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Economic Development

# Utility Licence Annual Technical Report 2015-2016

This compliance report is required to be completed by ActewAGL Distribution and approved by the General Manager Networks or the Chief Executive Officer of ActewAGL Distribution

The completed report shall be returned to:

Manager Utilities Technical Regulation

Access Canberra

Chief Minister, Treasury and Economic Development

# Utility Licence Annual Technical Report 2015-2016

## Electricity Distribution

*ActewAGL*

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## Approval

Item No.	Item Description	Response
1	ActewAGL Corporate Approval (Y/N)	
2	Authorising Officer Name	
3	Authorising Officer Title/Position	
4	Authorising Officer Signature	



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## Instructions for completing the annual report

### Completing the templates:

- 1 In most cases a response of “yes”, “no”, “not-applicable”, “not available”, or a number will suffice. Additional details can be provided in the “Comments” column. An explanatory statement or supplementary information (e.g. copies of policies or procedures or a link to material on the internet) may also be attached.
- 2 If the licensee response represents a marked departure from previously reported performance or from industry norms, information is to be provided on the probable cause(s) of the departure. As above, this can be provided in the “Comments” column, or in an attachment.
- 3 All responses provided should only relate to services provided in the ACT. Where this is not possible, the licensee should advise which jurisdictions the information relates to.
- 4 If the licensee is not able to provide the data required in this template, the licensee should indicate “data not available” and provide supplementary information detailing whether and when it intends to collect this data. Where data is not available the licensee should provide any other data it has that could serve essentially the same purpose as the data requested (i.e. data that could equally indicate the level of licensee compliance and identify possible causes
- 5 Details are to be provided for the 2015-16 financial year only.



**Tip :** Press Alt-Enter to start a new line in a cell.

### Legend and data validation

#### Legend

- Blue cells with white text indicate column headings
- Blank white cells beneath column headings can be used for additional comments
- Orange cells indicate qualitative inputs.
- Yellow cells indicate quantitative inputs
- Grey cells indicate information to note when completing the form
- Diagonal stripes indicate a value is not required
- Blue text indicates a link to another page

Column heading
Enter comments in these cells
Enter qualitative data in these cells
Enter quantitative data in these cells
Notes for completing questions
No answer required
<a href="#">Link to another page</a>



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## About the annual report

Under section 78 of the Utilities (Technical Regulation) Act 2014, the technical regulator's function is to monitor compliance with technical codes by regulated utilities. Including the performance of their services and functions and their compliance with licence conditions. Reports are on a financial year basis and must be submitted to the the Technical Regulator within three months of the end of that year (i.e. by 1 October). The reported information forms the basis for the Technical Regulator's annual compliance report for licensed utility service providers.


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## Section 1 Electricity Distribution Supply Standards Code

### 1.1 Voltage

#### 1.1.1 Nominal Voltage

Item	Reporting requirement	Response
1	Specify the Standard System Nominal Voltage: * <sup>1</sup>	230/400V (in accordance with AS 60038) , ActewAGL's current standards and procedures are developed to ensure the compliance with the specified supply voltage.
2	When deciding if voltage complies with ActewAGL's Standard System Voltage, what criteria are employed?	ActewAGL criteria for supply voltage compliance is a voltage range between 230/400V +10%, -6% for 95% of the time. This is specified in the ActewAGL Service and Installation Rules SM11144 and ActewAGL Quality of Supply Strategy SM11150. As with the note above, AAD assesses its logged quality of data in for a 99% compliance of the logged time.
3	From where is the criteria derived? What is the basis of the criteria?	As it is not practical to maintain supply voltage within the specified voltage range at all locations and at all times ActewAGL objective is to maintain supply voltage within the standard supply voltage range under the normal network state for 99% of the time when measured over a period of seven days. AAD quality of supply logging is assessed in accordance with AS 61000.4.30 requirements.

<sup>1</sup> If the Standard System Voltage does not comply with the Electricity Distribution Supply Standards Code, attach explanatory statement.

Wherever there is a '\*', the utility may be required to provide supplementary information as detailed in the relevant footnote. The utility may also provide supplementary information to elaborate on any response given in this section. Items of supplementary information should be in numbered Annexes and the Annex numbers should be provided in the space with the main response.



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## Section 1 Electricity Distribution Supply Standards Code

### 1.1 Voltage

#### 1.1.2 Measures to ensure Quality of Supply

Item	Reporting requirement	Response
1	Supply quality rectification in case of third party induced adverse effects. <sup>1</sup>	ActewAGL Service and Installation Rules SM11144 Limitations on Connection and Operation of Equipment cover this issue; additionally customers' compliance obligations are also detailed in the ActewAGL Deemed Standard Connection contract. See Attachment A-A4D Deemed Standard Connection Contract.
2	Limiting voltage dips.	The defined Voltage Dips (<1 second), may occur due to faults on the distribution network as a result of equipment failure or damage caused to ActewAGL equipment from falling tree branches, vehicle impact, bird/animal contact, adverse atmospheric conditions, and people digging and boring into underground cables.  ActewAGL has in place the following measures to limit voltage dips on the network: - Use of fast current limiting fuses and sensitive protection relays, as well as fault current limiting neutral earthing transformers; - A proactive routine preventative maintenance philosophy (as opposed to a breakdown maintenance response), including vegetation management to avoid tree interference with power lines; and - Use advanced mobile power quality analysers that adhere to AS 61000.4.30 and are classified as 'Class A' devices to capture voltage dips in the network.
3	Limiting switching transients.	ActewAGL limits switching transients through the following measures: - Use of switching equipment that has small chopping current characteristics; - Implementing routine maintenance programs to avoid excessive switch contact arcing; - Avoiding the use of network capacitors; and - Investigate the feasibility of 'point on wave' switching in the ActewAGL network; and - Use advanced mobile power quality analysers capable of capturing switching transients.
4	Limiting voltage differences between earth and neutral.	In order to minimise voltage difference between the neutral and earth, ActewAGL observes the substation earthing requirements set out in AS/NZS7000, AS3835.1:2008, AS/NZS4853:2012 and requires customers to use the MEN method of earthing as prescribed in AS 3000 and ActewAGL Service and Installations Rules SM11144 (see Clauses 3.2 and 5.4).  ActewAGL also measures all substation-earthing systems for compliance during substation commissioning and as part of regular programmed maintenance activities.
5	Complying with step and touch voltage requirements.	ActewAGL aims to comply with the earth potential rise requirements by basing its network designs on the stated reference publications e.g. The Electricity Association of NSW ECS – Guide to Protective Earthing and ESMA C (b) 1 – Guidelines for Design and Maintenance of Overhead Distribution and Transmission Lines.  ActewAGL also: - Provides training on conducting soil resistivity, EPR, fault loop impedance and neutral integrity testing to all electrical substation fitters; - Plans to implement a five-yearly program to visually inspect earth connections as part of the distribution substation inspection regime; - Procures advanced mobile power quality analysers that adhere to AS 61000.4.30 and are classified as 'Class A' devices to record the Earth Potential Rise as part of the updated proactive and reactive QoS survey processes; - Will continue to undertake earthing assessments where earth resistance measurements are performed on selected assets to ensure that step and touch voltages remain within the allowable limits; and - Will continue to develop a network-wide soil resistivity map.
6	Limiting voltage unbalance.	Network voltage unbalance can arise from unbalanced network impedances or unbalanced loads.  Balanced network impedances are achieved through design by ensuring that the same conductors are used in each phase and that they are appropriately configured, and by procuring transformers with ganged three phase tap changers.  ActewAGL Service and Installation Rules [SM11144] Clause 3.11 also states that customers have a responsibility to ensure voltage balance through balanced load connection. ActewAGL also:  Use advanced mobile power quality analysers that adhere to AS 61000.4.30 and are classified as 'Class A' devices to capture voltage unbalance as part of the updated proactive and reactive QoS survey processes; - Only procure and install transformers only with ganged three phase tap changers; Identify sites, from existing three-phase EDM and EM5400 smart meters in the network, where voltage unbalance is outside the specified limits.
7	Limiting direct current.	ActewAGL does not distribute DC supply, and requires customer inverters connected to its network to comply with the appropriate Australian Standards (e.g. AS4777) and regulatory requirements as identified in the ActewAGL Service and Installation Rules SM11144. Small quantities of direct current may occur from some lighting equipment and domestic appliances; however AS3100 limits the direct current contribution from these sources.  Presence of a direct current component in the neutral may occur due to cathodic protection installations. ActewAGL participates in inter-organisational electrolysis working groups that monitor the effect of cathodic protection schemes on networks to maintain contemporary knowledge for the minimisation of their impact to acceptable levels.  ActewAGL uses advanced mobile power quality analysers that adhere to AS61000.4.30 and are classified as 'Class A' devices to identify instances of high DC component as part of the updated proactive and reactive QoS survey processes.
8	Promoting customer awareness of lightning protection measures.	ActewAGL has published on its website some 'Electrical Safety Tips' that advise customers of factors, including lightning, that may cause malfunctions to electrical equipment and measures customers can take to avoid these problems.  ActewAGL has also published on its website the ENA Customer Guide to Electricity Supply. This guide contains detailed information about the electricity supply, including identifying and dealing with problems caused by lightning.
9	Limiting electromagnetic fields.	ActewAGL is represented on the ENA Management Committee. Through this association ActewAGL has access to the proceedings of the EMF Advisory Committee to become updated on the issues and practices to reduce EMF levels.  To satisfy the ARPANSA limits, ActewAGL observes a prudent avoidance practice as recommended by ESAA, and is reflected as a consideration in identifying design reservation and assessment requirements in ActewAGL's Data Manual [SM1183] and Chamber Substation design principles SM11117.  EMF complaints/concerns are investigated by ActewAGL on a case-by-case basis.
10	Limiting inductive interference.	ActewAGL has routine maintenance programs in place to ensure equipment is in good working condition, as identified in quoted reference standard AS2344. ActewAGL's network can be expected to satisfy Inductive Interference limits.  ActewAGL would investigate complaints of interference due to this phenomenon, if necessary in conjunction with the Australian Communications Authority.  ActewAGL also address potential inductive interference at zone substations as part of its Earth Grid refurbishment program.

<sup>1</sup> Attach a statement indicating measures taken by the utility to achieve the objective stated in the item. Where these measures include the use of quality procedures:

(a) Identify the procedures by their document numbers.

(b) State how many non-conformance reports were raised against these procedures during the report year.

(c) State whether any independent audits of these procedures were conducted during the report year, and if so

(d) State whether the audits raised any non-conformances or established any negative conclusions.




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## Section 1 Electricity Distribution Supply Standards Code

### 1.1 Voltage

#### 1.1.3 Quality of Supply Performance

Item	Reporting requirement	Notifications or complaints received		Valid notifications and complaints <sup>1</sup>		Other customer installation responsible and identified (% of valid)
		Total	/1000 customers	Total	/1000 customers	
1	Rapid fluctuations in supply voltage:	0	0	0	0	0
2	Harmonic content:	0	0	0	0	0
3	Voltage level (urban) Dips to <30% of nominal voltage :	0	0	0	0	0
4	Voltage level (rural) Dips to <30% of nominal voltage:	0	0	0	0	0
5	Switching transients:	0	0	0	0	0
6	Neutral to earth voltage difference:	0	0	0	0	0
7	Voltage unbalance LV Network:	0	0	0	0	0
8	Voltage unbalance HV Network:	0	0	0	0	0
9	DC voltage exceeds +/-10V between neutral & earth at point of supply.	0	0	0	0	0
10	Supply quality problem other than listed above	1	0.001	1	0.001	0
11	Please advise circumstances of each complaint and indicate action taken.	Complaint related to number of unplanned interruptions within a				

<sup>1</sup> That is, where circumstances indicated supply quality was outside specified limits and was not, where applicable, associated with events in the Transmission Network or in generation, or (except in the cases of rapid voltage fluctuations and harmonic content) with equipment in an Electrical Installation.


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## Section 1 Electricity Distribution Supply Standards Code

### 1.1 Voltage

#### 1.1.4 Earth Potential Rises

Item	Reporting requirement	Notifications of complaints received		Valid notifications or compliants (% of valid)
		Total	/1000 customers	
1	Step and touch voltage	0	0	0
2	Inductive interference	0	0	0


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## Section 1 Electricity Distribution Supply Standards Code

### 1.2 Lightning

Item	Reporting requirement	Response
1	Number of cases of lightning damage to the network:	37
2	Number of Lightning Arrestors that failed in Service	1
3	What measures have been implemented to minimise the risk of damage from overvoltage due to lightning? Please provide quantity information (e.g. the number of lightning arresters fitted to the network)	<p>Lightning arresters are normally located near the HV terminals of power transformers and at HV overhead to underground cable terminations. Lightning arresters are also installed on overhead 11kV switchgear.</p> <p>Based on our asset records of:            1402 pole substations,            101 11kV OH switchgear (e.g. reclosers, gas switches),            1956 (Approx) UG/OH terminations (Poles that have both OH HV and UG HV within 2m distance of pole location),</p> <p>This gives a total of 3459 distribution sites with lightning arrestors with an estimated 10,377 HV lightning arresters in the network.</p>


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## Section 1 Electricity Distribution Supply Standards Code

### 1.3 Supply Reliability

#### 1.3.1 Performance Indicators

Item	Reporting requirement		Feeder category			Overall network
			CBD <sup>4</sup>	Urban	Rural Short	
1	SAIDI <sup>1</sup>	Number of Feeders	46	208	22	230
2		Overall	47.83	80.15	70.59	79.04
3		Distribution network—planned	25.05	40.49	26.36	38.86
4		Distribution network—unplanned	22.78	39.66	44.23	40.19
5		Normalised distribution network—unplanned	22.77	35.73	30.25	35.10
6	SAIFI <sup>2</sup>	Overall	0.93	0.92	0.93	0.92
7		Distribution network—planned	0.123	0.194	0.109	0.184
8		Distribution network—unplanned	0.809	0.727	0.820	0.738
9		Normalised distribution network—unplanned	0.809	0.682	0.616	0.675
10	CAIDI <sup>3</sup>	Overall	51.29	87.00	76.00	85.71
11		Distribution network—planned	203.21	208.44	242.43	210.76
12		Distribution network—unplanned	28.15	54.55	53.93	54.47
13		Normalised distribution network—unplanned	28.14	52.38	49.11	52.03
14			CAIDI			Overall network
15		Minimum Reliability Targets		35.73	30.25	N. A.
16		Current Year Reliability Targets		0.68	0.62	N. A.

Item	Description	Response
17	Number of feeders recording repeated interruptions for the year (more than 1) - Planned - Unplanned	Planned: 123 Unplanned: 108

Item	Description	Response
18	Number of feeders recording repeated interruptions for the year (more than 2) - Planned - Unplanned	Planned: 96 Unplanned: 83
19	Number of feeders recording repeated interruptions for the year (more than 4) - Planned - Unplanned	Planned: 64 Unplanned: 53
20	Number of feeders whose SAIDI exceed the reported SAIDI average	Planned: Average SAIDI = 38.86 mins / 230 feeders = 0.169 min / feeder No. of feeders exceeding = 59
21	For the top 12 most unreliable feeders for the year (based on SAIDI - unplanned outage), provide a summary report for each feeder outlining: <ul style="list-style-type: none"> <li>• Feeder Name</li> <li>• Zone Substation source</li> <li>• Dates &amp; Times for all interruptions</li> <li>• Restoration times for each interruption</li> <li>• Total time that the feeder was off supply for each interruption</li> <li>▣ Total number of customers affected by each interruption</li> <li>• Comments as to what had caused each interruption</li> <li>• Any comments as to actions taken to restore supply</li> </ul>	Miller Cunningham Anthony Rolfe Lyons West MCHMBEAN Nona Folingsby Florey Seal William Slim Tillyard Reid  See worksheet '1.3.1.21' for full list.

Item	Description	Response
22	<p>For the top 12 most unreliable feeders for the year (based on SAIDI - planned outage), provide a summary report for each feeder outlining:</p> <ul style="list-style-type: none"> <li>• Feeder Name</li> <li>• Zone Substation source</li> <li>• Dates &amp; Times for all interruptions</li> <li>• Restoration times for each interruption</li> <li>• Total time that the feeder was off supply for each interruption <ul style="list-style-type: none"> <li>▣ Total number of customers affected by each interruption</li> </ul> </li> <li>• Comments as to what had caused each interruption</li> <li>• Any comments as to actions taken to restore supply</li> </ul>	<p>Ferdinand Throsby BISSHAWK Seal HAWKRPRD Verbrugghen Cunningham Miller Hilder Sturt Lambrigg Homann</p> <p>See worksheet '1.3.1.22' for full list.</p>
23	Number of feeders whose SAIFI exceed the reported SAIFI average	<p>Planned: Average SAIFI = 0.184 mins / 230 feeders = 0.0008 min / feeder No. of feeders exceeding = 66</p> <p>Unplanned: Average SAIFI = 0.675 mins / 230 feeders = 0.002935 min / feeder No. of feeders exceeding = 51</p>
24	<p>For the top 12 most unreliable feeders for the year (based on SAIFI - unplanned outage), provide a summary report for each feeder outlining:</p> <ul style="list-style-type: none"> <li>• Feeder Name</li> <li>• Zone Substation source</li> <li>• Dates &amp; Times for all interruptions</li> <li>• Restoration times for each interruption</li> <li>• Total time that the feeder was off supply for each interruption <ul style="list-style-type: none"> <li>▣ Total number of customers affected by each interruption</li> </ul> </li> <li>• Comments as to what had caused each interruption</li> <li>• Any comments as to actions taken to restore supply</li> </ul>	<p>Miller Cunningham Theodore MCHMBEAN Anthony Rolfe Lyons West Florey Belconnen Way Sth Tillyard Belconnen Way Nth Hughes William Slim</p> <p>See worksheet '1.3.1.24' for full list.</p>

Item	Description	Response
25	<p>For the top 12 most unreliable feeders for the year (based on SAIFI - planned outage), provide a summary report for each feeder outlining:</p> <ul style="list-style-type: none"> <li>• Feeder Name</li> <li>• Zone Substation source</li> <li>• Dates &amp; Times for all interruptions</li> <li>• Restoration times for each interruption</li> <li>• Total time that the feeder was off supply for each interruption</li> <li>• Total number of customers affected by each interruption</li> <li>• Comments as to what had caused each interruption</li> <li>• Any comments as to actions taken to restore supply</li> </ul>	<p>CAENO1-2 Ferdinand Throsby BISSHAWK Seal HAWKRPRD Verbrugghen Cunningham Lambrigg Miller Melba Bunbury</p> <p>See worksheet '1.3.1.25' for full list.</p>

1 SAIDI: total number of minutes, on average, that a customer on a distribution network is without electricity in a year.

2 SAIFI: Average number of times a customer's supply is interrupted per year.

3 CAIDI: Average duration of each interruption

4 CBD feeders – Feeders predominately supplying the following Town Centre's are to be accounted for under this category. CIVIC, FYSHWICK, WODEN / PHILLIP, BELCONNEN, TUGGERANONG and GUNGAHLIN

IncidentID	Date of event (DDMMYY)	Time of interruption (HHMM)	Restoration Time (HHMM)	Sub	Feeder Name	ZONE	Feeder classification	Reason for interruption	Detailed reason for interruption	Comments as to what had caused each interruption	Comments on actions taken to restore supply (if any)	Number of customers affected by the interruption	Average duration of sustained customer interruption (minutes)	CMOS	Network SADI	Network SAIFI
APPLY	2/07/2015	7:12:00 PM	8:19:28 PM	FALSE	Anthony Rolfe	GOLDOR, B-NB, ANTHONYRFL	Urban	Asset failure	HV			2,488	67	167,850	0.007484	0.011403
APPLY	7/07/2015	11:20:00 AM	11:59:00 PM	S 2259	Tilford	LATHAM, B-B, TILLYARD	Urban	Other		Safety reason		15	236	1,540	0.005139	0.00081
APPLY	23/07/2015	10:37:00 AM	11:11:02 AM	S 546	Lyons West	WODEN, B-HUB, LYONSWEST	Urban	Animal		Animal nesting/burrowing, etc and other		64	34	2,178	0.011775	0.00046
APPLY	25/07/2015	8:07:00 PM	8:59:59 PM	S 1103	Miller	CIVIC, B-HUB, MILLER	Urban	Asset failure	LV			22	53	3,184	0.006293	0.00019
APPLY	5/08/2015	10:00:00 PM	12:47:03 AM	S 546	Lyons West	WODEN, B-HUB, LYONSWEST	Urban	Asset failure	LV			38	107	6,848	0.034321	0.000205
APPLY	5/08/2015	10:00:00 PM	12:46:59 PM	S 546	Lyons West	WODEN, B-HUB, LYONSWEST	Urban	Asset failure	LV			47	167	7,848	0.044340	0.000254
APPLY	11/08/2015	8:48:00 AM	10:52:56 PM	S 4434	Cunningham	TELOPK, B-HUB, CUNNINGHAM	Urban	Asset failure	HV			28	125	1,498	0.001912	0.000151
APPLY	11/08/2015	8:50:00 PM	10:54:59 PM	S 2158	Cunningham	TELOPK, B-HUB, CUNNINGHAM	Urban	Asset failure	LV			41	125	5,124	0.027703	0.000222
APPLY	12/08/2015	11:25:00 AM	2:10:09 PM	S 2061	Reid	WANNIA, B-HUB, REID	Rural short	Asset failure	HV			18	165	2,970	0.016057	0.000097
APPLY	12/08/2015	6:58:00 PM	7:08:37 PM	FALSE	Cunningham	TELOPK, B-HUB, CUNNINGHAM	Urban	Asset failure	HV			53	37	1,962	0.010608	0.000287
APPLY	13/08/2015	6:06:00 PM	7:48:35 PM	FALSE	Florey	WODEN, B-BB, FLOREYSBY	Urban	Asset failure	HV			2,069	103	212,244	1.147501	0.01186
APPLY	17/08/2015	8:04:00 PM	9:36:00 PM	FALSE	Nona	GOLDOR, B-HUB, NONA	Urban	Asset failure	HV			2,540	92	233,676	1.263373	0.013733
APPLY	27/08/2015	12:13:00 AM	12:50:01 AM	S 1107	Miller	CIVIC, B-HUB, MILLER	Urban	Asset failure	HV			53	37	1,962	0.010608	0.000287
APPLY	31/08/2015	8:26:00 AM	9:39:59 AM	FALSE	Miller	CIVIC, B-HUB, MILLER	Urban	Asset failure	HV			1,992	74	147,384	0.796834	0.010770
APPLY	1/09/2015	9:03:00 AM	9:36:00 AM	S 1107	Miller	CIVIC, B-HUB, MILLER	Urban	Asset failure	HV			56	34	1,962	0.010608	0.000287
APPLY	12/09/2015	5:50:00 PM	6:52:00 PM	S 2941	Follingby	WODEN, B-BB, FLOREYSBY	Urban	Asset failure	LV			43	42	3,806	0.009764	0.000332
APPLY	13/09/2015	3:32:00 PM	4:09:57 PM	S 9431	NCHMBEAN	BELCON, B-HUB, MCHMBEAN	Rural short	Vegetation		Vehicle impact		37	38	1,404	0.007591	0.000200
APPLY	14/09/2015	7:46:00 PM	8:40:00 AM	S 546	Lyons West	WODEN, B-HUB, LYONSWEST	Urban	Animal		Animal nesting/burrowing, etc and other		63	54	3,402	0.013393	0.000241
APPLY	15/09/2015	7:46:00 PM	8:10:43 PM	S 1364	Lyons West	WODEN, B-HUB, LYONSWEST	Urban	Vegetation		Grow-in - Other responsible party		25	25	618	0.005341	0.000335
APPLY	18/09/2015	9:10:00 AM	11:01:00 AM	S 2997	Anthony Rolfe	GOLDOR, B-NB, ANTHONYRFL	Urban	Third party		Vehicle impact		12	111	1,332	0.007201	0.000065
APPLY	18/09/2015	5:31:00 PM	6:55:00 PM	S 583	Cunningham	TELOPK, B-HUB, CUNNINGHAM	Urban	Animal		Animal nesting/burrowing, etc and other		21	86	1,794	0.009537	0.000114
APPLY	25/09/2015	8:27:00 AM	9:11:00 AM	FALSE	Florey	LATHAM, B-BB, FLOREY	Urban	Animal		Animal nesting/burrowing, etc and other		2,469	44	108,636	0.587342	0.013349
APPLY	2/10/2015	1:11:00 AM	3:09:59 AM	S 2954	Miller	CIVIC, B-HUB, MILLER	Urban	Asset failure	HV			53	119	6,306	0.034093	0.000287
APPLY	7/10/2015	11:57:00 AM	12:43:00 PM	FALSE	Tilford	LATHAM, B-BB, TILLYARD	Urban	Vegetation		Blow-in/fall-in - NSP responsibility		2,801	46	123,844	0.696597	0.015144
APPLY	8/10/2015	3:09:00 AM	4:21:00 AM	S 3405	Florey	LATHAM, B-BB, FLOREY	Urban	Asset failure	HV			33	72	2,376	0.012846	0.000178
APPLY	10/10/2015	5:53:00 PM	6:49:58 PM	S 581	Lyons West	WODEN, B-HUB, LYONSWEST	Urban	Asset failure	LV			25	55	1,374	0.007429	0.000135
APPLY	15/10/2015	8:13:00 AM	8:52:00 AM	S 5015	Reid	WANNIA, B-HUB, REID	Rural short	Asset failure	LV			18	39	702	0.003795	0.000097
APPLY	17/10/2015	4:50:00 AM	5:54:59 AM	S 1779	Florey	LATHAM, B-BB, FLOREY	Urban	Overloads	0			65	65	4,224	0.022837	0.000351
APPLY	28/10/2015	4:16:00 PM	7:58:37 PM	FALSE	Anthony Rolfe	GOLDOR, B-NB, ANTHONYRFL	Urban	Third party		Vehicle impact		7	44	306	0.005164	0.000038
APPLY	11/11/2015	11:08:00 PM	12:25:04 AM	S 1303	NCHMBEAN	BELCON, B-HUB, MCHMBEAN	Rural short	Weather	0			32	77	2,466	0.013132	0.000173
APPLY	18/11/2015	8:13:00 AM	8:22:54 PM	S 1208	William Slim	BELCON, B-BB, WILLIAMSLIM	Urban	Asset failure	HV			20	10	198	0.001070	0.000108
APPLY	20/11/2015	1:50:00 PM	3:00:02 PM	S 2189	Reid	BELCON, B-HUB, MCHMBEAN	Rural short	Weather	0			4062	161	13,612	0.021961	0.000114
APPLY	24/11/2015	8:40:00 PM	9:46:00 PM	S 2020	Reid	WANNIA, B-HUB, REID	Rural short	Asset failure	LV			48	66	3,168	0.017128	0.000260
APPLY	26/11/2015	12:22:00 PM	3:20:00 PM	S 2480	Reid	WANNIA, B-HUB, REID	Rural short	Weather	0			36	58	2,088	0.011289	0.000195
APPLY	26/11/2015	2:29:00 PM	6:55:59 PM	S 2024	William Slim	BELCON, B-BB, WILLIAMSLIM	Urban	Vegetation		Grow-in - Other responsible party		27	246	1,947	0.009027	0.000141
APPLY	26/11/2015	2:54:00 PM	3:46:12 PM	S 1108	Florey	LATHAM, B-BB, FLOREY	Urban	Asset failure	LV			10	52	522	0.020822	0.000054
APPLY	26/11/2015	3:44:00 PM	5:54:59 PM	S 1379	Follingby	WODEN, B-BB, FLOREYSBY	Urban	Weather	0			28	131	1,666	0.039820	0.000151
APPLY	28/11/2015	12:15:00 PM	1:23:00 PM	S 2182	Tilford	LATHAM, B-BB, TILLYARD	Urban	Asset failure	LV			62	130	1,362	0.020854	0.000108
APPLY	1/12/2015	1:17:00 PM	3:00:04 PM	S 5195	William Slim	BELCON, B-BB, WILLIAMSLIM	Urban	Weather	0			34	103	3,504	0.018944	0.000184
APPLY	1/12/2015	2:53:00 PM	7:58:37 PM	S 1109	Miller	CIVIC, B-HUB, MILLER	Urban	Weather	0			101	61	618	0.032536	0.000111
APPLY	1/12/2015	3:15:00 PM	6:40:00 PM	S 1100	Florey	LATHAM, B-BB, FLOREY	Urban	Weather	0			32	213	6,816	0.036851	0.000173
APPLY	1/12/2015	8:13:00 PM	8:22:54 PM	S 1208	William Slim	BELCON, B-BB, WILLIAMSLIM	Urban	Asset failure	HV			20	198	0.001070	0.000108	
APPLY	2/12/2015	6:48:00 PM	9:46:00 PM	S 2074	Reid	WANNIA, B-HUB, REID	Rural short	Asset failure	LV			43	54	3,402	0.013393	0.000241
APPLY	4/12/2015	2:56:00 PM	3:30:56 PM	S 5994	Nona	GOLDOR, B-HUB, NONA	Urban	Third party		Vehicle impact		34	35	1,188	0.006423	0.000184
APPLY	5/12/2015	5:53:00 AM	7:39:59 AM	S 3405	Florey	LATHAM, B-BB, FLOREY	Urban	Asset failure	HV			11	107	1,176	0.006358	0.000059
APPLY	11/12/2015	4:29:00 PM	7:55:00 PM	S 5195	William Slim	BELCON, B-BB, WILLIAMSLIM	Urban	Vegetation		Grow-in - Other responsible party		21	107	1,176	0.006358	0.000059
APPLY	11/12/2015	5:01:00 PM	8:45:51 PM	S 1979	Follingby	WODEN, B-BB, FLOREYSBY	Urban	Vegetation		Grow-in - Other responsible party		11	225	4,722	0.025530	0.000114
APPLY	12/12/2015	3:52:00 AM	4:32:59 AM	S 2954	Miller	CIVIC, B-HUB, MILLER	Urban	Animal		Animal nesting/burrowing, etc and other		53	41	2,172	0.011743	0.000287
APPLY	17/12/2015	12:11:00 PM	1:42:58 PM	S 2158	Cunningham	TELOPK, B-HUB, CUNNINGHAM	Urban	Asset failure	LV			23	142	1,362	0.020854	0.000108
APPLY	26/12/2015	10:50:00 AM	11:04:59 AM	S 1774	Florey	LATHAM, B-BB, FLOREY	Urban	Vegetation		Blow-in/fall-in - NSP responsibility		23	14	324	0.000752	0.000124
APPLY	31/12/2015	4:50:00 PM	6:50:47 PM	FALSE	Reid	WANNIA, B-HUB, REID	Rural short	Asset failure	HV			19	211,512	94,762	0.512440	0.065644
APPLY	10/01/2016	5:20:00 PM	6:50:47 PM	FALSE	Reid	WANNIA, B-HUB, REID	Rural short	Asset failure	HV			1,044	91	94,762	0.512440	0.065644
APPLY	11/01/2016	1:01:00 PM	4:10:57 PM	S 2470	Reid	WANNIA, B-HUB, REID	Rural short	Asset failure	HV			38	190	7,318	0.039024	0.000205
APPLY	19/01/2016	1:18:00 PM	6:55:59 PM	S 2364	Lyons West	WODEN, B-HUB, LYONSWEST	Urban	Vegetation		Grow-in - Other responsible party		25	34	1,128	0.005623	0.000135
APPLY	21/01/2016	0:08:00 AM	9:40:00 AM	S 3157	Anthony Rolfe	GOLDOR, B-NB, ANTHONYRFL	Urban	Asset failure	HV			3	32	86	0.000519	0.000016
APPLY	21/01/2016	3:38:00 PM	4:14:00 PM	FALSE	NCHMBEAN	BELCON, B-HUB, MCHMBEAN	Rural short	Weather	0			585	36	21,060	0.113861	0.003363
APPLY	21/01/2016	3:38:00 PM	4:14:00 PM	FALSE	NCHMBEAN	BELCON, B-HUB, MCHMBEAN	Rural short	Weather	0			2,828	36	206,588	1.123264	0.000260
APPLY	21/01/2016	3:38:00 PM	4:27:39 PM	FALSE	Cunningham	TELOPK, B-HUB, CUNNINGHAM	Urban	Unknown	Unknown			2,485	50	123,384	0.666708	0.013435
APPLY	23/01/2016	4:25:00 AM	4:28:00 AM	FALSE	Cunningham	TELOPK, B-HUB, CUNNINGHAM	Urban	Unknown	Unknown			2,485	3	7,458	0.040322	0.013435
APPLY	25/01/2016	6:14:00 PM	6:14:00 PM	FALSE	Reid	WANNIA, B-HUB, REID	Rural short	Unknown	Unknown			5	206	1,128	0.006099	0.000027
APPLY	28/01/2016	3:13:00 PM	3:35:00 PM	FALSE	Reid	WANNIA, B-HUB, REID	Rural short	Asset failure	HV			3	22	66	0.000357	0.000016
APPLY	29/01/2016	10:12:00 AM	11:07:00 AM	FALSE	Miller	CIVIC, B-HUB, MILLER	Urban	Weather	0			2,166	55	119,130	0.644927	0.011711
APPLY	1/02/2016	3:44:00 PM	6:55:59 PM	FALSE	Tilford	LATHAM, B-BB, TILLYARD	Urban	Third party		Vehicle impact		62	34	1,318	0.115126	0.000111
APPLY	4/02/2016	9:30:00 AM	12:53:57 PM	S 1303	NCHMBEAN	BELCON, B-HUB, MCHMBEAN	Rural short	Vegetation		Grow-in - Other responsible party		11	203	2,338	0.012100	0.000059
APPLY	8/02/2016	2:20:00 PM	2:40:27 PM	FALSE	Lyons West	WODEN, B-HUB, LYONSWEST	Urban	Asset failure	HV			2,999	20	47,008	0.254128	0.012430
APPLY	9/02/2016	7:29:00 PM	10:33:00 PM	S 2997	Anthony Rolfe	GOLDOR, B-NB, ANTHONYRFL	Urban	Network business		Switching and protection error		12	184	2,208	0.011938	0.000065
APPLY	10/02/2016	6:25:00 PM	6:40:00 PM	S 5057	William Slim	BELCON, B-BB, WILLIAMSLIM	Urban	Third party		Vehicle impact		12	15	180	0.000973	0.000065
APPLY	11/02/2016	6:42:00 PM	6:49:00 PM	FALSE	Miller	CIVIC, B-HUB, MILLER	Urban	Asset failure	HV			2,166	67	145,118	0.794583	0.011711
APPLY	15/02/2016	2:09:00 AM	5:15:00 AM	S 1175	Cunningham	TELOPK, B-HUB, CUNNINGHAM	Urban	Asset failure	LV			20	186	3,720	0.020211	0.000108
APPLY	19/02/2016	12:21:00 PM	1:14:13 PM	FALSE	William Slim	BELCON, B-BB, WILLIAMSLIM	Urban	Third party		Vehicle impact		1,294	53	68,856	0.372721	0.000996
INC 162000462	20/02/2016	2:12:24 PM	2:49:24 PM	FALSE	Cunningham	TELOPK, B-HUB, CUNNINGHAM	Urban	Vegetation		Grow-in - NSP responsibility		10	37	370	0.002000	0.000054
INC 164002815	24/02/2016	6:46:09 PM	7:46:54 PM	PM	William Slim	BELCON, B-BB, WILLIAMSLIM	Urban	Asset failure	HV			1,409	81	85,655	0.446095	0.000718
INC 164002818	24/02/2016	8:37:07 PM	8:40:57 PM	PM	NCHMBEAN	BELCON, B-HUB, MCHMBEAN	Rural short	Asset failure	HV			3,169	3	9,507	0.054400	0.017133
INC 164002853	25/02/2016	2:46:39 PM	6:55:59 PM	PM	Miller	CIVIC, B-HUB, MILLER	Urban	Asset failure	LV			53	90	478	0.025863	0.000287
INC 164002987																



incidentID	Date of event (DDMM/YYYY)	Time of interruption (hh:mm)	Restoration Time (hh:mm)	Sub	Feeder Name	ZONE	Feeder classificatio n	Reason for interruption	Detailed reason for interruption	Comments as to what had caused each interruption	Comments on actions taken to restore supply (if any)	Number of customers affected by the interruption	Average duration of sustained customer interruption (minutes)	CMOS	Network SAIDI	Network SAIFI
APPLY	1/07/2015	9:09:00 AM	10:27:45 AM	S 903	Throsby	TELOPK_8+WB_THROSBY	Urban	Planned	0	Planned job		8	79	630	0.003406	0.000043
APPLY	1/07/2015	9:29:00 AM	3:33:00 PM	S 594	Sturt	TELOPK_8+NB_STURT	Urban	Planned	0	Planned job		27	364	9,828	0.053135	0.000146
APPLY	2/07/2015	8:31:00 AM	11:41:56 AM	S 1059	Throsby	TELOPK_8+WB_THROSBY	Urban	Planned	0	Planned job		17	191	3,246	0.017550	0.000092
APPLY	7/07/2015	8:35:00 AM	1:26:00 PM	S 4553	Throsby	TELOPK_8+WB_THROSBY	Urban	Planned	0	Planned job		20	291	5,820	0.010366	0.000038
APPLY	7/07/2015	8:54:00 AM	11:45:26 PM	S 4523	HAWKRRPD	WANNIA_8+LB_HAWKRRPD	Urban	Planned	0	Planned job		20	171	1,200	0.006488	0.000038
APPLY	7/07/2015	9:33:00 AM	1:41:07 PM	S 1931	Verbruggen	LATHAM_8+HB_VERRBRGHN	Urban	Planned	0	Planned job		17	248	4,218	0.0212805	0.000092
APPLY	7/07/2015	9:37:00 AM	1:44:58 PM	S 2938	Verbruggen	LATHAM_8+HB_VERRBRGHN	Urban	Planned	0	Planned job		58	248	0.000000	0.000000	0.000000
APPLY	8/07/2015	8:52:00 AM	12:33:09 PM	S 4357	HAWKRRPD	WANNIA_8+LB_HAWKRRPD	Urban	Planned	0	Planned job		14	221	3,096	0.016739	0.000014
APPLY	8/07/2015	9:15:00 AM	10:31:58 AM	S 1439	Sturt	TELOPK_8+NB_STURT	Urban	Planned	0	Planned job		35	77	2,694	0.014565	0.000189
APPLY	9/07/2015	9:30:00 AM	12:39:02 PM	S 1882	HAWKRRPD	WANNIA_8+LB_HAWKRRPD	Urban	Planned	0	Planned job		227	5	6,676	0.010667	0.000135
APPLY	9/07/2015	9:30:00 AM	2:02:00 PM	S 540	Miller	CIVIC_8+NB_MILLER	Urban	Planned	0	Planned job		30	272	8,160	0.044117	0.000162
APPLY	13/07/2015	8:56:00 AM	12:35:00 PM	S 1493	Hilder	WODEN_8+HB_HILDER	Urban	Planned	0	Planned job		30	219	5,570	0.035521	0.000162
APPLY	14/07/2015	9:40:00 AM	2:45:07 PM	S 1184	HAWKRRPD	WANNIA_8+LB_HAWKRRPD	Urban	Planned	0	Planned job		27	305	8,238	0.044539	0.000146
APPLY	16/07/2015	8:45:00 AM	11:23:56 AM	S 1930	Verbruggen	LATHAM_8+HB_VERRBRGHN	Urban	Planned	0	Planned job		43	159	6,834	0.036948	0.000232
APPLY	16/07/2015	9:00:00 AM	11:00:00 PM	S 4357	HAWKRRPD	WANNIA_8+LB_HAWKRRPD	Urban	Planned	0	Planned job		27	250	6,750	0.036494	0.000146
APPLY	17/07/2015	8:40:00 AM	12:22:58 PM	S 1493	Hilder	WODEN_8+HB_HILDER	Urban	Planned	0	Planned job		23	223	0.000000	0.000000	0.000000
APPLY	17/07/2015	8:44:00 AM	12:18:02 PM	S 1490	Hilder	WODEN_8+HB_HILDER	Urban	Planned	0	Planned job		67	214	0.000000	0.000000	0.000000
APPLY	18/07/2015	8:30:00 AM	3:40:00 PM	S 363	Throsby	TELOPK_8+WB_THROSBY	Urban	Planned	0	Planned job		63	430	0.000000	0.000000	0.000000
APPLY	18/07/2015	10:00:00 AM	3:26:00 PM	S 2376	Miller	CIVIC_8+NB_MILLER	Urban	Planned	0	Planned job		3	326	978	0.005288	0.000016
APPLY	20/07/2015	9:26:00 AM	12:18:12 PM	S 1115	Miller	CIVIC_8+NB_MILLER	Urban	Planned	0	Planned job		10	172	1,722	0.009310	0.000054
APPLY	22/07/2015	8:17:00 AM	10:09:06 AM	S 1931	Verbruggen	LATHAM_8+HB_VERRBRGHN	Urban	Planned	0	Planned job		21	1,560	0.000000	0.000000	0.000000
APPLY	23/07/2015	8:32:00 AM	11:58:00 AM	S 3351	Lambrigg	WANNIA_8+PB_LAMBRIGG	Urban	Planned	0	Planned job		15	206	3,090	0.016706	0.000081
APPLY	23/07/2015	8:46:00 AM	1:13:00 PM	S 1491	Hilder	WODEN_8+HB_HILDER	Urban	Planned	0	Planned job		74	267	0.000000	0.000000	0.000000
APPLY	23/07/2015	8:52:00 AM	1:04:00 PM	S 1492	Hilder	WODEN_8+HB_HILDER	Urban	Planned	0	Planned job		58	252	0.000000	0.000000	0.000000
APPLY	28/07/2015	8:30:00 AM	1:00:00 PM	S 1926	Verbruggen	LATHAM_8+HB_VERRBRGHN	Urban	Planned	0	Planned job		41	270	0.000000	0.000000	0.000000
APPLY	28/07/2015	8:45:00 AM	11:44:00 PM	S 1493	Hilder	WODEN_8+HB_HILDER	Urban	Planned	0	Planned job		25	234	5,850	0.031368	0.000035
APPLY	28/07/2015	9:26:00 AM	12:50:00 PM	S 1137	Lambrigg	WANNIA_8+PB_LAMBRIGG	Urban	Planned	0	Planned job		49	21	996	0.015344	0.000265
APPLY	30/07/2015	10:08:00 AM	2:26:00 PM	S 1152	Lambrigg	WANNIA_8+PB_LAMBRIGG	Urban	Planned	0	Planned job		20	258	5,160	0.027898	0.000108
APPLY	30/07/2015	10:12:00 AM	2:21:00 PM	S 3354	HAWKRRPD	WANNIA_8+LB_HAWKRRPD	Urban	Planned	0	Planned job		20	249	4,980	0.026924	0.000108
APPLY	30/07/2015	10:16:00 AM	2:16:00 PM	S 3356	HAWKRRPD	WANNIA_8+LB_HAWKRRPD	Urban	Planned	0	Planned job		81	240	0.000000	0.000000	0.000000
APPLY	31/07/2015	9:27:00 AM	12:07:04 PM	S 1199	Lambrigg	WANNIA_8+PB_LAMBRIGG	Urban	Planned	0	Planned job		31	160	4,962	0.025827	0.000168
APPLY	4/08/2015	9:30:00 AM	1:49:57 PM	S 1209	Lambrigg	WANNIA_8+PB_LAMBRIGG	Urban	Planned	0	Planned job		260	164	3,366	0.064658	0.000130
APPLY	6/08/2015	8:59:00 AM	11:23:00 AM	S 1083	HAWKRRPD	WANNIA_8+LB_HAWKRRPD	Urban	Planned	0	Planned job		46	144	3,600	0.019463	0.000135
APPLY	6/08/2015	9:05:00 AM	11:18:58 AM	S 1137	Lambrigg	WANNIA_8+PB_LAMBRIGG	Urban	Planned	0	Planned job		49	134	6,564	0.035488	0.000265
APPLY	6/08/2015	9:15:00 AM	3:39:58 PM	S 4553	Lambrigg	WANNIA_8+PB_LAMBRIGG	Urban	Planned	0	Planned job		62	385	0.000000	0.000000	0.000000
APPLY	7/08/2015	8:42:00 AM	11:45:07 AM	S 1209	Lambrigg	WANNIA_8+PB_LAMBRIGG	Urban	Planned	0	Planned job		27	183	4,944	0.026730	0.000146
APPLY	7/08/2015	9:40:00 AM	12:06:03 PM	S 3354	HAWKRRPD	WANNIA_8+LB_HAWKRRPD	Urban	Planned	0	Planned job		28	182	8,556	0.040878	0.000254
APPLY	8/08/2015	8:20:00 AM	1:10:00 PM	S 1574	Hilder	WODEN_8+HB_HILDER	Urban	Planned	0	Planned job		48	280	0.000000	0.000000	0.000000
APPLY	10/08/2015	9:20:00 AM	1:06:58 PM	S 1208	BISSHAWK	WANNIA_8+KB_BISSHAWK	Urban	Planned	0	Planned job		35	227	7,944	0.042949	0.000189
APPLY	11/08/2015	8:45:00 AM	10:54:00 AM	S 4522	HAWKRRPD	WANNIA_8+LB_HAWKRRPD	Urban	Planned	0	Planned job		14	129	1,806	0.009764	0.000076
APPLY	13/08/2015	8:58:00 AM	11:26:04 AM	S 1207	BISSHAWK	WANNIA_8+KB_BISSHAWK	Urban	Planned	0	Planned job		28	148	4,146	0.022415	0.000151
APPLY	13/08/2015	9:35:00 AM	1:40:07 PM	S 3357	Lambrigg	WANNIA_8+PB_LAMBRIGG	Urban	Planned	0	Planned job		27	245	6,618	0.035780	0.000146
APPLY	14/08/2015	9:24:00 AM	1:08:00 PM	S 1082	BISSHAWK	WANNIA_8+KB_BISSHAWK	Urban	Planned	0	Planned job		24	151	4,396	0.021280	0.000130
APPLY	14/08/2015	10:27:00 AM	1:15:00 PM	S 1207	BISSHAWK	WANNIA_8+KB_BISSHAWK	Urban	Planned	0	Planned job		52	168	8,736	0.047231	0.000281
APPLY	18/08/2015	8:58:00 AM	10:05:00 AM	S 1048	Ferdinand	CITYEA_REB_FERDINAND	Urban	Planned	0	Planned job		48	67	3,216	0.017387	0.000260
APPLY	18/08/2015	9:25:00 AM	1:52:57 PM	S 1218	BISSHAWK	WANNIA_8+KB_BISSHAWK	Urban	Planned	0	Planned job		38	268	0.000000	0.000000	0.000000
APPLY	18/08/2015	10:35:00 AM	12:51:00 PM	S 1930	Verbruggen	LATHAM_8+HB_VERRBRGHN	Urban	Planned	0	Planned job		45	136	6,120	0.033088	0.000243
APPLY	20/08/2015	8:45:00 AM	12:23:00 PM	S 1203	BISSHAWK	WANNIA_8+KB_BISSHAWK	Urban	Planned	0	Planned job		54	218	8,816	0.063366	0.000292
APPLY	20/08/2015	10:30:00 AM	2:48:00 PM	S 1935	Verbruggen	LATHAM_8+HB_VERRBRGHN	Urban	Planned	0	Planned job		11	238	2,838	0.015344	0.000265
APPLY	21/08/2015	8:32:00 AM	2:00:03 PM	S 504	Cunningham	TELOPK_8+LB_CUNNINGHAM	Urban	Planned	0	Planned job		43	328	0.000000	0.000000	0.000000
APPLY	21/08/2015	9:00:00 AM	1:51:00 PM	S 1845	Homan	LATHAM_8+HB_HOMANN	Rural short	Planned	0	Planned job		68	291	0.000000	0.000000	0.000000
APPLY	21/08/2015	9:17:00 AM	12:24:57 PM	S 1929	Verbruggen	LATHAM_8+HB_VERRBRGHN	Urban	Planned	0	Planned job		43	188	8,082	0.043695	0.000232
APPLY	24/08/2015	8:53:00 AM	2:30:56 PM	S 1209	Lambrigg	WANNIA_8+PB_LAMBRIGG	Urban	Planned	0	Planned job		28	338	9,462	0.051156	0.000151
APPLY	24/08/2015	8:56:00 AM	2:28:00 PM	S 1208	BISSHAWK	WANNIA_8+KB_BISSHAWK	Urban	Planned	0	Planned job		34	217	7,958	0.040379	0.000287
APPLY	24/08/2015	8:58:00 AM	2:26:04 PM	S 1208	BISSHAWK	WANNIA_8+KB_BISSHAWK	Urban	Planned	0	Planned job		34	328	0.000000	0.000000	0.000000
APPLY	25/08/2015	9:03:00 AM	12:30:08 PM	S 3351	Lambrigg	WANNIA_8+PB_LAMBRIGG	Urban	Planned	0	Planned job		23	207	4,764	0.025757	0.000124
APPLY	25/08/2015	9:32:00 AM	12:55:03 PM	S 1151	Verbruggen	LATHAM_8+HB_VERRBRGHN	Urban	Planned	0	Planned job		19	203	3,858	0.020858	0.000103
APPLY	26/08/2015	9:35:00 AM	1:50:58 PM	S 1936	Verbruggen	LATHAM_8+HB_VERRBRGHN	Urban	Planned	0	Planned job		65	256	0.000000	0.000000	0.000000
APPLY	28/08/2015	8:33:00 AM	11:33:03 PM	S 1074	Ferdinand	CITYEA_REB_FERDINAND	Urban	Planned	0	Planned job		37	377	0.000000	0.000000	0.000000
APPLY	28/08/2015	8:38:00 AM	12:55:03 PM	S 634	Throsby	TELOPK_8+WB_THROSBY	Urban	Planned	0	Planned job		44	267	1,148	0.001488	0.000238
APPLY	28/08/2015	8:48:00 AM	12:56:58 PM	S 974	Ferdinand	CITYEA_REB_FERDINAND	Urban	Planned	0	Planned job		103	249	0.000000	0.000000	0.000000
APPLY	28/08/2015	8:45:00 PM	5:59:51 PM	S 974	Ferdinand	CITYEA_REB_FERDINAND	Urban	Planned	0	Planned job		21	15	312	0.013647	0.000114
APPLY	1/09/2015	8:45:00 AM	1:18:58 PM	S 903	Throsby	TELOPK_8+WB_THROSBY	Urban	Planned	0	Planned job		65	274	0.000000	0.000000	0.000000
APPLY	1/09/2015	8:55:00 AM	3:13:00 PM	S 1973	Cunningham	TELOPK_8+LB_CUNNINGHAM	Urban	Planned	0	Planned job		33	378	0.000000	0.000000	0.000000
APPLY	1/09/2015	9:23:00 AM	1:14:00 PM	S 594	Sturt	TELOPK_8+NB_STURT	Urban	Planned	0	Planned job		46	816	0.000000	0.000000	0.000000
APPLY	2/09/2015	8:46:00 AM	12:31:58 PM	S 1067	Throsby	TELOPK_8+WB_THROSBY	Urban	Planned	0	Planned job		65	226	0.000000	0.000000	0.000000
APPLY	3/09/2015	8:45:00 AM	12:15:00 PM	S 1156	Throsby	TELOPK_8+WB_THROSBY	Urban	Planned	0	Planned job		53	210	0.000000	0.000000	0.000000
APPLY	3/09/2015	9:03:00 AM	10:21:59 AM	S 1689	Verbruggen	LATHAM_8+HB_VERRBRGHN	Urban	Planned	0	Planned job		55	79	4,344	0.023486	0.000297
APPLY	4/09/2015	9:04:00 AM	11:42:46 AM	S 261	Throsby	TELOPK_8+WB_THROSBY	Urban	Planned	0	Planned job		11	159	2,064	0.011159	0.000070
APPLY	4/09/2015	9:13:00 AM	12:15:46 PM	S 1082	HAWKRRPD	WANNIA_8+LB_HAWKRRPD	Urban	Planned	0	Planned job		183	183	2,010	0.010867	0.000559
APPLY	4/09/2015	9:25:00 AM	1:16:49 PM	S 1582	Throsby	TELOPK_8+WB_THROSBY	Urban	Planned	0	Planned job		11	421	8,240	0.060379	0.000130
APPLY	7/09/2015	8:30:00 AM	11:06:54 AM	S 3354	HAWKRRPD	WANNIA_8+LB_HAWKRRPD	Urban	Planned	0	Planned job		20				

APPLY	27/11/2015	8:38:00 AM	1:34:00 PM	S 1203	BISSHAWK	WANNIA_K8B_BISSHAWK	Urban	Planned	0	Planned job	51	296	#####	0.081617	0.000276
APPLY	27/11/2015	8:40:00 AM	12:40:00 PM	S 277	Sturt	TELOPK_8+NB_STURT	Urban	Planned	0	Planned job	46	240	#####	0.059688	0.000249
APPLY	28/11/2015	8:31:00 AM	2:17:04 PM	S 1439	Sturt	TELOPK_8+NB_STURT	Urban	Planned	0	Planned job	34	346	#####	0.063631	0.000184
APPLY	28/11/2015	8:38:00 AM	2:11:19 PM	S 1119	Sturt	TELOPK_8+NB_STURT	Urban	Planned	0	Planned job	39	342	#####	0.059103	0.000109
APPLY	30/11/2015	8:37:00 AM	1:37:00 PM	S 5395	Ferdinand	CITYEA_REB_FERDINAND	Urban	Planned	0	Planned job	37	300	#####	0.060012	0.000200
APPLY	30/11/2015	9:27:00 AM	3:30:01 PM	S 5595	Throsby	TELOPK_8+WB_THROSBY	Urban	Planned	0	Planned job	131	363	#####	0.257112	0.000708
APPLY	30/11/2015	9:43:00 AM	12:38:05 PM	S 904	Ferdinand	CITYEA_REB_FERDINAND	Urban	Planned	0	Planned job	22	175	3,852	0.020826	0.000119
APPLY	1/12/2015	9:20:00 AM	1:59:00 PM	S 904	Ferdinand	CITYEA_REB_FERDINAND	Urban	Planned	0	Planned job	26	279	7,254	0.039219	0.000441
APPLY	1/12/2015	9:30:00 AM	1:49:58 PM	S 3836	Homann	LATHAM_8+HB_HOMANN	Rural short	Planned	0	Planned job	67	260	#####	0.016471	0.000632
APPLY	2/12/2015	8:40:00 AM	1:10:20 AM	S 3838	Throsby	TELOPK_8+WB_THROSBY	Urban	Planned	0	Planned job	8	143	1,140	0.006163	0.000043
APPLY	2/12/2015	9:15:00 AM	1:09:57 PM	S 3176	Ferdinand	CITYEA_REB_FERDINAND	Urban	Planned	0	Planned job	38	235	8,928	0.048269	0.000205
APPLY	2/12/2015	9:23:00 AM	2:24:01 PM	S 1926	Verbruggen	LATHAM_8+HB_VERBRUGHN	Urban	Planned	0	Planned job	41	301	#####	0.066727	0.000222
APPLY	2/12/2015	10:25:00 AM	2:45:00 PM	S 904	Sturt	TELOPK_8+NB_STURT	Urban	Planned	0	Planned job	12	260	3,120	0.016868	0.000065
APPLY	3/12/2015	8:40:00 AM	1:15:00 PM	S 5550	Throsby	TELOPK_8+WB_THROSBY	Urban	Planned	0	Planned job	42	275	#####	0.062445	0.000227
APPLY	3/12/2015	8:46:00 AM	1:10:00 PM	S 3544	Throsby	TELOPK_8+WB_THROSBY	Urban	Planned	0	Planned job	24	264	5,336	0.014235	0.000130
APPLY	3/12/2015	9:02:00 AM	3:05:00 PM	S 903	Throsby	TELOPK_8+WB_THROSBY	Urban	Planned	0	Planned job	8	363	2,904	0.015701	0.000043
APPLY	4/12/2015	8:32:00 AM	1:16:00 PM	S 3052	BISSHAWK	WANNIA_K8B_BISSHAWK	Urban	Planned	0	Planned job	27	284	7,668	0.041457	0.000146
APPLY	4/12/2015	8:50:00 AM	1:25:59 PM	S 1935	Verbruggen	LATHAM_8+HB_VERBRUGHN	Urban	Planned	0	Planned job	7	245	1,716	0.009278	0.000038
APPLY	8/12/2015	8:52:00 AM	1:55:00 PM	S 9862	Homann	LATHAM_8+HB_HOMANN	Rural short	Planned	0	Planned job	20	183	3,660	0.019788	0.000108
APPLY	8/12/2015	9:03:00 AM	2:03:56 PM	S 6491	Ferdinand	CITYEA_REB_FERDINAND	Urban	Planned	0	Planned job	34	302	#####	0.055503	0.000184
APPLY	8/12/2015	9:05:00 AM	2:06:52 PM	S 3395	Ferdinand	CITYEA_REB_FERDINAND	Urban	Planned	0	Planned job	16	302	4,830	0.026513	0.000087
APPLY	10/12/2015	9:52:00 AM	2:30:00 PM	S 1048	Ferdinand	CITYEA_REB_FERDINAND	Urban	Planned	0	Planned job	39	278	#####	0.058617	0.000211
APPLY	14/12/2015	9:58:00 AM	3:19:58 PM	S 1836	Homann	LATHAM_8+HB_HOMANN	Rural short	Planned	0	Planned job	65	322	#####	0.113148	0.000351
APPLY	14/12/2015	9:58:00 AM	3:19:58 PM	S 1837	Homann	LATHAM_8+HB_HOMANN	Rural short	Planned	0	Planned job	56	322	#####	0.097479	0.000303
APPLY	15/12/2015	7:05:00 AM	7:20:00 AM	S 8748	Sturt	TELOPK_8+NB_STURT	Urban	Planned	0	Planned job	2	15	30	0.000042	0.000011
APPLY	15/12/2015	10:25:00 AM	1:40:00 PM	S 1843	Homann	LATHAM_8+HB_HOMANN	Rural short	Planned	0	Planned job	199	6,240	#####	0.033737	0.000103
APPLY	15/12/2015	11:22:00 AM	1:28:00 PM	S 8748	Sturt	TELOPK_8+NB_STURT	Urban	Planned	0	Planned job	2	126	252	0.001362	0.000011
APPLY	15/12/2015	4:18:00 PM	4:42:00 PM	S 8748	Sturt	TELOPK_8+NB_STURT	Urban	Planned	0	Planned job	2	24	48	0.000260	0.000011
APPLY	16/12/2015	8:50:00 AM	3:02:57 PM	S 3141	Seal	LATHAM_8+HB_SEAL	Urban	Planned	0	Planned job	38	373	#####	0.076621	0.000205
APPLY	16/12/2015	8:55:00 AM	3:08:03 PM	S 1833	Seal	LATHAM_8+HB_SEAL	Urban	Planned	0	Planned job	69	373	#####	0.139164	0.000373
APPLY	16/12/2015	9:18:00 AM	1:23:57 PM	S 1839	Homann	LATHAM_8+HB_HOMANN	Rural short	Planned	0	Planned job	16	241	3,446	0.014025	0.000087
APPLY	16/12/2015	9:23:00 AM	1:26:03 PM	S 1841	Seal	LATHAM_8+HB_SEAL	Urban	Planned	0	Planned job	69	183	#####	0.068284	0.000373
APPLY	17/12/2015	8:51:00 AM	1:30:03 PM	S 5552	Throsby	TELOPK_8+WB_THROSBY	Urban	Planned	0	Planned job	53	279	#####	0.079962	0.000287
APPLY	18/12/2015	8:43:00 AM	1:11:20 AM	S 1840	Seal	LATHAM_8+HB_SEAL	Urban	Planned	0	Planned job	78	149	#####	0.062835	0.000422
APPLY	18/12/2015	9:40:00 AM	1:13:03 PM	S 1832	Seal	LATHAM_8+HB_SEAL	Urban	Planned	0	Planned job	57	119	6,786	0.036689	0.000308
APPLY	6/01/2016	8:37:00 AM	1:12:04 PM	S 1839	Homann	LATHAM_8+HB_HOMANN	Rural short	Planned	0	Planned job	28	172	4,818	0.026409	0.000151
APPLY	8/01/2016	8:40:00 AM	1:24:55 PM	S 3810	Homann	LATHAM_8+HB_HOMANN	Rural short	Planned	0	Planned job	71	251	8,772	0.047425	0.000211
APPLY	12/01/2016	8:35:00 AM	7:07:04 PM	S 3177	Ferdinand	CITYEA_REB_FERDINAND	Urban	Planned	0	Planned job	32	632	#####	0.109352	0.000173
APPLY	14/01/2016	8:55:00 AM	12:52:06 PM	S 2158	Cunningham	TELOPK_8+LB_CUNNINGHAM	Urban	Planned	0	Planned job	29	237	6,876	0.037175	0.000157
APPLY	14/01/2016	8:55:00 AM	12:10:58 PM	S 1105	Miller	CIVIC_8+MB_MILLER	Urban	Planned	0	Planned job	68	196	#####	0.072047	0.000368
APPLY	14/01/2016	8:55:00 AM	12:10:51 PM	S 583	Cunningham	TELOPK_8+LB_CUNNINGHAM	Urban	Planned	0	Planned job	14	196	2,742	0.014825	0.000076
APPLY	15/01/2016	8:52:00 AM	1:15:01 PM	S 1552	Throsby	TELOPK_8+WB_THROSBY	Urban	Planned	0	Planned job	14	21	324	0.001752	0.000076
APPLY	18/01/2016	8:40:00 AM	1:11:54 PM	S 3446	Hilder	WODEN_8+JB_HILDER	Urban	Planned	0	Planned job	22	272	5,166	0.027930	0.000103
APPLY	19/01/2016	8:37:00 AM	1:11:20 AM	S 1573	Hilder	WODEN_8+JB_HILDER	Urban	Planned	0	Planned job	9	155	1,398	0.007558	0.000049
APPLY	19/01/2016	8:40:00 AM	1:15:07 AM	S 4430	Hilder	WODEN_8+JB_HILDER	Urban	Planned	0	Planned job	27	155	4,188	0.022642	0.000146
APPLY	19/01/2016	8:52:00 AM	1:54:53 PM	S 9555	Ferdinand	CITYEA_REB_FERDINAND	Urban	Planned	0	Planned job	27	303	8,178	0.044214	0.000146
APPLY	19/01/2016	8:57:00 AM	1:50:08 PM	S 4668	Ferdinand	CITYEA_REB_FERDINAND	Urban	Planned	0	Planned job	269	293	7,620	0.041198	0.000141
APPLY	20/01/2016	8:57:00 AM	9:20:09 AM	S 1330	Verbruggen	LATHAM_8+HB_VERBRUGHN	Urban	Planned	0	Planned job	14	251	324	0.010805	0.000076
APPLY	21/01/2016	8:58:00 AM	1:07:00 PM	S 3458	Hilder	WODEN_8+JB_HILDER	Urban	Planned	0	Planned job	24	249	5,976	0.032309	0.000130
APPLY	22/01/2016	8:50:00 AM	1:10:08 PM	S 1439	Sturt	TELOPK_8+NB_STURT	Urban	Planned	0	Planned job	34	138	4,692	0.025367	0.000184
APPLY	27/01/2016	9:25:00 AM	2:10:06 PM	S 974	Ferdinand	CITYEA_REB_FERDINAND	Urban	Planned	0	Planned job	31	285	8,838	0.047783	0.000168
APPLY	29/01/2016	9:00:00 AM	1:06:55 PM	S 1401	BISSHAWK	WANNIA_K8B_BISSHAWK	Urban	Planned	0	Planned job	33	247	8,148	0.044052	0.000178
APPLY	29/01/2016	9:03:00 AM	1:04:08 PM	S 6100	BISSHAWK	WANNIA_K8B_BISSHAWK	Urban	Planned	0	Planned job	16	241	3,458	0.020808	0.000087
APPLY	29/01/2016	9:07:00 AM	1:26:54 PM	S 4099	BISSHAWK	WANNIA_K8B_BISSHAWK	Urban	Planned	0	Planned job	19	230	4,368	0.023616	0.000103
APPLY	29/01/2016	9:11:00 AM	1:25:40 PM	S 3259	BISSHAWK	WANNIA_K8B_BISSHAWK	Urban	Planned	0	Planned job	36	223	8,028	0.043404	0.000195
APPLY	2/02/2016	9:27:00 AM	2:07:40 PM	S 9560	Sturt	TELOPK_8+NB_STURT	Urban	Planned	0	Planned job	9	281	2,526	0.013567	0.000049
APPLY	2/02/2016	9:44:00 AM	1:53:00 PM	S 1689	Verbruggen	LATHAM_8+HB_VERBRUGHN	Urban	Planned	0	Planned job	56	249	#####	0.073588	0.000303
APPLY	3/02/2016	8:53:00 AM	1:25:00 PM	S 3341	Verbruggen	LATHAM_8+HB_VERBRUGHN	Urban	Planned	0	Planned job	270	870	3,170	0.025253	0.000168
APPLY	3/02/2016	9:00:00 AM	9:30:00 PM	S 1048	Ferdinand	CITYEA_REB_FERDINAND	Urban	Planned	0	Planned job	118	790	#####	0.047877	0.000638
APPLY	4/02/2016	9:02:00 AM	12:35:00 PM	S 3385	Homann	LATHAM_8+HB_HOMANN	Rural short	Planned	0	Planned job	16	213	3,408	0.018425	0.000087
APPLY	5/02/2016	8:34:00 AM	1:25:00 PM	S 3446	Hilder	WODEN_8+JB_HILDER	Urban	Planned	0	Planned job	23	264	6,072	0.032828	0.000124
APPLY	5/02/2016	8:47:00 AM	1:15:03 PM	S 4339	Verbruggen	LATHAM_8+HB_VERBRUGHN	Urban	Planned	0	Planned job	35	188	6,582	0.035586	0.000189
APPLY	5/02/2016	9:11:00 AM	3:11:00 PM	S 2258	Seal	LATHAM_8+HB_SEAL	Urban	Planned	0	Planned job	43	360	#####	0.083693	0.000232
APPLY	8/02/2016	11:00:00 AM	1:15:01 PM	S 1176	HAWKRRPD	WANNIA_8+LB_HAWKRRPD	Urban	Planned	0	Planned job	43	215	360	0.016481	0.000124
APPLY	9/02/2016	8:50:00 AM	4:14:57 PM	S 1572	Hilder	WODEN_8+JB_HILDER	Urban	Planned	0	Planned job	19	445	8,554	0.045707	0.000103
APPLY	12/02/2016	8:45:00 AM	1:50:02 PM	S 1834	Homann	LATHAM_8+HB_HOMANN	Rural short	Planned	0	Planned job	56	305	#####	0.092354	0.000303
APPLY	16/02/2016	8:55:00 AM	1:11:59 AM	S 1878	Ferdinand	CITYEA_REB_FERDINAND	Urban	Planned	0	Planned job	49	139	6,810	0.036818	0.000265
APPLY	16/02/2016	9:16:00 AM	1:12:09 PM	S 2882	HAWKRRPD	WANNIA_8+LB_HAWKRRPD	Urban	Planned	0	Planned job	14	236	3,306	0.017874	0.000076
APPLY	16/02/2016	9:24:00 AM	1:19:56 PM	S 2881	HAWKRRPD	WANNIA_8+LB_HAWKRRPD	Urban	Planned	0	Planned job	28	236	6,606	0.035715	0.000151
APPLY	17/02/2016	8:35:00 AM	2:44:58 PM	S 3216	BISSHAWK	WANNIA_K8B_BISSHAWK	Urban	Planned	0	Planned job	19	236	6,606	0.035715	0.000151
APPLY	17/02/2016	8:35:00 AM	2:45:06 PM	S 2487	BISSHAWK	WANNIA_K8B_BISSHAWK	Urban	Planned	0	Planned job	19	370	7,032	0.038019	0.000103
APPLY	17/02/2016	9:03:00 AM	10:35:03 AM	S 5045	BISSHAWK	WANNIA_K8B_BISSHAWK	Urban	Planned	0	Planned job	38	92	3,498	0.018912	0.000205
APPLY	17/02/2016	12:34:00 PM	1:49:57 PM	S 1294	Lambrigg	WANNIA_8+PB_LAMBRIGG	Urban	Planned	0	Planned job	35	76	2,658	0.014371	0.000189
APPLY	18/02/2016	9:00:00 AM	3:45:14 PM	S 1096	Throsby	TELOPK_8+WB_THROSBY	Urban	Planned	0	Planned job	13	405	5,268	0.028482	0.000070
APPLY	18/02/2016	9:05:00 AM	3:50:00 PM	S 5040	Throsby	TELOPK_8+WB_THROSBY	Urban	Planned	0	Planned job	22	405	5,268	0.028482	0.000070
APPLY	19/02/2016	8:44:00 AM	12:14:00 PM	S 1210	Lambrigg	WANNIA_8+PB_LAMBRIGG	Urban	Planned	0	Planned job	51	210	#####	0.057904	0.000276
APPLY	19/02/2016	8:45:00 AM	12:20:03 PM	S 3084	Lambrigg										

INC 161005536	25/06/2016	12:38:48 PM	4:30:48 PM	BISSHAWK	WANNIA_8KB_BISSHAWK	Urban	Planned		0	Planned job
INC 161005551	26/06/2016	12:21:27 PM	4:46:27 PM	BISSHAWK	WANNIA_8KB_BISSHAWK	Urban	Planned		0	Planned job
INC 161005630	28/06/2016	9:59:23 AM	3:09:23 PM	Cunningham	TELOPK_8+LB_CNNINGHM	Urban	Planned		0	Planned job
INC 161005633	28/06/2016	10:04:44 AM	3:21:44 PM	Miller	CIVIC_8+NB_MILLER	Urban	Planned		0	Planned job
INC 161005718	29/06/2016	8:55:01 AM	1:41:01 PM	Sturt	TELOPK_8+NB_STURT	Urban	Planned		0	Planned job
INC 161005719	29/06/2016	9:00:57 AM	2:48:57 PM	HAWKRPRD	WANNIA_8+LB_HAWKRPRD	Urban	Planned		0	Planned job

19	232	4,408	0.023832	0.000103
19	265	5,035	0.027222	0.000103
46	360	####	0.089532	0.000249
21	317	6,657	0.035991	0.000114
34	286	9,724	0.052573	0.000184
28	348	9,744	0.052681	0.000151

IncidentID	Date of event (YYYYMMDD)	Time of interruption (HH:MM)	Recreation Time (HH:MM)	Sub	Feeder Name	ZONE	Feeder classification	Reason for interruption	Detailed reason for interruption	Comments as to what had caused such interruption	Comments on actions taken to restore supply (if any)	Number of customers affected by the interruption	Average duration of customer interruption (minutes)	CMOS	Network SAGE	Network SAGE
APPLY	2/27/2025	12:22 PM	8:59:28 PM	74252	Anthony Boile	GOLDCK_BB ANTHONVIL	Urban	Asset failure	PV			2,488	67	167,870	0.907484	0.051451
APPLY	7/20/2025	#####	#####	12253	Thylard	LATHAM_BB TILLAND	Urban	Other				15	235	1,540	0.021258	0.000261
APPLY	22/27/2025	8:44:00 PM	9:48:00 PM	12726	Beltconner Way Sh	CVC_8PB_BELCWAYSH	Urban	Asset failure	LV			12	64	768	0.004152	0.000005
APPLY	23/27/2025	#####	#####	12946	Lynn West	WOSEN_BB LYNWEST	Urban	Asset failure	LV			64	34	1,002	0.021775	0.000046
APPLY	25/27/2025	8:07:05 PM	8:50:55 PM	11303	Miller	CVC_8BMB MILLER	Urban	Asset failure	LV			22	53	1,184	0.006293	0.000139
APPLY	26/27/2025	1:58:00 PM	6:49:00 PM	14312	Beltconner Way Sh	CVC_8PB_BELCWAYSH	Urban	Asset failure	PV			1,689	51	84,296	0.508811	0.000097
APPLY	5/28/2025	15:00:00 PM	#####	12946	Lynn West	WOSEN_BB LYNWEST	Urban	Asset failure	LV			38	167	5,148	0.004321	0.000006
APPLY	5/28/2025	15:00:00 PM	#####	1581	Lynn West	WOSEN_BB LYNWEST	Urban	Asset failure	LV			47	167	7,848	0.004343	0.000024
APPLY	11/28/2025	1:40:00 PM	10:15:36 PM	14312	Cunningham	TELOPK_BB LYNWINGHM	Urban	Asset failure	PV			28	125	3,498	0.001812	0.000051
APPLY	11/28/2025	5:50:00 PM	10:54:59 PM	12518	Cunningham	TELOPK_BB LYNWINGHM	Urban	Asset failure	PV			41	125	1,134	0.027703	0.000022
APPLY	12/28/2025	1:58:20 PM	7:54:37 PM	14312	Miller	CVC_8BMB MILLER	Urban	Asset failure	PV			1,871	51	115,412	0.021544	0.000116
APPLY	27/28/2025	#####	#####	11307	Miller	CVC_8BMB MILLER	Urban	Asset failure	PV			53	37	1,462	0.053608	0.000087
APPLY	11/28/2025	8:20:00 AM	9:38:59 AM	14312	Miller	CVC_8BMB MILLER	Urban	Asset failure	PV			1,092	78	147,384	0.798834	0.000770
APPLY	1/29/2025	1:03:00 PM	9:36:58 AM	11307	Miller	CVC_8BMB MILLER	Urban	Asset failure	LV			56	34	1,002	0.020283	0.000003
APPLY	13/29/2025	3:32:00 PM	4:08:57 PM	15843	MCMBEAN	BELCON_BB MB MCMBEAN	Rural short	Third party	Vehicle impact			37	38	1,408	0.007795	0.000020
APPLY	14/29/2025	1:46:00 PM	8:40:00 AM	12946	Lynn West	WOSEN_BB LYNWEST	Urban	Asset failure	PV			63	54	1,402	0.000899	0.000041
APPLY	15/29/2025	7:46:00 PM	8:30:43 PM	12864	Lynn West	WOSEN_BB LYNWEST	Urban	Asset failure	PV			25	25	638	0.003841	0.000035
APPLY	16/29/2025	10:45:00 PM	11:40:07 PM	14312	Beltconner Way Sh	CVC_8PB_BELCWAYSH	Urban	Third party	Other			940	55	5,804	1.280179	0.001062
APPLY	18/29/2025	9:10:00 AM	#####	12907	Anthony Boile	GOLDCK_BB ANTHONVIL	Urban	Third party	Vehicle impact			12	111	1,352	0.007705	0.000005
APPLY	18/29/2025	5:51:00 PM	6:55:00 PM	1583	Cunningham	TELOPK_BB LYNWINGHM	Urban	Animal	Animal nesting/burrowing, etc and other			21	84	1,764	0.009537	0.000114
APPLY	25/29/2025	1:27:00 AM	9:11:00 AM	14312	Miller	CVC_8BMB MILLER	Urban	Asset failure	PV			2,460	44	106,619	0.507442	0.021349
APPLY	27/29/2025	11:01:00 AM	3:08:59 AM	12954	Miller	CVC_8BMB MILLER	Urban	Asset failure	PV			53	119	1,836	0.034070	0.000027
APPLY	7/29/2025	#####	12:40:00 PM	14312	Thylard	LATHAM_BB TILLAND	Urban	Vegetation	Blow-on/Fall-in - NBP responsibility			2,861	46	128,844	0.009597	0.021544
APPLY	8/29/2025	5:09:00 AM	4:21:00 AM	13405	Flony	LATHAM_BB FLONY	Urban	Asset failure	PV			33	72	2,875	0.052846	0.000178
APPLY	29/29/2025	1:55:00 PM	6:48:58 PM	1581	Lynn West	WOSEN_BB LYNWEST	Urban	Asset failure	LV			25	55	1,374	0.007429	0.000195
APPLY	17/29/2025	4:50:00 AM	5:54:59 AM	13779	Flony	LATHAM_BB FLONY	Urban	Overhead	0			65	4,424	0.020837	0.000051	
APPLY	29/29/2025	1:56:00 PM	4:59:43 PM	15913	Anthony Boile	GOLDCK_BB ANTHONVIL	Urban	Third party	Vehicle impact			7	44	396	0.008354	0.000038
APPLY	17/12/2025	1:33:00 PM	4:54:00 PM	11339	Beltconner Way Sh	CVC_8PB_BELCWAYSH	Urban	Weather	0			62	63	3,398	0.021777	0.000195
APPLY	17/12/2025	11:08:00 PM	#####	13953	MCMBEAN	BELCON_BB MB MCMBEAN	Rural short	Weather	0			32	77	2,466	0.053332	0.000175
APPLY	17/12/2025	8:47:00 PM	9:02:00 PM	14312	Beltconner Way Sh	CVC_8PB_BELCWAYSH	Urban	Animal	Animal nesting/burrowing, etc and other			1,091	14	2,272	1.03854	0.000602
APPLY	18/12/2025	8:13:00 PM	8:22:54 PM	13386	William Sim	BELCON_BB WILLIAMUM	Urban	Asset failure	PV			20	10	198	0.001070	0.000018
APPLY	20/12/2025	1:50:00 PM	3:00:02 PM	12389	MCMBEAN	BELCON_BB MB MCMBEAN	Rural short	Weather	0			58	70	4,062	0.021961	0.000014
APPLY	26/12/2025	1:20:00 PM	6:51:56 PM	12204	William Sim	BELCON_BB WILLIAMUM	Urban	Vegetation	Grow-in - Other responsible party			17	63	1,478	0.001427	0.000002
APPLY	26/12/2025	1:54:00 PM	3:46:12 PM	13308	Flony	LATHAM_BB FLONY	Urban	Asset failure	LV			10	52	522	0.002822	0.000054
APPLY	26/12/2025	12:15:00 PM	1:21:00 PM	12389	Thylard	LATHAM_BB TILLAND	Urban	Weather	0			34	1,362	0.007764	0.000016	
APPLY	17/12/2025	11:17:00 PM	3:00:04 PM	13195	William Sim	BELCON_BB WILLIAMUM	Urban	Weather	0			34	103	1,804	0.008044	0.000084
APPLY	17/12/2025	3:53:00 PM	7:53:54 PM	13109	Miller	CVC_8BMB MILLER	Urban	Weather	0			20	301	1,618	0.002136	0.000018
APPLY	17/12/2025	11:55:00 PM	6:48:00 PM	13300	Flony	LATHAM_BB FLONY	Urban	Weather	0			20	213	4,816	0.008851	0.000173
APPLY	17/12/2025	11:03:00 PM	8:22:54 PM	13208	William Sim	BELCON_BB WILLIAMUM	Urban	Asset failure	PV			20	10	198	0.001070	0.000018
APPLY	5/12/2025	1:53:00 PM	7:48:55 PM	13405	Flony	LATHAM_BB FLONY	Urban	Asset failure	PV			32	63	2,398	0.001427	0.000008
APPLY	11/12/2025	4:20:00 PM	7:55:00 PM	15195	William Sim	BELCON_BB WILLIAMUM	Urban	Vegetation	Grow-in - Other responsible party			18	206	1,708	0.020047	0.000097
APPLY	12/12/2025	1:53:00 AM	4:54:00 PM	11339	Beltconner Way Sh	CVC_8PB_BELCWAYSH	Urban	Animal	Animal nesting/burrowing, etc and other			42	41	212	0.021743	0.000018
APPLY	16/12/2025	2:27:00 PM	3:00:00 PM	14312	Beltconner Way Sh	CVC_8PB_BELCWAYSH	Urban	Network business	Switching and protection error			1,369	3	1,310	0.000877	0.000020
APPLY	17/12/2025	12:11:00 PM	1:42:58 PM	12518	Cunningham	TELOPK_BB LYNWINGHM	Urban	Asset failure	PV			52	92	7,792	0.029854	0.000081
APPLY	26/12/2025	#####	#####	14312	Thylard	LATHAM_BB TILLAND	Urban	Vegetation	Blow-on/Fall-in - NBP responsibility			21	104	1,684	0.001752	0.000024
APPLY	31/12/2025	5:50:00 PM	6:27:39 PM	14312	Miller	CVC_8BMB MILLER	Urban	Asset failure	PV			2,466	98	211,512	1.145143	0.051711
APPLY	8/26/2025	#####	#####	15100	Anthony Boile	GOLDCK_BB ANTHONVIL	Urban	Asset failure	PV			17	63	1,478	0.001427	0.000002
APPLY	19/26/2025	11:08:00 PM	11:59:31 PM	13364	Lynn West	WOSEN_BB LYNWEST	Urban	Vegetation	Grow-in - Other responsible party			25	42	1,038	0.005612	0.000035
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM	13308	Flony	LATHAM_BB FLONY	Urban	Weather	0			36	21,080	0.113861	0.000163	
APPLY	21/26/2025	1:38:00 AM	4:54:00 PM													

IncidentID	Date of event (GMT+1)	Time of interruption (hh:mm)	Restoration Time (hh:mm)	Sub	Feeder Name	ZONE	Feeder classification	Reason for interruption	Detailed reason for interruption	Comments on what to what caused such interruption	Comments on actions taken to restore supply (if any)	Number of customers affected by interruption	Average duration of sustained customer interruption (minutes)	CMO S	Network SAGD	Network SAGF
APPLY	1/07/2015	8:37:00 AM	11:07:40 AM	13851	Bunbury	WOODEN RTB BUNBURY	Urban	Planned	0	Planned job		27	151	4.134	0.02231	0.00046
APPLY	1/07/2015	9:09:00 AM	10:27:40 AM	5301	Thorold	TELOPE S-WB THOROLD	Urban	Planned	0	Planned job		8	79	630	0.020406	0.00043
APPLY	2/07/2015	8:31:00 AM	12:24:58 PM	1499	Bunbury	WOODEN RTB BUNBURY	Urban	Planned	0	Planned job		25	141	4.622	0.02207	0.00038
APPLY	2/07/2015	8:31:00 AM	11:41:56 AM	13059	Thorold	TELOPE S-WB THOROLD	Urban	Planned	0	Planned job		17	191	1.246	0.015750	0.00002
APPLY	2/07/2015	8:38:00 AM	12:29:00 PM	13983	Bunbury	WOODEN RTB BUNBURY	Urban	Planned	0	Planned job		17	245	1.302	0.018064	0.00011
APPLY	7/07/2015	8:35:00 AM	14:07:00 PM	5353	Thorold	TELOPE S-WB THOROLD	Urban	Planned	0	Planned job		20	25	5.820	0.031466	0.00038
APPLY	7/07/2015	8:54:00 AM	11:45:26 AM	14523	HAWKWRPD	WANNIA S-BB HAWKWRPD	Urban	Planned	0	Planned job		7	171	1.200	0.020468	0.00038
APPLY	7/07/2015	9:33:00 AM	14:07:00 PM	13931	Verbruggen	WANNIA S-BB VERBRUGGEN	Urban	Planned	0	Planned job		17	245	1.218	0.018065	0.00002
APPLY	7/07/2015	9:37:00 AM	14:48:58 PM	2388	Verbruggen	LATHAM S-BB VERBRUGGEN	Urban	Planned	0	Planned job		58	248	REBBER	0.027757	0.00034
APPLY	8/07/2015	8:52:00 AM	12:33:00 PM	14557	HAWKWRPD	WANNIA S-BB HAWKWRPD	Urban	Planned	0	Planned job		14	221	1.096	0.020739	0.00076
APPLY	9/07/2015	8:52:00 AM	12:38:00 PM	13882	HAWKWRPD	WANNIA S-BB HAWKWRPD	Urban	Planned	0	Planned job		27	147	1.676	0.020687	0.00015
APPLY	9/07/2015	9:30:00 AM	20:03:00 PM	5340	Miller	CVIC S-WB MILLER	Urban	Planned	0	Planned job		30	272	1.160	0.044117	0.00062
APPLY	14/07/2015	8:50:00 AM	12:41:00 PM	14973	Bunbury	WOODEN RTB BUNBURY	Urban	Planned	0	Planned job		42	231	REBBER	0.029947	0.00020
APPLY	14/07/2015	8:56:00 AM	12:41:00 PM	15102	Bunbury	WOODEN RTB BUNBURY	Urban	Planned	0	Planned job		42	231	5.702	0.052454	0.00027
APPLY	14/07/2015	9:40:00 AM	24:05:07 PM	11584	HAWKWRPD	WANNIA S-BB HAWKWRPD	Urban	Planned	0	Planned job		27	305	8.238	0.044539	0.00046
APPLY	15/07/2015	9:05:00 AM	12:46:00 PM	15170	Melba	LATHAM S-BB MELBA	Urban	Planned	0	Planned job		49	231	REBBER	0.028523	0.00025
APPLY	16/07/2015	8:45:00 AM	11:23:56 AM	13930	Verbruggen	LATHAM S-BB VERBRUGGEN	Urban	Planned	0	Planned job		43	159	6.834	0.030648	0.00032
APPLY	16/07/2015	9:08:00 AM	13:00:00 PM	13800	Verbruggen	WANNIA S-BB HAWKWRPD	Urban	Planned	0	Planned job		27	250	1.750	0.020494	0.00046
APPLY	18/07/2015	8:30:00 AM	9:40:00 PM	13983	Thorold	TELOPE S-WB THOROLD	Urban	Planned	0	Planned job		63	450	REBBER	0.034663	0.00041
APPLY	20/07/2015	10:00:00 AM	9:26:00 PM	12376	Miller	CVIC S-WB MILLER	Urban	Planned	0	Planned job		3	326	978	0.007288	0.00016
APPLY	20/07/2015	9:26:00 AM	12:18:12 PM	13155	Miller	CVIC S-WB MILLER	Urban	Planned	0	Planned job		10	171	1.222	0.020320	0.00054
APPLY	22/07/2015	8:47:00 AM	10:09:06 AM	13931	Verbruggen	LATHAM S-BB VERBRUGGEN	Urban	Planned	0	Planned job		19	82	1.560	0.008434	0.00003
APPLY	23/07/2015	8:32:00 AM	11:58:00 AM	13931	Lambrigg	WANNIA S-BB LAMBRIGG	Urban	Planned	0	Planned job		15	206	3.090	0.020706	0.00081
APPLY	24/07/2015	9:30:00 AM	10:59:58 AM	15170	Melba	LATHAM S-BB MELBA	Urban	Planned	0	Planned job		49	231	1.388	0.029130	0.00025
APPLY	28/07/2015	8:30:00 AM	1:00:00 PM	15126	Verbruggen	LATHAM S-BB VERBRUGGEN	Urban	Planned	0	Planned job		41	270	REBBER	0.039850	0.00022
APPLY	28/07/2015	9:26:00 AM	2:50:00 PM	13157	Lambrigg	WANNIA S-BB LAMBRIGG	Urban	Planned	0	Planned job		49	258	1.500	0.024044	0.00025
APPLY	30/07/2015	10:08:00 AM	2:36:00 PM	13152	Lambrigg	WANNIA S-BB LAMBRIGG	Urban	Planned	0	Planned job		20	204	1.976	0.027888	0.00038
APPLY	30/07/2015	10:12:00 AM	2:21:00 PM	13354	HAWKWRPD	WANNIA S-BB HAWKWRPD	Urban	Planned	0	Planned job		20	249	1.840	0.020524	0.00038
APPLY	30/07/2015	10:33:00 AM	2:16:00 PM	13356	HAWKWRPD	WANNIA S-BB HAWKWRPD	Urban	Planned	0	Planned job		20	249	1.820	0.020524	0.00038
APPLY	31/07/2015	9:27:00 AM	12:07:04 PM	13199	Lambrigg	WANNIA S-BB LAMBRIGG	Urban	Planned	0	Planned job		31	160	1.462	0.026827	0.00068
APPLY	4/08/2015	9:30:00 AM	14:49:57 PM	13209	Lambrigg	WANNIA S-BB LAMBRIGG	Urban	Planned	0	Planned job		46	260	REBBER	0.026451	0.00049
APPLY	6/08/2015	8:59:00 AM	11:23:00 AM	13883	HAWKWRPD	WANNIA S-BB HAWKWRPD	Urban	Planned	0	Planned job		11	141	1.000	0.021963	0.00015
APPLY	6/08/2015	9:05:00 AM	11:18:54 AM	13157	Lambrigg	WANNIA S-BB LAMBRIGG	Urban	Planned	0	Planned job		49	134	1.564	0.031488	0.00025
APPLY	6/08/2015	9:13:00 AM	13:05:58 PM	14553	Lambrigg	WANNIA S-BB LAMBRIGG	Urban	Planned	0	Planned job		381	REBBER	0.120541	0.033335	0.00041
APPLY	7/08/2015	8:42:00 AM	11:45:07 AM	13209	Lambrigg	WANNIA S-BB LAMBRIGG	Urban	Planned	0	Planned job		27	181	1.444	0.020730	0.00046
APPLY	7/08/2015	9:04:00 AM	12:06:00 PM	13354	HAWKWRPD	WANNIA S-BB HAWKWRPD	Urban	Planned	0	Planned job		47	182	1.556	0.024234	0.00034
APPLY	11/08/2015	9:20:00 AM	1:06:58 PM	13208	BISHAWK	WANNIA S-BB BISHAWK	Urban	Planned	0	Planned job		47	249	1.944	0.020749	0.00049
APPLY	11/08/2015	8:45:00 AM	10:54:00 AM	14522	HAWKWRPD	WANNIA S-BB BISHAWK	Urban	Planned	0	Planned job		14	129	1.806	0.009794	0.00076
APPLY	11/08/2015	8:58:00 AM	13:26:00 PM	14207	BISHAWK	WANNIA S-BB BISHAWK	Urban	Planned	0	Planned job		28	148	1.446	0.022415	0.00038
APPLY	13/08/2015	9:35:00 AM	14:07:00 PM	13357	Lambrigg	WANNIA S-BB LAMBRIGG	Urban	Planned	0	Planned job		27	245	1.638	0.021783	0.00046
APPLY	14/08/2015	8:52:00 AM	11:59:57 AM	15170	Melba	LATHAM S-BB MELBA	Urban	Planned	0	Planned job		46	188	1.646	0.026745	0.00049
APPLY	14/08/2015	10:24:00 AM	1:08:00 PM	14872	BISHAWK	WANNIA S-BB BISHAWK	Urban	Planned	0	Planned job		141	132	1.288	0.021280	0.00030
APPLY	14/08/2015	10:27:00 AM	11:55:00 PM	13207	BISHAWK	WANNIA S-BB BISHAWK	Urban	Planned	0	Planned job		52	168	1.736	0.024711	0.00081
APPLY	18/08/2015	8:58:00 AM	10:55:00 AM	13048	Ferdinand	CITYEA S-BB FERDINAND	Urban	Planned	0	Planned job		48	67	1.216	0.017387	0.00060
APPLY	18/08/2015	9:25:00 AM	1:52:57 PM	13218	BISHAWK	WANNIA S-BB BISHAWK	Urban	Planned	0	Planned job		35	189	1.046	0.020589	0.00025
APPLY	18/08/2015	10:35:00 AM	12:51:00 PM	13930	Verbruggen	LATHAM S-BB VERBRUGGEN	Urban	Planned	0	Planned job		45	136	1.320	0.033088	0.00043
APPLY	20/08/2015	8:45:00 AM	12:29:00 PM	13203	BISHAWK	WANNIA S-BB BISHAWK	Urban	Planned	0	Planned job		54	248	REBBER	0.035448	0.00023
APPLY	20/08/2015	10:30:00 AM	2:48:00 PM	13935	Verbruggen	LATHAM S-BB VERBRUGGEN	Urban	Planned	0	Planned job		11	258	2.838	0.015344	0.00059
APPLY	21/08/2015	8:32:00 AM	2:00:00 PM	15504	Cunningham	TELOPE S-BB CHNINGHAM	Urban	Planned	0	Planned job		43	328	REBBER	0.027264	0.00032
APPLY	21/08/2015	9:12:00 AM	12:24:57 PM	13929	Verbruggen	LATHAM S-BB VERBRUGGEN	Urban	Planned	0	Planned job		43	169	1.682	0.020524	0.00032
APPLY	24/08/2015	8:33:00 AM	12:05:03 PM	13816	Bunbury	WOODEN RTB BUNBURY	Urban	Planned	0	Planned job		37	112	1.446	0.022415	0.00020
APPLY	24/08/2015	8:53:00 AM	2:36:50 PM	13209	Lambrigg	WANNIA S-BB LAMBRIGG	Urban	Planned	0	Planned job		28	338	1.462	0.021036	0.00051
APPLY	24/08/2015	8:58:00 AM	2:08:00 PM	14522	BISHAWK	WANNIA S-BB BISHAWK	Urban	Planned	0	Planned job		42	192	1.600	0.020749	0.00030
APPLY	24/08/2015	8:58:00 AM	2:26:00 PM	13208	BISHAWK	WANNIA S-BB BISHAWK	Urban	Planned	0	Planned job		34	328	REBBER	0.020634	0.00084
APPLY	24/08/2015	8:59:00 AM	2:26:00 PM	13731	Bunbury	WOODEN RTB BUNBURY	Urban	Planned	0	Planned job		41	11	1.162	0.020639	0.00070
APPLY	24/08/2015	9:44:00 AM	11:52:55 AM	12732	Bunbury	WOODEN RTB BUNBURY	Urban	Planned	0	Planned job		39	129	1.028	0.027184	0.00021
APPLY	25/08/2015	9:09:00 AM	12:30:00 PM	13935	Lambrigg	WANNIA S-BB LAMBRIGG	Urban	Planned	0	Planned job		23	207	1.764	0.020575	0.00024
APPLY	25/08/2015	9:32:00 AM	11:55:00 PM	13115	Verbruggen	LATHAM S-BB VERBRUGGEN	Urban	Planned	0	Planned job		23	253	1.858	0.020628	0.00023
APPLY	26/08/2015	9:35:00 AM	1:50:58 PM	13936	Verbruggen	LATHAM S-BB VERBRUGGEN	Urban	Planned	0	Planned job		65	256	REBBER	0.039954	0.00051
APPLY	26/08/2015	9:35:00 AM	1:50:58 PM	13936	Ferdinand	CITYEA S-BB FERDINAND	Urban	Planned	0	Planned job		65	256	REBBER	0.039954	0.00051
APPLY	26/08/2015	9:35:00 AM	1:50:58 PM	13936	Ferdinand	CITYEA S-BB FERDINAND	Urban	Planned	0	Planned job		44	257	REBBER	0.031148	0.00038
APPLY	26/08/2015	8:48:00 AM	12:56:58 PM	15974	Ferdinand	CITYEA S-BB FERDINAND	Urban	Planned	0	Planned job		303	249	REBBER	0.138645	0.00057
APPLY	26/08/2015	8:48:00 AM	12:56:58 PM	15974	Ferdinand	CITYEA S-BB FERDINAND	Urban	Planned	0	Planned job		151	265	1.312	0.020639	0.00014
APPLY	1/09/2015	8:45:00 AM	11:58:58 PM	5303	Thorold	TELOPE S-WB THOROLD	Urban	Planned	0	Planned job		65	274	REBBER	0.029679	0.00051
APPLY	1/09/2015	8:55:00 AM	3:13:00 PM	13175	Cunningham	TELOPE S-BB CHNINGHAM	Urban	Planned	0	Planned job		33	338	REBBER	0.027441	0.00078
APPLY	2/09/2015	8:45:00 AM	12:15:00 PM	13816	Thorold	TELOPE S-WB THOROLD	Urban	Planned	0	Planned job		35	189	1.046	0.020589	0.00025
APPLY	3/09/2015	8:45:00 AM	12:15:00 PM	13516	Thorold	TELOPE S-WB THOROLD	Urban	Planned	0	Planned job		53	210	REBBER	0.006175	0.00087
APPLY	4/09/2015	9:05:00 AM	10:27:00 AM	13689	Verbruggen	LATHAM S-BB VERBRUGGEN	Urban	Planned	0	Planned job		78	134	1.144	0.021468	0.00029
APPLY	4/09/2015	9:04:00 AM	11:42:46 AM	12361	Thorold	TELOPE S-WB THOROLD	Urban	Planned	0	Planned job		13	159	2.064	0.011159	0.00070
APPLY	4/09/2015	9:13:00 AM	12:15:44 PM	13882	HAWKWRPD	WANNIA S-BB HAWKWRPD	Urban	Planned	0	Planned job		11	181	2.010	0.010867	0.00059
APPLY	4/09/2015	9:25:00 AM	11:56:40 PM	13882	Thorold	TELOPE S-WB THOROLD	Urban	Planned	0	Planned job		23	182	1.550	0.020524	0.00038
APPLY	7/09/2015	8:30:00 AM	11:06:54 AM	13354	HAWKWRPD	WANNIA S-BB HAWKWRPD	Urban	Planned	0	Planned job		20	157	1.138	0.019696	0.00038
APPLY	7/09/2015	8:30:00 AM	11:06:54 AM	13354	Thorold	TELOPE S-WB THOROLD	Urban	Planned	0	Planned job		17	264	1.488	0.020206	0.00049
APPLY	7/09/2015	8:42:00 AM	14:51:57 PM													

APPLY	5/02/2016	9:11:00 AM	3:11:00 PM	52258	Seal	LATHAM RQB SEAL	Urban	Planned	0	Planned job	43	360	#####	0.083693	0.000032
APPLY	5/02/2016	1:30:00 PM	3:30:00 PM	52816	Bunbury	WODEN RTB BUNBURY	Urban	Planned	0	Planned job	33	60	1.380	0.007461	0.000214
APPLY	8/02/2016	11:00:00 AM	12:31:57 PM	51176	HAWKPRD	WANNIA B+LB HAWKPRD	Urban	Planned	0	Planned job	41	82	3.180	0.018166	0.000222
APPLY	10/02/2016	8:40:00 AM	12:14:56 PM	51881	Mebla	LATHAM RUB MELBA	Urban	Planned	0	Planned job	45	207	5.312	0.050345	0.000243
APPLY	16/02/2016	8:55:00 AM	11:13:59 PM	51678	Ferriand	CITYEA BEB FERDONAND	Urban	Planned	0	Planned job	49	139	4.830	0.038438	0.000205
APPLY	16/02/2016	9:36:00 AM	11:29:00 PM	52882	HAWKPRD	WANNIA B+LB HAWKPRD	Urban	Planned	0	Planned job	14	236	3.306	0.017874	0.000076
APPLY	16/02/2016	9:24:00 AM	11:39:56 PM	52881	HAWKPRD	WANNIA B+LB HAWKPRD	Urban	Planned	0	Planned job	28	236	4.408	0.031735	0.000051
APPLY	17/02/2016	8:35:00 AM	2:44:58 PM	51216	BISSHAWK	WANNIA BKB BISSHAWK	Urban	Planned	0	Planned job	53	370	#####	0.130621	0.000287
APPLY	17/02/2016	8:35:00 AM	2:45:06 PM	52487	BISSHAWK	WANNIA BKB BISSHAWK	Urban	Planned	0	Planned job	19	370	7.032	0.038019	0.000103
APPLY	17/02/2016	9:03:00 AM	10:30:04 AM	52045	BISSHAWK	WANNIA BKB BISSHAWK	Urban	Planned	0	Planned job	38	62	1.498	0.018912	0.000205
APPLY	17/02/2016	12:34:00 PM	1:49:57 PM	51204	Lambridge	WANNIA B+PB LAMBRIEGG	Urban	Planned	0	Planned job	35	76	2.658	0.014371	0.000189
APPLY	18/02/2016	8:50:00 AM	3:11:05 PM	51090	Mebla	LATHAM RUB MELBA	Urban	Planned	0	Planned job	33	381	#####	0.047992	0.000178
APPLY	18/02/2016	9:00:00 AM	3:45:14 PM	51096	Throody	TELOP B+WB THRODSEY	Urban	Planned	0	Planned job	13	405	5.268	0.023482	0.000270
APPLY	18/02/2016	9:05:00 AM	3:50:00 PM	51840	Throody	TELOP B+WB THRODSEY	Urban	Planned	0	Planned job	22	405	8.910	0.048172	0.000119
APPLY	19/02/2016	8:44:00 AM	12:10:00 PM	51210	Lambridge	WANNIA B+PB LAMBRIEGG	Urban	Planned	0	Planned job	51	210	#####	0.037794	0.000276
APPLY	19/02/2016	8:45:00 AM	12:20:09 PM	53084	Lambridge	WANNIA B+PB LAMBRIEGG	Urban	Planned	0	Planned job	44	215	5.462	0.051155	0.000238
INC 162000480	22/02/2016	7:52:11 AM	11:38:25 AM		BISSHAWK	WANNIA BKB BISSHAWK	Urban	Planned	0	Planned job	63	226	#####	0.077059	0.000341
INC 162000516	23/02/2016	8:08:52 AM	11:25:52 AM		BISSHAWK	WANNIA BKB BISSHAWK	Urban	Planned	0	Planned job	49	197	1.653	0.021489	0.000205
INC 161002626	25/02/2016	7:32:24 AM	7:35:24 AM		Lambridge	WANNIA B+PB LAMBRIEGG	Urban	Planned	0	Planned job	11	3	33	0.0000178	0.000059
INC 161002629	25/02/2016	8:09:09 AM	12:25:09 PM		BISSHAWK	WANNIA BKB BISSHAWK	Urban	Planned	0	Planned job	24	256	4.144	0.032348	0.000330
INC 161002635	25/02/2016	8:46:17 AM	12:28:17 PM		Lambridge	WANNIA B+PB LAMBRIEGG	Urban	Planned	0	Planned job	60	220	#####	0.071366	0.000284
INC 162000084	26/02/2016	8:39:12 AM	1:30:12 PM		HAWKPRD	WANNIA B+LB HAWKPRD	Urban	Planned	0	Planned job	65	311	#####	0.139293	0.000251
INC 162000095	26/02/2016	8:25:00 AM	1:36:54 PM		Ferriand	CITYEA BEB FERDONAND	Urban	Planned	0	Planned job	32	303	1.661	0.022361	0.000179
INC 162000090	26/02/2016	9:37:11 AM	2:57:15 PM		BISSHAWK	WANNIA BKB BISSHAWK	Urban	Planned	0	Planned job	49	320	#####	0.084790	0.000265
INC 162000200	1/03/2016	8:00:35 AM	2:11:35 PM		HAWKPRD	WANNIA B+LB HAWKPRD	Urban	Planned	0	Planned job	20	371	7.420	0.040156	0.000108
INC 161002058	2/03/2016	8:09:40 AM	1:00:40 PM		BISSHAWK	WANNIA BKB BISSHAWK	Urban	Planned	0	Planned job	38	291	8.148	0.046022	0.000131
INC 161003026	9/03/2016	8:03:04 AM	10:43:04 AM		Bunbury	WODEN RTB BUNBURY	Urban	Planned	0	Planned job	45	180	7.200	0.038927	0.000243
INC 161000421	17/03/2016	7:52:55 AM	1:05:55 AM		HAWKPRD	WANNIA B+LB HAWKPRD	Urban	Planned	0	Planned job	43	331	#####	0.072381	0.000232
INC 162000081	23/03/2016	6:59:36 AM	1:26:36 PM		Bunbury	WODEN RTB BUNBURY	Urban	Planned	0	Planned job	43	387	774	0.004485	0.000011
INC 162000061	24/03/2016	8:37:38 AM	12:09:39 PM		BISSHAWK	WANNIA BKB BISSHAWK	Urban	Planned	0	Planned job	88	212	#####	0.130875	0.000476
INC 161003459	26/03/2016	8:53:19 AM	11:19:19 AM		Cunningham	TELOP B+LB CUNNINGHAM	Urban	Planned	0	Planned job	160	12,560	0.013841	0.000087	
INC 161003474	30/03/2016	12:11:43 PM	1:40:43 PM		Seal	LATHAM RQB SEAL	Urban	Planned	0	Planned job	77	89	6.853	0.037051	0.000416
INC 161003524	1/04/2016	7:59:36 AM	12:19:36 PM		Cunningham	TELOP B+LB CUNNINGHAM	Urban	Planned	0	Planned job	25	260	6.500	0.035142	0.000335
INC 161003528	1/04/2016	9:27:51 AM	11:55:51 PM		Verbraathen	LATHAM B+WB VERBRIEGEN	Urban	Planned	0	Planned job	14	208	#####	0.060726	0.000202
INC 161003593	4/04/2016	8:50:21 AM	12:28:25 PM		BISSHAWK	WANNIA BKB BISSHAWK	Urban	Planned	0	Planned job	43	218	5.377	0.036097	0.000232
INC 161003637	5/04/2016	8:36:04 AM	10:54:04 AM		BISSHAWK	WANNIA BKB BISSHAWK	Urban	Planned	0	Planned job	42	116	4.872	0.026341	0.000237
INC 161003629	5/04/2016	9:09:05 AM	10:40:05 AM		Lambridge	WANNIA B+PB LAMBRIEGG	Urban	Planned	0	Planned job	44	91	4.004	0.021648	0.000218
INC 161003711	7/04/2016	9:11:15 AM	10:24:15 AM		BISSHAWK	WANNIA BKB BISSHAWK	Urban	Planned	0	Planned job	15	73	1.095	0.020520	0.000081
INC 161003780	9/04/2016	8:53:07 AM	11:31:21 PM		Cunningham	TELOP B+LB CUNNINGHAM	Urban	Planned	0	Planned job	86	260	#####	0.120966	0.000451
INC 162003114	13/04/2016	9:09:26 AM	11:31:26 AM		HAWKPRD	WANNIA B+LB HAWKPRD	Urban	Planned	0	Planned job	28	142	3.876	0.021496	0.000131
INC 162003116	13/04/2016	9:39:59 AM	11:24:59 AM		Seal	LATHAM RQB SEAL	Urban	Planned	0	Planned job	58	145	2.760	0.039197	0.000314
INC 162003150	14/04/2016	9:09:11 AM	11:31:11 AM		Verbraathen	LATHAM B+WB VERBRIEGEN	Urban	Planned	0	Planned job	142	1,266	0.017608	0.000214	
INC 162003186	15/04/2016	9:05:57 AM	11:30:57 AM		BISSHAWK	WANNIA BKB BISSHAWK	Urban	Planned	0	Planned job	39	145	5.655	0.036074	0.000211
INC 162003215	16/04/2016	12:02:42 PM	1:36:25 PM		HAWKPRD	WANNIA B+LB HAWKPRD	Urban	Planned	0	Planned job	65	18	1.232	0.023639	0.000051
INC 162003118	17/04/2016	11:06:25 PM	11:16:36 PM		CASINO 2	BELCON RQB CASINO 2	Urban	Planned	0	Planned job	1,800	50	#####	0.099139	0.000712
INC 162003135	18/04/2016	9:40:43 AM	11:42:43 AM		Bunbury	WODEN RTB BUNBURY	Urban	Planned	0	Planned job	36	122	4.392	0.021745	0.000195
INC 162003179	19/04/2016	10:19:50 AM	12:44:50 PM		Bunbury	WODEN RTB BUNBURY	Urban	Planned	0	Planned job	32	145	4.480	0.025086	0.000173
INC 162003412	20/04/2016	9:30:10 AM	11:13:10 AM		BISSHAWK	WANNIA BKB BISSHAWK	Urban	Planned	0	Planned job	34	123	4.182	0.022610	0.000184
INC 162003481	27/04/2016	9:01:24 AM	12:12:24 PM		Bunbury	WODEN RTB BUNBURY	Urban	Planned	0	Planned job	34	195	4.680	0.025302	0.000130
INC 162003482	27/04/2016	9:05:36 AM	11:31:36 AM		Cunningham	TELOP B+LB CUNNINGHAM	Urban	Planned	0	Planned job	37	8	296	0.001600	0.000200
INC 162003483	28/04/2016	9:06:41 AM	2:34:50 PM		Cunningham	TELOP B+LB CUNNINGHAM	Urban	Planned	0	Planned job	57	328	#####	0.130129	0.000308
INC 162003458	29/04/2016	9:01:34 AM	3:25:34 PM		BISSHAWK	WANNIA BKB BISSHAWK	Urban	Planned	0	Planned job	49	284	#####	0.130720	0.000205
INC 162003177	3/05/2016	8:43:09 AM	12:03:25 PM		BISSHAWK	WANNIA BKB BISSHAWK	Urban	Planned	0	Planned job	77	200	#####	0.081374	0.000416
INC 162003482	4/05/2016	9:16:59 AM	12:02:28 PM		Verbraathen	LATHAM B+WB VERBRIEGEN	Urban	Planned	0	Planned job	73	165	#####	0.065311	0.000395
INC 162003481	5/05/2016	9:25:15 AM	1:41:15 PM		BISSHAWK	WANNIA BKB BISSHAWK	Urban	Planned	0	Planned job	16	200	4.160	0.021491	0.000087
INC 162003919	6/05/2016	9:26:16 AM	12:29:16 PM		Bunbury	WODEN RTB BUNBURY	Urban	Planned	0	Planned job	79	183	#####	0.078162	0.000427
INC 162003204	10/05/2016	9:24:02 AM	10:45:02 AM		Bunbury	WODEN RTB BUNBURY	Urban	Planned	0	Planned job	46	81	1.808	0.021021	0.000260
INC 162003072	11/05/2016	9:01:57 AM	12:20:57 PM		Miller	CIVIC B+WB MILLER	Urban	Planned	0	Planned job	39	199	7.761	0.041960	0.000211
INC 161003832	13/05/2016	1:25:42 PM	3:10:42 PM		BISSHAWK	WANNIA BKB BISSHAWK	Urban	Planned	0	Planned job	17	105	1.785	0.009651	0.000092
INC 161003850	14/05/2016	8:55:52 AM	1:21:28 PM		Miller	CIVIC B+WB MILLER	Urban	Planned	0	Planned job	128	266	#####	0.135800	0.000632
INC 161003832	18/05/2016	9:49:34 AM	2:50:34 PM		Cunningham	TELOP B+LB CUNNINGHAM	Urban	Planned	0	Planned job	46	301	#####	0.074809	0.000249
INC 161003877	19/05/2016	9:53:17 AM	4:09:17 PM		Miller	CIVIC B+WB MILLER	Urban	Planned	0	Planned job	167	336	#####	0.124968	0.000669
INC 161004040	22/05/2016	8:29:10 AM	1:09:10 PM		Cunningham	TELOP B+LB CUNNINGHAM	Urban	Planned	0	Planned job	9	290	2.610	0.014111	0.000049
INC 161004065	27/05/2016	8:49:28 AM	11:33:28 AM		Cunningham	TELOP B+LB CUNNINGHAM	Urban	Planned	0	Planned job	32	164	5.248	0.023973	0.000173
INC 161004066	27/05/2016	9:01:55 AM	3:16:15 PM		Seal	LATHAM RQB SEAL	Urban	Planned	0	Planned job	308	373	#####	0.217796	0.000584
INC 161004067	27/05/2016	9:09:12 AM	12:33:12 PM		Seal	LATHAM RQB SEAL	Urban	Planned	0	Planned job	58	204	#####	0.063970	0.000314
INC 161004638	28/05/2016	10:04:33 AM	11:33:33 AM		Cunningham	TELOP B+LB CUNNINGHAM	Urban	Planned	0	Planned job	15	89	1.335	0.007218	0.000081
INC 161005033	7/06/2016	9:27:48 AM	1:30:27 PM		Ferriand	CITYEA BEB FERDONAND	Urban	Planned	0	Planned job	52	245	#####	0.068762	0.000281
INC 161005119	9/06/2016	9:27:30 AM	11:40:30 AM		Cunningham	TELOP B+LB CUNNINGHAM	Urban	Planned	0	Planned job	38	133	5.054	0.027325	0.000205
INC 161005121	15/06/2016	10:09:24 AM	11:57:24 AM		HAWKPRD	WANNIA B+LB HAWKPRD	Urban	Planned	0	Planned job	73	108	7.894	0.042625	0.000195
INC 161005027	15/06/2016	9:29:48 AM	1:09:49 PM		HAWKPRD	WANNIA B+LB HAWKPRD	Urban	Planned	0	Planned job	51	289	6.725	0.031659	0.000135
INC 161005245	15/06/2016	9:26:16 AM	12:30:16 PM		BISSHAWK	WANNIA BKB BISSHAWK	Urban	Planned	0	Planned job	11	184	2.024	0.010943	0.000099
INC 161005039	16/06/2016	8:25:14 AM	3:33:14 PM		Ferriand	CITYEA BEB FERDONAND	Urban	Planned	0	Planned job	47	428	#####	0.138572	0.000214
INC 161005094	16/06/2016	8:52:31 AM	11:09:40 AM		BISSHAWK	WANNIA BKB BISSHAWK	Urban	Planned	0	Planned job	78	139	#####	0.058682	0.000422
INC 161005093	20/06/2016	9:40:52 AM	12:32:52 PM		Ferriand	CITYEA BEB FERDONAND	Urban	Planned	0	Planned job	19	172	1.248	0.017668	0.000033
INC 161005412	21/06/2016	9:32:27 AM</													


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## Section 1 Electricity Distribution Supply Standards Code

### 1.3 Supply Reliability

#### 1.3.2 132kV and 66kV sub-transmission line performance

Item	Reporting requirement	Response
1	132kV sub-transmission lines in service - Number - Total Length	189.9
2	66kV sub-transmission lines in service - Number - Total Length	2 (7.3 km)
3	132kV Underground Cables in Service - Number - Total Length	6.02
4	Number of 132kV or 66kV sub-transmission line and cable unplanned Interruptions experienced for the year	0
5	For all interruptions above, provide the following details: <ul style="list-style-type: none"> <li>• Sub-transmission Line Identification Name</li> <li>• Voltage Level</li> <li>• Dates &amp; Times of all interruptions</li> <li>• Restoration times for each interruption</li> <li>• Total time that the line or section of the line was off supply for each interruption</li> <li>• What caused each interruption?</li> <li>• Action taken to restore supply</li> </ul>	N/A

Item	Reporting requirement	Response
6	Provide details of any Line enhancements, additions, and any lines decommissioned during the reporting year.	None
7	Provide Geographic Schematic of the 132kV and 66kV network and highlight additions for the reporting period and also highlight any proposed changes that have been identified in planning reports.	See Attachment B - Transmission Network
8	Provide Single line schematics of all 132kV and 66kV Substations and Switching stations and highlight additions for the reporting period and also highlight any proposed changes that have been identified in planning reports.	See Attachment C - Single Line Schematics
9	Provide a copy of all planning reports which may impact on the subtransmission system (lines, substations and switching stations)	Included in DAPR.
10	Provide details of proposed subtransmission augmentations for the next five years	Included in DAPR.



## Section 1 Electricity Distribution Supply Standards Code

### 1.3 Supply Reliability

#### 1.3.3 Zone substations / switching stations performance

**Note:** Wherever there is a '\*', the utility may be required to provide supplementary information as detailed in the relevant footnote. The utility may also provide supplementary information to elaborate on any response given in this section. Items of supplementary information should be in numbered Annexes and the Annex numbers should be provided in the space with the main response.

List all Zone Substations / Switching Stations	Incoming network voltage/ Outgoing Feeder Voltages	Substation maximum supply capacity	Number of 132kV or 66kV yard incidents or interruptions due to defects within station recorded for the year* <sup>1</sup>	Number of 11kV / 22kV / 33kV switchgear incidents due to defects within station recorded for the year* <sup>1</sup>	Total number of feeder trips due to feeder faults for the year	Total number of feeders supplied by the Zone S/S
	( 132kV/11kV )	MVA				
Angle Crossing	132kV/11kV	15	0	0	0	1
Belconnen	132kV/11kV	55+55	0	0	9	19
Bruce	132kV	Nil	0	0	0	0
Causeway	132kV	Nil	0	0	0	0
City East	132kV/11kV	57+55+57	0	0	5	28
Civic	132kV/11kV	55+55+55	0	0	13	16
East Lake	132kV/11kV	55	0	0	4	5
Fyshwick	66kV/11kV	20+25+25	0	0	5	6
Gilmore	132kV/11kV	45+45	0	0	5	13
Gold Creek	132kV/11kV	57+57	0	0	13	20
Latham	132kV/11kV	50+50+50	0	0	16	21
Telopea Park	132kV/11kV	50+50+50	0	0	12	34
Theodore	132kV/11kV	45+45	0	0	2	11
Wanniassa	132kV/11kV	50+50+50	0	0	18	25
Woden	132kV/11kV	50+50+50	0	1	13	30

Provide details of any substation enhancements, additions, and any substations decommissioned during the reporting year.

1 For all incidents, provide full details associated with each matter (these are to be all incidents or matters emanating from or caused by operations within the Zone or Switching Station).

This should include:

- Zone , Switching Station
- Date and time of incident.
- Description of the incident,
- Impact on the Zone / Switching Station and impact on the electricity supply from that Zone or Switching Station
- Total number of customers affected by any interruption to supply,
- Time period that customers were off supply
- Cause of the incident
- Actions taken to rectify the incident
- Actions taken or to be taken to prevent or minimise the risk of any repeat of the incident.

Zone	Feeder	Received Date	Received Time	Comments (including the cause of the incident)	Duration Customers Off Supply (mins)	No. of Consumers Affected	Repetition Prevention
Woden	Theodore	31/05/2016	3:23:40 PM	11kV Bus Coupler failed to latch	3	7,042	


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## Section 1 Electricity Distribution Supply Standards Code

### 1.3 Supply Reliability

#### 1.3.4 Distribution substations / switching stations performance

**Note:** Wherever there is a \* symbol, the Utility may be required to provide supplementary information as detailed in the relevant footnote. The Utility may also provide supplementary information to elaborate on any response given in this section. Items of supplementary information should be in numbered Annexes and the Annex numbers should be provided in the space with the main response.

Item	Reporting requirement	Total Number in Service	Number added/deleted during year	Number recorded interruptions of supply to customers due to station equipment defects	Number recording interruptions of supply to customers due to LV circuit defects	Number recording repeated interruptions of supply to customers, more than 1* <sup>1</sup>	Number recording more than 4 interruptions of supply to customers* <sup>1</sup> & <sup>2</sup>
1	Distribution Substations	4624	32	144	332	38	1
2	Distribution Switching Stations	344	2	0	0	0	0

1 Interruptions to be accounted for are those affecting the s/s only. HV feeder outages affecting the s/s should not be included.

2 For all these s/s provide a listing for each affected s/s, detailing:

- s/s number
- Cause and reason for interruption.
- Zone Substation source
- Dates & Times for all interruptions
- Restoration times for each interruption
- Total time that the s/s or that supply from the s/s was off supply for each interruption
- Total Number of Customers affected by each interruption

Zone	Feeder	Received Date	Received Time	Comments (including the cause of the incident)	Duration Customers Off Supply (mins)	No. of Consumers Affected	Repetition Prevention
------	--------	---------------	---------------	---	--------------------------------------	---------------------------	-----------------------

Telopea Park	Empire	19/10/2015	12:57:00 PM	LV isolation To build scaffold	97	8	
Telopea Park	Empire	1/12/2015	2:49:00 PM	Lines Clashed	69	11	
Telopea Park	Empire	16/01/2016	7:16:00 PM	LV isolation To repair broken cross arm	56	14	
Telopea Park	Empire	21/01/2016	7:08:00 PM	LV isolation To repair fallen overhead lines	235	30	


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## Section 1 Electricity Distribution Supply Standards Code

### 1.4 Monitoring Quality of Supply

Ref	Reporting requirement	Response
1	How many tariff smart meters which measure voltage have been installed since the last report?	0
1a	Please indicate results obtained for voltage limit non-compliance.	N/A
2	How many complaints of low voltage NOT associated with planned or unplanned outages were received?	0
3	How many such complaints were substantiated?	0
4	What were the lowest voltages measured in the substantiated complaints? Please specify locations.	0
5	Please list the action that was taken to remedy the above specific low voltage problems.	N/A
6	How many substantiated low voltage problems remain unresolved after 3 months?	0
7	How many complaints of high voltage NOT associated with planned outages or faults were received?	0
8	How many such complaints were substantiated?	0
8a	Please specify locations.	N/A
9	What were the highest voltages measured?	N/A
10	Please list the action that was taken to remedy the above specific high voltage problems.	N/A
11	How many substantiated high voltage problems remained unresolved after 3 months?	N/A

Ref	Reporting requirement	Response
12	As rural customers are often located at the extremities of the networks, what measures (other than customer feedback and network studies) were in place to ensure that these customers experience voltage levels within statutory limits throughout the year?	ActewAGL has shifted its proactive load survey to a program which monitors the beginning and end of preselected HV feeders at the substation. The end goal is to have eventually monitored all feeders at minimum and maximum distances from the zone substation irrespective of whether the supply is located in / classified as urban or rural.
13	Please list all random rural voltage surveys that were carried out in the reporting year together with the times and dates of the tests, the addresses of the customers surveyed, the resultant voltage levels and the point of measurement eg. At customer's terminals.	See Proactive load survey 2015/2016 (worksheet 1.4.1)
14	Please list all random urban voltage surveys that were carried out in the reporting year together with the times and dates of the tests, the addresses of the customers surveyed, the resultant voltage levels and the point of measurement eg. At customer's terminals.	See Proactive load survey 2015/2016 (worksheet 1.4.1)
15	What measurements were taken in the reporting year to enable network studies (relating to LV levels on existing networks) to be carried out. Please list the times, dates, places and results of all such measurements.	See Proactive load survey 2015/2016 and reactive logging 2015/2016 (worksheet 1.4.1)
16	What actual measurements were taken at consumers' terminals?	See Proactive load survey 2015/2016 and reactive logging 2015/2016 (worksheet 1.4.1)
17	How many incidents involving broken or high resistance neutral occurred during the year?	39
18	Resultant number of customers with damaged equipment.	0
19	Value of customers' equipment damaged.	N/A
20	How many incidents involving "brown outs" occurred during the year?	
	- Due to Burnt off HV tails	4
	- Due to Burnt off LV or neutral tails	206 - Note: The majority of brown outs are single premises incidents. ActewAGL is in the process of integrating single premise incident reporting into an overall reporting framework, coincident with a OMS system upgrade commissioned in late February 2016.
	- Due to blown HV fuse	4
	- Due to blown LV fuse	85
	- Other (Please detail)	0

Proactive load survey 2015/2016											
Sub #	District	Feeder	VA 99%	VA1%	VB99%	VB1%	VC99%	VC1%	Require tap down?	Solar penetration to HV?	Comments
Sub 570	City East	Bunda	250.5	243.7	253.8	247.0	252.8	246.1	Yes	No	Voltage peaks at approx 8pm each night, voltage rise not due to solar penetration
Sub 1343	Latham	Weir	254.5	250.8	255.0	250.9	255.0	250.8	Yes	Yes	Voltage peaks during daytime, voltage level high due to low sub load
Sub 2812	Gilmore	Falkiner	254.8	249.7	255.4	249.9	254.9	250.0	Yes	Yes, C phase	Voltage peaking around midnight and during the middle of the day, C phase occasionally at a net export of solar energy
Sub 2876	City East	Wakefield	250.4	246.1	251.4	247.0	250.6	246.3	No	No	Voltage within acceptable range
Sub 3298	Civic	Christian	252.9	239.8	252.7	240.7	253.1	240.5	Further information required	No	Transformer has had its load shifted from MD of 365A down to 65A after an out that lasted from the 6th to the 13th of May Due to the drop in load the transformer output has risen by about 9 volts. Further information is required as to why this transformer is no longer under a suitable load.
Sub 3455	Belconnen	Chandler	249.8	244.8	250.5	245.5	250.6	245.2	No	No	Voltage within acceptable range
Sub 3736	Gilmore	Falkiner	255.4	250.7	255.7	250.6	255.3	250.4	Yes	No	Voltage peaking at midnight and midday during almost no load conditions. Solar close to penetrating HV
Sub 4029	Latham	Bowley	247.6	243.5	248.0	243.6	248.3	244.4	No	Yes, A phase	Voltage within acceptable range, small solar penetration of approx 7A causing an estimated 2V line voltage rise
Sub 4634	Belconnen	Aikman	252.7	248.5	252.2	248.0	253.9	249.2	Yes	No	Voltage slightly high, tap down advisable
Sub 5607	Gold Creek	Lander	250.0	246.2	250.5	246.5	250.6	246.1	No	No	Voltage within acceptable range
Sub 6656	Belconnen	Chandler	250.1	246.2	250.1	246.6	250.3	247.0	No	No	Voltage within acceptable range
Sub 6835	Civic	Christian	253.1	249.0	253.1	249.5	253.2	249.2	Yes	No	Voltage slightly high due to extremely low load(50A per phase), tap down advisable
Sub 7039	City East	Wakefield	246.9	242.2	247.1	241.8	247.6	242.8	No	No	Voltage within acceptable range
Sub 7152	Latham	Lower Molongolo West	252.6	244.1	252.2	242.8	253.5	246.8	Yes	No	Voltage slightly high, tap down advisable
Sub 7566	Belconnen	Meacham	251.8	246.4	251.5	246.0	251.7	247.4	No	No	Voltage within acceptable range
Sub 7656	Belconnen	Meacham	251.8	246.7	252.2	246.5	251.8	247.5	No	Yes	Voltage within acceptable range, slight solar penetration on B phase
Sub 8162	City East	Ferdinand	253.6	248.8	254.0	248.6	254.7	249.7	Yes	No	Voltage slightly high due to extremely low load(50A per phase), tap down advisable. Appears to be SL load
Sub 8557	Belconnen	Aikman	248.0	244.1	247.8	244.0	248.4	244.5	No	No	Voltage within acceptable range
Sub 8942	Gold Creek	Anthony Rolfe	250.4	246.4	250.5	246.5	250.7	246.0	No	No	Voltage within acceptable range
Sub 9023	Gold Creek	Anthony Rolfe	247.5	242.5	248.2	242.6	247.7	242.5	No	Yes	Voltage within acceptable range, slight solar penetration on C phase

Reactive logging 2015/2016							
Date	Requestor	Suburb	Address	Work Order	Reporting Category	Date Completed	Comments
29/07/2015	Mark Hendy	Belconnen	LMW/QCC	173894	N/A	5/11/2015	Requires 110V program and CT box
30/06/2015	Michael Skinner (electrician)	Gowrie	18 Bruxner Cl Gowrie	157876	High Volts	18/11/2015	Logging shows high voltage and transformer to be tapped down. Workorder 183264 created for tap change. Tap change completed on 18/11/15
20/07/2015	Melissa	Duffy	20 Rocklands St Duffy	163426	High Volts	21/08/2015	Voltage with acceptable range
16/07/2015	Antti Haavisto	Flynn	30 Pattinson Cres Flynn	160215	N/A	30/07/2015	Antti had private logging completed at customers house and produced worrying results, logged with our equipment. No issues found, private logger faulty
3/08/2015	Site Electrician	Coombs	Blk1 Sec20	164254	N/A	21/08/2012	Electrician measured 415 across light switch during construction, complex logged and fault looped at multiple points,no issues found
14/07/2015	Michael Lloyd On behalf of Customer	Evatt	5 Alderman St	160287	High Volts	11/09/2015	Tap change arranged WO:163414 , completed on 11/9/2015
8/03/2015	Darren Coggan, Spotless on behalf of Russel Offices	Russell	Russell Offices	173892	Supply Fault	13/10/2015	Ongoing investigation, possibly faulty Tx, issues seems to be resolved with load balancing
2/09/2015	Stewart Andrews Heydey	Acton	CSIRO sub 1001	172482	High Volts	11/04/2015	Sub voltage causing crane to trip out during construction, Tx tapped down 2.5% WO:176152. completed on 4/11/15
10/09/2015	Canberra mail centre	Fyshwick	8 Nyrang St	172452	Supply Fault	9/10/2015	Logging results show large current spikes (possible large motor starts) may be causing issues, problems not caused from ActewAGLS network
9/12/2015	Joshua Jordan	Stirling	Headley Bear College – 51 Fremantle	172494	High Volts	14/10/2015	Voltage above acceptable limit, Tap change 177150
9/11/2015	MR J A BERRY	Wanniassa	17 Harwood Court	171021	N/A	21/09/2015	Customer was receiving AM radio interference, interference disappeared in Spring. Possibly caused by neighbour with solar and new ducted reverse cycle heating
18/09/2015	Kath	Duffy	84 Serpentine Street	179829	High Volts	15/11/2015	Logging shows voltage going above the upper voltage limit, Transformer to be tapped down. Workorder 186096 created for tap change
8/03/2015	Guilia Jones on behalf of Rivitt resedents	Rivett	Woolom St	167808	N/A	14/09/2015	Supplies logged and no issues found, results were passed on as well as contact details for residents if there are any future issues
10/10/2015	Dispatch on behalf of customer	Ainslie	8b Rutherford St	176820	High Volts	2/12/2016	Logging shows voltage going above the upper voltage limit, Transformer to be tapped down. Workorder 186083
12/10/2015	Dispatch on behalf of customer	Watson	1 Manning St	176443	High Volts	7/07/2016	Logging shows voltage going above the upper voltage limit, Transformer to be tapped down
10/08/2015	Leylan and Wahid on behalf of customer	Kaleen	3 Picton Cl	51256	High Volts	18/11/2015	High voltahe issues, logging reveal voltage within acceptable range, transformer tapped down to add more overhead, tap change workorder 183284
11/05/2015	Dispatch of behalf of customer	Acton	2 Phillip Law St	183348	High Volts	30/11/2016	NISHI CINEMA having trouble with all there equipment showing power error Feeder: Riverside. Logging results show voltage within acceptable range, transformer to be tapped down to allow headroom for solar
6/11/2015	Dispatch on behalf of customer	Macgregor	72A Hollows Cir	181552	Supply Fault	28/11/2015	Burn out white phase found in minipiller, passed to on call crew for repair
14/12/2015	Scott Girvan	Melba	33 Scarlett Street	188294	High Volts	6/01/2016	To be tapped down WOR190813
16/12/2015	Dispatch on customers behalf	Palmerston	30 Gramplans Street	188634	High Volts	6/01/2016	To be tapped down WOR190888
5/01/2016	Matt Creek	Holt	17 McCabe Cres	51256	High Volts	12/02/2016	Previous logging results show high voltage, pole sub 1626 to be tapped down WOR190893
5/01/2016	Network complaints	Gungahlin	21 Ansett St	51256	N/A	4/12/2016	Gave advice on elctromagnetic fields to pass on to customer, site visit arranged for the 6/1/2016
5/01/2016	Stephen March	Weetangera	24 Shumack St	190859	High Volts	19/02/2016	Transformer tap down ordered
16/06/2016	John MacDonald	Griffith	97 La Perouse St	190862	High Volts	19/02/2016	Transformer tap down ordered
16/12/2015	Dispatch on behalf of Customer	Hackett	1 of 14 Hackett Pl	197300	Supply Fault	18/02/2016	POE logged, no issue found
19/01/2016	Dispatch on behalf of customer	Mitchell	8 of 141 Flemington Rd	197304	Low Volts	4/03/2016	Tx overload, Tx upgraded to 500kVA, logging to identify possible circuit rearrangements
21/01/2016	Paul	Hawker	4 Marrakai St	193384	Interference	21/01/2016	Intereference to AM disappeared when house power circuit isolated, internal fault
2/11/2016	Dispatch on behalf of Customer	Yarralumla	u7 28 Black St	197310	High Volts	12/07/2016	Transformer tap down ordered
28/01/2016	Zbynek Vala from Photon Energy	Symonston	2 Faulding St	198474	High Volts	4/04/2016	Requires Tx recommission for 348kW solar
28/01/2016	Zbynek Vala from Photon Energy	Fyshwick	187 Gladstone St	198474	High Volts	4/04/2016	Requires Tx recommission for 138kW solar
29/01/2016	Dispatch on behalf of Customer	Weston	Brierley St	197313	Supply Fault	13/02/2016	Sub in Coleman Court loading dock, please use pm35s or pm40s
2/09/2016	Dispatch on behalf of Customer	Lyons	37 Burnie St	197314	High Volts	11/04/2016	37 Burnie St is the Church
17/02/2016	Dispatch on behalf of customer	Richardson	8 Morduant Place	198200	High Volts	4/04/2016	Transformer tap down ordered
17/02/2016	Don Hamer	Stirling	1 Nash Pl	0	N/A	17/02/2016	Customer was concered about EMF levels form adjacent substation, gave them a guesstimation on what levels they are likely to be receiving and appropriate safe exposure levels
3/04/2016	Leaf Electrical	Kambah	5 Heady Pl	201273	High Volts	22/03/2016	Bad neutral identified, repaired and issue fixed

Sub 3455	Belconnen	Chandler	249.8	244.8	250.5	245.5	250.6	245.2	No	No	Voltage within acceptable range
18/03/2016	Albert Massoud on behalf of customer	Acton	Nishi Sub 9726 2 Phillip Law St		100815	High Volts		20/05/2016	Transformer tap down ordered		
7/03/2016	Natasha Campbell	Hawker	33 Alexandria Street		204844	High Volts		29/04/2016	Transformer tap down ordered		
3/09/2016	Michael Lloyd on behalf of customer	Red Hill	Sub 6675 111 Carnegie Cres		204914	High Volts		29/04/2016	Transformer tap down ordered		
4/04/2016	Alison Davis on behalf of customer	Evatt	3 Edgar Pl		206047	N/A		4/04/2016	EMF readings taken and results explained, no issue identified		
14/04/2016	Matt Hogan on behalf of Energy Action	Forrest	Sub 8700 Sydney Ave		210996	High Volts		7/07/2016	Transformer tap down ordered		
28/04/2016	Dispatch	Duffy	3 Waranga Pl		211002	Supply Fault		6/05/2016	Fault loop okay, customer reports that no issue since retightening pole connections		
10/05/2016	Santanu on behalf of weston School	Coombs	Woodbury Ave Coombs		213628	High Volts		20/05/2016	Logging completed and forwarded for tap down, scheduled for the 12th of July		
3/06/2016	Dispatch on behalf of Customer	Rivett	1 Cordia Pl		218333	High Volts		28/06/2016	Fault loop completed and neutral ok, voltage slightly high so tap down ordered		
2/06/2016	Dispatch on behalf of customer	Pearce	50 Collings St		218335	High Volts		11/07/2016	Voltage recorded a V99% of 248.7 V over two weeks of logging no further action required		




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## Section 2 Electricity Network Assets Management Code

### 2.1 Duty of an Electricity Distributor

#### 2.1.2 Notifiable Incidents

**Note:** Wherever there is a '\*\*', the utility may be required to provide supplementary information as detailed in the relevant footnote.

Item	Item Description	Number of incidents attributable to aerial lines, underground lines, substations, equipment, metering and earthing and protection systems (or related faults)* <sup>1</sup>	Number Reported In Writing to the Technical Regulator <sup>*2</sup>
1	The death of a person	0	0
2	A dangerous incident	69	2
3	Damage to property:	13	0
4	Fires	17	0
5	Damage to the environment	3	0
6	Electric shock reports received	36	2
7	Serious Electrical Near Misses with potential to cause death, injury or property damage eg. Live conductors on ground	Not required by Law	

1 For all Notifiable Incidents as defined in Part 4 of the Utilities (Technical Regulation) Act 2014 (including electric shock reports) which occurred on the Electricity Network or in the distribution area. Summarise the incidents; indicate whether the victims or people at risk (if any) were employees, contractors or members of the public; analyse the causes and contributory causes of the incidents; and indicate measures taken to prevent similar incidents in the future.

2 If not reported to the Technical Regulator, explain why not.


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## Section 2 Electricity Network Assets Management Code

### 2.1 Duty of an Electricity Distributor

#### 2.1.3.1 Maintenance of High Voltage Switchgear in Distribution Substations

Item	Within ground mounted distribution substations 11kV & 22kV network NOT including Zone Substations	No. in service	Number of units planned for maintenance.	Number actually maintained	Comments (Please indicate if the equipment is maintained in accordance with Manufacturers' recommendations and if not, why)
1	OCB	132	79	66	OCBs are mainly located in chamber substations and have associated protection relays. Substations housing protection relays are inspected and maintained on a 5-year cycle (when verifying relay settings per the RTI database). Substations are also visually inspected while conducting network operations.
2	VCB	60			
3	Gas CB	92			
4	Oil Switch isolatable	1878	0 [see note 1]	0 [see note 1]	
5	RMU i.e. 2 oil switches & Sw Fuse	1090	0	2	Due to very robust design and no serviceable parts and installation in weatherproof enclosures, manufacturer advises operational check and inspection for oil leaks or damage is required at 7 year intervals. Operational staff inspect prior to switching and report defects as/when identified. Mechanical defects and oil leaks are repaired promptly.
6	RMU Epoxy	759	120	117	Inspected and maintained at 4-8 year intervals. Includes operation, disassembly of links, cleaning of dust/ corrosion, cable termination inspection for tracking and top up of oil filled cable terminations where installed.
7	RMU SF6	1096	0	5	Generally maintenance free with no serviceable parts subject to 5 yearly inspections. Sw/gr reported with low gas is monitored.

Item	Within ground mounted distribution substations 11kV & 22kV network NOT including Zone Substations	No. in service	Number of units planned for maintenance.	Number actually maintained	Comments (Please indicate if the equipment is maintained in accordance with Manufacturers' recommendations and if not, why)
8	11kV Switching Stations 3 way	264	12	12	12 switching stations with Hazemeyer RMUs.
9	11kV Switching Stations 4 way	51			
10	J&P Switchgear	21	0	0	
11	GEC Switchgear	17	0	0	
12	Long & Crawford s/gear	15	0	0	
13	Isolatable YSE s/gear	13	0	0	Combination CB and oil switch configurations exist at 3 sites. CB feeds TX only, – (not used for manual feeder fault switching). However Caution note on SCADA at System Control regarding CB contact cluster retaining spring. Equipment replacement is identified for 2 of these sites are subject to imminent re-development.
14	YSE isolating contacts	0	0	0	
15	Aged Switchgear; number				
	- greater than 50 years	32	0	0	J&P, Southwales, Yorkshire and Long & Crawford
	- greater than 60 years	9	0	0	Yorkshire and Long & Crawford
16	List all s/gear with operational restrictions and outline restrictions in place	98	N/A	N/A	
17	Are there any plans for replacement of 10 to 16 above?	Yes. J&P switchgear - 2 each at S1196 & S1197 have been decommissioned in 2015/16 and 12 at S683 are planned and budgeted to be replaced in FY 2016/17. Others are to be replaced on an opportunity basis as per availability of funds.			
18	List all s/gear that leaked SF6 gas and remedial action undertaken	N/A	N/A	2	1. F&G RMU at S8679 - False low gas indication. Pressure normal after gas guage replacement. 2. S6629 - RM6 RMU indicating low gas. Action underway to replace.
19	State ActewAGL's policy on post fault maintenance (PFM) of 11kV s/gear	N/A	N/A	0	As per manufacturer's recommendations.

Item	Within ground mounted distribution substations 11kV & 22kV network NOT including Zone Substations	No. in service	Number of units planned for maintenance.	Number actually maintained	Comments (Please indicate if the equipment is maintained in accordance with Manufacturers' recommendations and if not, why)
20	Detail all instances of PFM undertaken 2012-2013	N/A	N/A	0	No records available.

**Notes**

1. These Inspections typically arise from initial inspections that have raised a defect report. Initial inspections relate to switching operations, Fire Extinguisher inspection, Battery/Chargers maintenance, Thermo vision inspections and other targeted activity (data verification, load /quality of supply measurement, customer isolations etc).
2. There is also 1 two-way 11kV switching station.

**For OCBs the following is undertaken:**

Lowering the main oil vessel, exploring the main contacts  
 Examination of main & arcing contacts, arc control pots and bushings on CB truck for damage/wear  
 Oil level/top up or replace all oil (if excessively dirty due to high fault clearing duty)  
 Oil sample (taken if oil not changed for PCB testing and recording)  
 Check tank lining and confirm gaskets ok  
 Clean and lubricate mechanism bearings and linkages  
 Manually undertake a slow close operation to confirm linkages and contacts move as required  
 Examine aux contacts operate in unison with primary contacts  
 Examine secondary connection contacts for pitting and damage on both truck and cubicle  
 Manual trip and close resets  
 Electrical operation trip and close (includes protection function)  
 Examination of all mechanical components (shutters and linkages, interlocks and earth connections)

**For VCB's**

As for OCBs but exclude oil-related activities and add HV withstand test across the vacuum bottle.

**For GCB's**

As for OCBs but exclude oil-related activities

## Section 2 Electricity Network Assets Management Code

### 2.1 Duty of an Electricity Distributor

#### 2.1.3.2 Maintenance of Low Voltage Switchgear in Distribution Substations

Item	Low Voltage equipment	No. in service	Number of planned inspections carried out	Number of units planned for maintenance	Number Actually maintained	Comments (Please indicate if the equipment is maintained in accordance with Manufacturers' recommendations and if not, why)
1	Transformer isolator	2764	492	35	35	See note 1. Maintenance relates to LV CBs completed with RTI protection maintenance. Many Tx Isolators are operated during planned / fault switching. Defects are reported when identified.
2	Bus Section	622				See note 2. Maintenance relates to LV CBs completed with RTI protection Maintenance and chamber substation inspections.
3	Henley Pillar	2	The separate pillar inspection program has been terminated. External inspections are carried out as part of vegetation inspection and also opportunity based.	The separate pillar inspection program has been terminated. External inspections are carried out as part of vegetation inspection and also opportunity based.	6	See note 3
4	Mini-pillar	10627				See note 4
5	Mini Link Pillar	2808				See note 4
6	POE Box	3427	No inspection or planned maintenance for POEs	No inspection or planned maintenance for POEs		See note 4
7	LV panel within subs	3713	492	39	39	See note 5 The number maintained are those replaced to eliminate the capstan links (nuts) plus the number of LV circuitbreakers maintained.
8	LV isolators with capstan nut	61	0	0	0	No. in service end 2014/15 was 65. 4 replacements were carried out in 2015/16. There is no inspection program for capstan link (nut) isolators.

Item	Low Voltage equipment	No. in service	Number of planned inspections carried out	Number of units planned for maintenance	Number Actually maintained	Comments (Please indicate if the equipment is maintained in accordance with Manufacturers' recommendations and if not, why)
9	Number of Capstan nut isolators replaced during the reporting year?	N/A	There is no inspection program for capstan link (nut) isolators.	4	4	The LV switch boards at the following substations were replaced in FY 2015/16. S1953, S4172, S2227 & S 4460.
10	Proposed date of replacement of remaining capstan nut isolators.	N/A	N/A	N/A	N/A	Being very old switchboards it is neither practicable nor cost effective to replace only the capstan nut isolators. Therefore, the whole LV switchboard is replaced. Due to budgetary and other resource constraints, it is planned to replace 5 old switchboards every year, so that the capstan links will be eliminated from the network gradually.
11	Aged Switchgear; number & type					
	- greater than 50 years	47	0	0	0	
	- greater than 60 years	15	0	0	0	
12	List all s/gear with defects and/or operational restrictions and provide details.	18	0	0	0	
13	Are there any plans for replacement of 11 & 12 above? Give details.	Yes	0	0	0	S 683 LV switchboard is planned to be replaced in FY 2016/17.

**Notes**

1. No specific asset record - quantity is approximate - derived from transformer count in chamber padmount, kiosk and stockade substations (from 2.1.3.3) as these have a transformer isolator (this excludes pole subs).
  2. No specific asset record - quantity is approximate - derived from transformer count in chamber substations when there are 2 or more transformers with LV bus tie facilities. Some bus tie facilities exist in padmount substations and are excluded from this count (estimated to be less than 20).
  3. Data derived from ArcFM (asset database).
  4. Data derived from ArcFM (asset database) and pillar numbering program is continuing to capture pillar and POE data.
  5. No specific asset record - quantity is approximate - derived from the count of chamber, padmount and kiosk substations as these have LV switchboards and there are few installations without a switchboard.
- Note: manufacturers of LV distribution equipment (other than for CB's often do not specify a maintenance requirement other than periodic visual inspection. Thermographic inspections are completed in chamber substations where high loads are experienced).
6. It is planned to replace 2-3 old LV switchboards (e.g. capstan link, compact etc.) per year.


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## Section 2 Electricity Network Assets Management Code

### 2.1 Duty of an Electricity Distributor

#### 2.1.3.3 Maintenance of Distribution Transformers

Item	Transformer Type	No. in service	PCB tests (as per the utility's maintenance plan)	How many PCB tests proved positive?	Maintenance Frequency	Number of units planned for maintenance	Number of units actually maintained	Comments (Please indicate if the equipment is tested/inspected/maintained in accordance with the utility's maintenance plan and if not, why this is so)
1	Ground Mounted in Enclosure (padmount or Kiosk)	2747	79	6	See notes		14	Yes
2	Inside Chamber	966						Yes
3	Pole Mounted	1397					8	Yes
4	In stockade	16					0	Yes

#### Notes

1. The maintenance plan requires no routine maintenance of Transformers other than visual inspection for oil leaks/ bushing damage. PCB samples are taken on opportunity basis prior to any transformer movement or work on the unit. All recovered
2. Transformers on pole substations are not tested for PCBs while in-situ mainly for Work Safety reasons. These transformers are tested for PCBs when there is some other reason to remove them from the substation.

## Section 2 Electricity Network Assets Management Code

### 2.1 Duty of an Electricity Distributor

#### 2.1.3.4 Programmed Inspection & Maintenance of Distribution Substations

Item	Type of Substation	No. in service	Inspection Frequency	Number of planned Inspections carried out	Number actually Inspected	Maintenance Frequency	Number of units planned for maintenance	Number actually maintained	Comments
1	Padmount	2473	5 yearly	492	492	Maintenance of transformers stem from inspections and failures. Maintenance of circuit breakers and the protection relays are based on the Relay Test Instructions and are generally on a five yearly cycle.	158	8	
2	Kiosk	266	5 yearly						
3	Chamber	477	5 yearly						
4	Pole	1402	5 yearly (urban); yearly in BFM	1364	1364				




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## Section 2 Electricity Network Assets Management Code

### 2.1 Duty of an Electricity Distributor

#### 2.1.3.5 Maintenance of Zone Substation Transformers

Item	Transformer size	No. in service	Maintenance Frequency	Number planned for maintenance	Number Actually maintained	Comments (Please indicate if the equipment is maintained in accordance with Manufacturers' recommendations and if not, why)
1	0 to 25 MVA	4	Annual	4	4	Yes
2	25MVA to 100MVA	27	Annual	27	27	Yes
3	>100MVA	0	N/A	N/A	N/A	N/A
4	What significant issues exist with zone substation transformers? Provide details of defects and planned corrective action.	N/A				No significant issues reported during FY2015/16

## Section 2 Electricity Network Assets Management Code

### 2.1 Duty of an Electricity Distributor

#### 2.1.3.6 Maintenance of Zone Substation Tap Changers

**Note:** Please list all units.

	Manufacturer	Type and code	Number in service	Maintenance Frequency	Number planned to be maintained	Number Actually maintained	Were contacts changed or serviced?	Was oil changed or cleaned?	Comments (Please indicate if the equipment is maintained in accordance with Manufacturers' recommendations and if not, why)
1	ABB	External UBBRN 350/150	1	7 years	0	0	N/A	N/A	Not due for maintenance. To be maintained as per tapchanger OEM recommendations when due for maintenance.
2	ABB	External UZEDN 380/500	7	7 years	0	0	N/A	N/A	Not due for maintenance. To be maintained as per tapchanger OEM recommendations when due for maintenance.
3	ABB	External UZEDN 380/600	1	7 years	0	0	N/A	N/A	Not due for maintenance. To be maintained as per tapchanger OEM recommendations when due for maintenance.
4	ABB	External UZFDN 380/500	2	7 years	0	0	N/A	N/A	Not due for maintenance. To be maintained as per tapchanger OEM recommendations when due for maintenance.
5	ABB	External UZFDN 380/600	1	7 years	0	0	N/A	N/A	Not due for maintenance. To be maintained as per tapchanger OEM recommendations when due for maintenance.
6	ABB	External UZFRT 380/300	2	7 years	0	0	N/A	N/A	Not due for maintenance. To be maintained as per tapchanger OEM recommendations when due for maintenance.
7	Reinhausen	External VV II 250D-76-12 23 3G	1	7 years	0	0	N/A	N/A	Not due for maintenance. To be maintained as per tapchanger OEM recommendations when due for maintenance.
8	Reinhausen	Internal BCDIII200D	0	7 years	0	0	N/A	N/A	Not due for maintenance. System Spare unit.
9	Reinhausen	Internal BCII200D	0	7 years	0	0	N/A	N/A	Not due for maintenance. System Spare unit.
10	Reinhausen	Internal DIIY400-150/60	4	7 years	0	0	N/A	N/A	Not due for maintenance. To be maintained as per tapchanger OEM recommendations when due for maintenance.
11	Reinhausen	Internal DIIY400-60/110	4	7 years	0	0	N/A	N/A	Not due for maintenance. To be maintained as per tapchanger OEM recommendations when due for maintenance.
12	Reinhausen	Internal MIIY500/60C	8	7 years	7	7	N/A	N/A	Due to field resource constraint and network outage restrictions, these units were rescheduled in FY15-16 (Nov 2015).
13	What significant issues exist with zone substation tapchangers? Provide details of defects and planned corrective action.	No significant issues present in any of the tap changer units.							


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## Section 2 Electricity Network Assets Management Code

### 2.1 Duty of an Electricity Distributor

#### 2.1.3.7 Maintenance of 11kV/22kV/33kV Switchgear in Zone Substations - Switchgear Listing

**Note:** Please list all units.

Item	Manufacturer (e.g., Reyrolle)	Code (e.g., LMT)	Type (e.g., OCB)	Voltage	Number in service	Year of manufacture of oldest unit	Manufacturer's recommended freq. of maintenance (e.g., 5 years)	Comments (include zone s/s the switchgear is located within) (Please indicate if the equipment is maintained in accordance with Manufacturers' recommendations and if not, why)
1	Brush Switchgear	Q20/2MK2	OCB	11kV	20	1976	5 faults/4 years	Belconnen, City East, Latham, Wanniasa & Woden Zone Substations Maintenance cycle determined using Failure Mode Effect Analysis (FMEA) study.
2	Brush Switchgear	Q20/2MK3	OCB	11kV	1	1982	5 faults/4 years	Woden Zone Substation Maintenance cycle determined using Failure Mode Effect Analysis (FMEA) study.
3	Brush Switchgear	Q20/2MK4	OCB	11kV	60	1976	5 faults/4 years	Belconnen, City East, Wanniasa & Woden Zone Substations Maintenance cycle determined using Failure Mode Effect Analysis (FMEA) study.
4	Email	J18X-A24	OCB	11kV	32	1970	5 faults/4 years	Latham & Wanniasa Zone Substation Maintenance cycle determined using Failure Mode Effect Analysis (FMEA) study.
5	Email	J22X-A30	OCB	11kV	12	1970	5 faults/4 years	Latham & Wanniasa Zone Substation Maintenance cycle determined using Failure Mode Effect Analysis (FMEA) study.
6	ABB	VD4	VCB	12kV	54	2009	10 faults/7 years	Angle Crossing Mobile Zone, Civic & East lake Zone Substations Maintenance cycle determined using Failure Mode Effect Analysis (FMEA) study.

Item	Manufacturer (e.g., Reyrolle)	Code (e.g., LMT)	Type (e.g., OCB)	Voltage	Number in service	Year of manufacture of oldest unit	Manufacturer's recommended freq. of maintenance (e.g., 5 years)	Comments (include zone s/s the switchgear is located within) (Please indicate if the equipment is maintained in accordance with Manufacturers' recommendations and if not, why)
7	GEC Alsthom Australia	SBV3/DB	VCB	12kV	71	1992	10 faults/7 years	City East, Gold Creek, Latham & Woden Zone Substations Maintenance cycle determined using Failure Mode Effect Analysis (FMEA) study.
8	GEC Heavy Engineering Division	SBV1	VCB	12kV	86	1985	10 faults/7 years	Gilmore, Telopea Park & Theodore Zone Substations Maintenance cycle determined using Failure Mode Effect Analysis (FMEA) study.
9	Hawker Siddely	VMH	VCB	12kV	15	2000	5 faults/4 years	Fyshwick Zone Substations Maintenance cycle determined using Failure Mode Effect Analysis (FMEA) study.
10								
	Aged Switchgear; number							
11	- greater than 50 years	ALM	ISOL	66	5	1962	2 years	Fyshwick Zone Substations Maintained as per manufacturer recommendations.
12	- greater than 60 years	N/A	N/A	N/A	N/A	N/A	N/A	N/A
13	List all s/gear with defects and/or operational restrictions and provide details.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14	Are there any plans for replacement of above aged & operationally restricted units? Provide details.	No. Maintained as per manufacturer	N/A	N/A	N/A	N/A	N/A	N/A


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## Section 2 Electricity Network Assets Management Code

### 2.1 Duty of an Electricity Distributor

#### 2.1.3.8 Maintenance of 11kV/22kV/33kV Switchgear in Zone Substations - Switchgear Details by Type

**Note:** Please list all units.

Item	Type	Number in service	Maintenance Frequency	Planned maintenance number to be maintained	Actual maintenance number	Post Fault maintenance number maintained	Comments (Also please indicate the number of fault operations prior to Post Fault Maintenance) (Please indicate if the equipment is maintained in accordance with Manufacturers' recommendations and if not, why)
1	OCB	125	5 years	70	96	9	Maintained every 4 years / 6 operations. Maintenance cycle determined using Failure Mode Effect Analysis (FMEA) study.
2	VCB	226	7 years	13		3	Maintained every 8 years / 10 operations. Maintenance determined using Failure Mode Effect Analysis (FMEA) study.
3	Gas CB	0	N/A	N/A	N/A	N/A	No units in network
4	Other	0	N/A	N/A	N/A	N/A	No units in network

## Section 2 Electricity Network Assets Management Code

### 2.1 Duty of an Electricity Distributor

#### 2.1.3.9 Maintenance of 66kV & 132kV Switchgear in Zone Substations

**Note:** Please list all units.

Item	Manufacturer	Code	Type	Number in service	Year of manufacture of oldest unit	Planned number to be maintained	Actual maintenance number	Manufacturer's recommended freq. of maintenance	Comments (Please indicate if the equipment is maintained in accordance with Manufacturers' recommendations and if not, why)
1	ABB	ELK-04	GCB	10	2013	0	0		
2		HLR145	OCB	34	1980	6	2	5 years	
3		LTB145	GCB	10	1993	0	0	6 years	
4		PASSM0/145	GCB	1	2012	0	0	7 years	
5	ASEA	HKEYC60/800	OCB	5	1996	0	0	7 years	
6	GEC-ALSTOM	DT1-145	GCB	6	2011	0	0	7 years	
7	HITACHI	OFPTB-120-25L	GCB	11	1976	0	0	7 years	
8	Stanger (132kV)	HCB,PB, Motor HCB &	ISOL	139	1977 (estimate)	126	110	2 yrs	Maintain as per isolators manufacturer recommendations.
9	ALM (66kV)	VSB	ISOL	5	1962 (estimate)			2 yrs	Maintain as per isolators manufacturer recommendations.
10	ALSTOM	S2DA	ISOL	6	2011			2 yrs	Maintain as per isolators manufacturer recommendations.
11	ABB	ES145 & R145	ISOL	2	2009			2 yrs	Maintain as per isolators manufacturer recommendations.
12	Dickson Primer	RDRB, PB & RDB	ISOL	12	1970 (estimate)			2 yrs	Maintain as per isolators manufacturer recommendations.
13	McDonald Constructions	CB & ESY	ISOL	17	1965			2 yrs	Maintain as per isolators manufacturer recommendations.
14									
15									
16									
17									
18									
19									
20									
21									
22									

Item	Manufacturer	Code	Type	Number in service	Year of manufacture of oldest unit	Planned number to be maintained	Actual maintenance number	Manufacturer's recommended freq. of maintenance	Comments (Please indicate if the equipment is maintained in accordance with Manufacturers' recommendations and if not, why)
23									
24									
25									
26									
27									
28									
29									
30									
	Aged Switchgear; number								
31	- greater than 50 years	ALM(66kV)	ISOL	5					No asset replacements planned. Planned to be decommissioned within 5 years.
32	- greater than 60 years	N/A							N/A
33	List all s/gear with defects and/or operational restrictions and provide details.	N/A							None
34	Are there any plans for replacement of above aged & operationally restricted units? Give details.	No. Maintain as per manufacturer recommendations.							No asset replacements planned.


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## Section 2 Electricity Network Assets Management Code

### 2.1 Duty of an Electricity Distributor

#### 2.1.3.10 General Maintenance

Item	Item Description	Response
1	From time to time manufacturers of switchgear and ancillary equipment issue defect notices, modification recommendations and operational restrictions. Which position in the utility is responsible for ensuring such notices are acted upon in a timely manner?	Logistics/Contracts/Fleet Manager / Specifying Officer / Branch Manager Works Delivery / Director Safety and Capability depending on the nature of the problem.  If the problem is safety related, a Corrective Action Request and/or Hazard Alert notice is issued through the safety and quality systems. Material and asset defects are recorded within the asset management system for rectification works.
2	Please list the notices that have been received during the past five years.	See Attachment D - ABB Safelink update; See Attachment E - Midlands LOBAC (LVABC) 95mm2
3	Is the utility confident that all such notices for equipment currently in service have been implemented?	An audit of compliance has not occurred as yet, however broader work practices are inspected on a routine basis and there has been no evidence of non-compliance with the alerts posted.
4	Number of cable joint failures:	
	- HV cables	37
	- LV cables	27
	- Service cables	Unknown. Number of service cable joint failures are not recorded
	- Other eg. Pilot cables	-
5	Number and type of HV switchgear termination problems eg. Ferroresonance	Number of Ferroresonance failures are not recorded
6	Number of overhead line connection failures	
	- mains eg. Airbreak switch tails:	54



Item	Item Description	Response
	- service lines	298
7	Number of broken or high resistance neutral connections.	39
8	How many HV switchgear failures/operational problems:	18 (excluding ABS's)
9	Number of HV cast iron potheads in service: - outdoor / indoor. As these present a high safety risk, please outline replacement plans.	26 substations have cast iron pothead 11kV terminations. Actual number of potheads not available. A number of high risk ones have been replaced over the years. Most of the remaining ones pose moderate to low risk. Due to budgetary restrictions no planned replacement program has been scheduled.
10	How many security breaches have occurred in substations and switching stations.	0
11	What preventative action has been taken to address these security breaches.	N/A
12	How many items of SF6 switchgear currently leak or require re-filling?	1
13	What remedial action is being taken eg. Switchgear replacement	Repairs planned for August 2016
14	How much SF6 gas has been lost to the environment, and what preventative action is being taken to prevent further loss?	12.5kg. Repair leaking equipment
15	What ENA SF6 gas management tier is being achieved?	Tier 2: Mass Balance Accounting
16	State the type of diagnostic tests carried out on instrument transformers in zone and chamber substations	Zone substation instrument transformer maintenance/condition monitoring diagnostic tests (72.5kV & 145kV) - DGA analysis on oil filled instrument transformers
17	How many such instrument transformers are currently suspect?	0
18	Protection relays:	
	- How many failures/mal-operations	0
	- Please outline number & type of relay currently in service with poor reliability record (problems >10% for any one type).	There are no known relays with poor reliability in service. Relays with calibration drift are adjusted or replaced during routine maintenance.
	- How many & type of known defective units currently in service ( eg.Siemens 7SL)	There are no known defective relays in service. Defective relays are always replaced when they fail. The Calibration of the Siemens 7SL is known to drift and requires additional maintenance. This is not considered a failed relay by ActewAGL. All 7SL24 at Bruce switching station have been replaced. Currently, a few 7SL24 relays are in service at Causeway switching station. These are scheduled for maintenance in 2016-17.
	- how many protection mal-grading events occurred during reporting year?	0
19	Batteries - Zone substations:	

Item	Item Description	Response
	- age of oldest 10% of each battery type	All zone substation batteries are of type Nickel-Cadmium (NiCAD). The total population in service in 2012/13 was 20 units, therefore the age of the oldest 2 units have been reported.  Age of oldest 2 batteries in service – 30 years
	- how often is battery discharge testing conducted?	Discharge Test performed every 6 months
	- What is the criteria for determining battery replacement?	Battery Capacity Test results fall bellow 80% of battery rated capacity
20	Batteries - Distribution substations:	
	- age of oldest 10% of each battery type	27 years
	- how often is battery discharge testing conducted?	Every 6 months
	- What is the criteria for determining battery replacement?	Failure of discharge test and/or end of design life.
21	Number of tariff meters replaced due to age reasons	950
22	Number of tariff meters replaced due to accuracy problems	470
23	Number of tariff meters that failed, or exceeded accuracy limits?	26
24	Total number of meters planned for replacement	2000
25	Total number of meters actually replaced	1420



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## Section 2 Electricity Network Assets Management Code


### 2.1 Duty of an Electricity Distributor

#### 2.1.3.11 Pole inspection and Maintenance - General

Item No.	Item Description	Timber L.V and 11/22kV	Concrete L.V and 11/22kV	Steel L.V and 11/22kV	Other L.V and 11/22kV
1	How many poles L.V and 11/22kV are owned by the utility	29032	10723	5899	3552
2	How many poles were inspected during the year?	8544	3243	1184	394
3	How many poles were condemned during the year?	1019	0	54	1
4	How many poles were "nailed" during the year?	599	0	0	0
5	How many poles were replaced during the year?	507	0	0	0
6	What percentage of the timber pole population is now nailed?	46%	N/A	N/A	N/A
7	What is the estimated future cost to remove and replace these poles, and when will this become necessary?	\$189,000,000	0	0	0
8	What is the required remediation time for condemned poles?	12 months	12 months	12 months	12 months
9	How many condemned poles were not remediated within this period?	13	0	20	0
10	How many condemned poles were not remediated within the target period but were remediated within 3 months of the expiration of their target remedial time?	11	0	17	0
11	How many condemned poles were not remediated within the target period but were remediated within 6 months of the expiration of their target remedial time?	2	0	3	0

Item No.	Item Description	Timber L.V and 11/22kV	Concrete L.V and 11/22kV	Steel L.V and 11/22kV	Other L.V and 11/22kV
12	How many condemned poles have not been remediated and are more than 6 months overdue for remedial action	0	0	0	0
13	How many dangerous poles (those requiring immediate/urgent remedial action) were identified during the year?	8	0	0	0
14	How many poles failed during the year? Please provide details.	0	0	0	0

132kV and 66kV		Timber	Concrete	Steel	Other
15	How many poles / towers are owned by the utility	434	835	201	7
16	How many poles / towers were inspected during the year?	113	23	0	0
17	How many poles were condemned during the year?	17	0	0	0
18	How many poles were replaced during the year?	0	0	0	0
19	What is the estimated future cost to remove and replace these poles, and when will this become necessary?	\$11,900,000	0	0	0
20	What is the required remediation time for condemned poles?	> 24 months including ACT Government approval, NCA approval, heritage and ecological assessment when track work is required.	0	0	0
21	How many condemned poles were not remediated within this period?	0	0	0	0
22	How many dangerous poles (those requiring immediate/urgent remedial action) were identified during the year?	0	0	0	0
23	How many poles failed during the year? Please provide details.	0	0	0	0



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Section 2

Electricity Network Assets Management Code

2.1

Duty of an Electricity Distributor

2.1.3.12

Pole inspection and Maintenance - Inspections and Vegetation

Item No.	Item Description	Response
Pole / Lines Inspections		
1	What is your pole / line inspection cycle for LV and HV poles in Urban locations	5 yearly in the urban; All high voltage poles are also aerially inspected every three years in the urban.
2	What is your pole / line inspection cycle for LV and HV poles in Bushfire designated locations	4 yearly in the BFM; Remaining BFM poles are visually inspected by either the ground or aerial every year.
3	How many overdue for inspection by more than 6 months.	None
4	Which Suburbs were scheduled for pole inspections for this reporting period?	Lyneham McKellar Pearce Acton Holt Oako Estate Kambah Hawker Belconnen Scullin Mitchell Hirman Higgins Lawson Hall Bruce Wanniasa Isaacs Hume Aranda O'Malley Macgregor
5	Which suburbs scheduled for inspection above, were not inspected.	Wanniasa Aranda Macgregor
6	Which Bushfire designated areas were scheduled for pole inspections this reporting period?	Bushfire Sector D - Full Ground Inspection Bushfire Sector B - Ground Visual Inspection Bushfire Sector A & C - Aerial Inspection
7	Which Bushfire designated areas scheduled for inspection, above, were not inspected.	None. All inspected.
8	What is your pole / line inspection cycle for your 132kV and 66kV sub-transmission lines?	4 yearly full ground inspection. Aerial inspection every year.
9	Were any 132kV / 66kV line inspections completed this reporting period?	Yes
10	• Number of structures inspected	136 inspected via ground. 1470 aerial inspection.
11	• Number remaining to be inspected.	None. All inspected by end of August.
12	• These are scheduled for inspection by (date):	Inspections not completed by end of June(104) were sheduled for July and August.
13	How many overdue for inspection by more than 6 months.	None.
14	Were all identified bushfire risk issues mitigated/actioned prior to commencement of the bushfire season? If not, why not. Provide details.	No. Access problems due to wet ground. The few assets with outstanding issues can be isolated if necessary to remove risk.

Vegetation Management

15	What is your vegetation inspection cycle for LV and HV lines in Urban locations	3 yearly.
16	What is your vegetation inspection cycle for LV and HV lines located in Bushfire designated areas?	Yearly cycle.
17	Which Suburbs were scheduled for vegetation inspections for this reporting period?	ACTON AINSLIE ARANDA BARTON BONNYTHON BRADDON BRUCE CAMPBELL CHAPMAN CHIFLEY COOK CURTIN DEAKIN DENMAN PROSPECT DICKSON DOWNER DUFFY FADDEN FARRER FISHER FORREST FYSHWICK GARRAN GILMORE GIRALANG GREENWAY GRIFFITH HACKETT HALL HARRISON HAWKER HIGGINS
18	Which suburbs scheduled for inspection above, were not inspected.	None. All inspected.
19	Which Bushfire designated areas were scheduled for vegetation inspections this reporting period?	All.
20	Which Bushfire designated areas scheduled for inspection, above, were not inspected.	None. All inspected.
21	What is your vegetation inspection cycle for your 132kV and 66kV sub-transmission lines?	Yearly cycle.

Item No.	Item Description	Response
22	Were any 132kV / 66kV line inspections completed this reporting period?	All.
23	• Number of lines inspected	All.
24	• Number remaining to be inspected	0
25	• These are scheduled for inspection by (date):	N/A
26	High risk areas not cleared due to circumstances beyond the Utility's control eg. Heritage areas, National parks	None.
27	Were all identified bushfire risk issues mitigated/actioned prior to commencement of the bushfire season? If not, why not. Provide details.	Yes

Private Power Poles / Lines

28	Were any private power poles / lines inspected for this reporting cycle	Yes
29	Number of poles inspected	358
30	Number of poles condemned or requiring replacement within 12 months	15

Please provide a listing of all such poles:

31	• Pole number	POL19403 POL82842 POL70916 POL26477 POL26151 POL26269 POL26462 POL26454 POL70857 POL70527 POL69831 POL69365 POL69962 POL69942 POL69338
32	• Location	POL19403 - 10 LIVERSIDGE STREET ACTON POL82842 - BEHIND R.G. MENZIES LIBRARY POL70916 - out front 27 ISA ST POL26477 - Roadside 13 De Burgh St POL26151 - 49 EARLE ST CLAIR PLACE POL26269 - 45 LEWIN ST POL26462 - Roadside at 3 Owen Cres POL26454 - Roadside 3 De Burgh St POL70857 - 3 Lithgow St Fyfehawk POL70527 - 34 Geelong St Fyfehawk POL69831 - Roadside 240 Goyder street. POL69365 - NEXT TO 65 MARTINA ST CLAIR PLACE POL69962 - 40 Warranoo Cres POL69942 - Roadside 25 Lumesh St Narabundah POL69338 - Narabmi St
33	• Owner	POL19403 - ANU POL82842 - ANU POL70916 - ACT GOVERNMENT POL26477 - ACT GOVERNMENT POL26151 - ACT GOVERNMENT POL26269 - ACT GOVERNMENT POL26462 - ACT GOVERNMENT POL26454 - ACT GOVERNMENT POL70857 - ACT GOVERNMENT POL70527 - ACT GOVERNMENT POL69831 - ACT GOVERNMENT POL69365 - ACT GOVERNMENT POL69962 - ACT GOVERNMENT POL69942 - ACT GOVERNMENT POL69338 - ACT GOVERNMENT
34	Number of private poles replaced?	0 (all reinforced)
35	Number of poles identified as requiring maintenance or repairs to the structure.	9

Please provide a listing of all such poles

36	• Pole number	POL26165 POL24604 POL26259 POL26251 POL70526 POL69824 POL69822 POL69969 POL69838
37	• Location	POL26165 - 45 MACKENNAL ST POL24604 - 80 LEWIN ST POL26259 - Roadside 76 Longstaff St POL26251 - Roadside 49 Longstaff St POL70526 - END OF GEELONG ST POL69824 - Roadside 290 Goyder St POL69822 - roadside 294 Goyder St POL69969 - 9 Annys St POL69838 - Roadside 174 Goyder St Narabundah
38	• Owner	POL26165 - ACT GOVERNMENT POL24604 - ACT GOVERNMENT POL26259 - ACT GOVERNMENT POL26251 - ACT GOVERNMENT POL70526 - ACT GOVERNMENT POL69824 - ACT GOVERNMENT POL69822 - ACT GOVERNMENT POL69969 - ACT GOVERNMENT POL69838 - ACT GOVERNMENT
39	Number of private poles repaired or maintained?	4 (5 to be corrected by ACT government street light maintenance contractor)


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## Section 2 Electricity Network Assets Management Code

### 2.1 Duty of an Electricity Distributor

#### 2.1.5.1 Required Operational Documents

**Note:** Wherever there is a '\*', the utility may be required to provide supplementary information as detailed in the relevant footnote.

Item No.	Item Description	Did the utility have compliant <sup>1</sup> documents or procedures? (Yes/No* <sup>2</sup> )	Document Reference Number	How many non-conformance reports were raised against these documents or procedures during the report year?	Were any independent audits of these documents or procedures conducted during the report year? (Yes/No)	If so, did the audits raise any non-conformances or establish any negative conclusions? (Yes* <sup>3</sup> /No)
1	Risk assessment for determining electrical service conditions and physical environment:	Yes	PR4625	0	No	No
1a	Provide copy of current risk assessment and register of both network & operations.	Yes	PR4675; Risk register maintained within a computer program (Guardian)	0	Yes	No
2	Management of design, construction, maintenance and operation records necessary for safety:	Yes	PR1178	0	Yes	No
3	Electricity network maintenance plan:	Yes	SM1192	0	No	No
4	Employee safety training program:	Yes	7.5 P3 EHQS training, SM4605 L&D training program	0	Yes	No
5	Hazard identification & risk assessment for electrical apparatus work:	Yes	PR4625	0	Yes	No
6	Energisation and re-energisation:	Yes	PR3204	0	Yes	No
7	Working in confined spaces:	Yes	PR4609	0	Yes	No
8	Switching (including earthing):	Yes	PR1313 PR1315 PR1203 WF13105	0	Yes	No
9	Work on or near LV electrical apparatus, (whether live or de-energised):	Yes	PR4625 SM4605 SM4615	0	Yes	No
10	Work on or near HV electrical apparatus, (whether live or de-energised):	Yes	SM4605	0	Yes	No

Item No.	Item Description	Did the utility have compliant <sup>1</sup> documents or procedures? (Yes/No* <sup>2</sup> )	Document Reference Number	How many non-conformance reports were raised against these documents or procedures during the report year?	Were any independent audits of these documents or procedures conducted during the report year? (Yes/No)	If so, did the audits raise any non-conformances or establish any negative conclusions? (Yes* <sup>3</sup> /No)
11	Work on or near underground cables:	Yes	SM4605 WF13123 WF13124	0	Yes	No
12a.	Work in substations:	Yes	SM4605 WF13130 WF13127	0	Yes	No
12b.	Register of all Network Underground and Aerial Lines (other than aerial services) showing locations, cable types and sizes:	No	Although there is no register per se; all assets are mapped and available for viewing by the public upon request.	0	No	No
13	Procedures and time frame for reporting Serious Electrical Accidents to:					
	- Utilities Technical Regulator	Yes	PR4608	0	No	
	- ACT WorkSafe	Yes	PR4608 PR1210	0	No	No
	- Other Persons	Yes	PR4608 PR1210	0		
14	Safety Plan to AS 5577:	Yes	SM4601	0	No	No
15	Quality Management Systems to ISO 9001	Yes	ISO 9001 - 2008 Quality Certification	0	Yes	Yes
16	Risk Management Systems to ISO 31000	Yes	PR4660 PO4930 PR4612	0	No	No (see notes)

1 "compliant" here means that on the last day of the report year the document or procedure was up-to-date, fully compliant with requirements (if any) and, where applicable, also approved.

2 If "No", attach explanatory statement indicating when this item was last up-dated and detailing remedial action including actual or proposed resourcing and completion date.

3 If "Yes", attach explanatory statement analysing the predominant causes (examining, in particular, the possibility of any systemic weaknesses) and outlining preventive measures and actual or target implementation dates.

## Notes



## Section 2 Electricity Network Assets Management Code

### 2.1 Duty of an Electricity Distributor

#### 2.1.5.2 Training

Item	Network worker employee classifications (expand table to suit number of classifications)	Total number of employees in each classification in employment during any part of the report year	Number of employees in each classification who have received training appropriate for their type of work and been approved by the employer after the training was satisfactorily completed	Number of employees in each classification who have demonstrated competency in the relevant work procedures and safety instructions	Number of employees in each classification who, during the report year, received appropriate instruction and demonstrated competency in rescue and resuscitation procedures relevant to the nature of their work	
1	System Fitters	53	53	53	39	✓
2	Line Workers	47	47	47	30	✓
3	Labourers	27	27	27	27	✓
4	Plant Operators / Drivers	15	15	15	14	✓
5	Apprentices	9	9	9	9	✓
6	Cable Jointers	9	9	9	3	✓
7	Asset Inspectors	16	16	16	10	✓
8	Engineers	32	32	32	31	✓
9	Technical / Design Officers	17	17	17	8	✓
10	Managers / Supervisors	29	29	29	7	✓
11	Administrative / Clerical Officers	61	61	61	23	✓
12	Professionals	30	30	30	12	✓
13	System / Network Operators	12	12	12	4	✓

Item	Description	Response
14	Total number of contractors	4
15	Number of training courses provided to network employees during the report year:	1378
16	Number of above training courses which were accredited under the Vocational Education and Training Act 1995:	320
17	Number of above training courses in which the training provider was qualified to provide that training:	49

Item	Description	Response
18	Number of utility competency standards applicable to network employees:	219
19	Number of above utility competency standards which are identical to a national competency standard as recognised by the Australian National Training Authority:	0
20	Of the utility competency standards which are NOT identical to an Australian National Training Authority national competency standard, how many have some other industry equivalent?	0
21	What safeguards has the utility employed to ensure that all CONTRACT workers are appropriately trained and have demonstrated competency for their type of work?	Internal audit schedules, data management, contract accreditation scheme and certification, appointment of dedicated roles to manage these processes
22	Number of Contractors / contracted personnel employed and accredited to work upon ActewAGL's network	92 Contractors;
23	List all companies providing all the contractors / contracted personnel in Item 22.	See Attachment G - AAD Accredited Tree Surgeons
	• Company name	See Attachment G - AAD Accredited Tree Surgeons
	• Company ABN	See Attachment G - AAD Accredited Tree Surgeons
	• ActewAGL Accredited training provided to contractors employees	See Attachment G - AAD Accredited Tree Surgeons
	• ActewAGL network contractor is accredited to work upon and service provided by contractor	See Attachment G - AAD Accredited Tree Surgeons
24	What safeguards are in place to ensure telecommunication workers accessing their assets on ActewAGL network assets are competent, trained and aware of ActewAGL's requirements for pre-pole climbing and safety electrical clearance distances, and familiar with pole markings and climbing restrictions?	<p>ActewAGL has an Electrical Industry Safety Rule book.</p> <p>The books contents and how to interrupt it and comply with the rules is delivered in Nationally accredited training.</p> <p>This training is offered to all contractors that work or near the Organisation assets.</p> <p>Compliance to this requirement is managed through audit and accreditation programs</p>


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## Section 2 Electricity Network Assets Management Code

### 2.1 Duty of an Electricity Distributor

#### 2.1.5.3 Exposure to 50Hz Electric and Magnetic Fields

Item	Item Description	Response
1	What protective measures does the utility take against the potentially adverse effects of exposure of its workers, particularly those with implanted cardiac pacemakers, to 50Hz electric and magnetic fields?	<p>Issues related to pacemakers are covered in ActewAGL Electrical Safety Rules. Clause 4.14.1 states that 50Hz electromagnetic field (EMF) should not exceed limits specified by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA). A policy of prudent avoidance is applied to employees with implants, to minimise their exposure even to much lower levels of EMF.</p> <p>Energy Networks Association has an active EMF committee on which ActewAGL has active representation. This committee monitors EMF developments and new scientific studies.</p> <p>ActewAGL investigates EMF complaints on a case by case basis.</p>
2	What protective measures does the utility take against the potentially adverse effects of exposure of the public to 50Hz electric and magnetic fields?	<p>ActewAGL conducts field surveys around network plant and equipment at zone substations and in close proximity to energised 11kV lines and 132 kV sub transmission lines.</p> <p>Surveys are also taken of office areas, in the field near assets and at times, customer request.</p>
3	What level of occupational exposure to electric fields does the utility consider acceptable over the:	
	a) short-term?	30kV/m
	b) long-term?	10kV/m
4	What level of occupational exposure to magnetic fields does the utility consider acceptable over the:	
	a) short-term?	5 mT (50,000mG)
	b) long-term?	0.5 mT (5000mG)

Item	Item Description	Response
5	What level of public exposure to electric fields does the utility consider acceptable over the:	
	a) short-term?	10 kV/m
	b) long-term?	5 kV/m
6	What level of public exposure to magnetic fields does the utility consider acceptable over the:	
	a) short-term?	1 mT (10,000 mG)
	b) long-term?	0.1 mT (1,000 mG)
7	What measurements are taken to ensure compliance with these levels?	ActewAGL conducts field surveys around network plant and equipment at zone substations and in close proximity to energised 11kV lines and 132 kV
8	Please indicate the field strength measurements at various locations and where they were taken.	<p>Distribution Substations - Magnetic fields ranged between 4 mG to 1600 mG (0.0004 mT to 0.16 mT) the upper reading is in close proximity to LV mains cables. Electric fields ranged between 0.1 kV/m to 0.9 kV/m</p> <p>132 kV Zone Substations - Magnetic fields ranged between 1 mG to 897 mG (0.0001 mT and 0.0897 mT). Electric fields ranged between 0 kV/m and 5.04 kV/m.</p> <p>11kV Distribution (Overhead) Lines - Magnetic fields ranged between 2 mG to 1000 mG (0.0002 mT and 0.1 mT) near energised 11kV lines (the upper figure was for live line work). Electric Fields ranged between 0.1 kV/m to 1.5 kV/m (Upper figure was taken at 0.400 mm from energised line).</p> <p>132 kV Transmission Lines - Magnetic fields ranged between 5 mG to 12 mG (0.0005 mT to 0.0012 mT). Electric fields ranged from 0.1 kV/m to 0.3 kV/m (at the edge of the easements pertaining to energised 132kV lines).</p> <p>Within Offices - Magnetic fields were generally below 10mG (0.0010 mT) otherwise VDU's would start to blur and flicker. The electric field meter does not record any measurable values for LV installations.</p>
9	How many notifications about possible high levels of magnetic and electric fields were made by the public in the past year?	0
10	Please state how many such concerns were justified and what action was taken to alleviate any problem and the public concerns.	N/A


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## Section 2 Electricity Network Assets Management Code

### 2.1 Duty of an Electricity Distributor

#### 2.1.5.4 Minimisation of Environmental Damage

Item	Item Description	Response
1	Approximately how much contaminated oil was disposed of during the year?	1483 litres
2	How is contaminated oil disposed of?	<p>ActewAGL has an agreement with Transformer Maintenance Service Australia Pty Ltd (TMS), an authorised oil recovery contractor, for the disposal of all waste oils. The waste oil is collected from site or the Greenway depot by TMS who then transport the waste interstate for disposal in accordance with relevant State and National legislation.</p> <p>Oil to be disposed of is tested for polychlorinated biphenyls (PCB).</p> <ul style="list-style-type: none"> <li>• Oil with PCB concentration less than (</li> <li>• Oil with PCB concentration greater than (&gt;) 2ppm is considered contaminated and is collected by TMS for transport to an interstate licenced facility for processing and destruction.</li> </ul> <p>TMS complete all paperwork required under NEPM legislation. Once destroyed, TMS provide ActewAGL with a destruction certificate.</p>
3	How are capacitors with possible PCB contamination disposed of?	Capacitors for disposal are stored in drums/bins located at the Greenway depot. Collection of the waste by an approved contractor (Chemsal Pty Ltd) is arranged when the drums are approximately three-quarters full. The drums are then transported as controlled waste.

4	What other hazardous waste is produced by the utility?	<p>Electricity networks do not produce hazardous materials. However, ActewAGL is required to identify the location of hazardous materials and, on occasion, dispose of waste that is surplus to operational requirements (such as NiCd batteries which are returned to the manufacturer).</p> <p>Asbestos Containing Material (ACM) is double-bagged and placed in a designated bin. Handling and disposal is in accordance with the relevant Asbestos Management Plan, which complies with ACT legislation. ACM waste is then removed and disposed of by ACT licenced asbestos removalists.</p> <p>Copper Chrome Arsenate (CCA) waste is handled and disposed of in accordance with the CCA Management Plan.</p> <p>Herbicides: The handling and use of herbicides is performed under the supervision of the ACT Environment Protection Authority (EPA).</p> <p>SF6 gas insulated switchgear is returned to an authorised recycler for gas recovery, cleaning and tank disposal.</p>
5	How is this (if any) disposed of?	A destruction certificate is sought from the service organisation licensed to dispose of the hazardous material

## Section 2 Electricity Network Assets Management Code

### 2.2 Network Safety Management System

#### 2.2.1 Electricity Network Safety Management System and Electricity Safety Plan

**Note:** Wherever there is a '\*', the utility may be required to provide supplementary information as detailed in the relevant footnote.

Item No.	Item Description	Response
1	Where and how can the Register of Network Underground and Aerial Lines be accessed by the public during business hours?	The preferred method is through the Dial Before You Dig service (Telephone 1100 or DBYD website).  For large areas and/or for design purposes where electronic (CADD) format is required or more practical (typically design consultants / developers) through the ActewAGL Electricity Network Data Application Form and Agreement
2	Outline measures adopted for bushfire mitigation.	Bushfire Risk Mitigation [PO4605], Bushfire Management Strategy [SM4609] & Preparedness Index detail the ActewAGL measures used in Bushfire mitigation. Measures include: Index measuring preparedness, fault mitigation based on bushfire risk, ongoing network resilience measures installed, ongoing continual improvement program implemented.
3	Has network maintenance been carried out in accordance with the maintenance plan?*	Yes
4	Does the organisation have a current Electricity Safety Plan compliant to Section 6.1 of the Electricity Network Assets Management Code 2013.	Yes
5	Did any circumstances arise to necessitate a modification to the then current Safety Plan?*	No
6	Number of non-compliances with the Safety Plan during the report year*	0

Item No.	Item Description	Response
7	Provide details of actions taken (with dates) to raise public safety awareness of electrical safety in general (including incident reporting, notification of electric shocks etc.)	The following public safety awareness television campaigns were conducted in 2015-16: Episode 1 – Vegetation management 17 September to 3 October Episode 2 – Storm safety 22 October to 15 November Episode 3 – Christmas light safety 19 November to 3 December Episode 4 – Bushfire preparedness 3 December to 20 December Episode 5 – Bushfire & helicopter patrols 14 January to 4 February Episode 6 – Reporting damaged assets 11 February to 18 February Episode 7 – Vegetation management (2nd run) 3 March to 17 March Episode 8 – Power outages 31 March to 21 April Episode 9 – Dial Before You Dig 28 April to 16 May Episode 10 – Natural Gas Safety 19 May to 2 June Episode 11 – Winter electrical safety 9 June to 25 June Episode 12 – Clearances around assets 30 June to 26 July
	Provide a copy of the Bushfire Mitigation Plan.	See the Bushfire Management Strategy - SM4609 provided to UTR in November 2015.
	Provide a copy of the Bushfire Preparedness Report	The 2015/16 BPR was provided to UTR in October 2015.
	Provide a copy of the Electricity Safety Plan.	The 2015/16 EMP was provided to UTR in February 2016.
	Provide a copy of the Public Safety Awareness Plan	The Electricity Network Assets Management Code does not require a Public Safety Awareness Plan to be provided to the Technical Regulator.
	Provide a copy of the Asset Management Plan	ActewAGL Distribution includes asset specific plans in its Annual Planning Report which is published on the ActewAGL website and a copy has been provided to UTR.
	Provide chart of annual LTI performance against 3 year rolling LTI average	See Attachment H - ActewAGL 3 year rolling LTIFR

1. Provide details of major work items and a summary for other actions not carried out to the extent required by the plan and indicate the expected impacts.
2. If so, attach an explanatory statement outlining the circumstances, the required Safety Plan changes and when those changes became (or are targeted to become) effective.
3. Append the Safety Plan compliance report.

#### Notes

1. Bushfire Readiness Report provided to ACT Government on 4/10/2016 as required by Electricity Transmission Supply Code 2016.
2. The Electricity Safety Plan must be provided to the ACT Government each year within 30 days of the end of the financial year (30th July); therefore the new requirement in this report duplicates the legislative requirement.
3. The Electricity Network Assets Management Code does not contain a specific provision to supply a Public Safety Awareness Plan. It does refer to the contents of a Electricity Safety Plan addressing the safety of the public.
4. The Electricity Network Assets Management Code does not contain a specific provision to supply an Asset Management Plan. It does refer to a requirement for the electricity distributor to have an up to date asset management system.  
Note: An Asset Management Plan was provided to the ACT Governemnt in March 2014.
5. Note: Although an LTI performance report is provided; it is an Occupational Health and Safety system that does not relate to technical safety.




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## Section 2 Electricity Network Assets Management Code

### 2.3 Electrical Safety Rules

**Note:** Wherever there is a '\*', the utility may be required to provide supplementary information as detailed in the relevant footnote.

Item No.	Item Description	Response
1	Does the organisation have a current set of Electrical Safety Rules	Yes
2	When were the safety rules most recently amended	1/05/2016
3	Does the organisation have a record of all persons trained in the Electrical Safety Rules	Yes. This is a National Unit of Competency and staff are trained and assessed against this requirement; results are captured in the ActewAGL Learning Management System; and results reported to management. Skills Passports are stamped for individuals.
4	What mechanisms are in place to ensure that refresher training is provided to ensure training accreditation does not lapse	Data is stored in ActewAGL's Learning Management System Aurion. This data feeds into a SQL reporting data base to manage core compliance of exposure (i.e. expired training). A 3 year training program is also published and managed by the ActewAGL Learning and Development Team.


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## Section 3 Electricity Service & Installation Rules Code

### 3.1 Electricity Service & Installation Rules

#### 3.1.1 Required Operational Documents

**Note:** Wherever there is a '\*\*', the utility may be required to provide supplementary information as detailed in the relevant footnote.

Item	Item Description	Did the utility have compliant <sup>1</sup> documents or procedures? (Yes/No <sup>*2</sup> )	Document Reference Number	How many non-conformance reports were raised against these documents or procedures during the report year?	Were any independent audits of these documents or procedures conducted during the report year? (Yes/No)	If so, did the audits raise any non-conformances or establish any negative conclusions? (Yes <sup>*3</sup> /No)
1	Service and Installation Rules	Yes	SM11144	0	No	

1 "compliant" here means that on the last day of the report year the document or procedure was up-to-date, fully compliant with requirements (if any) and, where applicable, also approved.

2 If "No", attach explanatory statement indicating when this item was last up-dated and detailing remedial action including actual or proposed resourcing and completion date.

3 If "Yes", attach explanatory statement analysing the predominant causes (examining, in particular, the possibility of any systemic weaknesses) and outlining preventive measures and actual or target implementation dates.

*Note 2 : The S&I Rules were updated and approved by the ACT Government in May 2015*


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## Section 3 Electricity Service & Installation Rules Code

### 3.2 Embedded Generation

#### 3.2.1 Photovoltaic inverters connected to the network

**Note:** Please state the number of photo voltaic inverters connected to the network.

	15/16	14/15	13/14	12/13	11/12	10/11	09/10	08/09	07/08	06/07	Before 06/07	Total
Number of PV systems connected each year.	1274	1240	2062	1723	4823	3537	1881	445	226	35	52	17,298
kVA connected each year.	5537.1	4754.5	8818	7192.7	12122.6	9093.3	3708.1	844.8	451.6	62.5	121.7	52,707


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## Section 3 Electricity Service & Installation Rules Code

### 3.2 Embedded Generation

#### 3.2.2 Photovoltaic inverters rated output

**Note:** Please indicate the rated output of all photo voltaic inverters connected to the network.

	0-1kVA	1-2kVA	2-3kVA	3-4kVA	4-5kVA	5-10kVA	>10kVA
Number	115	6,143	3,311	3,151	1,362	2,404	277
Photovoltaic rating	90	9,190	7,750	10,110	5,812	13,434	5,259
Other							


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## Section 3 Electricity Service & Installation Rules Code

### 3.2 Embedded Generation

#### 3.2.3 Inverter Testing

Item No.	Item Description	Response
1	Please state the number of letters sent to customers with PV installations over 5 years old.	7870
2	Please state the number of test reports received by ActewAGL for equipment over 5 years old.	3127
3	Please indicate the number of PV Installations disconnected due to non-compliance with S&I Rules.	0
4	Please advise the process for remediating a site with a PV installation that has not provided test reports within the time frame required	AAD will offer a one off extension based on customer contact through the testing process. If no contact or test results received following first letter, a second letter is sent to re-prompt and advise of the overdue test. Third letter advises if no contact / test result received PV installation will be disconnected.


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## Section 3 Electricity Service & Installation Rules Code

### 3.2 Embedded Generation

#### 3.2.4 Preventing faulty systems feeding into a de-energised network

Item No.	Item Description	Response
1	How is this possibility covered by the Safety Rules?	Clauses 8.6.1 and 9.5.3 of the Electrical Safety Rules [SM4605] - all sources of electrical supply including renewable energy sources are isolated. If the work site have bonders applied the renewable energy sources inside the bonded area only are isolated.
2	Are all such installations indicated on network drawings?	Yes
3	What action is taken by the permit or sanction issuer to ensure worker safety?	The above information are recorded in the access permit and the permit issuer will ensure all isolations have taken place before issuing the permit to the workers.


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## Section 3 Electricity Service & Installation Rules Code

### 3.2 Embedded Generation

#### 3.2.5 Medium to Large Generation Plant

Item No.	Item Description	Response
1	Number of other types of generation (>10kVA per phase) inter-connected to ActewAGL's HV or LV network. Please provide details of all such generators	See the table below
2	Location (i.e., suburb, block, section)	See the table below
3	Type of generation, manufacturer and output	See the table below
4	Network connection point	A reminder letter is sent out requesting the test to be completed within 7 days; this is then followed by a disconnection notification letter.
5	Total rated output of medium to large (>10kVA per phase) generation that is connected to ActewAGL's network.	35,689 KVA
6	A faulty system could continue to feed into the network after supplies have been disconnected—how is this possibility covered by the Safety Rules?	Clauses 8.6.1 (HV) and 9.5.3 (LV) of the Electrical safety rules - all sources of electrical supply including renewable energy sources are isolated. If the work site has bonders applied, the renewable energy sources inside the bonded area only are isolated.
7	Are all such installations indicated on network drawings?	Yes
8	What action is taken by the permit or sanction issuer to ensure worker safety?	The above information is recorded in the access permit and the permit issuer will ensure all isolations have taken place before issuing the permit to the workers.

Location	Type of Generation	Output (kVA)
Acton, 1/39	PV	33
Acton, 1/63	Rotating machine - steam	100
Airport Terminal 1	Rotating machine - gas	1440
Airport Terminal 2	Rotating machine - gas	1500

Barton	PV	100
Barton 1/65	Rotating machine - gas	335
Barton 1/65	Rotating machine - gas	171
Barton, 1/3	Rotating machine - gas	685
Belconnen Tip, 1585/0	Rotating machine - gas	1000
Burra Creek, NSW	Rotating machine - micro hydro	1830
Canberra 29/211	PV	56
CIT Bruce, 4/9	Rotating machine - gas	62
CIT Fyshwick 9/30	Rotating machine - gas	183
City, 6/24	PV	400
Civic, 1/92	Rotating machine - gas	150
Civic, 9/31	Rotating machine - gas	1440
Condor 12/211	PV	47
Coombs 17/2	PV	100
Florey 1/1	PV	100
Forrest 6/29	PV	88
Fyshwick, 10/18	PV	200
Fyshwick, 44/34	PV	144
Greenway 10/16	PV	200
Gungahlin, 1/20	PV	55
Hughes 4/30	PV	83
Hume 7/86	PV	60
Hume, 16/6	PV	60
Jamieson 15/49	PV	100
Lyneham, 18/71	PV	200
Lyneham, 38/59	PV	51
Majura B622	Rotating machine - Diesel	1500
Mugga Lane Tip, 2114/0	Rotating machine - gas	1000
Page 23/2	PV	100
Parkes 1/49	PV	178
Parkes 1/49	Rotating machine - gas	725
Parkes, 13/29	Rotating machine - gas	260
Phillip 80/8	PV	100
Phillip 88/8	PV	80
Stirling, 2/24	PV	176
Symonston, 22/112	PV	348
Symonston, 4/126	PV	140
Theodore, 10/682	PV	20,000
Woden 11/18	PV	100
		<b>35,680</b>




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## Section 4 Emergency Planning Code

### 4.1 Procedures

#### 4.1.1 Required Operational Documents

**Note:** Wherever there is a '\*', the utility may be required to provide supplementary information as detailed in the relevant footnote.

Item No.	Item Description	Did the utility have compliant <sup>1</sup> documents or procedures? (Yes/No <sup>*2</sup> )	Document Reference Number	How many non-conformance reports were raised against these documents or procedures during the report year?	Were any independent audits of these documents or procedures conducted during the report year? (Yes/No)	If so, did the audits raise any non-conformances or establish any negative conclusions? (Yes <sup>*3</sup> /No)
1	Emergency Plan	Yes	SM4610	None	No	N/A
2	Procedure(s) to identify and provide training to staff responsible for management and coordination during an Emergency Event	Yes	PR4679 & PR4678	None	No	N/A
3	Emergency management records	Yes	PR4679	None	No	N/A
3a.	Were any simulation / testing exercises conducted during the year of the emergency plan	Yes	Exercise Hamilton Report 2015	None	No	N/A
3b.	Provide a brief outline of the scenario's tested	Refer notes table below				

Item No.	Item Description	Did the utility have compliant <sup>1</sup> documents or procedures? (Yes/No* <sup>2</sup> )	Document Reference Number	How many non-conformance reports were raised against these documents or procedures during the report year?	Were any independent audits of these documents or procedures conducted during the report year? (Yes/No)	If so, did the audits raise any non-conformances or establish any negative conclusions? (Yes* <sup>3</sup> /No)
4a.	Were there any instances where emergency management procedure were invoked (excluding drills and simulations)	N/A	N/A	None	N/A	N/A
4b.	Provide a summary of the event and response required	N/A	N/A	None	N/A	N/A

1 "compliant" here means that on the last day of the report year the document or procedure was up-to-date, fully compliant with requirements (if any) and, where applicable, also approved.

2 If "No", attach explanatory statement indicating when this item was last up-dated and detailing remedial action including actual or proposed resourcing and completion date.

3 If "Yes", attach explanatory statement analysing the predominant causes (examining, in particular, the possibility of any systemic weaknesses) and outlining preventive measures and actual or target implementation dates.

Notes					
<b>1. Business Continuity Plan (BCP) testing</b>	<i>Conduct a relocation exercise to review and test 16 BCP.</i>	<i>All BCP holders were tested against a denial of access to normal workplace desktop exercise scenario. All BCPs were tested for currency and updated.</i>	<i>Complete</i>	<i>1/05/2016</i>	
<b>2. Organisational Crisis Management exercise Hamilton</b>	<i>Conduct a Crisis Management exercise to test the Energy Networks Emergency Management Plan and the Crisis Management team.</i>	<i>This test was a simultaneous exercise that tested the Crisis Management Team and the Energy Networks Divisional management against a Bushfire event and a Cyber-attack.</i>	<i>Complete</i>	<i>1/11/2015</i>	
<b>3. IT Disaster Recovery Testing</b>	<i>Conduct an exercise simulating a major IT outage or IT service interruption.</i>	<i>Real time planning and relocation of the Fyshwick Data Centre to TansACT House in Civic used as IT DR Test</i>	<i>Complete</i>	<i>1/03/2016</i>	


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## Section 5 Contestable Work Accreditation Code Code

### 5.1 Contents of an Approved Accreditation Scheme

#### 5.1.1 Required Operational Documents

**Note:** Wherever there is a '\*', the utility may be required to provide supplementary information as detailed in the relevant footnote.

Item No.	Item Description	Did the utility have compliant <sup>1</sup> documents or procedures? (Yes/No* <sup>2</sup> )	Document Reference Number	How many non-conformance reports were raised against these documents or procedures during the report year?	Were any independent audits of these documents or procedures conducted during the report year? (Yes/No)	If so, did the audits raise any non-conformances or establish any negative conclusions? (Yes* <sup>3</sup> /No)
1	Accreditation Scheme	Yes	-	0	No	
2	Register (or Statement) of Accredited Persons	Yes	-	0	No	

1 "compliant" here means that on the last day of the report year the document or procedure was up-to-date, fully compliant with requirements (if any) and, where applicable, also approved.

2 If "No", attach explanatory statement indicating when this item was last up-dated and detailing remedial action including actual or proposed resourcing and completion date.

3 If "Yes", attach explanatory statement analysing the predominant causes (examining, in particular, the possibility of any systemic weaknesses) and outlining preventive measures and actual or target implementation dates.


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## Section 5 Contestable Work Accreditation Code Code

### 5.1 Contents of an Approved Accreditation Scheme

#### 5.1.2 Person Responsible

Item No.	Item Description	Response	
		Position	Phone
1	Person responsible for reviewing the Accreditation Scheme	Manager Asset Strategy and Planning	(02) 6270 7667