European Bank
for Reconstruction and Development

Sub-sectoral Environmental and Social Guidelines: Petroleum and Coal Products

PROCESS DESCRIPTION

The Petroleum and Coal Products Manufacturing subsector is based on the transformation of crude petroleum and coal into usable products. The dominant process is petroleum refining which is covered in a separate guideline. This guideline covers a wide range of processes including:

- Coke production;
- Coal gasification to produce SynGas;
- Coal liquefaction;
- Coal tar distillation;
- Carbon black manufacture;
- Bitumen blowing.

The preparation of coal (i.e. screening, grading, blending, washing, packing, loading/unloading, transporting) prior to use is not covered within this guideline. The downstream uses of these products such as asphalt roofing etc, are also not covered by this guideline.

Coke Production

Coke is produced by baking low-ash, low-sulfur bituminous coal without oxygen at temperatures as high as 1,000 °C to remove the volatile constituents. It is used as a fuel and as a raw material in iron ore smelting.

Coal Gasification (SynGas Production)

Coal gasification is the reaction of coal with oxygen, steam and carbon dioxide to form SynGas. The SynGas is later purified to the required specifications and can be converted into other hydrocarbons as required, e g. methanol. Sulphur in the coal is released as hydrogen sulphide and nitrogen is released as ammonia. Both forms are easily captured and utilised in saleable products. Ash and coal tar are recovered from the bottom of the reactor.

Coal Liquefaction

Coals can be converted into liquid fuels by direct or indirect liquefaction:

- *Direct:* Coal is either hydrogenated (mixing it with hydrogen gas and heating the system) or carbonised (coked between 450 and 700°C compared to 800 to 1000°C for metallurgical coke) to produce coal tars richer in lighter hydrocarbons than normal coal tar: the coal tar is then further processed into fuels);
- *Indirect*: Coal is converted into SynGas which is converted into light hydrocarbons such as ethane which can be converted into fuels such as gasoline and diesel.

Coal Tar Distillation

Coal tar results from cooling the gas produced during coal carbonisation (coking and gasification). Primary distallation yields either naphthalene oil or light creosote (middle oil) and heavy creosote (heavy oil). The process leaves residual oils which are blended to give creosote oils, which are used as a feedstock for carbon black manufacture, as a timber preservative, and for fluxing coal tar, pitch and bitumen.

Carbon Black

In carbon black manufacture, a heavy aromatic feedstock (such as coal tar distillation residue) is injected into a stream of combustion gases and burned and cracked between 1200 and 1700°C to produce carbon black and hydrogen. The output is quenched with water and recovered by

cyclones and bag filters, pelletised and dried. The product is stored in silos pending distribution. Commercial uses of carbon black include use in tyres, rubber and plastic products.

Bitumen Blowing and Asphalt Processing

Bitumen is the residue from crude oil distillation. Bitumen blowing is used for polymerising and stabilising bitumen to improve its weathering characteristics. Air is blown through a hot bitumen flux to raise the temperature at which it will soften. Catalysts may be used to achieve certain properties and to increase the rate of reaction. Blown bitumen is used in the production of asphalt roofing products, in the installation of built-up roofs and for the repair of leaky roofs. Various bitumen-based coatings are manufactured by mixing bitumen with solvent, oils and fluxing agents and packaging into drums, cans or tankers.

KEY ENVIRONMENTAL, HEALTH AND SAFETY RISK/LIABILITY ISSUES

The main environmental and health and safety risks for the range of coal processes described in the previous section are discussed below.

Air Emissions

A wide range of fugitive and point source emissions arise from coal processes including:

Coke production:

- Emissions of particulate matter (PM), volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), methane, ammonia, carbon monoxide, hydrogen sulfide, hydrogen cyanide, and sulfur oxides (SOx).

Carbon black and bitumen blowing processes:

- Emissions of volatile organic compounds (VOC), hydrogen, carbon monoxide, carbon dioxide, reduced sulphur compounds, sulphur dioxide and nitrogen compounds and carbon black particles.

Coal tar distillation and bitumen blowing process:

- Emissions of tar fume, odour, polycyclic aromatic hydrocarbons (PAH) and particulates from handling, storing, heating, mixing and cooling tar from coal tar distillation and bitumen blowing.

Coal gasification and liquefaction process:

- Fugitive emissions of particulates, VOCs, carbon monoxide and hydrogen;
- Point source emissions of dust and heavy oils (tar) from coal preparation, gasification and liquefaction processes;
- Gasification may release heavy metals, reduced sulphur compounds, ammonia and hydrogen cyanide;
- SynGas manufacture and heat and power generation produce significant amounts of carbon dioxide;
- Venting and flaring may release raw materials and by-product combustible gases.

Wastewater

Process water may be contaminated with hydrocarbons, PAHs, ammonia, amines, heavy metals, suspended solids. Many of these can be recovered and recycled back into the process.

Some carbon black plants achieve zero discharge to water.

Where it is not practicable to prevent the generation of these difficult wastewater streams, they need to be segregated and treated separately, before being discharged to communal effluent treatment facilities. Many facilities operate wastewater treatment plants to perform primary treatment to effluent prior to discharge to the sewerage system. Variations to wastewater discharge consents may require changes in the operation of the treatment plant, in order to maintain compliance.

Wastes

A wide variety of hazardous and non-hazardous wastes may be generated by all the processes, e.g. waste oils, spent catalysts, sludge, dust from bag houses, bottom ash.

Some, such as coal bottom ash, slag and fly ash may be commercially recycled. Others, such as sludge from coal storage and preparation, can be recycled into the process as a feedstock or fuel. Spent catalysts should be returned to the manufacturer for regeneration or sent to specialist companies to recover the heavy metals.

Soil and Surface Water Contamination

Sites with a long history of such processes may be severely contaminated with substances hazardous to health and the environment.

- Ammoniacal liquor and coal tar was frequently stored in underground tanks which may have leaked into the surrounding soil;

- Spent oxide from gasification has a high sulphur and cyanide content but can be used in dyeing and acid manufacture but on small sites may have been disposed of as waste on site;

- At earlier production sites, slaked lime used to be used to remove hydrogen sulphide from gas giving rise to heaps of "foul lime", which weather to a rock hard consistency and may give rise to hydrogen sulphide (a toxic or foul smelling gas);

- Concentrations of hazardous contaminants such as PAHs and coal tar may be widely distributed on old gas works sites around old process areas, coal storage sites and disposal areas;

- Coal dust will be concentrated in areas of coal storage and breaking.

Hazardous Materials, Fire & Explosion

Coal dust may ignite depending on concentration in air and presence of ignition sources and presents a significant hazard in coal storage and handling facilities where dust clouds may be generated in enclosed spaces. Coal itself is susceptible to spontaneous combustion. An oxygen-enriched atmosphere may develop due to leaks from air separation units leading to a saturation of materials, hair and clothing with oxygen that can burn vigorously if ignited.

Accidental releases of SynGas, oxygen, methanol and ammonia can generate fire and explosion hazards. Recommended measures to prevent accidental releases should include regular monitoring with vapour detection equipment of pipes, vales, seals and tanks. Additional recommendations to prevent to hazardous material from combustion are provided in the improvements section.

Site Security

A site threat and vulnerability assessment analysis should be undertaken and security counter measures should be developed as part of a Security Management Plan. API have developed Security Guidelines for the Petroleum Industry that should be considered.

OTHER ENVIRONMENTAL, HEALTH AND SAFETY RISK/LIABILITY ISSUES

Burns and Heat Stress

High temperatures processes can increase the temperature of the working environment which can lead to heat stress for those working in the vicinity. Contact burns can result from contact with hot equipment especially during maintenance activities.

Chemical Exposure to Petroleum and Coal Products

Coal and petroleum processing facilities manufacture hazardous materials as intermediate and final products and bi-products that should be handled, stored, and transported properly to prevent or minimise impacts to health and the environment.

Collision

This may take the form of people being hit by moving vehicles, platforms or gantries as well as by moving, flying or falling objects.

Any collisions or near misses should be recorded by the H&S system and appropriate action taken to mitigate any future collisions or near misses. Storage equipment should be inspected and potentially tested after any collisions.

Inhalation Hazards/Respiratory Disease

- Releases and accumulation of nitrogen gas from the combustion of SynGas into work areas can lead to asphyxiating conditions;
- Exposure to coal dust can lead to lung damage including cancer and pulmonary fibrosis, which is a respiratory disease;
- Exposure to carbon monoxide inhibits the capability of the blood to carry oxygen and can be fatal.

Machinery

All equipment should have safety guarding and workers should be issued with appropriate personal protective equipment to protect them and to avoid workers becoming trapped and/or injured. Again the organisations health and safety systems should identify, evaluate and control these risks (see also the improvements section).

Manual Handling and Repetitive Work

Lifting and carrying heavy or awkwardly shaped objects, such as equipment and bags, can result in manual handling injuries.

Noise & Vibration

Noise will be generated through:

- Large rotating machinery (compressors, turbines, motors etc);
- Release of high pressure gases/steam during emergency depressurisation.

Permitting

Petroleum and coal product facilities in the EU are subject to national regulations under the Integrated Pollution Prevention and Control Directive (2008/1/EC) and may be subject to the Seveso II (1996/82/EC) which aims to control the major accident hazard from dangerous substances depending on the volume of hazardous materials at the site. Operations outside the EU will still be subject to local regulations and will require an environmental and /or operational permit to operate.

Most coal and petroleum products and by-products placed on the market within the EU will be subject to new environmental called the Registration, Evaluation, Authorisation of Chemicals (REACH) Regulations (1907/2006) and may be subject to other regulations and product standards depending on the nature and intended uses of the chemical.

This regulation may ultimately place tighter restrictions on what uses certain chemical substances can be put to "downstream" and may indirectly affect market demand for coal products.

Polychlorinated Biphenyls (PCBs) and Asbestos

- PCBs are a group of substances which are good electrical insulators. Typically, PCBs may be present as constituents of hydraulic oils or dielectric fluids in electrical switchgear, transformers and fluorescent light starters;

- Asbestos has been used on a large scale for many years as a fire proofing and insulation material and may be encountered in a wide range of forms including asbestos cement boards, as fire retardant gaskets in pipework and as fire retardant insulation around boilers and furnaces.

There is a strong likelihood of these types of materials occurring at facilities involved in coal and coke processing, especially when plant and buildings were installed prior to the 1980s.

Both PCBs and asbestos are hazardous to health and an organisations existing management systems and practices should recognise these risks and potentially have programmes in place to mitigate or remove risks associated with these materials.

Slips, Trips and Falls

These often occur on the same level and are primarily caused by uneven surfaces, inappropriate footwear, lighting, weather conditions, trailing cables and pipe work especially during unblocking, maintenance and cleaning activities.

KEY SOCIAL, LABOUR AND COMMUNITY RISK/LIABILITY ISSUES

Major Accidents

Accidental leaks of in coal processing facilities and the presence of flammable gases and liquids pose the most critical hazards to community health and safety during product loading and unloading and transport outside the processing facility.

Public Anxiety

Public anxiety, particularly from neighbouring residents, can be caused by a lack of knowledge regarding the nature of the chemicals being stored on the site, odours from the site, the potential for fires and explosions and the action that will be taken in the case of an accidental

release. This public anxiety can result in significant planning constraints being imposed on this type of facility.

A stakeholder management plan should be in place which engages with the community and residents about activities at the site. Consultations with community groups would indentify any concerns and where appropriate action taken to address the concerns raised. As well as proactive engagement with community groups, there should be a system in place to record and act on complaints received.

Plans for health and safety, fire risk management and emergency response, should account for risks to the public and the community and where these plans are robust they will serve to allay fear and anxiety residents and the community may have about the facilities to store and process coal.

Dust and Odour

- Public/environmental health and nuisance issues associated with dust and vented fumes can arise from production activities and may have a significant effect on neighbouring locations. This may be important if there are residential areas and light industry in the area;

- Some of the substances produced or used have the potential to cause offensive odours to neighbouring communities.

Transport

- Transport of product by road, rail or ship can be significant issue. Transport movements may have significant community impacts and an organisation may face additional financial and operating risks associated with transporting product off site (the transport of petroleum will be subject to both local regulations and international standards related to the transport of hazardous products).

FINANCIAL IMPLICATIONS

- There is a relatively high potential for soil and groundwater contamination to be present. This can be very costly to remediate. Financial provisions may need to be set aside to address contamination and retirement of assets;

- Many countries are signatories to the Kyoto Protocol and have adopted targets for the reduction of CO_2 emissions. Where Governments have set up carbon emission reduction programmes industrial entities have been required to reduce their CO_2 emissions through the setting of targets. This can result in a need for substantial investment in new/clean technologies to achieve the emission targets. These targets may be reflected in environmental and/or operating permits;

- Injuries may lead to increased payroll costs to replace skilled workers and lost production time;

- Many countries are signatories to the Kyoto Protocol and have adopted targets for the reduction of CO_2 emissions. Where Governments have set up carbon emission reduction programmes industrial processes have been required to reduce their CO_2 emissions through the setting of targets. This can result in a need for substantial investment in new/clean technologies to achieve the emission targets. These targets may be reflected in environmental permits;

- Under the EU Emissions Trading Scheme (ETS) Member States allocate allowances for

carbon emissions to industrial operations like coal product processing plants. The scheme can create both financial assets (operators have emitted less than set in allowances) or financial liabilities (operators have emitted more than set in allowances) and entities can trade their carbon allowances;

- Capital investment may be required to comply with new environmental, health and safety requirements and investments may be required in new physical assets to store and transfer petroleum;

- If products are manufactured, exported or used within the EU they are likely to have to be registered under the REACH regulations (there is a timetable for this) as well as meet other legislation related to product standards. This may represent a substantial cost and risks, especially where any substances might be subject to "authorisation" by the European Chemicals Agency. These costs and risks may be significant to small operators producing many varieties of chemical substances from coal processing;

- Fines, penalties and third party claims may be incurred for non-compliance with environment, health and safety regulations or industry/customer standards;

- The value of assets on balance sheets may be impaired by pollution and financial provisions may have to be set aside to address these.

IMPROVEMENTS

This section considers potential measures which may be considered to improve the EHS performance of an organisation. This section is intended to be a checklist of issues to be considered rather than providing detailed specifications on design characteristics which can be found in supporting references attached to this guide.

Environmental, Health and Safety

General Guidelines

- Management systems should be in place for EHS, which will include EHS training to employees.

- Ensure asset management plans include proposals to maintain on site abatement equipment and treatment plant;

- Use dry cleaning methods wherever practicable for solids, e.g. vacuum extraction, wipe down equipment that is accessible rather than washing and rinsing it.

Air Emissions

- Implement a formal Leak Detection and Repair (LDAR) programme and where necessary, replace with higher quality items, any equipment which generate significant fugitive emissions;

- Minimise height of coal drop to stockpile;

- Consider use of water spray/polymer coatings on coal stockpiles to reduce dust emissions;

- Enclose conveyors and storage areas to reduce dust;

- Install or upgrade of abatement technology to minimise exposure to toxic raw materials and product and to control the release of emissions, e.g. enclosure of equipment, appropriate ventilation with filters, gas balancing systems, baghouses, cyclones, filters, and wet or alkali scrubbers;

- Install floating roofs, seals, vapour balancing systems to tanks as necessary;
- Limit vapour emissions through: bottom filling, closed loop systems, vapour recovery systems, gasoline supply and return systems and vapour trucks/railcars/vessels;
- Use dry techniques where appropriate to abate particulate and gaseous exhaust streams.

Energy Management

- Improve insulation to minimise heat loss;
- Recover heat and energy from processes for use elsewhere on the site or to supply heat and power off site.

Health, Safety and Fire Risk Management

- Reduce coal fire and explosion hazards by:
  - Compact coal piles to reduce air in pile;
  - Minimise quantity of coal stored;
  - Monitoring for hot spots;
  - Eliminating ignition sources including banning smoking in and around facilities and providing appropriate equipment grounding;
  - Constructing storage structures from non-combustible materials;
  - Conduct coal preparation under nitrogen blanket or other explosion prevention measures;
  - Use of adequate dust collection systems.
- Control the effect of fires and explosions by segregating distancing of process, storage, utility and safe areas;
- Use explosion-proof equipment and conductive materials and ensure that equipment is grounded and bonded;
- Provision of personal protective equipment (PPE) that is fit for the task to prevent injury and maintain hygiene standards. Staff should be trained in the correct selection, use and maintenance of PPE;
- Train workers in correct use of machinery and safety devices;
- Redesign manual processes to avoid heavy lifting/repetitive activities;
- Install mechanical lifting aids where possible and rotate work tasks to reduce repetitive activities;
- Separate people from moving equipment;
- Install safeguards on moving parts of conveyor belts to reduce risk of entrapment of employees;
- Provide local fire department with list of products and volumes stored on the premises;
- Install automatic alarms and shut off systems to key equipment and infrastructure;
- Good housekeeping should be maintained at all times in all areas;
- Consider need for upgrades to security measures.

Noise

- To reduce the risk of noise exposure isolate noisy equipment and rotate tasks to minimise time spent in a noisy area over an eight hour period and provide personal protective equipment where people have to enter noisy areas.

Soil and Groundwater Contamination

- Regular inspection should be carried out of all bulk containment on site to prevent leakage and product loss;
- Emergency storage lagoons may be needed to prevent contaminated firewater reaching controlled waters;
- Provide secondary spill containment for bulk storage tanks and silos.

Slips, Trips and Falls

- Route cables and pipework under walkways to prevent slips, trips and falls;
- Construct walkways of non slip materials;
- Provide a good standard of lighting;
- Install walkways to separate people from vehicle movements to reduce risk of collision;
- Ensure that the process layout reduces opportunities for process activities to cross paths.

Waste

- Recover and re-use raw materials and waste products where practicable e.g. in process or for heat and power generation where commercially and technically feasible.

Wastewater

- Recycle wastewater where possible back to the processes or to secondary uses such as for cleaning;
- Segregate process water, rainwater and indirect cooling water streams to reduce the hydraulic loading to waste water treatment equipment or sewers;
- Concentrated wastewater streams should be segregated and pretreated, e.g. oil/water separators, skimmers, dissolved air flotation, biological treatment, dewatering, metals removal etc.
- Contaminated or potentially contaminated storm water should be collected and routed to a treatment plant. The site should have plans documenting the location of all freshwater and foul water drains and ideally these drains are colour coded on site and the emergency response plan has measures to prevent spills flowing into the drainage network;
- Install impervious hard standing in areas of potential leaks and spills, which drains to an enclosed oil/water separator to prevent emissions;
- Oil taken from separators should be recovered and recycled/reused;

Social, Labour and Community Improvements

- Involve the neighbouring community in the creation and practice of plans to respond to major incidents at the installation;

- Implement a programme of assessment of routine monitoring of worker health.

GUIDE TO INITIAL DUE DILIGENCE SITE VISITS

During the initial site visit, the issues will vary according to the type of processes carried out, the age of the facility and the level of environment, health and safety management already introduced. While visiting the site it is important to discuss and review the following:

General Guidance

- What is the standard of "housekeeping" on site? Do areas look clean and tidy? Look for evidence of any recent spills or releases of raw materials/product.

- Confirm organisational responsibilities and systems for EHS and social issues and check that EHS systems cover both all employees and contractors;

- What processes are undertaken and hazardous materials stored including volumes? Have the risks associated with handling of petroleum products been documented and addressed in appropriate systems?

- Does the organisation have any ISO accredited systems in place which may be related to quality, environment and health and safety? Does the organisation plan to obtain any ISO standards?

- Note signs of poor housekeeping, such as signs of spillages and high numbers of empty or partially full drums (what is the condition of these drums?). Particularly note any recent spills. Look for evidence of any recent spills or releases of raw materials/product;

- Check the condition of any assets, facilities, and equipment. What systems are in place to monitor and maintain physical assets? What investment in asset management is planned? Does the business plan and financials reflect these planned investments? Look for wear and tear and poor maintenance.

Air Emissions Management

- What systems and resources are in place to ensure the facility complies with permitted air emission limits (including air emission limits related to occupational health)? If relevant, is the facility compliant with permitted air emission limits and if not, what measures and investments are required to ensure compliance?

Health Safety and Fire Risk Management

- Check signage around the site:
    - Does it convey the health and safety risks?
    - Are fire exits and/or evacuation routes clearly marked?
    - Are there demarcated routes for pedestrians and vehicles?

- Is fire fighting and first aid equipment available? Is there trained and competent fire fighting resource on site?

- Check the age and condition of equipment, look for signs of wear and tear, degradation, leaks and breaks;

- Check that solid waste storage and disposal (storage equipment) is in a good condition;

- Are staff wearing Personal Protective Equipment and have been appropriately trained to use the equipment?

Inspection and Incidents

- Check the conditions and duration of validity for all permits;
- Have the premises been inspected recently by the regulatory authorities for health, hygiene and environment? What were their findings?
- Does the organisation have insurance in place to cover the recall of contaminated/faulty products? Have there been any recent product recall incidents?
- Does the organisation have insurance to cover any significant damage to the environment/community/operations? Review the terms of the insurance cover?
- Has the organisation been subject to environment, safety or quality audits by customers/insurers? What was the outcome of these audits?
- Have there been any recent incidents on site such as fatalities, fires/explosions, spills? Is insurance in place to cover such incidents?
- Does the business plan have line items for environment, health and safety improvements as well as asset management, and maintenance?

Investment

- Where are the organisations main markets? Are they manufacturing or exporting to the EU? Will new product standards such as REACh regulation be relevant? Could the organisations markets and hence revenue be impacted by REACH? Is investment required;
- Review budgets for capital expenditure (capex) and operational expenditure to cover EHS matters. Does the business plan have line items for environment, health, safety and social improvements as well as asset management and maintenance?
- If investment or refinancing will lead to restructuring of the organisation, what will be the potential impacts on health and safety at the operation and wider community? Have these been considered and assessed by the company?
- If the company plans to invest in new technology what will be the impact on human resources?

Financials and risk management

- Does the organisation have insurance to cover any significant damage to the environment/community/operations (this may be covered by public liability insurance or the organisation may be party to an industry scheme). Review the terms of the cover;
- Does the organisation have insurance in place to cover the recall of "contaminated" oil/coal products? Have there been any recent product recall incidents?
- Does the business plan have line items for environment, health and safety improvements as well as asset management/maintenance? Are appropriate provisions set aside to meet environmental and social obligations?

- Check the conditions and duration of validity for all permits. Is the company required to comply or implement any EHS improvement plans?

Noise and Odours

- Note the noise and dust levels at the site to determine whether abatement equipment is in use or might be required;
- Note any odours that might cause a nuisance.

Storage

- Check the condition of storage facilities for raw materials and finished products;
- Confirm that audits are undertaken to monitor the condition of storage equipment. Review findings from the latest audits.
- Check for automatic safeguards on machinery to prevent accidental injury;

Waste storage

- Check that solid waste storage and disposal (storage equipment) is in a good condition;
- Check that waste storage areas are clear of debris and that skips are covered to prevent waste escaping, for example, check that waste containers have lids or are stored in an area with a roof;
- Does the organisation have lagoons on site to store oil contaminated waste? Have these lagoons been on site for some time or are they been developed relatively recently? If they are "old" there is a risk they may have leaked and caused contamination.

Water Abstraction & Management

- What amounts and quality of water are required? Where is the water obtained from? Is the water recycled? If changes are proposed will there be adequate water resources to meet any planned increases in production? Have the potential impacts been Assessed?

Waste water Management

- What liquid effluents are produced? What discharge control measures are employed?
- Is effluent and wastewater treated before discharge? If so, check the condition of the treatment plant and location of discharge
- Check the condition of the wastewater treatment plant and location of discharge points for wastewater from the facility. Note the colour and appearance of adjacent watercourses;
- Note whether the wastewater treatment plant discharges to a local watercourse or the municipal wastewater treatment works. Higher environmental risks will be associated with facilities discharging to water courses;
- What does the quality of these discharges look like? Note the colour and appearance of adjacent watercourses;
- Is water quality tested? What are the waters tested for? Where are the samples taken from and how often? Do the discharges have to meet set standards? Does the waste water treatment plants have the capacity to deal with any planned expansion at the site;
- Check for automatic safeguards on machinery to prevent accidental injury.

Social, Labour and Community

- Check that labour standards, contracting and remuneration are in line with national law and are consistent with the average for the sector;
- Check that wages and working hours are consistent with the average for the sector and national standards;
- Check that hours worked, including overtime, are recorded and staff should receive written details of hours worked and payment received;
- Check that wages and working hours are consistent with the average for the sector and national standards;
- Has the Company received inspections from the local labour inspectorate in the previous three years? Have these resulted in any penalties, fines, major recommendations or corrective action plans?
- Does the organisation have a grievance mechanism which allows employees to raise workplace concerns?
- Are employees free to form, or join, a worker's organisation of their choosing?

Take note/ask questions relating to any activities that address the improvements listed in the improvements section of this document.

Environmental, Health and Safety

- Operational procedures to manage environmental, health and safety risks;
- Monitoring programmes;
- Improvement objectives, targets and project plans;
- Training for personnel;
- Plans for asset management;
- Regular inspections, checks and audits with records to demonstrate achievement of the required level of performance against legal requirements and improvement action;
- Emergency plans for environment, health and safety accidents or hygiene non-compliance;
- Waste management plans;
- Plans to deal with closure and remediation and/or decommissioning of the site;
- Management review/demonstrated involvement in environment, health, safety and hygiene management;
- Strategic and operational plans which account for EHS issues

ACTION PLANS

Dependent on the individual business, select appropriate improvements from the list above to include in the action plan. As a minimum, any business should be required to have the following in place:

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