

Application for exemption from certain requirements of the Technical Rules submitted by Western Power

Wagin Substation Weak In-Feed

Issues Paper

June 2015

Economic Regulation Authority

WESTERN AUSTRALIA

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Invitation to make submissions

Interested parties are invited to make submissions on the Authority's issues paper by **4:00 pm (WST) Thursday, 2 July 2015** via:

Email address: publicsubmissions@erawa.com.au

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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

1. Western Power has submitted an application to the Authority for exemption from compliance with certain requirements of its Technical Rules in relation to the connection of an 885 kVA non-exporting Private Parallel Generator to the Western Power Network at the Wagin Substation. The proposed connection may cause a weak in-feed¹ on the Western Power 66 kV network. The application is made under section 12.40 of the *Electricity Networks Access Code 2004* (**Access Code**).

Exemptions from Technical Rules

2. 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. The Authority first approved and published Western Power's Technical Rules on 26 April 2007 which became effective from 1 July 2007. Revisions to the Technical Rules were approved by the Authority on 10 November 2011 and took effect from 23 December 2011.
3. Under section 12.40 of the Access Code a service provider may apply to the Authority for an exemption from one or more requirements of its technical rules which apply to the service provider and all applicants, users and controllers of the covered network.
4. Section 12.41 of the Access Code requires the Authority to determine an application as soon as practicable as a reasonable and prudent person on reasonable technical and operational grounds and having regard to the effect the proposed exemption will have on the service provider and users of the network and any interconnected network. The Authority must grant the exemption if it determines that in all the circumstances, the disadvantages of requiring compliance with the Technical Rules are likely to exceed the advantages.
5. Under section 12.43, an exemption:
 - may be granted for a specified period or indefinitely;
 - may be subject to any reasonable conditions the service provider considers fit, in which case the network persons must comply with the conditions, or may be unconditional; and
 - may be varied or revoked by the service provider after reasonable notice to the network persons.
6. Under section 12.46, the Authority may consult the public in accordance with Appendix 7. Section 12.44 requires the Authority to notify the service provider of its determination within 45 business days of receiving the application, if it has consulted with the public, and 25 business days if it has not.
7. Under section 12.42, the Authority may refer a service provider's request to a technical rules committee established by the Authority and request its advice on the application. If it seeks advice from the technical rules committee then, subject to

¹ Where a fault contribution (for example, from an embedded generating unit) is insufficient to guarantee reliable operation of an otherwise functional and fully compliant protection scheme in the affected transmission line.

complying with the specified time limits, the Authority must have regard to that advice in making its determination.

8. Section 12.47 requires the Authority to publish a notice giving details of any exemption.

Western Power's Application

9. Western Power submitted an application for an exemption to the Authority on 12 May 2015.
10. The application is for a temporary exemption from compliance with clause 2.9.4 of the Technical Rules (i.e. maximum total fault clearance times) to allow Western Power to connect an 885 kVA non-exporting Private Parallel Generator (**PPG**) for its customer, Morton Seed & Grain (**MSG**).
11. MSG's connection site is located approximately 7 km from the Western Power Wagin Substation. The PPG consists of a single generator of 885 kVA which will not be exporting power into the Western Power Network.
12. The proposal is to connect the PPG to the Wagin substation via the existing 22 kV WAG510 feeder. Due to the age of the substation, both transformers at the Wagin substation have only HV fuses installed instead of circuit breakers, which are the current standard.
13. The Wagin substation is deemed to comply with the Technical Rules under clause 1.9.4 as it existed prior to 2007. However, for Western Power to connect MSG's PPG and remain compliant with the Technical Rules, a substantial upgrade would be required at the Wagin substation including new 66 kV and 22 kV circuit breakers, current transformers and associated protection equipment. Western Power has estimated the upgrade cost at \$2 million, plus costs for additional communication and SCADA upgrades.
14. Western Power has considered the options based on MSG's connection requirements and the current network considerations and proposes to connect the PPG without requiring the whole substation to comply with clause 2.9.4 in the Technical Rules.
15. Western Power's intention is that the Wagin substation will return to compliance as part of the network development planning process because the substation assets are aging and approaching the end of their life.
16. In order to reduce the risk exposure, Western Power is proposing that a SCADA style intertrip arrangement² is put in place as an integral part of the connection. This is to ensure that the disconnection of the PPG only occurs at times when the 66 kV transmission lines supplying the Wagin substation are out of service for planned or unplanned outages.
17. Western Power considers that the proposed connection arrangement permits MSG to obtain a covered service to the extent reasonably practicable, in accordance with

² The controlled tripping, or disconnection, of equipment which ensures the isolation of the equipment concerned during unacceptable operational circumstances (such as faulted, or planned outages, for equipment essential for the safe, reliable continuous connection and operation of the equipment)

good electricity practice, while efficiently minimising any cost associated with network augmentation.

18. MSG has expressed its acceptance of the proposed connection arrangement and the associated operational constraints. The proposed connection arrangement has no additional impact on the existing level of safety and reliability to other network users.

Matters to be considered

19. In considering whether to approve Western Power's applications for exemption from certain aspects of the Technical Rules, the Authority must, having regard to the effect the proposed exemption will have on the service provider and users of the network and any interconnected network, grant the exemption if it determines that in all the circumstances, the disadvantages of requiring compliance with the Technical Rules are likely to exceed the advantages.
20. Although non-compliant, Western Power considers the Technical Rules exemption is the least costly solution which provides an acceptable technical outcome and risk profile. Western Power has stated that, should the Technical Rules exemption option not be accepted and full compliance be required, it could result in a significant cost impact on MSG which would likely see the project become not viable.
21. Further, Western Power states that refusal to connect MSG may be seen as an unnecessary barrier to connection because the connection will not be adding significantly to present risks and there may be a possible equity issue as the solar PV systems already connected to the feeder present similar risks.
22. Overall, Western Power considers that in this case, the advantages of operating with the exemption outweigh the disadvantages of requiring full compliance.
23. The Authority has requested Energy Safety to provide its views on the proposed arrangement, particularly in relation to whether the proposal meets all safety requirements.

Submissions are invited from interested parties on Western Power's application, in particular regarding:

- Whether the proposed exemption will materially impact on other users;
- Whether there are any reasonable alternative options which would be compliant with the Technical Rules; and
- Whether the proposed exemption will materially impact the safety and reliability of the Western Power network.