Decommissioning Proposals

Proposals for ensuring that satisfactory de-commissioning arrangements are given below, and cover the following areas:

- ✓ Actions to be taken at Design & Build of new developments
- ✓ Site Closure Arrangements for:
  - o Decommissioning
  - o Decontamination
  - o Demolition

Design & Build of New Developments

New developments at the site could range from small scale installations such as new storage silos or bulk tanks, to major equipment installation, to new production bays. Such developments offer the opportunity to ensure safe and efficient de-commissioning in the future, by considering relevant aspects at the planning stage.

Factors that will be considered, and the general approaches to be adopted are shown in Table 1.

Decommissioning at Site Closure

Decommission involves bulk removal activities that take place on the closure of an active site. This may include clearing of tanks and associated pipework, safe disconnection of services, general housekeeping measures and securing the site from unauthorised access.

Factors that will be considered, and the general approaches to be adopted are shown in Table 2.

Decontamination at Site Closure

Decontamination involves the treatment and cleaning of structures or equipment contaminated during the operation of the plant, or where hazardous substances (e.g. asbestos) are part of the building or plant.

Factors that will be considered, and the general approaches to be adopted are shown in Table 3.

Demolition at Site Closure

Demolition is the physical process of dismantling and disposing of built structures including buildings, framed structures and process plant.

Factors that will be considered, and the general approaches to be adopted are shown in Table 4.

Table 1 Design and Build Considerations

Factors considered	Approach
Underground tanks or pipes	To be avoided where possible. If required, then secondary containment and/or leak detection will be installed and supplemented with a formal programme for inspection and maintenance.
Cleaning of vessels & pipe work	Appropriate points for drainage of pipes and tanks will be incorporated into the design of any new vessels and associated pipe work.
Materials used are recyclable	This will be incorporated into tender specifications as a general aim to be addressed where practical.
Insulation is provided which is readily dismantled without dust or hazard	This requirement will be included in tender specifications during the development process (i.e., notified to the designer, planning supervisor and contractors).
Emergency preparedness	Ensure that contractors have made suitable provision for foreseeable environmental emergencies (e.g., spills if working with any liquids) during the construction of the buildings.
Records	A CDM[1] Health & Safety File will be completed and maintained as a source of information for decommissioning in the future.

[1] In compliance with the Construction (Design and Management) Regulations 1994

Table 2 Decommissioning Considerations

Factors considered	Approach
Protection against vandalism	Site/Area to be protected by secure fences and routes of access to be locked/secured.
Awareness of all contractors of site rules for environmental protection	Specific site rules included within contracts and on-site induction for environmental protection given to all contractors prior to start of work.
Access & loading/unloading areas	To be assessed in conjunction with contractors
Cleaning of raw materials storage areas [2]	All materials to be removed and sold or disposed of, with special attention during the loading process to the material, hazard characteristics and its classification with regard to disposal.
Cleaning of induction furnaces [2]	Removal of refractories and/or ceramic fibre linings and insulation materials.[3] Drainage and safe disposal of treated water from furnace cooling systems. Removal and disposal or recycling of skull scrap and then disposal or sale of the furnace.
Cleaning of cupolas [2]	Removal of refractories and/or ceramic fibre linings and insulation materials. [3] Drainage and safe disposal of treated water from furnace cooling systems. Removal and safe disposal of radioactive charge level indicators. Removal and disposal or recycling of skull scrap and then disposal or sale of the furnace.
Cleaning of heat treatment furnaces [2]	Removal of refractories and/or ceramic fibre lining.[3] Removal and disposal or recycling of skull scrap and then disposal or sale of the furnace

[2] Alternatively, may be undertaken as part of the Decontamination stage in the Site Closure
[3] Materials containing Refractory Ceramic Fibre require disposal as Hazardous Waste (formerly "Special" Waste)

Table 2 Decommissioning Considerations

Factors considered	Approach
Cleaning of abatement plant (dry bag filtration plant) [4]	Removal of all material collected by the plant. Removal of all the bag/cartridge filters within the plant, these filters to be bagged up for appropriate disposal
Cleaning of abatement plant (cyclone) [4]	Removal of all material collected by plant for disposal
Cleaning of abatement plant (wet) [4]	Draining of all liquid collected by the plant and also within the plant. Liquid may require specialist disposal. Sludges to be removed for disposal.
Cleaning of sand reclamation plant [4]	Removal of all sands within the plant unit for disposal or re-use/recycling
Cleaning of sand silos/hoppers [4]	Emptying of all silos and hoppers of all materials. Also associated pipework will be emptied
Cleaning of machine shop plant [4]	All machines to have cutting fluids pumped out and be correctly disposed of.
Cleaning of quench tanks [4]	Emptying of all quench tanks (oil, water or synthetic quenches) and cleaning of tanks before appropriate disposal or recycling
Cleaning of shot/grit blast machines [4]	Emptying of all shot/grit media from plant for appropriate disposal or sale
Cleaning of sand mixers [4]	Disconnection of chemical binder and sand feeds. Drainage of all feed pipes into suitable containers for safe disposal. Removal of mixed sand from mixer troughs and around plant.
Cleaning of general production areas [4]	Removal from all areas of materials that can reasonably/practicably be removed

4 Alternatively, may be undertaken as part of the Decontamination stage in the Site Closure

Table 2 Decommissioning Considerations

Factors considered	Approach
Cooling towers	Drain all cooling towers and dispose (discharge to sewer/drain or tankered) of water as appropriate, depending on type of chemical treatment agents used and concentration.
Cleaning of laboratory facilities	Removal of all substances within the laboratory and appropriate disposal. Disposal of any radioactive source materials to a suitable facility.
Cleaning of drainage system	All interceptors will be pumped out and cleaned to remove any residual polluting matter
Safe disconnection of services	All electrical services to be locked off and disconnected. All gas connections to be purged and locked off. All compressed air lines to be disconnected, ensuring no residual pressure is left within the lines. All oil lines to be drained out (also see section on the flushing of pipelines)
Waste disposal drums and IBC's	All wastes to be clearly identified, appropriately packaged (overpackaging where required) and correctly disposed of in accordance with the relevant legislation (Controlled and/or Special waste)
Waste disposal bulk liquids	All wastes to be tankered away for disposed after identification (chemical analysis where appropriate). With removal completed under supervision
Disposal of surface deposits and stockpiles	All waste to be loaded for disposal by an appropriate method (dependant upon hazards of material and quantities) taking account of possible dust creation. Disposed of according to relevant legislative controls (i.e. Controlled and/or Special waste)
Making safe any underground tanks, etc.	All underground tanks will be de-gassed and filled with an inert material, e.g., sand

Table 2 Decommissioning Considerations

Factors considered	Approach
Location plans for all underground pipes	To be determined as part of the Site Condition investigation, with modification of site plans as appropriate over the operation life to indicate location of new installations
Location plans for all underground tanks	To be determined as part of the Site Condition investigation, with modification of site plans as appropriate over the operation life to indicate location of new installations
Location plans of all hazardous waste storage areas	Identified on site plan
Location of all lagoons identified	Identified on site plan
Method for establishing the composition of the lagoons material	Maintenance of records on lagoon contents, along with analysis details
Method for ensuring the surrender of landfill licence	Compliance with the licence conditions and post closure after care regime
Plant and wheel washing	Requirement for to be assessed in conjunction with the contractors
Emergency preparedness	Appropriate fire-fighting equipment present on site. Spill kits/response material will be present on site. Detailed plans and procedures will be developed in conjunction with contractors

Table 3 Decontamination Considerations

Factors considered	Approach
Protection against vandalism	Site/Area to be protected by secure fences and routes of access to be locked.
Awareness of all contractors of site rules for environmental protection	Specific site rules included within contract and on-site induction given to all contractors
Site contamination investigation	To be devised from initial site report and knowledge of the current and previous (period between site report and de-commissioning) processes
Areas to be noted for sampling to include: 1. Stocking and handling areas 2. Production areas	
Materials to be noted for sampling to include: 1. Contamination of stocking and handling areas 2. Heavy metals at iron and steel processing units 3. Oils at iron and steel processing units 4. Heavy metals at slag and metal recovery operations 5. Sediments in lagoons	
Removal and/or sealing of asbestos containing material within and/or on buildings and plant	All asbestos work to be performed by an appropriately licensed contractor, after notification to the HSE and in accordance with all the relevant regulations. The waste will be disposed of as special waste to a licensed facility.
PCB contamination, e.g., in electrical switchgears	Removal and disposal of all elements of plant and equipment that is identified or suspected as contaminated with PCBs

Table 3 Decontamination Considerations

Factors considered	Approach
Removal or flushing out of pipelines	All pipelines (both under and above ground) will be as a minimum flushed through. Then an assessment for removal will be made
Removal or flushing out of vessels	All vessels (both under and above ground) will be as a minimum flushed through. Then an assessment for removal will be made
Cleaning & dismantling of abatement plants (dry bag filtration plant, cyclones, and wet arresters)	Careful dismantling of plant and cleaning of the dismantled elements of the plant and associated ducting. Prior cleaning or flushing through of ductwork, etc. may be appropriate if not already undertaken.
Dismantling of sand mixers	Careful dismantling of plant and cleaning of the dismantled elements of the plant and associated pipe work. Cleaning of the sand mixing plant hoppers and mixing vessels of the various binders and additives used, if not already undertaken.
Cleaning of plant	The removal & disposal of all oils (hydraulic, pneumatic) within plant
Waste disposal	All waste materials to be appropriately disposed of according to legislation
Emergency preparedness	Appropriate fire-fighting equipment present on site. Spill kits/response material will be present on site. Detailed plans and procedures will be developed in conjunction with contractors

Table 4 Demolition Considerations

Factors considered	Approach
Protection against vandalism	Site/Area to be protected by secure fences and when site not manned all routes of access to be locked
Awareness of all contractors of site rules for environmental protection	Specific site rules included within contract and on-site induction given to all contractors
Asbestos containing material within and/or on buildings and plant	All asbestos containing material removed before any demolition work on the appropriate building began, see asbestos element in decontamination
Consideration of contamination	Completion of the de-commissioning and decontamination sections activities should result in the demolition section being determined primarily by conventional factors, such as prevention of nuisance, engineering constraints and minimisation of physical hazard, etc.
Plant & wheel washing	Requirement for, to be assessed in conjunction with the contractors
Information	Ensure the CDM Health & Safety File is available and up-to-date as a source of information
Emergency preparedness	Appropriate fire-fighting equipment present on site. Spill kits/response material will be present on site. Detailed plans and procedures will be developed in conjunction with contractors