

7 May 2021

Chris Otton
Senior Advisor Market Design
Electricity Authority
By email to WholesaleConsultation@ea.govt.nz

Dear Chris

Extended reserve code amendment

1. This is a submission by the Major Electricity Users' Group (MEUG) on the Electricity Authority (EA) consultation paper "Extended Reserve Code amendment" (ER) and separate documents for appendix A and D published 13th April 2021.¹ MEUG members have been consulted in the preparation of this submission. This submission is not confidential. Some members may make separate submissions.
2. MEUG welcomes the path forward proposed to have a pragmatic evolution of the Automatic Under-frequency load shedding (AUFLS) regime. However, the details matter. There are several important aspects of the proposed Code amendment and AUFLS Technical Requirements (ATR) that are unclear. It is critical the EA, System Operator and affected direct connects are "on the same page" to avoid misunderstandings or unintended consequences before the new regime is codified and implemented. We do not want to discover in the implementation phase we had thought the regime meant one thing only to find the System Operator and EA intended another. MEUG proposes two solutions to avoid this risk:
 - a) The Code amendment and the final proposed ATR need to be completed simultaneously rather than as proposed, the Code first and then the ATR.
 - b) Last year COVID-19 prevented an opportunity for a face-to-face meeting between the System Operator, EA and MEUG members. MEUG strongly recommends such a meeting must be held to clarify the issues set out in this submission.
3. Responses to questions in the consultation paper follow:

¹ Zipped document URL <https://www.ea.govt.nz/zipcontroller/download/d91a63d6aed4f762ea5f45650e785bb4>

Question	MEUG comment
1. Do you agree the issue identified by the Authority are worthy of attention?	Yes. MEUG’s reading of the paper is the focus of the EA set out in section 2 is to facilitate physical resilience with a pragmatic AUFLS scheme for the North Island that is as near to lowest cost as possible. This differs from the prior planned ER regime that focussed on minimum cost subject to ensuring physical resilience.
2. Do you agree with the objectives of the proposed amendment? If not, why not?	Yes, agree with the objectives.
3. Do you agree with the proposed changes to the monitoring data resolution and requirements? If you disagree, what monitoring regime do you think would be more efficient?	No comment as does not apply to grid connected MEUG members with AUFLS exemptions.
4. Do you agree with the incorporation by reference of the ATR and the proposed process for amending the ATR?	Yes, this aligns with the more pragmatic approach to be adopted. As explained in paragraph 2 of this submission MEUG sees risks in proceeding to amend the Code first and then finalise the ATR. In our view, both need to be completed simultaneously.
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?	While this question is for North Island Electricity Distribution Businesses (EDB), MEUG members in some cases will have the same timing challenge as EDB to implement approved equivalence arrangements. That is, once exemptions expire on 30 th June 2022 [3.41] then either: <ul style="list-style-type: none"> If for part or all the load there are no equivalence proposals, and the System Operator is satisfied all efforts have been made to check if any options are possible, then for that part of their load, the direct connect in effect operates per the status quo. What matters to the System Operator is [3.19]: “Whilst every distributor and direct connect consumer will be obligated to provide AUFLS, individual provision will be assessed based on the provider’s contribution to the overall AUFLS scheme.” And later in [3.36]: “Direct connect consumers unable to isolate appropriate proportions of their load to provide

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	<p>AUFLS will be encouraged to seek equivalence arrangements for their AUFLS provision obligations.”</p> <p>In other words, direct connect consumers must demonstrate to the System Operator they have taken reasonable steps to identify onsite AUFLS or otherwise source equivalence proposals. It is not a breach of the Code if after searching a direct connect consumer cannot find an equivalence proposal from either another direct connect consumer or an EDB.</p> <ul style="list-style-type: none"> • If for part or all the load there are equivalence proposals that the System Operator is satisfied will effectively contribute to the NI AUFLS scheme, the direct connect consumer has 3-years between 30th June 2022 and 30th June 2025 to plan, procure and implement that equivalence arrangement. This is the same challenge EDB have.
<p>6. Do you agree with the use of equivalence arrangements to allow previously exempted parties to work towards compliant AUFLS provision?</p>	<p>Yes, provided the discretion of the System Operator is exercised reasonably. See MEUG response to question 5 above on how we understand the equivalence arrangements will work.</p> <p>There is an open question how direct connect consumers could seek a review of a decision by the System Operator that imposed an equivalence regime that the direct connect consumer viewed as onerous. That is, the direct connect consumer may consider there are no feasible equivalence arrangements whereas the System Operator has a different view.</p>
<p>7. Do you agree the benefits of the proposed amendment outweigh its costs?</p>	<p>Agree the benefits are likely to exceed the costs.</p> <p>As we explain in the answer to the next question, we do not believe the proposal is the best option.</p>
<p>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.</p>	<p>The option of simultaneously agreeing a Code amendment and the final text of the ATR is, in our view, a better solution than the proposal. The rationale for simultaneously agreeing both is discussed in paragraph 2 of this submission.</p> <p>In the appendix to this submission is an inaugural list of issues in the draft ATR that need to be clarified. Clarification of those issues may lead to changes to the definitions and other aspects of the proposed Code amendment. Hence the need to simultaneously settle the final text of the Code and ATR.</p>

Question	MEUG comment
	<p>The above comments relate to the immediate task of finalising and implementing a near-term improvement to the regime. The balance of the answer to this question relates to the longer-term evolution of the regime.</p> <p>MEUG agrees with the consultation paper [3.54]</p> <p>“Dynamic management would always provide optimum AUFLS coverage and make load management resources available for other uses.”</p> <p>The paper considers a dynamic management regime would add implementation costs, time and added risks compared to the proposal. No values are assigned to either the incremental benefits or incremental costs of a dynamic management regime. It is possible that the incremental benefits over time would exceed the incremental implementation costs of such a scheme.</p> <p>MEUG does not consider delaying implementation is a problem given the consultation paper confirms there is no problem with the current regime, e.g., in the Executive summary pi:</p> <p>“Additionally, process and tool improvements implemented since 2010 give the system operator confidence that the current 2-block scheme is fit for purpose for managing the power system risks of today.”</p> <p>What matters is how fast the current power system make-up may radically change to add material risk to the current 2-block scheme.</p> <p>MEUG would have preferred that analysis had been undertaken to know for sure the proposal was the best option.</p> <p>In the absence of such an analysis MEUG recommends the EA consider if there are any design features of the proposal that may inhibit migrating in the longer-term to a dynamic management regime. If issues are found, then the EA should consider solutions to remove those barriers impeding the option of a longer-term optimal solution using dynamic management.</p>
<p>9. Do you agree the Authority’s proposed amendment complies with section 32(1) of the Act?</p>	<p>No.</p> <p>A better option is to address the uncertainties in the application and interpretation of the ATR and consistency with the proposed Code amendment as discussed in paragraph 2 of this submission and answer to question 8 above.</p>

Question	MEUG comment
<p>10. Do you have any comments on the drafting of the proposed amendment?</p>	<p>Yes.</p> <p>MEUG does not support the drafting as proposed because, as noted in paragraph 2 of this submission and answers to questions 8 and 9 above, a better option is to simultaneously settle the final text of the Code and ATR.</p> <p>In addition to the points made above and in the appendix of issues needing clarifying in the ATR, MEUG notes that there is no definition of “pre-event demand” in the proposed Code amendment or draft ATR. The noun “pre-event demand” is used in the draft Code clause 7 subsections (6)(a) and (6A), and twice on page 19 and once on page 23 of the draft ATR. The final AUFLS settings for a year will be set ex ante by the System Operator based on historic information and agreed equivalence arrangements. It is an easier exercise to give certainty to EDB about what level of “pre-event demand” the System Operator will set for EDB given they have relatively predictable and diversified load compared to direct connects. MEUG members would like to understand how the System Operator may estimate “pre-event demand” for them given the unpredictability and large step changes in demand that are for business-as-usual for North Island direct connects.</p>

4. MEUG looks forward to the EA considering our proposals in paragraph 2 for a face-to-face meeting of the system Operator, EA and direct connects, to facilitate the simultaneous finalisation of the Code amendment and ATR.

Yours sincerely



Ralph Matthes
Executive Director

Appendix: Issues with the draft ATR

Aspects of the draft AUFLS Technical Requirements (ATR) that require clarification follow:

- [1] Given the unique nature of many industrial loads, 'equivalents' to match the pre-event load probably don't exist.

We address this topic in the covering submission answer to question 5. Confirmation that MEUG's understanding of the process set out in that answer is important to ensure there is no misunderstanding of the intended process.

- [2] The draft ATR proposes 0.3 seconds time delay from frequency triggers to confirmation that the load has disconnected. We doubt that most feeders could be disconnected this fast; FIR Load is less than 1 second; AUFLS of 0.3 seconds is probably not achievable by many. 0.5 seconds would be more achievable.

- [3] Total AUFLS Provider demand is defined in page 19 with reference to a calculation in section 6 of the draft ATR. There is no section 6 in the draft ATR.

We assume, but would like to clarify, that the definition refers to the schematics and calculations on page 25 that show AUFLS Load Obligations equal to Gross Load (i.e., Demand plus Generation).

This is a fundamental issue for MEUG because the AUFLS obligation calculation on page 25 does not deduct IL or Co-Gen Load or Load required to comply with H&S Acts. MEUG's view is that AUFLS obligations for direct connects must deduct these loads first.

Therefore, the AUFLS demand obligation would be calculated as:

$$2 \times 16\% \times (\text{Gross Load minus IL, minus Co-Gen Load, minus Safety load}) \text{ MW.}$$

Note MEUG's proposed calculation appears to be consistent with the statement in paragraph [3.52] of the consultation paper, relating to the alternative option of continuing the current "at least" basis for a 4-block proposal,

"However, the continuation of the current over arming practice would mean that load may be assigned to AUFLS that could otherwise have been assigned to other uses, such as interruptible load."

To be consistent the same should apply to the value of IL that direct connect consumers contribute to an emerging AUFLS event. Hence AUFLS obligations for direct connects should be calculated based on site load after IL is deducted.

In summary there are three issues of concern:

- Confirmation that AUFLS requirements are to be net of IL.
- Need to exempt load that maintains generation. MEUG believes there is a high risk of significant unintended consequences such as reducing IL Load Reserves and tripping Co-Generators during AUFLS events with the proposal in the draft ATR.
- Issue of tripping supply with H&S and plant integrity implications.