



Briefing note 3 – Health and safety

Safety systems incorporated into the design and operation of energy-from-waste facilities

Proposed energy-from-waste facility at Great Blakenham, Suffolk

Background

Recycling and resource management company, SITA UK, operates a number of energy-from-waste (EFW) facilities in the UK. This briefing note summarises the legislation that these facilities must operate under and the requirements of the agencies that regulate them - the Health and Safety Executive (HSE) and the Environment Agency (EA). The role of both of these organisations is to ensure the plants are built and operated in a safe and environmentally acceptable way.

Permit to operate

Organisations that operate energy-from-waste facilities in the UK must have a 'permit to operate', which is issued by the Environment Agency. This sets out the requirements that must be met before a facility is able to operate. It also sets out emissions levels that must be achieved. These emissions limits were set by the World Health Organisation to ensure there is no negative impact on human health or the environment.

The permit requires the operator to:

- monitor emissions continuously
- ensure monitoring equipment is correctly calibrated
- provide data for the public domain
- report within 24 hours any occurrence that causes emissions to exceed these limits

The Environment Agency has the power to demand improvements to poorly operating facilities and can issue a 'prohibition notice' requiring a facility to shutdown until improvements are made. The Environment Agency will make regular audit visits to a site, some of which are without warning, to ensure that standards are maintained.

Safety through Statutory Regulations

Various legislation requires a plant operator to ensure that a facility is maintained in a safe condition. A key piece of legislation is the Pressure Systems Safety Regulations (PSSR). This requires 'statutory inspections' to be carried out on systems operating under pressure (eg Boilers) by an independent inspector at prescribed intervals. The extent of the inspection is detailed in a 'written scheme of examination' which must be approved by a 'competent body' working on behalf of the Health and Safety Executive. Inspections must be recorded and a facility can only continue to operate if the inspector considers the condition of the equipment is acceptable and fit for purpose.

Similarly other systems require periodic inspection and certification, for example all items of lifting equipment and any equipment providing a safe place of work such as ventilation systems.



Safety through plant design

Plants containing large boilers must be designed in accordance with relevant European and British standards, which include in-built safety systems to ensure that they cannot exceed their maximum working pressure. Plants are computer controlled and key (safety) controls are designed to ensure that it will shut down safely in the event of any abnormal operation which could result in hazardous conditions. All plant designs are subject to a rigorous 'Hazard and Operability Review' (HAZOP).

Safety through insurer requirements

The owner of an energy-from-waste facility needs to insure against loss and premiums and cover are dependent upon the insurer being satisfied that a facility is constructed, operated and maintained to an appropriate standard. To this end insurers carry out stringent audits of plant and processes and pay particular attention to all the systems installed to minimise loss, such as fire detection systems, water cannons and inert gas blanketing for electrical systems. Insurance companies often pay close attention to statutory inspections and in many cases act as the competent authority on behalf of the Health and Safety Executive.

Safety through correct operation

SITA UK has a matrix system for identifying the training that is required for each role in the organisation. This is a mixture of theoretical training (principles of how equipment works) technical training (how equipment must be operated) and health and safety training (how to work in the facility without putting themselves or others at risk). In recent years more effort has been focused on employees *demonstrating* competency. Following training, employees are assessed to ensure they can correctly apply their learning in the work place. The matrices contain a record of the training received and record whether the appropriate competency levels have been attained.

Ensuring that the plant is being operated safely and effectively is the primary responsibility of the management team at the site who must have the appropriate qualifications and experience. SITA UK has its own Environment and Safety professionals who provide expert support to the facilities and carry out internal auditing to ensure that standards are being achieved.

Summary

The intention of this briefing note is to show that the safe and environmentally acceptable operation of an energy-from-waste facility is dependent on a number of factors. These include; meeting the requirements of relevant legislation, designing and building the plant in line with appropriate codes and standards, maintaining and inspecting the plant to ensure it remains fit for purpose and operating the plant correctly to keep it within design conditions. Finally there is a need for internal and external auditing to ensure these processes are being followed.

If you would like more information about health and safety, or any other issues relating to the proposed energy-from-waste facility please call our freephone information line: 0800 0721179

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