

Emergency Response Flowchart

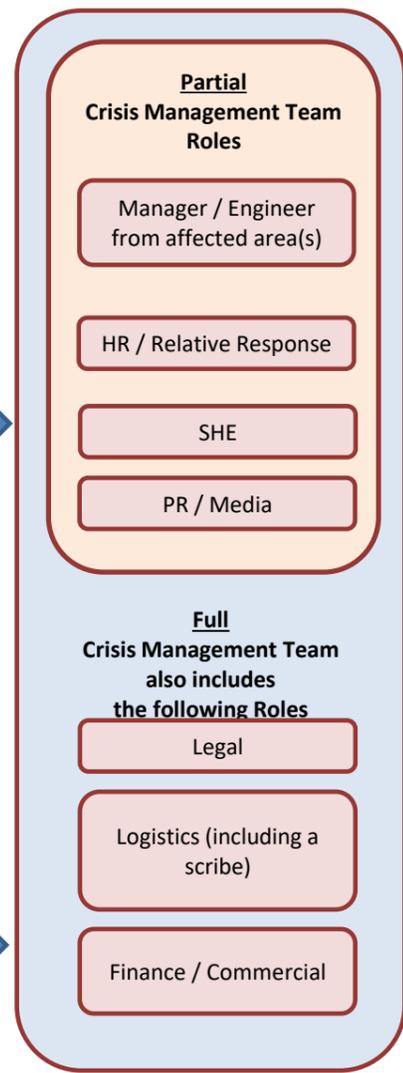
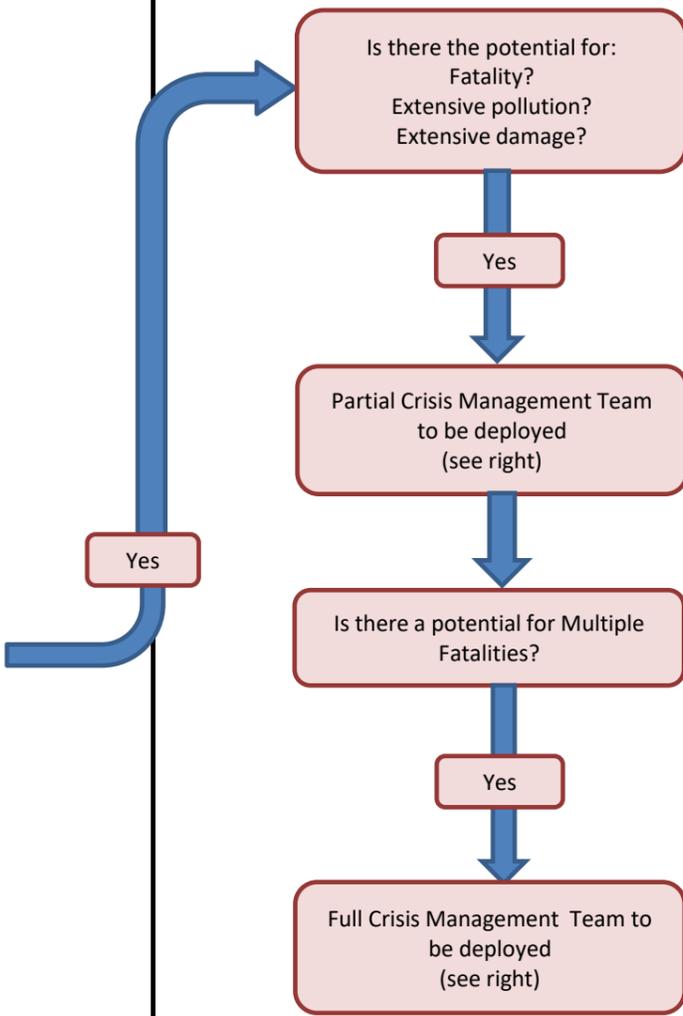
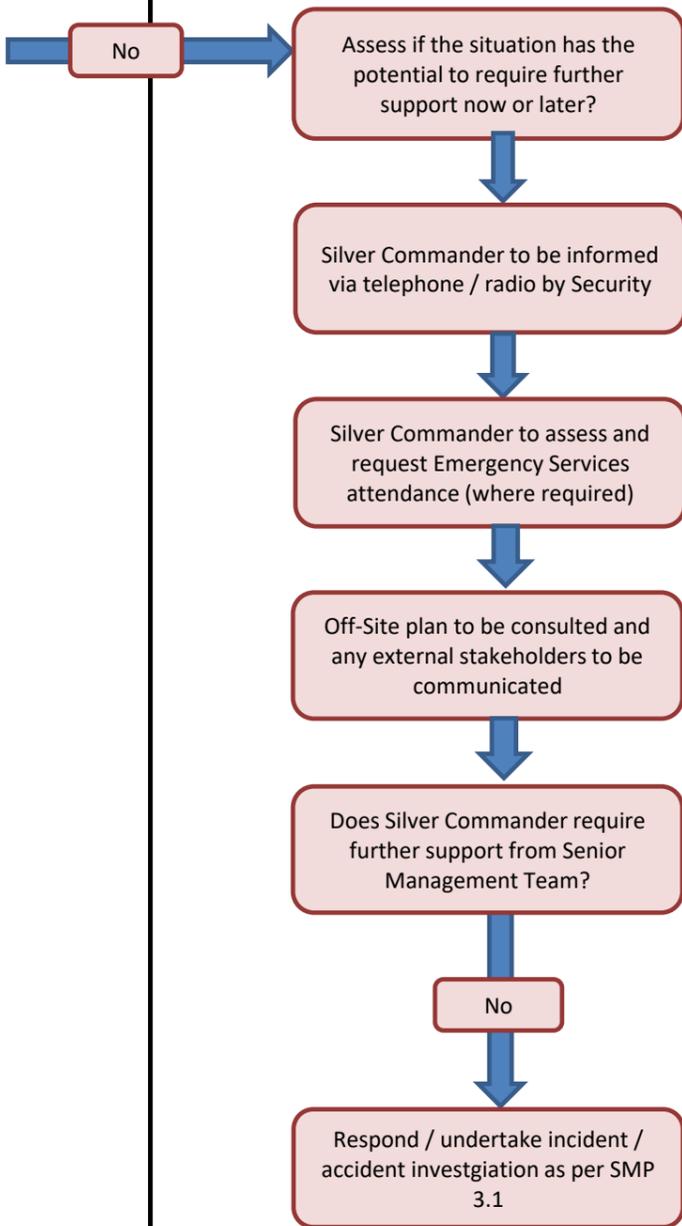
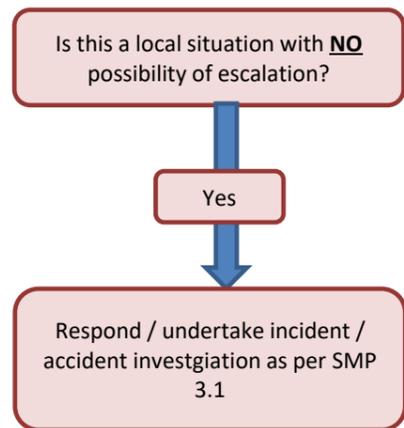
Issue Date:	09/03/2022
Emergency Procedure	EPO
Version	2
Review Date	09/03/2024

LEVEL 1
Bronze Commander Only
 First Aid treatment
 Non-Safety Critical Alarms
 Non-Safety Critical Breakdowns

LEVEL 2
Bronze & Silver Commanders Only
Serious injury as defined
Dangerous occurrence as defined
 Loss of containment: Directly to watercourse
 >25 litres oil and / or 200 litres of chemical
 Loss of production due to damage to equipment

LEVEL 3
Bronze, Silver & Gold Commanders
 Emergency Services on-site:
 Ambulance, Fire, Police
 Unscheduled regulator on-site:
 HSE, NRW

LEVEL 3
Crisis Management Team(s)





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Serious Injury is defined as:

Fractures (other than fingers, thumbs, toes)
Amputations (full or Partial)
Loss of sight
Crush injuries (head, arms, legs, torso)
Burns covering >5% of the body
Loss of consciousness caused by head injury or asphyxiation
Any injury involving Confined Space Entry

Dangerous Occurances are defined as:

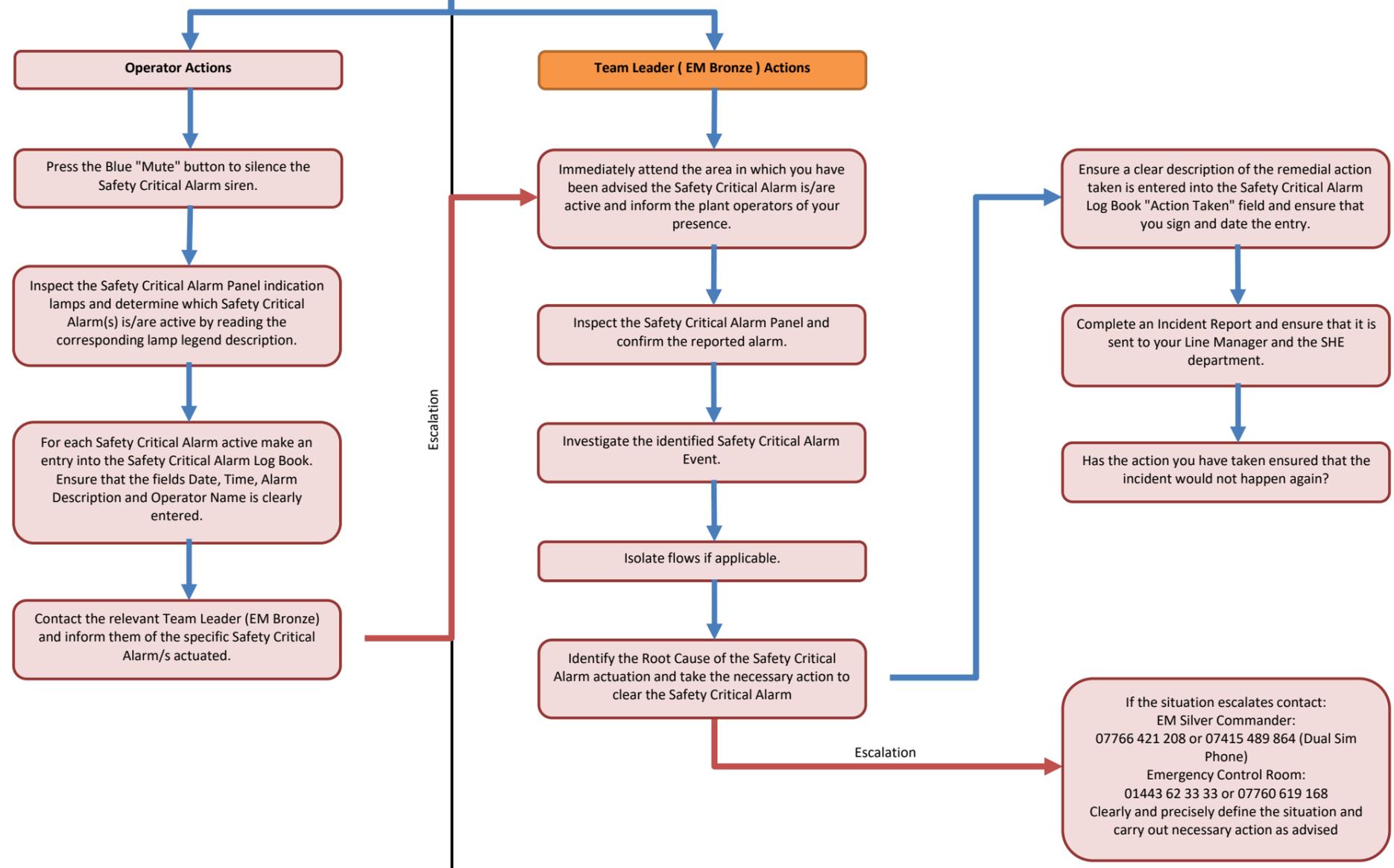
Collapse, overturning or failure of load bearing lifting equipment
Failure of closed vessels, protective devices and pipework
Contact with overhead electric lines or close contact which causes discharge
Electrical incidents causing explosion or fire
any explosion, discharge, intentional fire or ignition which causes injury requiring first aid or medical treatment

Safety Critical Alarm Activation

Issue Date:	09/03/2022
Emergency Procedure	EP1
Version	v1.0
Review Date	09/03/2024



LEVEL 1 Safety Critical Alarm Activated



Emergency Type
EP1 - Safety Critical Alarms

Causes:
1. Safety Critical Alarm for sumps, tanks, penstock system and catchment pits etc.

Anticipated Consequences

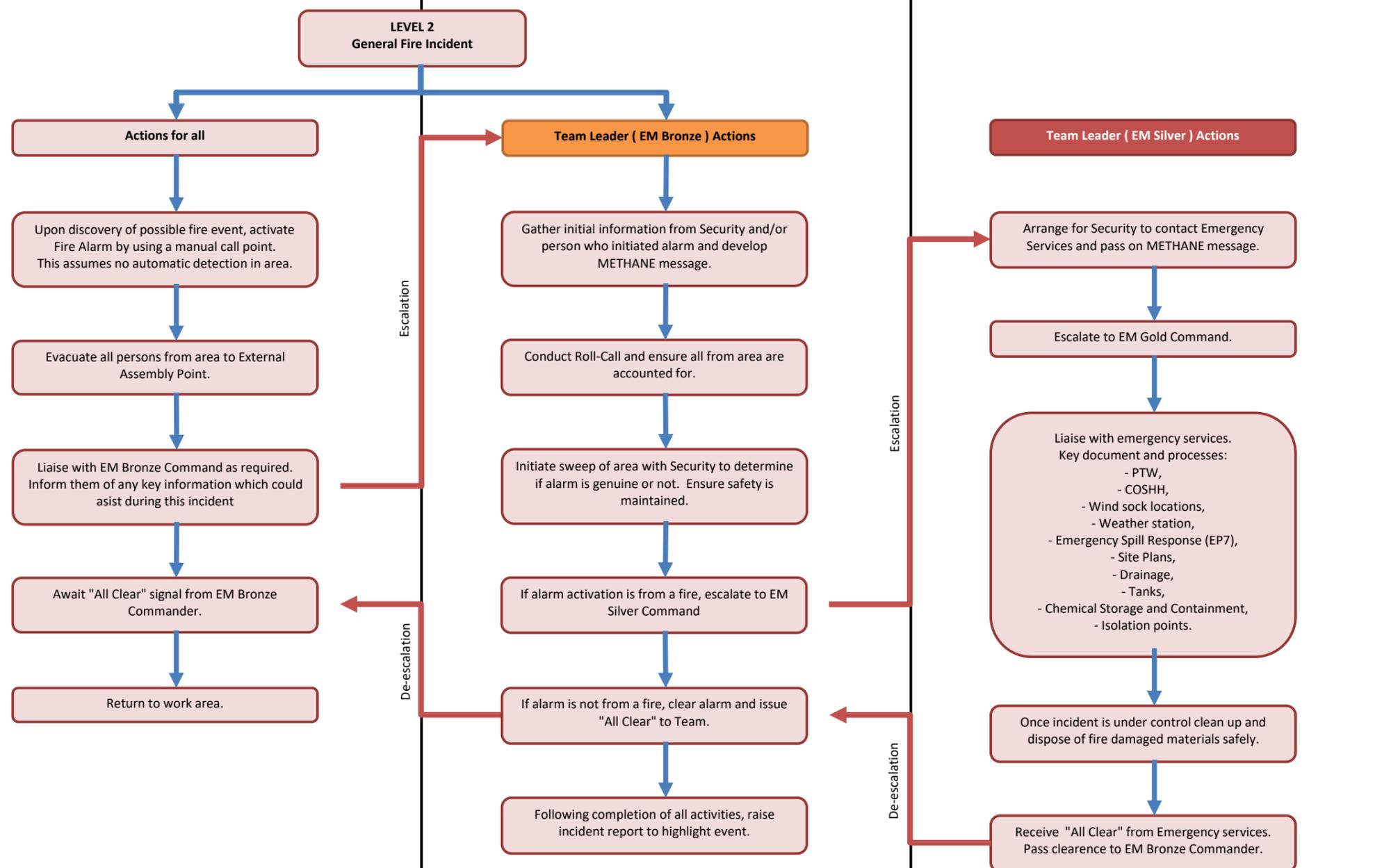
- Health and Safety
 - Toxic gas
 - High / Low pH
- Environmental
 - uncontrolled releases to air, water or land

Actions to be taken by operator / team-leader (listed in order of priority)

- Examine the control panel relating to the area alarming.
- Notify the Team Leader (EM Bronze) of the incident immediately.
- EM Bronze to investigate the alarm activation and identify the root cause of the abnormal condition.
- If the reason for the alarm activation is due to incoming flows, isolate the source where it is safe to do so.
- Take further corrective actions as required.
- Complete incident report.

Fire & Evacuation of Process Plants

Issue Date:	09/03/2022
Emergency Procedure	EP2
Version	2
Review Date	09/03/2024



Emergency Type
EP2 - Fire and Evacuation

Causes:

1. Electrical fire in chemical storage areas (covered by EP3).
2. Electrical fire in non-chemical storage areas.
3. Gas leaks followed by explosion and fire.

Anticipated Consequences

1. Fire could spread between buildings and hazardous areas and could cause a major environmental impact.
2. Toxic and polluting smoke may be generated as a result of the fire breakdown products. The smoke would be dispersed and have an environmental impact on the local community.
3. Contaminated firewater run-off to surrounding land causing groundwater pollution (covered by EP3).

Actions to be taken by operator / team-leader (listed in order of priority)

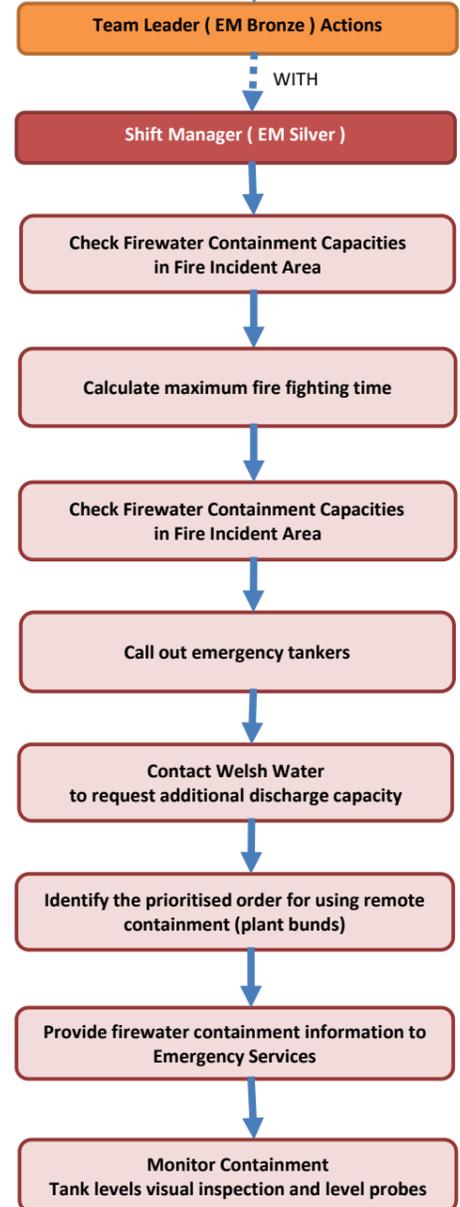
1. If a fire is detected (via the automated site fire alarm system) the fire alarm will automatically be sounded locally, which is also relayed to the Security Control Room.
2. If the automatic fire alarm system has not activated the alarm can be raised at the nearest break glass point or by ringing 3333
3. Ensure all persons are evacuated from danger area to designated external assembly point.
4. The EM Bronze or fire warden shall carry out a roll call to ensure all personnel are accounted for and have evacuated the area.
5. If it proves to be a false alarm, await 'All Clear' from the appointed responsible person.
6. If toxic smoke present sound Site Incident Alarm and move personnel into appropriate IAP's.
8. If genuine, treat as a major fire incident and follow the steps outlined below:-
 - a) Security control room to call fire and rescue service and other emergency services as necessary.
 - b) If safe to do so, turn off electricity/ gas supplies.
 - c) EM SILVER COMMANDER to liaise with Emergency Services when they arrive on site.
 - d) If the fire involves chemicals, then follow Emergency Procedure EP3.
 - e) Once under control, clean up any materials that may be a hazard to the environment.
 - f) Await 'All Clear' from the Fire and Rescue Service.
 - g) Complete "initial" incident report - Recovery Programme, debrief meeting and initiate fire incident investigation if applicable.

Firewater Management

Issue Date:	09/03/2022
Emergency Procedure	EP3
Version	2
Review Date	09/03/2024



LEVEL 2
Major Fire Incident Reported and
Emergency Services Called Out.



Maximum Firewater Containment Reached

Contact the NRW to obtain their decision whether a sacrificial area can be used for the excess firewater runoff

Area / Activity	Pollution pathway	Local containment capacity	Initial Fire fighting time using local capacity (A)	Additional remote containment if required			Maximum Fire Fighting time = a+b+c+d	
				Penstock containment tanks 80 m ³ x 2 = 160 m ³ (B)	Other tanks / bunds to be used	Fire fighting time (C)		Emergency tankers 20 m ³ x 2 = 40 m ³ (D)
ZP1	Storm drain	110% ~70m ³	32 min	36 min each = 72 min	CP2, CP3	32 min each = 64 min	9min each = 18min	186 min
CP2	Storm drain	110% ~70m ³	32 min	36 min each = 72 min	Zp1, CP3	32 min each = 64 min	9min each = 18min	186 min
CP3	Storm drain	110% ~70m ³	32 min	36 min each = 72 min	Zp1, CP2	32 min each = 64 min	9min each = 18min	186 min
DBP1 & CTP1	Storm drain	Total ~200m ³	91 min	36 min each = 72 min	External bund	32 min	9min each = 18min	213 min
Chemical stores	Storm drain	1.5m ³ / room Total ~10m ³	5 min	36 min each = 72 min	N/A	N/A	9min each = 18min	95 min
Bulk acid stores	Storm drain	110% ~70m ³	32 min	36 min each = 72 min	N/A	N/A	9min each = 18min	122 min
Drainage pipework	N/A	COMAH area ~25 m ³	N/A	N/A	N/A	N/A	N/A	N/A
MRB Tandem and Finishing mills	Storm drain	Tan ~60m ³ Fin ~30m ³ Xserv~30m ³ Tot ~120m ³	55 min	N/A	Soluble oil chamber ~15 m ³	7 min	9min each = 18min	80 min
Central oil store	Storm drain	~10 m ³	5 min	N/A	Tandem ~ 60 m ³ Finishing ~ 30 m ³ X service ~ 30 m ³ Sol oil chamber ~ 15 m ³ Tot. ~135m ³	61 min	9min each = 18min	84 min

Emergency Type
EP3 - Firewater Management

Causes:
The following activities pose the greatest pollution risk to the local river and groundwater caused by firewater run-off in dealing with a major fire on site:

- Zinc Plating Plant 1
- Copper Plating Plant 2
- Copper Plating Plant 3
- Nickel Plating Plant 2
- Armour Plating Plant 1
- Armour Plating plant 2
- Chemical Stores
- Bulk Sulphuric Acid Storage
- Bulk Sodium Hydroxide Storage
- Bulk Oil Store
- MRB Rolling Mills

Anticipated Consequences

In the event of a fire the firewater runoff may contain pollutants. These pollutants may escape from the site into the local watercourse or to ground by a number of pathways. These include:

- The site's surface water drainage system.
- Direct run-off into nearby watercourses or onto ground causing risk to groundwater.
- Via the foul sewer drainage system

Actions to be taken by operator / team-leader (listed in order of priority)

In the event of a major fire on site the following firewater containment measures shall be adopted:

- Check containment capacities in the two remote containment tanks (penstocks).
- Calculate maximum fire fighting time @2.2m³/min fire fighting water use. Refer to Table 1 which shows the total firewater containment (local and remote) that is available on site in the COMAH area in the event of a major fire in the area.
- In the event that the fire escalates and additional firewater is generated, the additional remote containment facilities shall be used in priority order.
- In the event that all containment is used up, the Environmental Agency shall be responsible for the decision to use a sacrificial area to deposit the fire water that minimises environmental impact.

Weather Station Management

Issue Date: 09/03/2022

Emergency Procedure **EP4**

Version 2

Review Date 09/03/2024



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Emergency Type EP4 - Weather Station Management

Causes:

The following activities pose the greatest air pollution risk to the local environment caused by a major fire on site in the following areas:

1. Zinc Plating Plant 1
2. Copper Plating Plant 2
3. Copper Plating Plant 3
4. Nickel Plating Plant 2
5. Armour Plating Plant 1
6. Armour Plating Plant 2
7. Chemical Stores
8. Bulk Sulphuric Acid Storage
9. Bulk Sodium Hydroxide Storage
10. Bulk Oil Store
11. MRB Rolling Mills

Anticipated Consequences

In the event of a major fire in buildings containing hazardous chemicals, there is the potential to release toxic emissions to atmosphere that may impact on the local community.

Actions to be taken by operator / team-leader (listed in order of priority)

The Met Office website is an essential air monitoring system to monitor the impact of the fire smoke plume on the local community.

In the event of a major fire on site or an abnormal release to atmosphere of a hazardous substance the following air quality monitoring measures shall be followed:

1. Initiate the Met Office website.
2. Monitor and record the following information for Emergency Services, the Natural Resources Wales and Health and Safety Executive:
 - @Ambient air temperature;
 - @Wind-Speed and Direction.
3. This information shall be made readily available to the Emergency Services, Natural Resources Wales and Health and Safety Executive as required.
4. During all major incidents involving fire and abnormal emissions to atmosphere The Emergency Control Room shall be responsible for the visual monitoring of air emissions using CCTV.

LEVEL 1 Weather Station Management

Access Met Office website

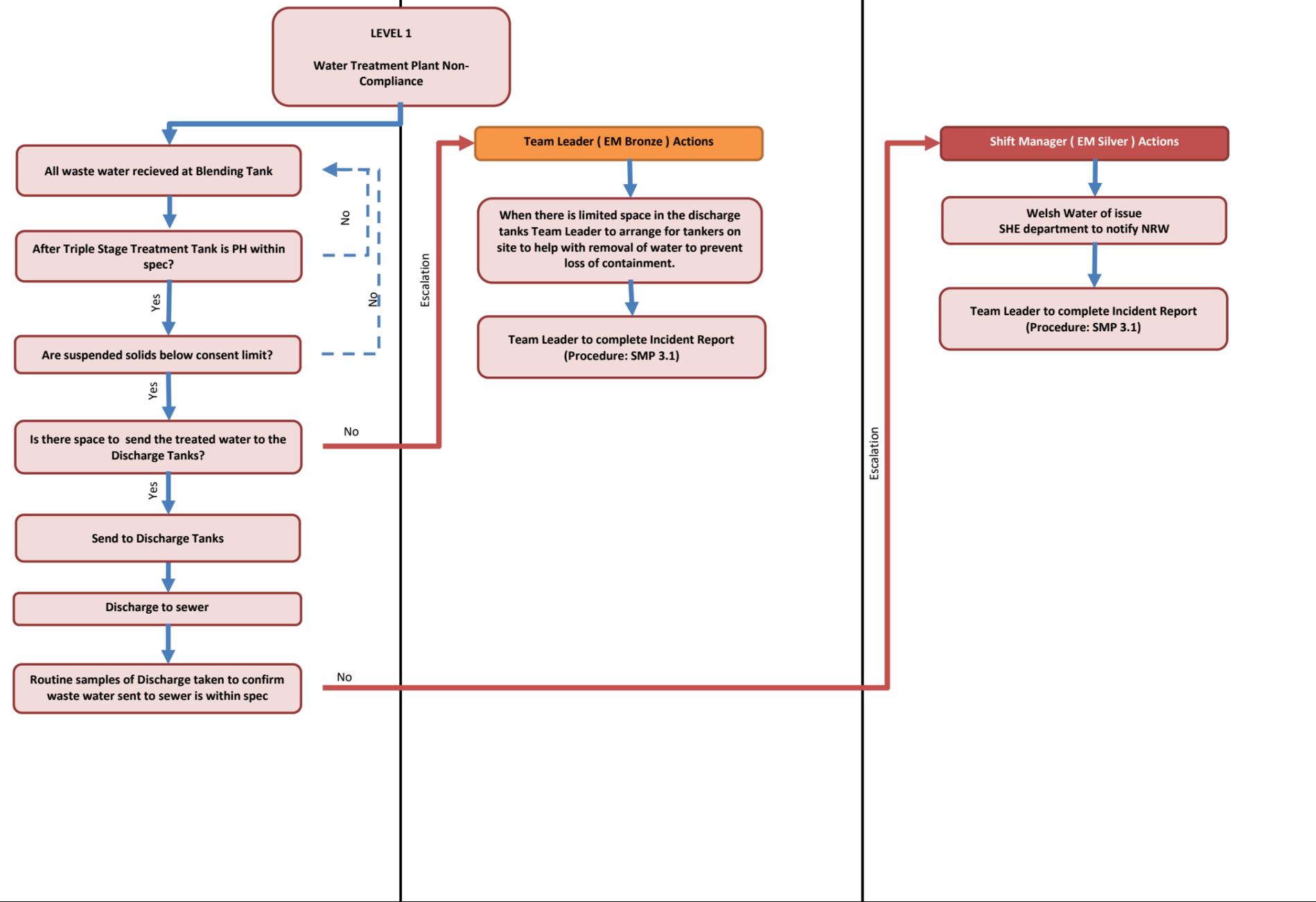
Monitor and Record:
1. Wind-Speed and Direction
2. Ambient Air Temperature

Provide Weather Station Information to the
Emergency Services and the HSE/NRW on a
regular basis

The Emergency Response Room shall visually
monitor air emissions from the fire using CCTV

Abnormal Emissions from Water Treatment

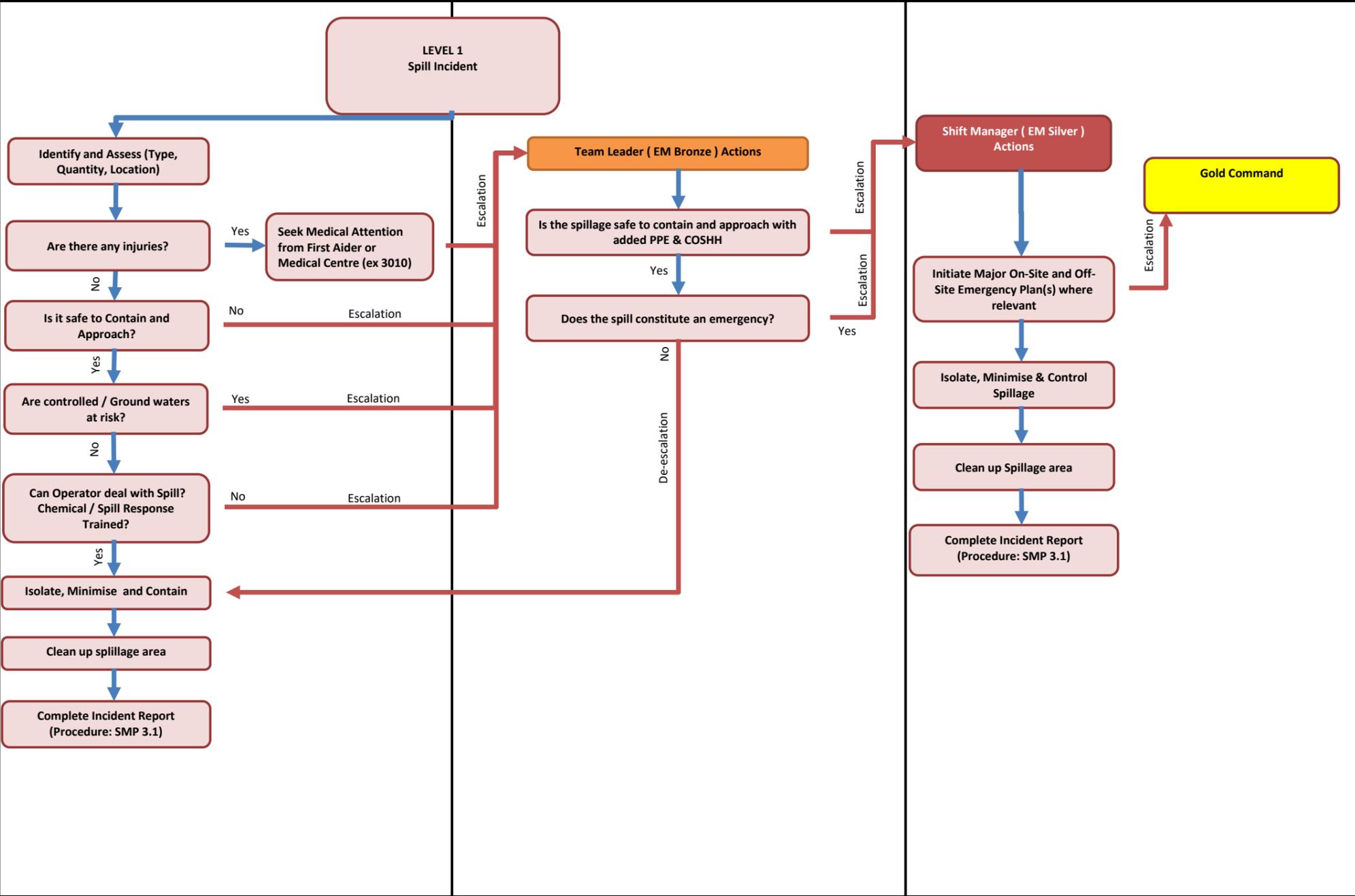
Issue Date:	09/03/2022	
Emergency Procedure	EP5	
Version	2	
Review Date	09/03/2024	



Emergency Type
EP5 - Abnormal Emissions from Water Treatment Plant
Causes:
Failure of the Main Sewer Plant to treat and meet the consent conditions of the Environmental Permit. This could be as a result of pH, metals, chlorine, sulphate and cyanide discharges.
Anticipated Consequences
<ul style="list-style-type: none"> Non-compliance with Environmental Permit. Potential to cause pollution incident at Welsh Water's main sewer treatment plant.
Actions to be taken by operator / team-leader (listed in order of priority)
<ol style="list-style-type: none"> If pH at discharge point is alarming, the plant operator will investigate and water will be rejected to out of spec line to allow retreatment. If suspended solids are above consent limit, the waste water will be rejected to the out of spec line to allow retreatment. If the routine sewer effluent sample does not meet the sewer consent conditions, the discharge is immediately isolated and the cause investigated and corrected. The Team Leader on shift shall be responsible for completing the incident report (Procedure SMP 3.1) where any non-compliances may have occurred. The SHE Department shall be responsible form notify Natural Resources Wales when applicable. In the unlikely event of a serious breach in our sewer effluent discharge, the RM SILVER COMMANDER shall be immediately notified. The RM SILVER COMMANDER shall be responsible for informing Welsh Water of the breach to the sewer if applicable.

Spillage Response

Issue Date:	09/03/2022	
Emergency Procedure	EP6	
Version	2	
Review Date	09/03/2024	



Emergency Type EP6 - Spillage Response
Causes:
<ol style="list-style-type: none"> 1. Spillages during loading and unloading of chemicals. 2. Spillage of diesel during the diesel dispensing operation. 3. Failure of automatic liquid level control sensors and devices. 4. Overfilling of tanks. 5. Rupture of pipe work carrying hazardous materials. 6. Rupture of containers holding hazardous chemicals 7. Contaminated firewater from fire fighting activities
Anticipated Consequences
Potentially polluting liquids entering storm water drainage system and polluting the local river.
<ol style="list-style-type: none"> 1. If safe to do so seal off storm drains with drain mats from spill kits. 2. Inform Security Control Room (3333) to put them on Stand-by. 3. Contain spillage with absorbent booms/socks from spill kits 4. If safe to do so quickly stem source of liquid. 5. If spillage has already entered the drain, block off drain outlet discharge to the river. 6. Check local ductwork to ensure spillage has not entered duct. 7. Utilise spill response trailer if required. 8. Contact relevant Departmental Manager and Environmental Manager 9. Use diesel pump to empty liquid from drains / ductwork into IBC, flush drain / ductwork with clean water and transfer wash water with diesel pump to IBC. 10. If acceptable, discharge contents of IBC to main effluent treatment plant. 11. Where additional spill response support is required, call out numbers available via Water Treatment Plant 12. Clean up spillage. 13. Assess cause and take action to prevent repeat. 14. Complete incident report

Loss of Material to Ground

Issue Date: 09/03/2022

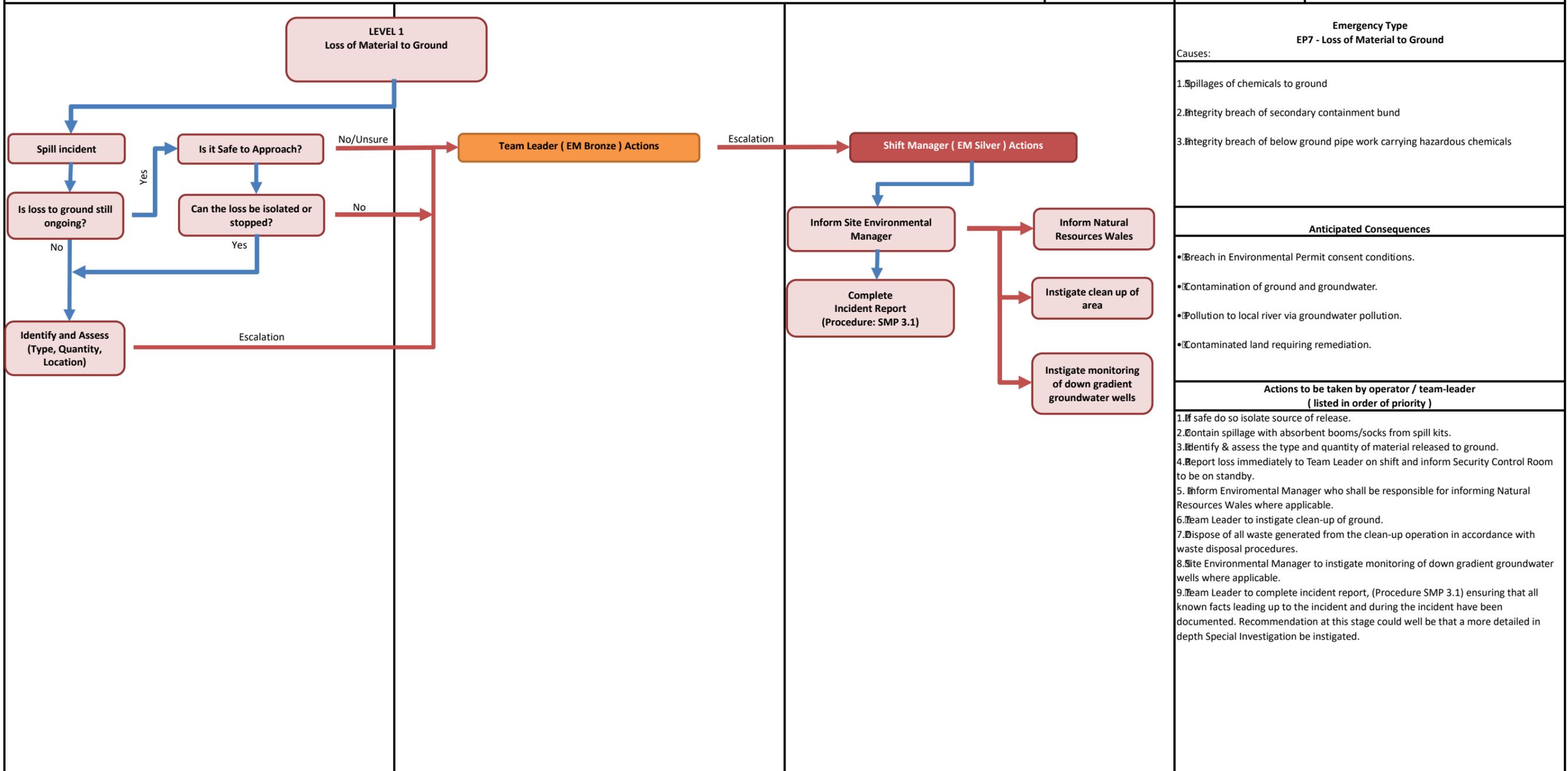
Emergency Procedure EP7

Version 2

Review Date 09/03/2024



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Natural Gas Leak

Issue Date: 09/03/2022

Emergency Procedure EP7

Version 2

Review Date 09/03/2024



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LEVEL 1 Natural Gas Leak

Natural gas leak reported and/or A2 gas alarm sounds in Plant Areas, Evacuation started.

Isolate likely supply (if safe using gas monitors) and identify and assess

Are there any injuries?

Yes

Seek medical Attention from First Aider or Medical Centre (3010)

No

Escalation

Team Leader (EM Bronze) Actions

Follow SR 179 :- Identification of Natural Gas Leaks

Inform Security Control Room of ongoing incident (3333)

Manage Evacuation Process and safely monitor incident locally.

Complete Incident Report (Procedure: SMP 3.1)

Escalation

Shift Manager (EM Silver) Actions

Follow SR 179 :- Identification of Natural Gas Leaks

Contact National Grid / Wales & West Utilities to explain situation and/or request assistance

Contact Fire Service if appropriate

Initiate Major on site emergency plan

National Grid to carry out isolations and repairs and give all clear

Once incident is over and area safe. Complete Incident Report (Procedure: SMP 3.1)

Gold Command

Emergency Type
EP7 - Loss of Material to Ground

Causes:

1. Pipe work leak.
2. Pipe work fracture.

Anticipated Consequences

- Potential to cause a major fire/explosion on site.
- Major fire could involve chemicals, which could lead to a major environmental impact i.e. discharges to air and water.

Actions to be taken by operator / team-leader (listed in order of priority)

1. Release of natural gas reported or A2 alarm in AP&P/CP3.
2. Evacuate area and affected buildings safely
3. Identify and assess location.
4. If there are any injuries seek medical attention from first aider or medical centre (ex 3010).
5. Fixed gas monitors exist (BPAC/AP&P/CP3). Isolate if levels fall below A1 alarm.
6. Immediately inform Security Control Room (3333) and RM SILVER COMMANDER or equivalent.
7. RM SILVER COMMANDER to call out National Grid and liaise with them when on site.
8. RM SILVER COMMANDER to Inform Fire and Rescue Service (if appropriate) via Security Control Room.
9. National Grid to isolate and repair and give 'All Clear'.
10. Initiate major on site emergency plan if appropriate.
11. RM SILVER COMMANDER or equivalent to complete Incident Report

Storm Water Containment System

Issue Date: 09/03/2022

Emergency Procedure EP9

Version 2

Review Date 09/03/2024



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Emergency Type EP9 - Storm Water Containment System

Causes:

1. Failure of conductivity probe and pH probe to detect contaminated storm water.
2. Failure to respond to alarm conditions.
3. Failure to close outlet in the event of alarm conditions.

Anticipated Consequences

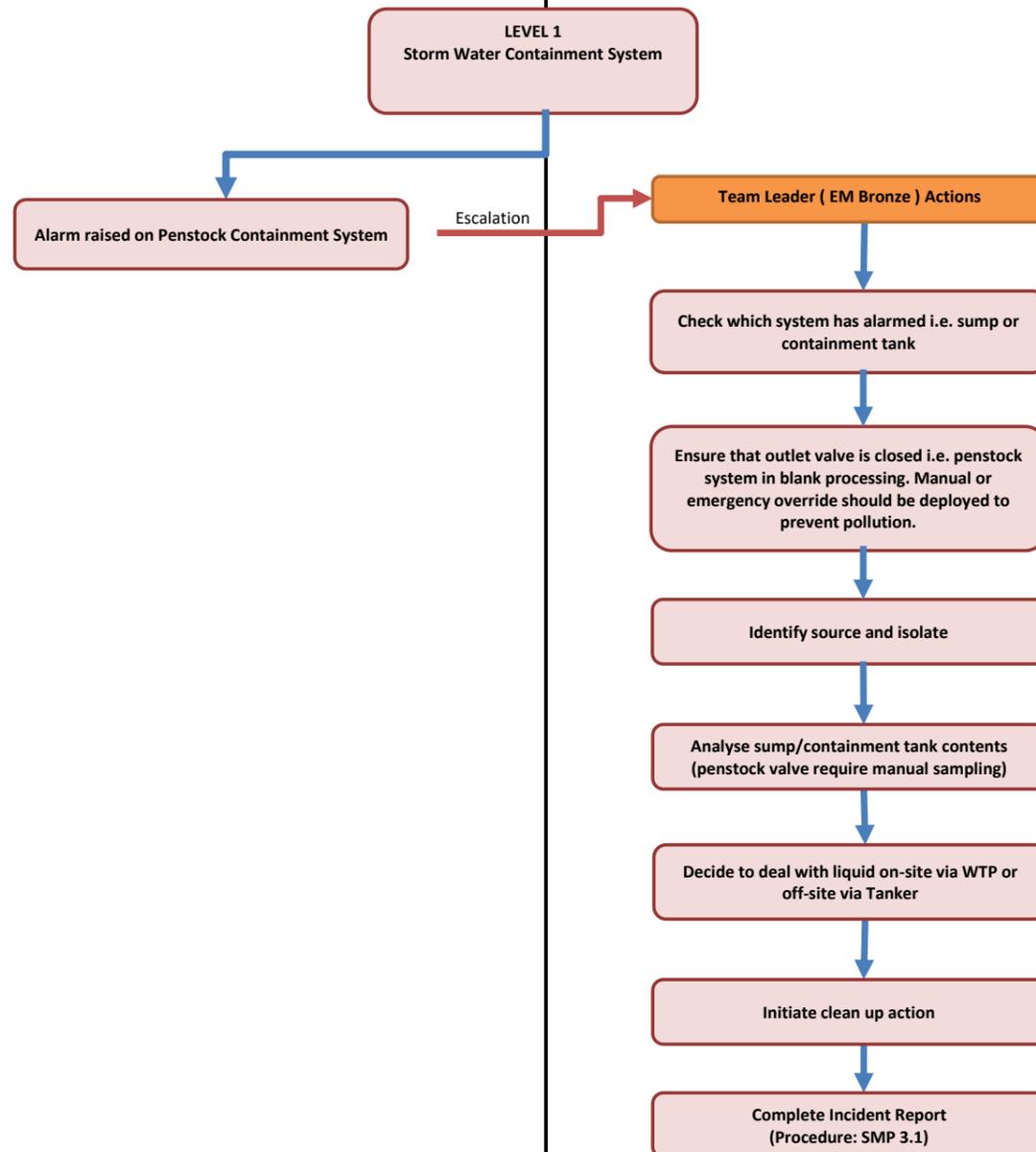
- Contaminated storm water could reach the River Ely and cause pollution.
- Breach in Environmental Permit consent conditions.
- Abnormal emissions could give rise to local ground contamination on site and immediate vicinity off-site.

Actions to be taken by operator / team-leader (listed in order of priority)

1. Alarm raised on Penstock Containment System.
2. The RM Bronze Commander shall be informed.
3. Check which system has alarmed i.e. sump or containment tank.
4. Ensure that the containment system outlet valve is closed. This is the penstock system in blank processing only. The valves of the penstock are usually closed and only release when the contents of the sump are within specification of pH and conductivity. In an incident either manual or emergency override should also be deployed to prevent pollution to the environment.
5. Identify cause of alarm (spillage) and isolate.
6. Analyse sump / containment tank contents. The sump is the chamber associated with the penstock valve and requires manual sampling.
7. Decide whether to deal with liquid on or off-site.
8. Initiate clean up action.
9. Complete Incident Report (Procedure SMP 3.1)

Other Emergency procedures to be considered / used:

- Firewater management EP4
- Spillage response EP8



Suspect Package

Issue Date: 09/03/2022

Emergency Procedure: EP10

Version: 2

Review Date: 09/03/2024



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Emergency Type EP10 - Suspect Package

Causes:

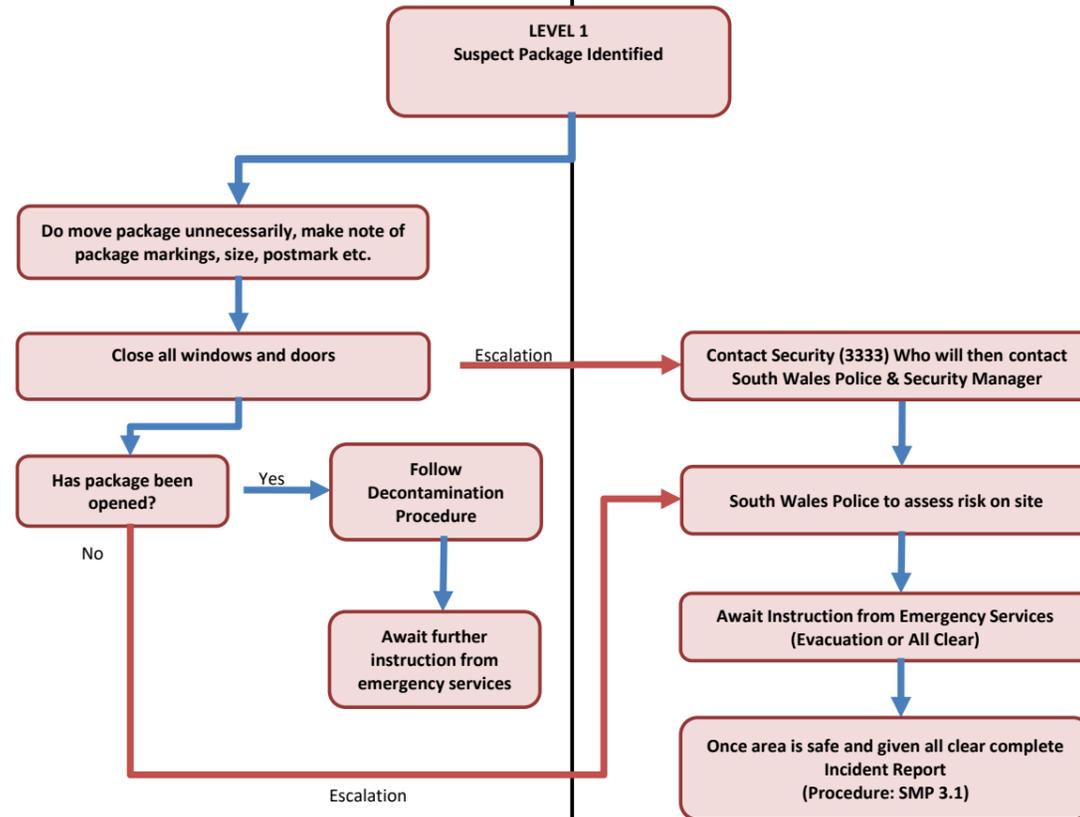
1. May contain hazardous chemicals.
2. May contain biohazard – Anthrax etc.
3. May contain electrical incendiary device.

Anticipated Consequences

- Harm to personnel.
- Harm to personnel and the local community.
- Harm to personnel and buildings.

Actions to be taken by operator / team-leader (listed in order of priority)

1. Suspicious package identified.
2. Make note of package markings, size, postmark etc.
3. Call Security Control Room on 3333.
4. Close all windows and doors.
5. If package not opened, carry out procedure as follows:
 - Await further instructions from Security.
 - Complete incident report (Procedure SMP3.1)
6. If package opened, treat as an emergency. The Security Control Room shall contact the following:
 - Emergency Services where applicable
 - South Wales Police
 - Head of Security
7. Follow Decontamination Procedure:
 - Remove contaminated items of clothing and place in sealed plastic bag.
 - Stay within room until Emergency Services arrive and await instructions.
 - Complete incident report (Procedure SMP 3.1).



Bomb Threat Warning

Issue Date: 09/03/2022

Emergency Procedure: EP11

Version: 2

Review Date: 09/03/2024



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Emergency Type
EP11 - Bomb Threat Warning

Causes:

1. Bomb threat warning via telephone/mobile phone

Anticipated Consequences

- Potential harm to personnel and the local community.
- Potential fire risk and harm to personnel and the environment.

**Actions to be taken by operator / team-leader
(listed in order of priority)**

1. Try to keep the caller in order to gain further information, particularly in relation to the device and the time it may be due to explode or ignite.
2. Listen for:
 - a) Pronounced accent or speech impediments in the caller's voice;
 - b) Background noise;
 - c) Any sounds which may indicate whether or not the call is being made from a private, public or establishment telephone.
3. Record all relevant information on proforma. Officers should bear in mind that all information appertaining to a bomb warning telephone call, must be carefully and accurately recorded as such information may be of vital evidential value during any follow up enquiries. It must also be borne in mind that the making of a bomb hoax call is a criminal offence.
4. Contact Security Control Room as soon as possible to report threat.
5. Security Control Room to contact South Wales Police.
6. Await further instructions from South Wales Police.
7. Await for 'All Clear' from South Wales Police.
8. Security to complete incident report.

LEVEL 1
Receipt of Bomb Warning to site

Try to keep the caller talking in order to gain further information

Listen to:
a) Pronounced accent or speech impediments in caller's voice;
b) Background noises;
c) Any sounds which may indicate whether the call is being made from a private, public or establishment telephone.

Record all relevant information

Complete bomb warning proforma

Escalation

Contact Security (3333) who will Initiate Emergency Plan

Security to contact South Wales Police

Await Instruction from Emergency Services (Evacuation or All Clear)

Once area is safe and given all clear complete Incident Report (Procedure: SMP 3.1)

Oxy- acetylene cylinder incident

Issue Date: 09/03/2022

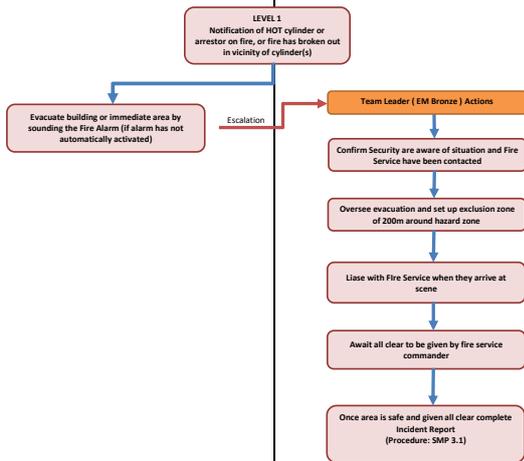
Emergency Procedure: EP12

Version: V1.0

Review Date: 09/03/2024



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Emergency Type
EP12 - Oxy- acetylene cylinder incident

Causes:
1. Faulty cylinder

Anticipated Consequences

- Potential harm to personnel and the local community.
- Potential fire risk and harm to personnel and the environment.

Actions to be taken by operator / team-leader
(listed in order of priority)