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Submission on Credible Event Management Draft Scope and Methodology

Introduction

1. Vector welcomes the opportunity to provide this submission on the System Operator's consultation on Credible Event Management. Vector agrees that a review of the Credible Event Management framework is timely and that clarity on the trade off between pre and post-event contingencies could be useful.

General comments

2. Vector supports the System Operator's intention behind the consultation. We consider that a robust framework to select optimal measures to respond to credible events would be valuable.

3. However, Vector has some concerns that this workstream may result in outcomes similar to some reviews of grid upgrade proposals, where cost estimates based on uncertain and heavily aggregated data are used make decisions without acknowledging the lack of certainty in the data. In the case of this proposal, Vector would hope that even if the methodology produced a particular outcome, there would be scope for selecting a different option where expert judgement and appropriate consideration of risks would suggest that the outcome selected by the methodology is not the best.

4. Vector supports the methodology as a means of choosing between different options in reaction to an event. However, the methodology should not be used as a justification for doing nothing to prevent involuntary load shedding or to move away from N-1 security standard. The uncertainty and lack of reliability in the

inputs being used means that the methodology is unlikely to be able to provide sufficient certainty in its results to justify involuntary load shedding.

5. As a linked issue, Vector suggests that a relevant question for the review to consider is whether there are any outcomes which are by definition unacceptable, regardless of the cost to avoid them.

6. Vector submits that the fundamental issue which needs to be addressed is that the grid is planned to one standard but operated to another. As long as this situation continues, problems such as those the Credible Event Management policy is intended to address will occur. Vector submits that it is not practical to have planning standards and operating standards that are not aligned.

Specific comments on the paper

7. Vector suggests that it should be made clear who has responsibility for deciding what an acceptable trade off is between shedding load prior to an event or taking a risk that an event will occur and implementing contingency actions following the event.

8. Vector's concerns with the methodology are mitigated to an extent by the statement that "the purpose of the cost value is to allow an assessment of the relative costs of an event for each available means of management rather than necessarily determining an actual event cost."¹ However, due to the uncertainty in the inputs there is still a risk that the methodology will produce results that are not accurate. Any decisions made on the basis of the costing methodology must recognise this uncertainty.

9. In particular, Vector is not convinced that the VoLL price of \$20,000/MWh is appropriate. It is very low compared to international standards and was derived from a survey conducted in 1992, since when there have been important changes to consumption patterns and end use applications. We suggest that the SO uses a number more aligned with international practice (perhaps the number recently published by the Australian Energy Regulator for the Value of Customer Reliability, which equates to approximately NZ\$56,000). We are also unclear how the scenario costs of \$2000, \$5000 and \$10000/MWh for pre-arranged load shedding were derived. If they were based on VoLL, they are likely to also be under-estimates for the reasons given above. We also note that special protection schemes do not necessarily imply that voluntary load shedding will be available.

¹ *Security Policy Review: Credible Event Management DRAFT Scope and Methodology* consultation paper. Appendix 1, page 20.

10. Vector queries what the instantaneous reserves figures and overfrequency reserves values are based on. Are they a form of historical average, or forecast average?

11. Vector notes that in the example in Appendix 4 relating to the Hawkes Bay Load Duration Curves that for approximately 10% of the time the load is above the pre-arranged load shed level. So if an event was to occur during a period of very high load, additional load would need to be shed voluntarily (or all load could be lost if the transformer trips). Vector believes that a more risk-averse approach would be appropriate.

Conclusion

12. In summary, Vector agrees with what the System Operator is attempting to achieve, but is concerned that the numbers and methodology being used are so uncertain and aggregated that the results they produce may not be robust. This uncertainty is less important provided (a) that the results are only used to compare the relative value of different options, and (b) that doing nothing (i.e. allowing people to be turned off) is not considered as an option. Vector submits that the results of the methodology must not be used to justify any move away from an N-1 security standard.

13. Thank-you for considering this submission. If you require further information please contact me on 09 978 7612 or at tim.chatterton@vector.co.nz.

Yours sincerely,

A handwritten signature in purple ink, appearing to read 'M Chatterton', with a stylized flourish at the end.

Tim Chatterton
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