

Indaver Ireland Limited

IE Licence Review Application

IED Article 50 Compliance

Reference: LA010332

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1. Compliance with Industrial Emissions Directive (IED), Article 50

1.1 Article 50 Operating Conditions

1. Waste incineration plants shall be operated in such a way as to achieve a level of incineration such that the total organic carbon content of slag and bottom ashes is less than 3 % or their loss on ignition is less than 5 % of the dry weight of the material. If necessary, waste pre-treatment techniques shall be used.

Indaver Meath operates under Condition 3.20.4 of their existing IE licence (W0167-03), which requires the plant to operate in order to achieve a level of incineration such that the Total Organic Carbon (TOC) content of the slag and bottom ashes is less than 3% or their loss on ignition is less than 5% of the dry weight of the material.

2. Waste incineration plants shall be designed, equipped, built and operated in such a way that the gas resulting from the incineration of waste is raised, after the last injection of combustion air, in a controlled and homogeneous fashion and even under the most unfavourable conditions, to a temperature of at least 850 °C for at least two seconds.

The temperature and residence time of waste in the furnace affects the completeness of combustion. Regulation of temperature is a critical factor for CO abatement.

At Indaver Meath, combustion takes place at 850°C. To achieve burnout of organics and abate TOC in the flue gasses, a minimum temperature of 850°C will be maintained for at least 2 seconds in the first pass of the boiler.

Even under the most unfavourable of Conditions, the incineration plant shall be operated in such a way that, after the last injection of combustion air, the gas resulting from the process is raised, in a controlled and homogenous fashion, for a duration of two seconds to a temperature of 850°C in compliance with Condition 3.20.5.

Waste co-incineration plants shall be designed, equipped, built and operated in such a way that the gas resulting from the co-incineration of waste is raised in a controlled and homogeneous fashion and even under the most unfavourable conditions, to a temperature of at least 850 °C for at least two seconds.

This is not applicable to Indaver it is an incineration plant.

If hazardous waste with a content of more than 1 % of halogenated organic substances, expressed as chlorine, is incinerated or co-incinerated, the temperature required to comply with the first and second subparagraphs shall be at least 1100 °C.

This is not applicable to Indaver Meath. Under Condition 1.3 of the existing IE licence (W0167-03), hazardous wastes with a content of more than 1% halogenated organic substances, expressed as chlorine, are not accepted for treatment at the installation.

In waste incineration plants, the temperatures set out in the first and third subparagraphs shall be measured near the inner wall of the combustion chamber. The competent authority may authorise the measurements at another representative point of the combustion chamber.

Under condition 3.20.5 of the existing IE licence (W0167-03), heat measurements are taken on near the inner wall or at another representative point of the combustion chamber as authorised by the Agency.

3. Each combustion chamber of a waste incineration plant shall be equipped with at least one auxiliary burner. This burner shall be switched on automatically when the temperature of the combustion gases after the last injection of combustion air falls below the temperatures set out in paragraph 2. It shall also be used

during plant start-up and shut-down operations in order to ensure that those temperatures are maintained at all times during these operations and as long as unburned waste is in the combustion chamber.

The auxiliary burner shall not be fed with fuels which can cause higher emissions than those resulting from the burning of gas oil as defined in Article 2(2) of Council Directive 1999/32/EC of 26 April 1999 relating to a reduction in the sulphur content of certain liquid fuels (36), liquefied gas or natural gas.

Under Condition 3.20.6 of the existing licence (W0167-03), Indaver's incineration plant is equipped with at least one auxiliary burner, which must be switched on automatically when the temperature of the combustion gases after the last injection of combustion air falls below 850°C. The auxiliary burner shall also be used during plant start-up and shut-down operations in order to ensure the temperature of 850°C is maintained at all times during the operations and as long as unburned waste is in the combustion chamber.

During start-up or shut-down or when the temperature of the combustion gas falls below 850°C, the auxiliary burner shall not be fed with fuels which may cause higher emissions than those resulting from the burning of gas oil, as defined in Council Directive 1999/32/EC, relating to a reduction in the sulphur content of certain liquid fuels, liquefied gas or natural gas.

4. Waste incineration plants and waste co-incineration plants shall operate an automatic system to prevent waste feed in the following situations:

- (a) at start-up, until the temperature set out in paragraph 2 of this Article or the temperature specified in accordance with Article 51(1) has been reached;*
- (b) whenever the temperature set out in paragraph 2 of this Article or the temperature specified in accordance with Article 51(1) is not maintained;*
- (c) whenever the continuous measurements show that any emission limit value is exceeded due to disturbances or failures of the waste gas cleaning devices.*

Indaver is operated using a Distributed Control System, an automated system, which is controlled and monitored 24/7.

The facility is controlled by an interface computer system (screens, keyboard, and printers) from the Control Room. The system monitors all the parameters and measurements required in order to have a good overview of facility performance. It executes facility control loops, reports low-level and high-level alarms and controls different levels of safety interlocking.

Burners are used for start-up and maintaining the minimum temperature of 850°C in the furnace when required. This is monitored by the DCS.

Under Condition 3.20.8 of the existing IE licence (W0167-03), Indaver's incineration plant operates an automatic system to prevent waste feed at start-up, until the temperature of 850°C has been reached; whenever the temperature of 850°C has not been maintained; whenever the continuous measurements show that any emission limit value is exceeded due to disturbances or failures of the purification devices; and whenever stoppages, disturbances, or failure of the purification devices or the measurement devices may result in the exceedance of the emission limit values.

During start-up or shut-down or when the temperature of the combustion gas falls below 850°C, the auxiliary burner shall not be fed with fuels which may cause higher emissions than those resulting from the burning of gas oil, as defined in Council Directive 1999/32/EC, relating to a reduction in the sulphur content of certain liquid fuels, liquefied gas or natural gas.

5. Any heat generated by waste incineration plants or waste co-incineration plants shall be recovered as far as practicable.

Under Condition 8.1.1 of the existing licence (W0167-03), waste generated onsite are prepared for re-use, recycled or recovered, or where that is not technically or economically feasible, disposed of in a manner which will prevent or minimise any impact on the environment.

At Indaver Meath, waste is accepted for incineration onsite. Energy is recovered from the resulting flue gases in the furnace using a conventional steam boiler. The resulting steam is fed to a turbine and up to 21.5 megawatts of electricity (MW_e) is generated. Approximately 2.5 MW_e is consumed by the equipment in the plant and the other 19 MW_e is then available for export to the national grid.

The recovery process implemented on site is classed as *R01 Use principally as a fuel or other means to generate energy*.

6. Infectious clinical waste shall be placed straight in the furnace, without first being mixed with other categories of waste and without direct handling.

Under normal operating conditions, Indaver do not accept any hazardous clinical wastes. However, in 2021, during the COVID-19 pandemic, in accordance with national emergency measures and under the direction of the Agency, Indaver accepted hazardous clinical wastes, such as 18 01 03*.

Under normal circumstances, such hazardous infectious clinical wastes are not accepted by the site and are not included in the current IE licence.

7. Member States shall ensure that the waste incineration plant or waste co-incineration plant is operated and controlled by a natural person who is competent to manage the plant.

The waste incineration plant at Indaver Meath is operated and controlled by competent personnel. Attachment 2-5-2 provides information on the technical skills, knowledge and qualifications of those who are responsible for the operation of the plant.