NEWBRIDGE ENERGY RESPONSE TO NRW

Response emailed to Jamie Blythin 11 10 21

<table>
<tr><th>Number</th><th>Statutory notice</th><th>NRW request</th><th>Newbridge Energy Response</th></tr>
<tr><td>1</td><td>Statutory notice</td><td>
<table>
<tr><th>Condition number</th><th>Steps to be taken</th><th>By date</th></tr>
<tr><td>1.1.1 & 2.1.1</td><td>Fuel for the CHP Biomass Boiler shall only be accepted on site and used in the CHP Biomass Boiler if it is listed in the environmental permit (Virgin woodchip and untreated waste wood listed in Schedule 2 Table S2.1), free of contaminants and conforms to the manufacturers specifications (Uniconfort biomass boilers and CHP plants, Combustor standard,E,Manual for Installation, Maintenance, Storage, ED03/2017-nev.00).</td><td>24.09.21</td></tr>
</table>
</td><td>Fuel types as permitted by the Environmental Permit are detailed within the appropriate SOP. The SOP’s will follow at a later date.

The fuel specification as detailed in the boiler manufacturer’s O&M Manual has now been incorporated within the appropriate SOP.

1.5.3 Fuel data table

The table below sums up the main data of the solid fuel to be used, including maximum size allowed according to the type of loading device used to feed the combustor (Duplo, screw or pusher).

<table>
<tr><td colspan="2">Type of machine: GLOBAL/G</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td colspan="2">Specifications for virgin wood</td></tr>
<tr><td>Origin of the Fuel</td><td>Bio fuel (ref. Table 1, par.6.1 – UNI EN 17225-1) type 1.1; 1.2.1; 1.3.1; 1.4 provided the origin is as above.</td></tr>
<tr><td>Permitted moisture conditions (W)</td><td>Up to M55 (<55% wet base, <122% dry base)</td></tr>
<tr><td>Lower Calorific value allowed</td><td>> 7.5 MJ/kg and < 16.7 MJ/kg</td></tr>
<tr><td>Maximum ash content</td><td>up to 3 % (A3.0)</td></tr>
<tr><td>Minimum ash melting temperature</td><td>minimum 1100°C</td></tr>
<tr><td rowspan="2">Fuel density (bulk state)</td><td>wood chips: 250-400 kg/m3</td></tr>
<tr><td>pellet (with 100% load): up to 650 kg/m3</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td colspan="2">Fuel size</td></tr>
<tr><td rowspan="5">Feeding with Duplo</td><td>Fine Sawdust (diameter <3.15mm): max 2% of the load volume</td></tr>
<tr><td>Sawdust (3.15 mm ≤ diameter ≤ 5 mm)</td></tr>
<tr><td>Wood chips: P100, in any case the length of all pieces must not exceed 125 mm.</td></tr>
<tr><td>Hog fuel: P63 with max. 30x30 mm sect. and in any case the length of all pieces must not exceed 125 mm</td></tr>
<tr><td>Bark: dimensions max 125x10x20mm max 25% in volume per load unit</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td rowspan="2">Power yield</td><td>Although the permitted range includes the fuels set out above, the nominal power is only assured with fuel having LCV between 8.6 MJ/kg and 13.6 MJ/kg.</td></tr>
<tr><td>For fuels outside of this range, but still within the allowed fuels, there is a decrease of the nominal output.</td></tr>
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</td></tr>
<tr><td>2</td><td>Statutory notice</td><td>
<table>
<tr><td>1.1.1 , 2.1.1 & 2.3.1</td><td>Remove all fuel for the CHP that is stored at the site that is not authorised by the environmental permit, contains contaminants and does not conform to the manufacturer’s specifications (Uniconfort biomass boilers and CHP plants, Combustor standard,E,Manual for Installation, Maintenance, Storage, ED03/2017-nev.00).

The removal should specifically include the fuel material stored in the first outside fuel bay on 20.09.21 which contained contaminants including plastic, rubber and electrical wires.

Ensure this material is taken to a site authorised to accept it and completed duty of care documentation e.g. waste transfer notes are provided to NRW by the date specified.</td><td>15.10.21</td></tr>
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</td><td>The rejected A W Jenkinson (SED Services) material is being removed from site by Enviroclear wc 11 10 21 and transported for disposal at the Hafod Landfill Site.

The duty of care paperwork and weighbridge tickets for the material movement will follow.</td></tr>
<tr><td>3</td><td>Statutory notice</td><td>
<table>
<tr><td>1.1.1 & 2.3.1</td><td>Ensure the fuel mix for the CHP Biomass Boiler is stored undercover in line with SOP Fuel Blending (BFLSP-SW-010-001SOP006 April 2021 Issue 1).</td><td>Prior to CHP biomass boiler restarting following the planned shutdown.</td></tr>
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</td><td>Please refer to SOP 006, issue 2. This SOP has been amended to reflect storage, both on the mixing slab and within the NB.4 bunker. Included within the updated SOP are the parameters that determine which storage area is the most appropriate to be used for any specific batch.</td></tr>
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4	Statutory notice	1.1.1 & 2.3.1 — Ensure staff follow the site EMS and relevant SOPs including Material Acceptance (BFLSP-SW-010-0013OP004 Issue date 24.03.21 Issue number 1) and Waste acceptance, pre-acceptance and rejection procedure (NBEP038, 19.04.21). — 24.09.21	The updated SOP will be communicated to staff by means of a Toolbox Talk, it will also be the subject of regular review and refresher training. The updated SOP will follow.
5	Statutory notice	1.1.1 & 3.1.2 a) During normal operating conditions exhaust gases from the combustion unit shall be abated via the installed fabric filter (bag house) to comply with the Emission Limit Value of 50mg/Nm^3. — a,b & c 24.09.21 b) The fabric filter shall be maintained in good operating condition. c) The performance of the fabric filter shall be monitored during plant operation using suitable process monitoring techniques (including but not limited to filter differential pressure) and reviewed at least hourly by a suitably competent process operator. Where process monitoring data indicates a deterioration in filter performance that may lead to, or is likely to be causing an emission limit value exceedance, then an investigation shall be carried out immediately by suitably competent personnel and remedial measures taken to prevent and where that is not possible, minimise an emission limit breach. Provide evidence to demonstrate that steps a,b & c have been achieved by the date specified. — Within 1 week of scheduled CHP biomass boiler restart following the planned shutdown.	The NB.1 boiler was shut down (controlled) on Sunday 26th September 2021 at 0600 hours. This shutdown was to allow for routine planned maintenance and further investigation as to the cause of the heat-exchanger issue that resulted in the bypassing of the bag-filter on the morning of the 15thSeptember. Components attended to during the shutdown included the main boiler chamber, heat exchanger array, soot-blowers, particulate cyclone and bag filter. During the works it was found that two of the four soot blowers had suffered accelerated corrosion and had subsequently become ineffective in mitigating particulate build-up within the heat exchanger. Following consultation with Uniconfort it was confirmed that the boiler could be recommissioned with only two of the four soot blowers operational. The two replacement soot blowers are currently being manufactured and will be installed within the next 4 weeks. A further controlled shutdown will be required to facilitate this and NRW will be provided with advance notice accordingly. Uniconfort have confirmed that the operation of the boiler will not be compromised during this period of operation. However, operators are alert to this matter and close monitoring of boiler KPI's will persist. The NB.1 boiler was recommissioned on Monday 4th October 2021 at 1600 hours and in accordance with the appropriate SOP. During the period of maintenance, the daily, weekly and monthly PPM's were reviewed and updated accordingly in regards to both the boiler and bag filter. The maintenance team are checking the seals on the bag filter units daily, in order to ensure that there is no risk of moisture ingress which could result in a reduction in efficiency. Routine cleaning of the bag filters is in place to ensure their efficiency is maintained. The SCADA Operators are monitoring the differential pressure across the heat exchanger every hour. Both boiler and bag filter performance continues to be routinely monitored and refresher training has been provided to the Operators. An automated alarm is scheduled to be incorporated within the process SCADA system. This will alert the control room staff to an exceedance of the maximum permitted pressure differential. This is under discussion with Uniconfort. In addition, Element (Source Emissions Testing) have been booked for 25 10 21 (earliest date available) to complete the MCERTS stack testing on the NB1 boiler following the maintenance works.