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Natural Resources Wales

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Re-location of Continuous Emission Monitoring Systems (CEMS)

On 22 December 2015, we received a letter and a report from Eco2. The letter asked that we consider the report entitled 'CFD modelling of FLOWSIC100 – high accuracy flow sensor installation in measuring duct channel' and asked that Natural Resources Wales (NRW) approve a change in the design for flow sampling from the stack to a long horizontal duct within the flue gas treatment building

The letter also highlighted the advantages of the re-siting of CEMS to the horizontal ducts at other projects, and also how the modelling report identifies the high accuracy of the flow sensor at the horizontal measuring channel rather than the vertical duct.

The report, prepared by B&W Volund, (part of the consortium involved in the construction and operation of the permitted installation) was sent to NRW's Air Quality Modelling Risk Assessment Team (AQMRAT) for review. AQMRAT agreed with the findings of the modelling report and to the re-locate the CEMS. However, the following comments should be noted:

- Our conclusions are made on the modelling of flow, and not on actual measurements of the flow and pollutants within the stack
- The modelling showed that CEMS location, as well as fulfilling the requirements of TGN M1 (or to an equivalent standard), showed that stack gas measured at the location of the CEMS should be homogenous. However, this can only be determined through monitoring once the plant is up and running
- Homogeneity testing would have to be in accordance with the standard BS EN 15259
- If the CEMS location fulfils the requirements of TGN M1, then it is likely that the stack gas will also be homogenous

- As the CEMS measurements would be from a location that deviates from the M1 specifications, they would need to prove homogeneity of the stack gas pollutants at this particular point
- Based on the flow modelling (which indicated that the flow should be homogenous), the stack gas should also be homogenous, but this need to be measured and demonstrate during the commissioning.

We have previously provided this response both by email and in CAR 6111 (following a meeting with eco2 12 February 2016). We will not require a variation to the environmental permit for this change, but would expect to receive a full report confirming the sampling position is homogeneous or, if that is not the case, the proposals for the relocation of the monitoring ports and other compliant position, probably in the vertical stack.

If you have any questions about this letter, please give me a call.

Regards

Nick Jenkins
PPC Officer – Industry Regulation Team, SW Wales