

Policy on Monitoring of Stack Emissions to Air at EPA Licensed Sites



1. OVERVIEW

In Ireland at present there are no mandatory minimum criteria specified in relation to the completion of stationary source waste gas monitoring at EPA licensed sites. This is a different situation to other European countries, where industrial air emissions monitoring at licensed/permitted sites is required to be carried out by ISO17025 accredited organisations (including England, Wales, Northern Ireland, Germany, Spain, France, Netherlands, Belgium, Denmark). The use of accredited service providers is also regarded as best practice in the BAT Reference (BREF) Document on the General Principles of Monitoring which states the following:

It is the responsibility of the competent authority to establish and set appropriate quality requirements, and to consider a range of safeguards. For the purposes of compliance assessment use of the following is good practice:

- *Standard methods of measurement, where available;*
- *Certified instruments;*
- *Certification of personnel;*
- *Accredited laboratories.*

This BREF document is currently under review by the European IPPC Bureau and it is expected that references to the use of accredited monitoring contractors will be further strengthened. This is important in the context of the new Industrial Emissions Directive (2010/75/EC) which replaces existing legislation including the IPPC Directive and seeks to bring more consistency to the application of BAT across the EU, as well as requiring member states to strictly implement BAT unless deviations can be clearly justified.

The criteria specified below are therefore considered by the Agency to be appropriate and to be the minimum required to meet the standard IPPC/Waste licence competency requirements for those carrying out emissions monitoring.

In order to ensure the generation of consistent high quality and robust stationary source emissions monitoring data from EPA licensed sites, the EPA has specified minimum acceptable criteria on this monitoring from January 1 2014 as follows:

Contracted Monitoring: From January 1 2014, the EPA requires that where periodic (i.e. not continuous emissions monitoring) monitoring of stack gas is carried out at EPA licensed (IPPC and Waste) sites, the work is completed by an ISO17025 accredited organisation (to include the relevant pollutants within the scope of accreditation).

Monitoring by In-House Teams: Where monitoring work is carried out by in-house teams, the team/organisation is not required to hold ISO17025 accreditation, but must meet criteria specified

by the Agency in order to be permitted to continue carrying out the monitoring work as required by the IPPC/waste licence, and may be subject to audits to assess the adequacy of the monitoring.

2. CONTRACTED MONITORING

General Requirements

From 1 January 2014, the EPA requires that contractors carrying out monitoring of stack gas emissions to atmosphere are accredited to the ISO17025 standard (including relevant requirements of CEN/TS 15675 and IS EN 15259) and the scope of accreditation held by consultants for the following parameters, if they wish to monitor these parameters at IPPC/waste licensed sites, shall as a minimum be :

- From 1 January 2014: Total particulates (low and high range), NO_x, SO₂, CO, VOC (by FID), dioxins, velocity and temperature, oxygen, and moisture. Where monitoring for other parameters is to be carried out, the parameter must be included within the 17025 management system documentation (procedures, etc..) to assure the quality of the monitoring.
- From 1 January 2015, the following additional parameters: HCl, formaldehyde, metals, and speciated organics. Where monitoring for other parameters is to be carried out, the parameter must be included within the 17025 management system documentation (procedures, etc.) to assure the quality of the monitoring.

A contractor may choose not to include some of the specific parameters listed above within their scope of accreditation, but in such cases the Agency will not accept any monitoring results for those parameters which are not within the contractors scope of accreditation (once the relevant deadline has passed). Where a contractor wishes to monitor for parameters which are not specifically listed above, the parameter to be monitored must still be included within the 17025 management system and documentation to ensure an equivalent level of data quality is maintained.

From 2016 the Agency recommends that any additional parameters that may be considered as being viable, e.g. HF, ammonia should be added to the scope of accreditation, however failing this, where a contractor wishes to carry out monitoring for a given pollutant, inclusion within the ISO17025 management system will suffice for these parameters. Monitoring for such parameters shall as a minimum be carried out in line with the requirements of the Agency AG2 guidance document. For those parameters where mandatory accreditation is not required the Agency still recommends that ISO17025 accredited analytical laboratories are used for sample analyses. However, the impact of not having certain parameters within the scope of accreditation should be considered carefully where the contractor is considering working in other jurisdictions where ISO17025 accreditation is required for stack emissions monitoring.

	Must be accredited Jan 2014	Must be accredited Jan 2015	QMS & documented procedures (examples)
Parameters	<ul style="list-style-type: none"> - Total particulates (low & high range) - NO_x, SO₂, CO - VOC (by FID) - Velocity and temperature - Dioxins - oxygen - moisture 	<ul style="list-style-type: none"> - HCl - Formaldehyde - Metals (incl. mercury) - Speciated Organic carbon e.g. TA Luft organics (I, II, III) 	<ul style="list-style-type: none"> - Odour - mercaptans, - Hydrogen sulphide, amines, - CVOC's, phenol - Total aldehydes - Isocyanate, Methanol, MDI - Bioaerosols, MIBK - Isopropanol ^{Note 1}, - Isopropyl acetate - PM₁₀ PM_{2.5} others - HF, - ammonia

Note 1: Some of these parameters may be specified as stand-alone limits, other times they may be included as part of TA Luft Class I, II, & III limits.

Applicability

The above requirements are initially applicable to stationary source emissions monitoring in stacks/ducts/vents at EPA licensed installations/facilities.

Accredited monitoring services will not be required for other emissions monitoring such as monitoring of landfill gas emissions from the surface of landfills and monitoring of surface emissions from biofilters (though accredited monitoring will be required for monitoring of emissions from landfill gas flares and engines, which are typically monitored for combustion gases and VOCs). Accreditation may be required for such monitoring in the future.

The EPA can provide clarification on the requirements for accredited monitoring where uncertainties arise on specific sites.

Quality Management System for Pollutants Not Requiring Accreditation

The contractor will be required to have a documented Quality Management System (QMS) in place, including a clearly documented procedure for the non-accredited parameters which is broadly in line with the objectives of ISO 17025 (training records, equipment maintenance protocols etc. in line with what is described in AG2). This may then be audited by the EPA.

As a minimum, all emissions monitoring must be carried out in line with the requirements of EPA Air Monitoring Guidance Note AG2. This includes the use of relevant standards in line with Appendix 1 'Index of Preferred Methods' of AG2. In very exceptional circumstances the EPA may agree an alternative method where it can be justified by the licensee, however typically the preferred method in AG2 shall be applied, unless it has been superseded by a new CEN or ISO standard, or a different method is specified in the site licence.

3. IN-HOUSE MONITORING

The BAT Reference Document on the General Principles of Monitoring makes specific reference to self-monitoring and indicates that ‘for self-monitoring activities the use of recognised quality management systems and periodic check by an external accredited laboratory instead of formal own accreditation can be appropriate’. This is the approach to be taken by the EPA specifically in relation to monitoring being carried out by licensee’s own staff and is also in line with practices in some other European Countries where accreditation may not be required for in-house monitoring teams if other specified criteria are met.

Any licensee proposing to monitor emissions to atmosphere from a licensed emission point for assessment of compliance with a licence emission limit value must, prior to January 1 2014, notify the EPA of the scope of monitoring proposed to be carried out by the licensee (standard form be provided for licensee to complete with all the necessary details), including the parameters to be monitored at each emission point, the method to be used, the expertise of the personnel carrying out the monitoring, any external analytical requirements and the frequency of monitoring.

As a minimum, all emissions monitoring must be carried out in line with the requirements of EPA Air Monitoring Guidance Note AG2. This includes the preparation of relevant procedures, training records, quality control documents, etc. In very exceptional circumstances the EPA may agree an alternative method where it can be justified by the licensee, however typically the preferred method in AG2 should be applied.

The site must, where requested, notify the EPA in advance of all in-house air emissions monitoring exercises and the monitoring work may be audited by the EPA or by an appointed contractor. The costs of this inspection will be charged to the licensee as part of their annual financial charges. Where a licensee fails to address deficiencies identified in in-house monitoring the EPA may require the licensee to employ 17025 accredited contractors and may not accept in-house generated results.

In addition, third party check monitoring by an ISO17025 accredited contractor must be carried out at one of the licensed emission points on an annual basis as a cross-check on the licensee monitoring. This cross-check monitoring can be counted as one of the scheduled monitoring events for the purposes of licence compliance. Where there are two emission points or less the cross-check monitoring may be completed once in every two year period. Where the licensee is monitoring at 3 or more stacks the independent check monitoring must be carried out annually at each main emission point in rotation.

In-house monitoring will also have to address the following requirements:

- Where an external contract laboratory is used for analysis, this laboratory must be accredited to ISO17025 (for the parameter being analysed) where the parameter requires mandatory accreditation in the table above, i.e. the same requirement as for air monitoring contractors;
- As part of the documentation system the licensee will need to specify the minimum criteria required for personnel carrying out emissions monitoring. This will be subject to Agency review and comment. It is expected that the UK MCERTS personnel qualification will be an appropriate standard for those carrying out in-house monitoring but personnel certification will not be mandatory;
- Where there is a proficiency testing scheme available the monitoring team shall partake in the scheme. A cylinder testing type scheme would normally be suitable (e.g. for combustion gases), stack simulator testing will not be required. For those carrying out

weighing of particulates and drying of probe washings, completion of a suitable PT weighing scheme will be necessary.

Note: These requirements for in-house monitoring exclude monitoring for emergency purposes or process monitoring, for example monitoring of emissions in the event of a failure of a primary emissions monitoring system or process monitoring not for reporting compliance against limit values.

Any queries on this policy should be directed to the EPA Air Enforcement Team – airthematic@epa.ie

Issued: March 2012.

References:

- I.S. EN ISO/IEC 17025: 2005 - General requirements for the competence of testing and calibration laboratories;
- I.S. EN 15259: 2007: Air Quality – Measurement of Stationary Source Emissions – Requirements for Measurement Section and Sites and for the Measurement Objective, Plan and Report;
- SR CEN/TS 15675: Air Quality – Measurement of Stationary Source Emissions – Application of EN ISO/IEC 17025:2005 to Periodic Measurements
- EPA Air Emissions Monitoring Guidance Note #2 (AG2), available from www.epa.ie