

Application to revoke Technical Rule temporary exemption granted to Western Power for Meadow Springs Zone Substation

Appendix 4 - Submission from Mr Stephen Davidson following
ERB process

Economic Regulation Authority

WESTERN AUSTRALIA

D197998

Re: Application for review of the decision by the
Economic Regulation Authority for:

- (a) exemption from compliance with the
Technical Rules clause 2.5.4(b) Normal
Cyclic Rating (NCR) Criterion dated
15 May 2015,
and;
- (b) amendment to the Technical Rules
submitted in April 2016 and titled
“Normal Cyclic Rating (NCR) Criterion”.

Application by:

STEPHEN DAVIDSON

Applicant

APPLICATION FOR REVIEW

Date of document: 14 November 2018

Prepared by:

Stephen Davidson
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Pursuant to Section 12.45 of the *Electricity Networks Access Code 2004 (the Code)* the Applicant applies for review of the decision (**Decision 1**) made in July 2015 by the Economic Regulation Authority (**Authority**) and placed on the public register kept by the Code Registrar under the Code on or about 20 July 2015 whereby the Authority approved the exemption from compliance with the Technical Rules clause 2.5.4(b) Normal Cyclic Rating (NCR) Criterion submitted by Western Power Corporation on 15 May 2015 under section 12.40 of the Code – approving for Western Power to be exempt from compliance with clause 2.5.4(b) of the Technical Rules at the Meadow Springs Zone Substation, and (related);

In accordance with clauses 28(1)(a)&(b) of the *Economic Regulation Authority Act 2003 (the ERA Act)*, and consequently to Section 12.45 of the *Electricity Networks Access Code 2004 (the Code)* as applied to the Decision 1, the Applicant applies for review of the decision (**Decision 2**) made in November 2016 by the Economic Regulation Authority (**Authority**) and placed on the public register kept by the Code Registrar under the Code on or about 9 November 2016 whereby the Authority approved the proposed revised wording of the Normal Cyclic Rating (**NCR**) criterion submitted by Western Power Corporation on 1 April 2016 under section 12.50 of the Code – changing the wording of the Normal Cycling Rating criterion which outlines the permissible level of power loss following the unplanned loss of a supply transformer at a substation.

The application seeks the following final orders: -

1. The Decision 1 and Decision 2 (**Decisions**) of the Authority be set aside or varied to give effect to the matters asserted in the grounds for this application.
2. Further or alternatively the Authority to draft and approve the original wording of the Technical Rules clause 2.5.4(b) Normal Cyclic Rating (NCR) Criterion to give effect to the matters asserted in this application.
3. Further or alternatively, the Authority to establish the total amount and timing of the Capital Expenditures (**CAPEX**) Western Power spent since the commencement of the first Access Arrangement, on zone substations by not applying the original wording of the Technical Rules clause 2.5.4(b) Normal Cyclic Rating (NCR) Criterion. This includes expenditures on Meadow Springs and, if applicable, Mandurah zone substations mentioned in Decision 1, the aggregate cost of which was estimated to be \$37M (10+27).
4. Further or alternatively, the Authority to remove from the Regulated Asset Base (**RAB**) the CAPEX amount(s) of Item 3 here to give effect to the matters asserted in the grounds for this application.
5. Further or alternatively, the Authority to make the adjustments consequential to any order under Item 4 here, for Western Power to effectively pay back for any returns it received from inclusion of the CAPEX of Item 3 into the RAB to give effect to the matters asserted in the grounds for this application.
6. Further or alternatively, the Authority to investigate whether the actions of Western Power and the Authority asserted in the grounds for this application amount to just a coincidence, cooperation or collusion, as well as what was the motive and intent.
7. The Authority restores the Archive section of the Technical Rules on its website, with all previously published versions of the Technical Rules made available (including two uncorrected versions).
8. The Authority publishes this submission on the Authority's website (for transparency) without any delay.
9. Such further or other orders as may be appropriate.

The grounds for this application are annexed.

Applicant



GROUND

The two Decisions are interrelated as Decision 2 was largely made by relying on Decision 1. Both Decisions comprise one whole, as is described below.

Background

Technical

The fundamental engineering problem of concern in Technical Rules clause 2.5.4(b) is how much load is permissible to be lost (following the unplanned outage of a single transformer), before a decision is made to install a new transformer in the zone substation.

Financial

The cost of installing a new transformer in the zone substation varies between \$10M and \$27M. There are about one hundred zone substations in the Perth metropolitan area, each of which typically have two or three transformers. This illustrates the multi billion dollars significance of clause 2.5.4(b) in terms of CAPEX allocation; it articulates the rationale for having just two spare transformers for the Perth metropolitan area rather than, ultimately, one hundred and two spare transformers (one in each of one hundred zone substations plus two rapid response spare transformers required under the NCR criterion).

Societal

The issue raised here is important and urgent. It is important because it adversely affects Western Australian industrial competitiveness and consumer welfare, which is job and living standards. It is urgent because the current Access Arrangement expired on 30 June 2017, the regulatory financial adjustments are made effective on that day as part of the Authority's approval of the next 'Access Arrangement 4' (AA4), the process of which is ongoing at the time of writing this Application.

Decision 2 - Amendment to change wording of Technical Rules clause 2.5.4(b) Normal Cyclic Rating (NCR) Criterion

1. The Authority erred in its finding of facts or the exercise of its discretion was incorrect or was unreasonable having regard to all the circumstances in approving amendment to the Technical Rules dated 31 March 2016,

submitted to the Authority on 1 April 2016 and titled “Normal cyclic rating (NCR) amendment” by substantially relying on the inappropriate, for the purpose of changing the Technical Rules, assertion by Western Power that the existing wording of clause 2.5.4(b) was ambiguous whereas the (original) wording of clause 2.5.4(b) was unambiguous and did not allow the room for different interpretations.

For completeness, the whole (original) clause 2.5.4 Zone Substations is quoted next, inclusive of the explanatory box¹:

“2.5.4 Zone Substations

2.5.4(a) The 1% Risk Criterion

The 1% risk criterion permits the loss of a supply to that portion of a substation’s peak load that is demanded up to 1% time in a year (87 hours) following the unplanned outage of a supply transformer in that substation.

2.5.4(b) Normal Cyclic Rating (NCR) Criterion

(1) The NCR risk criterion permits the loss of a portion of power transfer capacity at a substation following the unplanned loss of a supply transformer within that substation.

(2) The portion of the power transfer capacity that may be lost is the lesser of:

(A) 75% of the power transfer capacity of the smallest supply transformer within the substation; and

(B) 90% of the power transfer capacity of the rapid response spare supply transformer.”

“Relationship between 1% Risk criterion and NCR criterion is explained below:

- 1. Zone substations require special consideration as they form the boundary between the transmission system and the distribution system. The 1% Risk Criterion and NCR Criterion permit higher supply transformer utilisation than that permitted by the N-1 criterion, but lower than that permitted by the N-0 criterion.*
- 2. The 1% Risk and NCR criteria are based on sharing a common spare supply transformer among a population of supply transformers across a number of zone substations within a geographically confined area.*

¹ Western Power, “Technical Rules”, Approved by Economic Regulation Authority, effective from 23 December 2011, p.27, explanatory box, end clause 2.5.4.

A trade off is the risk of limited *load shedding* for as long as it takes to deploy and install a spare *supply transformer*. The acceptance of this risk determines the application of these two criteria.”

The regulatory precision of clause 2.5.4 Zone Substations is noted, sharp and clear thoughts and words focused on substance. For example, the explanatory box complements the wording of the clause, by outlining its rationale and puts it into the perspective of the other two planning criteria (“N-0” and “N-1”). For these reasons, the actual wording of clause 2.5.4 and the explanatory box comprise one whole and must be interpreted as a whole, which the Authority failed to do (Western Power too).

2. The Authority erred in its finding of facts or the exercise of its discretion was incorrect or was unreasonable having regard to all the circumstances in approving amendment to the Technical Rules dated 31 March 2016, submitted to the Authority on 1 April 2016 and titled “Normal cyclic rating (NCR) amendment” by substantially relying on the inappropriate, for the purpose of changing the Technical Rules, assertion by Western Power that the purpose of the amendment was (only) to:

“Modify the clause to remove ambiguity in the interpretation of the normal cycling rating (NCR) planning criteria².”

whereas the following amended wording of clause 2.5.4(b), as published by the Authority³ substantially changed its content and substance:

“2.5.4 Zone Substations

2.5.4(a) The 1% Risk Criterion

The 1% risk criterion permits the loss of a supply to that portion of a substation’s peak load that is demanded up to 1% time in a year (87 hours) following the unplanned outage of a supply transformer in that substation.

2.5.4(b) Normal Cyclic Rating (NCR) Criterion

- (1) *The NCR risk criterion permits the loss of a portion of power transfer capacity at a substation following the unplanned loss of a supply transformer within that substation.*

² Western Power, “Submission to the Economic Regulation Authority for amendments to the Technical Rules, 2016 Part B”, Submission for Economic Regulation Authority, 31 March 2016, p.5, Table 1.

³ Economic Regulation Authority, “Western Power’s Proposed Amendments to the Technical Rules Submitted April 2016”, Final Decision, November 2016, p.7, Table 1, right column.

(2) The maximum power transfer at an NCR substation is 75% of the power transfer capacity of the substation, except that the total power transfer capacity lost shall not exceed 90% of the power transfer capacity of the rapid response spare capacity transformer.”

in a manner that *considerably reduced the power transfer capacity of the NCR substations, by effectively mandating lower utilisation of power supply transformers than that permitted by the N-1 criterion*. This reduction of the power transfer capacity has a significant adverse economic effect on Western Australia, of the order of hundreds of millions of dollars. For example, see Item 12 here.

3. The Authority erred in its finding of facts or the exercise of its discretion was incorrect or was unreasonable having regard to all the circumstances in approving amendment to the Technical Rules dated 31 March 2016, submitted to the Authority on 1 April 2016 and titled “Normal cyclic rating (NCR) amendment” by not considering neither the (original) wording of clause 2.5.4(b) (see Item 1 here) nor the following extract from the explanatory box at the end of clause 2.5.4 (see Item 1 here) of the Technical Rules which could be interpreted as explaining the intent of clause 2.5.4, including that of clause 2.5.4(b) Normal Cyclic Rating (NCR) Criterion:

“The 1% Risk Criterion and NCR Criterion permit higher *supply transformer* utilisation than that permitted by the N-1 criterion, but lower than that permitted by the N-0 criterion.”

In the Applicant’s opinion, this quote explains the essence of clause 2.5.4, including that of clause 2.5.4(b).

4. The Authority erred in its finding of facts or the exercise of its discretion was incorrect or was unreasonable having regard to all the circumstances in approving amendment to the Technical Rules dated 31 March 2016, submitted to the Authority on 1 April 2016 and titled “Normal cyclic rating (NCR) amendment” by substantially relying on the inappropriate, for the purpose of changing the Technical Rules, whereas the Authority’s Decision 1, quoted in Item 2 here created an inconsistency between the wording of (amended) clause 2.5.4(b) and the (unamended) wording of the explanatory box at the end of clause 2.5.4, in particular with respect the quote in Item 3 here.
5. The Authority erred in its finding of facts or the exercise of its discretion was incorrect or was unreasonable having regard to all the circumstances in

approving amendment to the Technical Rules dated 31 March 2016, submitted to the Authority on 1 April 2016 and titled “Normal cyclic rating (NCR) amendment” by substantially relying on the inappropriate, for the purpose of changing the Technical Rules, assertion by Western Power that the existing wording had been critically reviewed earlier:

“The preparation of the recent submission for a Technical Rules exemption for Meadow Springs [Zone Substation] works led to closer scrutiny of the NCR criterion clause in the Rules.”⁴

Reference to section on Decision 1 below shows that no scrutiny was applied neither by Western Power nor the Authority.

6. The Authority erred in its finding of facts or the exercise of its discretion was incorrect or was unreasonable having regard to all the circumstances in approving amendment to the Technical Rules dated 31 March 2016, submitted to the Authority on 1 April 2016 and titled “Normal cyclic rating (NCR) amendment” by substantially relying on the inappropriate, for the purpose of changing the Technical Rules, assertion by Western Power that the existing wording had been critically reviewed earlier by the Authority:

“On the basis of the ... feedback from the Authority’s technical consultant a more practicable wording for this Rule is being proposed.”⁵

In other words, Western Power’s substantial argument for changing the rule was the Authority’s advise (by the Authority’s technical consultant) to do so. This could be interpreted as the circular argument.

7. The Authority erred in its finding of facts or the exercise of its discretion was incorrect or was unreasonable having regard to all the circumstances in approving amendment to the Technical Rules dated 31 March 2016, submitted to the Authority on 1 April 2016 and titled “Normal cyclic rating (NCR) amendment” by substantially relying, without own independent verification, incorrect assertion by Western Power describing the benefit of the proposed amendment as:

⁴ Western Power, “*Submission to the Economic Regulation Authority for amendments to the Technical Rules, 2016, Part B*”, Submission for Economic Regulation Authority, 31 March 2016, p.7, Table 3.1.

⁵ Western Power, “*Submission to the Economic Regulation Authority for amendments to the Technical Rules, 2016, Part B*”, Submission for Economic Regulation Authority, 31 March 2016, p.7, Table 3.1, row labeled 2.

“Defer investment by increasing the loading [SD: of transformers in zone substations].”⁶

That is explicitly stated in the Authority’s Issues Paper⁷:

“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. Western Power points to the Authority’s determination on the Meadow Springs Substation exemption proposal, which was approved by the Authority ...”

8. Further, the proposed amendment to amend clause 2.5.4(b) Normal Cyclic Raring (NCR) Clause submitted by Western Power in April 2016 was not in good faith and was misleading because the full sentence of the Western Power’s argument of Item 7 here reads:

“Defer investment by increasing the loading against otherwise deterministic compliance limits, but limiting risk in cases where those limits are breached for short periods of time by deploying more efficient mitigation methods”.

whereas, no comparison (technical nor economic) was made between the allowable zone substation loading under the (original) clause 2.5.4(b) and (then proposed, amended) clause 2.5.4(b) to support the purported benefit.

9. In addition, the proposed amendment to amend clause 2.5.4(b) Normal Cyclic Raring (NCR) Clause submitted by Western Power in April 2016 was not in good faith and was misleading because the argument of Item 7 and Item 8 here was inconsistent with the other arguments presented by Western Power, and endorsed by the Authority, to the effect of, that the rule 2.5.4(b) was not being changed, just clarified. For example, see Issue 2 here.

⁶ Western Power, “*Submission to the Economic Regulation Authority for amendments to the Technical Rules, 2016, Part B*”, Submission for Economic Regulation Authority, 31 March 2016, p.8, Table 3.1 (continued from p.7), row labeled 4.

⁷ Economic Regulation Authority, “*Proposed Amendments to the Technical Rules Submitted by Western Power (April 2016)*”, Issues Paper, 2 May 2016, p.5, text under Table 1.

10. In addition, the proposed amendment to amend clause 2.5.4(b) Normal Cyclic Rating (NCR) Clause submitted by Western Power in April 2016 was not in good faith and was misleading as the argument⁸:

“There is no equivalent clause in the NER because rapid response spare supply transformers are not used in the same way outside of Western Australia”.

was inconsistent with past Technical Rules presentations by Western Power: emphasized that the network service providers own planning criteria are part of the Technical Rules, but not part of the NER. For example, at the System Restart Forum in Perth on 25 February 2015, titled “Technical Rules”.

11. The Authority erred in its finding of facts or the exercise of its discretion was incorrect or was unreasonable having regard to all the circumstances in approving for amendment to the Technical Rules dated 31 March 2016 and titled “Normal cyclic rating (NCR) amendment” when this is inconsistent with the objectives and sections 12.1, 12.2 and 12.3 of the Code in that the Authority uncritically accepted the claims of Items 1 to 10 here as a fait accompli without verifying them.
12. One public submission investigated Western Power’s claim of Item 7 here. The comparison of the wording (original and of the proposed amendment) demonstrated that the opposite is true – the proposed amendment had detrimental effect on the investment by unreasonably reducing the permitted supply transformer loading in zone substations and its implementation leads to premature, unnecessary and economically inefficient investments.⁹ The reduction in permitted transformer loading was so excessive that the quote of Item 3 here no longer applies, because the resulting utilisation fell below that permitted under the “N-1” criterion. The “N-1” criterion requires one spare transformer in each zone substation. In laymen’s terms and referring to the 2nd sentence of the Financial Background section here, Decision 1 effectively requires (the ultimate long term effect of), not two, but, at least, ‘one hundred and two’ spare transformers in the Perth metropolitan area. The latter would be very inefficient use of the capital, relative to the former, hence this Application to the Authority for review.

⁸ Western Power, “*Submission to the Economic Regulation Authority for amendments to the Technical Rules, 2016, Part B*”, Submission for Economic Regulation Authority, 31 March 2016, p.8, Table 3.1 (continued from p.7), row labeled 5.

⁹ James Davidson, “*Proposed Amendments to Western Power’s Technical Rules submitted April 2016*”, Submission for Economic Regulation Authority, 3 June 2016.

13. The Authority erred in its finding of facts or the exercise of its discretion was incorrect or was unreasonable having regard to all the circumstances in approving for amendment to the Technical Rules dated 31 March 2016 and titled “Normal cyclic rating (NCR) amendment” when this is inconsistent with the objectives and sections 12.1, 12.2 and 12.3 of the Code in that the Authority failed to consider the content of the public submission referred to in Item 12 here, as is explained in Items 14 to 17 here.
14. The Authority erred in its finding of facts or the exercise of its discretion was incorrect or was unreasonable having regard to all the circumstances in approving for amendment to the Technical Rules dated 31 March 2016 and titled “Normal cyclic rating (NCR) amendment” when this is inconsistent with the objectives and sections 12.1, 12.2 and 12.3 of the Code in that the Authority uncritically accepted the opinion of the Authority’s technical consultant Geoff Brown and Associates (**GBA**)¹⁰ that:

“We have not analysed Mr Davidson’s submission in this report and do not agree with his interpretation of the “NCR now”. The intent of the proposed change is to clarify the existing requirement, rather than to change it as suggested by Mr Davidson.”

The Applicant respectfully requests that the public submission referred to in Item 12 here, by James Davidson, be analysed on its merit.

15. The Authority erred in its finding of facts or the exercise of its discretion was incorrect or was unreasonable having regard to all the circumstances in approving for amendment to the Technical Rules dated 31 March 2016 and titled “Normal cyclic rating (NCR) amendment” when this is inconsistent with the objectives and sections 12.1, 12.2 and 12.3 of the Code in that the Authority uncritically accepted the opinion of the Authority’s technical consultant GBA of Item 14 here whereas the argument was intrinsically flawed in respect of what is the starting point, as explained in Item 16 here.
16. Namely, the flaw in the Authority’s (GBA’s) argument is its assumption that the Western Power’s proposal is the starting point, not the wording of the Technical Rules. This is in contrast to the Applicant’s understanding that the starting point in any regulation and legislation is its current wording and the onus of proof lies with the party wanting to change it.

¹⁰ Geoff Brown & Associates: “*Review of Western Power’s Application for Technical Rules Amendments*”, Final Report for Economic Regulation Authority, 31 August 2016, p.12, 3rd last paragraph.

It is not reasonable to exempt any argument from (economic) scrutiny, hence the Authority erred in its finding of facts or the exercise of its discretion was incorrect or was unreasonable having regard to all the circumstances in approving for amendment to the Technical Rules dated 31 March 2016 and titled “Normal cyclic rating (NCR) amendment” when this is inconsistent with the objectives and sections 12.1, 12.2 and 12.3 of the Code in that the Authority uncritically rejected to scrutinize the proposal to change clause 2.5.4(b) of the Technical Rules (despite the evidence of its flaws), as well as inconsistent with the Authority’s own obligations under clauses 28(1)(a)&(b) of the ERA Act.

17. The Authority erred in its finding of facts or the exercise of its discretion was incorrect or was unreasonable having regard to all the circumstances in approving for amendment to the Technical Rules dated 31 March 2016 and titled “Normal cyclic rating (NCR) amendment” when this is inconsistent with the objectives and sections 12.1, 12.2 and 12.3 of the Code in that the Authority uncritically accepted the opinion of the Authority’s technical consultant GBA that:

“... there is no change to the existing requirement.”¹¹ ”

“... advice from GBA that there is no actual change to the existing requirements and that all that the change relates purely to a clarification of the NCR requirement in the Technical Rules.”¹²”

18. In addition, both the above statements are inconsistent with the Western Power’s assertion of Item 7 here. Hence the arguments presented in support of the Decision 2, see in Item 7 and Item 17 here, are mutually exclusive.
19. The Authority erred in its finding of facts or the exercise of its discretion was incorrect or was unreasonable having regard to all the circumstances in approving the exemption from compliance with Technical Rules clause 2.5.4(b) Normal Cyclic Rating (NCR) Criterion when this is inconsistent with the objectives and sections 12.1, 12.2 and 12.3 of the Code in that the Authority uncritically accepted explanation that the purpose of the proposed amendment was to increase the power transfer capacity, without providing neither specific examples nor the aggregate net financial benefit.

¹¹ Economic Regulation Authority, “*Western Power’s Proposed Amendments to the Technical Rules Submitted April 2016 – Final Decision*”, November 2016, p.10, Item 37.

¹² Economic Regulation Authority, “*Western Power’s Proposed Amendments to the Technical Rules Submitted April 2016 – Final Decision*”, November 2016, p.11, Item 39.

That was unexpected, given that the Technical Rules largely determine Western Power's Capital Expenditures (**CAPEX**) and the aggregate financial impact of a single rule change in the Technical Rules can be hundreds of millions of dollars of expenditures. These amounts are well in excess of the Regulatory Test threshold for a single project of \$30M for the transmission system and \$5M for the distribution system.

One would expect at least the same level of the techno-economic scrutiny from the Authority for proposals to change the Technical Rules as that for the Regulatory Test.

Decision 1 – Meadow Springs Zone Substation Exemption

20. On 15 May 2015, Western Power submitted to the Authority the request for exemption from compliance with the requirements of Technical Rules clause 2.5.4(b) Normal Cyclic Rating (NCR) Criterion for Meadow Springs Zone Substation.¹³
21. It shows the cost of installing a new transformer in the zone substation is very high and that it can vary between \$10M and \$27M, respectively for Meadow Springs and Mandurah zone substations.
22. Western Power's own interpretation of the NCR criterion of clause 2.5.4(b) cannot be ascertained from the information publicly available in the request of Item 20, as two documents referred to in the request were not made public.
23. The Authority erred in its finding of facts or the exercise of its discretion was incorrect or was unreasonable having regard to all the circumstances in approving the exemption from compliance with Technical Rules clause 2.5.4(b) Normal Cyclic Rating (NCR) Criterion when this is inconsistent with the objectives and sections 12.1, 12.2 and 12.3 of the Code in that the Authority uncritically accepted the opinion of the Authority's technical consultant who erred in his understanding of the (original) wording of clause 2.5.4(b) when describing it as:

"The wording of this clause is unfortunate as it does not convey the intended meaning. The intent is to specify the

¹³ Western Power, "*Exemption Request – Meadow Springs Zone Substation*", Submission for Economic Regulation Authority, 15 May 2015.

allowable power transfer through the substation under normal operating conditions¹⁴,...

whereas: a) the claim was inconsistent with wording of clause 2.5.4(b) for the reasons explained in Item 1 here, and b) as no evidence was provided in support of this claim.

24. The Authority erred in its finding of facts or the exercise of its discretion was incorrect or was unreasonable having regard to all the circumstances in approving the exemption from compliance with Technical Rules clause 2.5.4(b) Normal Cyclic Rating (NCR) Criterion when this is inconsistent with the objectives and sections 12.1, 12.2 and 12.3 of the Code in that the Authority uncritically accepted the opinion of the Authority's technical consultant who reported to the public Western Power's interpretation of clause 2.5.4(b) (see Item 1 here) as:

"As interpreted by Western Power, this is determined by the total installed power transfer capacity rather than the capacity of the smallest supply transformer¹⁵ ..."

25. The Authority erred in its finding of facts or the exercise of its discretion was incorrect or was unreasonable having regard to all the circumstances in approving the exemption from compliance with Technical Rules clause 2.5.4(b) Normal Cyclic Rating (NCR) Criterion when this is inconsistent with the objectives and sections 12.1, 12.2 and 12.3 of the Code in that the Authority uncritically accepted the following decision of the Authority's technical consultant:

"For the purpose of this review we have used Western Power's interpretation of the clause [clause 2.5.4(b)]¹⁶,..."

26. The Authority erred in its finding of facts or the exercise of its discretion was incorrect or was unreasonable having regard to all the circumstances in approving the exemption from compliance with Technical Rules clause 2.5.4(b) Normal Cyclic Rating (NCR) Criterion when this is inconsistent with the objectives and sections 12.1, 12.2 and 12.3 of the Code in that the

¹⁴ Geoff Brown & Associates: "Review of Western Power's Application for a Technical Rules Exemption for Meadow Springs Zone Substation", Final Report for Economic Regulation Authority, 20 July 2015, p.6, 2nd last paragraph, first two sentences.

¹⁵ Geoff Brown & Associates: "Review of Western Power's Application for a Technical Rules Exemption for Meadow Springs Zone Substation", Final Report for Economic Regulation Authority, 20 July 2015, 2nd last paragraph, 3rd sentence.

¹⁶ Geoff Brown & Associates: "Review of Western Power's Application for a Technical Rules Exemption for Meadow Springs Zone Substation", Final Report for Economic Regulation Authority, 20 July 2015, 2nd last paragraph, beginning.

Authority uncritically accepted the following recommendation of the Authority's technical consultant:

"... but we recommend that the wording be revised in the next revision of the [Technical] Rules so that it actually convey the intended meaning."¹⁷ ..."

27. The Authority erred in its finding of facts or the exercise of its discretion was incorrect or was unreasonable having regard to all the circumstances in approving the exemption from compliance with Technical Rules clause 2.5.4(b) Normal Cyclic Rating (NCR) Criterion when this is inconsistent with the objectives and sections 12.1, 12.2 and 12.3 of the Code in that the Authority uncritically accepted the Western Power's interpretation of clause 2.5.4(b) (see Item 1 here), which the Authority's technical consultant reported to the public as:

"Western Power interprets clause 2.5.4(b) of the Technical Rules as requiring that at all times the power transfer through a substation under normal operating conditions must not exceed 75% of the transformer NCR of all installed transformers."¹⁸ ..."

28. In addition, the request for exemption submitted by Western Power on 15 May 2015 did not appear to have been in good faith nor the appropriate use of the exemption, as explained in the public submission by Community Electricity:

"We note that the expected non-compliance is expected to commence in the current financial year ... the inference that Western Power intends to proceed with or without the exemption [to install a new transformer in Meadow Springs zone substation]. If this is the case, we consider that this is not an appropriate use of an exemption and we do not support it."¹⁹ ..."

The Applicant shares the above concern.

¹⁷ Geoff Brown & Associates: "Review of Western Power's Application for a Technical Rules Exemption for Meadow Springs Zone Substation", Final Report for Economic Regulation Authority, 20 July 2015, 2nd last paragraph, beginning.

¹⁸ Geoff Brown & Associates: "Review of Western Power's Application for a Technical Rules Exemption for Meadow Springs Zone Substation", Final Report for Economic Regulation Authority, 20 July 2015, p.3, 1st paragraph, 1st sentence.

¹⁹ Community Electricity: "Application for exemption from certain requirements of the Technical Rules submitted by Western Power – Meadow Springs substation", Submission in Response to ERA Public Consultation, 20 July 2015, p.1, 2nd last paragraph, extract.

29. Further to the concern of Issue 28 here, the request for exemption may also had other purposes that were not publicly stated and which may not be consistent with the objectives and sections 12.1, 12.2 and 12.3 of the Code, which should be investigated – the motive and intent. The Applicant wonders if the said discrepancy was discussed in Western Power and, if so, what arguments were presented?

The Applicant's Earlier Request to the Authority to reconsider Decision 1 – Meadow Springs Zone Substation Exemption

30. On 16 December 2016, pursuant to section 12.45 of the Access Code 2004, the Applicant applied to the Authority for its Decision 1 - "*Determination on Application for exemption from certain requirements of the Technical Rules 2011, submitted by Western Power, Meadow Springs Zone Substation Exemption*" dated July 2015, that was published on the Authority's web site, in respect of the covered network under section 12.41 to be revoked.²⁰
31. The Authority erred in its finding of facts or the exercise of its discretion was incorrect or was unreasonable having regard to all the circumstances in approving the exemption from compliance with Technical Rules clause 2.5.4(b) Normal Cyclic Rating (NCR) Criterion when this is inconsistent with the objectives and sections 12.1, 12.2 and 12.3 of the Code whereby the Authority have made no decision in respect of the application of Issue 30 here after nearly two years have elapsed since the application was made.
32. For these reasons, the Applicant considers that the Authority failed its obligation, under section 12.45 of the Access Code, to advise the Applicant of the Authority's determination in relation to the Application of Item 30 here within a reasonable time.
33. To be fair, there was limited incidental email correspondence with the Authority in respect of the Application of Item 30 here and another related issue (concerning section 12.53 of the Access Code), which, according to the information available to the Applicant, have not been placed on the public record nor addressed by the Authority, for nearly two years.

²⁰ Steve Davidson, "*Exemption Request – Meadow Springs Zone Substation*", Submission for Economic Regulation Authority, 16 December 2016.

34. In order to ease correspondence (and in case the correspondence was lost, for example due to personnel changes) the Applicant provides the email correspondence of Item 33 here, as follows:
- Attachment 1** – Request for review dated 14 December 2016.
- Attachment 2** – Correspondence to the Authority after 14 December 2016.
- Attachment 3** – Correspondence from the Authority after 14 December 2016.
35. The Applicant respectfully requests that the Authority restores the Archive section of the Technical Rules, with all previously published versions of the Technical Rules, including the “uncorrected versions”, as per the Authority’s email (Elizabeth Walters) of 7 April 2017: *“In light of your inquiry the ERA will add the two uncorrected versions to the archive for completeness”*.

APPENDICES

Request for Review dated 14 December 2016

App. No.	Date	Author	Type	Attachments
#1	14 Dec 2016	Stephen Davidson	Letter, On-line 6:28 pm	Yes, one:
#1A			Attachment 1	James Davidson submission to the ERA of 3 June 2016

Correspondence to the ERAWA after 14 December 2016

List of emails (dates):

App. No.	Date	Author	Type	Email trail / Attachments
#2	20 Feb 2017	S Davidson	Email, 5:18 pm	Yes / No
#3	22 Feb 2017	S Davidson	Email, 10:24 pm	Yes / No
#4	1 Mar 2017	S Davidson	Email, 3:27 pm	Yes / No
#5	6 Mar 2017	S Davidson	Email, 2:48pm	Yes / Yes
#6	21 Mar 2017	S Davidson	Email, 11:16 am	Yes / No
#7	4 April 2017	S Davidson	Email, 11:43 am	Yes / Yes

Correspondence from ERAWA after 14 December 2016

List of emails (dates):

App. No.	Date	Author	Type	Email trail / Attachments
#8	16 Dec 2016	E Walters	Email, 10:43 am	Yes / No
#9	21 Feb 2017	E Walters	Email, 9.15 am	Yes / No
#10	24 Feb 2017	E Walters	Email, 1:22 pm	Yes / No
#11	2 Mar 2017	E Walters	Email, 10:10 am	Yes / No
#12	7 Mar 2017	E Walters	Email, 4:04 pm	Yes / No
#13	27 Mar 2017	E Walters	Email, 10:24 am	Yes / No
#14	7 April 2017	E Walters	Email, 4.01 pm	Yes / No
#15	25 May 2017	E Walters	Email, 2:13 pm	Yes / No
#16	13 Jun 2017	E Walters	Email, 10:55 am	Yes / No

Appendix #1

From: Stephen Davidson [mailto: [REDACTED]]
Sent: Wednesday, 14 December 2016 6:28 PM
To: Records <records@erawa.com.au>; publicsubmissions <publicsubmissions@erawa.com.au>
Subject: Public Submission - Technical Rules

Hi ERAWA

Please see attached.

Kind regards

Name: Steve Davidson

Mob: [REDACTED]

Email: [REDACTED]

Appendix #1A

Economic Regulation Authority
Level 4, Albert Facey House
469 Wellington Street
Perth WA 6000

Attention: Elizabeth Walters

14th December 2016

Dear Ms Elizabeth Walters,

Ref: Authority's *"Determination on Application for exemption from certain requirements of the Technical Rules 2011 submitted by Western Power, Meadow Springs Zone Substation Exemption"* dated July 2015, that was published on the Authority's web site on 20 July 2015 (**Determination**)¹.

In accordance with section 12.45 of the Electricity Networks Access Code 2004 (**Access Code**) I respectfully apply to the Economic Regulation Authority (**Authority**) for the above exemption granted in respect of the covered network under section 12.41 to be revoked.

In my opinion, the effect of the Determination is inconsistent with the Access Code objectives of Section 2.1 to:

"... promote the economically efficient:

(a) investment in, and

(b) operation of and use of,

networks and services of networks in Western Australia in order to promote competition in markets upstream and downstream of the networks"

because it has quite the opposite effect of allowing and fostering Western Power's economically inefficient investment in zone substations – hundreds of millions of dollars.

The issue raised here is important and urgent. It is important because it adversely affects industrial competitiveness and consumer welfare, that is jobs and living standards. It is urgent because preparations to privatise Western Power are well advanced.

We trust the Authority will be mindful of own obligation to consider public interest under Section 9(1), Division 3, Part 2 of the Electricity Industry Act 2004:

"The Authority must not exercise a power conferred by this Division unless the Authority is satisfied that it would not be contrary to the public interest to do so."

Specifically, the Determination did not fulfill its obligation under Section 12.41 of the Access Code:

"... if the Authority determines that in all the circumstances the disadvantages of requiring the network persons to comply with the requirement [SD: of the technical rule] are likely to exceed the advantages,"

¹ <https://www.erawa.com.au/electricity/electricity-access/western-power-network/technical-rules/era-determinations-on-exemptions-from-the-technical-rules/meadow-springs-zone-substation>

because the (literal) application of the technical rule 2.5.4(b) Normal Cycling Rating (NCR) Criterion, as stated in the Technical Rules, was not considered as an option.

Namely, in the Meadow Springs Zone Substation Exemption Application dated 15 May 2015 (**Application**)² Western Power ignored technical rule 2.5.4(b) of the Technical Rules and, instead, used own 'creative interpretation' of the technical rule 2.5.4(b). By doing so, Western Power breached Section 2.5(c) of the Access Code:

"any applicable technical rule".

On the other hand, in the Review³ of the Application, technical consultant for the Authority (**Consultant**) uncritically accepted Western Power's 'creative interpretation' in lieu of the (literal) wording of the technical rule 2.5.4(b) Normal Cycling Rating (NCR) Criterion⁴.

Consequently and by relying on the incorrect premise, the Authority arrived at a wrong conclusion - the Decision inconsistent with the objectives of the Access Code. The Romans' saying describing this flaw in logic is:

*"Conclusio sequitur partem periolem premise debiliorem"*⁵.

Next Step

The option of the (literal) application of the technical rule 2.5.4(b) Normal Cycling Rating (NCR) Criterion (**Option**), as stated in the Technical Rules was considered in James Davidson's earlier submission to the Authority regarding a related issue (**Submission**)⁶(attached here for ease of correspondence).

Unexpectedly, its technical content, including the Option, was not considered at the time Western Power Proposed Changes of the Technical Rules - April 2016 were discussed. The Submission was effectively sidelined by the comment:

*"We have not analysed Mr Davidson's submission in this report."*⁷

I believe that was a significant omission, and its content is central for the argument presented here too.

In the interest of WA electricity consumers I have been addressing you with the objective being to avoid overinvestment in the network. I specifically seek the Authority to:

1. Revoke the decision on the basis that it fosters overinvestment in the network.

²<https://www.erawa.com.au/cproot/13583/2/Western%20Power%20application%20for%20tech%20rules%20exemption%20-%20Meadow%20Springs%20Zone%20Substation.pdf>

³<https://www.erawa.com.au/cproot/13764/2/Review%20of%20western%20power's%20application%20for%20a%20technical%20rules%20exemption%20for%20meadow%20springs%20zone%20substation.pdf>

⁴ The Consultant further recommended the "Western Power's creative interpretation" to become a new technical rule; which Western Power used in April 2016 as a key argument to amend the Technical Rules without conducting any techno economic analysis.

⁵ The conclusion follows the weakest premise.

⁶[https://www.erawa.com.au/cproot/14258/2/Steve%20Davidson%20April%202016%20Normal%20Cyclic%20Rating%20Clause%202%205%204%20\(002\).pdf](https://www.erawa.com.au/cproot/14258/2/Steve%20Davidson%20April%202016%20Normal%20Cyclic%20Rating%20Clause%202%205%204%20(002).pdf)

⁷<https://www.erawa.com.au/cproot/14442/2/GBA%20report%20March%20and%20April%202016.pdf>

2. Perform a techno economic analysis that the Option (of the literal application of the technical Rule 2.5.4(b) Normal Cycling Rating (NCR) Criterion of the Technical Rules 2011.
3. List all the implicit and explicit assumptions, data and workings for that analysis, facilitating transparency and public scrutiny.

For further information or comment, please see contact details per below:

Attachment:

8-Jun-16, Public Submission - Issues Paper (WP Proposal of April 2016) - NCR Criterion - James Davidson⁸.

Contact:

Name: Steve Davidson

Email: [REDACTED]

⁸[https://www.erawa.com.au/cproot/14258/2/Steve%20Davidson%20April%202016%20Normal%20Cyclic%20Rating%20Clause%202%205%204%20\(002\).pdf](https://www.erawa.com.au/cproot/14258/2/Steve%20Davidson%20April%202016%20Normal%20Cyclic%20Rating%20Clause%202%205%204%20(002).pdf).

Economic Regulation Authority
Level 4, Albert Facey House
469 Wellington Street
Perth WA 6000

Attention: Elizabeth Walters

3rd June 2016

Dear Ms Elizabeth Walters,

Proposed Amendments to Western Power's Technical Rules Submitted April 2016

It seems that the proposed change to Clause 2.5.4 may not actually result in improved efficiency of investment. In this submission I present some calculations which show possible outcomes.

Of course, the capacity of a substation increases with the addition of more transformers. I provide calculations in Table 1 that show precisely how much the capacity of a given substation increases and how it differs depending on the definition of NCR (Normal Cyclic Rating) in its current form and the proposed amended form.

For simplicity, I make the assumption that each transformer (including the RRSST, Rapid Response Spare Transformer) has a capacity of 33 MVA. I have included N-1 substation capacity for illustration and as a sanity check because, as I understand it, the NCR capacity should always be similar to but slightly higher than the N-1 capacity.

Table 1 – Comparison of the three criteria shows that the proposed change leads to reduced substation capacity.

	Number of Transformers	1	2	3	4	5
	Sum capacity	33.0	66.0	99.0	132.0	165.0
Assumption	Capacity of each transformer (including RRSST) for simplicity of calculations	33.0	33.0	33.0	33.0	33.0
N-1 now	N-1 substation capacity	10.0	33.0	66.0	99.0	132.0
NCR now	Permissible loss of load = min (33 * 75%, RRSST * 90%) = 33 * 75%	24.8	24.8	24.8	24.8	24.8
	Capacity = N-1 capacity + permissible loss	24.8	57.8	90.8	123.8	156.8
NCR proposed	Maximum power transfer is 75% of the power transfer capacity, which is the sum capacity	24.8	49.5	74.3	99.0	123.8

Note: the “N-1” case is only illustrative, the cases to be compared are “NCR now” and “NCR proposed”.

Note: all values are MVA (Mega-Volt-Amperes).

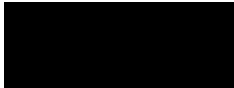
Let me offer an explanation of my understanding that may clarify the way in which I have made the calculations in Table 1. Suppose that a substation comprised of homogenous transformers rated at 33 MVA were required to satisfy the N-1 criterion. The maximum capacity for a station with two transformers would be 33 MVA, the capacity of a single transformer. The maximum capacity for a station with three transformers would be 66 MVA, the capacity of two transformers, and so on.

The N-1 criterion is conservative, because it requires having what is essentially a spare transformer in each zone substation. The NCR risk criterion is less conservative, because it allows a population of zone substations of, say fifty North of the river, to share a single spare transformer (RRST). This is an enormous economic saving, given that each transformer costs say \$10 million, whereas making a substation NCR requires a construction effort that is only a fraction of the cost.

According to Table 1, a substation of three transformers will have a capacity of 90.8 MVA under the current NCR definition but a capacity of only 74.3 MVA under the proposed redefinition of NCR. For a substation of four transformers, the capacities are 123.8 MVA and 99.0 MVA respectively which is a huge discrepancy.

A good definition of NCR is one which maximizes the capacity of substations in order to defer investment as long as possible. I hope that the calculations I have presented can prompt more analysis of the quantitative aspects of the proposed amendment.

Yours Sincerely,

A solid black rectangular box used to redact the signature of James Davidson.

James Davidson

Appendix #2.

Steve Davidson

Mob [REDACTED]

Email: [REDACTED]

On Tue, Feb 21, 2017 at 9:15 AM, Elizabeth Walters <[REDACTED]> wrote:

Dear Mr Davidson

We are currently reviewing your submission and will be writing to you as soon as possible regarding the matters you have raised.

I would like to clarify one aspect of your submission. I have copied below the second bullet point of the things you have requested the Authority to do.

"Perform a techno economic analysis that the Option (of the literal application of the technical Rule 2.5.4(b) Normal Cycling Rating (NCR) Criterion of the Technical Rules 2011."

I'm not sure if I am reading it correctly. There appears to be a missing word or phrase?

Kind regards,

Elizabeth Walters
Assistant Director Electricity

Economic Regulation Authority

Level 4, 469 Wellington Street, Perth WA 6000
PO Box 8469, Perth BC WA 6849

[REDACTED] | www.erawa.com.au | Ph: 08 6557 7958

This email is subject to our [disclaimer statement](#)

<image001.png> <image002.png> <image003.png>

From: Stephen Davidson [mailto:[REDACTED]]

Sent: Monday, 20 February 2017 5:18 PM

To: Elizabeth Walters <[REDACTED]>
Subject: Re: Public Submission - Technical Rules

Dear Assistant Director Electricity

I wish to ask for an anticipated date of response.

Kind regards

Name: Steve Davidson

Mob: [REDACTED]

Email: [REDACTED]

On Fri, Dec 16, 2016 at 10:43 AM, Elizabeth Walters <[REDACTED]> wrote:

Dear Mr Davidson

Thank you for your submission made in accordance with section 12.45 of the Electricity Networks Access Code 2004, requesting that the Authority revoke the exemption granted to Western Power for its Meadow Springs Zone Substation in July 2015. We will review the matters raised in your submission as soon as possible in the new year. In the meantime, if you have any further queries, please let me know.

Kind regards,

Elizabeth Walters
Assistant Director Electricity

Economic Regulation Authority

Level 4, 469 Wellington Street, Perth WA 6000
PO Box 8469, Perth BC WA 6849

[REDACTED] | www.erawa.com.au | Ph: 08 6557 7958

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Appendix #3

Steve Davidson

From: Stephen Davidson [REDACTED]
Sent: Wednesday, 22 February 2017 10:24 PM
To: Elizabeth Walters
Subject: Re: Public Submission - Technical Rules

Dear Elizabeth

Thank you for your email on 21/02/2017.

My letter to you of 14/12/2016 was based on Section 12.45 of the Access Code, central to which was "*the required action bullet point 1*" for the Authority to "*Revoke the decision ...*", and your email is silent on this crucial issue.

It was also unexpected to find out that my 14/12/2016 request has not been published on the Authority's web site for over two months.

The purpose of my follow-up *required action bullet points 2 and 3*, referred to in the email (which are separate to Section 12.45 of the Access Code) was to quantify Western Power's gold-plating in order to remove that amount from the Western Power's regulated asset base / income stream, so Western Power as a business, not electricity users, pay for their own inefficient investments (in breach of Technical Rules 2007 and Technical Rules 2011) and regardless of its impact on any sale value of Western Power.

Consequently, I respectfully seek the Authority to, without undue delay:

1. Publish my 14/12/2016 letter on the Authority's web site (for transparency), and
2. Revoke the decision (for economic efficiency) to grant the Meadow Springs Zone Substation Exemption that was published on the Authority's web site on 20/7/2015 (New Decision) and publish the New Decision on the Authority's web site (for transparency)
3. Put back on the Authority's web site Technical Rules 2011, for transparency, which were unexpectedly removed from the Authority's web site (and Western Power's web site too) for reasons unknown to the public.
4. Articulate the next steps the Authority intends to take to rectify the consequences of not considering the option of the express wording of the Technical Rules 2011.

In response to your question please accept the revised wording as follows:

"Perform a techno economic analysis ~~of that~~ the Option (of the literal application of the technical Rule 2.5.4(b) Normal Cycling Rating (NCR) Criterion of the Technical Rules 2011.)"

What I meant was to carry out a techno economic comparison of the "NCR now" and the "NCR proposed" of Table 1 of James Davidson's submission of 3rd June 2016 to you. I can help with defining the scope of work for the comparison if that would be of assistance.

The above should be part of action item 4 here. Please note that James Davidson's submission demonstrated that the proposed was not economically efficient, which gives you justification to immediately implement the required action items 1, 2 and 3 here.

I trust that this is of some help and that this offers a positive way forward under the circumstances.

Kind regards

Steve Davidson

Mob [REDACTED]

Email [REDACTED]

On Tue, Feb 21, 2017 at 9:15 AM, Elizabeth Walters <[REDACTED]> wrote:

Dear Mr Davidson

We are currently reviewing your submission and will be writing to you as soon as possible regarding the matters you have raised.

I would like to clarify one aspect of your submission. I have copied below the second bullet point of the things you have requested the Authority to do.

"Perform a techno economic analysis that the Option (of the literal application of the technical Rule 2.5.4(b) Normal Cycling Rating (NCR) Criterion of the Technical Rules 2011."

I'm not sure if I am reading it correctly. There appears to be a missing word or phrase?

Kind regards,

Elizabeth Walters
Assistant Director Electricity

Economic Regulation Authority

Appendix #4

Steve Davidson

From: Stephen Davidson [mailto:[REDACTED]]
Sent: Wednesday, 1 March 2017 3:27 PM
To: Elizabeth Walters <[REDACTED]>
Subject: Re: Public Submission - Technical Rules

Dear Elizabeth Walters

Thank you for your email. I wish to respond to each of your four bullet points.

Bullet Point 1. The request nor the decision was not needed, according to the literal wording of Technical Rules 2011. The creative interpretation resulted in premature and inefficient investment. This was clearly demonstrated in James Davidson's submission, irrespective of the timing of that submission. This is central to my communication. The mistake made at the time (2015) was that Western Power and ERA ignored the Technical Rule at the time (regardless of James Davidson's subsequent submission). The same mistake was also repeated in 2016, during the process of changing the Technical Rules, this time by ignoring the Technical Rules and James Davidson's submission.

Bullet Point 2. In reference as to *"Regardless of whether this was the case or not"*. It is essential we agree now that *"The ERA technical consultant accepted that interpretation rather than the literal wording of the rule."*, (in 2015 and 2016).

In response to your question. *"it is unclear how this would have affected the decision to grant the exemption"* the answer is simple, there was no breach of the Technical Rules and the exemption was not needed. This is what my letter requests you to rectify. Also, refer to my response to bullet point 1.

Bullet Point 3. Yes I concur. It was included in my letter as a succinct proof of the inefficient investment, see the "NCR Proposed", which allows the authority to make immediate decision to act on my request, pursuant to Clause 12.47 of the Access Code

Bullet Point 4. Yes. I concur with your understanding. Its application *"does not result in efficient investment"*; indeed that was a huge leap backwards which now mandates inefficient investments (Technical Rules 2016).

I refer also to ERA Issues Paper June 2015 Item 21 first bullet:

"Whether there are any reasonable alternative options which would be compliant with Technical Rules. "

The answer to this question is yes, to apply the literal wording of Technical Rules.

Please note that in their request for exemption of 15 May 2015 (DM# 12947998) and (DM#12633462) Western Power failed to mention or to quote the Technical Rules at the time. Refer to Attachment 1 on Page 15, which appears to be taken from Western Power's internal document

in which the inconsistency in Western Power's application was their creative interpretation in the transmission planning criteria. The Attachment 1, is written in a manner that caused confusion; in other words it was inconsistent with the Technical Rules at the time, as evidenced in the mis-interpretation of the rule. See "Clause 2.5.4.2 Application of the NCR Criterion."

In conclusion, Are you convinced? Can you make a decision immediately?

Thank you again for your attention.

Regards

Steve

On Fri, Feb 24, 2017 at 1:22 PM, Elizabeth Walters <[REDACTED]> wrote:

Dear Mr Davidson

Thank you for your response clarifying what you meant by performing a techno economic analysis (i.e. a techno economic comparison of the "NCR now" and the "NCR proposed" of Table 1 of James Davidson's submission of 3rd June 2016).

As the matters you have raised are quite complex, it would be helpful to meet with you to discuss further to ensure we properly understand your position. Would you be available to do this?

I've set out below a few points for your consideration prior to a meeting:

- Your letter requests that the exemption granted to Western Power in July 2015 in relation to Meadow Springs Zone substation should be revoked on the basis that it is inconsistent with the Access Code objectives and has the effect of "allowing and fostering Western Power's economically inefficient investment in zone substations – hundreds of millions of dollars." However, as the purpose of the exemption was to enable deferment of investment that Western Power considered would otherwise have been required in the Meadow

Appendix # 5

Steve Davidson

From: Stephen Davidson <[REDACTED]>
Sent: Monday, 6 March 2017 2:48 PM
To: publicsubmissions
Subject: 2016 Changes to Technical Rules
Attachments: 20170306064515302 ERAwa.pdf

Hi ERA

Please see attached letter.

kind regards

Steve Davidson

mobile: [REDACTED]

[REDACTED]

Economic Regulation Authority
Level 4, Albert Facey House
469 Wellington Street
Perth WA 6000

Attention: Elizabeth Walters

6th March 2017

Subject: 2016 Changes to Technical Rules

Dear Ms Elizabeth Walters,


I respectfully request that the Economic Regulation Authority send me a marked up copy of Technical Rules 2016 highlighting differences between Technical Rules 2011 and Technical Rules 2016.

I noticed that some important changes were made in 2016 that were not part of November 2015, March 2016 or April 2016 publicly announced changes.

What are the changes that were not explicitly announced to the public and why were these changes made away from public eyes?

Thank you for your kind attention.

Yours sincerely,

A black rectangular box redacting the signature of Steve Davidson.

Steve Davidson

A black rectangular box redacting contact information, likely a phone number or email address.

Appendix #6

Steve Davidson

To: Steve Davidson
Subject: Re: Public Submission - Technical Rules- calculation of NCR Criterion for Meadow Springs and 2016 amendments to Technical Rules
Attachments: image001.jpg

On Mon, Mar 27, 2017 at 10:24 AM Elizabeth Walters <[REDACTED]> wrote:

Dear Stephen

Thank you for clarifying your calculation based on a literal interpretation of the 2011 version of the Technical Rules. We are continuing to investigate the concerns you have raised.

In light of your comments regarding the current Technical Rules including changes which were not covered by the various approved amendments, we have undertaken a comparison of the latest version with the December 2011 version. Apart from typographical and formatting changes, we have not identified any differences, other than those approved by the Authority. Could you please let us know which clauses you have identified as having changed.

Thank you

Regards

Elizabeth

From: Stephen Davidson [mailto:[REDACTED]]

Sent: Tuesday, 21 March 2017 11:16 AM

To: Elizabeth Walters <[REDACTED]>

Subject: HPRM: Re: Public Submission - Technical Rules- calculation of NCR Criterion for Meadow Springs and 2016 amendments to Technical Rules

Dear Elizabeth

Thank you for your email on 7/3/2017.

There are many problems with the calculation provided under the "Meadow Springs" heading, including

- a) Nameplate capacity of transformers at substation
- b) Unsubstantiated statement that "90% of the power transfer capacity of the RRTS is not relevant to the calculation"
- c) Misinterpretation of the NCR criterion,
- d) Failure to consider the "NCR Criterion" in James Davidson's letter.

My comments

a) The respective nameplate ratings for T1 and T2 of 38.6 MVA and 35.5 MVA do not seem to be correct. These would need to be verified by the transformer data sheets or by a photo of the transformer nameplates

b) What is the rating of the RRTS? This would need to be verified by the transformer data sheet or by a photo of the transformer nameplate

c) What is the basis for the calculation? Certainly not the wording of the TR-2011

d) Refer to Table 1 of James Davidson's letter row NCR now and let us for a moment ignore comments a) to c) above

NCR Capacity = (N-1 capacity) + permissible loss of load

= 35.5 + 26.625

= 62.125 MVA

Hence my argument proved.

Kind regards

Steve Davidson

Mob [REDACTED]

Email: [REDACTED]

On Tue, Mar 7, 2017 at 4:04 PM, Elizabeth Walters <[REDACTED]> wrote:

Dear Mr Davidson

Appendix #7

Kind regards,

Elizabeth Walters
Assistant Director Electricity
Economic Regulation Authority
Level 4, 469 Wellington Street, Perth WA 6000
PO Box 8469, Perth BC WA 6849

[REDACTED] | www.erawa.com.au | Ph: 08 6557 7958

This email is subject to our [disclaimer statement](#).



From: Stephen Davidson [mailto:[REDACTED]]
Sent: Tuesday, 4 April 2017 11:43 AM
To: Elizabeth Walters <[REDACTED]>; publicsubmissions <publicsubmissions@erawa.com.au>;
Records <records@erawa.com.au>
Subject: Public Submission - Past changes to Technical Rules

Hi ERAWA

Please see attached.

Kind regards

Name: Steve Davidson

Mob: [REDACTED]

Email: [REDACTED]

Economic Regulation Authority
Level 4, Albert Facey House
469 Wellington Street
Perth WA 6000

Attention: Elizabeth Walters

4 April 2017

Dear Ms Elizabeth Walters,

Ref: Your 27 March 2017 reply to my 6 March 2017 email submission

Thank you for your 27/3/2017 reply to my 6/3/2017 email submission.

I am pleased that your investigation found out that, at the time of your reply, the published rules available on the Authority's web site were consistent with the November 2015, March 2016 and April 2016 approved changes.

My review of the information currently available on the Authority's web site revealed that:

- the last notice pursuant to section 12.53 the Authority published on 9 November 2016, stating that the revised rules will commence on 1 December 2016;
- since then, three different versions of the Technical Rules, all dated 1 December 2016, were published: No revision number; Revision 1, and; Revision 2 (see page 169 of the current Technical Rules, which bears EDM document #40546182), and;
- each time, the previous version was removed from the web site (and NOT relocated to the archive section).
- In addition, individual changes were not listed (vague generic terms were used to describe them instead, for example, typographical and formatting changes)

One of these (now) removed versions of the Technical Rules dated 1 December 2016 initiated my 6/3/2017 submission.

I believe that your earlier statement (your 24/2/2017 email) to the effect of that 'the Authority is only required to publish notice of decisions to amend the Technical Rules' refers to section 12.53 of the Access Code 2004 (see the attached).

Consequently, one can conclude that the Authority's conduct since 9 November 2016 has been inconsistent with its obligations under section 12.53 of the Access Code 2004.

In conclusion, it is my opinion that the Authority should immediately discontinue its recent practice of making secret and retroactive changes of the Technical Rules, as is inconsistent with its obligations under section 12.53 of the Access Code 2004 and it does not provide the transparency required for good governance. I hope that the Authority would also agree that all future changes of the Technical Rules should be individually identified and tabulated for transparency.

Please do not hesitate to contact me if you have any questions or need any clarifications.

I hope that this helps.

Yours sincerely,

[REDACTED]

Steve Davidson

Email: [REDACTED]

Mob.: [REDACTED]

Attachment 1

Section 12.53, Access Code 2004

12.53 As soon as practicable, the *Authority* must consider whether any amendments to *technical rules* proposed under section 12.50 are consistent with this Chapter 12 and the *Code objective*, having regard to any exemptions granted under sections 12.34 and 12.41, and then either:

- (a) approve; or
- (b) 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.

Attachment 2

6/3/2017 email < next page >

Appendix # 8

Steve Davidson

----- Forwarded message -----

From: Elizabeth Walters <[REDACTED]>
Date: Fri, Dec 16, 2016 at 10:43 AM
Subject: RE: Public Submission - Technical Rules
To: Stephen Davidson <[REDACTED]>, Records <records@erawa.com.au>, publicsubmissions <publicsubmissions@erawa.com.au>
Cc: Lincoln Flindell <[REDACTED]>, Robert Pulella <[REDACTED]>, Paul Kelly <[REDACTED]>

Dear Mr Davidson

Thank you for your submission made in accordance with section 12.45 of the Electricity Networks Access Code 2004, requesting that the Authority revoke the exemption granted to Western Power for its Meadow Springs Zone Substation in July 2015. We will review the matters raised in your submission as soon as possible in the new year. In the meantime, if you have any further queries, please let me know.

Kind regards,

Elizabeth Walters
Assistant Director Electricity

Economic Regulation Authority

Level 4, 469 Wellington Street, Perth WA 6000
PO Box 8469, Perth BC WA 6849

[REDACTED] | www.erawa.com.au | Ph: 08 6557 7958

This email is subject to our [disclaimer statement](#).



From: Stephen Davidson [mailto:[REDACTED]]
Sent: Wednesday, 14 December 2016 6:28 PM
To: Records <records@erawa.com.au>; publicsubmissions <publicsubmissions@erawa.com.au>
Subject: Public Submission - Technical Rules

Appendix #9

Steve Davidson

Mob: [REDACTED]

Email: [REDACTED]

On Tue, Feb 21, 2017 at 9:15 AM, Elizabeth Walters <[REDACTED]> wrote:

Dear Mr Davidson

We are currently reviewing your submission and will be writing to you as soon as possible regarding the matters you have raised.

I would like to clarify one aspect of your submission. I have copied below the second bullet point of the things you have requested the Authority to do.

"Perform a techno economic analysis that the Option (of the literal application of the technical Rule 2.5.4(b) Normal Cycling Rating (NCR) Criterion of the Technical Rules 2011."

I'm not sure if I am reading it correctly. There appears to be a missing word or phrase?

Kind regards,

Elizabeth Walters
Assistant Director Electricity

Economic Regulation Authority

Level 4, 469 Wellington Street, Perth WA 6000
PO Box 8469, Perth BC WA 6849

[REDACTED] www.erawa.com.au | Ph: 08 6557 7958

This email is subject to our [disclaimer statement](#).

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From: Stephen Davidson [mailto:[REDACTED]]
Sent: Monday, 20 February 2017 5:18 PM

Appendix #10

Please note that in their request for exemption of 15 May 2015 (DM# 12947998) and (DM#12633462) Western Power failed to mention or to quote the Technical Rules at the time. Refer to Attachment 1 on Page 15, which appears to be taken from Western Power's internal document

in which the inconsistency in Western Power's application was their creative interpretation in the transmission planning criteria. The Attachment 1, is written in a manner that caused confusion; in other words it was inconsistent with the Technical Rules at the time, as evidenced in the mis-interpretation of the rule. See "Clause 2.5.4.2 Application of the NCR Criterion."

In conclusion, Are you convinced? Can you make a decision immediately?

Thank you again for your attention.

Regards

Steve

On Fri, Feb 24, 2017 at 1:22 PM, Elizabeth Walters <[REDACTED]> wrote:

Dear Mr Davidson

Thank you for your response clarifying what you meant by performing a techno economic analysis (i.e. a techno economic comparison of the "NCR now" and the "NCR proposed" of Table 1 of James Davidson's submission of 3rd June 2016).

As the matters you have raised are quite complex, it would be helpful to meet with you to discuss further to ensure we properly understand your position. Would you be available to do this?

I've set out below a few points for your consideration prior to a meeting:

- Your letter requests that the exemption granted to Western Power in July 2015 in relation to Meadow Springs Zone substation should be revoked on the basis that it is inconsistent with the Access Code objectives and has the effect of "allowing and fostering Western Power's economically inefficient investment in zone substations – hundreds of millions of dollars." However, as the purpose of the exemption was to enable deferment of investment that Western Power considered would otherwise have been required in the Meadow Springs/Mandurah load area, it is unclear to us how granting the exemption can have resulted in an increase in investment? Could we please discuss to make sure we understand your submission.
- Your letter notes that Western Power's application for the exemption ignored technical rule 2.5.4(b) of the Technical Rules and, instead, used its own "creative interpretation" of the rule. And that the ERA's technical consultant accepted that interpretation rather than the literal wording of the rule. Regardless of whether this was

the case or not, it is unclear how this would have affected the decision to grant the exemption. Could we please discuss.


- Your letter refers to James Davidson's "earlier submission" regarding a related issue. The Technical Rule exemption was granted in July 2015, whereas James Davidson's submission was received in June 2016, and so could not have been considered as part of the decision to grant the exemption.
- As you are seeking a comparison of different options for the NCR Criterion on investment, is your concern that the current specification of the NCR Criterion in the Technical Rules does not result in efficient investment?

I note your comment that the 2011 version of the Technical Rules is no longer on the ERA website. Although there is no obligation for the ERA to publish the Technical Rules (it is only required to publish decisions to amend them), we understand from your email that they are useful to stakeholders and will ensure the archive page (<https://www.erawa.com.au/electricity/electricity-access/western-power-network/technical-rules/technical-rules/archive>) includes all previous versions. Please let us know if you think any are missing or incorrect.

I look forward to hearing from, and hopefully meeting with, you.



Kind regards,

Elizabeth Walters
Assistant Director Electricity
Economic Regulation Authority
Level 4, 469 Wellington Street, Perth WA 6000
PO Box 8469, Perth BC WA 6849

 | www.erawa.com.au | Ph: 08 6557 7958

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<image001.png> <image002.png> <image003.png>

From: Stephen Davidson [mailto:
Sent: Wednesday, 22 February 2017 10:24 PM
To: Elizabeth Walters < >
Subject: Re: Public Submission - Technical Rules

Dear Elizabeth

Thank you for your email on 21/02/2017.

Appendix #11

Steve Davidson

----- Forwarded message -----

From: **Elizabeth Walters** <[REDACTED]>
Date: Thu, Mar 2, 2017 at 10:10 AM
Subject: RE: Public Submission - Technical Rules
To: Stephen Davidson <[REDACTED]>
Cc: Robert Pullella <[REDACTED]>, Lincoln Flindell <[REDACTED]>

Dear Stephen

Thanks for the additional information you have provided which has helped us to better understand the concerns you are raising. We are undertaking further investigation in light of your email below. We will respond to you as soon as possible.

Thank you

Kind regards,

Elizabeth Walters
Assistant Director Electricity

Economic Regulation Authority

Level 4, 469 Wellington Street, Perth WA 6000
PO Box 8469, Perth BC WA 6849

[REDACTED] | www.erawa.com.au | Ph: 08 6557 7958

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From: Stephen Davidson [mailto:[REDACTED]]
Sent: Wednesday, 1 March 2017 3:27 PM
To: Elizabeth Walters <[REDACTED]>
Subject: Re: Public Submission - Technical Rules

Dear Elizabeth Walters



Stephen Davidson <[REDACTED]>

RE: Public Submission - Technical Rules- calculation of NCR Criterion for Meadow Springs and 2016 amendments to Technical Rules

2 messages

Elizabeth Walters <[REDACTED]>

Tue, Mar 7, 2017 at 4:04 PM

To: Stephen Davidson <[REDACTED]>

Cc: Robert Pullella <[REDACTED]>, Lincoln Flindell <[REDACTED]>

Dear Mr Davidson

I note your letter addressed to me dated 6 March 2017 queries changes to the Technical Rules that you consider were not part of the November 2015, March 2016 or April 2016 changes. Could you please provide details of the specific sections you have identified.

As per my previous email, we are continuing to investigate your concerns regarding the Meadow Springs substation exemption. Further to your email of 1 March (see below), I have set out below what I think is your view of the literal interpretation of the NCR Criterion (based on the [Technical Rules in place](#) when the [Meadow Springs](#) exemption was applied for) and the result it would give for Meadow Springs, together with the calculation Western Power used. Can you please confirm whether this is what you meant.

I think the literal interpretation results in a power transfer capacity of 47.475 MVA compared with Western Power's calculation which was 55.575 MVA. Please see below for details of calculation.

Relevant Technical Rule when exemption was requested

(b) Normal Cyclic Rating (NCR) Criterion

- (1) The NCR risk criterion permits the loss of a portion of *power transfer capacity* at a *substation* following the unplanned loss of a *supply transformer* within that *substation*.
- (2) The portion of the *power transfer capacity* that may be lost is the lesser of:
 - (A) 75% of the *power transfer capacity* of the smallest *supply transformer* within the *substation*; and
 - (B) 90% of the *power transfer capacity* of the rapid response spare *supply transformer*.

Relationship between 1% Risk criterion and NCR criterion is explained below:

1. *Zone substations* require special consideration as they form the boundary between the *transmission system* and the *distribution system*. The 1% Risk Criterion and NCR Criterion permit higher *supply transformer* utilisation than that permitted by the N-1 criterion, but lower than that permitted by the N-0 criterion.
2. The 1% Risk and NCR criteria are based on sharing a common spare *supply transformer* among a population of *supply transformers* across a number of *zone substations* within a geographically confined area. A trade off is the risk of limited *load shedding* for as long as it takes to deploy and install a spare *supply transformer*. The acceptance of this risk determines the application of these two criteria.

Meadow Springs

Nameplate capacity of transformers at substation:

T1 is 38.6 MVA

T2 is 35.5 MVA

Please note in both scenarios below, 90% of the power transfer capacity of the rapid response spare supply transformer is not relevant to the calculation.

Literal Interpretation of NCR Criterion rule- capacity that can be lost is 75% of the power transfer capacity of the smallest transformer (i.e. 35.5 MVA) which is 26.625MVA, so the allowable power transfer capacity for Meadow Springs would be 47.475 MVA (38.6 + 35.5 – 26.625)

Interpretation used by Western Power – maximum power transfer through the substation **should be** 75% of the total substation capacity- i.e. allowable power transfer capacity for Meadow Springs would be 55.575 MVA (75% * (38.6 + 35.5)).

From: Stephen Davidson [mailto:]

Sent: Wednesday, 1 March 2017 3:27 PM

To: Elizabeth Walters

Subject: Re: Public Submission - Technical Rules

Appendix #13

Steve Davidson

To: Steve Davidson
Subject: Re: Public Submission - Technical Rules- calculation of NCR Criterion for Meadow Springs and 2016 amendments to Technical Rules
Attachments: image001.jpg

On Mon, Mar 27, 2017 at 10:24 AM Elizabeth Walters <[REDACTED]> wrote:

Dear Stephen

Thank you for clarifying your calculation based on a literal interpretation of the 2011 version of the Technical Rules. We are continuing to investigate the concerns you have raised.

In light of your comments regarding the current Technical Rules including changes which were not covered by the various approved amendments, we have undertaken a comparison of the latest version with the December 2011 version. Apart from typographical and formatting changes, we have not identified any differences, other than those approved by the Authority. Could you please let us know which clauses you have identified as having changed.

Thank you

Regards

Elizabeth

From: Stephen Davidson [mailto:[REDACTED]]
Sent: Tuesday, 21 March 2017 11:16 AM
To: Elizabeth Walters <[REDACTED]>
Subject: HPRM: Re: Public Submission - Technical Rules- calculation of NCR Criterion for Meadow Springs and 2016 amendments to Technical Rules

Dear Elizabeth

Thank you for your email on 7/3/2017.

There are many problems with the calculation provided under the "Meadow Springs" heading, including

Appendix #14

Steve Davidson

From: Elizabeth Walters <[REDACTED]>
Date: Fri, Apr 7, 2017 at 4:00 PM
Subject: RE: Public Submission - Past changes to Technical Rules
To: Stephen Davidson <[REDACTED]>, publicsubmissions <publicsubmissions@erawa.com.au>, Records <records@erawa.com.au>
Cc: Lincoln Flindell <[REDACTED]>

Dear Stephen

Thank you for your email and letter of 4 April 2017. As set out in my email of 24 February, the ERA is only required to publish decisions to approve (or not) any amendments to the rules and the date those amendments will commence. As you note in your letter, a decision on the most recent amendments to the Technical Rules was published on 9 November 2016 stating that those amendments would commence on 1 December 2016. Although not required to, historically the ERA has included updated versions of the Technical Rules incorporating approved amendments on its website. These updated versions are prepared by Western Power.

Following approval and publication of the amendments by the ERA on 9 November 2016, Western Power prepared an updated version of the Technical Rules incorporating the approved amendments. This document was added to our website in early December 2016. Subsequently, Western Power identified figure 3.3 was not displaying correctly and provided a corrected version. Soon after that, Western Power identified further typographical/formatting issues that had arisen when preparing the document for publication and a clause that had been deleted in error (3.5.2d) and provided a second corrected version. None of these corrections related to, or affected, amendments approved by the ERA. Each of the revised documents included a table describing the changes.

The ERA updated its webpage (twice) to include the corrected versions at the time they were received from Western Power. Both of the revised documents included a table describing the changes. In light of your inquiry the ERA will add the two uncorrected versions to the archive for completeness.

We appreciate your advice regarding this matter and hope we have addressed your concerns. If you have any other concerns please let me or Lincoln Flindell know and we will endeavour to assist you.

We are continuing to investigate the Technical Rule exemption for Meadow Springs and the NCR criteria.

Kind regards,

Elizabeth Walters
Assistant Director Electricity

Economic Regulation Authority

Level 4, 469 Wellington Street, Perth WA 6000
PO Box 8469, Perth BC WA 6849

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From: Stephen Davidson [mailto:[REDACTED]]
Sent: Tuesday, 4 April 2017 11:43 AM
To: Elizabeth Walters <[REDACTED]>; publicsubmissions <publicsubmissions@erawa.com.au>;
Records <records@erawa.com.au>
Subject: Public Submission - Past changes to Technical Rules

Hi ERAWA

Please see attached.

Kind regards

Name: Steve Davidson

Mob: [REDACTED]

Email: [REDACTED]

5/25/2017

Gmail - FW: Meadow Springs technical rule exemption



Stephen Davidson <[REDACTED]>

FW: Meadow Springs technical rule exemption

1 message

Elizabeth Walters <[REDACTED]>

Thu, May 25, 2017 at 2:13 PM

To: Stephen Davidson <[REDACTED]>

Cc: Robert Pullella <[REDACTED]>, Lincoln Flindell <[REDACTED]>

Dear Stephen

Further to my email below, this is just to let you know that, following a request from us, Western Power has provided us with an amended Meadow Springs technical rule exemption application correcting the calculation of the NCR capacity limits.

We are preparing an invitation for public submissions on whether the exemption should be revoked. We will include a copy of your application and the corrected application from Western Power to assist stakeholders. We are considering what other material will help stakeholders to understand the issue and may need to seek your approval to publish some of the correspondence we have had with you over the last few months.

We will let you know as soon as possible regarding publication of any correspondence and will keep you updated regarding the publication date.

In the interim, if you have any queries regarding the process please let me know.

Kind regards,

Elizabeth Walters
Assistant Director Electricity

Economic Regulation Authority

Level 4, 469 Wellington Street, Perth WA 6000
PO Box 8469, Perth BC WA 6849

[REDACTED] | www.erawa.com.au | Ph: 08 6557 7958

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Appendix #16

Steve Davidson

To: Steve Davidson
Subject: RE: FW: HPRM: FW: Meadow Springs technical rule exemption

On Tue, Jun 13, 2017 at 10:55 AM Elizabeth Walters <[REDACTED]> wrote:

Dear Stephen

Further to my email below, we have been advised by the Electricity Review Board that you have lodged an application to review the Authority's decision to approve the Technical Rule exemption granted to Western Power for the Meadow Springs zone substation.

We will not be able to proceed with your application to the Authority for the Meadow Springs zone substation Technical Rule exemption to be revoked until the Electricity Review Board makes a decision on the application you have made to it.

If you would like to discuss, or have any queries, please give me a call.

Kind regards,

Elizabeth Walters
Assistant Director Electricity
Economic Regulation Authority
Level 4, 469 Wellington Street, Perth WA 6000
PO Box 8469, Perth BC WA 6849

[REDACTED] www.erawa.com.au | Ph: 08 6557 7958

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From: Elizabeth Walters
Sent: Thursday, 25 May 2017 2:13 PM
To: 'Stephen Davidson' <[REDACTED]>
Cc: Robert Pullella <[REDACTED]>; Lincoln Flindell <[REDACTED]>
Subject: HPRM: FW: Meadow Springs technical rule exemption