

# Generator compliance template review 2019

## The Reliability Panel has published a final report on changes to the template for generator compliance programs

Generators must meet technical performance standards so they do not adversely affect power system security. The template for generator compliance programs helps generators with developing and designing programs to test and monitor their compliance with performance standards.

The Panel has completed its review of the template for generator compliance programs. Under the NER, the Panel is charged with undertaking a period review of the template.

This review occurred following the Commission's final determination for the *Generator Technical Performance Standards (GTPS)*, which altered and added technical performance requirements applying to connecting generators in a range of areas. In the final determination, the AEMC committed to directing the Panel to review the template for generator compliance prior to its next scheduled review.

In this review, the Panel investigated whether the current template is consistent with changes to the rules, the emergence of new technologies, and new performance standards and compliance methods. The Panel's final recommendations are to amend the template to:

- address changes to the generator technical performance standards made in the Commission's GTPS rule, and
- update the template and enhance its clarity and usability.

The revised template becomes effective on 19 December 2019.

## Final recommendations - addressing the GTPS rule change

A key part of the review was to adjust the template to reflect the AEMC's recent GTPS rule.<sup>1</sup> The Panel's final decision amends the template to address the changes made to technical performance standards in the following areas:

- suggest compliance testing occur following at least one major voltage disturbance every 3 years to assess generating system reactive current injection and absorption performance.<sup>2</sup>
- clearly provide for the testing of multiple reactive power control modes by requiring compliance testing to address all operating control modes listed in the generator performance standard.<sup>3</sup>

## Final recommendations - improving usability and clarity

The Panel has also made a range of changes to improve the template's usability and clarity. The Panel's final decisions updates the template so that it is clear but also flexible enough to allow for future changes in technology, testing and monitoring methods. These include to:

- define 'major event', 'significant disturbance', and 'major disturbance' in the template and provide guidance to users on interpreting these definitions

<sup>1</sup> AEMC, Generator technical performance standards rule, 2018.

<sup>2</sup> This is to address the new requirements added to S5.2.5.5 for generators to inject or absorb reactive current when maintaining continuous uninterrupted operation for voltage disturbances.

<sup>3</sup> This is to address the new requirement added to S5.2.5.13 for generating systems to operating in multiple commissioned reactive power control modes.

- clarify arrangements for testing full reactive power capability as being subject to not exceeding network voltage limits
- include guidance on how to address any interdependencies between a generating system's performance and the performance of remote equipment relevant to a generator's compliance
- clarify the trigger for, and frequency of, compliance testing in response to disturbances to power system frequency
- clarify references to 'plant change' within the template, update the template definition of plant change to include changes in generating system software and firmware and to be consistent with clause 5.3.9 of the NER
- remove the method for testing a generator response to disturbance by instigating a network trip due to the system security risks associated with conducting a 'fault throw test'
- clarify that "appropriate metering" for power quality compliance testing involves power quality metering equipment using measurement sensors with sufficient frequency bandwidth
- clarify that compliance testing for "partial load rejection" should occur when power system frequency moves out of the operational frequency tolerance band or every 5 years (whichever is more frequent)
- clarify that high speed monitoring is an acceptable method for demonstrating compliance with reactive power and voltage control requirements
- remove inappropriately technology specific language from a number of test methods, and
- add additional guidance for generators on validating and updating their generating system models, and having control and protection setting changes approved by AEMO and the relevant NSP.

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