Fire Prevention and Mitigation & Stockpile Management Plan

Cardiff

PURPOSE

The Fire Prevention and Mitigation Plan (FPMP) is a separate document that in conjunction with the Emergency Contingency and Accident Management Plan forms part of the Environment Management System. The FPMP sets out the fire prevention measures and procedures in place on site to prevent a fire from occurring and detect, suppress and mitigate in the event one breaks out.

The fire prevention measures in this guidance have been designed to meet the 3 key objectives:
PREVENTION - minimise the likelihood of a fire happening
RESPONSE - aim for a fire to be extinguished within 4 hours
RESPONSE - minimise the spread of fire within the site and to neighbouring sites

It is strongly recognised that there is a need for emergency preparation and response as it cannot be accepted that all risks will be eliminated and all fires will be prevented by following this document. Emergency preparation and response is therefore covered in the Emergency Contingency and Accident Management Plan.

On a national level, recognition of the requirement to have contingencies in place in order to redirect incoming feed to other internal or external facilities or ultimately suspend third party and intercompany deliveries are a crucial element to adherence to the requirements and compliance with this document.

REVIEW

Review of this document should be at least annually or after any SHEC reportable event. The review should be undertaken by the SHEC Advisory Team and local site management as appropriate.

RELATED DOCUMENTS / LEGAL REQUIREMENTS

INTERNAL
- Environmental and Health and Safety Risk Assessments – Fire Risk Assessments
- Emergency Contingency and Accident Management Plan
- Operating Techniques

EXTERNAL
- Regulatory Reform (Fire Safety) Order
- BS5306: Parts 3 and 8: Code of Practice For Selection and Installation of Portable Fire Extinguishers
- Health and Safety At Work Act
- BS EN 3: Specification for Extinguishing Medium

- BS EN 5266: Code of Practice for the Emergency Lighting of Premises
- Site Environment Permit
- Environment Agency: PPG18: Managing Fire Water and Major Spillages
- Environment Agency: PPG21: Incident Response Planning
- Natural Resources Wales: Fire Prevention and Mitigation Plan Guidance

TRAINING

All applicable persons will be trained on these procedures via means of a Tool Box Talk (TBT) which is documented and reviewed as part of the internal audit process. Contractors will be made aware of the plan as relevant to their roles/ tasks being undertaken.

AVAILABILITY OF THE PLAN

A copy of the fire prevention plan will be provided in electronic format to the NRW. A copy of the Fire Prevention Plan will be available to all employees and contractors for reference purposes at all times. A copy will be available in the Emergency Grab bag in the event of an incident.

SITE ACTIVITIES

The site activities are detailed in the Operating Techniques, but in summary consist of:

- Storage and treatment of ferrous and non ferrous metals;
- Storage and treatment of general mixed scrap metal;
- Storage and treatment of End of Life Vehicles (ELVs);
- Storage of Waste Electrical and Electronic Equipment (WEEE);
- Storage of Waste Batteries;
- Storage of Waste Tyres.

TYPES OF COMBUSTIBLE WASTES

Some waste types stored and treated will be considered to be combustible e.g.

- Scrap metals contaminated or mixed with other waste such as plastics
- Undepolluted ELVs
- ELV Residues e.g. petrol & oil filters (not covered by the guidance but considered in the plan)
- De-polluted ELVs
- Tyres
- WEEE wastes e.g. ELF and computers and monitors
- Quarantined wastes e.g. gas cylinders (not covered by the guidance but considered in the plan)

Fragmentised ferrous and non-ferrous scrap and clean and uncontaminated ferrous and non-ferrous scrap metal and furnace ready scrap metal are not considered combustible for the purposes of this protocol.

A fire risk assessment will be undertaken and both environmental and H&S risk assessments will take into consideration potential for risk of fire from activities.

SITE PLANS

Plan showing sensitive human and environmental receptors within a 1km radius of the site is contained in Appendix 1 of this Protocol. This plan identifies any hospitals, nursing homes, schools, residential areas, parks and leisure/recreation areas, surface waters, potable abstractions, protected habitats, fisheries etc. within a 1km radius of the site. Transport networks (road, rail etc.) and industrial receptors are also visible on the plan.

Plan showing stockpile location, access & egress, drainage etc. will be contained in the Operating techniques and is provided in appendix 2 of this document.

Plan showing access/ egress, location of fire-fighting and emergency equipment, location of emergency assembly point etc. will be contained in the Emergency Contingency and Accident Management Plan and is provided in appendix 3.

POSSIBLE CAUSES OF FIRE

- Arson or Vandalism
- Plant and equipment faults
- Hot exhausts
- Electrical faults including damaged or exposed electrical cables
- Discarded smoking materials
- Hot works welding & flame cutting
- Ignition sources e.g. Industrial heaters
- Batteries in ELVs / Batteries
- Leaks and spillages of oils and fuels
- Build-up of loose combustible waste, dust and fluff
- Reactions between wastes (e.g. non-conforming)
- Deposited hot loads
- Non-conforming wastes e.g. LPG tanks & sealed cylinders, petrol lawnmowers.
- Self-combustion (Frag waste) not applicable
- Dust
- Sparks from loading buckets and grabs
- External sources of ignition e.g. open burning / fires on neighbouring sites/ fireworks/ lanterns
- Visitors and contractors
- Tramp Metal (that finds its way into moving machinery and causes localised hotspots)

MANAGE THE COMMON CAUSES OF FIRE

Security measures

Security measures will be in place to prevent unauthorised access and minimise risk of Arson/ Vandalism. This will including adequate security fencing and CCTV (CCTV will be monitored externally by security company). This will include arrangements for outside of working hours.

Plant & Equipment
There will be a programme of routine inspection and maintenance for static and mobile plant and machinery. All mobile plant and equipment is pre-inspected before use and the findings recorded using a pre-inspection check-sheet. All mobile plant and equipment will be subject to scheduled routine maintenance in accordance with manufacturers guidelines. Any defects will be reported and repaired. This will prevent faults that could cause fire and also prevent leaks and spills of combustible fuel and oil trailing or being tracked around site.

Fire extinguishers are available at strategic locations by static plant and machinery.

Mobile plant that is not being used is parked away from combustible waste, in locations shown on plan in appendix 2.

Mobile and static plant and equipment will be subject to routine cleaning to prevent accumulation of debris that could settle on. Visual inspections will be carried out at regular intervals during the working day and plant operators will regularly inspect their plant to detect the potential for fire caused by dust settling on hot exhausts and engine parts. This will take place at regular intervals throughout operations (a minimum of twice per day) and at the end of the operators shift. Daily routine visual inspections of the site will include a fire watch at least twice per day and at the end of the shift.

Electrical systems will be certified by a qualified electrician and there will be procedures in place that set out the regular maintenance. Portable equipment is PAT tested annually, 6 monthly for high risk tools.

Hot works
Sims has a Hotworks policy SMMUK Policy 23. A Point of Work Risk Assessment (POWRA) and permit to work system will be in place for hot works such as welding and cutting. Hot works will be carried out in a designated safe area at least 15m away from combustible stockpiles and with sufficient fire-fighting equipment available. This will include a fire watch by a nominated employee for a suitable period after hot works have ended.

Any welding required in operational areas will be subject to additional controls e.g. cordoning off area, cleaning to remove combustible materials and damping down if required.

Industrial heaters are not used on site, however should they be used, procedures will be in place that set out the use and regular maintenance of industrial heaters.

General Provisions
A no smoking policy is in place in operational areas and designated smoking areas are located a safe distance from combustible wastes to prevent accidental ignition.

Employees and contractors will be inducted and monitored to ensure they follow safe working practices and are aware of the emergency contingency and accident plan. Key employees will be trained in the use of fire fighting equipment. Regular fire drills will be undertaken to test the effectiveness of the emergency responses.

Sources of ignition will be kept 6 metres away from combustible and flammable waste.

Batteries will be removed from ELV without delay following receipt and before stockpiling and batteries will be stored in leak proof acid resistant battery boxes.

Procedures are in place to ensure fuels, oils and combustible liquids are appropriately stored to prevent leaks and spills. Storage will be at least 6m away from stockpiles of combustible wastes. Spillage procedures will be in place. Spill drills will be undertaken to test the effectiveness of the emergency responses.

Inspections will take place daily and housekeeping will be regularly undertaken to prevent the build-up of loose combustible waste, dust and fluff on plant, equipment and site.

Combustible wastes will be stored with a separation distance of 6m between waste piles, buildings, or other combustible or flammable materials and 6m from the site perimeter.

Combustible wastes stored in skips or containers e.g. tyres will be accessible so any fire that should occur inside it can be put out.

Combustible wastes (e.g. tyres) will not be stored in buildings.

With the exception of tyres which are listed in NRW guidance as being a material that is at risk of self-combustion if stored for greater than 3 months, there will be no wastes on site that will have the potential for self-combustion i.e. self-heat /generate heat at a faster rate than it can be lost to the environment.

Internal roadways will be maintained to enable fire access at a minimum of 4m width. There are no weight or height restrictions on site transport routes or on the immediate access roads in the vicinity of the site that would restrict access for Fire Rescue Service FRS appliances. Access has minimum of 3.7m width and 3.7 – 4m height clearance and min weight restrictions >24 tonnes.

Waste Acceptance

Written waste acceptance procedures will be in place to prevent non-conforming wastes. Every load will be inspected for the presence of non-conforming items and as detailed in the Operating Techniques and Waste Acceptance Procedures. Non-conforming items found will be rejected or quarantined as appropriate. Suppliers will be informed of the ferrous and non-ferrous waste acceptance criteria and the main material types prohibited are displayed at the site entrance. This procedure will prevent any non-conforming wastes that could be incompatible or unstable wastes causing a reaction.

The waste types that will be accepted on site (solid scrap metal, ELV, lead acid batteries, SMW) are neither incompatible with each other nor unstable and therefore there will not be reactions between these wastes. In any event they will be stored separately.

Quarantine Area

An area on site will be maintained as a quarantine area. E.g. somewhere a suspected hot load could be deposited or where unburnt wastes could be moved to isolate and prevent them catching fire. Due to the nature of operations and the size of the site, this quarantine area will need to be flexible in terms of location. Any changes to Quarantine Area will be discussed and documented at daily morning meetings.

Stockpile Management
The planning of site production will be the cornerstone for ensuring that stockpiles meet the requirements of this Protocol in terms of quantity and storage times. At least monthly stock- takes will form the process for this assessment/ review.

Manage Stockpile Size
Hazardous / combustible wastes with the exception of end of life vehicles e.g. SMW, lead acid batteries and tyres are not treated on site and will therefore be stored in their largest form.

Tonnage Restrictions and Storage Times
Tonnage restrictions for the site may change depending on the particular materials stockpiled and yard conditions at the time. However these will be dependent on checks being in place to ensure safety at all times and those with potential hazards to be kept away from pedestrian areas/working areas.

Care will be taken to ensure that scrap is stacked in a safe manner and there are no signs of stockpiles being unstable. Vehicles will not tip directly onto scrap stockpiles

The maximum quantities of wastes stored onsite at any one time and maximum stockpile sizes will be:

Waste type	Max quantity on site	Max quantity in any one stockpile	Stockpile dimension/ conditions**	Estimate of daily amount received	Duration
Ferrous e.g. Light Iron/ Shearing./ including depolluted ELV	1000 tonnes	300tonnes / will not exceed 720m3	12m*12m*5m	50 tonnes	Typically 1 month weeks will not exceed 6 months
Non Haz WEEE	75 tonnes	75 tonnes / 200m3	7m*7m*4m	1 tonnes	Typically 1 month will not exceed 6 months
ELV	50	50 ELV	2 high and 2 wide so	10 tonnes	Typically 1 month will

			can access both sides		not exceed 6 months
SMW/ SDA	75 tonnes	50 tonnes / 300m3 typically and will not exceed 300m3	6m*10m* 5m	5 tonnes	Typically 1 month will not exceed 3 months
Lead acid batteries	50 tonnes – typically there will be circa 10tonnes on site	10 tonnes	5m*5m*1 m	2 tonnes	Typically 3 months will not exceed 6 months
ELF	50 tonnes – typically there will be circa 25 tonnes	Will not exceed 300m3	10m*19m *1.5 ELF will not be stacked higher than 3.5m	1 tonnes	Typically 3 months will not exceed 6 months
Waste oil	500 litres in x bunded tanks			N/A	Typically 6 months will not exceed 12 months
Waste petrol	1000 litres in bunded tanks			N/A	Typically 6 months will not exceed 12 months
Waste diesel	2000 litres in bunded tanks			N/A	Typically 6 months will not exceed 12 months
Waste coolant	500 litres in bunded tanks			N/A	Typically 6 months will

					not exceed 12 months
Brake Fluid	100 litres in bunded			N/A	Typically 6 months will not exceed 12 months
Tyres	30 tonnes onsite at any one time, stored in stable stacks or skips		Storage in stacks - Height not exceeding 2m	N/A	Typically 3 months will not exceed 6 months
Air Con gases	100 kg in cylinders			N/A	Typically 6 months weeks will not exceed 12 months
Oil filters	500 kg in 205 l drums			N/A	Typically 6 months weeks will not exceed 12 months
Quarantined waste/ orphaned gas cylinders	5 tonnes /Gas cylinders in cages			N/A	Will not exceed 6 months
Non ferrous – Cables	50 tonnes	20tonnes / 30m3 typically will not exceed 450m3	5m*10m* 5m	2 tonnes	Typically 1 month will not exceed 6 months
Non ferrous – clean and uncontaminated NF not considered	100 tonnes	20tonnes / 30m3 typically	5m*10m* 5m	5 tonnes	Typically 1 month will

combustible for purposes of this plan*		will not exceed 450m3			not exceed 6 months

**these are examples of dimensions – no stockpile size will exceed 20m length / width as per NRW guidance. The 5m height is considered appropriate for stockpiles of these waste types are stable at this height and this height would not inhibit practical fire-fighting ability as plant/ machinery is available on site to move wastes/ spread out if required.

A maximum of 50 tonnes of hazardous waste (excluding ELVs awaiting depollution and WEEE awaiting manual treatment) will be stored onsite at any one time.

Manage stockpile durations

To reduce the risk, it is proposed that all combustible materials will be stored on site for no longer than 6 months, which is the maximum suggested in the NRW's Fire Prevention and Mitigation Plan Guidance.

NRW guidance advises certain materials are at risk of self-combustion if stored for greater than 3 months. Tyres (whole or processed) are included in this list. Sims stores tyres whole in stockpiles across our network of facilities in Wales and England and have not experienced any fires / issues regarding self-combustion in tyre stockpiles. The storage time for tyres is therefore considered appropriate at 6 months.

The risk associated with the storage of waste oil/ fuel and other ELV residues such as brake fluid/ coolant etc will not increase with duration stored on site, if containment is appropriate and maximum quantities are not exceeded. The storage time for ELV residues is therefore considered appropriate at 12 months.

WASTE TREATMENT

General provisions
All equipment used for the treatment of waste will be fit for purpose, regularly maintained and inspected before use.

All employees will be appropriately trained in respect of their relevant roles.

ELV depollution
All equipment will be fit for purpose, regularly maintained and inspected before use.

Undepolluted ELV will be inspected for leaks at point of receipt. Any spill identified would be dealt with immediately as per the Emergency Contingency and Accident Management Plan to prevent spills trailing and being tracked about on site. ELV are stored on impermeable surface and further visual checks will be undertaken routinely throughout the day. Depollution will take place until there are no visible fluids draining from the ELV. Bungs will be available for use where required.

ELV treatment activities / depollution will take place in the designated area located away from combustible materials, using dedicated equipment that is intrinsically safe and fit for purpose and following Safe Working Procedures. ELV residues and components removed from ELV will be stored in suitable containers.

Shearing/ Baling
All equipment will be fit for purpose, regularly maintained and inspected before use. Waste acceptance & inspection procedures as detailed in operating techniques will ensure, as far as is reasonably practicable that wastes with the potential to cause fires during baling/ shearing treatment process are identified and quarantined. An operator must be present to operate and monitor the shear during the process. There are no conveyors/ points where tramp metal could cause hotspots.

FIRE PRECAUTIONS

Detecting Fires
The detection system on site is visual. This is appropriate to the nature and scale of the waste management operations. During operational hours stockpiles will be visually monitored by the site management team. Outside of operational hours the CCTV is visually monitored remotely by Security Contractors.

All relevant employees will be trained in the Fire Prevention Plan and the Emergency Contingency and Accident Management Plan. This will extend to site security where responsibility is allocated. Procedures will be in place during and following hot works to monitor and detect the outbreak of fire.

Due to the type of waste i.e. Scrap Metal/ELVs, there will be no requirement to monitor the temperature.

Fire-fighting techniques / Suppression systems
Resources will be available to fight a fire including plant and trained operatives to move waste e.g. separating unburned material from fire, separating burning material from the fire so it can be quenched with IBC water / extinguishers or hoses in the event that Fire Rescue Service are in attendance.

In case of a fire breaking out the Emergency Controller (or deputy) will be alerted immediately and the onsite fire-fighting equipment will be employed. The Emergency Contingency and Accident Management Plan will be initiated.
Fire-fighting equipment consists of:

- Portable extinguishers.
- 2 1000 litres IBC water

Fire-fighting equipment will be located at strategic locations near to areas of waste storage to aid rapid response to supress a fire.

The Fire Rescue Service will be called when deemed necessary by the Emergency Controller.
In worst case scenario, if a fire was to occur that could not be tackled safely using on site techniques then the fire rescue service would be called. Water would be sourced from fire engine / fire hydrants to meet these requirements.

The nearest fire hydrant is located at the site entrance.

All relevant, key contact details for both internal and external communications will be detailed within the Emergency Contingency and Accident Management Plan. This Fire Prevention and Management Plan and the Emergency Contingency and Accident Management Plan will be held onsite and is easily retrievable by both site employees and the Fire and Rescue Service at all times.

Contingency during a fire

A contingency will be in place to divert incoming wastes during a fire. Site management will redirect incoming loads to other internal or external facilities as necessary e.g. Newport/ Skewen/ Avonmouth.

Managing Fire Water
Impermeable pavement and sealed drainage systems will minimise the risk of pollution from fire water into the ground.

Fire water will be diverted to sewer where available and prevented from entering surface water courses e.g. rivers, streams, estuaries etc. by pollution control equipment such as drain mats to block drains.

After a fire
Any residues from the fire will be recovered/ disposed of as appropriate.
Infrastructure and drainage will be inspected and repairs undertaken if the integrity has been compromised and before the area is returned to active waste storage/ treatment.
A full investigation will take place including route cause, corrective actions to prevent reoccurrence, effectiveness of response. Stockpile Management and Fire Prevention Protocol and Emergency Contingency and Accident Management Plans will be reviewed and updated accordingly where required.

Compliance with the plan

The FPP will be communicated to employees by means of a TBT and compliance with the plan will be monitored visually on a daily basis during routine inspections. Safety Conversations will be used to monitor employees understanding of the requirements.

Regular exercises on site to test the effectiveness of fire response will be tested twice per year (as detailed in Emergency Contingency Plan) by drills and will be documented in SMM Policy 16 folder.

Q1. Are permits to work available for all contractors on site?
Q2. Are the tonnage restrictions being followed?
Q3. Are adequate roadways and fire breaks being maintained?
Q4. Is the fire-fighting equipment available?
Q5. Is there a designated quarantine area available?
Q6. Are sources of ignition being controlled?

OTHER STOCKPILE MANAGEMENT CONSIDERATIONS

Reducing Falling Objects & preventing slips, trips and falls

Flattened/baled cars or other baled waste will be picked and placed at the base of stockpiles. Bales will not be used as support or separation walls.

Vehicles will not tip directly onto stockpiles. Lorry Drivers will be instructed to tip a minimum of 1 car length away from the edge of stockpiles.

Oversized O/S material will be inspected regularly to ensure items do not overhang or are unstable. If stability cannot be ensured, then physical means such as barriers will be used as a temporary measure to provide a safe distance for pedestrians.

Only pedestrians authorised by the weighbridge to tip/ unload will be allowed access to the stockpile areas. Pedestrians (inspectors and customers) must keep a minimum distance of at least an average car length away from the edge of the stockpile.

All pedestrians/ Customers will be controlled and as required escorted by site staff at all times while on site. Trained operatives will ensure tipping, loading and maintenance activities where customers/contractors are involved do comply with the relevant safe procedures as per company policy/risk assessments and Safe Working Procedures in place.

Pedestrians will keep to designated walkways where available and good housekeeping will be maintained to minimise the risk of slips, trips and falls.

To allow site management to comply with controls and prove reasonable monitoring is taking place, the following key questions will be asked regularly:
Q7. Are bales/ flattened cars stored at the base of piles?
Q8. Are there any obvious overhangs or stability issues?
Q9. Are all visitors accompanied on site?
Q10. Are employees using designated walkways?
Q11. Are lorry drivers tipping a minimum of a car length away from stockpile edges?
Q12. Are the edges of stockpiles routinely pushed up to minimise trips and slips?

SMM UK Stockpile Management and Fire Prevention Protocol Cardiff
Appendix 1 Sensitive Receptors within 1km radius