

# Emergency Response Flowchart

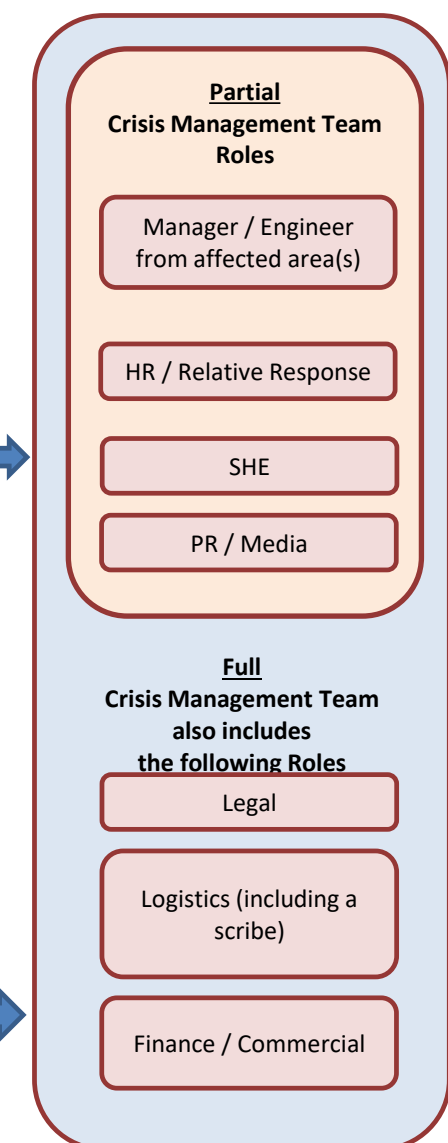
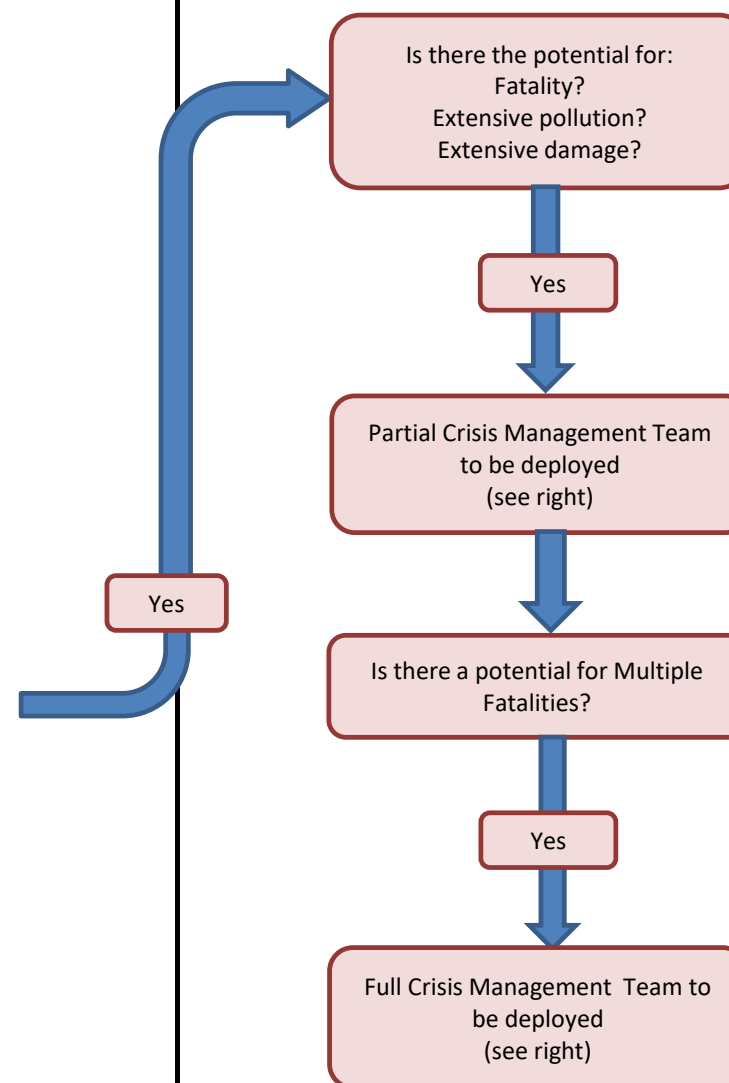
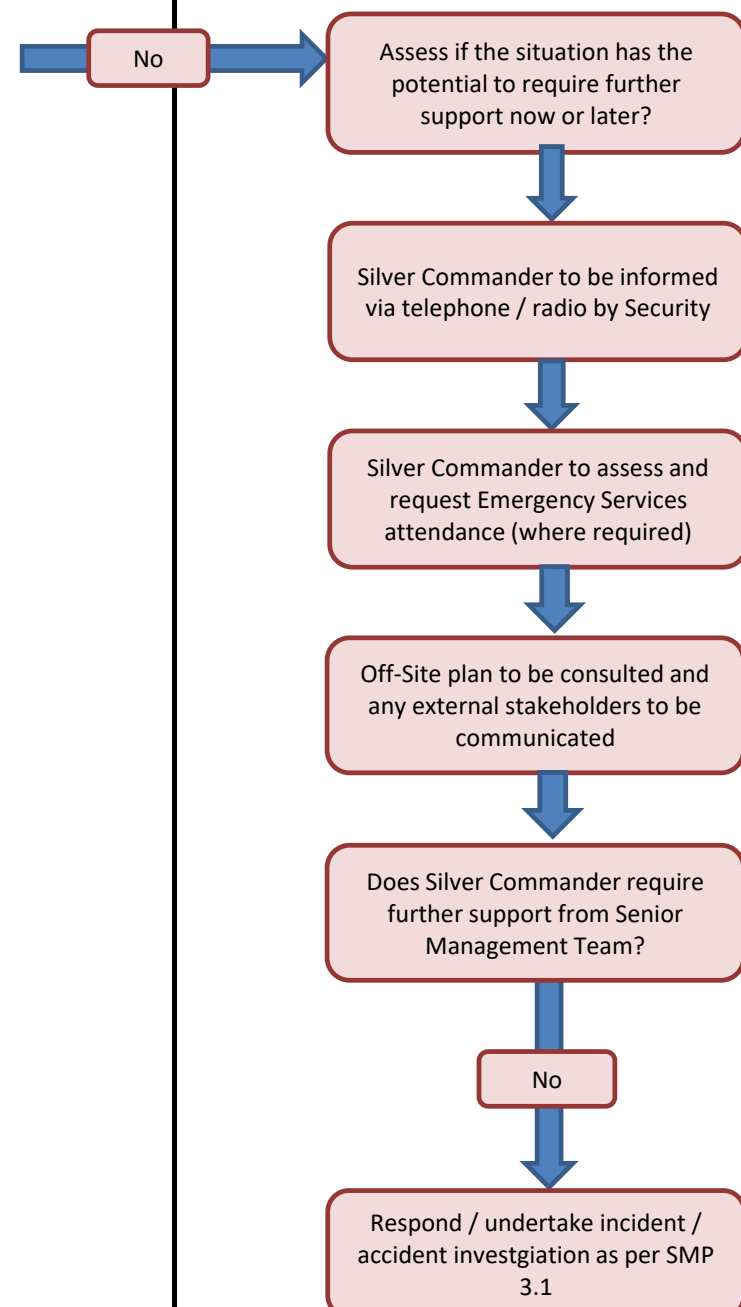
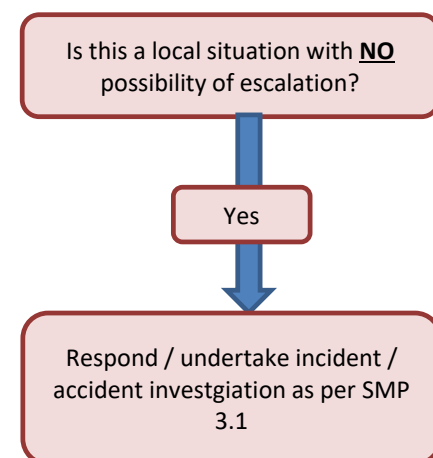
Issue Date:	09/03/2022
Emergency Procedure	EPO
Version	2
Review Date	09/03/2024

**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:**

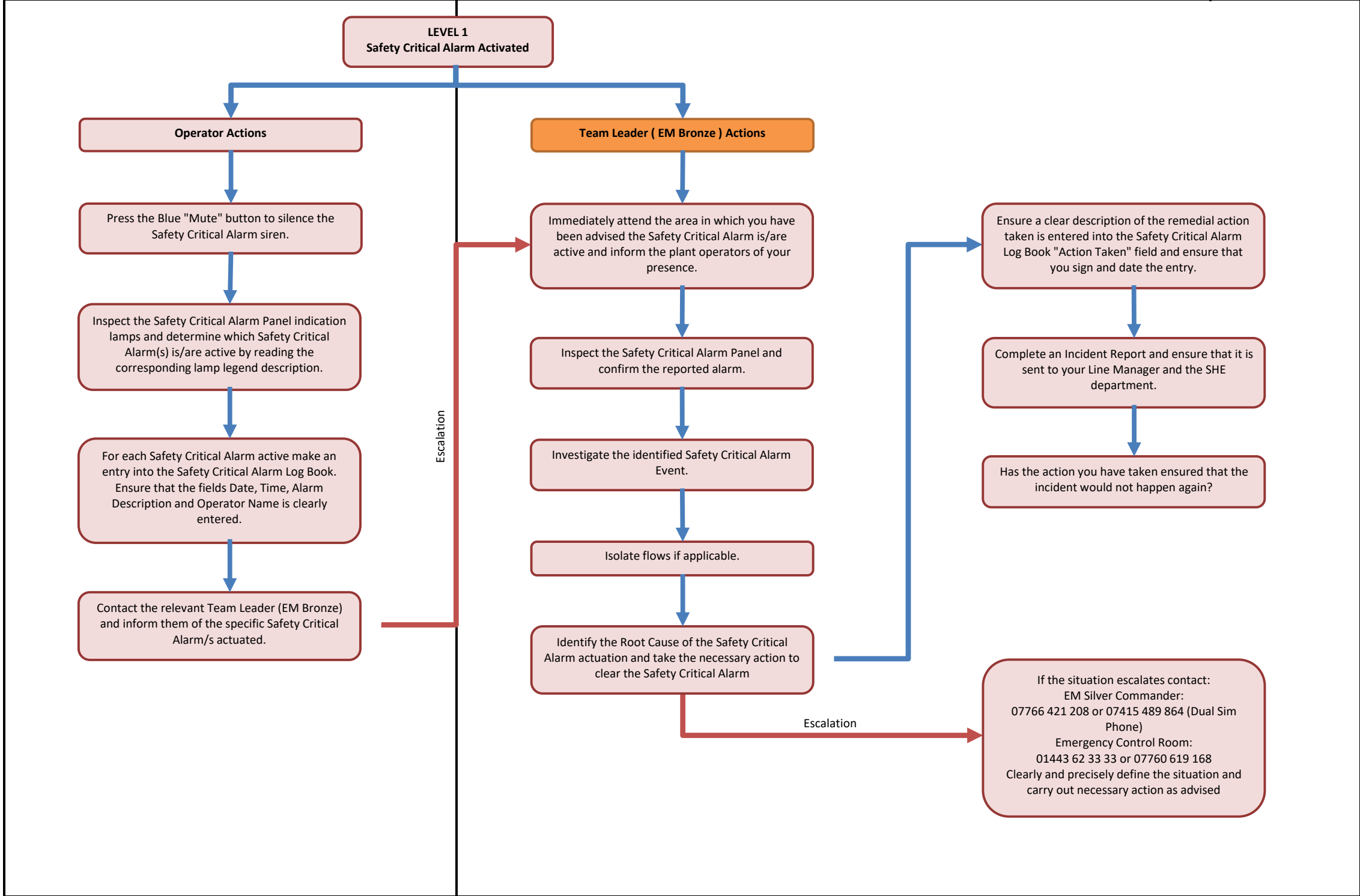
- Fractures (other than fingers, thumbs, toes)
- Amputations (full or Partial)
- Loss of sight
- Crush injuries (head, arms, legs, torso)
- Burns covering >5% of the body
- Loss of consciousness caused by head injury or asphyxiation
- Any injury involving Confined Space Entry

**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

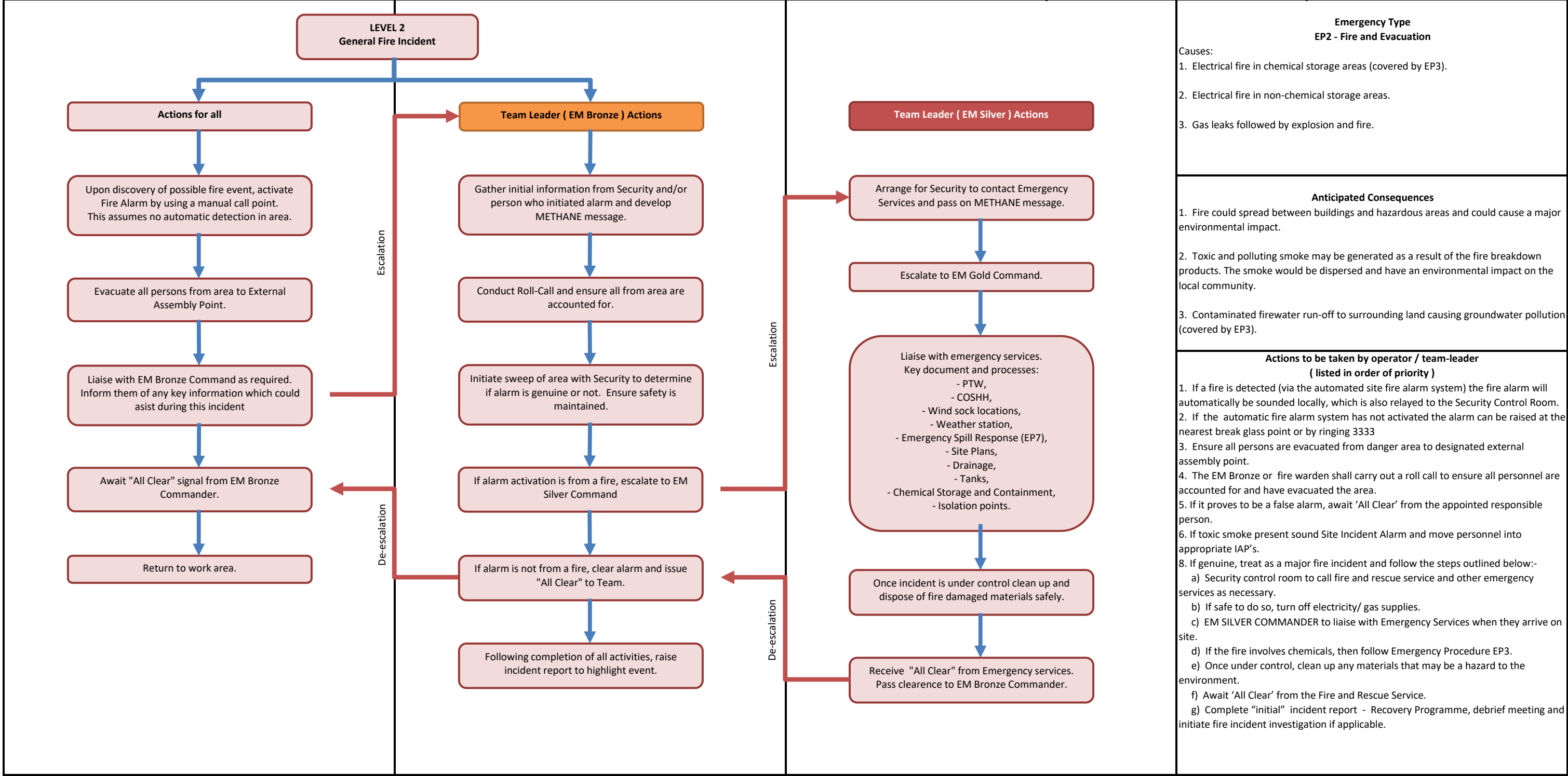
Issue Date:	09/03/2022
Emergency Procedure	EP1
Version	V1.0
Review Date	09/03/2024



<b>Emergency Type</b> EP1 - Safety Critical Alarms
Causes: 1. Safety Critical Alarm for sumps, tanks, penstock system and catchment pits etc.
<b>Anticipated Consequences</b>  1. Health and Safety - Toxic gas - High / Low pH  2. Environmental - uncontrolled releases to air, water or land
<b>Actions to be taken by operator / team-leader (listed in order of priority)</b> 1. Examine the control panel relating to the area alarming. 2. Notify the Team Leader (EM Bronze) of the incident immediately. 3. EM Bronze to investigate the alarm activation and identify the root cause of the abnormal condition. 4. If the reason for the alarm activation is due to incoming flows, isolate the source where it is safe to do so. 5. Take further corrective actions as required. 6. Complete incident report.

# Fire & Evacuation of Process Plants

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



# Firewater Management

Issue Date:

09/03/2022

Emergency Procedure

EP3

Version

2

Review Date

09/03/2024



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

Team Leader ( EM Bronze ) Actions

WITH

Shift Manager ( EM Silver )

Check Firewater Containment Capacities  
in Fire Incident Area

Calculate maximum fire fighting time

Check Firewater Containment Capacities  
in Fire Incident Area

Call out emergency tankers

Contact Welsh Water  
to request additional discharge capacity

Identify the prioritised order for using remote  
containment (plant bunds)

Provide firewater containment information to  
Emergency Services

Monitor Containment  
Tank levels visual inspection and level probes

Maximum Firewater Containment Reached

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

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:

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 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:

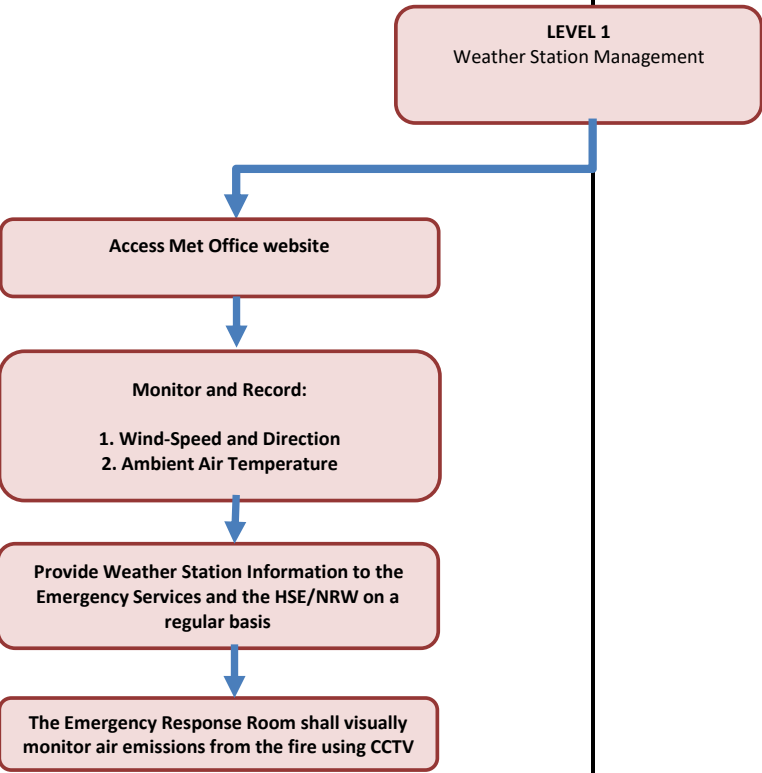
1. Check containment capacities in the two remote containment tanks (penstocks).
2. Calculate maximum fire fighting time @2.2m<sup>3</sup>/min fire fighting water use. Refer to Table 1 which shows the total firewater containment (local and remote) that is available on site in the COMAH area in the event of a major fire in the area.
3. In the event that the fire escalates and additional firewater is generated, the additional remote containment facilities shall be used in priority order.
4. 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.

Escalation

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 m3 x 2 = 160 m3 (B)	Other tanks / bunds to be used	Fire fighting time (C)	Emergency tankers 20 m3 x 2 = 40 m3 (D)	
ZP1	Storm drain	110% ~70m <sup>3</sup>	32 min	36 min each = 72 min	CP2, CP3	32 min each = 64 min	9min each = 18min	186 min
CP2	Storm drain	110% ~70m <sup>3</sup>	32 min	36 min each = 72 min	Zp1, CP3	32 min each = 64 min	9min each = 18min	186 min
CP3	Storm drain	110% ~70m <sup>3</sup>	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 <sup>3</sup>	91 min	36 min each = 72 min	External bund	32 min	9min each = 18min	213 min
Chemical stores	Storm drain	1.5m <sup>3</sup> / room Total ~10m <sup>3</sup>	5 min	36 min each = 72 min	N/A	N/A	9min each = 18min	95 min
Bulk acid stores	Storm drain	110% ~70m <sup>3</sup>	32 min	36 min each = 72 min	N/A	N/A	9min each = 18min	122 min
Drainage pipework	N/A	COMAH area ~25 m <sup>3</sup>	N/A	N/A	N/A	N/A	N/A	N/A
MRB Tandem and Finishing mills	Storm drain	Tan ~60m <sup>3</sup>	55 min	N/A	Soluble oil chamber ~ 15 m3	7 min	9min each = 18min	80 min
		Fin ~30m <sup>3</sup>						
		Xserv~30m <sup>3</sup>						
		Tot ~120m <sup>3</sup>						
Central oil store	Storm drain	~10 m <sup>3</sup>	5 min	N/A	Tandem ~ 60 m <sup>3</sup>	61 min	9min each = 18min	84 min
					Finishing ~ 30 m <sup>3</sup>			
					X service ~ 30 m <sup>3</sup>			
					Sol oil chamber ~ 15 m3			
					Tot. ~135m <sup>3</sup>			

# Weather Station Management

Issue Date:	09/03/2022	 <b>THE ROYAL MINT®</b> THE ORIGINAL MAKER
Emergency Procedure	EP4	
Version	2	
Review Date	09/03/2024	



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.

# Abnormal Emissions from Water Treatment

Issue Date:

09/03/2022

Emergency Procedure

EP5

Version

2

Review Date

09/03/2024



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## 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

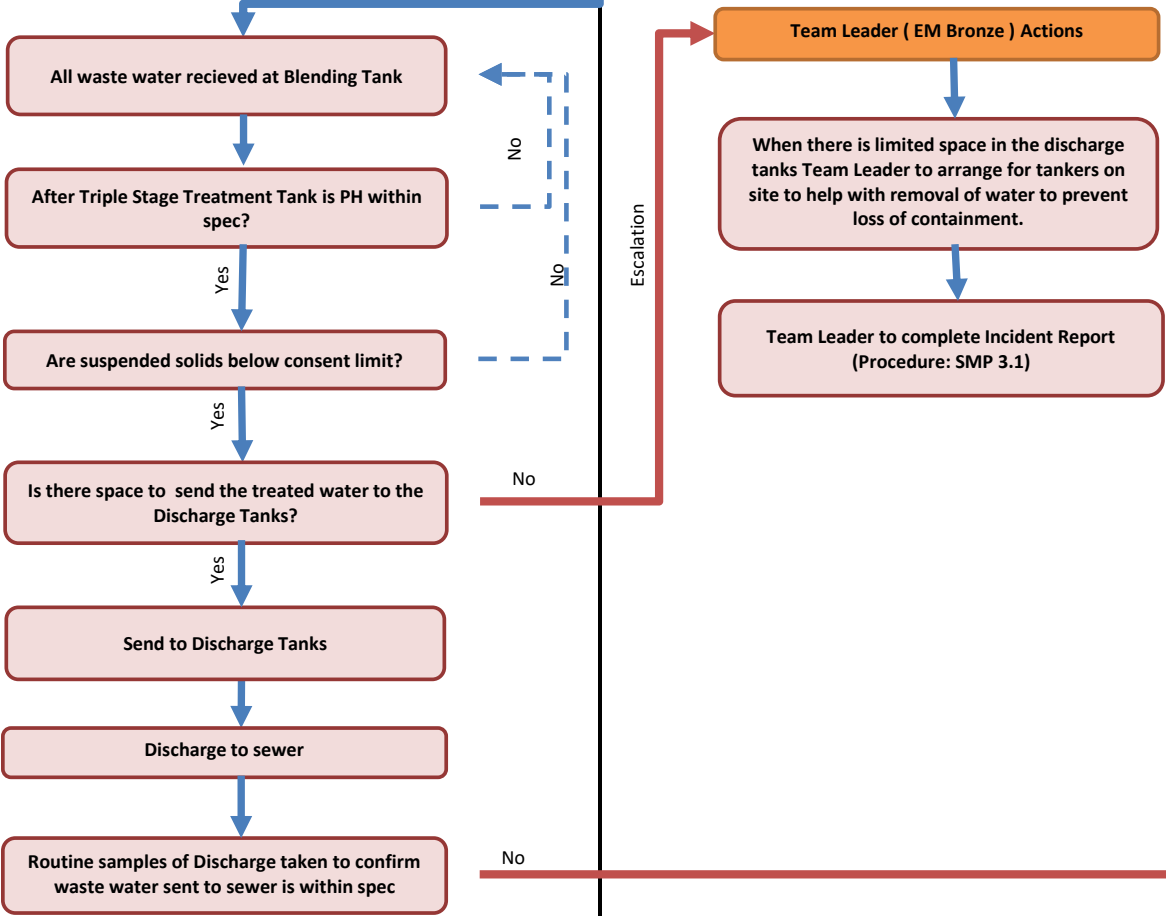
- Non-compliance with Environmental Permit.
- Potential to cause pollution incident at Welsh Water's main sewer treatment plant.

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

1. 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.
2. If suspended solids are above consent limit, the waste water will be rejected to the out of spec line to allow retreatment.
4. If the routine sewer effluent sample does not meet the sewer consent conditions, the discharge is immediately isolated and the cause investigated and corrected.
5. The Team Leader on shift shall be responsible for completing the incident report (Procedure SMP 3.1) where any non-compliances may have occurred.
6. The SHE Department shall be responsible form notify Natural Resources Wales when applicable.
7. In the unlikely event of a serious breach in our sewer effluent discharge, the RM SILVER COMMANDER shall be immediately notified.
8. The RM SILVER COMMANDER shall be responsible for informing Welsh Water of the breach to the sewer if applicable.

## LEVEL 1

Water Treatment Plant Non-Compliance



## Team Leader ( EM Bronze ) Actions

When there is limited space in the discharge tanks Team Leader to arrange for tankers on site to help with removal of water to prevent loss of containment.

Team Leader to complete Incident Report (Procedure: SMP 3.1)

## Shift Manager ( EM Silver ) Actions

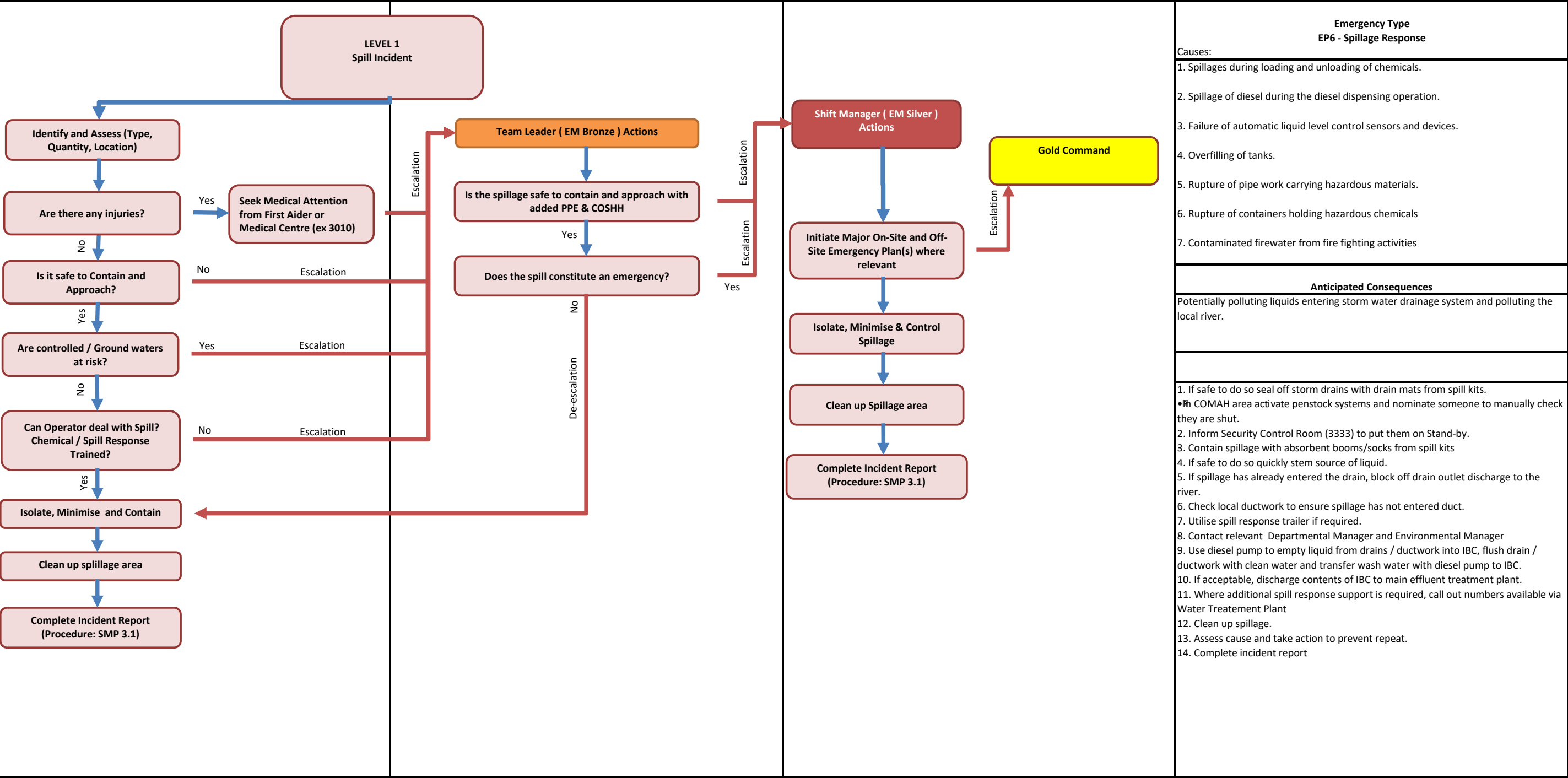
Welsh Water of issue SHE department to notify NRW

Team Leader to complete Incident Report (Procedure: SMP 3.1)



# Spillage Response

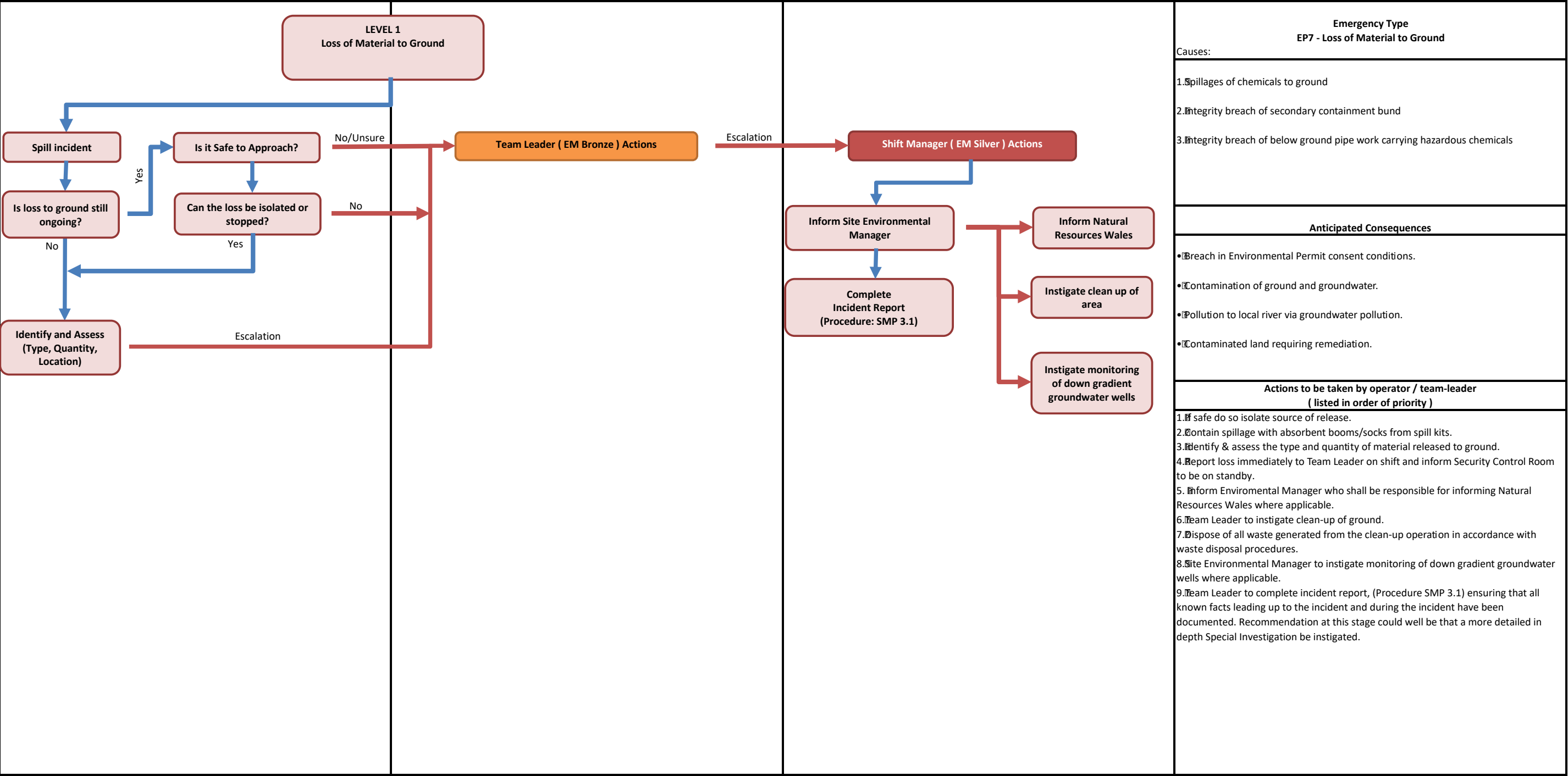
Issue Date:	09/03/2022
Emergency Procedure	EP6
Version	2
Review Date	09/03/2024





# Loss of Material to Ground

Issue Date:	09/03/2022
Emergency Procedure	EP7
Version	2
Review Date	09/03/2024



# Natural Gas Leak

Issue Date:

09/03/2022

Emergency Procedure

EP7

Version

2

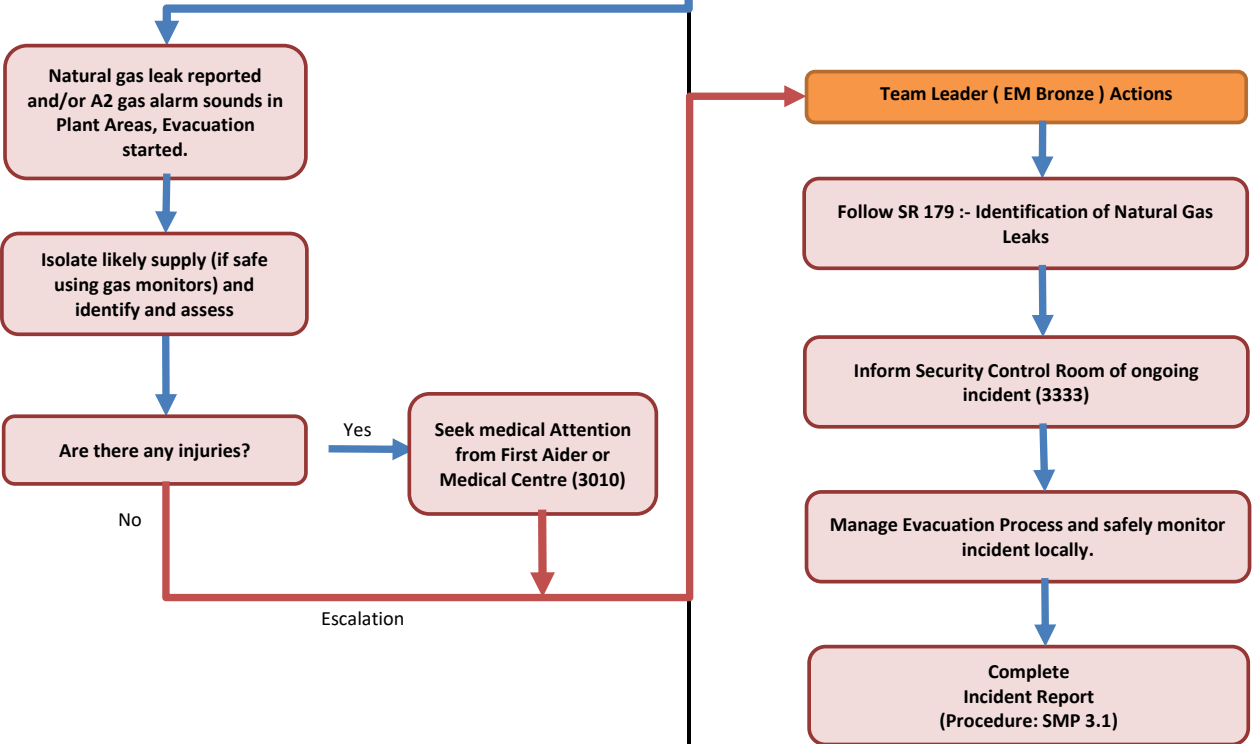
Review Date

09/03/2024



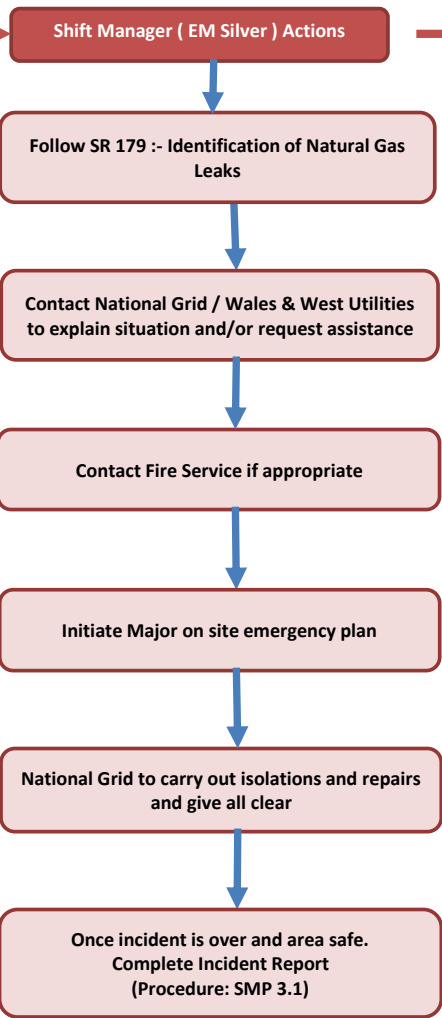
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## LEVEL 1 Natural Gas Leak



Escalation

## 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	<div> <b>THE ROYAL MINT®</b> THE ORIGINAL MAKER</div>
		Emergency Procedure	EP9	
		Version	2	
		Review Date	09/03/2024	
<div><div>LEVEL 1 Storm Water Containment System</div><div><div>Alarm raised on Penstock Containment System</div><div>Escalation</div><div>Team Leader ( EM Bronze ) Actions</div><div>Check which system has alarmed i.e. sump or containment tank</div><div>Ensure that outlet valve is closed i.e. penstock system in blank processing. Manual or emergency override should be deployed to prevent pollution.</div><div>Identify source and isolate</div><div>Analyse sump/containment tank contents (penstock valve require manual sampling)</div><div>Decide to deal with liquid on-site via WTP or off-site via Tanker</div><div>Initiate clean up action</div><div>Complete Incident Report (Procedure: SMP 3.1)</div></div></div> <td colspan="3">Emergency Type EP9 - Storm Water Containment System</td>		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	<div> <b>THE ROYAL MINT®</b> THE ORIGINAL MAKER</div>
		Emergency Procedure	EP10	
		Version	2	
		Review Date	09/03/2024	
<div><div><div><div>LEVEL 1 Suspect Package Identified</div><div>Do move package unnecessarily, make note of package markings, size, postmark etc.</div><div>Close all windows and doors</div><div>Has package been opened?</div><div>Yes</div><div>Follow Decontamination Procedure</div><div>Await further instruction from emergency services</div><div>Escalation</div></div><div><div>Contact Security (3333) Who will then contact South Wales Police &amp; Security Manager</div><div>South Wales Police to assess risk on site</div><div>Await Instruction from Emergency Services (Evacuation or All Clear)</div><div>Once area is safe and given all clear complete Incident Report (Procedure: SMP 3.1)</div></div></div></div> <div><div>Emergency Type EP10 - Suspect Package</div><div>Causes:<div><div>1. May contain hazardous chemicals.</div><div>2. May contain biohazard – Anthrax etc.</div><div>3. May contain electrical incendiary device.</div></div></div><div>Anticipated Consequences<div><div>•Harm to personnel.</div><div>•Harm to personnel and the local community.</div><div>•Harm to personnel and buildings.</div></div></div><div>Actions to be taken by operator / team-leader ( listed in order of priority )<div><div>1. Suspicious package identified.</div><div>2. Make note of package markings, size, postmark etc.</div><div>3. Call Security Control Room on 3333.</div><div>4. Close all windows and doors.</div><div>5. If package not opened, carry out procedure as follows:<div><div>Await further instructions from Security.</div><div>Complete incident report (Procedure SMP3.1)</div></div></div><div>6. If package opened, treat as an emergency. The Security Control Room shall contact the following:<div><div>Emergency Services</div><div>Emergency Services where applicable</div><div>South Wales Police</div><div>Head of Security</div></div></div><div>7. Follow Decontamination Procedure:<div><div>Remove contaminated items of clothing and place in sealed plastic bag.</div><div>Stay within room until Emergency Services arrive and await instructions.</div><div>Complete incident report (Procedure SMP 3.1).</div></div></div></div></div></div>				

# 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

Contact Security (3333) who will Initiate Emergency Plan

Security to contact South Wales Police

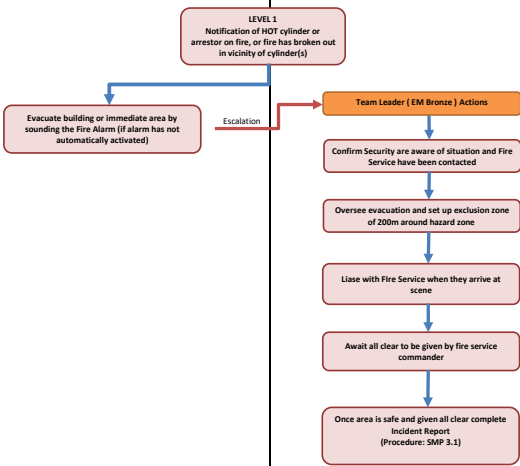
Await Instruction from Emergency Services (Evacuation or All Clear)

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

Escalation

Oxy- acetylene cylinder incident

Issue Date: 09/03/2022  
Emergency Procedure: EP12  
Version: V1.0  
Review Date: 09/03/2024



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 )