

Mr David Sheppard
Viridis 178 Ltd
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Our ref: PAN-000118

Your ref:

Date: 22nd September 2016

Dear Mr Sheppard,

Application reference: PAN-000118

Operator: Viridis 178 Ltd

Facility: Viridis 178 Swansea Power Plant, Westfield Industrial Park, Titanium Road, Waunarlwydd, Swansea, SA5 4SF

Further to your letter received on 30th August 2016, please find below our response to your letter.

Schedule 1 – Operations

Table S1.1 Activities

‘. . . our running profile as described cannot be restricted to any daily cap (on total running hours)’

The dispersion modelling carried out as part of the air emissions impact assessment submitted with the application is based on a maximum daily run duration of 5 hours. Maximum 8-hour mean and daily average process contributions (PC) have been calculated at human and ecological receptors by taking the maximum one-hour concentrations and multiplying by $5/8 = 0.625$ and $5/24 = 0.208$, respectively. The PCs at two ancient woodlands within the vicinity of the installation calculated using this method are in excess of 100% of the World Health Organisation daily average NO_x critical level (CLE) of $75 \mu\text{g}/\text{m}^3$ (‘WHO (2000) Air Quality Guidelines for Europe; 2nd Edition. WHO Regional Publications, European Series, No. 91’). Furthermore, the PC at one of these woodlands is also in excess of the higher daily average NO_x CLE given in this report, which is applicable in areas with concurrently high ambient levels of sulphur dioxide and ozone.

We acknowledge that the modelling submitted with the application is based on an emission limit value (ELV) for NO_x of $190\text{mg}/\text{m}^3$, and that concentrations of NO_x in emissions from the

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installation will be approximately half this given that we have included a lower NO_x ELV in the permit of 95 mg/m³ (based on the ELV stipulated in the Medium Combustion Plant Directive for 'new' plant and on the assessment of BAT presented in the Amec Foster Wheeler report produced on behalf of the Department for Business, Energy and Industrial Strategy (DBEIS) (ref. Amec Foster Wheeler Environment & Infrastructure Limited (2016) 'Developing Best Available Techniques for combustion plants operating the balancing market' (the DBEIS BAT report)).

Even accounting for this lower level of NO_x concentration, PCs based on a 24-hour average (i.e. operation of all the engines in the installation continuously for 24 hours) are still very likely to be in excess of 100% of both the lower and upper daily average CLe. However, the daily average NO_x CLe provides thresholds above which the protection of vegetation cannot be guaranteed should fairly frequent exceedences of the thresholds occur. In this case, exceedences of this CLe are likely only to occur extremely infrequently and therefore we propose a limit on the number of times per year when the installation can operate for more than 5 hours per day, up to a total of 24 hours in any one day.

Table S1.3 Pre-operational measures

PO1

'First of all, is this condition required? We do not see the benefit of it?'

We require this information to confirm what is BAT for the installation as a full options appraisal was not included with the application.

'... could we ask that report is provided 2-3 weeks prior to the site being fully commissioned?'

We can agree to reduce the timescale for submission to 3 weeks and have amended this condition accordingly.

'The last sentence within PO1, referring to hydrocarbon and formaldehyde is not relevant to our generator and we therefore ask that this be omitted. These pollutants are not included within the medium combustion plant directive (MCPD).'

An assessment of the impact of emissions of unburnt hydrocarbons and formaldehyde is required because emissions of these substances are associated with the use of enhanced lean burn in conjunction with spark ignition engines. Enhanced lean burn is recognised in the DBEIS BAT report as being the primary method for achieving the MCPD ELV for 'new' plant of 95 mg/m³, which we have included in the permit, and the draft Large Combustion Plant BRef (LCP BRef) notes that increased emissions of carbon monoxide and unburnt hydrocarbons are associated with the application of lean burn and additional engine tuning. The LCP BRef also notes that monitoring of formaldehyde and unburnt hydrocarbons is required for natural gas fired spark ignition engines utilising lean burn.

PO3

'... could we ask that the reporting timescale be made 2-3 weeks before the site is fully commissioned.'

We can agree to reduce the timescale for submission to 3 weeks and have amended this condition accordingly.

Table S1.4 Improvement programme requirements

IC 1

‘Please can the submission of the report be changed from ‘on the commissioning of the installation’ to ‘on the completion of the commissioning of the installation.’

We agree to this suggestion and have amended this condition accordingly.

‘This program seems pointless in our situation.’

We consider that the requirements of this improvement condition are duplicated in the pre-operational conditions and therefore we have removed this condition from the draft permit.

IC 2

‘Please could the reporting timescale be changed to 4 years to tie in with Paragraph 1.2 under the heading Conditions.’

The 3-year timescale will allow NRW to review emissions and other data accumulated during operation ahead of a further review of BAT. Other UK regulators are adopting the same timescale and consistency is important as it will allow UK-wide BAT data to be compiled for the same time period. The reporting timescale therefore needs to remain at 3 years.

As we have removed IC 1 from the permit we have re-numbered this condition ‘IC 1’.

‘Could we outline with number of annual operation hours only.’

The requirements of the first bullet point in this condition need to remain to be consistent with other UK regulators and to gather data to further develop the UK position on BAT for capacity mechanism installations (and other Balancing Market power generating facilities). The collection of further data, including data on operating hours, was recommended and accepted by the DBEIS-hosted Balancing Market review working group, consisting of Amec Foster Wheeler, industry representatives and UK-regulators.

‘Could we omit unburnt hydrocarbon and formaldehyde from the report as these are not required by the MCPD or emission limits within the permit.’

Assessment of unburnt hydrocarbons and formaldehyde is required for the reasons outlined above.

Schedule 3

Table S3.1 Point source emissions to air – emission limits and monitoring requirements.

‘Both the NO_x and CO readings need to be accompanied with an appropriate O₂ reference value – in this case 15% O₂.’

We have amended the oxygen reference values to 15% throughout the permit.

Schedule 4

Table S4.1 Reporting of monitoring data.

‘Could we change the reporting period from starting 1 January to starting 1 October.’

The reporting period start date of 1st January is standard across all environmental permits and as such is applicable to all installations in the combustion sector. We therefore cannot agree to this amendment.

Table S4.2 Annual production/treatment

‘Could the units for net power be changed to MWh.’

We can agree to this suggestion and have amended this condition accordingly.

Table S4.3 Performance parameters

‘Can the raw material item be removed? – we can simply have gas energy use in MWh.

We have amended the table to remove the reference to ‘Raw material (natural gas) usage and amended the units of the ‘Energy usage’ row to MJ.

‘Operating Hours – The assessment frequency needs to be changed to Annually to link in with Condition point 4.2.2. Can the total number of runs be omitted and the number of runs >2 hrs be changed to 6 hours or preferably removed.’

The requirements of this performance parameter need to remain as (as noted above) the collection of further data, including data on operating hours, was recommended and accepted by the DBEIS-hosted Balancing Market review working group, consisting of Amec Foster Wheeler, industry representatives and UK-regulators.

Table S4.4 Reporting forms

‘To mimic the changes stated in the previous paragraph.’

We have amended this table accordingly and have amended this condition accordingly.

Schedule 6 Interpretation

‘Please can we change ‘year’ to calendar year ending 30th September.’

As noted above, the standard reporting period for environmental permits is from 1st January.

'The concentrations of substances in emissions to air needs to be updated to reflect the data sheets submitted within the Permit Application.'

We have updated this section to make it relevant to spark ignition engines, including amending the oxygen content reference to 15%.

'We need to state the correct O₂ reference at 15%.'

Please see the above comment.

Yours sincerely

A handwritten signature in black ink, appearing to read 'V. Seller', with a stylized flourish at the end.

Victoria Seller
Senior Permitting Officer (Regulated Industry)

Permitting Service