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Indaver Ireland Limited

IE Licence Review Application

Assessment of Compliance with Conclusions on Best Available techniques from the BREF for General Principles of Monitoring (2003) and the REF for Monitoring of Emissions to Air and Water from IED Installations (2018)

Reference: LA010332

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This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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1. Introduction

This report has been prepared for the purposes of Section 4.7 of an Industrial Emissions Licence (IE) Review application submitted by Indaver Ireland for their site at Carranstown, Duleek, County Meath. This report, which applies to IE Licence W0167-03, consists of a review of the licensed activities on site and the proposed activities to which the licence review relates in the context of any applicable Best Available Techniques (BAT).

The Industrial Emissions Directive 2010/75/EU (IED) and the European Union (Industrial Emissions) Regulations 2013 (SI 138 of 2013) define BAT, BAT Reference Document (BREF) and BAT Conclusions (BATC) as follows.

The Industrial Emissions Directive defines Best Available Techniques as follows: 'best available techniques' means the most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing the basis for emission limit values and other permit conditions designed to prevent and, where that is not practicable, to reduce emissions and the impact on the environment as a whole: a) 'techniques' includes both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned. b) 'Available techniques' means those developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the costs and advantages, whether or not the techniques are used or produced inside the Member State in question, as long as they are reasonably accessible to the operator. c) 'best' means most effective in achieving a high general level of protection of the environment as a whole;
The Industrial Emissions Directive definition of BAT Reference Document is as follows: "(11) 'BAT reference document' means a document, resulting from the exchange of information organised pursuant to Article 13, drawn up for defined activities and describing, in particular, applied techniques, present emissions and consumption levels, techniques considered for the determination of best available techniques as well as BAT conclusions and any emerging techniques, giving special consideration to the criteria listed in Annex III;" SI 138 of 2013 has a similar definition.
The Industrial Emissions Directive and SI 138 of 2013 have the same definition of BAT conclusions, as follows: 'BAT conclusions' means a document containing the parts of a BAT reference document laying down the conclusions on best available techniques, their description, information to assess their applicability, the emission levels associated with the best available techniques, associated monitoring, associated consumption levels and, where appropriate, relevant site remediation measures;

The Industrial Emissions Directive 2010/75/EU replaced seven existing directives including the Integrated Pollution Prevention and Control (IPPC) Directive (2008/1/EC).

- Historically, the BREF process for the IPPC Directive produced guidance documents that member states had to have regard to when permitting (licensing) installations.
- However, the IED has made BAT conclusions mandatory in the permitting process (Article 14(3) of the IED).

Where BAT conclusions are available for any new installations, they are expected to achieve the associated standard before commencement of operations.

For existing installations, the IED provides that where a Commission Implementing Decision on BAT conclusions is published, within four years (relating to the main activity of the installation), the Environmental Protection Agency (EPA) should undertake that 'all permit/licence conditions for the installation concerned are reconsidered, where necessary updated' and 'ensure compliance with the BAT'.

The European IPPC Bureau (EIPPCB) organises and co-ordinates the exchange of information between Member States and the industries concerned on Best Available Techniques (BAT), as set forth in Article 13 of the IED. The EIPPCB produces BAT reference documents (BREF) and BAT conclusions.

2. Activity

As per W0167-03 the facility is currently licensed to carry out the following activities as outlined in the First Schedule of the Environmental Protection Agency (EPA) Act 1992, as amended:

11.3: Disposal or recovery of waste in waste incineration plants or in waste co-incineration plants –

(a) for non-hazardous waste with a capacity exceeding 3 tonnes per hour,

(b) for hazardous wate with a capacity exceeding 10 tonnes per day.

Following implementation of the proposed development, which includes an increase in the amount of waste being accepted at the facility and the construction of a hydrogen generation unit, two new activities as outlined in the First Schedule of the EPA Act 1992, as amended, will be carried out:

5.13 (a) The production of inorganic chemicals, such as gases, such as ammonia, chlorine or hydrogen chloride, fluorine, or hydrogen fluoride, carbon oxides, sulphur compounds, nitrogen oxides, hydrogen, sulphur dioxide, carbonyl chloride (production means the production on an industrial scale by chemical or biological processing);

11.6 Temporary storage of hazardous waste, (other than waste referred to in paragraph 11.5) pending any of the activities referred to in paragraph 11.2, 11.3, 11.5 or 11.7 with a total capacity exceeding 50 tonnes, other than temporary storage, pending collection, on the site where the waste is generated.

3. BAT/BREF Assessments

A review of the European Commission Integrated Pollution Prevention and Control Conclusions on Best Available techniques from the BREF for General Principles of Monitoring (2003) and the REF for Monitoring of Emissions to Air and Water from IED Installations (2018) is presented in the table below.

It is noted that the REF on Monitoring of Emissions to Air and Water from IED Installations (2018), or MON REF, is a horizontal document which does not contain BAT conclusions. Whilst the MON-REF replaces the BREF on the General Principles of Monitoring (July 2003), or MON, the MON BAT Conclusions have been addressed with reference to the MON REF. The Reference Document is a horizontal document and is not industry specific. Monitoring of emissions to air and stormwater apply.

Table 1 Review of European Commission Integrated Pollution Prevention and Control Conclusions on Best Available techniques from the BREF for General Principles of Monitoring (2003) and the REF for Monitoring of Emissions to Air and Water from IED Installations (2018)

Best Available Techniques (BAT)		Applicability Assessment (describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
2.7. Monitoring Requirements to be Included with Emission Limit Values (ELVs) in Permits			
BAT 1	Make it clear in the permit that monitoring is an inherent and legally enforceable requirement and that it is as necessary to comply with the monitoring obligation as with the limit value/equivalent parameter.	Applicable Monitoring of all emissions and limit values will be set out in the licence documents. The licence conditions represent a legally binding requirement.	In place
BAT 2	Specify clearly and unambiguously the pollutant or parameter being limited.	Applicable Monitoring of air emissions will be in compliance with The Industrial Emissions Directive 2010/75/EC which requires continuous monitoring of specific parameters and regular sampling of dioxins present in the flue gases prior to discharge from the stack to ensure compliance with emission limit values. The following parameters are continuously measured in the stack: • NOx • CO • SO2 • HCL • DUST • TOC There is biannual monitoring for Hydrogen Fluoride (HF) and heavy metals Cadmium (Cd) and Thallium (Tl) and their compounds, Mercury (Hg) and its compounds, Antimony (Sb), Arsenic (As), Lead (Pb), Chromium (Cr), Cobalt (Co), Copper (Cu), Manganese (Mn), Nickel (Ni), Vanadium (V) and their compounds. The plant does not use urea and the plant is not a fluidised bed incinerator. Nitrous Oxide (N_2O), PM_{10} and $PM_{2.5}$ will be monitored quarterly. There is a testing regime in place for PCDD/F Monitoring of stormwater emissions are carried out for Parameters pH, conductivity and TOC.	In place The proposed development will tie in with the existing licensed main air emission point. There will be no new main emission point to air from the proposed development.
BAT 3	State clearly the location where samples and measurements are to be taken. These should match the positions where the limits are applied.	Applicable	In place.

Best Available Techniques (BAT)		Applicability Assessment (describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
	It is necessary to have suitable sampling measurement sections and/or measurement sites available. To this end, relevant requirements for space and technical facilities, such as safe measurement platforms and sampling ports, should also be stated in the permit.	The emission and monitoring locations have been clearly identified in the relevant attachments and drawings submitted with the application. The flue gas stack is equipped with a monitoring platform for collecting grab samples. The stormwater system includes 2 no. monitoring stations. Monitoring Chamber 1 (MSWI-I) prior to attenuation pond. Monitoring Chamber 2 (MSW 1-2) at outlet of attenuation pond.	The proposed development will tie into the existing licenced emission points.
BAT 4	Specify the monitoring timing requirements (time, averaging time, frequency, etc.) of sampling and measurements.	Applicable The proposed frequency of the air and stormwater sampling and reporting has been specified in Section 7 of the IE licence review application. The following parameters are measured continuously in the stack: • NOx – in place • NH3 – will be in place. • N2O – not applicable, this plant does not use urea and the plant is not a fluidised bed incinerator. This is currently measured quarterly. • CO – in place • SO2 – in place • HCl – in place • HF – in place • Dust – in place • TVOC – TOC is measured continuously. The continuous measurements will be accessible in 'real time' in the control room. Other testing regimes in place for the stack include: • Metals – Measured biannually. • Hg – demonstrated low and stable, periodic testing in place. • PBDD/F – Indaver do not accept brominated flame retardants and therefore this is not applicable. • PCDD/F – test regime in place • Benzo(a)pyrene – not currently tested.	In place. The proposed development will tie into the existing licenced main emission point and stormwater emission point.

Best Available Techniques (BAT)		Applicability Assessment (describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
		There is continuous monitoring at two monitoring chambers, prior to the attenuation pond and at outlet of TOC, pH, and conductivity for stormwater.	
BAT 5	Consider the feasibility of limits with regard to available measurement methods. Limits must be set so that the monitoring required in order to determine compliance is within the capability of available measurement methods. For example, in order to obtain detectable quantities of dioxins from stack emissions it is usually necessary to sample over several hours. In this case the averaging time should correspond to this practical sampling duration. The limit setting process must therefore take into account the technical limitations of the relevant monitoring methods which will include consideration of detection limits, response times, sampling times, possible interferences, general availability of the methods and possible use of surrogates.	Applicable The Emission Limit Values (ELVs) for air have been based on the IE Directive (2010/75/EU) limits. Stormwater emissions have trigger values which have been agreed with the EPA rather than ELVs.	In place. The proposed development will tie into the existing licenced main emission point and stormwater emission point.
BAT 6	Consider the general approach to the monitoring available for relevant needs (e.g., the scale). It is useful if the monitoring programme for a limit first describes the general type of monitoring required, before giving details of specific methods. The general approach will suit the considerations of location, timing, timescale and feasibility, and take into account the options of direct measurement, surrogate parameters, mass balances, other calculations, and the use of emission factors. These general approaches are described in the BREF document.	Applicable Monitoring of the main air emission point and the stormwater emission will be as outlined in IE Licence W0167-03.	In place. The proposed development will tie into the existing licenced main emission point and stormwater emission point.
BAT 7	Specify the technical details of particular measurement methods, i.e., the associated standard (or alternative) measurement method, and the units of measurement. Choosing measurement methods in accordance with the following priorities will lead to better reliability and comparability, provided they are reasonably practicable as detailed in the BREF document.	Applicable The methods to be used for the monitoring of air and stormwater emissions have been set out in Section 7 of this application and are in accordance with IE W0167-03.	In place The proposed development will tie into the existing licenced main emission point and stormwater emission point.

Best Available Techniques (BAT)		Applicability Assessment (describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
BAT 8	In cases of self-monitoring, either performed by the operator or by a contractor, clearly state the procedure for periodically checking the traceability of the self-monitoring. An accredited third-party testing laboratory should be used for this work.	Applicable The existing site EMS procedures, staff training, and role competency ensure the correct interpretation of monitoring results. Onsite monitoring is carried out by appropriately qualified and certified third-party contractors in line with the required EPA standards to minimise the risk of uncertainty in monitoring results.	In place The proposed development will be incorporated into the monitoring programme for the site.
BAT 9	State the operational conditions (e.g., production load) under which the monitoring is to be performed. If normal or maximum production at the facility is required, this should be quantitatively defined.	Applicable Flue gas emissions are monitored during operating periods. The facility operates 24 hours per day, seven days per week with some scheduled shutdowns for maintenance.	In place.
BAT 10	Clearly state the compliance assessment procedures, i.e., how will the monitoring data be interpreted to assess compliance with the relevant limit (as shown in Chapter 6 of the BREF document), also taking into account the uncertainty of the monitoring result as explained in the BREF document.	Applicable Analysis of the monitoring results is completed by suitably trained and qualified staff members or external contractors. Daily reports of 10 or 30-minute measurements and the daily average stack measurements are automatically generated. These reports have the ELV's set and as such, these reports also indicate to the environmental department or management at the facility whether the limits have been exceeded. Monthly stack monitoring reports summarise the results and provide an assessment of compliance in accordance with conditions as per IE W0167-03. Additional stack measurements are undertaken quarterly and biannually by external contractors. The results are directly comparable with the licence limits or trigger levels. All data that is produced on site from the internal monitoring systems e.g., stormwater, will be assessed to compare with the trigger limit via the control room. The limits are programmed into the system and interlocks in place to stop discharge if results are outside of trigger levels. Trained operators' man the control room at all times.	In place. The proposed development will be incorporated into the monitoring programme for the site.
BAT 11	Specify the reporting requirements, e.g., what results and other information are to be reported; when, how, and to whom. Reporting aspects of compliance monitoring are considered further in Chapter 7 of the BREF document.	Applicable Site procedures detail the required roles and responsibilities and the required internal communication structures for emissions monitoring onsite.	In place. The sites procedures and emergency response plan will be updated to include the proposed development.

Best Available Techniques (BAT)		Applicability Assessment (describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
		The emergency response plan provides for the notification of the relevant authorities as required. The facility's reporting requirements such as quarterly reporting, annual reporting, outlines compliance with the emission limits and are submitted to the EPA.	
BAT 12	Include appropriate quality assurance and control requirements, so that the measurements are reliable, comparable, consistent, and auditable. The main quality considerations may include those detailed in the BREF document.	Applicable The sites existing EMS procedures and ongoing staff training ensures that all onsite monitoring is conducted by appropriately qualified and certified third-party contractors in line with the required EPA standards. The sites procedures also ensure all laboratory testing is conducted by accredited laboratories where possible as per the EPA requirements. Records are retained for audit purposes.	In place The sites procedures and emergency response plan will be updated to include the proposed development.
BAT 13	Make arrangements for the assessment and reporting of exceptional emissions, both foreseeable (e.g., shutdowns, stoppages, maintenance) and unforeseeable (e.g., disturbances in the process input, or in abatement technique). The approach to these emissions is discussed in the BREF document.	Applicable The site's existing Distributed Control System (DCS) provides warnings of any failures and malfunctions throughout the facility. The sites EMS details the required action in the event of exceptional emissions including the procedures for reporting and quantifying. Any exceptional emissions will be reported to the EPA and such incidents will be summarised and included in the facility's AER.	In place The proposed development will connect into the existing DCS.