

H-CC 5-11e Monitoring Details

It is proposed that the following emissions monitoring equipment will be fitted to the new cremation equipment.

Cremator Flues (Before abatement)

At the point where the flue gas leaves the secondary combustion zone, each cremator will be fitted with a Fuji ZKM Zirconia cell, flue gas oxygen analyser. The purpose of this is to provide both good combustion control and record the secondary chamber oxygen concentration. The latter is required to demonstrate compliance with specified permit conditions. This type of instrument is accurate and responsive in the range expected and the analysis technology complies with the Environment Agency's Technical Guidance Note (TGN) M2. (Unlike some instruments, it measures oxygen concentrations on a wet gas basis.)

Abatement Plant Flue

At the point where flue gases from the leave the abatement plant, a combined oxygen and carbon monoxide analyser will be fitted. This analyser is used to measure and report the carbon monoxide emissions from the process and will record emissions from either one or two cremators depending upon what plant is running. Oxygen readings at this point are also recorded, but this to allow statutory reporting of the carbon monoxide emissions to the correct reference conditions (11% Oxygen, dry gas).

The instrument to be used for this measurement is a Fuji Electric Instruments ZPA. This instrument determines oxygen concentrations using electrochemical cell technology, and carbon monoxide is measured by non- dispersive infra-red (NDIR) technology. In both cases the technology employed complies with the Environment Agency's Technical Guidance Note (TGN) M2

Particulates emissions from the abated cremators will be monitored in the exhaust duct after the bag filter and the ID fan. The instrument to be installed is a PCME Dust Monitor 210 analyser, which uses triboelectric measurement techniques. The technology complies with the Environment Agency's Technical Guidance Note (TGN) M2 and is considered the most effective method of continuously measuring low particulate emissions concentrations.

The data collected from the instruments detailed above, together with the flue gas temperature at outlet from the cremator's secondary chamber, will be recorded and reported as 5 minute means, as required by the PG 5/2(12).

In the case of the particulate matter analyser, the instruments output signal will be recorded, but there are no requirements for quantitative or qualitative measuring of particulates on an abated cremator. The instrument is required only to detect a failure in the filtration plant.

In addition to the permanently installed, continuous emission monitoring system (CEMS), particulate matter and carbon monoxide emissions will be tested on an annual basis by manual extractive sampling. Similarly, emissions of hydrogen chloride (HCl) and Mercury and volatile organic compounds (VOC) which are not monitored continuously will test annually by extractive tests.

In the case of Dioxin and Furans (PCDD/F), it is proposed that the performance of the equipment will be demonstrated during the initial acceptance tests using either an extractive emissions test or by demonstrating the secondary chamber operating conditions meet the standards specified in PG 5/2(12). It is not proposed, or normally required, that annual testing be carried out unless there are consistent indications of poor combustion conditions in the form of high carbon monoxide and/or high organic compound concentrations.

No routine monitoring of CO₂, NO_x or SO₂ is proposed as it is not required in the Process Guidance Note, PG5/2(12). In these instances the level of emissions largely relate to the cremator charge rather than the cremation equipment itself.

The data produced by all continuous monitoring will be recorded in such a manner that the reporting requirements specified in the Process Guidance can be achieved.