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ORAL HEARING INTO

PROPOSED DECISION 186-1

RINGASKIDDY WASTE MANAGEMENT FACILITY

PROOF OF EVIDENCE

Conor Jones

INDAVER IRELAND

1. Introduction

My name is Conor Jones and I am Site Services Manager and Project Manager with Indaver Ireland. I am a Chemical Engineering graduate of University College Dublin. I have 6 Years Experience in the Waste Management Industry with Indaver Ireland. In my first three years with the company, I managed our Waste Transfer Station in Dublin Port and for all six years I have also managed our on-site services division.

For the past 3 Years I have been working on Indaver's major infrastructure projects in Ireland. I was involved in the compilation of the EIS, Planning application, EPA Licence Application, Seveso Notification and the Hazard Identification and Risk Assessment for the Ringaskiddy Project.

2. Scope

I will be covering the following elements of the proposed facility in my evidence;

- Selective Non-Catalytic Reduction Technology for NO_x reduction
- Fugitive Emissions from WTE Plant and Waste Transfer Station
- Ash sampling and classification.

3. Selective Non-Catalytic Reduction (SNCR)

General

All combustion processes lead to the formation of nitrogen oxides (NO_x). These substances are formed partly from combustion of the nitrogen fraction in the waste feed and partly from the oxidation of nitrogen in the combustion air. The optimised combustion conditions in the furnace will minimise the oxidation of nitrogen in the combustion air. However, to meet the strict NO_x emission values set out in the Incineration Directive, 'De NO_x' technology will be used.

This technology uses the reaction of ammonia or urea with nitrogen oxides at high temperature to convert the nitrogen oxides to nitrogen and water vapour thus reducing the NO_x concentrations in the flue gases. This will be achieved by the injection of the ammonia/urea into the first section of the boiler. This technology is known as selective non-catalytic reduction (SNCR).

The concentration of NO_x in the combustion gases will be continuously monitored and the rate of ammonia or urea injection will be set to ensure that the NO_x concentration will be well below the concentration limits in the Directive.

Reason for Technology Selection

The application and control of this technology is well established and will achieve the low limits set by the incineration directive. SNCR is suitable for the Ringaskiddy facility because of relatively low NO_x generation in the raw flue gases. SNCR technology is considered as BAT in the Draft BREF Guidance document on Incineration.

4. Fugitive Emissions

General

Fugitive emissions are addressed in Section 9.7 of the Licence Application reference document. There will be the potential for fugitive emissions from both the Waste to Energy Plant and the Waste Transfer Station. However, mitigation measures have been incorporated into the design to prevent any significant fugitive emissions.

These measures include:

Waste to Energy Plant

- Breathing losses from bulk storage tanks will be ducted to the Post Combustion Chamber (PCC), and to an activated carbon unit if the PCC is shut down.
- Unloading, handling and storage of solid waste will be undertaken in the enclosed reception hall which will be under negative pressure.
- Dry link couplers will be used for all tanker unloading operations.
- Regular inspections of pipe work to ensure that any leaks are identified and repaired.
- Vehicles delivering non-hazardous solid waste will be covered.
- Bottom ash will be stored in a bunker inside the main process building. The bottom ash will also be loaded inside in this area to prevent any fugitive emissions. All trucks leaving the facility will be covered.
- Hazardous residues (electrofilter ash and flue gas cleaning residues etc.) will be transported in closed conveyors to silos. Silos will be equipped with HEPA filters and all loading operations will be enclosed and loaded into closed containers.
- No materials which could give rise to dust will be stored in the open air.

Waste Transfer Station

- Breathing losses from bulk storage tanks will be ducted to an activated carbon unit.
- Dry link couplers will be used for all tanker unloading operations.
- Regular inspections of pipe work to ensure that any leaks are identified and repaired.
- Fugitive emissions from the drum wash and repack building will be ducted to an activated carbon unit.

5. Ash Sampling and Classification

General

All ash residues will be sampled regularly and subsequently analysed in order to determine whether they are classified as hazardous or not.

The classification of the residues as hazardous or not is made by referencing the composition of the residue with the classification rules set out in the European Waste Catalogue (EWC). If the residue does not contain the properties listed in H1 to H14 of the 'Waste Catalogue and Hazardous Waste List', and Annex III of

the Hazardous Waste Directive 91/689/EEC, it is non-hazardous. The list makes provision for this choice of hazardous and non-hazardous, by the inclusion of "mirror entries" for all residues from the incineration process depending on the presence and concentration of "dangerous substances".

The monitoring regime is outlined below.

Monitoring Frequency

Schedule C.4 of the proposed licence requires that waste residue monitoring be conducted quarterly for the first year and biannually thereafter on the bottom ash and boiler ash and biannually on the electrofilter ash, flue gas cleaning residues and gypsum.

As proposed in section 13.4 of the waste licence application, Indaver will conduct full composition and leachate testing on the bottom ash, boiler ash, electro filter ash & flue gas cleaning residues fortnightly (initially), until the composition has been confirmed.

Once initial characterisation tests indicate the composition and the classification for disposal of the various ash types, the classification is not expected to change and the monitoring of ash will be reduced in line with the licence requirements.

Classification

Bottom Ash
The bottom ash will be non hazardous and will consist mainly of silicates, minerals, and metals. The bottom ash will be sampled by an independent company, using standardised methods, to ensure that representative sampling is carried out prior to analysis. Until fully characterised, the analysis will be confirmed before the bottom ash is sent off site for disposal.

The EWC code for the bottom ash is 19 01 12, bottom ash and slag other than those mentioned in 19 01 11*.

Boiler Ash
Based on experience elsewhere in Europe it is expected that the boiler ash will be non hazardous for disposal. However this ash will be treated as hazardous until analysis confirms that it is non hazardous for disposal. The boiler ash will be sampled and analysed as outlined in section 13.4 of the licence application until fully characterised.

The EWC code for the boiler ash will be 19 01 15* (boiler dust containing dangerous substances) or 19 01 16 (boiler dust other than those mentioned in 19 01 15*) depending on the results of analysis.

Electro filter ash & Flue Gas Cleaning Residues
The electro filter ash and flue gas cleaning residues will be classified as hazardous for disposal and will be disposed of to a hazardous waste landfill.

The EWC code for the electro filter ash is 19 01 13*, fly ash containing dangerous substances. The EWC code for the flue gas cleaning residues is 19 01 07*, solid waste from gas treatment.

Gypsum

It is expected that the gypsum will be non hazardous for disposal. However it will be treated as hazardous until analysis confirms that it is non hazardous. If no reuse option can be found for the gypsum, it will be disposed of to a non hazardous waste landfill.

The EWC code for the gypsum is 19 01 05* (filter cake from gas treatment) or 19 01 07* (solid wastes from gas treatment) or 19 01 99 (waste not otherwise specified) depending on the results of analysis.