will provide the thresholds for which it classifies a risk as low, intermediate, high or extreme to align with appendix B of AS 5577.]*

### **A.4.2 Risks within the scope of the ENSMS**

*[The ENO will describe the organisations risks it has incorporated into its ENSMS.*

*The ENO will identify which of these risks are not at ALARP<sup>5</sup>. Where a risk is not at ALARP, the Network Operator will summarise the cause and identify the treatment actions to bring this risk to ALARP status.*

*Where a risk is at ALARP but maintains a residual risk of intermediate or higher, the ENO will articulate why this residual risk is tolerable.]*

### **A.4.3 Reviews of formal safety assessments**

*[The ENO will describe which formal safety assessments relating to ENSMS scoped risks have been reviewed in the year to which the report relates. This description will include details of the trigger, the findings and outcomes of the review.]*

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<sup>5</sup> As Low As Reasonably Practicable in accordance with Australian Standard AS 5577 Appendix B.



## A.5 Safety risk management actions

*[For each open safety risk management action within the ENSMS scope, at the conclusion of the reporting year, the ENO is to describe the relevant risk, the proposed risk management actions and the progress against these actions.]*

**Table 4 Risk management actions – open, completed and raised.**

Criteria	Number
Number of risk management actions within the ENSMS scope that were raised in the reporting year	
Number of open safety risk management actions within the ENSMS scope from any reporting year	
Percentage of safety risk management actions within the ENSMS scope completed by the due date within the reporting year	

## A.6 Compliance with directions

*[The following table is for ENO to report how many directions have been issued by IPART under clause 13 of the Electricity Supply (Safety and Network Management) Regulation 2014 within the reporting year, how many directions are yet to be addressed and how many outstanding directions have not been complied with by the directions deadline.]*

**Table 5 Data on directions issued by IPART**

Total number of directions issued by IPART	Total number of directions outstanding	Number of outstanding directions not complied with by the due date

## A.7 Outstanding directions not complied with

*[The ENO will provide a summary of each outstanding direction that is past its due date. The summary will include a description of the response to each direction and the reason that it is past due.]*

## A.8 Statistical Reporting

### Network asset failures

**Table 6 Network asset failures**

Asset type	Asset population or length	Target functional failure rate	Conditional failures past due in the reporting year	Functional failures			
				Unassisted		Assisted	
				No fire	Fire	No fire	Fire
Pole/tower							
Pole top structures / components <sup>a</sup>							
Conductor – transmission / sub-transmission <sup>b</sup>							
Conductor – high voltage <sup>c</sup>							
Conductor – low voltage <sup>d</sup>							
Service wire <sup>e</sup>							
Primary plant – power transformers <sup>f</sup>							
Primary plant – distribution transformers							
Primary plant – reactive plant <sup>g</sup>							
Primary plant – switchgear							
Secondary plant – protection equipment <sup>h</sup>							
Secondary plant - SCADA							
Secondary plant – substation batteries							

<sup>a</sup> Pole top structures/components are any structure that is attached to a pole to support electricity mains and apparatus.

<sup>b</sup> Transmission and sub-transmission is voltages 33kV AC nominal and above.

<sup>c</sup> High voltage is voltages 1kV AC nominal and above up to 33kV AC nominal.

<sup>d</sup> Low voltage is voltages below 1kV AC nominal.

<sup>e</sup> A service wire is the wire connecting a distribution network to a private installation.

<sup>f</sup> Primary Plant – Power Transformers are transformers where the secondary/output voltage is 5kV nominal or above.

<sup>g</sup> Reactive plant is reactors and capacitors.

<sup>h</sup> Note that proper operation of fuses does not constitute a functional or conditional failure. Mal-operation of fuses is regarded as a functional failure.

**Note:** Asset length for conductors is to be calculated by the route length.

*[The ENO may insert any commentary they see fit to explain or justify the target failure rates or any issues that may have contributed to the observed failure rates.]*

The ENO may use more detailed information when reporting statistics. These can be added under the headline metrics.

Where an ENO provides more detailed data (i.e. it is disaggregated further than required), the data should also be provided to IPART using a weighted average where:  

$$\sum_n \text{metric} = (\text{metric}_{\text{type } 1} * \text{proportion}_{\text{type } 1}) + \dots + (\text{metric}_{\text{type } n} * \text{proportion}_{\text{type } n}).]$$

## A.9 Encroachment on network assets

**Table 7 Vegetation**

Criteria	Inside bushfire prone areas	Outside bushfire prone areas
Category 1 defects		
Category 2 defects overdue		
Category 3 & 4 defects overdue		
Total vegetation encroachments as a result of third parties		

**Table 8 Ground Clearance**

Criteria	Inside bushfire prone areas	Outside bushfire prone areas
Number of OH <sup>a</sup> spans for which inspections were planned		
Number of OH spans for which inspections became overdue		
Number of OH spans for which LIDAR <sup>b</sup> inspections became overdue		
Number of defects identified <sup>c</sup>		
Number of defect rectifications that became overdue		
Total ground clearance encroachments as a result of third parties		

<sup>i</sup> Overhead.

<sup>j</sup> Light Detection and Ranging.

<sup>k</sup> A ground clearance defect is where power lines is below the minimum safe height of that power line. Where the operating context is changed and the minimum safe height is reduced below the height of the power lines.

**Table 9 Clearance to structures**

Criteria	Inside bushfire prone areas	Outside bushfire prone areas
Category 1 defects		
Category 2 defects overdue		
Category 3 & 4 defects overdue		
Total structure encroachments as a result of third parties		

[Reporting on encroachments is to consist of all defects newly identified during the reporting period.

The ENO may provide commentary as they see fit relating to encroachments on their network.

The rectification of a defect includes where a network asset ceases to encroach as a result of deviating from standards as per section 2.

Note that a structure is regarded as ‘a stationary object that is built, constructed or erected, temporarily or permanently, at the direction of a person or persons’

*Category 1 Defects: Defects that pose a direct and immediate risk to the safety of the public/staff and requiring immediate rectification.*

*Category 2 Defects: Defects that pose a risk to the safety of the public/staff and require rectification with one month.*

*Category 3 Defects: Defects that pose a predictable future risk to the safety of the public/staff and require rectification within 6 months*

*Category 4 Defects: Defects that pose a predictable future risk to the safety of the public/staff but can be rectified through planned maintenance.]*

## **A.10 Unauthorised access to the network**

*[The ENO is to report the number of times in the reporting year that there has been unauthorised access to their network. This includes unauthorised access by their workers and by other parties.*

*The ENO will also report on the number of planned security inspections to be undertaken on their network assets and the number of inspections that became overdue, as well as the number of security inspections from any year that are still overdue.]*

**Table 10 Unauthorised access to the network**

<b>Criteria</b>	<b>Network Operator</b>	<b>Accredited Service Providers</b>	<b>General Public</b>
Major substations and switching stations			
Distribution substations, regulators, switches and associated equipment			
Electricity mains outside major substations			
Communications equipment outside major substations			

## **A.11 Customer Safety Reporting**

*[The ENO is to report on activity and safety issues identified with private electrical installations connected to their network. Note that the Electricity Supply Amendment (Advanced Meters) Act 2016 includes amendments to the Electricity Supply (Safety and Network Management) Regulation 2014. As a result of these amendments, IPART is interested only in customer installation safety incidents as a result of the network operators’ electricity network or their workers.]*

**Table 11 Customer safety reporting**

Criteria	Number
Number of customer shocks from installations caused by the ENO's electricity network	

**A.12 ENO comments**

*[The ENO may include commentary in this section as they see fit.]*