

Proposed Amendments to the Technical Rules Submitted by Western Power (April 2016)

Issues Paper

2 May 2016

Economic Regulation Authority

WESTERN AUSTRALIA

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Invitation to make submissions

On 1 April 2016, Western Power submitted proposed amendments to the Technical Rules for the South West interconnected network to the Economic Regulation Authority (**Authority**).

Western Power has proposed a number of amendments to its Technical Rules in order to better align its technical requirements with national requirements, and to improve accessibility to network connection for users with small embedded generating units.

Western Power's proposal is made under section 12.50 of the *Electricity Networks Access Code 2004* (**the Code**).

The purpose of this issues paper is to assist interested parties in making submissions in relation to the proposed amendments. These submissions will assist the Authority in making its determination.

Interested parties are invited to make submissions by **4.00 pm (WST) on Friday, 3 June 2016**. Submissions should be marked to the attention of the Assistant Director, Electricity and should be made via the [portal](#) on the ERA website.

CONFIDENTIALITY

In general, all submissions from interested parties will be treated as being in the public domain and placed on the Authority's website. Where an interested party wishes to make a submission in confidence, it should clearly indicate the parts of the submission for which confidentiality is claimed, and specify in reasonable detail the basis for the claim. Any claim of confidentiality will be considered in accordance with the provisions of *Electricity Networks Access Code 2004*, sections 14.12 to 14.15.

The publication of a submission on the Authority's website shall not be taken as indicating that the Authority has knowledge either actual or constructive of the contents of a particular submission and, in particular, whether the submission in whole or part contains information of a confidential nature and no duty of confidence will arise for the Authority.

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Introduction

Western Power has proposed a number of amendments to its Technical Rules in order to describe its planning and treatment requirements under the NCR planning criterion.

Western Power's proposal also addresses out of date references to *Electricity (Supply Standards and System Safety) Regulations 2001*, and includes additions to the Glossary of the Technical Rules that will allow the Rules to automatically adopt revisions to relevant Standards and Regulations as they are updated. Western Power's proposal is made under section 12.50 of the *Electricity Networks Access Code 2004 (the Code)*.

Technical Rules consist of the standards, procedures and planning criteria governing the construction and operation of an electricity network, and are required under the Access Code for all covered networks. They set out the minimum standards for the facilities, loads and generators which connect to the network in order to ensure the safety of all network users.

The Authority first approved and published Western Power's Technical Rules on 26 April 2007 which became effective from 1 July 2007. As required by the Code, the Authority commenced a review of the Technical Rules in October 2008 which was completed in August 2011. Subsequent to this review, revisions to the Technical Rules were approved by the Authority on 10 November 2011 and took effect from 23 December 2011.

In November 2015, Western Power submitted a new proposal to the Authority for changes to the Technical Rules. The Authority's Issues Paper on Western Power's proposal of November 2015, and an invitation for submissions from stakeholders were published on the Authority's website on 10 February 2016. Submissions from five stakeholders were received by the Authority by the submission deadline of 15 March 2016. The Authority intends to publish its Draft Decision on these proposed amendments in May 2016.

In March 2016, Western Power submitted a second proposal for amendments to its Technical Rules. These proposed amendments consisted of changes to load shedding provisions for connections which meet the N-1 criterion, changes to the maximum fault clearance times for weak infeed generators connected to the network, and changes to the treatment of three phase earth faults.

The proposed amendments from Western Power's March 2016 submission, along with those outlined in this Issues Paper and Western Powers proposal submitted in April 2016, are open for public comment until **4.00 pm (WST) on Friday, 3 June 2016**.

Regulatory Requirements

Under Section 12.50 of the Code, a service provider may submit to the Authority a proposal to amend the Technical Rules at any time.

The Authority may reject the proposal if in its opinion, the proposal is misconceived or lacking in substance or has been made on trivial or vexatious grounds.

As soon as practicable, the Authority must consider whether the proposed amendments are consistent with Chapter 12 of the Code and the Code objective, having regard to any exemptions granted under sections 12.34 and 12.41, and then either approve or not approve the proposed amendments by publishing a notice of its decision, and if the decision was to approve the proposed amendments, the date on which the amendments commence.

Under section 12.54, the Authority must consult the public in accordance with Appendix 7 if it considers the proposed amendments to the Technical Rules to be substantial, and must approve the proposed amendment only if it considers that the amendment will not have a material adverse effect on the service provider or a user.

The Authority will engage directly with stakeholders in a workshop to be held on 10 May 2016 at Albert Facey House, in order to seek their views on the proposed amendments. Stakeholders will also be invited to make submissions on the proposal by Western Power, the Authority's Issues Paper, and any matters discussed in the workshop.

To assist its review, the Authority has appointed an independent technical consultant to provide technical advice and assistance.

Western Power's Proposal

The amendments to the Technical Rules proposed by Western Power include:

- amendments to the wording of the Normal Cyclic Rating (**NCR**) criterion, which outlines the permissible level of power loss following the unplanned loss of a supply transformer at a substation;
- the replacement of references to *Electricity (Supply Standards and System Safety) Regulations 2001* with references to *Electricity (Network Safety) Regulations 2015*;
- correction of an incorrect cross reference in Clause 4.2.1(a);
- correction of the misspelling of the word "Distribution" in the title of Section 5; and
- additions to the Glossary of the Technical Rules that will allow the Rules to automatically adopt revisions to Standards and Regulations "as amended from time to time".

A summary of Western Power's proposed amendments is set out below.

Normal Cyclic Rating (NCR) amendment

Western Power proposes to amend the wording of Clause 2.5.4, (Zone Substations), which deals with the amount of allowable power loss following the unplanned loss of a supply transformer at a substation.

The current wording of clause 2.5.4, and Western Power's proposed amendment are outlined in Table 1 below.

Table 1 Current Clause 2.5.4 and amendments proposed by Western Power

| Clause 2.5.4 Zone Substations | Amended Clause 2.5.4 |
|---|--|
| <p>2.5.4 Zone Substations</p> <p>a) The 1% Risk Criterion</p> <p>The 1% Risk criterion permits the loss of supply to that portion of a substation's peak load that is demanded for up to 1% of time in a year (87 hours) following the unplanned outage of any supply transformer in that substation.</p> <p>b) Normal Cyclic Rating (NCR) Criterion</p> <ol style="list-style-type: none"> 1. The NCR risk criterion permits the loss of a portion of <i>power transfer</i> capacity at a <i>substation</i> following the unplanned loss of a supply transformer within that substation. 2. The portion of the <i>power transfer</i> capacity that may be lost is the lesser of: <ol style="list-style-type: none"> A. 75% of the power transfer capacity of the smallest supply transformer within the substation; and B. 90% of the <i>power transfer</i> capacity of the rapid response spare supply transformer. | <p>2.5.4 Zone Substations</p> <p>a) The 1% Risk Criterion</p> <p>The 1% Risk criterion permits the loss of supply to that portion of a substation's peak load that is demanded for up to 1% of time in a year (87 hours) following the unplanned outage of any supply transformer in that substation.</p> <p>b) Normal Cyclic Rating (NCR) Criterion</p> <ol style="list-style-type: none"> 1. The NCR risk criterion permits the loss of a portion of <i>power transfer</i> capacity at a <i>substation</i> following the unplanned loss of a <i>supply transformer</i> within that <i>substation</i>. 2. The maximum <i>power transfer</i> at an NCR <i>substation</i> is 75% of the <i>power transfer</i> capacity of the <i>substation</i>, except that the total <i>power transfer</i> capacity lost shall not exceed 90% of the <i>power transfer</i> capacity of the rapid response spare <i>supply transformer</i>. |

Western Power considers that its proposed amendment will deliver economic benefits to users because it will allow for the deferral of investment that would otherwise have been made in order to ensure compliance with limits which can be safely breached with the employment of efficient risk mitigation methods. Western Power proposes to employ the use of Rapid Response Spare Supply Transformers to mitigate the risks associated with amending the NCR risk criterion.¹

Western Power points to the Authority's determination on the Meadow Springs Substation exemption proposal, which was approved by the Authority, and which received little negative feedback from stakeholders,² as evidence that its proposed amendments will be well received and beneficial to stakeholders.

¹ Western Power, *Technical Rules Amendments Submission Part B 2016*, April 2016, p. 8.

² One submission was made by Community Electricity against the exemption on the grounds that it considered that Western Power would allow the connection of the Meadow Springs zone substation regardless of the Authority's determination, and its request to provide an exemption was in order to reduce the "impact on its compliance, reputation and financial risk exposure". Community Electricity's submission supported the deferral of investment that would result in the Authority's approval of the exemption.

Issue 1

Submissions are invited from interested parties on whether the proposed amendments to Clause 2.5.4 will result in improved efficiency of investment in Western Power's infrastructure.

Issue 2

The Authority is also interested in stakeholder comments on whether any risk to network safety or security of supply are adequately addressed in the changes proposed by Western Power, or whether there may be any adverse impact on users as a result of the proposed amendments, if they are approved.

Replace out of date references to *Electricity (Supply Standards and System Safety) Regulations 2001*

Western Power proposes to replace references to *Electricity (Supply Standards and System Safety) Regulations 2001* with references to *Electricity (Network Safety) Regulations 2015* in the following sections of the Technical Rules:

- Clause 2.5.8 (c) Maximum fault currents³
- Clause 2.7 Transmission and Distribution System Design and Construction Standards
- 3.4.6(a) Design Standards

Western Power advises that it has proposed this change because the *Electricity (Supply Standards and System Safety) Regulations 2001* have been repealed and subsequently replaced with the *Electricity (Network Safety) Regulations 2015*.

Western Power considers that its proposed change to reference the current regulations is prudent, and will result in no material changes to current practice. Western Power further submits that not proceeding with the proposed amendment will result in the risk that there may be inconsistency between the requirements of the Technical Rules and the current regulations.

Issue 3

Submissions are invited from interested parties on whether Western Power has included all relevant clauses in the Technical Rules in its proposal to replace references to *Electricity (Supply Standards and System Safety) Regulations 2001* with references to *Electricity (Network Safety) Regulations 2015*.

Issue 4

The Authority also invites submissions on whether the proposed amendments will result in any material impact on users, or on system security and safety.

³ Western Power has advised the Authority that its proposal of April 2016 incorrectly referenced Clause 2.5.8(b), and that the clause impacted by this change is in fact Clause 2.5.8(c). Western Power has provided the Authority with an updated version of its proposal, which is available on the [ERA website](#).

Corrections to cross reference and typographical error

Western Power has identified that Clause 4.2.1(a) incorrectly refers to Clause 4.1.1(a), where it should instead refer to Clause 4.2.1(b).

Western Power advises that Clause 4.1.1(a) relates to “rights of entry and inspection”, in a different context to the intention of Clause 4.2.1(b), where it is considered that the same inspections and tests are generally addressed in Rule 4.2.1.

Western Power has therefore proposed that Clause 4.2.1(a) be amended to correctly refer to Clause 4.2.1(b). The amendment proposed by Western Power is outlined in Table 2 below.

Table 2 Proposed amendment to Clause 4.2.1(b)

clause 4.2.1(b):

(b) If a *User* installs or replaces *equipment* at a *connection point*, the *Network Service Provider* is entitled to witness the inspections and tests described in clause ~~4.1.1(a)~~ 4.2.1(a).

Western Power has also identified a typographical error in the spelling of the word “Distribution” in the title of Section 5 of the Technical Rules. Western Power proposes to correct this error.

Issue 5

The Authority invites submissions from stakeholders with reference to any potentially negative impact of amending the current cross reference to Clause 4.1.1(a) in Clause 4.2.1(a).

Dates of Standards and Regulations

Western Power has proposed to make a number of additions to the Glossary of the Technical Rules that will allow the Rules to automatically adopt revisions to Standards and Regulations “as amended from time to time”.

Western Power considers that there is no benefit to maintaining references in the Technical Rules to Standards and Regulations which have been superseded.

Western Power’s proposed additions to the Glossary of the Technical Rules are outlined in Table 3 below.

Table 3 Proposed additions to the Technical Rules Glossary

| Term | Definition |
|---|---|
| Australian Standard (AS) and Australian/New Zealand Standard (AS/NZS) | Unless otherwise stated, the latest version, as published and amended from time to time, of referenced International and Australian Standard and/or Australian/New Zealand Standard applies. Where a date reference is supplied this is to indicate the version of the Standard to which specific (content/location within the text) references are made. |
| IEC, EN | The latest version of stated Standard applies, as published and amended from time to time. Where a date reference is supplied this is to indicate the version of the standard to which specific (content/location within the text) references are made. |
| Regulation, sets of regulations | The latest version of a stated Regulation, or a set of regulations, applies, as approved, amended and published from time to time. |

Issue 6

Submissions are invited from interested parties on Western Power's proposed additions to the Technical Rules Glossary and their associated proposed definitions