



Independent Pricing and Regulatory Tribunal
New South Wales

Electricity Networks Audit Guideline – reliability audits

© Independent Pricing and Regulatory Tribunal of New South Wales 2017

This work is copyright. The *Copyright Act 1968* permits fair dealing for study, research, news reporting, criticism and review. Selected passages, tables or diagrams may be reproduced for such purposes provided acknowledgement of the source is included.

ISBN 978-1-76049-112-3

The Tribunal members for this review are:

Dr Peter J Boxall AO, Chair

Mr Ed Willett

Ms Deborah Cope

Inquiries regarding this document should be directed to a staff member:

Christine Allen (02) 9290 8412

Erin Cini (02) 9113 7778

Amendment record

Issue	Date issued	Summary of amendments made
ENRAG - original	June 2016	First release of final Audit Guideline
ENRAG v2	May 2017	<p>Addition of Ms Deborah Cope as a Committee member, replacing Ms Catherine Jones.</p> <p>Amendments to Chapter 3 and appendix A regarding audit process.</p> <p>Addition of section 3.5.5.</p> <p>Removal of section 3.7.1 from previous version.</p> <p>Amendments to chapter 7, mainly to reflect changes to Ausgrid's operating licence.</p> <p>Minor changes to Table D.1.</p> <p>Addition of Table D.2 reflect changes to Ausgrid's operating licence.</p> <p>Various further amendments unrelated to reliability and performance audits.</p>
ENRAG v3	May 2017	Various amendments unrelated to reliability and performance audits.
ENRAG – Reliability and performance - draft	August 2017	<p>Separate Audit Guidelines published for consultation.</p> <p>Minor wording changes on page 1.</p> <p>Addition of conditions 17.3, 17.4, 17.5 and 17.8 to the audit criteria in Table A.1 (Table D.1 in earlier versions)</p> <p>Addition of Table A.3 to reflect Endeavour Energy's new operating licence.</p>

Contents

1	Reliability audit for licenced electricity distribution networks	1
1.1	Objective	1
1.2	Scope	1
1.3	Specific auditor expertise	1
1.4	Audit timing	2
1.5	Criteria	2
1.6	Findings	3
	Appendices	5
A	Audit criteria for reliability audits	7

DRAFT

1 Reliability audit for licenced electricity distribution networks

These audit requirements apply to **licenced electricity distribution networks only**.

The Minister imposed additional licence conditions on electricity distribution networks relating to reliability and performance (referred to in this Chapter 7 as ‘the conditions’). The conditions were imposed pursuant to item 6(1)(b) of Schedule 2 to the *Electricity Supply Act 1995* NSW (the ES Act), and are contained in:

- ▼ the *Reliability and Performance Licence Conditions for Electricity Distributors, 1 July 2014* for Essential Energy. There are some separate standards for **Essential Energy and Endeavour Energy** contained in schedules 2, 3 and 5 of the conditions,¹ and
- ▼ the *Schedule of Ministerially imposed licence conditions for the operator of a transacted distribution system* for Ausgrid. This licence supersedes references to Ausgrid in the July 2014 document.
- ▼ the *Schedule of Ministerially imposed licence conditions for the operator of a transacted distribution system* for Endeavour Energy. This licence supersedes references to Endeavour Energy in the July 2014 document.

1.1 Objective

The objective of this audit is to assess the licence holder’s compliance with the specific licence conditions that relate to reliability and performance, over a given financial year.

1.2 Scope

This audit is to assess the licenced electricity distribution network’s compliance with licence standards relating to reliability and performance and to assess the accuracy of data and calculations used to report compliance with the standards.

The audit also covers the quarterly reliability and customer satisfaction data that was reported to IPART over the preceding financial year.

1.3 Specific auditor expertise

An approved reliability auditor must have:

- ▼ familiarity with the electricity supply industry in Australia, especially NSW
- ▼ familiarity with the IT and performance reporting systems used in the electricity supply industry to record and report information of the type that is the subject of this audit

¹ See pp 12, 13 and 15 of the *Reliability and Performance Licence Conditions for Electricity Distributors, 1 July 2014*.

- ▼ experience in verifying the integrity of data entry and data processing systems of the type used in the electricity supply industry, and
- ▼ experience in, and detailed knowledge of operational or compliance auditing of the type required on this assignment.

1.4 Audit timing

An independent audit must be conducted after the end of each financial year to audit the licence holder's performance against the performance and reliability standards.² The licence holder should nominate an auditor by 1 May each year and must provide a copy of the auditor's report by 30 September to IPART. Essential Energy must also submit a copy to the Minister.³ Table 1.1 shows the proposed timeline for the audit process.

Table 1.1 Proposed timeline for reliability audits

Deadline	Indicative date	Steps
By 1 May		Auditor nomination received by IPART for approval, if the preferred auditor has not been pre-approved on the audit panel. It is at the ENO's discretion whether it submits the proposal at this stage or waits until the auditor is approved.
By 1 June		The audit nomination and detailed audit proposal is submitted for approval if using a pre-approved auditor.
	Within working 10 days of receipt, unless more information is needed.	IPART approves auditor nomination and proposal (or requests further information, or does not approve).
By 1 July		IPART receives signed deed poll from the approved auditor and licensee. Audit can commence.
	1 September	Auditor's draft report due to IPART.
	15 September	Feedback on the draft audit report provided to auditors.
By 30 September		Final report submitted to the Minister and IPART.

1.5 Criteria

The auditor will review audit evidence to test against the audit criteria listed in Table A.1 or Table A.2 in Appendix A. Where possible, the criteria should be tested as though the audit took place during the specified financial year ending June 30 to determine whether compliance was achieved during this period.

These audits are independent audits. The evidence reviewed by the auditor should be sufficient for the auditor to form an opinion consistent with Table 4.1 in **IPART's Audit Guideline – fundamentals, process and findings**.

² Condition 18.7 of the *Reliability and Performance Licence Conditions for Electricity Distributors*, 1 July 2014.

³ Conditions 18.12 of the *Reliability and Performance Licence Conditions for Electricity Distributors*, 1 July 2014.

1.6 Findings

The audit opinion sought by IPART is 'limited assurance' that the licence holder has complied with the conditions (see *Audit Guideline – fundamentals, process and findings*).

1.6.1 Audit grades

The auditor is required to give a two-part grade for the assessment of data reliability and accuracy **in addition** to an overall accuracy grade for each licence condition. The data reliability and accuracy grades are explained and presented in Appendix B of IPART's *Audit Guideline – fundamentals, process and findings*.

DRAFT



Appendices

DRAFT



DRAFT

A Audit criteria for reliability audits

Table A.1 Reliability audit criteria – audits against compliance with the *Ministerially imposed licence conditions for distribution network service providers* (DNSP licence conditions, applicable to Essential Energy, to Ausgrid for the period up to and including 30 November 2016; and to Endeavour Energy for the period up to and including 13 June 2017)

Licence condition reference	Minimum criteria ^{a,b}	Auditor's comments	Audit Grade
Network overall reliability standards			
15.1	The licence holder has not exceeded the SAIDI ^a average standards that apply to its feeder types in a financial year (when excluded interruptions are disregarded). Review in reference to Schedule 2, Table 1.		
15.2	The licence holder has not exceeded the SAIFI ^b average standards that apply to its feeder types in a financial year (when excluded interruptions are disregarded). Review in reference to Schedule 2, Table 2.		
Individual feeder performance			
16.1	The licence holder has complied with licence conditions 16.2(a) – (g) below in circumstances where one or more of the feeders of a licence holder exceed the relevant individual feeder standards for any 12 month period ending at the end of March, June, September or December (when excluded interruptions are disregarded).		
16.2 (a)	The licence holder has investigated the causes for each feeder exceeding the individual feeder standards.		
16.2 (b)	The licence holder has completed an investigation report identifying the causes and as appropriate, any action required to improve the performance of each feeder to the individual feeder standards by the end of the quarter following the quarter in which the feeder first exceeded the individual feeder standards.		
16.2 (c)	The licence holder has completed any operational actions identified in the investigation report to improve the performance of each feeder to the individual feeder standards by the end of the third quarter following the quarter in which each feeder exceeded the individual		

Licence condition reference	Minimum criteria ^b	Auditor's comments	Audit Grade
	feeder standards.		
16.2 (d)	Where the investigation report identifies actions (other than operational actions) that are required to improve the performance of each feeder to the individual feeder standards, the licence holder has developed a project plan including implementation timetable and commenced its implementation by the end of the second quarter following the quarter in which the feeder first exceeded the individual feeder standards (except as permitted by licence condition 16.2(e).		
16.2 (e)	The licence holder has considered non-network strategies which provide reliable outcomes for customers, and adopted such strategies where found by the investigation report to be equal or more cost-effective than the lowest cost feasible network option.		
16.2 (f)	The licence holder has ensured that the implementation timetable for the network project plan or alternative non-network solutions are as short as is reasonably practicable.		
16.2. (g)	Where all reasonable steps to improve supply reliability have been taken, the licence holder has subjected the costs of further actions to rectify the non-compliance to a cost-benefit analysis. Where such analysis did not provide a positive benefit, and no further action was undertaken to improve the feeder's performance, the ongoing non-conformance with the individual feeder standards has been reported by the licence holder to the Minister.		
16.3	The investigation report included a documented rectification plan where action was found to be justified in order to improve the performance of a feeder to the individual feeder standards.		
Customer service standards			
17.1	The licence holder has paid \$80 to customers when the licence holder has exceeded the interruption duration standard at a customer's premises and the customer has made a claim to the licence holder within three months of that interruption.		
17.2	The licence holder has paid \$80 to customers when the licence holder has exceeded the interruption frequency standard at a customer's premises in a financial year and the customer has made a claim to the licence holder within three months of the end of the financial year to which the interruptions relate.		
17.3	The licence holder has determined a claim for payment under condition 17 and notified the customer of the determination in writing, within one month of receipt of a claim. For customers eligible for payment, the notice of determination must include the amount to be paid, the manner of payment and the timing of payment. Where the claim is not paid (whether in part or in full), the notice of determination includes reasons for the decision.		

Licence condition reference	Minimum criteria ^b	Auditor's comments	Audit Grade
17.4	The licence holder has taken reasonable steps to make customers aware of the availability of payments on the terms set out in condition 17. Reasonable steps include, as a minimum, publication of information on the licence holder's website and annual newspaper advertisements. On request from a customer, the licence holder has provided written information on the availability of payments on the terms set out in condition 17.		
17.5	The licence holder has made only one payment of \$80 to a customer per premises in a financial year for exceeding the interruption frequency standard.		
17.6	The licence holder has paid no more than \$320 under condition 17 to a customer per premises in the financial year.		
17.8	The licence holder has only made payments under condition 17 to customers who have been supplied electricity through a metered connection point on an electricity distributor's system.		
Performance monitoring and reporting			
18.2, 18.3	<p>The licence holder has submitted a quarterly network overall reliability standards report within one month of the end of each quarter to the Minister, which includes:</p> <ul style="list-style-type: none"> ▼ an accurate statement of performance against SAIDI average standards and SAIFI average standards by feeder type for the previous 12 months, disregarding excluded interruptions, ▼ adequate reasons for any non-compliance by the licence holder with the network overall reliability standards in the previous 12 months and plans to improve performance, and ▼ any other matter formally notified by the Minister in the previous 12 months. 		
18.4	<p>The licence holder has submitted a quarterly individual feeder standards report to the Minister, which includes:</p> <ul style="list-style-type: none"> ▼ the date at which the feeder first exceeded the relevant individual feeder standard, together with the actual SAIDI and SAIFI performance of the feeder for the 12 month period ▼ details of the remedial action that the licence holder intends taking, or has taken, to improve the performance of those feeders, and <ul style="list-style-type: none"> – either: the date of completion, or the date of planned completion, of the remedial action plan, or – details of the investigation and action proposed or undertaken leading to the decision to advise the Minister that is not economically justifiable to bring the feeder performance into compliance with the individual feeder standards. 		
18.5	The licence holder has submitted a quarterly customer service standards report to the		

Licence condition reference	Minimum criteria ^b	Auditor's comments	Audit Grade
	<p>Minister which includes:</p> <ul style="list-style-type: none"> the number of payments given under licence condition 17 to customers by each type of area and by type of standard as listed in Table 1 of Schedule 5 to the licence conditions, and the number of claims not paid (whether in part or full) under licence condition 17 to customers by each type of area and by type of standard as listed in Table 1 in Schedule 5 to the conditions. <p>Review this criterion by reference to Table 1 of Schedule 5.</p>		
18.6	<p>The licence holder has reported to the Minister:</p> <ul style="list-style-type: none"> within 24 hours, any major network incident involving significant injury to persons, loss of property or widespread supply interruptions, and immediately, any high level severity network incidents. 		

^a SAIDI is the 'system average interruption duration index'.

^b SAIFI means the 'system average interruption frequency index'.

Table A.2 Reliability audit criteria – audits against compliance with the *Ministerially imposed licence conditions for the operator of a transacted distribution system* (Applicable to Ausgrid only from 1 December 2016 onwards)

Licence condition reference	Minimum criteria ^b	Auditor's comments	Audit Grade
Network overall reliability standards			
4.1	<p>The licence holder has not exceeded the SAIDI^a average standards that apply to its feeder types in a financial year (when excluded interruptions are disregarded).</p> <p>Review in reference to Schedule 2, Table 1.</p>		
4.2	<p>The licence holder has not exceeded the SAIFI^b average standards that apply to its feeder types in a financial year (when excluded interruptions are disregarded).</p> <p>Review in reference to Schedule 2, Table 2.</p>		
Individual feeder performance			
5.1	<p>The licence holder has complied with licence conditions 5.2(a) – (g) below in circumstances where one or more of the feeders of a licence holder exceed the relevant individual feeder</p>		

Licence condition reference	Minimum criteria ^b	Auditor's comments	Audit Grade
	standards for any 12 month period ending at the end of March, June, September or December (when excluded interruptions are disregarded).		
5.2 (a)	The licence holder has investigated the causes for each feeder exceeding the individual feeder standards.		
5.2 (b)	The licence holder has completed an investigation report identifying the causes and as appropriate, any action required to improve the performance of each feeder to the individual feeder standards, and such report was completed by the end of the quarter following the quarter in which the feeder first exceeded the individual feeder standards.		
5.2 (c)	The licence holder has completed any operational actions identified in the investigation report to improve the performance of each feeder to the individual feeder standards by the end of the third quarter following the quarter in which each feeder exceeded the individual feeder standards.		
5.2 (d)	Where the investigation report identifies actions (other than operational actions) that are required to improve the performance of each feeder to the individual feeder standards, the licence holder has developed a project plan including implementation timetable and commenced its implementation by the end of the second quarter following the quarter in which the feeder first exceeded the individual feeder standards (except as permitted by licence condition 5.2(e)).		
5.2 (e)	The licence holder has considered non-network strategies which provide reliable outcomes for customers, and adopted such strategies where found by the investigation report to be equal or more cost-effective than the lowest cost feasible network option.		
5.2 (f)	The licence holder has ensured that the implementation timetable for the network project plan or alternative non-network solutions are as short as is reasonably practicable.		
5.2. (g)	Where all reasonable steps to improve supply reliability have been taken, the licence holder has subjected the costs of further actions to rectify the non-compliance to a cost-benefit analysis. Where such analysis did not provide a positive benefit, and no further action was undertaken to improve the feeder's performance, the ongoing non-conformance with the individual feeder standards has been reported by the licence holder to the Minister.		
5.3	The investigation report included a documented rectification plan where action was found to be justified in order to improve the performance of a feeder to the individual feeder standards.		
Customer service standards			

Licence condition reference	Minimum criteria ^b	Auditor's comments	Audit Grade
6.1	The licence holder has paid \$80 to customers on each occasion when the licence holder has exceeded the interruption duration standard at a customer's premises and the customer has made a claim to the licence holder within three months of that interruption ceasing.		
6.2	The licence holder has paid \$80 to customers when the licence holder has exceeded the interruption frequency standard at a customer's premises in a financial year and the customer has made a claim to the licence holder within three months of the end of the financial year to which the interruptions relate.		
6.3	Claims made under condition 6 were determined within 1 month of receipt, and the notice of determination included either: <ul style="list-style-type: none"> ▼ the amount to be paid, and manner and timing of payment, or ▼ reasons for the decision if the claim is not paid or only partially paid. 		
6.4	The licence holder has taken reasonable steps to make customers aware of the availability of payments on the terms set out in condition 6.		
6.6	The licence holder has paid no more than \$320 under condition 6 to a customer per premises in the financial year.		
Performance monitoring and reporting			
7.1, 7.2	The licence holder has submitted a quarterly network overall reliability standards report within one month of the end of each quarter to the Tribunal, which includes: <ul style="list-style-type: none"> ▼ an accurate statement of performance against SAIDI average standards and SAIFI average standards by feeder type for the previous 12 months, disregarding excluded interruptions, ▼ adequate reasons for any non-compliance by the licence holder with the network overall reliability standards in the previous 12 months and plans to improve performance, and ▼ any other matter formally notified by the Tribunal in writing. 		
7.3	The licence holder has submitted a quarterly individual feeder standards report on feeders that exceeded the relevant standard, within one month of the end of each quarter, to the Tribunal, which includes: <ul style="list-style-type: none"> ▼ the date at which any feeder first exceeded the relevant individual feeder standard, together with the actual SAIDI and SAIFI performance of the feeder for the previous 12 month period ▼ details of the remedial action that the licence holder intends taking, or has taken, to improve the performance of those feeders, and ▼ either: <ul style="list-style-type: none"> – the date of completion, or the date of planned completion, of the remedial action plan, or – details of the investigation and action proposed or undertaken leading to the decision to 		

Licence condition reference	Minimum criteria ^b	Auditor's comments	Audit Grade
	advise the Tribunal that is not economically justifiable to bring the feeder performance into compliance with the individual feeder standards.		
7.4	<p>The licence holder has submitted a quarterly customer service standards report to the Tribunal which includes:</p> <ul style="list-style-type: none"> the number of payments given under licence condition 6 to customers by each type of area and by type of standard as listed in Table 1 of Schedule 5 to the licence conditions the number of claims not paid (whether in part or full) under licence condition 6 to customers by each type of area and by type of standard as listed in Table 1 in Schedule 5 to the conditions, and Any other matters notified by the Tribunal in writing. <p>Review this criterion by reference to Table 1 of Schedule 5.</p>		
7.5	The licence holder has reported to the Tribunal on any incident in accordance with the most up-to-date Reporting Manual issued by the Tribunal.		

Table A.3 Reliability audit criteria – audits against compliance with the Ministerially imposed licence conditions for the operator of a transacted distribution system (Applicable to Endeavour Energy only from 14 June 2017 onwards)

Licence condition reference	Minimum criteria ^b	Auditor's comments	Audit Grade
Network overall reliability standards			
4.1	<p>The licence holder has not exceeded the SAIDI^a average standards that apply to its feeder types in a financial year (when excluded interruptions are disregarded).</p> <p>Review in reference to Schedule 2, Table 1.</p>		
4.2	<p>The licence holder has not exceeded the SAIFI^b average standards that apply to its feeder types in a financial year (when excluded interruptions are disregarded).</p> <p>Review in reference to Schedule 2, Table 2.</p>		
Individual feeder performance			
5.1	The licence holder has complied with licence conditions 5.2(a) – (g) below in circumstances where one or more of the feeders of a licence holder exceed the relevant individual feeder standards for any 12 month period ending at the end of March, June, September or December		

Licence condition reference	Minimum criteria ^b	Auditor's comments	Audit Grade
	(when excluded interruptions are disregarded).		
5.2 (a)	The licence holder has investigated the causes for each feeder exceeding the individual feeder standards.		
5.2 (b)	The licence holder has completed an investigation report identifying the causes and as appropriate, any action required to improve the performance of each feeder to the individual feeder standards, and such report was completed by the end of the quarter following the quarter in which the feeder first exceeded the individual feeder standards.		
5.2 (c)	The licence holder has completed any operational actions identified in the investigation report to improve the performance of each feeder to the individual feeder standards by the end of the third quarter following the quarter in which each feeder exceeded the individual feeder standards.		
5.2 (d)	Where the investigation report identifies actions (other than operational actions) that are required to improve the performance of each feeder to the individual feeder standards, the licence holder has developed a project plan including implementation timetable and commenced its implementation by the end of the second quarter following the quarter in which the feeder first exceeded the individual feeder standards (except as permitted by licence condition 5.2(e)).		
5.2 (e)	The licence holder has considered non-network strategies which provide reliable outcomes for customers, and adopted such strategies where found by the investigation report to be equal or more cost-effective than the lowest cost feasible network option.		
5.2 (f)	The licence holder has ensured that the implementation timetable for the network project plan or alternative non-network solutions are as short as is reasonably practicable.		
5.2. (g)	Where all reasonable steps to improve supply reliability have been taken, the licence holder has subjected the costs of further actions to rectify the non-compliance to a cost-benefit analysis. Where such analysis did not provide a positive benefit, and no further action was undertaken to improve the feeder's performance, the ongoing non-conformance with the individual feeder standards has been reported by the licence holder to the Minister.		
5.3	The investigation report included a documented rectification plan where action was found to be justified in order to improve the performance of a feeder to the individual feeder standards.		
Customer service standards			

Licence condition reference	Minimum criteria ^b	Auditor's comments	Audit Grade
6.1	The licence holder has paid \$80 to customers on each occasion when the licence holder has exceeded the interruption duration standard at a customer's premises and the customer has made a claim to the licence holder within three months of that interruption ceasing.		
6.2	The licence holder has paid \$80 to customers when the licence holder has exceeded the interruption frequency standard at a customer's premises in a financial year and the customer has made a claim to the licence holder within three months of the end of the financial year to which the interruptions relate.		
6.3	Claims made under condition 6 were determined within 1 month of receipt, and the notice of determination included either: <ul style="list-style-type: none"> ▼ the amount to be paid, and manner and timing of payment, or ▼ reasons for the decision if the claim is not paid or only partially paid. 		
6.4	The licence holder has taken reasonable steps to make customers aware of the availability of payments on the terms set out in condition 6.		
6.6	The licence holder has paid no more than \$320 under condition 6 to a customer per premises in the financial year.		
Performance monitoring and reporting			
7.1, 7.2	The licence holder has submitted a quarterly network overall reliability standards report within one month of the end of each quarter to the Tribunal, which includes: <ul style="list-style-type: none"> ▼ an accurate statement of performance against SAIDI average standards and SAIFI average standards by feeder type for the previous 12 months, disregarding excluded interruptions, ▼ adequate reasons for any non-compliance by the licence holder with the network overall reliability standards in the previous 12 months and plans to improve performance, and ▼ any other matter formally notified by the Tribunal in writing. 		
7.3	The licence holder has submitted a quarterly individual feeder standards report on feeders that exceeded the relevant standard, within one month of the end of each quarter, to the Tribunal, which includes: <ul style="list-style-type: none"> ▼ the date at which any feeder first exceeded the relevant individual feeder standard, together with the actual SAIDI and SAIFI performance of the feeder for the previous 12 month period ▼ details of the remedial action that the licence holder intends taking, or has taken, to improve the performance of those feeders, and ▼ either: <ul style="list-style-type: none"> – the date of completion, or the date of planned completion, of the remedial action plan, or – details of the investigation and action proposed or undertaken leading to the decision to 		

Licence condition reference	Minimum criteria ^b	Auditor's comments	Audit Grade
	advise the Tribunal that is not economically justifiable to bring the feeder performance into compliance with the individual feeder standards.		
7.4	<p>The licence holder has submitted a quarterly customer service standards report to the Tribunal which includes:</p> <ul style="list-style-type: none"> ▼ the number of payments given under licence condition 6 to customers by each type of area and by type of standard as listed in Table 1 of Schedule 5 to the licence conditions ▼ the number of claims not paid (whether in part or full) under licence condition 6 to customers by each type of area and by type of standard as listed in Table 1 in Schedule 5 to the conditions, and ▼ Any other matters notified by the Tribunal in writing. <p>Review this criterion by reference to Table 1 of Schedule 5.</p>		
7.5	The licence holder has reported to the Tribunal on any incident in accordance with the most up-to-date Reporting Manual issued by the Tribunal.		