

Northpower

**Extended Reserve
Code Amendment**

11 May 2021

Introduction

Northpower welcomes the opportunity to provide feedback on the Electricity Authority's consultation paper on its proposed amendment to the Code to transition Automatic under-frequency load shedding provision in the North Island to the system operator's proposed 4-block scheme.

1. Do you agree the issues identified by the Authority are worthy of attention?

We agree that the retirement of thermal units increases the risks associated with an under-frequency event, and therefore support the proposed change from a 2 block to a 4 block AUFLS scheme.

2. Do you agree with the objectives of the proposed amendment?

We agree with the objectives of the proposed amendment.

3. Do you agree with the proposed changes to the monitoring data resolution and requirements?

Yes, provided there is some way to highlight and account for significant changes in network feeder configuration or significant changes in load.

4. Do you agree with the incorporation by reference of the ATR and the proposed process for amending the ATR?

Yes

5. Do you agree that a 30 June 2025 deadline will provide enough time for providers to transition their systems to the 4-block AUFLS scheme?

Yes, provided that the proposed code change is made with sufficient time to implement the changes, (budget, design, procure install and test).

6. Do you agree with the use of equivalence arrangements to allow previously exempted parties to work towards compliant AUFLS provision?

Yes, noting that our large industrial consumers represent around 40% of our AMD at peak times, and a larger proportion off-peak. As such, with the expiry of existing exemptions, these consumers will either need to modify their operations to ensure compliance, or procure an equivalent service from another provider.

7. Do you agree the benefits of the proposed amendment outweigh its costs?

No comment

8. Do you agree the proposed amendment is preferable to the other options? If you disagree, please explain your preferred option in terms consistent with the Authority's statutory objective in section 15 of the Electricity Industry Act 2010.

We support the option preferred by the Authority.

9. Do you agree the Authority's proposed amendment complies with section 32(1) of the Act?

No comment

10. Other comments

There a couple of issues that don't appear to have been considered.

Firstly is the behaviour of inverter connected DGs particularly the small scale DGs and those that don't come under Part 8 of the Code. In theory these DGs should ride through under frequency event and only disconnect the generation at a frequency below the extended reserve trigger point by a margin 0.3 Hz. As the penetration of DGs increases they will become a significant factor and it would be prudent to validate the under frequency performance of these inverters and not just rely on a statement of conformity from the manufacturer, given that these are programmable devices.

Secondly the dynamic behaviour of large motor needs to be considered particularly when conducting a post analysis as the transient behaviour of significant motor loads may appear as a load increase in some situations. Also the data that the System Operator is looking to require pre-implementation of the proposed extended reserve scheme doesn't specifically ask for motor data which would indicate this is not a consideration.