

Western Australia

**Electricity Industry (Network Quality and
Reliability of Supply) Code 2005**

As at 20 Sep 2007

Version 00-d0-12

Extract from www.slp.wa.gov.au, see that website for further information

Electricity Industry (Network Quality and Reliability of Supply) Code 2005

CONTENTS

Part 1 — Preliminary

1.	Citation	1
2.	Commencement	1
3.	Terms used in this Code	1

Part 2 — Quality and reliability standards

Division 1 — Quality Standards

4.	Definition	4
5.	Obligation to observe standards	4
6.	Voltage fluctuations	4
7.	Harmonics	5
8.	Duty to disconnect if damage may result	5

Division 2 — Standards for the interruption of supply to individual customers

9.	General standard of reliability	6
10.	Duty to reduce effect of interruption	6
11.	Planned interruptions	7
12.	Significant interruptions to small use customers	8

Division 3 — Standards for the duration of interruption of supply in particular areas

13.	Standards prescribed for particular areas	9
-----	---	---

Contents

	Division 4 — Variation of obligations under this Part	
14.	Alternative provision may be made by Minister on application	10
15.	Provisions may be excluded or modified by agreement	11
	Part 3 — Payments to customers for failure to meet certain standards	
16.	Terms used in this Part	12
17.	Interruptions to which this Part does not apply	12
18.	Payment for failure to give required notice of planned interruption	13
19.	Payment for supply interruptions exceeding 12 hours	13
20.	Only one application for each metered premises	14
21.	Information to be provided	14
22.	Alternative methods of payment	15
	Part 4 — Duties incidental to the prescribed standards	
	Division 1 — Monitoring, record keeping and investigation	
23.	Monitoring and record keeping	16
24.	Quality investigations	16
	Division 2 — Complaints	
25.	Information to be given to small use customers	17
	Division 3 — Performance reporting	
26.	Annual report on monitoring systems	17
27.	Publication of information about performance	18
28.	Reports not needed if there were no small use customers	18
	Schedule 1 — Information to be published	
	Notes	
	Compilation table	22

Electricity Industry (Network Quality and Reliability of Supply) Code 2005

Part 1 — Preliminary

1. **Citation**

This Code is the *Electricity Industry (Network Quality and Reliability of Supply) Code 2005*.

2. **Commencement**

This Code comes into operation on 1 January 2006.

3. **Terms used in this Code**

- (1) In this Code, unless the contrary intention appears —
Authority means the Economic Regulation Authority established by the *Economic Regulation Authority Act 2003*;

customer means a person whose electrical installations are connected to a transmission or distribution system for the purpose of receiving electricity supply;

customer's electrical installations means equipment and wiring associated with the distribution of electricity within a customer's premises beyond the point of connection to the network;

distributor means —

- (a) the holder of a distribution licence; and
- (b) the holder of an integrated regional licence which authorises the carrying out of the activities described in the Act section 4(1)(c);

s. 3

interruption means a loss of electricity supply for more than one minute that is due to a cause beyond the control of the customer concerned;

network means —

- (a) transmission works; or
- (b) distribution works,

that are used to convey electricity under a distribution licence, transmission licence or integrated regional licence, but does not include a line, pole, switch, transformer or apparatus that is —

- (c) on or a part of premises to which electricity is supplied by a transmitter or distributor; and
- (d) situated beyond the point at which electricity is so supplied;

Perth CBD means the area supplied with electricity by —

- (a) the Milligan Street Zone Substation; or
- (b) the Hay Street Zone Substation,

operated by the Electricity Networks Corporation;

planned interruption means an interruption that is undertaken in accordance with section 11;

small use customer means a customer who consumes not more than 160 MWh of electricity per year;

transmitter means —

- (a) the holder of a transmission licence; and
- (b) the holder of an integrated regional licence which authorises the carrying out of the activities described in the Act section 4(1)(b);

unplanned interruption means an interruption that is not undertaken in accordance with section 11;

urban areas means —

- (a) the metropolitan region described in the *Metropolitan Region Town Planning Scheme Act 1959* Third Schedule;

- (b) the local government district of Mandurah; and
 - (c) the following townsites as constituted under the *Land Administration Act 1997* section 26 —
 - (i) Albany;
 - (ii) Bunbury;
 - (iii) Geraldton;
 - (iv) Kalgoorlie.
- (2) Notes in this Code are provided to assist understanding and do not form part of the Code.

[Section 3 amended in Gazette 31 Mar 2006 p. 1346.]

Part 2 — Quality and reliability standards

Division 1 — Quality Standards

4. Definition

In sections 6(2) and 7 —

compatibility levels means reference values for coordinating the emission and immunity of equipment which is part of, or supplied by, a network in order to ensure electromagnetic compatibility in the whole system, including connected equipment.

5. Obligation to observe standards

- (1) A transmitter and a distributor must, so far as is reasonably practicable, ensure that electricity supplied by the transmitter or distributor to a customer's electrical installations, as measured at the point of connection of those installations to the network, at all times complies with the standards prescribed by sections 6(2) and 7.
- (2) Subsection (1) does not apply to electricity supplied to a customer's electrical installations if the cause of the non-compliance —
 - (a) is in those installations; or
 - (b) is an act or omission of the customer.

6. Voltage fluctuations

- (1) In the Table to subsection (2), the expressions "**P_{st}**" and "**P_{lt}**" have the meanings that they have, as at the commencement of this Code, in Part 3.7 clause 3 of Standard 61000:2001 published jointly by Standards Australia and the Standards Council of New Zealand.
- (2) The standard for the voltage fluctuation of electricity supplied is a level of fluctuation that is less than the compatibility levels set out in the Table to this subsection.

Table

Compatibility levels	
P _{st}	1.0
P _{lt}	0.8

7. Harmonics

The standard for the harmonic voltage distortion level of electricity supplied is a distortion level that is less than the compatibility levels set out in the Table to this section.

Table

Compatibility levels for harmonic voltages (in percent of the nominal voltage)

Odd harmonics non multiple of 3		Odd harmonics multiple of 3		Even harmonics	
Order h	Harmonic voltage %	Order h	Harmonic voltage %	Order h	Harmonic voltage %
5	6	3	5	2	2
7	5	9	1.5	4	1
11	3.5	15	0.3	6	0.5
13	3	21	0.2	8	0.5
17	2	>21	0.2	10	0.5
19	1.5			12	0.2
23	1.5			>12	0.2
25	1.5				
>25	0.2+1.3 (25/h)				

Note — Total harmonic distortion (THD): 8%

8. Duty to disconnect if damage may result

If—

- (a) a transmitter or distributor is, or will be, unable to comply with section 5 in relation to a standard prescribed by section 6(2) or 7; and

- (b) the failure may result in damage to a customer's electrical installations or property,

the transmitter or distributor must, so far as is reasonably practicable, disconnect the supply of electricity to those installations or property, unless it is in the interests of the customer to maintain the supply.

Note: This note relates to the standards prescribed by law for the voltage level and the frequency of electricity supplied by the networks operated by Western Power Corporation at the commencement of this Code. Those matters are not covered by this Code because they are provided for by the *Electricity Act 1945* section 25(1)(d). Under that section —

- (a) the voltage must be maintained at +/- 6% of the voltage declared for the purposes of that section namely, 240v single-phase or 415v three-phase; and
- (b) the frequency must be maintained at +/- 2.5% of the frequency so declared namely, 50 cycles per second.

Division 2 — Standards for the interruption of supply to individual customers

9. General standard of reliability

A transmitter or distributor must, so far as is reasonably practicable, ensure that the supply of electricity to a customer is maintained and the occurrence and duration of interruptions is kept to a minimum.

10. Duty to reduce effect of interruption

- (1) A transmitter or distributor must, so far as is reasonably practicable, reduce the effect of any interruption on a customer.
- (2) Without limiting subsection (1), a transmitter or distributor must consider whether the transmitter or distributor should supply electricity by alternative means to a customer who will be affected by a proposed interruption if —
- (a) the interruption is expected to exceed the relevant period under section 11(2);

- (b) the effect of the interruption on the customer's business is likely to be substantial; or
- (c) the transmitter or distributor is aware that a person living in the customer's premises has special health needs and requires electricity for the operation of equipment that caters to those needs.

11. Planned interruptions

- (1) It is not a breach of section 9 for a transmitter or distributor to interrupt the supply of electricity to a customer for the purpose of maintaining or altering the transmitter's or distributor's network if —
 - (a) so far as is reasonably practicable, the length of the interruption does not exceed the relevant period specified in subsection (2); and
 - (b) the transmitter or distributor has given notice of the proposed interruption to the customer —
 - (i) not less than 72 hours before the start of the interruption; or
 - (ii) if it is not reasonably practicable to comply with subparagraph (i), at the earliest practicable time before the start of the interruption.
 - (2) The periods referred to in subsection (1)(a) are —
 - (a) if the customer's premises are on or south of the 26th parallel of latitude —
 - (i) 6 hours; or
 - (ii) 4 hours, if at the time when notice is given the forecast maximum temperature issued by the Bureau of Meteorology in Perth for the area in which the premises are situated is 30°C or more for any part of the period of the interruption;
- or

- (b) if the customer's premises are north of the 26th parallel of latitude, 4 hours.
- (3) It is sufficient for the purposes of subsection (1)(b) if the notice —
 - (a) is sent by post to the customer at the premises concerned or delivered to the customer's letterbox at those premises;
 - (b) is broadcast twice on a television or radio station broadcasting to the area in which the premises are situated; or
 - (c) is published in a newspaper circulating in that area.

12. Significant interruptions to small use customers

- (1) In this section —
 - permitted number of times* means —
 - (a) for small use customers in the Perth CBD or the urban areas, 9 times; and
 - (b) 16 times for small use customers in other areas;
 - prescribed standard* means the supply of electricity for 9 years in every 10 without the interruption of supply exceeding that specified in subsection (2)(a) or (b);
 - year* means the period of 12 months ending on 30 June.
- (2) This section applies at any time when the supply of electricity by a distributor to a small use customer —
 - (a) has been interrupted for more than 12 hours continuously; or
 - (b) has in the preceding year been interrupted more than the permitted number of times,and the distributor considers that the prescribed standard is unlikely to be met in respect of the customer.
- (3) The distributor must either —

- (a) remedy the cause or causes of interruption so that the prescribed standard is met; or
- (b) enter into an alternative arrangement to the small use customer's satisfaction for the supply of electricity to the customer.

Division 3 — Standards for the duration of interruption of supply in particular areas

13. Standards prescribed for particular areas

- (1) In this section —
customer premises means premises on which electrical installations are connected to a transmission or distribution system for the purpose of receiving supply.
- (2) A transmitter or distributor must, so far as is reasonably practicable, ensure that for customer premises in an area referred to in the first column of the Table to this subsection the average total length of interruptions of supply, as calculated under subsection (3), does not exceed the number of minutes specified in the second column opposite the reference to that area.

Table

Area	Standard for average total length of interruptions
the Perth CBD	30
the urban areas other than the Perth CBD	160
any other area of the State	290

- (3) For the purposes of subsection (2), the average total length of interruptions of supply is to be calculated as at 30 June in each year —
 - (a) by taking the average total length, in minutes, of interruptions of supply to customer premises in an area during each year of the period of 4 years ending on that day; and

- (b) by then taking the average of the 4 annual figures determined under paragraph (a).
- (4) Each customer premises, or part of such premises, for which the supply of electricity is metered separately under the *Energy Operators (Powers) Act 1979* section 62(5) are separate premises for the purposes of this section.

Division 4 — Variation of obligations under this Part

14. Alternative provision may be made by Minister on application

- (1) A transmitter or distributor may apply to the Minister for —
 - (a) an exemption from compliance with a provision of this Part; and
 - (b) the replacement of that provision by another provision to be complied with by the transmitter or distributor in the supply of electricity.
- (2) An application under subsection (1) must be referred to the Authority for its advice.
- (3) If, having regard to the advice of the Authority, the Minister is satisfied that it is appropriate to do so, the Minister may by instrument —
 - (a) exempt the transmitter or distributor from compliance with the provision concerned; and
 - (b) attach to the exemption a condition that another provision, in place of the provision for which an exemption is granted, is to be complied with by the transmitter or distributor in the supply of electricity.
- (4) An exemption may be expressed to apply —
 - (a) generally; or
 - (b) only in respect of a specified area, or a specified part of an area, to which the transmitter's or distributor's licence applies.

- (5) An instrument under subsection (3) may provide for circumstances in which, and conditions (additional to that mentioned in subsection (3)(b)) subject to which, an exemption is to apply.
- (6) An exemption is of no effect at any time when a condition to which it is subject is not being observed.
- (7) The Minister may at any time, after obtaining the advice of the Authority, by notice in writing to the transmitter or distributor, revoke or vary an instrument under subsection (3), including by imposing any further condition to be complied with by the transmitter or distributor.
- (8) A transmitter or distributor to which an instrument under subsection (3) applies must, on request by a customer of the transmitter or distributor who is or may be affected by the operation of the instrument, provide the customer, free of charge, with a copy of the instrument and of any notice given under subsection (7).

15. Provisions may be excluded or modified by agreement

- (1) A customer and a transmitter or a distributor may agree in writing that a provision of this Part is excluded or modified in relation to the supply of electricity by the transmitter or distributor to the customer.
- (2) An agreement under subsection (1) must set out the matters that the parties consider are the advantages and disadvantages to the customer of entering into the agreement.
- (3) This Part has effect in relation to the supply of electricity to a customer subject to any agreement entered into by the customer under this section.

Part 3 — Payments to customers for failure to meet certain standards

16. Terms used in this Part

In this Part —

corporation means the Electricity Networks Corporation, the Regional Power Corporation, or a subsidiary of either of those corporations, but only so far as the corporation is operating a distribution system;

eligible customer means a customer who is supplied with electricity from a distribution system operated by a corporation and consumes not more than 50 MWh of electricity per year;

emergency operating state has the meaning given by section 3.5.1 of the Wholesale Electricity Market Rules published in the *Gazette* on 5 October 2004 at pages 4323 to 4725.

[Section 16 amended in Gazette 31 Mar 2006 p. 1346.]

17. Interruptions to which this Part does not apply

- (1) Sections 18 and 19 do not apply to an interruption that —
 - (a) is to the supply of electricity on the South West interconnected system and —
 - (i) that occurs during, or as a consequence of, an emergency operating state; or
 - (ii) that is occasioned by the exercise or performance of a power or duty under a written law to disconnect the supply of electricity to any premises on account of fire or other hazard or to facilitate the rescue of any person or property;
 - (b) is caused by the eligible customer or equipment under the eligible customer's control; or

- (c) the Minister determines should not attract a payment under this Part because it occurred in exceptional circumstances.
- (2) A determination under subsection (1)(c) is to be made by order published in the Gazette, and may be revoked or amended by the Minister in the same way.

18. Payment for failure to give required notice of planned interruption

If —

- (a) a corporation fails to give an eligible customer not less than 72 hours notice of a planned interruption as required by section 11(1)(b)(i); and
- (b) the customer, within 60 days after the interruption, applies to the corporation for compensation under this section,

the corporation must, within 30 days after the application is made, pay the sum of \$20 in respect of the failure to the customer or as provided by section 22.

19. Payment for supply interruptions exceeding 12 hours

(1) If —

- (a) the supply of electricity by a corporation to a customer is interrupted for more than 12 hours continuously, whether or not notice has been given to the customer under section 11(1); and
- (b) the customer, within 60 days after the interruption ceases, applies to the corporation for compensation under this section,

the corporation must, within 30 days after the application is made, pay the sum of \$80 in respect of the interruption to the customer or as provided by section 22.

s. 20

- (2) For the purposes of subsection (1)(a) the period of 12 hours is to be calculated from the time when the corporation —
- (a) was advised by the customer that the supply of electricity was interrupted; or
 - (b) should have become aware, on account of the information reasonably available to it, that the customer's supply had been interrupted,

whichever is the earlier.

Note: A person who is dissatisfied with a failure or refusal of a corporation to pay a sum in accordance with this section or section 18 may seek to enforce payment by application to the electricity ombudsman under the Act Part 7.

20. Only one application for each metered premises

- (1) For any particular interruption referred to in section 18(a) or 19(1)(a) not more than one application may be made to the corporation under that section in respect of any premises.
- (2) Each premises, or part of premises, for which the supply of electricity is metered separately under the *Energy Operators (Powers) Act 1979* section 62(5) are separate premises for the purposes of subsection (1).

21. Information to be provided

- (1) A corporation must provide eligible customers with information as to —
 - (a) the rights conferred by sections 18 and 19;
 - (b) how applications under those sections may be made; and
 - (c) the manner in which applications will be dealt with by the corporation.
- (2) A corporation must provide the information described in subsection (1) to an eligible customer by written notice sent to the customer at the address to which accounts are sent, whether accompanying an account or otherwise.

- (3) A notice under subsection (2) must be given to an eligible customer by a corporation not less than once in each financial year of the corporation.

22. Alternative methods of payment

A payment under section 18 or 19 may, instead of being made to the customer concerned, be made by the corporation —

- (a) to the retail licensee who supplies electricity to the customer if there is an arrangement in force under which the sum will be paid or credited to the customer; or
- (b) as agreed between the corporation and the customer.

Part 4 — Duties incidental to the prescribed standards

Division 1 — Monitoring, record keeping and investigation

23. Monitoring and record keeping

- (1) A transmitter or distributor must take all such steps as are reasonably necessary to monitor the operation of its network to ensure compliance with —
 - (a) the provisions of Part 2 or an instrument made under section 14(3); and
 - (b) the reporting requirements under section 27.
- (2) A transmitter or distributor must keep such records of information as are required for the purposes of subsection (1) and retain the information for at least 5 years after the day on which a report containing the information is published under section 27.

24. Quality investigations

- (1) In this section —

working day means a day other than a Saturday, a Sunday or a public holiday throughout the State or in the area where the relevant premises are situated.
- (2) A customer who considers that the supply of electricity to the customer's electrical installations by a transmitter or distributor does not, or did not at a particular time or on a particular occasion, comply with —
 - (a) section 6(2) or 7; or
 - (b) an instrument made under section 14(3),may in writing request the transmitter or distributor to investigate whether the supply of electricity complies with, or at a particular time or on a particular occasion complied with, that section or that instrument.

- (3) If a request is so made, the transmitter or distributor must within 20 working days complete the investigation, and must take such field measurements as may be required for that purpose.
- (4) The transmitter or distributor must report the results of the investigation to the customer concerned.
- (5) Subsection (3) does not apply if the transmitter or distributor believes on reasonable grounds that the request is frivolous or vexatious or is not made in good faith.

Division 2 — Complaints

25. Information to be given to small use customers

- (1) In this section —
complaint means a complaint that a provision of Part 2, or of an instrument made under section 14(3), has not been, or is not being, complied with.
- (2) A transmitter and a distributor must make available, at no cost, a copy of a document setting out information about its complaints handling processes to a small use customer —
 - (a) who makes a complaint to the transmitter or distributor;
or
 - (b) asks to be given such information.
- (3) The document referred to in subsection (2) must inform a small use customer of any right that the customer has to refer to the electricity ombudsman under the Act Part 7 a complaint that is not resolved to the customer's satisfaction.

Division 3 — Performance reporting

26. Annual report on monitoring systems

- (1) A transmitter and a distributor must, as required by subsection (2), arrange for an independent expert to audit, and report on, the operation of the systems that the transmitter or the

distributor has in place for monitoring its compliance with Part 2 or an instrument made under section 14(3).

- (2) An audit under subsection (1) is to be carried out in respect of the operation of such systems during each year ending on 30 June.

27. Publication of information about performance

- (1) A transmitter and a distributor must —
- (a) prepare a report setting out the information described in Schedule 1, so far as it relates to the operations of the transmitter or distributor, in respect of each year ending on 30 June; and
 - (b) publish that report and the report referred to in section 26 not later than the following 1 October.
- (2) A report is published for the purposes of subsection (1)(a) if —
- (a) copies of it are available to the public, without cost, at places where the transmitter or distributor transacts business with the public; and
 - (b) a copy of it is posted on an internet website maintained by the transmitter or distributor.
- (3) A copy of each report must be given to the Minister and the Authority not less than 7 days before it is published under subsection (1).

28. Reports not needed if there were no small use customers

A transmitter or distributor only has to —

- (a) arrange for an audit and report under section 26; and
- (b) prepare a report under section 27,

in respect of a year if, during the year, the transmitter or distributor had one or more small use customers.

[Section 28 inserted in Gazette 19 Sep 2007 p. 4725-6.]

Schedule 1 — Information to be published

[s. 27(1)(a)]

1. In this Schedule —
complaint means a complaint that a provision of —
 - (a) Part 2; or
 - (b) an instrument made under section 14(3),has not been, or is not being, complied with;
customer premises means premises on which electrical installations are connected to a transmission or distribution system for the purpose of receiving supply;
isolated system means a system for the transmission and distribution of electricity that is not connected to the North West interconnected system or the South West interconnected system;
North West interconnected system means the interconnected transmission and distribution systems, generating works and associated works —
 - (a) located in the Pilbara region of the State; and
 - (b) into which electricity is supplied by one or more of the electricity generation plants at Dampier, Port Hedland and Cape Lambert,as expanded or altered from time to time.
2. For the purposes of items 7 and 11 each of the following is a discrete area —
 - (a) the Perth CBD;
 - (b) the urban areas other than the Perth CBD;
 - (c) all other areas of the State,but in preparing a report under section 27(1)(a) a transmitter or distributor is to set out the information mentioned in items 7 and 11, so far as it relates to the operations of the transmitter or distributor, for the whole of the discrete area described in paragraph (c) and also for each of the following areas separately —
 - (d) the area served by the North West interconnected system;
 - (e) each area of the State served by an isolated system.

3. For the purposes of item 14 each of the following is a discrete area —
 - (a) the Perth CBD;
 - (b) the urban areas other than the Perth CBD;
 - (c) all other areas of the State.
4. In respect of each failure by the transmitter or distributor to comply with a provision of this Code or an instrument under section 14(3) (as identified by monitoring records or under section 24 or following a complaint) —
 - (a) the total number of breaches of each provision; and
 - (b) the remedial action taken in each case.
5. The number of premises of small use customers the supply of electricity to which has been interrupted —
 - (a) for more than 12 hours continuously; or
 - (b) more than the permitted number of times, as that expression is defined in section 12(1),and in the case of interruptions referred to in paragraph (a), the number of interruptions and the length of each interruption.
6. The total number of complaints received.
7. The number of complaints received from customers in each of the discrete areas.
8. The total amount spent by the transmitter or distributor in addressing complaints, other than by way of payment under sections 18 and 19.
9. The number and total amount of payments made by the transmitter or distributor under each of sections 18 and 19.
10. The information published for items 4(a), 6, 7, 8 and 9 in respect of the year ending 30 June preceding the year to which the report relates.
11. For each discrete area —
 - (a) the average length of interruption of supply to customer premises expressed in minutes;
 - (b) the average number of interruptions of supply to customer premises;
 - (c) the average percentage of time that electricity has been supplied to customer premises; and

- (d) the average total length of all interruptions of supply to customer premises expressed in minutes.
- 12. The information published for each paragraph of item 11 in respect of each of the 3 years ending 30 June preceding the year to which the report relates.
- 13. For each paragraph of item 11, the average of the 4 amounts under that paragraph in respect of the years comprising —
 - (a) the year to which the report relates; and
 - (b) the 3 years referred to in item 12.
- 14. For customer premises in each discrete area, an estimate of the 25th, 50th, 75th, 90th, 95th, 98th and 100th percentile values of —
 - (a) the average length of interruption referred to in item 11(a);
 - (b) the number of interruptions; and
 - (c) the total length of interruptions.
- 15. For each category of information in item 14(a), (b) and (c), a graph showing the distribution of customer premises across the range of that category.

Notes

¹ This is a compilation of the *Electricity Industry (Network Quality and Reliability of Supply) Code 2005* and includes the amendments made by the other written laws referred to in the following table.

Compilation table

Citation	Gazettal	Commencement
<i>Electricity Industry (Network Quality and Reliability of Supply) Code 2005</i>	13 Dec 2005 p. 6051-69	1 Jan 2006 (see s. 2)
<i>Electricity Corporations (Consequential Amendments) Regulations 2006 r. 75</i>	31 Mar 2006 p. 1299-57	1 Apr 2006 (see r. 2)
<i>Electricity Industry (Network Quality and Reliability of Supply) Amendment Code 2007</i>	19 Sep 2007 p. 4725-6	s. 1 and 2: 19 Sep 2007 (see s. 2(a)); Code other than s. 1 and 2: 20 Sep 2007 (see s. 2(b))