SECONDARY FUEL TESTING ARRANGEMENTS

SUMMARY DOCUMENT

JULY 2010

Note:

1. This summary document has been produced by EirGrid for information only. Parties should base any decision or actions on the legally binding documents rather than on this summary.

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1. BACKGROUND

This document, for information, contains a summary of the secondary fuel testing requirements. This document summarises the arrangements for testing the capability of a generation unit to change-over from primary to secondary fuel and back to primary fuel on instruction from EirGrid. It also summarises the requirements associated with fuel stock inspections.

It should be noted that this document is not intended in any way to provide all the information relating to secondary fuel testing. The consultation and decision documents[1] should be examined and analysed in detail for further information.

2. FUEL STOCK TESTS

2.1. FUEL STOCK REQUIREMENTS

CER Decision 09/001 stated that there were certain secondary fuel stock level requirements for different types of generators. The secondary fuel stock level requirements are outlined in Table 1 below.

Table 1: Summary of Fuel Stock Requirements

Primary Fuel Type of Generating Unit	Requirement to be capable of running on secondary fuel	Requirement to hold stocks of that fuel
Gas units and CHP units of more than 10 MW	Yes	Requirement to hold secondary fuel
Non – gas units such as oil and coal (excluding renewable and peat units)	No requirement	Requirement to hold primary fuel
Renewable units	No requirement	No requirement
CHP units of 10 MW or less	No requirement	No requirement
Peat units	No requirement	No requirement

2.1.1. Requirements

1) Generators are obliged to provide monthly reports to EirGrid on their secondary fuel stock levels (MWh). The report must show the available amount of secondary fuel (MWh) of the unit running continuously at rated capacity on its primary fuel.

[1] http://www.eirgrid.com/media/Secondary%20Fuel%20Consultation%20Aug09.pdf
http://www.eirgrid.com/media/EirGrid%20Secondary%20Fuel%20Recommendations%20Paper.pdf
http://www.cer.ie/en/electricity-security-of-supply-current-consultations.aspx?article=7d14283f-b667-4cdc-996b-61f6e56fd94e

2) When a generator has real time secondary fuel level indication commissioned, the unit will be required to provide this real time secondary fuel level indication to the National Control Centre (NCC) via this signal. The real time fuel level indication must show the available amount of fuel (MWh) of the unit running continuously at rated capacity on its primary fuel.

2.1.2. Quantity of Fuel to be Stored

Per CER Decision 09/001, the amount of fuel generators are required to store is based on the expected generating unit's running hours.

Higher Merit Generating Units

Generating units that expect to operate more than 2,630 hours per year are categorised as higher merit generating units for the purpose of this proposed decision. These units are required to hold stocks equivalent to five days continuous running based on the unit's rated capacity on its primary fuel.

Lower Merit Generating Units

Generating units that expect to operate less than 2,630 hours per year are categorised as lower merit generating units for the purpose of this proposed decision. These units are required to hold stocks equivalent to three days continuous running based on the unit's rated capacity on its primary fuel.

CHP units greater than 10MW

In recognition of the primary purpose of these units, CHP units with a capacity of greater than 10 MW will be required to hold fuel stocks equivalent to one day continuous running based on the unit's rated capacity on its primary fuel.

EirGrid will monitor the secondary fuel stock level compliance of generators.

2.2. FUEL STOCK INSPECTIONS

EirGrid will carry out physical inspections of the secondary fuel stocks held in secondary fuel tanks. It should be noted that inspections will be carried out on all secondary fuel storage locations including offsite third party locations.

2.2.1. Requirements

1) EirGrid will carry out up to two physical inspections of secondary fuel stock levels per year. The inspections will be carried out during business hours on business days.
2) Notice will be issued by EirGrid to the appropriate nominated contact point for the generator. Notice of one business day will be given to the generation unit prior to the inspection. The generator will be required to facilitate EirGrid or their representative's access to their fuel stores and any reasonable request in the examination.

3) Where a generator's fuel stock is held off-site on their behalf by another party, the generator must arrange with the holder of the fuel to facilitate an inspection by EirGrid with one business day's notice as outlined above. A dedicated supply line (pipeline) with a dedicated pump must be in place between the off-site fuel storage and the generating station.

EirGrid may carry out random secondary fuel stock level checks as it deems appropriate. EirGrid will monitor and inspect the secondary fuel stock levels held by generators in accordance with the fuel stock quantities required under the Decision 09/001. There are certain specific criteria that will govern whether a unit is in accordance with the secondary fuel stock level obligations. These criteria are outlined in the following section.

2.2.2. Criteria – Passed Fuel Stock Test

A passed fuel stock test is one where the real time fuel stock levels/monthly stock level reports are in accordance with the physical fuel stock inspection and where the readings confirm that there is sufficient fuel to meet the running requirements for the unit as defined by the Decision 09/001 and/or the Grid Code.

i.e. a passed fuel stock test is based on the generator meeting all of the following criteria:

1) That the required levels of secondary fuel stock (per section 2.1.2) communicated via real-time fuel level indication to the NCC or through the monthly reports are present in the tanks;
2) That the required levels of secondary fuel stocks following physical inspection are present in the tanks;
3) That tanks are replenished immediately following any secondary fuel usage by generator (without instruction from EirGrid)
4) That tanks are replenished in a prompt manner following a secondary fuel test (on instruction from EirGrid) within the specified window for replenishment (2 calendar months); and
5) The stored secondary fuel must be in usable form.

In all other cases, where the unit does not meet the criteria set out above, the secondary fuel stock test will be deemed a failure.

When an inspection takes place it will make reasonable allowance for any fuel used in recent secondary fuel tests (carried out on instruction from EirGrid) which is in the process of being re-stocked (within the allowed 2 month replenishment window) assuming evidence is provided to this effect. Any secondary fuel testing (or use of secondary fuel) which is carried out by the generator without instruction from EirGrid should not impact on the generator's required secondary fuel stock levels.

Generators are obliged at all times to make EirGrid aware of any material changes to the stock level of secondary fuel, its usability or the ability of the unit to operate on that fuel. For the avoidance of doubt, three hours (of running at rated capacity on primary fuel) will be deemed a material difference

in fuel stock levels (margin of error). Generators will be required to increase their stock to the required levels within two calendar months following the failed stock level test.

Following a secondary fuel test which is carried out on instruction from EirGrid there will be a reasonable period of time (two calendar months) allowed to the generation unit to replenish secondary fuel stock levels. During this time the unit will not be deemed to have failed the fuel stock level test provided the amount of fuel stored in the tanks is equivalent to the required stock level less the amount of fuel consumed during the secondary fuel test plus the allowed margin of error.

2.3. COMMUNICATION WITH EIRGRID

2.3.1. Data to be submitted to EirGrid

Where a generator does not have online secondary fuel stock level indication, secondary fuel stock levels (MWh) should be submitted to EirGrid at least once per month. This monthly report should be emailed to EirGrid at Generator_Testing@eirgrid.com on the 1st of each month and an update should be emailed to EirGrid if there are any material differences in the generator secondary fuel stock levels within month.

2.3.2. Notification of Secondary Fuel Stock Inspection

The generator is required to nominate a specific point of contact and an alternate to EirGrid (to Generator_Testing@eirgrid.com) for all communications with regard to secondary fuel stock inspections. EirGrid will notify the generator (via a specific point of contact) by email one business day in advance of the secondary fuel stock inspection.

2.3.3. Communication on Fuel Stock Levels

EirGrid will notify the generator (via the specific point of contact) of any non compliance with the required secondary fuel stock levels. Following a failed secondary fuel stock level inspection (as per criteria in section 2.5.1), EirGrid will issue a non-compliance notice to the generator within 20 business days. CER will also be notified of any non compliance with the required fuel stock levels.

3. SECONDARY FUEL TESTS

3.1. BACKGROUND

EirGrid can instruct a generation unit to perform up to two successful secondary fuel tests per year. This section defines the arrangements for testing the capability of a generation unit to start up on secondary fuel or change-over from primary to secondary fuel and back to primary fuel on instruction from EirGrid.

Definitions

Fuel Switch Over Output is the MW output not lower than minimum load, at which a generation unit can achieve a switch over from primary fuel to secondary fuel or vice versa.

Secondary Fuel Test

On instruction from the National Control Centre (NCC) a generation unit must start up on secondary fuel or complete a change-over from primary fuel to secondary fuel while holding electrical output at or above the **Fuel Switch Over Output**. The unit will then be instructed on secondary fuel to a MW value of no less than 90% of registered capacity on the primary fuel or such other level as system conditions allow. Following a period of running on secondary fuel, the unit will be instructed by NCC to change back to the primary fuel, again while holding electrical output at or above Fuel Switch Over Output or desynchronised.

3.2. REQUIREMENTS - SECONDARY FUEL TEST

For the first test following the implementation of the approved testing arrangements, EirGrid will give prior notice of not less than 48 business hours to the generator's nominated contact point.

For all subsequent tests, EirGrid will issue an instruction from the NCC to switch fuel or start up on secondary fuel. EirGrid will endeavour to schedule the test at such time as to minimise the possibility of the generator undergoing sustained running on its secondary fuel.

1) On instruction from NCC a generation unit must switch from the primary to secondary fuel in five hours or less. It should achieve this while holding electrical output at or above the **Fuel Switch Over Output**. This parameter is provided by the nominated contact point to the TSO and is considered part of the generation data requirements in the Grid Code. The generation unit must operate continuously while switching from its primary to its secondary fuel on instruction from EirGrid.

2) The unit when on the secondary fuel will be instructed to generate at a MW value of no less than 90%[2] of their registered capacity on primary fuel or such other level as system conditions allow. The unit will need to maintain operation on the secondary fuel for a minimum of one hour after a successful fuel switchover.

3) Following a period of running on the secondary fuel, the NCC will instruct the unit to switch back to the primary fuel or desynchronise. In the case of a changeover, the unit should achieve this while maintaining the electrical output at all times above the **Fuel Switch Over Output**. During the test, the generation unit should respond to the instructions issued by NCC at all times.

It is anticipated that under normal circumstances the secondary fuel test should be completed within a few hours. However, under exceptional circumstances, the unit may be required to operate on secondary fuel for a longer period of time if there are concerns for system security. EirGrid will consider the system conditions at all times when scheduling secondary fuel tests.

3.3. SECONDARY FUEL TEST

3.3.1. Criteria – A Successful Secondary Fuel Test

A test is deemed successful if the unit materially complies with all instructions from the NCC including electronic dispatch instructions, operates continuously at or above **Fuel Switch Over Output** at all times during the test and operates on secondary fuel with a performance that is equivalent to that on the primary fuel source.

i.e. a successful secondary fuel test is based on a generator meeting all of the following criteria:

1) Compliance with the instructions issued by NCC;
2) Carry out a successful start up on secondary fuel or change-over from primary to secondary fuel at or above **Fuel Switch Over Output** while operating continuously in five hours or less (i.e. without tripping);
3) Continuous operation on secondary fuel for a specified period at an output instructed by NCC, this would include operating at an output of no less than 90% of their registered capacity on primary fuel;
4) Successful change-over to primary fuel at or above the **Fuel Switch Over Output** while operating continuously (i.e. without tripping); and
5) Generator's performance is in line with the Grid Code requirements.

[2] *Per the Decision 09/001, Generating units required to run on a secondary fuel must be capable of generating on its secondary fuel at no less than 90% of the unit's capacity on its primary fuel.*

6) Generator carries out the secondary fuel test with a profile that is broadly similar (within 10 %) to the secondary fuel test profile[3] submitted to EirGrid.

For the avoidance of doubt the performance of the unit on the secondary fuel cannot be limited by any EPA or other license requirements. In addition, if the unit while on secondary fuel is instructed for system conditions to maintain an output less than 90% of registered capacity on primary fuel but completes the rest of the test successfully, the test will be deemed a success.

In all other cases, where the unit does not meet the criteria set out in section 3.3.1, the secondary fuel test will be deemed a failure.

3.3.2. Fuel Stock Replenishment Following a Secondary Fuel Test

Following a secondary fuel test, the generator is expected to make the necessary arrangements with their suppliers to replenish secondary fuel stock levels. As specified above, generators have two calendar months from the date of the secondary fuel test to replenish stocks to the required level and with fuel of a usable grade. A detailed assessment of the secondary fuel capability of a generator may be required if there are multiple secondary fuel test fails. In the case of a failed secondary fuel test, generators must replenish the stocks expended in both the original and repeat tests within two calendar months, from the date of the original test.

3.3.3. Re-Test following a failed secondary fuel test

Following a failed secondary fuel test, the generator will be obliged to communicate with EirGrid on the reasons for failure of the unit in the secondary fuel test. Generators will be required to carry out a secondary fuel re-test promptly. If there is repeated failure of the unit to successfully complete a secondary fuel test, then that unit will be in breach of the Decision 09/001 and the matter will be referred to CER.

3.4. COMMUNICATION WITH EIRGRID

3.4.1. Secondary Fuel Test Profile

Generators will be required to submit their secondary fuel test profile / technical characteristics to EirGrid at Generator_Testing@eirgrid.com. This profile should be submitted using the Secondary Fuel Test Profile template spreadsheet located on the EirGrid website. This profile should be submitted in the first quarter of each year or as required.

[3] *The secondary fuel test profile should be submitted to EirGrid using the Secondary Fuel Test profile template located on the EirGrid website.*

3.4.2. Secondary Fuel Test

NCC will send an EDIL message to signal the start and end of the secondary fuel test. During the secondary fuel test, NCC will dispatch the generator per the submitted secondary fuel test profile.

3.4.3. Communication of Test Result

Following a Secondary Fuel Test, EirGrid will issue the test result (pass/fail) to the generator within 20 business days of the test. In the case of a failed test EirGrid will also notify the CER.