

NATIONAL ELECTRICITY LAW

REQUEST FOR MAKING OF A RULE RELATING TO RE-CLASSIFICATION OF CONTINGENCY EVENTS

A. NAME AND ADDRESS OF PERSON MAKING THE REQUEST

Australian Energy Regulator
Level 42
360 Elizabeth Street
MELBOURNE VIC 3000

B. DESCRIPTION OF PROPOSED RULE CHANGES

The Australian Energy Regulator (AER) proposes that clause 4.2.3 of the *National Electricity Rules* (NER) be changed to set out a clearer process for NEMMCO to re-classify contingency events during abnormal conditions.

The proposal follows a detailed investigation by the AER of the events of 16 January 2007 when bushfires caused transmission lines between Victoria and New South Wales to fail. Around 25 per cent of Victoria's load was shed and the national power system was separated into three electrical islands following the transmission line failure. The AER found that most aspects of the power system worked well on the day despite the extensive shocks. The power system remained stable even though 2200MW of load was shed. Load was fully restored within four hours. However, the AER identified scope for improvement and has taken a number of steps to ensure that improvements are made:

- The AER is recommending two rule changes, this rule change and another rule change to alter the obligation on NEMMCO to set the dispatch price within 3 dispatch intervals to the value of lost load (VoLL) following the shedding of interruptible load as a result of a contingency event.
- Some generators failed to ride through the power system disturbance as agreed to in their performance standards. However, in Victoria and Queensland ongoing Chapter 9 derogations apply less exacting technical standards, potentially compromising system security. The AER has written to Ministers in Victoria and Queensland recommending removal of the derogations.
- The AER took enforcement action against the SECV for bidding in ancillary services that it could not provide. The SECV was issued dispatch instructions and paid for those services.
- The AER recommended that NEMMCO review its load restoration and intervention pricing practices by the end of 2007. NEMMCO has reported on the outcomes of those reviews¹.

The AER's investigation found that NEMMCO's re-classification process on 16 January 2007 was non-transparent and unduly relied upon the advice of the relevant transmission network service provider. The AER also found that NEMMCO's approach towards re-

¹ <http://www.aer.gov.au/content/index.phtml/itemId/714828/fromItemId/656186>

classification on 16 January appears to have been inconsistent with its approach earlier that summer, when similar conditions prevailed.

The proposed changes would ensure greater consistency, transparency and rigour to the process of re-classifying contingency events. Specifically, the changes would require NEMMCO to develop and then apply pre-determined risk assessment criteria when considering whether to re-classify a contingency event and to provide market participants with improved information about potential and actual re-classifications of contingency events.

The AER's proposal should be read in conjunction with its investigation report. A copy of the report can be found on the AER's website: www.aer.gov.au.

In developing the Rule change proposal, the AER did not formally consult. It did, however, discuss the nature and practical implications of the proposal with NEMMCO, who indicated its support for the Rule change proposal. NEMMCO and relevant participants have already taken practical steps to address problems associated with the re-classification process that were highlighted in the context of the events of 16 January 2007. Such steps appear to be consistent with the contents of this proposal. The AER has also discussed the Rule change proposal with the Transmission Network Service Providers (TNSPs) and considers that the proposal fully accounts for the important role played by TNSPs in the re-classification process. Finally, the AER has discussed the Rule change proposal with the Victorian jurisdiction to ensure consistency between this proposal and action proposed by the jurisdiction to ensure that the events of 16 January do not recur.

C. STATEMENT OF ISSUES

i Summary of current provisions

Clause 4.2.3(f) of the NER deals with the re-classification of contingency events. It provides that, when abnormal conditions arise, NEMMCO may, in its reasonable opinion, determine a non-credible contingency event to be a credible contingency event. Abnormal conditions are conditions posing additional risks to the power system. These include severe weather conditions and bushfires.

Other provisions of the NER, such as clauses 4.2.4 and 4.2.6, effectively require NEMMCO to take into account non-credible contingency events that it has re-classified as credible when dispatching generators and determining flows on interconnectors.

Clause 4.2.3(f) also requires NEMMCO to notify all market participants of the re-classification of a contingency event, as soon as practicable after the re-classification decision has been taken.

ii The issue with the current provisions

The events of 16 January 2007 highlight the difficulties associated with the current drafting of clause 4.2.3(f), which the AER's rule change proposal seeks to address.

On 16 January, there was a bushfire in the vicinity of transmission lines linking Victoria to New South Wales. When the bushfire crossed the transmission lines' easement, the lines in

question tripped. The event also caused other transmission lines between New South Wales and Victoria and between South Australia and Victoria to trip, resulting in the separation of the national power system into three electrical islands. A major imbalance between supply and demand followed, which led to the activation of the Victorian automatic under-frequency load shedding scheme. Around 2200MW of load was shed.

NEMMCO's Power System Incident Report states that system separation could have been avoided had re-classification of the lines in question occurred.² Re-classification would have resulted in reduced reliance on imports using the transmission lines in question and reduced, but not completely eliminated, the impact of the transmission line failure, including the extent of load shedding in Victoria.

As illustrated above, serious consequences can ensue if re-classification does not occur when it is warranted. Equally, there can be serious market impacts if re-classification occurs but the circumstances do not justify it. However, there are at least three flaws with the current formulation of clause 4.2.3(f). In practical terms, these flaws mean that clause 4.2.3(f) does not ensure that NEMMCO exercises its role under the clause with the consistency, responsibility and transparency that such critical re-classification decisions require.

First, clause 4.2.3(f) does not prescribe any criteria that NEMMCO must apply in making a decision to re-classify a non-credible contingency event. This effectively means that inconsistent decisions may be made which, in turn, results in uncertainty as to how NEMMCO might deal with particular abnormal circumstances. The AER considers that the events of 16 January 2007 illustrate this point.

The threat posed to the Victoria-New South Wales transmission lines was similar to the threat posed by bushfire on at least two previous occasions that summer – namely, 11 and 14 December 2006. On both those occasions, NEMMCO had re-classified the possibility of the same transmission lines being tripped to be a credible contingency event. NEMMCO stated that the decision to reclassify the loss of those lines on 11 and 14 December 2006 could be distinguished from its decision not to reclassify the same risk on 16 January 2007 on a number of grounds: the location of the fire relative to the easement on which the transmission lines were located; the relative intensity of the fuel load; and the circuit construction on the transmission line towers. However, as explained in the AER's investigation report into the events of 16 January,³ these factors appeared to apply equally to the transmission lines in question on 16 January.

Second, clause 4.2.3(f) provides NEMMCO with a broad discretion to re-classify contingency events. Under the current drafting, the only guidance NEMMCO receives about exercising this discretion is that it must make the determination to re-classify "in its reasonable opinion." In practical terms, the breadth of discretion contained in clause 4.2.3(f) could be read as effectively permitting NEMMCO to rely on information provided by others. More particularly, as currently drafted, clause 4.2.3(f) could be interpreted as authorising NEMMCO to continue its approach of relying solely on information provided by the relevant TNSP when determining whether to re-classify a non-credible contingency event.

² Power System Incident Report: System Separation and Load Shedding 16 January 2007, p. 17.

³ AER Final Report, The events of 16 January 2007 Investigation Report, September 2007, pp. 22-24.

This is the approach NEMMCO adopted on 16 January. However, throughout the day on 16 January 2007, SP AusNet, which operated the relevant transmission lines in Victoria, provided NEMMCO with inconsistent information and advice about whether to determine the possibility of the lines being tripped to be a credible contingency event. NEMMCO, following its usual practice of relying on information from the relevant TNSP in these circumstances, appears to have been waiting for a clear statement from SP Ausnet supporting re-classification. However, as no such clear statement arrived, NEMMCO did not re-classify the possibility of the lines being tripped to be a credible contingency event on 16 January.

In summary, the breadth of the discretion in clause 4.2.3(f) means that NEMMCO can effectively delegate its discretion to re-classify contingency events to TNSPs by relying exclusively on information provided by the TNSP. However, the AER considers that NEMMCO should take direct responsibility for re-classification decisions, including the collection and analysis of relevant information, particularly in light of clause 4.3.1, which clearly vests the responsibility to manage and maintain power system security in NEMMCO.

Finally, there are limited requirements for NEMMCO to provide information to market participants regarding the re-classification of contingency events. Under clause 4.2.3(f), NEMMCO must notify market participants once it has re-classified a non-credible contingency event to be a credible contingency event. However, that clause does not oblige NEMMCO to provide information to market participants when abnormal conditions exist but when NEMMCO does not consider it necessary to re-classify a non-credible contingency event.

On 16 January, because the possibility of the lines being tripped was not re-classified to be a credible contingency event, NEMMCO did not notify market participants of the situation. While this may be consistent with the current drafting of clause 4.2.3(f), it would appear to be inconsistent with clause 4.3.1(m), which obliges NEMMCO to make available to participants information which could or has the potential for having a significant impact on power system security. Had market participants been forewarned about the risks posed by the bushfire on 16 January, they may have been in a situation to better manage the consequences resulting from the tripping of the transmission lines.

iii How proposed rule changes will address the current issues

The AER considers that its proposed changes would address the abovementioned flaws in clause 4.2.3(f). The proposed changes fall into four groups.

The first group of changes establish a framework for the development of pre-determined criteria for assessing abnormal risks to avoid inconsistent approaches being adopted in the future. The framework provides NEMMCO with flexibility to respond to the specific circumstances associated with each event involving abnormal conditions when deciding whether or not reclassification is warranted.

The criteria would be established following consultation with relevant stakeholders and would take into account the particularities of the risk(s) to the power system associated with various types of abnormal circumstances that might arise. The rule change proposal anticipates an informal consultation between NEMMCO and the various stakeholders for the establishment and review of the re-classification criteria.

The criteria would guide NEMMCO in its decision-making process, but would not bind NEMMCO to take a particular decision. The criteria would also guide all relevant stakeholders, including emergency services, regarding the matters it should bring to NEMMCO's attention in the context of examining the effects of abnormal conditions on the status of non-credible contingency events. The proposed changes would not preclude NEMMCO from supplementing the proposed pre-determined criteria.

It is expected that the criteria would enhance the consistency and rigour of the process of re-classifying contingency events by providing more detailed guidance. Further, defining criteria associated with the risks of the various types of abnormal conditions that might arise would provide NEMMCO with a better understanding of how it might respond to abnormal conditions before they actually arise.

The second group of changes would oblige NEMMCO to re-classify a non-credible contingency event where NEMMCO considers that abnormal conditions make the occurrence of that event reasonably possible. The proposed changes to the drafting of clause 4.2.3(f) would effectively require NEMMCO to take direct responsibility for re-classification, rather than relying solely on information from TNSPs.

The third group of changes would require NEMMCO to notify market participants when it is considering whether or not to re-classify a non-credible contingency event to be a credible contingency event, before a decision either way is actually taken. As part of the notification obligation, NEMMCO would be required to provide market participants with any information it has that is relevant to determining whether re-classification is warranted. The AER considers that requiring NEMMCO to notify market participants of all relevant information it has regarding a potential re-classification would significantly enhance transparency for market participants about the re-classification of contingency events and allow them to adjust their conduct and/or operations accordingly.

The final group of changes would enhance the obligations NEMMCO currently has to report to market participants when non-credible contingency events are re-classified to be a credible contingency event.⁴ In particular, the changes require NEMMCO to report on a six-monthly basis on the re-classification decisions that have been taken during that period. The report would explain the abnormal conditions involved and how NEMMCO applied the risk assessment criteria (mentioned above) that resulted in its determination that re-classification was warranted. Ideally, the report would also include NEMMCO's analysis of re-classification trends and its appraisal of the appropriateness and effectiveness of the relevant criteria that were applied in each case.

The AER considers that requiring NEMMCO to expand the information provided to participants regarding reclassification decisions would, at a minimum, make NEMMCO's application of the re-classification criteria more transparent. Re-classification reports would also provide NEMMCO with a basis of analysis that it could use to continually refine the risk assessment process and criteria for re-classification of contingency events under clause 4.2.3(f).

⁴ These changes would involve an amendment to NEMMCO's pre-existing obligation in clause 4.8.15 to review and report on operating incidents, including the occurrence of non-credible contingency events, to include details of how the relevant re-classification criteria were assessed and applied in the context of the particular event that has occurred.

C. EXPLANATION OF CONTRIBUTION TO NEM OBJECTIVE

Under the NER, NEMMCO is responsible for power system security. Determining whether re-classification of contingency events is necessary is a critical function performed by NEMMCO in pursuance of its system security obligations. It is apparent from the events of 16 January that significant system security consequences may flow if re-classification does not occur when it should occur. Similarly, there may be serious consequences if NEMMCO decides to re-classify when re-classification is not warranted.

The AER considers that its proposed rule changes would contribute to the NEM objective of enhancing reliability and security of the power system. Requiring NEMMCO to take into account pre-established re-classification risk assessment criteria will improve the process of re-classifying contingency events. In particular, this will make the re-classification process more rigorous and consistent. The AER considers that such an approach would reduce the likelihood of re-classification not occurring when it is warranted by the circumstances or re-classification occurring when the circumstances do not so warrant. In turn, this would improve the NEM's ability to withstand contingency events overall, thereby enhancing system security and reliability and would increase the efficient operation of the NEM.

Further, making all market participants aware that NEMMCO is considering re-classifying a non-credible contingency event would allow them to act prior to the event occurring. Such early action may result in the possible consequences of a contingency event being avoided or, at least, mitigated. The AER considers that such an outcome would increase the reliability and efficient operation of the power system and the NEM more generally.

D. EXPLANATION OF EXPECTED BENEFITS, COSTS AND IMPACT ON THOSE AFFECTED

There are a number of important benefits associated with the Rule change proposal. In particular, the proposal will help to ensure that the re-classification process is more consistent, transparent and rigorous. In turn, these benefits will enhance reliability and security of the power system.

The establishment and application of the risk assessment criteria in accordance with the Rule change proposal may entail some cost for NEMMCO and potentially TNSPs. However, NEMMCO and TNSPs have already taken steps that are consistent with the Rule change proposal, in recognition of the fact that the costs are outweighed by the significant benefits.

APPENDIX A

RULE CHANGE REQUEST – RECLASIFICATION OF CONTINGENCY EVENTS

TEXT OF PROPOSED AMENDMENTS

1. Amend clause 4.2.3 as follows:

4.2.3 Credible and non-credible contingency events

- (a) A “*contingency event*” means an event affecting the *power system* which *NEMMCO* expects would be likely to involve the failure or removal from operational service of a *generating unit* or *transmission element*.
- (b) A “*credible contingency event*” means a *contingency event* the occurrence of which *NEMMCO* considers to be reasonably possible in the surrounding circumstances including the *technical envelope*. Without limitation, examples of *credible contingency events* are likely to include:
 - (1) the unexpected automatic or manual *disconnection* of, or the unplanned reduction in capacity of, one operating *generating unit*; or
 - (2) the unexpected *disconnection* of one major item of *transmission plant* (e.g. *transmission line, transformer* or *reactive plant*) other than as a result of a three phase electrical fault anywhere on the *power system*.
- (c) A “*single credible contingency event*” means an individual *credible contingency event* for which a *Registered Participant* adversely affected by the event would reasonably expect, under normal conditions, the design or operation of the relevant part of the *power system* would adequately cater, so as to avoid significant disruption to *power system security*.
- (d) The “*critical single credible contingency event*” at any particular time is the *single credible contingency event* considered by *NEMMCO*, in the particular circumstances, to have the potential for the most significant impact on the *power system* at that time. This would generally be the instantaneous loss of the largest *generating unit* on the *power system*. Alternatively, it might be the loss of any *interconnection* under *abnormal conditions*.
- (e) A “*non-credible contingency event*” is a *contingency event* other than a *credible contingency event*. Without limitation, examples of *non-credible contingency events* are likely to include:
 - (1) three phase electrical faults on the *power system*; or
 - (2) simultaneous disruptive events such as:
 - (i) multiple *generating unit* failures; or

- (ii) double circuit *transmission line* failure (such as may be caused by tower collapse).
- 2. Delete clause 4.2.3(f).
- 3. Insert a new clause 4.2.3A

4.2.3A Re-classifying contingency events

- (a) Abnormal conditions are conditions posing added risks to the *power system* including, without limitation, severe weather conditions, lightning, storms, and bush fires.
- (b) If *abnormal conditions* exist *NEMMCO* must:
 - 1) on an ongoing basis, make reasonable attempts to obtain all information relating to how the *abnormal conditions* may affect a *contingency event* from all available sources, including from *Registered Participants*, emergency services agencies and any other body that may possess relevant information.
 - 2) identify any *non-credible contingency event* the occurrence of which is made more likely by the existence of the *abnormal conditions*.
- (c) As soon as practicable after *NEMMCO* identifies a *non-credible contingency event* in accordance with clause 4.2.3A(b), *NEMMCO* must provide *Market Participants* with a notification specifying:
 - (1) the abnormal conditions;
 - (2) the relevant *non-credible contingency event*
 - (3) *NEMMCO's* current assessment of the likelihood of the occurrence of the event – that is whether it is classified as a *credible contingency event* or a *non-credible contingency event*;
 - (4) information in its possession that is relevant to its consideration under clause 4.2.3A(e), the source of that information and the time that information was received or confirmed by *NEMMCO*;
 - (5) the time at which the notification has been issued; and
 - (6) the time at which an updated notification is expected to be issued, where this might be necessary.
- (d) *NEMMCO* must update a notification issued in accordance with clause 4.2.3A(c) as it becomes aware of new information that is material to the assessment under clause 4.2.3A(e), and in any event no later than the time indicated in the original notification pursuant to clause 4.2.3A(c)(6), until such time as it issues a notification specifying that the *abnormal conditions* have ceased to have a material effect on the likely occurrence of the *non-credible contingency event*.
- (e) If *NEMMCO* identifies a *non-credible contingency event* in accordance with clause 4.2.3A(b) it must, on an ongoing basis, consider whether the occurrence of the *non-credible contingency event* is reasonably possible, having regard to all the facts and circumstances.

- (f) In undertaking its consideration in accordance with clause 4.2.3A(e) *NEMMCO* must have regard to criteria referred to in clause 4.2.3B.
- (g) If, after undertaking a consideration in accordance with clause 4.2.3A(e), *NEMMCO* reasonably considers that the *abnormal conditions* make the occurrence of a *non-credible contingency event* reasonably possible, it must reclassify that event to be a *credible contingency event* and must notify *Market Participants* as soon as practicable.
- (h) If, after reclassifying a *non-credible contingency event* to be a *credible contingency event* in accordance with clause 4.2.3A(g), *NEMMCO* considers that the relevant facts and circumstances have changed so that the occurrence of that *contingency event* is no longer reasonably possible, *NEMMCO* may reclassify that *event* to be a *non-credible contingency event*. If *NEMMCO* does so, it must update the notification to *Market Participants* in accordance with clause 4.2.3A(d) as soon as practicable.
- (i) Every six months, *NEMMCO* must issue a report setting out its reasons for all decisions to re-classify *non-credible contingency events* to be *credible contingency events* under clause 4.2.3A(g) during the relevant period. The report must include an explanation of how *NEMMCO* applied the criteria established in accordance with clause 4.2.3B for each of those decisions. The report may also include *NEMMCO*'s analysis of re-classification trends during the relevant period and its appraisal of the appropriateness and effectiveness of the relevant criteria that were applied in the case of each re-classification decision.

NB: The AER recommends that clause 4.2.3A(f) not come into effect until *NEMMCO* has established the criteria referred to in proposed clause 4.2.3B (below).

4. Insert a new clause 4.2.3B

4.2.3B Criteria for re-classifying contingency events

- (a) Within 6 months of the commencement of this clause, *NEMMCO* must establish criteria that it must use when considering whether *abnormal conditions* make the occurrence of a *non-credible contingency event* reasonably possible under clause 4.2.3A(g). *NEMMCO* must:
- (1) establish the criteria following consultation with relevant stakeholders including *Market Participants*, *Transmission Network Service Providers*, *Jurisdictional System Security Coordinators* and emergency services;
 - (2) ensure that the criteria include a requirement to have regard to the particulars of any risk(s) to the *power system* associated with the various types of *abnormal conditions* that might arise; and
 - (3) publish the criteria on its website as soon as practicable after the criteria have been established.
- (b) *NEMMCO* must review the criteria established in accordance with clause 4.2.3B(a) every 12 months. *NEMMCO* must undertake the review following consultation with relevant stakeholders including *Market Participants*, *Transmission Network Service Providers*, *Jurisdictional System Security Coordinators* and emergency services.

- (c) *NEMMCO* may amend the criteria established under clause 4.2.3B(a) following consultation with relevant stakeholders including *Market Participants, Transmission Network Service Providers, Jurisdictional System Security Coordinators* and emergency services.

5. Amend clause 4.8.15 by inserting the following:

- (ca) With respect to a report that has been prepared by *NEMMCO* in accordance with clause 4.8.15(a)(1) or (3) that relates to an operating incident involving a *non-credible contingency event*, the report must include details of how the re-classification criteria identified under clause 4.2.3B that are applicable to that *contingency event* were assessed and applied in the context of that event.