



Grid Code Testing Requirements



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1. Background

The aim of this document is to provide the EirGrid TSO requirements for a User organising Grid Code Testing. These requirements include;

- Timelines before and after the Grid Code Test,
- Test procedure content and structure,
- Test report content and structure.

2. Timelines for Grid Code Tests

Pre Test:

- Test Procedures should be submitted at least 20 business days in advance of the test date to generator_testing@eirgrid.com and are to be agreed 10 business days in advance of the proposed test date,
- Test profiles¹ and test requests shall be sent to generator_testing@eirgrid.com 10 business days in advance of the proposed test date,
- Test profiles and test requests must be sent to control@eirgrid.com for approval at least 5 days in advance of test,
- Test profiles are refined and resubmitted to control@eirgrid.com 1 business day in advance of test,
- Generator_testing@eirgrid.com shall be copied on all correspondence in relation to the Grid Code Test.

Post Test:

- Signed test procedures and data files shall be sent to generator_testing@eirgrid.com 1 business day after the test,
- Test reports shall be sent to generator_testing@eirgrid.com 10 business days after the test or as otherwise agreed.
- 10 business days shall be allowed for comments or feedback on the Grid Code Test Report.

3. Grid Code Test Procedure – Content and Structure

Each Test Procedure will consist of the following sections highlighted below:

1. Version Control

Version control of all test procedures is required. A new version shall be revised based on EirGrid feedback as appropriate and resubmitted to generator_testing@eirgrid.com. Document versioning shall record the following:

- a. Version number,
- b. Version summaries,
- c. Date of latest version,
- d. Author.

2. Test Objective

Description of the test including references to specific clauses and Grid Code version e.g.

The objective of the test is to demonstrate the signals as defined in the signal list. This will be completed in accordance with the Grid Code Version 4.0 Section CC.12.

3. Grid Code Reference;

Include definitions and extracts of the Grid Code² as applicable.

¹ <http://www.eirgrid.com/media/Test%20Profile%20Template.xlsx>

² <http://www.eirgrid.com/media/Grid%20Code%20Version%204.pdf>



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4. Description of the test to be carried out;

A series of bullets providing overview of the test to be carried out.

5. Test Criterion

Describe the criteria for the test to be carried out successfully e.g.

- Numerical table with Grid Code requirements and expected results from the test

6. Safety precautions

Any safety precautions that must be adhered to should be listed in this section. These precautions can range from the PPE requirements for those attending site to specific precautions on the unit itself. Should site induction be required for an Eirgrid witness, this shall be included here.

7. Testing prerequisites

This section of the procedure shall list actions to be taken or conditions to be in place prior to the commencement of the test e.g.

- If the test is part of a defined sequence of tests, one of the test's prerequisites may be that the tests earlier in the sequence have been carried out.
- If temporary settings have to be applied to certain equipment, the prerequisite would be the application of these settings.
- If the unit must be on load, generating at a defined MW level (Generated / Exported)
- Approval of test request and profile by EirGrid

8. Test execution plan

This is the detailed step-by-step plan for carrying out the test. The test execution plan shall be in the following table format:

STEP	Description	Unit Witness	EIRGRID Witness	Time
1	Confirm prerequisites in Section 7 are satisfied			
2	Contact NCC and request test to proceed			
3				
4				
5				
6				
7				
8				
9				
10				
11	Contact NCC and notify of test completion			
12	Test Ends			

Note that for any change in Active or Reactive Power approval from NCC must be received. This should be reflected in the test execution table.

9. List of data trends and screenshots to be recorded

A list of all of the data recorded during the test shall be included within the test procedure. This shall include;

- Measurement device
- Units being measured,
- Accuracy of measurement,



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- Point of measurement.
- Sampling frequency,

Similarly if the user shall provide screen shots of the control system as part of their supporting evidence. A list of these must also be included. Where more than one recording device is used the time stamps should be synchronised.

10. Signoff Sheet

Comments:

Unit Witness Signoff _____ Date / Time: _____

EirGrid Witness Signoff _____ Date / Time: _____



4. Grid Code Test Report – Content and Structure

Each Test Report will consist of the following sections highlighted below:

1. Version Control

Version control of all test reports is required. A new version shall be revised based on EirGrid feedback as appropriate and resubmitted to generator_testing@eirgrid.com. Document versioning shall record the following:

- a. Version number,
- b. Version summaries,
- c. Date of latest version,
- d. Author.

2. Executive Summary

This shall include:

- a) Grid Code Test Number,
- b) Record of test dates
- c) Grid Code References,
- d) Test objective,
- e) Registered Capacity of the unit,
- f) Summary of test results in table format.

3. Test Objective

Description of the test including references to specific clauses to which version of the Grid Code.

4. Test Execution

This is confirmation that the test was carried out as per the test procedure. Should the test procedure have been altered on the day of test, then this will be highlighted within the test report.

5. Criteria for Compliance

This section should specify exactly what the unit needs to do in order to demonstrate compliance with the necessary section or clause in the Grid Code. This is should be in table format as appropriate.

6. Test Results

This is a summary of the test results and a statement whether the test satisfied the criteria for compliance. Tables shall be used highlighting the test criteria and the test results.

7. Engineering Analysis

This shall include extensive analysis of the test and shall include the following:

- a) Test history including assessment of unsuccessful tests and mitigating action taken in advance of this test.
- b) Assessment of test execution with the planned test procedure, (Test time against test profile, EDIL Declarations and instructions as appropriate, communications with NCC),
- c) Unit performance during the test. This will include reference to measurement devices and sampling rates, assessment of the stability of the Unit, analysis data trends submitted for the test,
- d) Confirmation that the Unit remained within its operational emission levels, as stated in the appropriate EPA licence.
- e) Any system conditions which impacted on the test,
- f) Unit protection or alarms activated during the test.
- g) Derived calculations, graphs and formulas,
- h) Analysis of test data and clear referencing of the supporting documentation.

8. Supporting Documentation

All supporting documentation for test assessment shall be listed or embedded as appropriate within the test report. This shall be easy to follow for the reader. Tables, graphs and screenshots, or pictures can be included and shall have appropriate numbering captions with comments or highlights.



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Where embedded attachments are not feasible, supporting documents can be included as an attachment to the report.

- a) Signed test procedure,
- b) Test data recorded in .csv file format including a data tag table for the purpose of identifying the data stored,
- c) Where requested in the test procedure screenshots taken over the course of the test,
- d) A table of all included graphs and data trends with caption,
- e) Unit Reference documents as required.
 - Unit manuals,
 - Name plate rating of the Unit,
 - Correction curves for ambient conditions,
 - Unit capability curves