NS05-30

Distributed Generation

Congestion Management Standard

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1 DOCUMENT CONTROL

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Revision history	Description of Change	Date
Version 1	New document	Dec 2021
Version 2	Constraint priority update based on industry experience	Nov 2023

2 INTRODUCTION

Network Waitaki provides electricity lines services to our connected customers via our electricity distribution network.

Our distribution network is shared by many customers, each receiving power sufficient to meet their specific electrical needs.

However, any localised over-supply of exported energy from distributed generation (DG) into our network has the potential to cause power quality issues and adversely impact other customers. We strive to ensure that our network is safe for our workers, our customers and the equipment connected to it.

The Electricity Industry Participation Code 2010 (the Code) governs the connection of DG to ensure that the operation of New Zealand's electricity grid remains stable and reliable. In accordance with Part 6 of the Code, we manage the connection of DG to our network to ensure all appropriate requirements are met without adversely impacting our other customers.

3 SCOPE

This standard applies to any device that can inject power into our network.

4 CONGESTION MANAGEMENT

We manage the integration of Distributed Generation to minimise congestion by:

- Using our DG connection process and DG Standards
- Ensuring DG equipment has appropriate protection and control technology
- Ensuring DG power output does not cause network components to malfunction or exceed ratings
- Ensuring the network has the capacity to accommodate the injection from the installed DG
- Publishing congested areas on our website

DG power output may need to be curtailed or disconnected from the network in the following circumstances:

1. DG power output is likely to cause the network to exceed voltage limits set by the Electricity (Safety) Regulations Clause 28(1)(b)
2. Operation of customer DG is likely to present a danger to workers on our network. This could be due to the operation of the installation being contrary to recognised industry-wide safe-working practices, or when work is carried out on live LV conductors
3. Operation of the customer DG may exceed the fault or current rating of network equipment
4. Operation of the customer DG may disrupt supply to other customers. E.g. power quality issues such as excessive voltage fluctuations or harmonics

4.1 Curtailment, disconnection and management of DG

Where network issues are identified we may require the DG operator to curtail the DG to reduce output, operate within nominated times or under nominated conditions, or disconnect the DG.

No compensation will be paid by Network Waitaki should DG output be curtailed or otherwise managed.

Curtailment or other management techniques may be applied to any or all of the DG operators on that part of the network experiencing the conditions. NWL will generally manage DG operators in the following order:

1. Flexible plant interrupted first (e.g. gas/diesel generators or batteries)

2. Intermittent/interruptible plant interrupted second (e.g. solar and wind)

3. Inflexible plant third (e.g. hydroelectric)

If curtailment of the DG output fails to address the conditions compromising the network, disconnection of any or all of the DG installations connected to the affected part of the network may be required.

During a constraint situation, NWL will use best endeavours to ensure that any DG curtailment or management is proportionate to the share of total DG output at the time the constraint is identified (based on capacity installed). Electricity networks are dynamic and future changes to network conditions may result in a reassessment of previously accepted DG applications.

5 APPLICATIONS TO CONNECT

We will review all DG applications for both new connections and changes to existing connections (e.g. changes to nameplate capacity or fuel type), and identify situations where the connection of DG may compromise the safety and operational performance of the network.

If, in our assessment, the connection of the proposed DG will result in network congestion, we will offer guidance to the applicant to help enable them to meet our requirements.

If the proposed DG installation is still unable to meet our requirements to avoid congestion, the application to connect to the network will be declined (with an explanation). Where the application is declined, the applicant may wish to resubmit a revised application addressing the issues in the original application and we will work with the applicant to identify potential solutions that may allow us to reverse the declined application. For example, this may include restricting export to certain time periods.

6 EXPIRY OF APPROVED APPLICATIONS

Approved DG applications may be cancelled by us if they are not constructed within 18 months.

The applicant will be advised by email to the email address on the application. A new DG application will be required if the applicant wishes to continue to connect.

If the applicant has only partially installed the approved DG on the application, the remainder may be cancelled after 18 months. A new application must be submitted for the remaining DG following the cancellation.