Material recovery facilities

(6) Check List – Material Recovery

I. Activity

- What is the general condition of the facility? (visible spillages, strong odour, intensive dust layer, rusted vessels and pipes)
- Is a pre-acceptance procedure performed to assess whether the waste is suitable for storage and treatment at the facility?
- Is the accepted waste type (EWC) in line with the permit?
- How is the incoming waste identified?
- Is sampling performed by qualified persons and in line with corresponding standards?
- Is pre-acceptance information compared with the incoming waste?
- Is the available storage capacity checked before accepting the waste?
- Are records kept for waste received for utilization/recovery? And are the record kept on valid forms?
- Is the waste flow documented and traceable?
- Are the waste transfer cards filled out correctly (i.e. stating the type of waste, quantity of waste and the registration number of vehicles)?
- What are the different treatment throughputs of the facility and is it in line with the permit?
- Are treatment processes documented?
- Does the consumption of possible used raw material meet the quantities defined by the permit?
- Are criteria for rejection of waste set?
- Is unacceptable waste isolated and stored in a quarantine area before its removal?
- Are unaccepted waste deliveries documented and reported?
- In case hazardous waste is treated, is additional information such as hazardous waste category, names and maximum concentration, waste composition, calorific value, etc. available?
- Is the amount of annually hazardous waste treated in line with the permit?
- How is the proper treatment of accepted waste controlled?
- Are records kept for waste generated?
- What happens with the produced wastes? (wastes unintentionally produced e.g. activated carbon from the abatement technology)
- Is the final recycled material analysed? (e.g. leaching behaviour of stabilised waste)
- Are energy, material consumption and emission in accordance with the BAT BREF document “Waste treatment Industry” and the permit?
- Are the installed abatement technologies sufficient for the facility emissions?
## (6) Check List – Material Recovery

### II. Facility Development

- Are all installations listed in the permit?
- Are the capacities of the installations in line with the permit?
- Are all treatment technologies in line with the permit?
- Are the storage conditions as stated in the permit?
- Do storage areas have sufficient capacity?
- Is the drainage infrastructure sufficiently large to contain all possible contaminated run-offs?
- Are the storage areas separated for different waste types to avoid mixing?
- What is the condition of the tanks, drums, vessels and other containers at the storage area?
- Is periodic maintenance of installations recorded and sufficient?

### III. Handling

- What are the spillage procedures in case of leachate?
- Are the employees trained regarding hazardousness and proper personal protective equipment of the different waste types?
- Are proper tools for opening, holding, clamping, lifting and rotating devices in place?
- Are material losses and emissions documented?
- Are emissions into air, soil and water prevented or kept as low as possible? (especially at areas for unloading, blending, mixing, opening and emptying)
- Can used and empty containers be a source of emissions? Are they cleaned before emissions occur due to evaporation or rinsing out?
- What happens to water used for cleaning?

### IV. Dust/Fine Particulates Control

- Are operational procedures/working plan in place, which set out the design, operational considerations and requirements to minimise and control potential nuisance from dust?
- Is the effectiveness of the design and operational provisions regularly monitored?
- Is dust monitoring performed at specified locations on and off site?
- Are water sprinklers operated in waste handling areas?
- Are dust extraction systems, to remove dust and particulates from working areas, used?
- Are all relevant areas (e.g. main transfer station) as well as roadways regularly swept?

### V. Noise and Vibration Control

- Is the plant and equipment adequately maintained to mitigating noise levels?
- Is equipment selected that has low noise emission levels (confirms with EU Noise Standards)?
- Is it ensured that noisy equipment is not used for long periods of time and at inappropriate times (e.g. defined in operational procedures)?
- Are patterns of waste delivery monitored in order to ensure that vehicle movements are avoided during specific periods?
- Are site roads maintained to reduce noise and vibration from vehicle movements?
- Are noisy plants and equipment located away from residential areas and enclosed if possible?
- Is regular monitoring of noise levels carried out?
- Are noise related complaints recorded and investigated?
- Are noisy activities carried on indoors and are building doors kept closed?
(6) Check List – Material Recovery

VI. Odour Control
- Are wastes known to be malodorous accepted?
- Are appropriate procedures developed and implemented for dealing with malodorous waste?
- Are appropriate air filtration systems with bio-filters to remove odour used?
- Are all waste handling areas regularly inspected and monitored by facility staff?
- Is odour monitored at specified locations on-site and off-site (i.e. sensitive areas, settlements)?

VII. Emissions into water
- Does the supplied water undergo treatment?
- Is the deep water well lining suitable protected, in case of water from own sources, so that rainwater does not penetrate the well?
- Is rain water collected?
- Is all water that can be contaminated collected?
- Does the quantity of used water match with the permit?

VIII. Emissions into air
- How are pollutants released into air recorded (continuous measurement, periodical measurement of the quantity of consumed raw materials and fuel)?
- Is the type and quantity of introduced pollutants compliant with binding detailed legal requirements, e.g. regulations?
- Is the type of introduced pollutants in compliance with binding emission standards?
- Is the release of pollutants monitored in line with stipulations of the permit and/or in line with binding detailed legal requirements, e.g. regulation?

IX. Emission into soil
- Is the base and drainage system of the facility impermeable for the existing waste types?
- Are the protections for emissions into sufficient and in good condition?

X. Environmental management
- Is an environmental management system in place?

XI. Special focus at metal recycling facilities
- Special focus should be taken regarding section V Noise and Vibration Control
- Further focus should be on energy consumption and efficiency

XII. Special focus at paper recycling facilities
- Special focus should be taken regarding section VI Odour Control
(6) Check List – Material Recovery

XIII. Special focus at glass recycling facilities

- Special focus should be taken regarding IV Dust/Fine Particulates Control and V Noise and Vibration Control

XIV. Special focus at plastic recycling facilities

- Are the plastic fractions separated regarding plastic type (e.g. PE, PA, PP, etc.)?
- Are plastic fractions including brominated flame retardants separated and separately treated?
- Special focus should be taken regarding IV Dust/Fine Particulates Control and V Noise and Vibration Control

XV. Further issues to be checked

- Security
- Accident management plan
- Pest
- Mud on the road
- Closure and aftercare management plan
- ...

Source: Checklist for the waste management sector covering waste recovery
“Increase of operating efficiency of Inspection for Environmental Protection, on the basis of Norwegian experience”

Further reading: BREF Waste treatment Industries: