Attachment F .1 Treatment, Abatement and Control Systems.

Dust and Odour Control System

The potential sources of dust emissions are vehicle movements over paved areas during dry periods and processing of the wastes. The mitigation measures currently employed, including regular cleaning of the paved yards and processing all waste inside the buildings, have proven to be effective in controlling emissions from such sources, as is demonstrated by the results of the dust deposition monitoring carried out by PANDA in accordance with the current Licence requirements.

In Building 3 there is provision for the extraction and treatment of odorous air in an odour control system that has a design capacity of 40,824 m^3/hour. The system which is designed to accommodate the drying of waste as part of the manufacture of SRF, comprises particulate removal (dust cyclone), followed by venturi and alkaline scrubbers that treat the air before it is fed into the furnace. The temperature in the furnace will be maintained at between 800 and 850^0 Centigrade (C). A back up carbon filter is provided and used to treat the odorous air in the building when the furnace is shut down for routine maintenance.

Although the IBA does not present a risk of odour nuisance, it is intended to retain the capacity to install the dust and odour control system and emission point authorised under the current licence to allow the flexibility to manufacture SRF, or introduce other waste treatment processes in the future.

In Building 4, the odour abatement system comprises a staged air extraction, scrubbing and treatment in a roof mounted bio-filter. The system has a design capacity of 104,000 m^3/hour. The first stage involves high efficiency acid scrubbing to remove alkaline based odours, particulates, and bioaerosols, which are similar to fine particulates in the particle size range of 1um to 2.5 um. This stage also incorporates a high efficiency vane eliminator capable of removing all mist greater than 1 um to an efficiency of 99.5%.

The second stage is a biotrickling filter that will remove odorous gases and this is followed by third stage polishing utilising carbon filtration that will also assist in removing particles and odorous gases. The fourth stage involves the injection of plasma after the biotrickling filter and before the air enters a carbon filter.

Although the type of waste processing that will be carried out in Building 4 has not been determined it is intended to retain the capacity to install an odour control system and the associated emission point, to allow the flexibility introduce other waste treatment processes in this building in the future. While the location of the emission point should not change, it is likely that the design of the odour abatement system will be different from that currently authorised; however the details will be submitted to the OEE for its prior approval as part of a Specified Engineering Works

When the ash is emptied from the grate in the WtE plant it will be quenched with water and will be damp when loaded into the transport vehicles. On arrival at the PANDA installation the ash will be off-loaded inside Building 3, where the treatment plant described in Attachment D1 is located. Following the removal of the metal the treated IBA will be stored on the building floor until it is loaded into the transport vehicles, which will also occur inside the building.

The IBA comprises the elements of the MSW waste stream that cannot be burnt e.g. glass, brick, rubble, sand, grit, metal as well as combusted products such as ash and slag. It has a low potential to generate odour nuisance and typically in other EU member states and in the USA is stored in the open pending treatment. However is odours are an issue the carbon filter already authorised for Building 3 will be used.

Surface Water Controls

The exiting water storage tank is used to supply the dust suppression systems and the road sweeper and the jet vac fleet. At present, the tank is filled with water abstracted from two on-site wells. The rainwater run-off from the roof of Building 4 will replace the groundwater, but the wells will be retained as back-up during dry weather.

A shut off valve has been fitted at the outfall from the ICW. This will be activated in the event of an incident that could give rise to surface water contamination, for example a fire or accidental release of oils. The run-off from the new paved areas (5,000 m^2) around Building 4 will discharge to a new on-site soakaway via an oil interceptor.

All waste processing is and will be carried out inside fully enclosed buildings. There is no direct or indirect discharge of leachate or sanitary wastewater to the surface water drainage system.

Materials with the potential to adversely affect surface and groundwater quality, for example oil, is stored and handled in a manner that minimises the risk of accidental spills or leaks. The design and construction of all the tank and drum storages areas comply with the licence conditions, which requires that all such structures/areas are impervious to the materials stored and that that there is adequate retention capacity to contain any accidental spills or leaks.

PANDA has site specific procedures to deal with spills and any emergencies that may arise to ensure that the appropriate response actions are taken by trained staff to minimise any associated environmental impacts. Appropriate spill containment and clean-up equipment is provided at the facility, as required by the current licence conditions.

In the event of an incident or accident at the facility, including a fire that could give rise to the risk of surface water pollution, the shut off valve on the outlet from the ICW will be closed to contain the contaminated surface water within the facility's drainage system. Following any such incident, the water that accumulates in the drainage system will be tested to identify the appropriate management option.

Wastewater

Sanitary wastewater from the Administration Building is collected and directed to an on-site Biocycle wastewater treatment plant, located to the south of the building. The treated effluent used to discharge to an on-site percolation area, but this has been discontinued and the effluent is currently sent off-site for treatment in a local authority owned municipal wastewater treatment plant.