

**Emergency Management Plan**

Process Domain: Crisis & Emergency

HESQ-YP-PLN-090

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Yara Pilbara

Ammonia Plant & Technical Ammonium Nitrate Production Facility

Emergency Management Plan

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Distribution List

No.	Location / Recipient	
1	Yara Pilbara Ammonia Plant Control Room	Hardcopy
2	Yara Pilbara TAN Control Room	Hardcopy
3	Yara Pilbara SRT Room	Hardcopy
4	Yara Pilbara Perth Office	Hardcopy
5	Yara Pilbara Emergency Centre TAN SRT Room	Hardcopy
6	Yara Pilbara YPF Gatehouse	Hardcopy
7	Yara Pilbara SharePoint	Electronic
8	DFES - Karratha Regional office	Electronic
9	Police - Officer in Charge Karratha	Electronic
10	Department of Mines, Industry Regulation and Safety (DMIRS)	Electronic
11	Pilbara Ports – Dampier BLB Control Room	Electronic
12	Department of Environment and Energy	Electronic
13	EMQNet	Electronic



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Document ID: YMSPilbara-329755810-1541

Version: 2.0

Approval Date: 11/09/2023

Document Owner:
Willie Bezuidenhout

Approved by:
Justin Zis

Next Review Date: 2025-03-16



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1 Emergency Contact

YARA PILBARA CONTACT LIST		
General Enquires Only:	Yara Pilbara Ammonia Plant Reception	08 9183 4000 / 4100 (Mon - Fri 0715 -1530)
24hr Emergency Line:	Ammonia Plant Control Room	1800 117 506
	TAN Plant Control Room	
Emergency only	Yara Pilbara Radio Channel	Channel 4
Security Enquires	Security Gate	08 9183 4111

Hardcopies of Yara Pilbara's internal and external emergency contact lists are available in the Ammonia Plant Control Room, Technical Ammonium Nitrate (TAN) Plant Control Room, the SRT Control Room and Perth Head Office. An electronic version is also available from Yara Pilbara's YMS [[Emergency Response](#)] and in the online Yara Crisis Management system (EMQNet) at www.emqnet.com



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2 Purpose and Scope

This Emergency Management Plan (EMP) has been prepared to meet the on-site and off-site emergency planning and response requirements for Yara Pilbara's Ammonia Plant (YPF) and Yara Pilbara Nitrates Technical Ammonium Nitrate Production Facility (TAN Plant).

Please note:

- Yara Pilbara Fertilisers (YPF) Ammonia Plant will hereafter be referred to as Ammonia Plant
- Yara Pilbara Nitrates (YPN) Technical Ammonium Nitrate Production Facility will hereafter be referred to as TAN Plant

Both Ammonia Plant and TAN Plant are classified as Major Hazard Facilities (MHF) under the Dangerous Goods Safety (MHF) Regulations 2007.

The purpose of this EMP is to establish the organisational structure and identify procedures and available resources to enable Yara Pilbara and Emergency Service personnel to manage an emergency within Yara Pilbara's operations by providing a safe and practicable response.

The objectives of this EMP are to:

1. Provide awareness about emergency events that can occur at Yara Pilbara;
2. Demonstrate emergency response capability & preparedness;
3. Identify Yara Pilbara's emergency response personnel, their roles and methodology to safely and effectively mitigate or manage an emergency; and
4. Ensure a continuous improvement process is applied through auditing, exercises and reviews to this EMP
5. Outlines the process to notify and communicate with emergency services, neighbouring facilities, regulators and local administration/community.

This EMP covers emergency preparedness and response in the following areas:

- Ammonia & TAN Plant – Inside Battery Limits (ISBL);
- Ammonia & TAN Plant – Outside Battery Limits (OSBL);
- YURI (Renewable Hydrogen Plant)
- Ammonia Transfer Pipeline – 879mtr above ground pipeline
- Ammonia Export Pipeline Corridor – 5.2 km above ground pipeline; and
- Ammonia Ship Loading Operations – Dampier Bulk Liquids Berth (BLB) Jetty;

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3 References

Reference	Title
250-508-MHF-YPF-0002	Yara Pilbara Fertilisers MHF Safety Report
250-508-MHF-YPN-0001	Yara Pilbara Nitrates MHF Safety Report
Legislation	
Work Health and Safety Act 2020 (WA)	
Health and Safety (General) Regulations 2022 (WA)	
Dangerous Goods Safety Act 2004 (WA)	
Dangerous Goods Safety (Major Hazard Facility) Regulations 2007	
Emergency Management Act 2005.	
Emergency Management Regulations 2006	
Environmental Protection Act 1986	
Environmental Protection Regulations 1987	
Environmental Protection (Unauthorised Discharges) Regulations 2004	
Environmental Protection and Biodiversity Conservation Act 1999	
Standards	
AS3745 Planning for Emergencies in Facilities	



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4 Yara Pilbara Emergency Response Overview

4.1 Shift Superintendent Responsibility

In the event of an emergency at the Technical Ammonium Nitrate Production Facility (TAN Plant), the Shift Superintendent of the TAN Plant will assume the role of the Incident Controller (IC).

In the event of an emergency at the Ammonia Plant, Export or Transfer Pipelines the Shift Superintendent of the Ammonia Plant will assume the role of the Incident Controller (IC).

In the event of an emergency at the Dampier Bulk Liquids Berth, the Ship Loading Officer at the Berth will assume the role of the Incident Controller (IC).

The Incident Controller will command the Emergency Response Team with support from the Site Response Team and Corporate Response Team (crisis management).

4.2 Emergency Notification Flow Chart

Emergency Notification Flow Chart is contained in Appendix A.

4.3 Pre-Incident Plans (PIP)

Pre-Incident Plans (PIPs) provide guidelines to manage various foreseeable emergency scenarios and are listed in Appendix B. These PIPs provide initial guidance to response organisations in terms of potential impacts, response requirements and notifications. The PIPs must be reviewed in alignment with this EMP.

4.4 Plant Operations

An overview of the plants, including general operations of both the Ammonia Plant and TAN Plant can be located in the respective safety reports.

4.5 Plant Populations During Normal Operations

Populations of the Ammonia Plant and TAN Plant during normal hours is tabulated in Appendix F.

4.6 Plant First Aid & Medical Information

First aid equipment and medical facilities are outlined in Appendix H.



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4.7 Map of Surrounding Areas

A map of the surrounding areas showing the built and natural environment and the neighbouring facilities that may be affected in the event of a major incident is contained in Appendix I.

4.8 Inventory of Dangerous Goods on Each Site

An inventory of dangerous goods and a description of the hazardous properties of those goods located at both the Ammonia Plant and the TAN Plant are contained in Yara Pilbara's Dangerous Goods Manifests:

- [PSM-YPF-PRO-032](#) YPF Dangerous Goods Manifest
- [PSM-YPN-PRO-032](#) YPN Dangerous Goods Manifest

4.9 Environmental Response

Where relevant, the individual Pre-Incident Plans (PIP's), referenced in Appendix B address the environmental hazards and immediate actions that need to occur to prevent/minimise environmental impact.

A specific Ammonia Spill - Environmental Work Instruction is in place to address Ammonia Spill scenarios. This document includes instructions and accountabilities required to manage the environmental aspects of an off-site terrestrial ammonia spill, an on-site terrestrial ammonia spill and a marine ammonia spill.

The response required is dependent on several factors including:

- the sources of the spill, i.e. pipeline, ammonia tank, jetty;
- the receiving environment, i.e. on-site or off-site terrestrial or marine; and
- the volume of the spill

In each scenario the response is broken down into the following steps:

- immediate response;
- containment;
- treatment;
- disposal;
- monitoring; and
- reporting.



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5 Major Incidents and Emergency Scenarios

The development of this EMP included identifying major incident hazards in consultation with employees, external consultants, BIEMC & regulatory agencies etc.

Potential Major Incidents		Ammonia Plant	YPN Plant
MI01	Loss of control of Methane	X	
MI02	Loss of control of Hydrogen	X	X
MI03	Loss of control of Carbon Monoxide	X	
MI04	Loss of containment of Ammonia	X	X
MI05	Loss of containment of NOx	X	X
MI06	Loss of control of LPG	X	X
MI07	Loss of containment of Nickel Carbonyl	X	
MI08	Loss of control class 4.2 catalyst	X	
MI09	Loss of control of Ammonium Nitrate		X
MI10	Loss of control ANSOL		X

Potential Emergency Scenarios	Ammonia Plant	YPN Plant
Medical emergency	X	X
Bomb threat	X	X
Security breach / activist	X	X
Process Fire / Bush Fire	X	X
Vehicle accident/collisions/impact	X	X
Natural disaster (cyclone, earthquake, flood, storm surge etc)	X	X
Catastrophic events at Pilbara Ports Authority Lease Port that may damage Yara Pilbara ship-loading facilities	X	

Document ID: YMSPilbara-329755810-1541

Version: 2.0

Approval Date: 11/09/2023

Document Owner:

Approved by:

Next Review Date: 2025-03-16

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6 Emergency Preparedness and Response Training

Yara Pilbara employs an Emergency Response Coordinator with necessary skills, experience, training, and knowledge necessary to:

- Train and coach Yara Pilbara's Emergency Response Team regarding the EMP, PIPs and SOPs;
- Maintain Yara Pilbara's EMP and emergency response equipment;
- Conduct audits and emergency management reviews as part of continuous improvement process and Yara Pilbara's Safety Management System;
- Coordinate any necessary external training as per emergency preparedness and response planning; and
- Plan and execute emergency drills and exercises with on-site and external agencies.

All employees and visitors shall receive relevant training and awareness as part of the site induction program. This includes necessary knowledge and awareness in emergency systems, evacuation procedures and preparedness.

6.1 Pre-Incident Plans

Pre-incident plans have been prepared to provide specific guidance on the appropriate response to emergency scenarios listed in [Appendix B](#). These plans also advise on the potential escalation scenarios and the equipment (including clean-up disposal) and resources available onsite and elsewhere that can be deployed.



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7 Emergency Alarms

7.1 Raising the Alarm on Site

Personnel, contractors and visitors on site must report all emergencies immediately to the respective Control Room or Site Security. This notification can be via:

Site	Emergency No.	Control Room	Security (direct)	2 Way Radio Channel	Manual Call Points
Ammonia Plant & YURI	1800 117 506	08 9183 4165	Extension: 4111	Channel 4 clearly announcing "emergency, emergency, emergency"	Red break glass alarm devices located throughout both facilities.
TAN Plan	(directed to Security)	08 9183 4007 / 4008	External: 08 9183 4111		

The relevant person, on receiving the notification, should document the name of the caller, details of the incident, location of incident, injuries and chemicals involved. The person shall immediately report the incident to the Shift Superintendent who will commence management of the incident.

Where the emergency call is received by a Control Room Operator, they shall also notify Security.

7.2 Raising the Alarm Off Site

Personnel, contractors, the public and visitors off-site must report all emergencies immediately via:

- Yara Pilbara’s Two-Way Radio: Channel 6 analogue or 26 Digital
- Yara Emergency number 1800 117 506 or
- Security 08 91 834 111

The person receiving the call should document the name of the caller, details of the incident, location of incident, injuries and chemicals involved.

The person receiving the call shall immediately report the incident to the Shift Superintendent and Security.



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7.3 Notification to the Emergency Services

DFES & Police should be contacted through the following means:

- Telephone: 000 (preferred method of contact)
- EMQNet messaging system
- Dedicated Radio: Channel 136 (DFES channel) on the five dedicated radios located in the following:
 - Scania fire truck ;
 - Tatra fire truck;
 - Ammonia Plant Control Room;
 - TAN Plant Control Room; and
 - Security Gatehouse.

7.4 Notification by Third Parties

State Emergency Services (WA Police, DFES etc), contractors, PPA, members of the public, police or neighbouring facilities may contact Yara Pilbara Security to report an emergency by dialling 1800 117 506.

7.5 Site Fire Alarm

The site fire alarms can be activated manually by an individual or automatically by the activation of a fire detector. The Control Room of the respective facility will receive immediate notification on activation of these alarms.

7.6 Control Room Alarms – Ammonia Plant

The Ammonia Plants Control Room contains facilities to monitor and control plant operation including the export pipeline (except loading arm operation). The plant has been provided with

- Isolation valves at strategic locations which can be operated remotely from the Control Room depending upon their criticality and role in process safety.
- Gas detectors for ammonia and flammable gas.
- Smoke & flame detectors are located across the plant.
- Manual call points installed at different locations.

When activated, detectors and manual call points send signal directly to the Ammonia Plant Control Room and automatically sound the emergency siren.

Document ID: YMSPilbara-329755810-1541

Version: 2.0

Approval Date: 11/09/2023

Document Owner:

Approved by:

Next Review Date: 2025-03-16

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7.7 Control Room Alarms – TAN Plant

The TAN plant is provided with a Central Control Room that contains facilities to monitor and control plant operation. The plant has been provided with:

- Toxic Gas Detection: point ammonia detectors and nitric oxide gas detectors;
- Flammable Gas Detection: hydrogen/hydrocarbon flammable gas detectors;
- Smoke detectors are installed in local instrument rooms, switchgear/electrical equipment rooms, cable trenches inside substation and occupied buildings;
- Manual Call Points strategically located indoors and outdoors around escape routes, exits, walkways and roads;
- Aspirating Smoke Detection Systems (ASDS) installed in buildings producing, storing or transporting ammonium nitrate;
- Thermal detectors are provided in areas where smoke detection is inappropriate;
- Duct smoke detectors - in the compressor shelter, shift Laboratory, bulk TAN storage, conveyor galleries, Control Room building, Transporter Workshop and Emergency Centre; Duct N₂O detectors in bulk TAN storage as an early warning of ammonium nitrate decomposition; and
- Signals from fire and smoke detectors will be connected to the fire detection signal processing control unit (Fire Alarm Control Panel) at the TAN Control Room. A 'low alarm' will be activated if a low alarm is triggered from one detector. A 'confirmed fire' alarm will be activated from a manual call point or if a high alarm is triggered from one detector.



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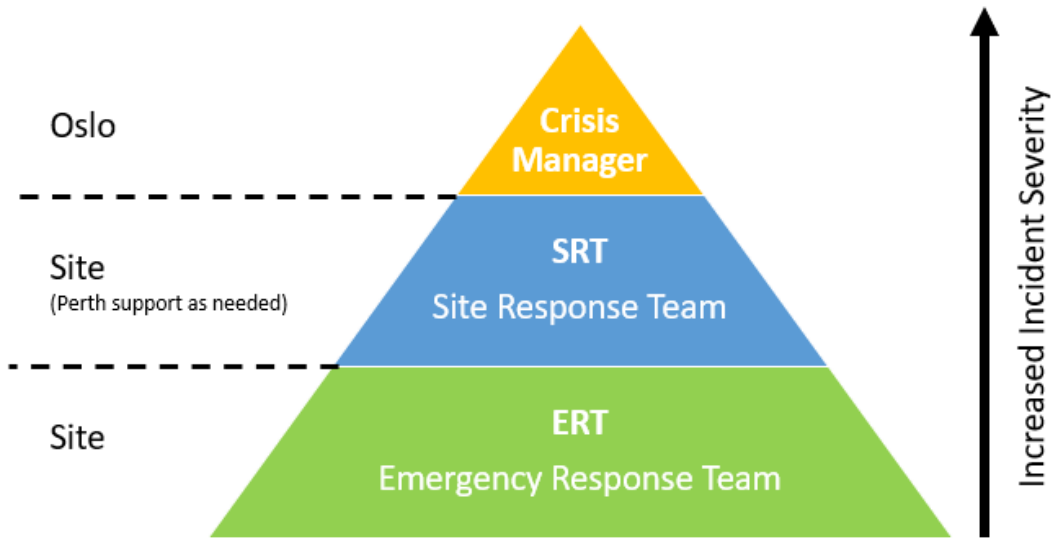
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8 Emergency / Crisis Response Structure

The Emergency and Crisis Management System structure consists of the following elements, some or all of which may be mobilised to deal with an Incident.



Yara have a three-tier structure in place to manage and respond to incidents affecting the site.

The structure and function of the Crisis Manager on Duty, Site Response Team (SRT) are detailed in the Crisis Management System and HOPS 0-08, with the structure of the Emergency Response Team (ERT) at site being the subject of the Yara Pilbara Emergency Management Plan (this document).

8.1 Crisis Manager on Duty (Corporate)

The Corporate Crisis Manager on Duty as required by HOPS 0-08 must be informed for severity 1/2 incidents - Business Travel Incident or Maritime Incidents by means of EMQNet, email or telephone.

8.2 Site Response Team (SRT)

The primary role of the SRT is to oversee the operational emergency response and the wellbeing of people involved in, or affected by, an incident or issue. This is achieved by providing shelter, support and advice to any response on site and developing plans to get operations back to normal as quickly as possible whilst liaising with Crisis Manager on Duty.



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The SRT makes operational plans to mitigate the effects of the emergency as well as identifying and communicating strategic issues (which affect the company's future operability, business continuity, profitability and reputation) arising from the event to the Crisis Manager on Duty. Elements of the SRT will also assist in investigating legal issues associated with the incident, conduct communications and liaise with Government.

The structure and function of the SRT is detailed in this Crisis Management System document.

The SRT includes the following roles:

- SRT Leader / Spokesperson
- SRT HR
- SRT Log Keeper
- SRT Operations
- SRT HESQ
- SRT Emergency Services
- SRT Recovery / Logistics

Note: Specialised support in areas such as Legal, Financial and Commercial are available as needed

The SRT Leader (SRTL), as required by the Incident Controller will coordinate the planning, logistics, resource, plant, community, and regulator liaison functions and shall give technical and services support to the Incident Controller as required.

All personnel who are qualified to be a part of the SRT are trained in the use of the EMQNet application, which is used to maintain a log for emergency events. All SRT members shall attend at least one desktop exercise per annum. The Log Keeper within the SRT is responsible for maintaining an accurate record of events.

The SRT Control Room for both the Ammonia and TAN Plant is in the Administration building within the Ammonia Plant boundaries, and alternative location is the SRT TAN room in the TAN Security Gatehouse.

The SRTL will consider locating the SRT to an offsite location if or when the need arises.



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8.3 Emergency Response Team (ERT)

The primary role of the ERT is to organise and carry out the tactical response operations at the incident scene. The ERT is made up of the first responders from each plant who undertake the physical response to an incident with support from the SRT.

The ERT will consist of the Incident Controller (Shift Superintendent / Senior Control Room Operator), ERT Leader, a minimum of five (5) additional trained members and an ESO (Emergency Services Officer). Two (2) additional members from the opposite site can be requested if required during an incident. This will allow appropriate numbers to maintain a fire team operating under self-contained breathing apparatus (SCBA), a backup team under SCBA, and operation of pumps and the fire appliance.

8.3.1 ERT Duty Cards

In the event of an emergency the roles of key personnel are vital to ensure a successful response. Duty cards summarising the process to be followed by key personnel listed below are outlined in Appendix J.

The ERT leader, under the direction of the Incident Controller, coordinates the team members, and any support personnel including ESO etc. as required. Any further resources required by the ERT will be determined by the Incident Controller based on their assessment of the specific incident response requirements and passed through the SRT Emergency Response Coordinator.

To allow the Shift Superintendent to maintain the required team strength, the names of available ERT Members from both plants on shift are available daily and can be viewed by both sites.

8.3.2 Incident Controller Duty Cards

The Incident Controller is required to coordinate the ERT Team dependent upon the type of emergency. Individual PIP dependent Incident Controller Duty Cards summarising the process for different types of emergencies are contained in Appendix B.

This process is designed to be flexible and requires the Incident Controller to adapt to the changing circumstances of the emergency.

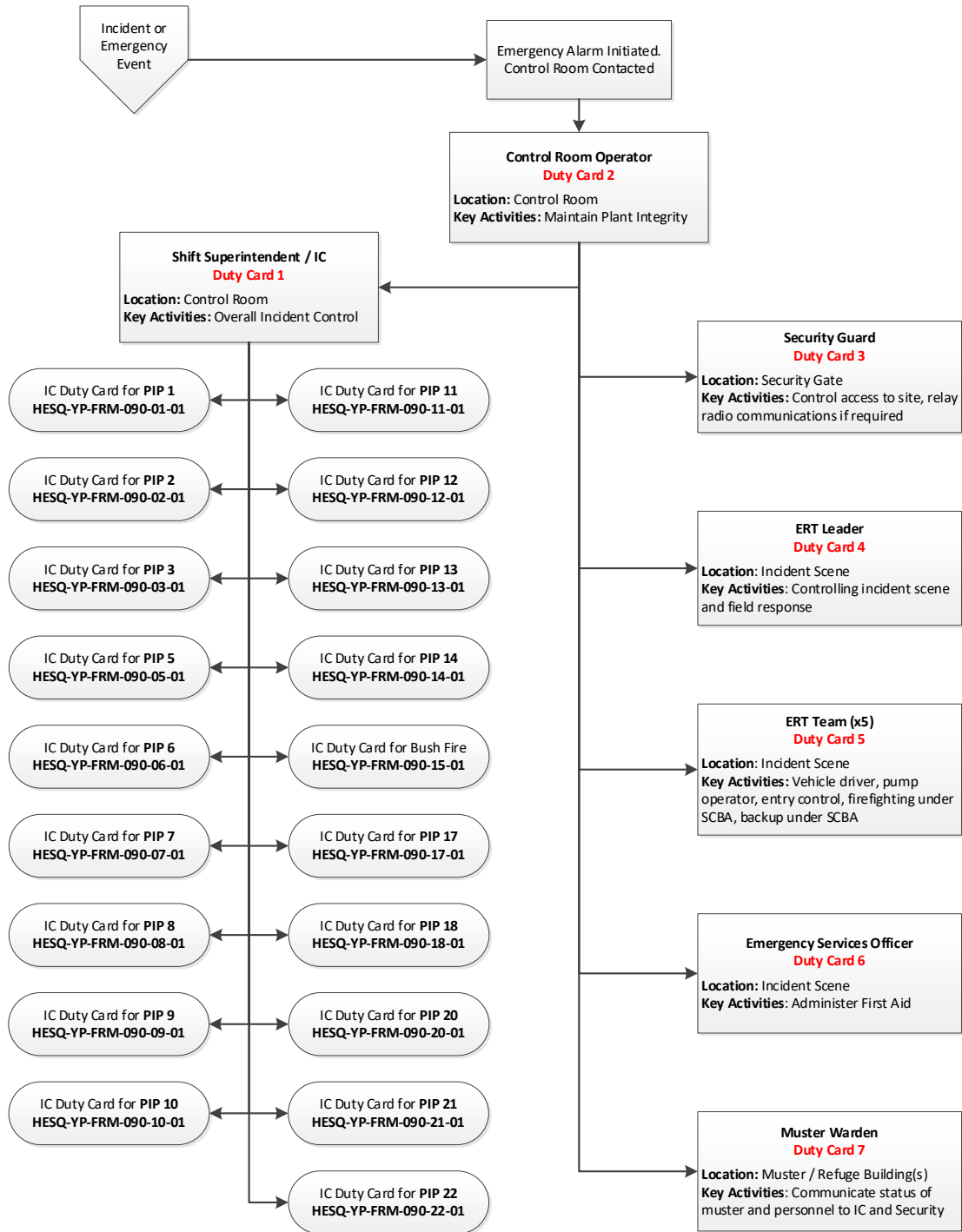


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8.4 Muster Marshalls

The current marshal structure includes nominated Muster Marshall who will account for persons at their muster building or refuge chamber. The Muster Marshall Emergency Roll Call Attendance Form [HESQ-YP-FRM-090-02] should be used to account for persons at the muster location.

Muster Marshalls shall then pass the information to Security via radio or phone on channel 5.

Wardens then remain on standby to receive further instruction. Muster Marshall training is provided to all new employees.

The Yara Evacuation & Site Refuge Report [HESQ-YP-FRM-090-01] should be used by Security to account for personnel at the muster locations.

8.5 Primary and Alternate Team Roles

The 'primary' person is the first choice for each role (IC, ERT TL).

If this person is not available, the 'alternate' position will fill the role.

If the 'primary' person is available, the 'alternate' may be required to act in a 'support' role.

8.6 Links with External Emergency Services Incident Control System (ICS)

The ERT has been structured to facilitate the interface with Australasian Inter-Service Incident Management System (AIIMS). This allows for liaison and support between Yara Pilbara Incident Controller and external emergency services / other 3rd parties in the local area.



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9 Determination of Emergency Level

Emergency events do not always require the same level of response. The level of response is dictated by the severity of the event and its potential effect on health and safety, as well as community perception and risk or potential threat.

The severity of an incident will be determined using a Severity Matrix. The matrix provides a description of the potential types and/or outcomes of events, a measurement of severity and the teams that would potentially be involved for each.

On notification of an incident or alarm the Shift Superintendent of the respective plant shall determine the emergency level. In the case of control alarms, the Duty Panel Operator shall comply with the requirements of the “Yara Pilbara Fertilisers Process Operations Alarm “Philosophy” in order to confirm if any process alarm is spurious.

Whilst emergencies are categorised as on-site and off-site, they are further defined as Levels 1 through 3, and once the emergency or incident has been escalated to the SRT, the Severity Matrix will be used to identify relevant incident issues and outcomes from the event.

9.1 Level One Emergency – Local Alert

An incident where the effects are expected to be confined to a limited area within the plant boundaries and can be adequately managed by personnel within the immediate location.

Its characteristics are that it:

- Is unlikely to worsen and be easily contained;
- Can be dealt with using local resources, e.g. fire extinguishers;
- Requires the ERT to be activated;
- May require the SRT to assemble;
- Requires internal notification but may not require any external notification immediately;
- Does not require evacuation to muster point;
- Only requires limited first aid; and
- Is unlikely to attract media interest in a local or national sense.

The Shift Superintendent must be notified. They shall assume the role of Incident Controller and activate the ERT but may not mobilise the SRT. Examples include a small-contained acid or ammonia leak, a leaking flange or a small fire.

This emergency level may not require the mobilisation of external emergency services. Command and control of the emergency will remain with the Incident Controller.

Document ID: YMSPilbara-329755810-1541

Version: 2.0

Approval Date: 11/09/2023

Document Owner:

Approved by:

Next Review Date: 2025-03-16

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Justin Zis



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9.2 Level Two Emergency – Site Alert

An incident where the effects will remain contained to a limited area but may spread to other areas within the respective plant boundaries. Such incidents will not cross the plant boundary, nor will they be harmful but may create perceptions / panic amongst neighbouring facilities and/or community.

Its characteristics are that it:

- Is contained to an area onsite and within the perimeter;
- Is not harmful to neighbouring facilities or community;
- Requires the ERT and the SRT to assemble and be activated;
- May require Crisis Manager on Duty to be advised and/or activated;
- May require injury treatment;
- “Requires the immediate notification to nominated regulatory agencies by the SRT;
- Evacuation to Muster Buildings /Refuge chambers and/or evacuation of site may be required;
- Incident, until controlled, has the potential to escalate to a Level Three incident; and media interest is possible both at local and state level.

Examples include an acid spill that is not contained, a small ammonia leak or a developing fire visible from distance.

This emergency level may or may not require the mobilisation of external emergency services to assist site personnel and augment site resources.

If the incident escalates and triggers a Westplan response, the role of Incident Controller will be filled by a civil emergency services officer (Police, DFES District Officer). The Yara Pilbara Incident Controller will not maintain control of the incident but will provide whatever the designated Incident Controller requires in relation to personnel, assets, technical assistance, etc. As the civil Incident Controller has little or no knowledge of the plant and the hazards involved, it is likely the Yara Pilbara senior person (previously the Incident Controller) will fill the role of Deputy Incident Controller or Operations (as defined by the AIMS

The Incident Controller and SRT will maintain close coordination of the incident to mobilise resources required to ensure an effective response to an incident or emergency.



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9.3 Level Three Emergency – External Alert

An incident where the effect may spread and impact the people, property and the environment inside and outside of the plant.

Its characteristics are that it:

- Is significant and has the capacity to worsen;
- Requires the ERT and the SRT to activate;
- Requires Crisis Manager on Duty to be advised/activated;
- Requires the immediate notification to internal and external stakeholders and near neighbours;
- Requires the immediate notification to nominated regulatory agencies by the SRT;
- Likely to require external support from local emergency services;
- May require evacuation to Muster buildings/Refuge chambers and/or offsite as necessary;
- May involve casualties; and
- Media interest is expected at local, state or national level.
- Examples include an uncontrolled fire or a large toxic gas release.

This emergency level will require the mobilisation of external emergency services to protect public persons, property and the environment and to assist site personnel and augment site resources. Onsite command and control of the emergency will remain with the Incident Controller.

The Loading Master will assume command and control of emergencies on the jetty during ship loading and take leadership of an incident at the jetty until the ERTL arrives.

Control of other offsite aspects of the emergency becomes the responsibility of the designated Hazard Management Agency, which under the Emergency Management Regulations 2006 are allocated to DFES.

The Incident Controller and SRT will maintain close coordination of the incident in order to mobilise resources required to ensure decisive response to an incident or emergency. The SRT will regularly update Crisis Manager on duty with details of the event as required by HOPS 0-08.



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10 Emergency Warning Systems

10.1 On Site Warning System

If required, the Incident Controller (Shift Superintendent of respective plant) shall authorise the activation of an emergency alarm, common to both plants, to alert all personnel to evacuate to Muster buildings/Refuge chambers. Confirmation of the site emergency alarm is carried out via the radio and PA system. If the Shift Superintendent is not immediately available, the Panel Operator shall initiate the alarm. The alarm should be sounded for the following situations;

- Any explosion;
- A fire (other than a minor fire that can be controlled);
- An uncontrolled ammonia gas or liquid release;
- An uncontrolled process gas release; or
- Any other situation where persons need to be accounted for and/or protected from an event.

The emergency alarm is to be raised whenever there is an unplanned medium-to-large release (or leak) at either plant.

In all cases, it is preferential to raise the alarm as it allows personnel to take precautionary actions.

Emergency sirens are provided in the different plant areas to alert personnel in emergency situations. These sirens are also audible at the Water Corporation Desalination Plant.

The emergency alarm sounds like an air raid siren and is tested every Monday at 0900 hours at the Ammonia Plant and 0915 hours at the TAN Plant.

The Site Evacuation Point Alarm Test Form [HESQ-YP-FRM-090-03] should be used to record the testing of the emergency alarms.

10.2 Off Site Communication System

This notification is required when a neighbouring facility, building or organisation may be affected by an emergency. In the case of a toxic release it is vital that neighbouring facilities in the path of such a release are notified immediately so that they can take appropriate safety measures.

If an emergency is classified as a Level Two or Level Three emergency, Yara Pilbara will immediately notify neighbouring facilities, DFES, WAPOL, regulators, local administration and all concerned agencies using the Message Manager System (EMQNet); which assists in alerting third party agencies through their nominated person(s).

Listed Message Manager recipients will receive a pre-defined and pre-approved Safety Management System and/or email alert advising them of the nature of the onsite emergency.

Document ID: YMSPilbara-329755810-1541

Version: 2.0

Approval Date: 11/09/2023

Document Owner:

Approved by:

Next Review Date: 2025-03-16

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Yara Pilbara maintain a hardcopy of the names and emergency contact numbers of external emergency departments, statutory authorities and neighbouring facilities in the area which is revised and updated on a quarterly basis by the Emergency Response Coordinator.

The contact listing is also maintained in the SRT Control Room and under the distribution list of EMQNet. The Incident Controller will initiate contact with the required neighbouring facilities in consultation with the SRTL.

Yara Pilbara will update neighbouring facilities and DFES with latest status about the incident and future course of action during a significant incident.

11 Emergency Coordination

The location of the emergency will determine the appropriate emergency response, command and control.

11.1 Emergencies within the Site Boundaries

For emergencies located within the plant boundaries the initial response will be made by Yara Pilbara ERT under the command of the respective site Incident Controller.

Emergencies within plant boundaries include the ammonia transfer pipeline, Yuri project and the Water Corp Desalination Plant.

11.2 Emergencies within the Export Pipeline Corridor

For emergencies within the export pipeline corridor that arise from or impact the ammonia export line, response will be made by Yara Pilbara ERT under the command of the Ammonia Plant Incident Controller.

Yara Pilbara will advise DFES, Landcorp and PPA if any emergency exists in the Yara Pilbara East / West Service Corridor.

11.3 Emergencies within the Dampier Port at the Ship Loading Facility

For emergencies located at the PPA Dampier Port that arise on the BLB Jetty, Yara will firstly notify DFES and then commence first response by the Yara ERT under the command of the Loading Master acting as Incident Controller. In this case, the Incident Controller will immediately notify the Ammonia Plant Control Room and then PPA.

11.4 Bushfire Scenarios

For bushfire emergency scenarios (both outside or within plant boundaries) PIP No. 15 Bushfire shall be followed.



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12 Action on Hearing the Alarm – On-Site

The emergency alarm sounds like an oscillating air raid siren and will be sounded throughout the plant for one minute.

Upon hearing the emergency alarm all personnel onsite (both Ammonia and TAN Plants) shall move to the closest Muster Building /Refuge chamber as follows:

- Stop work, immediately observe the windsock and evacuate across and upwind to the nearest and safest Muster Building or Refuge chamber.
- Escape hoods to be used when safe evacuation across and upwind to the nearest and safest Muster Building /Refuge chamber is not possible.
- The first staff member from site who reaches a Muster Building/refuge chamber shall become the Muster Marshall for that area.
- For the **Ammonia Plant**, when a Refuge chamber is reached, you are to enter the Refuge Chamber, proceed through the airlock and await instructions from the Muster Marshall to swipe your EAC at the swipe reader, then walk to and sit on the farthest available seat, when a Muster Building is reached, you are to assist in securing the building as directed and await instruction from the Muster Marshall. When entering the Muster Building provide your name to the Muster Marshall or delegate. They will provide Security with the accounted number of persons mustered.
- For the **TAN Plant**, when a Muster Building is reached, you are to assist in securing the building as directed and await instruction from the Muster Marshall. When entering the Muster Building swipe, the Muster Reader then move away from this area after confirming your swipe visually and audibly on the reader. As soon as practicable, give your name to the Muster Marshall or delegate.
- The Muster Marshall takes the names of everyone at the Muster Point/Building and confirms the names/numbers with the security guard by telephone or radio.
- Security guard to print out Emergency Muster report through Gallagher and keep it as a hardcopy.

Muster Buildings are equipped with public address system speakers and two-way radios to communicate with the Incident Controller and Security ,refuge chambers are equipped with a landline and base radio's..

All personnel will remain at the Muster Buildings/refuge chambers until the all clear alarm is sounded (continuous siren or tone).

Evacuation Assembly Area EAA1 and EAA2 (Ammonia) and Evacuation Assembly Area EAA2 and EAA4 (TAN Plant) are only to be used when there is a complete evacuation of the Ammonia and/or TAN Plant.

During a muster the allocated radio channel for people inside the muster buildings will be Ch 5.



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12.1 All Clear and Re-Entry

Prior to terminating an emergency, the Incident Controller will assess the situation and ensure that the risk has been controlled and there is no possibility of the incident reoccurring. The Incident Controller shall also initiate actions related to site clean-up, barricading, spill containment and safe disposal of any contaminated material resulting from the emergency. The all clear alarm is recognised as a continuous air raid siren on the Ammonia Plant and a continuous tone on the TAN Plant PA System and will indicate the all clear has been given. This will be confirmed via the two-way radio and the public address system. After the all clear has sounded, all employees shall report to their department.

ALL Work Permits shall stand '**SUSPENDED**' as soon as emergency is declared.

ALL jobs must be reassessed for risk prior to recommencing work.

ALL work permits must be revalidated and reissued before recommencement of work.



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13 Roles & Responsibilities

ROLE	ACCOUNTABILITIES
<p>Incident Controller - Shift Superintendent (or Senior Panel Operator in their absence)</p>	<p>Emergency Preparedness</p> <ul style="list-style-type: none"> • Participate in desktop, field and multi-agency exercise for emergency throughout the year; • Be aware of the ERT members present / available during shift; and • Be prepared to take all decisions regarding managing the emergency and plant operation during the period of emergency. <p>Emergency Response</p> <ul style="list-style-type: none"> • Assume role of Incident Controller in an emergency, In the event of an emergency at the Dampier Bulk Liquids Berth, the Ship Loading Officer at the Berth will assume the role of the Incident Controller (IC).; <ul style="list-style-type: none"> ○ If the incident is on a plant site, locate at the Control Room of the effected plant ○ If the incident is within the shipping pipeline boundary, locate at the Ammonia Plant Control Room. ○ If at the BLB Jetty, locate at the BLB Load Control Room • Place vest on to display Incident Controller; • Declare interim emergency level; • If in doubt, treat the situation as a worst-case scenario; • Declare emergency, sounds the site muster alarm and mobilise ERT if appropriate; • If required order evacuation of all personnel including employees, contractors and visitors. • Ring 000 to notify external emergency services; • Notify 3rd parties as required (or delegate to SRT); • Liaise with DFES once direct contact is established. • Inform SRTL; • Instruct Security to account for all personnel on site; • Get feedback from Security of each Muster /Building /refuge chamber to confirm the accounting of site personnel; • Manage the emergency and liaise between Emergency Response Team, Site Response Team, Security and Plant Operators; • Maintain communication with ERTL and the SRTL; • Liaise with and seek assistance from emergency services as required; • Initiate Message Manager Third Party notification protocols in EMQnet. • Direct panel operators in the operation of the plant; • Organise shutdown, isolation, outside service requirements, etc. as situation demands to make the area safe; • Provide predictions of incident potential or escalation to SRTL and external emergency services; • Communicate with regulators or delegate to SRTL and provide regular updates; and • Order termination of emergency or alternative actions. • Refer to PIPs to formulate plan



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ROLES	ACCOUNTABILITIES
<p>Emergency Response Team Leader</p>	<p>Emergency Preparedness</p> <ul style="list-style-type: none"> • Undertake emergency response training as required to maintain competency level; • Ensure emergency response equipment is maintained and ready for use; • Ensure ERT members attend regular emergency response training and are familiar with the location of emergency response equipment; • Organise with H&S Manager to conduct desktop, field and multi-agency exercises throughout the year; and • Be aware of ERT members present / available during shift. <p>Emergency Response</p> <ul style="list-style-type: none"> • Upon notification of emergency by the Incident Controller, proceed to the Central Control Room (YPF or TAN provided it is safe to do so) as soon as practicable; • Account for all ERT Members and EMR and contact the Incident Controller with confirmation of numbers. • Mobilise, command and coordinate the onsite EMR <ul style="list-style-type: none"> • Communicate with the Incident Controller with reference to, Intentions of the ERT in combatting the incident: <ul style="list-style-type: none"> ▪ Providing accurate information on incident; ▪ Gaining more information on current weather and operating conditions; ▪ Making safe access to incident site; ▪ Shut down requirements; ▪ Minimising damage; ▪ Containing major spills / leaks and making area safe; ▪ Liaison with HESQ to clean up and dispose of the spill in accordance with the relevant PIP and/or the Ammonia Spill - Environmental Work Instruction ; and ▪ Requirement of external emergency assistance. • Assist the Incident Controller with information and situational understanding as required by external emergency services personnel; and • Call upon the ESO to treat any casualties.
<p>Emergency Response Team</p>	<p>Emergency Preparedness</p> <ul style="list-style-type: none"> • Undertake emergency response training as required to maintain competency level; and • Participate in desktop, field and multi-agency exercises throughout the year. <p>Emergency Response</p> <ul style="list-style-type: none"> • The ERT will be mobilised by the ERTL if required; • Upon mobilisation of the site siren, if safe to do so, immediately move to the Central Control Room, or the location advised by the ERTL, and prepare for a briefing from the ERTL • The ERT will follow instructions given by the ERTL.



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ROLES	ACCOUNTABILITIES
<p>Emergency Services Officer</p>	<p>Emergency Preparedness</p> <ul style="list-style-type: none"> • Ensure first aid equipment is maintained and ready for use; • Participate in desktop, field and multi-agency exercises throughout the year; and • Be aware of whom the ERTL is on each shift. <p>Emergency Response</p> <ul style="list-style-type: none"> • When mobilised, receive commands and ensure coordination with the ERTL; • Remain at medical centre unless responding to requests for assistance from ERTL; • Assess the need for treatment of injuries and triage of casualties; • Provides transportation for sick or injured persons from site to Karratha Health Campus; • Lead Confined space rescue and Vertical Rescue emergencies with assistance from the ERTL; • Advise ERTL to provide a resource when transportation of a patient is required off site; • Advise the ERTL of the need for further medical assistance from both internal and external resources, and • Communicates with Dr or Karratha Health Campus regarding status of Injured Person
<p>Panel Operator</p>	<p>Emergency Preparedness</p> <ul style="list-style-type: none"> • Participate in desktop, field and multi-agency exercises throughout the year; • Ensure familiarisation with emergency isolation and shutdown procedures; and • Ensure familiarisation with the information required to be collected when an emergency is reported. <p>Emergency Response</p> <ul style="list-style-type: none"> • The most senior operator will assume the Incident Controller role in the absence of the Shift Superintendent; • Receive emergency reporting call on radio or telephone; • Repeat information given by caller to ensure accuracy; • Immediately notify the Shift Superintendent; • If the Shift Superintendent unavailable and the emergency requires immediate site muster, sound the emergency alarm; • Remain in contact with and operate plant as directed by the Shift Superintendent; and • Follow all further instructions given by Shift Superintendent. • Responsible for Log keeping during incidents with the Shift Superintendent and inform near neighbours using the EMQNet messaging tool



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ROLES	ACCOUNTABILITIES
<p>Gatehouse Security Officer</p>	<p>Emergency Preparedness</p> <ul style="list-style-type: none"> • Participate in desktop, field and multi-agency exercises throughout the year;and • Ensure all personnel, contractors and visitors are issued with swipe cards and swipe in and out when entering or leaving the facility. <p>Emergency Response</p> <ul style="list-style-type: none"> • Access the Gallagher personnel onsite screen. This screen accounts for the number of personnel onsite at any time (as personnel reach Muster Point/Building and swipe their card it will register and display their location); • Print a hard copy of people onsite immediately following the activation of the site siren; • Record and account for personnel using the site Electronic Access Control System and compare with the number of persons present at each Muster Building from the Muster Marshalls; • Contact the Incident Controller with the headcount results; • Follow all instructions given by the Incident Controller; • Maintain a log of activities and times relating to the incident; • Control vehicle access through the main gate; and • Assist emergency services and crew by providing them with hand held two way radio's and inform the Incident Controller when they arrive; and • Direct emergency vehicles to the pick-up point as instructed by the Incident Controller.
<p>Jetty Operator (BLB Incidents)</p>	<p>Emergency Preparedness</p> <ul style="list-style-type: none"> • Participate in desktop, field and multi-agency exercises throughout the year; • Ensure all personnel, contractors and visitors operating near the Berth are aware of the emergency arrangements when entering or leaving the facility; • Ensure familiarisation with emergency isolation and shutdown procedures for the BLB; and • Ensure familiarisation with the information required to be collected when an emergency is reported. <p>Emergency Response</p> <ul style="list-style-type: none"> • Upon hearing evacuation alarm immediately conduct isolation and make safe activities; • Contact the Incident Controller with headcount if appropriate; • Follow all instructions given by the Incident Controller; • Assist emergency services and crew and inform the Incident Controller when they arrive; and • Direct emergency vehicles to the location as instructed by the Incident Controller.



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ROLES	ACCOUNTABILITIES
<p>All Employees, Visitors & Contractors</p>	<p>Emergency Response</p> <ul style="list-style-type: none"> • Follow all site evacuation procedures upon hearing the emergency siren; • Obey all directions given by the Incident Controller; • Only use Yara Pilbara communication systems for emergency communication only; • Monitor two-way radio emergency channel 5. Unless directly involved, keep emergency channel clear; • Remain at Muster building/Refuge chamber until the all clear is sounded and confirmed by Incident Controller; and • Follow any further directions given by the Incident Controller.



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14 Notification and Liaison

Yara Pilbara may have a responsibility to notify external emergency service agencies, government authorities, local administration and neighbouring facilities either by landline or EMQNet.

14.1 Department of Fire and Emergency Services (DFES) Notification

Once DFES has been notified of the emergency, the Site Response Team Leader and Incident Controller is then responsible for further liaising with DFES.

Contact Number for DFES is 000

Once a direct contact is established, the Incident Controller will liaise with DFES Communications Centre (COMCEN) 1800 198 140 to update them on the following:

- If the hazard has or could spread beyond the plant limits or export pipeline (impact off-site);
- If the emergency is beyond the experience and resources of Yara Pilbara or its contractors;
- If the protective equipment available is not adequate to deal with the event; and
- Any employees or members of the public are or could be at risk.

Calls for attendance by external agencies shall be directed to the DFES Communications Centre on 000 ("Police, fire or ambulance" to be stated on answering) and the following information provided:

- Location of the emergency;
- Nature of emergency;
- Escalation potential;
- Details of any actual or potential life involvement; and
- The plant contact number for further details if required.

The SRTL is the second point of contact for emergency services for any strategic information. Whilst onsite the SRTL can be contacted in SRT Control Room.

Contact Numbers for Yara Pilbara SRT Control Room are

08 9183 4101 / 08 9183 4161 for conference calls

When calling DFES, inform the operator that a DFES Emergency Response Guide:

FESERG No. 55 for AMMONIA PLANT; and

FESERG No. 54 for TAN PLANT

Is in place for the facility and confirm that all required information have been given before terminating the call.

Yara Pilbara Security will advise the Incident Controller of the arrival of Emergency Services. Security will direct emergency vehicles to the location Pick up point as instructed by the Incident Controller



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14.2 Statutory Notifications

Refer to the Statutory Reporting – Notifiable Incident Reporting Procedure [HESQ-YP-PRO-057] for instructions and requirements for notifying regulatory bodies.

14.3 Notification to Gas Supplier

All Level Two and Level Three incidents shall be reported by SRT or Incident Controller to the gas supplier, through the Message Manager system and/or by direct telephone contact.

Depending on the situation there may be a need to restrict gas supply to the plant. The SRT will notify the gas supplier regarding restricting the gas supply.

Contact Numbers for Gas Supplier:

Varanus Island Control Room	6218 7637
24/7 Radio Room	6218 7600
Field Supervisor	6218 7601
Duty Incident Commander	0498 988 010

14.4 Notification to Pilbara Ports Authority (PPA)

All Level Two and Level Three incidents shall be reported by the SRT or Incident Controller to the PPA through the Message Manager system and/or by direct telephone contact.

If the incident is on the Bulk Loading Berth Jetty, the Chief Maritime Officer shall notify PPA. A separate notification through Message Manager shall also be issued.

14.5 Notification to Pipeline Corridor Owner (Landcorp)

All Level Two and Level Three incidents shall be reported by the SRT or Incident Controller to Landcorp through the Message Manager system and/or by direct telephone contact.

14.6 Notification to Neighbouring Facilities

Notification will be made where a neighbouring facility, building or organisation may be affected or perceived to be affected by an emergency, so they may take appropriate action to protect life safety.

Yara Pilbara will notify neighbouring facilities using the EMQNet Message Manage system and/or by direct telephone contact.

Monthly Testing of the Neighbours Message Manage system is conducted and contact list updated when required.



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Each neighbouring facility has also been given an information pack as part of requirements of the Dangerous Goods Safety (Major Hazard Facilities) Regulations (Schedules 1 and 4). The information pack outlines information about the Yara Pilbara Plants, their contact details, safety measures, appropriate response and other information to assist neighbouring facilities in the event of an emergency.

15 Communication Systems

15.1 Fixed Communication System

Two types of fixed communication system are installed at the plants:

- EPABX system; and
- Public Address (PA) system.

15.2 Intrinsically Safe Portable Communication Systems

Two-way radio communications channels are designated as per the Yara Radio Communications Procedure ([650-119-PRO-YPF-0001](#)) (refer to attachment 4 for detail).

- Channel 4 is a dedicated strictly for emergency use only and for contacting Medic or First Aid / Ambulance support.
- Channel 11 is a dedicated backup for emergency channel 4.

It may be noted that digital channels 1 to 6 and 12-13 operate using repeaters. In the event of a site blackout these channels will be available for 2 hours using battery backup. In the event of prolonged power failure these channels may become non-operational. In such situations channels 7 to 11 will be operational if the individual radio battery has sufficient charge.

Yara Pilbara has 5 designated “external emergency services only” radios. These radios shall be located at the Emergency Centre / Security Gate for immediate use by external emergency services arriving onsite.

16 Emergency Power Supply

The emergency power supplies comprise of the Emergency Generator and Emergency Switchboard, Uninterruptible Power Supply (UPS), batteries and associated power cabling.



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17 Muster Buildings & Evacuation Areas

17.1 Muster Buildings (inc. Chambers) and Evacuation Assembly Areas

In order to facilitate the rapid evacuation of personnel following an emergency, Muster buildings (including Refuge Chambers) and Evacuation Assembly Areas (EEA) are provided. Each of these muster buildings have been selected with consideration of occupancy (majority of personnel operate in these areas), ease and speed of access and located indoors (protection from atmospheric issues).

Refuge Chambers are regularly inspected by Yara Pilbara to ensure the chambers are fit for purpose [HESQ-YP-FRM-090-05]. The chambers are subject to 6 monthly external vendor servicing as per SAP maintenance plans.

Each Muster building has swipe card access, telephones and radios available for communications unless otherwise indicated.

The Muster buildings are equipped with first aid kits and water supply.

Location of Muster buildings, refuge chambers and Evacuation Assembly Areas are also listed in the following table.

The evacuation assembly areas for TAN Plant have been located in accordance with the Safe Storage of Ammonium Nitrate – Code of Practice.

17.2 Off-Site Evacuation Points

Nominated Off Site Evacuation Points (OEP) are listed in the following table.

Evacuation will depend on prevailing winds at the time and the decision will be made by the SRT Leader.

Refer to PIP No. 20 Site Evacuation for location map of Off-Site Evacuation Points and routes.

Muster Buildings and Evacuation Assembly Areas are listed in the following table and shown in the following:

Ammonia Plant Layout (including muster buildings)	YPF Dangerous Goods Manifest Site Plan
TAN Plant Layout (including muster buildings)	YPN Dangerous Goods Manifest Site Plan
Site Evacuation Areas	PIP No 20 Site Evacuation



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Description		Plant	Temporary / Permanent	Swipe Facility available
Muster Building 1	Minearc Chamber N of Control Room parallel to North Road	Ammonia	Permanent	Yes
Muster Building 2	Minearc Chamber SE corner of Administration Building parallel to East Road	Ammonia	Permanent	Yes
Muster Building 3	Minearc Chamber NW of Fire & Safety Building adjacent to East Road	Ammonia	Permanent	Yes
Muster Building 4	Minearc Chamber Contractors area adjacent to Evacuation Assembly Area 2	Ammonia	Permanent	Yes
Muster Building 5	TAN Control Room.	TAN	Permanent	Yes
Muster Building 6	Security and Emergency Centre (Main Gatehouse)	TAN	Permanent	Yes
Muster Building 7	Administration Building	TAN	Permanent	Yes
Muster Building 8	Ammonia Control Room	Ammonia	Permanent	Yes
EAA 1	Ammonia plant car park (nest to old gatehouse)	Ammonia	Permanent	Yes
EAA 2	Water Corp desalination plant exit gate	Ammonia	Permanent	Yes
EAA 3	TAN plant car park (next to main gatehouse)	TAN	Permanent	Yes
EAA 4	Perimeter gate NE of the Project Office	TAN / Projects	Permanent	No
OEAA 1	Corner Village and Burrup Road along pipeline corridor	All	Permanent	No
OEAA 2	Water Corp road towards King Bay & Burrup Road	All	Permanent	No
OEAA 3	Hearsons Cove Beach	All	Permanent	No
Windsock Locations	Top of the Prilling tower (U32) Top of the Absorption Tower (U12) Top of the Truck Loading Area (U73)	TAN / Projects	Permanent	N/A
Windsock Locations	North Storage Tank ISBL - Vessel 121-MD Pipe Rack 268 (Corner. Centre Rd & 3 rd Ave) Pipe Bridge (Corner. South Rd. & 1 st Ave)	Ammonia	Permanent	N/A



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18 Protective Equipment

Protective equipment is provided at each plant and at the ship loading facility to enable personnel to escape during an emergency, to enable rescue personnel to assist injured personnel and to operate critical items of the plant to control the emergency.

The equipment is serviced and maintained according to all the relevant Australian standards as outlined in the Fire and Emergency Equipment Maintenance Schedule [HESQ-YP-FRM-090-04].

A list of fire protection equipment which is located at each plant and the ship loading facility is contained in Appendix C.

A list of emergency protective equipment available on site is contained in Appendix G.

19 First Aid & Medical Facilities

First aid kits, safety showers and eyewash stations are provided at strategic locations throughout each plant and at the ship loading facility.

First aid will be provided by a qualified ESO 24 hours a day. Support may be provided to the ESO by other first aid qualified Yara Pilbara personnel on site.

A site ambulance equipped with appropriate first aid supplies is located at the Emergency Centre. This ambulance will be used to transport sick and injured personnel to the hospital, where transportation to hospital is time critical.

The nearest external medical facilities are in Karratha at Karratha Health Campus, approximately 20 km from the plant.

A list of first aid equipment is found in Appendix H.

20 Chemical Spill Kits

Chemical Spill Kits are available on each plant and are contained in appropriately marked wheelie bins. Each bin contains coveralls, several chemical absorbent materials, rubber gloves, goggles and other associated materials and equipment to assist in the clean-up of small spills.

The fire trucks and Hazmat trailer have further supporting equipment to assist in larger or more toxic chemical spill situations. The fire trucks also contain required PPE.

Disposal of spill clean-up material (including spent / used absorbent) must comply with the Waste Management Procedure. Liaise with HESQ for advice.



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21 Gas Monitors

21.1 Handheld Gas Monitors

Yara Pilbara has handheld gas monitors, which measure numerous gases (NH_3 , Cl_2 , LEL, O_2 , CO , NO_x and H_2S). The hand-held gas monitors provide quick and accurate gas readings in emergency situations. The hand-held monitors are in the Control Room at each plant and in the Security Gatehouse.

Operations personnel have been trained in the use of hand-held gas monitors.

The Emergency Response Team have their own gas monitors and pump in the fire truck.

21.2 Fixed Plant Gas Monitors

21.2.1 Ammonia Plant Control Room

The following inputs from the field feed to the Ammonia Plant Control Room

- Gas (methane) detectors x 2;
- Ammonia detectors x 18; and
- Fire detectors x 10.

Fixed gas monitors are strategically mounted in locations in the field where there is a possibility of a release of gas or fire. The operator in the Ammonia Plant Control Room is alerted by an alarm upon activation of the detectors. The Control Room Operator will send the respective Field Operator to investigate alarm activations.

21.2.2 Technical Ammonium Nitrate (TAN) Plant Control Room

The following inputs from the field feed to the TAN Plant Control Room

- Ammonia detectors
- Hydrogen detectors
- NO_x detectors
- N_2O detectors;
- Flame detectors; and
- Smoke, thermal and laser detectors

The fixed detectors are strategically mounted in locations in the field. The operator in the TAN Plant Control Room is alerted upon activation of the detectors. The Control Room Operator will send the respective Field Operator to investigate alarm activations.



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22 Site Access / Exit

22.1 Common to both Ammonia and TAN Plant

The main access to both Plants is from Village Road which runs off Burrup Peninsula Road.

There is a Security Gatehouse with boom gates to control ingress and egress of vehicles and personnel. To avoid entry of unwanted vehicles and personnel from outside, during emergency situations, the boom gates will be monitored by Security Officers when the emergency siren is sounded.

The Security Gatehouse is manned 24 hours a day by qualified security personnel.

During a major incident the ER & Security Coordinator and Security personnel will assist the Police if required.

A secondary access road to both plants is a dirt road that runs off Burrup Peninsula Road to the Water Corporation Desalination Plant. There are keys on both sides of the gates in break glass key boxes.

22.2 Ammonia Plant Only

There is a third access road to the Ammonia Plant located south of the Skid for the Natural Gas Pipeline (third party owned). This can be used, if required, as an alternate entry or exit point to the Ammonia Plant if the other access points are inaccessible.

23 Mutual Aid

Yara Pilbara is an active member of the Burrup Industries Emergency Management Committee (BIEMC) and supports other industries if mutual aid is required.

This support is also reciprocated, and emergency equipment and resources can be called upon from the BIEMC neighbours if required.

DFES will assist in coordinating neighbour mutual aid through a signed Memorandum of Understanding.



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24 Training & Competency

Yara Pilbara has competent people to deal with identified emergency scenarios.

Required training and competencies for key emergency roles are identified and managed within the training management system and site training matrix.

All operational and production personnel are trained and active members of the ERT and there will be an appropriate number of employees trained in relevant Emergency Response capabilities on each shift.

Refresher training for ERT personnel will be on-going as required to maintain Currency of Certification.

25 Exercises, Testing, Auditing and Review

A schedule of planned simulated emergencies to test the emergency management system is in place.

Regular exercises will be scheduled accordingly by the Emergency Response Coordinator.

The scheduling of the testing of the emergency management system will be managed in Synergi. Records and any resulting actions will be recorded in Synergi.

Testing and audit exercises include:

- Site Emergency Muster drill (6 per/year)
- Level 1 ERT Pre-Incident Plan Field Exercises (4 x per annum).
- Level 2 Desk Top Exercise (1 x per annum).

Level 3 Full Scale Mock Exercise (1 x per annum). Note: Inclusion of external emergency services as appropriate

As many persons as practical will be involved in simulated emergency exercises as a refresher program. These events are to be monitored to record system deficiencies so that improvements may be implemented.

Every significant emergency response event is formally reviewed to identify system deficiencies.

Internal / external audits and self-assessments will be conducted on a regular basis to monitor compliance with the requirements of the Emergency Response standard and procedures, in addition to equipment sufficiency and application. The objectives of the audits are to test the effectiveness of the emergency response and as part of the continuous development process, to identify and make recommendations for further improvement.



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26 Incident Investigations

The Plant Manager and the H&S Manager have the following responsibilities in relation to incident investigations:

- To organise an internal or independent investigation of incidents that occur;
- To assist external agencies in the event of a statutory investigation; and
- To ensure that all evidence is preserved when it is likely that a statutory investigation will be conducted.

All employees of Yara Pilbara are responsible for reporting all incidents to their supervisor. This process is outlined in the Yara Pilbara's Incident Investigation and Reporting process.

27 Debriefing

The Plant Manager and the H&S Manager are responsible to ensure a debriefing of all personnel involved in the emergency, and that the debriefing takes place within a reasonable time following the stand-down phase.

“Hot” debrief conducted for all personnel involved and immediately after the incident conducted by the ERT TL.

Incident debriefing to all ERT Team members once all equipment was made up and the Emergency Response capabilities restored by the IC.



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28 Appendices

Appendix A	Emergency Notification Flow Chart
Appendix B	Pre-Incident Plants & Incident Controller Duty Cards
Appendix C	Locations of Emergency Fire Equipment
Appendix D	Overview of Plant Location and Operations
Appendix E	Hazardous Inventories adjacent to the plant
Appendix F	Plant Population (indicative)
Appendix G	Protective Equipment
Appendix H	First Aid Equipment
Appendix I	Industries of Surrounding Area
Appendix J	Plant Safety Features
Appendix K	Abbreviations and Definitions



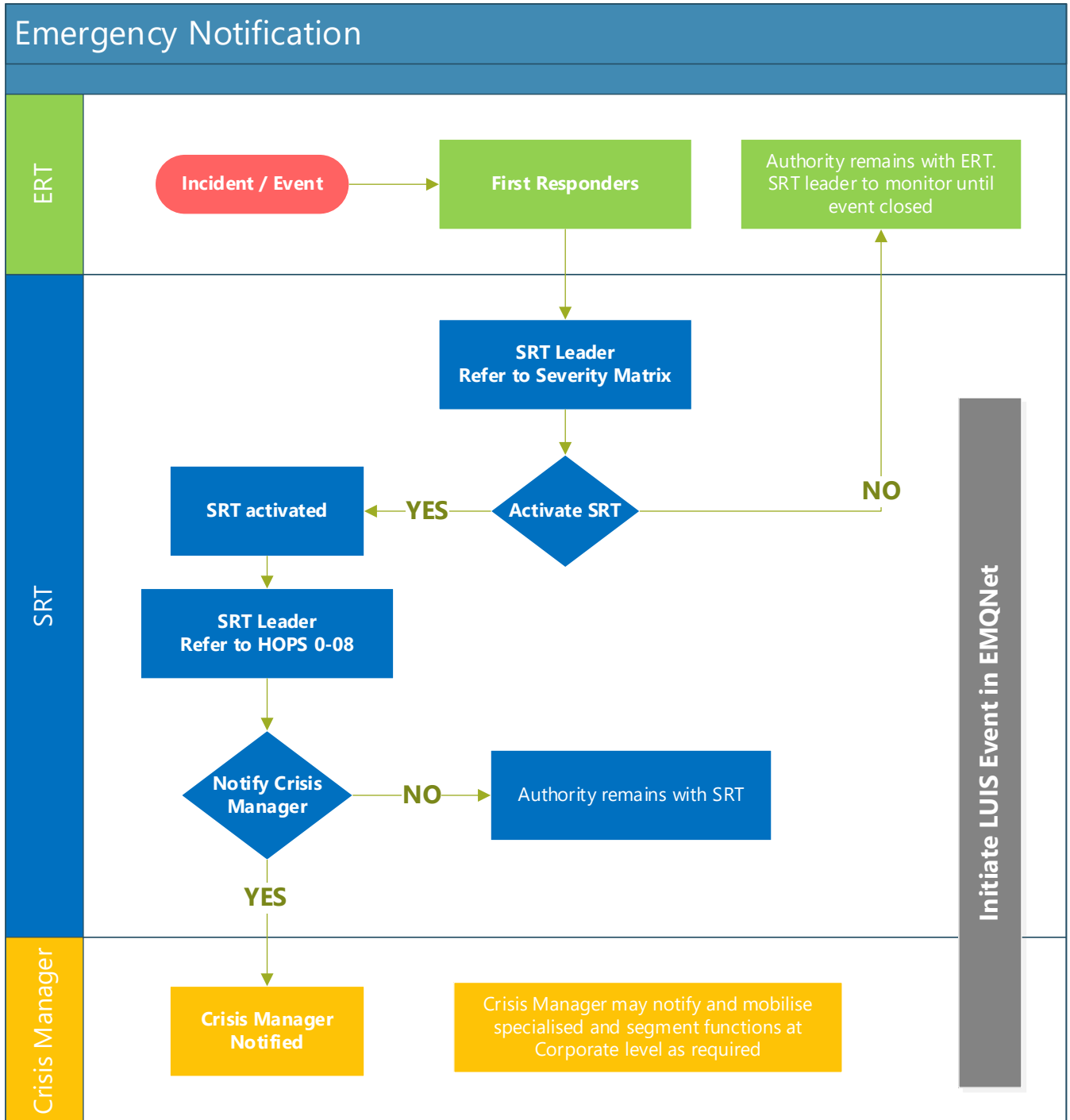
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28.1 APPENDIX A – Emergency Notification Flow Chart





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28.2 APPENDIX B – Pre-Incident Plans & Incident Controller Duty Cards

Plan No	Pre-Incident Plan No.	Reference
1	PIP No.1 Natural Gas Release	HESQ-YP-PIP-090-01.pdf
	PIP No 1 Natural Gas Release Incident Controller Duty Card	HESQ-YP-FRM-090-01-01.pdf
2	PIP No.2 Process Stream (Flammable Gas) Release	HESQ-YP-PIP-090-02.pdf
	PIP No. 2 Process Stream (Flammable Gas) Release Incident Controller Duty Card	HESQ-YP-FRM-090-02-01.pdf
3	PIP No.3 Ammonia Release (Export Pipeline, TAN and/or Ammonia Plant)	HESQ-YP-PIP-090-03.pdf
	PIP No. 3 Ammonia Release (Export Pipeline, TAN & Ammonia Plant) Incident Controller Duty Card	HESQ-YP-FRM-090-03-01.pdf
-	Deleted	
5	PIP No.5 Ammonia Release (Ship Loading & Jetty)	HESQ-YP-PIP-090-05.pdf
	PIP No. 5 Ammonia Release (Ship Loading & Jetty) Incident Controller Duty Card	HESQ-YP-FRM-090-05-01.pdf
6	PIP No.6 Major Injury or Fatality	HESQ-YP-PIP-090-06.pdf
	PIP No.6 Major Injury or Fatality Incident Controller Duty Card	HESQ-YP-FRM-090-06-01.pdf
7	PIP No.7 Non-Process Fire	HESQ-YP-PIP-090-07.pdf
	PIP No.7 Non-Process Fire Incident Controller Duty Card	HESQ-YP-FRM-090-07-01.pdf
8	PIP No.8 Cyclone Preparation & Contingency Planning	HESQ-YP-PIP-090-08.pdf
	PIP No.8 Cyclone Preparation & Contingency Planning Incident Controller Duty Card	HESQ-YP-FRM-090-08-01.pdf
9	PIP No.9 Bomb or Terrorist Threat	HESQ-YP-PIP-090-09.pdf
	PIP No.9 Bomb or Terrorist Threat Incident Controller Duty Card	HESQ-YP-FRM-090-09-01.pdf
10	PIP No.10 Substation, Transformer Bay, Generator or Crude Oil Tank Fire	HESQ-YP-PIP-090-10.pdf
	PIP No.10 Substation, Transformer Bay, Generator or Crude Oil Tank Fire Incident Controller Duty Card	HESQ-YP-FRM-090-10-01.pdf
11	PIP No.11 Ammonium Nitrate Prill Fire	HESQ-YP-PIP-090-11.pdf

Document ID: YMSPilbara-329755810-1541

Version: 2.0

Approval Date: 11/09/2023

Document Owner:

Approved by:

Next Review Date: 2025-03-16

Willie Bezuidenhout

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Plan No	Pre-Incident Plan No.	Reference
	PIP No.11 Ammonium Nitrate Prill Fire Incident Controller Duty Card	HESQ-YP-FRM-090-11-01.pdf
12	PIP No.12 ANSOL Incident	HESQ-YP-PIP-090-12.pdf
	PIP No.12 ANSOL Incident Incident Controller Duty Card	HESQ-YP-FRM-090-12-01.pdf
13	PIP No.13 Nitric Acid Solution Incident	HESQ-YP-PIP-090-13.pdf
	PIP No.13 Nitric Acid Solution Incident Incident Controller Duty Card	HESQ-YP-FRM-090-13-01.pdf
14	PIP No.14 NOx Gas Incident	HESQ-YP-PIP-090-14.pdf
	PIP No.14 NOx Gas Incident Incident Controller Duty Card	HESQ-YP-FRM-090-14-01.pdf
15	PIP No.15 Bush Fire	HESQ-YP-PIP-090-15.pdf
	PIP No.15 Bush Fire Incident Controller Duty Card	HESQ-YP-FRM-090-15-01.pdf
16	Deleted	
17	PIP No.17 Security Breach	HESQ-YP-PIP-090-17.pdf
	PIP No.17 Security Breach Incident Controller Duty Card	HESQ-YP-FRM-090-17-01.pdf
18	Environmental Incident (No. Only)	
	Environmental Incident Incident Controller Duty Card	HESQ-YP-FRM-090-18-01.pdf
19	Spare	
20	PIP No.20 Site Evacuation	HESQ-YP-PIP-090-20.pdf
	PIP No.20 Site Evacuation Incident Controller Duty Card	HESQ-YP-FRM-090-20-01.pdf
21	PIP No.21 Earthquake & Flooding Contingency Planning	HESQ-YP-PIP-090-21.pdf
	PIP No.21 Earthquake & Flooding Contingency Planning Incident Controller Duty Card	HESQ-YP-FRM-090-21-01.pdf
22.	PIP No 22 Non-Process Catalyst Fire	HESQ-YP-PIP-090-22.pdf
	PIP No 22 Non-Process Catalyst Fire Incident Controller Duty Card	HESQ-YP-FRM-090-22-01.pdf

Document ID: YMSPilbara-329755810-1541

Version: 2.0

Approval Date: 11/09/2023

Document Owner:
Willie BezuidenhoutApproved by:
Justin Zis

Next Review Date: 2025-03-16



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28.3 APPENDIX C – Location of Emergency Fire Equipment

Location	Fire Protection Equipment at Plant
Ammonia Plant - General	
Firewater Storage Tank	There is a designated Firewater Tank, 2005-MF which has a capacity of: Effective Volume 4,971 m ³ and nominal Volume of 5,269 m ³ . Desalinated Water tank of 6376 m ³ capacity is connected to the main fire water tank to provide additional emergency water.
Firewater pump	To pump discharge pressure of 860 kPa with 700 kPa at the hydraulically remotest point of the fire water network. Main Fire Water pump is provided with automatic starting facilities as per NFPA-20. If the pressure in the pump discharge header falls below 400 kPa the electric pump will start. Firewater pump start buttons are in the Fire Control Room. Pumps available are one electric and one diesel driven pump, 570 m ³ /h, discharge pressure 860 kPa, diff. head 88 m.
Ring Main	Distributed throughout the plant by a network looped around the plant so that all hydrants will have source of water at least from two directions. Isolating valves are in the system to permit fire water to reach any area regardless of a failure in any single line.
Hydrants	Fire Hydrants: - (AS 2419.1-1994) – Wet Barrel tube type, each fitted with 2x 2 ½ inch hose connections, 1x 4-inch hose connection and 1x 3-inch connection for monitor. All hydrants at Fertiliser plant have a fire hose box with 1 x 64mm firehose ,1 x 38 mm fire hose and a straight stream fog nozzle.
Monitors	Each monitor is rated for 120 m ³ /hr. capacity at 7 bar supply pressure. Monitors are fitted with an isolation valve and adjustable stream nozzle. The maximum water jet throw is 60 m horizontally at 45° trajectory and 28 m vertically in still air at 7 bar pressure. Monitors have traversing mechanism to give 360° rotation in either direction of the horizontal plane and 125° in the vertical plane (+80° to 45°) with separate swivels through a quick acting handlebar. For unattended operation of the monitor at the desired angles, suitable locks or swivel joints are provided. One handle for traversing both the horizontal and vertical rotation of the monitor is provided on the monitor body.



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Location	Fire Protection Equipment at Plant
Ammonia Plant - Process Plant	
Inside Battery Limits (ISBL)	4x Monitors at Strategic locations.
Ammonia Plant - Ammonia and Diesel Storage	
Ammonia Storage	4x Monitors at strategic locations.
Diesel Storage	Hydrants & Fire hose boxes & 50 kg foam extinguisher, wheel mounted type, suitable for Class A B rated fires (flammable liquid fires)
Ammonia Plant - Utilities	
Cooling Tower	Hydrants & Fire hose boxes
Utility Units	Hydrants & Fire hose boxes
Sub-stations	Fire extinguishers
Buildings	Hydrants & Fire hose boxes 9kg Dry Powder and CO ₂ portable fire extinguishers.
Control Room	FM-200 Gaseous Suppression System is provided for protection of cable basement below the flooding floor. The system is operated both automatically upon signal from smoke detectors and manually at the gas cylinder bank. The system includes 100% spare cylinders inline.
Control Room, Electrical Substation	<p>An aspirating smoke detection system with an air sampling system that draws air from panels in Control Room, Electrical Sub-Station and other enclosures with high smoke development risk.</p> <p>Smoke Detectors are 'Single Zone Voting' for alarm purpose only and 'Cross Zone Voting' for alarm and automatic activation of connected fire suppression system.</p> <p>Automatic Heat Detectors; 'Single Zone Voting' Heat Detectors are provided for Alarm purpose only.</p> <p>9kg Dry Powder and CO₂ extinguishers.</p>
DG Yard	2 x 1000ltr foam totes with environmentally friendly foam.



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Location	Fire Protection Equipment at Plant
<p>Ammonia Plant Ship Loading Facilities</p>	<p>Yara Pilbara’s firefighting system uses PPA’s existing 8-inch fire water main and ties in an 8-inch line to this main header. The firewater is supplied using 2x 500 m³ firewater tanks located in the PPA area. Supply of firewater for up to 4 hours at a rate of 72 m³/hr in the main firewater header. This can be refilled within 6 hours. This is as per the requirement of Australian Standards AS 2419.</p> <p>The Bulk Liquids Berth constitutes of 3x Fire Hydrants (with provision for 1x more in the future) and 2x Water Curtain Nozzles (Fogging Nozzles).</p> <p>In the event of an ammonia vapour release, the water curtain nozzles will be activated to suppress ammonia vapour at the berth. The minimum water jet throw for the nozzles is 31 m horizontally and 10 m vertically, in still air at 8 bar pressure. The water curtain nozzles are rated as follows:</p> <p>2 x 2.5-inch nozzles at 72 m³/hr and 8 bar pressure each (to be run at 45 m³/hr each).</p>

Location	Fire Protection Equipment at Plant
TAN Plant - General	
<p>Firewater Storage Tank</p>	<p>Two (2) desalinated water storage tanks (93-FB-001A/B) are used to store fire-fighting water. The tanks also supply desalinated water to all the users in the process and utility units in the complex.</p> <p>Each tank has a capacity of 1,038 m³ and 600 m³ of that capacity will be dedicated for firefighting.</p> <p>As shared tanks, the connection points to the TAN Plant utilities from the tanks are located above the dedicated fire-fighting water level and thus cannot draw water from it.</p> <p>Desalinated water is fed into these tanks from the Ammonia Plant at a maximum of 50 m³/h. The tank is topped up automatically when the water level drops below the allowable limit. The tanks can provide firewater for up to 4 hours, not including the automatic fill from Ammonia Plant.</p>
<p>Firewater Pump</p>	<p>The main firefighting centrifugal pumps (91-GA-002A/B) have a 350 m³/h capacity and can deliver water at 9.8 Bar. The main pump running is electrically driven and the other is a spare diesel pump.</p> <p>A centrifugal jockey pump with a 27 m³/h capacity is installed to maintain a constant pressure in the ring main at 9.8 Bar.</p>

Document ID: YMSPilbara-329755810-1541

Version: 2.0

Approval Date: 11/09/2023

Document Owner:
Willie Bezuidenhout

Approved by:
Justin Zis

Next Review Date: 2025-03-16

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Ring Main	<p>The site uses multiple interconnected ring main systems. All the ring mains have 12-inch piping with some 8-inch connections. Most of the piping is underground with some above ground piping using the same pipe racks as the process pipework.</p> <p>Block valves are installed at sections of the distribution system to enable isolation for maintenance. Block valves are butterfly valves with position indication if underground.</p>
Hydrants	<p>Fire hydrants installed in accordance with the Australian Standard AS 2419.1 (Fire Hydrant Installations - System design, installation and commissioning).</p> <p>Hydrants have full coverage of the site.</p>
Water Mist System	<p>A water mist system is installed in the NOx compressor shelter. The water mist system shall be in accordance with Australian Standard AS 4587 (Water Mist Fire Protection Systems – System Design, Installation and Commissioning).</p>
TAN Pant - General	
Fire hose reels	<p>Fire hose reels are installed in accordance with Australian Standard AS / NZS 1221 (Fire Hose Reels). Hose reels are equipped with a 30 m hose with a diameter of 25 mm. Nozzles have a capacity of 197 L/min at 3.5 bar inlet pressure. Hose reels have a working range between 1.75 and 10.5 bar inlet pressure.</p>
Fire Monitors	<p>Fire monitors are provided at strategic locations near and within fire hazardous areas. Fire water monitors are assumed to have a capacity of 1,325 L/min at 7 bar inlet pressure.</p> <p>Monitors are approximately at ground level and the minimum distance between a monitor and protected structure is 15 m. Fire monitors are located at:</p> <ul style="list-style-type: none"> • Two (2) in Unit 12 process area; • Three (3) in Unit 32 process area; and • Seven (7) in Bulk TAN storage building.
Dry riser / columns	<p>A dry riser is used at the Prilling tower.</p> <p>A dry column or dry ring main is used in the bag storage.</p> <p>The dry riser and column have Siamese fittings for fire inlet and outlet connection points. The inlet allows for connection with a Fire engine for supply of fire water. The outlet connections allow the connection of a fire hose reel or fire monitor.</p>



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<p>Fire Extinguishers</p>	<p>Fire extinguishers located on the site include portable / wheeled dry chemical type and portable CO₂ extinguishers in accordance with Australian Standard AS 2444 (Portable Fire Extinguishers and Fire Blankets – Selection and Location). Wheeled dry chemical fire extinguishers are located at points with higher fire risks such as oil cooled transformers, oil units of compressors or the chemical store.</p> <p>Portable fire extinguishers act as a first line of defence to cope with small fires.</p>
<p>TAN Plant - Nitrate Production & Storage Conveyor galleries</p>	
<p>Dry Deluge Fire Protection System</p>	<p>Conveyor galleries to/ from ammonium nitrate production or storage buildings have a dry deluge fire protection system.</p> <p>The deluge system consists of Six (6) spray nozzles which are initiated by two (2) smoke and one (1) thermal detector on each side. Fire barriers include protection of flammable construction material of at least 3 metres on both sides of barrier. The conveyor belt stops automatically if the F&G system receives a signal from 2 out of 6 detectors. Deluge is activated manually from the Control Room.</p> <p>A deluge valve is located near the water spray system and will have a pressure switch for indication of water flow operation.</p>



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TAN Plant – Nitric Acid Plant (Unit 12)		
Hydrogen Cylinders store	Detection / Alarms	2x Hydrogen detectors above the cylinders
	Protection / Mitigation	Hose Reels Hydrants Fire monitors
Compressors building	Detection / Alarms	Detectors (NOx, NH ₃ multicriteria & smoke detectors for duct) Analog and digital signals junction boxes Beacons Fire hand switches Fire horns Gas horn
	Protection / Mitigation	Water mist system Hose Reels Hydrants Fire monitors Dry chemical extinguisher (portable)
TAN Plant – (Unit 32)		
TAN plant (coating drum)	Detection / Alarms	Detectors (smoke & thermal) Analog & digitals signals junction boxes Beacons Fire hand switches Fire horns
	Protection / Mitigation	Hose reels Dry chemical extinguisher (portable) Deluge system (in the conveyor 72-PC-001)
TAN plant (coating storage area)	Detection/ Alarms	Beacons Fire horns
	Protection/ Mitigation	Hose Reels Hydrants Fire monitors

Document ID: YMSPilbara-329755810-1541

Version: 2.0

Approval Date: 11/09/2023

Document Owner:
Willie Bezuidenhout

Approved by:
Justin Zis

Next Review Date: 2025-03-16



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Conveyors inside Unit 32	Detection/ Alarms	Fire hand switches
	Protection/ Mitigation	Hose reels Dry chemical extinguisher (portable)
Prilling towers	Detection/ Alarms	Fire hand switches Beacons Analog & digital signals junction boxes CCTV
	Protection/ Mitigation	Dry riser Hose reels (low level) Hydrants (low level) Dry chemical extinguisher (portable) Fire Monitors
Refrigeration compressor	Detection/ Alarms	Four (4) NH ₃ detectors Fire hand switches Beacons
	Protection/ Mitigation	Dry chemical extinguisher (portable) Hydrants Hose reels Fire Monitors
Shift Laboratory	Detection/ Alarms	Detectors (NO _x , NH ₃ , smoke detectors for duct) Fire hand switches Fire horns Beacons Analog and digital signals junction boxes
	Protection/ Mitigation	Dry chemical extinguisher (portable) Trip of air supply system including closing of gas tight damper on detection of explosive/ toxic gas at the air intake
TAN Plant – Substations		
Substation I	Detection/ Alarms	Gas detection (NH ₃ and NO) air intake Fire hand switches Fire horns with beacons Laser Smoke Detectors



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	Protection/ Mitigation	Dry chemical & CO ₂ extinguishers (portable) Walls, floor and roof are fire resistant (1hr duration) Cable tunnels and transformer rooms are 2 hours fire resistant
Substation II	Detection/ Alarms	Gas detection (NH ₃ and NO) air intake Fire hand switches Fire horns with beacons Laser Smoke Detectors
	Protection/ Mitigation	Dry chemical & CO ₂ extinguishers (portable) Walls, floor and roof are fire resistant (1hr duration) Cable tunnels and transformer rooms are 2 hours fire resistant
TAN Plant – Ammonium Nitrate Solution and Off-Spec Treatment (Unit 35)		
Off-Spec Treatment Unit	Detection/ Alarms	Fire hand switches Beacons
	Protection/ Mitigation	Hose Reels Hydrants Dry chemical extinguisher (portable)
ANSOL Loading Area	Detection/ Alarms	Fire hand switch
	Protection/ Mitigation	Hydrants Hose reels inside the bag storage
Conveyor	Detection/ Alarms	Fire hand switch
	Protection/ Mitigation	Hydrants Hose reels
TAN Plant – TAN Bulk Storage (Unit 71)		
TAN Bulk Storage	Detection/ Alarms	Detectors (NO _x , N ₂ O, NH ₃ , smoke detectors for duct, VESDA) Fire hand switches Beacons Analog and digital signals junction boxes Solenoid valve junction box



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	Protection/ Mitigation	<p>Hose reels</p> <p>Hydrants</p> <p>Fire monitors</p> <p>Spray nozzles (deluge valve) and fire walls at both ends of 72-PC001</p> <p>Dedicated parking area (outside bulk storage) for front loaders. Parking area is equipped with sprinkler nozzles and fire walls</p> <p>Dry chemical extinguishers (portable & wheeled)</p> <p>Trip of air supply system including closing of gas tight damper on detection of explosive/ toxic gas at the air inlet</p>
TAN Plant – Conveyor Galleries		
Unit 32 to Unit 72	Detection/ Alarms	<p>Conveyor leaving U32 and entering U72:</p> <p>Smoke and thermal heat detectors on each side of the fire walls</p> <p>In case of fire alarm, the conveyor belt is stopped automatically if 2 of 6 detection signals are activated. The deluge can be activated manually from the Control Room and locally.</p> <p>Fire hand switches</p> <p>Beacons</p> <p>Analog & digital signals junction boxes</p> <p>Solenoid valve junction box</p>
	Protection/ Mitigation	<p>Spray nozzles (deluge valve) and fire walls at both ends of 72-PC001</p> <p>Hydrants</p> <p>Fire monitor in U32</p>
Unit 72 to Unit 73	Detection/ Alarms	<p>Conveyor leaving U72 and entering U73:</p> <p>Detectors (smoke & thermal) on each side of fire walls.</p> <p>In case of fire alarm, the conveyor belt is stopped automatically if 2 of 6 detection signals are activated. The deluge can be activated manually from the Control Room and locally. Fire hand switch</p> <p>Analog & digital signals junction boxes</p>
	Protection/ Mitigation	<p>Hose reels</p> <p>Hydrants</p>

Document ID: YMSPilbara-329755810-1541

Version: 2.0

Approval Date: 11/09/2023

Document Owner:
Willie Bezuidenhout

Approved by:
Justin Zis

Next Review Date: 2025-03-16



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		<p>Fire monitors</p> <p>Spray nozzles (deluge valve) and fire walls in both ends of conveyor 72-PC-002</p> <p>Dry chemical extinguishers (portable & wheeled)</p>
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TAN Plant – TAN Bagging Unit (Unit 73)		
TAN Bag Storage	Detection/ Alarms	Detectors (smoke) Fire hand switches Beacons Fire horns
	Protection/ Mitigation	Hose reels Hydrants Dry riser and inner ring main with additional discharged points (portable fire monitors, hoses, etc.) supplied by a fire truck Portable and wheeled dry chemical extinguishers Dedicated parking area (outside bag storage) for front loaders. Parking equipped with sprinkler nozzles and fire walls.
TAN Plant –Bag Storage (Unit 74)		
Empty Bag Storage	Detection/ Alarms	Smoke detectors Fire hand switches Beacons Fire horns
	Protection/ Mitigation	Hose reels Hydrants Dry chemical extinguisher (portable)
TAN Plant – Emergency Fire Pumps Shelter (Units 91 & 93)		
Emergency Fire Pumps Shelter	Detection/ Alarms	Fire hand switch Fire horn Beacon Junction box
	Protection/ Mitigation	Hose reels Hydrants Sprinkler nozzles using the other pump
TAN Plant – Diesel Storage		
Diesel emergency	Detection/ Alarms	Fire Hand Switch
	Protection/ Mitigation	Fire extinguisher



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generator and tank		Hydrants Hose Reels Double walled tank (self-bunded)
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TAN Plant – Cooling Tower (Unit 87)		
Cooling Tower	Detection/ Alarms	Fire Hand Switch Beacons Digitals signals junction boxes
	Protection/ Mitigation	Hose Reels Hydrants
TAN Plant – Utilities		
Offices	Detection/ Alarms	NH ₃ and NO _x detectors in ducting Smoke detectors Fire hand switches Fire horns Beacons Analog & digital signals junction boxes
	Protection/ Mitigation	Hydrants (outside of the building) Dry chemical & CO ₂ extinguishers (portable) Trip of air supply system including closing of gas tight damper on detection of explosive/ toxic gas at the air inlet
Control Room Building	Detection/ Alarms	Detectors (NO _x , NH ₃ , smoke detectors, smoke detectors for duct) Fire hand switches Fire horns Beacons Analog & digital signals junction boxes
	Protection/ Mitigation	Hydrants Dry chemical & CO ₂ extinguishers (portable) Trip of air supply system including closing of gas tight damper on detection of explosive/ toxic gas at the air inlet
Chemical Store	Detection/ Alarms	Smoke detectors Fire hand switches Fire horns Beacons
	Protection/ Mitigation	Hydrant Hose reel

Document ID: YMSPilbara-329755810-1541

Version: 2.0

Approval Date: 11/09/2023

Document Owner:
Willie Bezuidenhout

Approved by:
Justin Zis

Next Review Date: 2025-03-16



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		Dry chemical extinguishers (portable & wheeled)
Spare Parts Building	Detection/ Alarms	Smoke detectors Fire hand switches Fire horns Beacons
	Protection/ Mitigation	Hose reel (in the chemical store) Dry chemical extinguishers (portable)
Security Gate	Detection/ Alarms	Detectors (NOx, NH ₃ , smoke detectors, smoke detectors for duct) Fire hand switches Fire horns Beacons
	Protection/ Mitigation	Dry chemical & CO ₂ extinguishers (portable) Trip of air supply system including closing of gas tight damper on detection of explosive/toxic gas at the air inlet
Transporter Office	Detection/ Alarms	Detectors (NOx, NH ₃ , smoke detectors, smoke detectors for duct) Fire hand switches Fire horns Beacons
	Protection/ Mitigation	Trip of air supply system including closing of gas tight damper on detection of explosive/toxic gas at the air inlet Dry chemical extinguishers (portable)
Workshop Area	Detection/ Alarms	Fire hand switches Fire horns Beacons
	Protection/ Mitigation	Dry chemical extinguishers (portable & wheeled)

Location	Fire Protection Equipment at Plant
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Yara Pilbara Project Office	
Fire Extinguishers	<p>Fire extinguishers located on the site include portable dry chemical type and portable CO₂ extinguishers in accordance with Australian Standard AS 2444 (Portable Fire Extinguishers and Fire Blankets – Selection and Location). Two (2) Fire blankets.</p> <p>Portable fire extinguishers act as a first line of defence to cope with small fires.</p>
Hydrants	<p>Fire hydrants installed in accordance with the Australian Standard AS 2419.1 (Fire Hydrant Installations - System design, installation and commissioning).</p> <p>One Fire hydrant are located next to the Water storage facility.</p>
Firewater Storage Tank	<p>Two (2) clean water storage tanks (Temporary) are used to store fire-fighting water.</p> <p>Two (2) of these tanks has a capacity of 22 m³ dedicated for firefighting.</p> <p>These tanks can only be utilised as a last resort, the nearest Hydrant that is feeding of TAN Site Main ring is 100 metres three (3) fire hose lengths away and should always be utilised.</p>
Detection/Alarms	<p>Beacons</p> <p>Fire hand switches</p> <p>Fire horns</p> <p>Gas horn</p>

Emergency Vehicles & First Aid Facilities

Yara Pilbara Fertilisers Site	
Emergency Vehicles	<p>Mercedes Sprinter Ambulance</p> <p>Scania P310 Fire truck with 1500 L capacity water tank.</p> <p>Tatra Fire truck with 3000ltr capacity water tank delivering 3000ltr/min with a foam capacity of 260 L.</p> <p>Hazmat trailer.</p>
First Aid Facilities	<p>Emergency Centre Main Security Gatehouse with all medical equipment stocked.</p>



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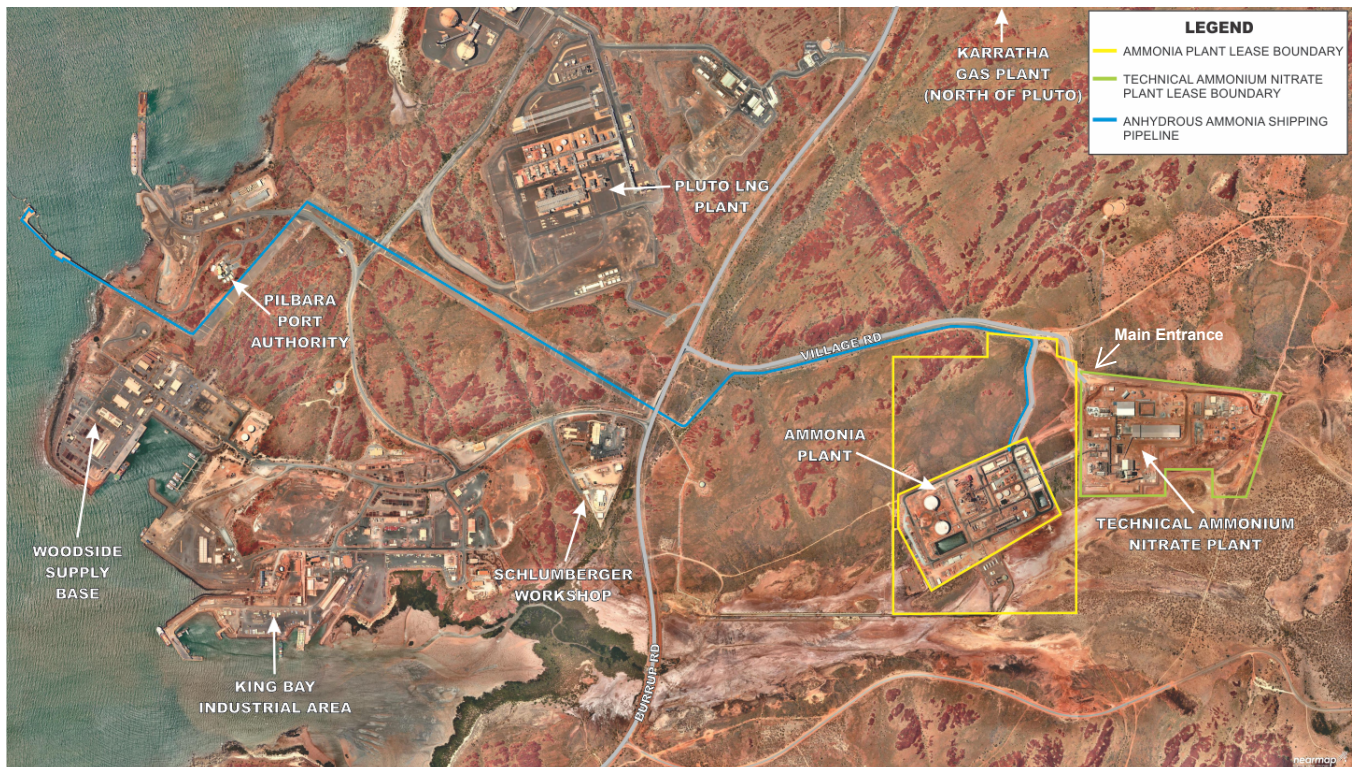
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28.4 APPENDIX D – Overview of Plant Locations and Operations

Details on the facility locations, description, boundaries and plant processes can be found within the respective MHF Safety Reports for each plant

250-508-MHF-YPF-0002	Yara Pilbara Fertilisers MHF Safety Report
250-508-MHF-YPN-0001	Yara Pilbara Nitrates MHF Safety Report



Details on the muster buildings and evacuation assembly points can be found within the following:

Ammonia Plant Layout (including muster buildings)	YPF Dangerous Goods Manifest Site Plan
TAN Plant Layout (including muster buildings)	YPN Dangerous Goods Manifest Site Plan
Emergency Evacuation Assembly Areas (EAA) & Offsite Evacuation Assembly Areas (OEAA)	PIP No. 20 Site Evacuation

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28.5 APPENDIX E – Hazardous Inventories Adjacent to the Plants

Note: There are a number of Major Hazard Facilities, oil / gas supply bases and gas supply pipelines that are in the vicinity of Yara Pilbara's operations on the Burrup Peninsula. However the hazardous inventories of these facilities are outside of the immediate impact areas and should not be impacted by an incident at Yara Pilbara facilities.



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28.6 APPENDIX F – Plant Population During Normal Operations (Indicative Only)

LOCATION	NO. OF PERSONNEL DAY SHIFT	NO. OF PERSONNEL NIGHT SHIFT
Ammonia Plant		
Employees	80	15
Contractors on Site/normal operations	0 - 80	0 - 40
TOTAL EMPLOYEES	160	55
TAN Plant		
Employees	60	12
Contractors on Site/normal operations	0 – 100	0 - 40
TOTAL EMPLOYEES	160	52
Turnaround or Major Capital Project		
Ammonia Plant	0 – 400	0 - 200
TAN Plant	0 - 200	0 – 100
TOTAL EMPLOYEES	0 - 600	0 - 300

Normal Work Hours:

- Dayshift employees: 0700 -1600 hours
- Shift workers: 0600 – 1800 hours
- Business Partners (Contractors): between 0600 – 1800 hours

These personnel will work various shifts and days according to their rosters and positions. The number of personnel on night shift equals the number of personnel on day and night weekend shifts and public holidays. During a shutdown the numbers may change as per the diagram.



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28.7 APPENDIX G – Protective Equipment

Fire Truck & TAN Emergency Centre	Fire Truck & Ammonia Fire & Safety Building
<ul style="list-style-type: none"> • Self-Contained Breathing Apparatus; • SCBA Long Lines with Scape sets • Fire Resistant Turn out coats and pants; • Chemical Splash Suits; • Fully Encapsulated Chemical Suits; • Personal Gas Detecting Devices; • Fire Resistant Hard Hats & Shields; and • Fire Resistant Boots. 	<ul style="list-style-type: none"> • Self-Contained Breathing Apparatus; • Fire Resistant Turn out coats and pants; • Chemical Splash Suits; • Fully Encapsulated Chemical Suits; • Personal Gas Detecting Devices; • Fire Resistant Hard Hats & Shields; and • Fire Resistant Boots.
Ammonia Plant & BLB	
<ul style="list-style-type: none"> • Self-Contained Breathing Apparatus; • Fully Encapsulated Chemical Suits; • Chemical Splash suits; • Respirators and Filter Cartridges; • 5 Minute Escape Units; • 15 Minute S-Cap Air Units; 	<ul style="list-style-type: none"> • Safety Goggles; • Safety Visors; • Elbow Length PVC Gloves; • PVC Coats, overalls and pants; • Hearing Protection; and • Dust Coveralls.

Equipment is serviced and maintained according as per the Fire and Emergency Response Equipment Maintenance Schedule.HESQ-YP-FRM-090-04.



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28.8 APPENDIX H – First Aid Equipment

Emergency first aid equipment is listed below:

First Aid Equipment	
Medical Centre	
Portable oxygen equipment.	Treatment bed
Portable oxy-viva – complete.	12 lead EWCG Monitor
Oxy-Sok Resuscitation Kits.	K.E.D
Eye wash stations.	Splints
Otoscope/ Ophthalmoscope.	Scoop Stretcher
Glucometer.	Maggi lamp
Thermoscan	Defibrillator (Ambulance & FA Room)
AED	First aid treatment supplies
Fire Truck	
Industrial First Aid Kit	Oxy Viva
Ship Loading Facility	
First Aid Kit	Oxy-Sok Resuscitation Kit.
Office & Occupied Buildings	
First Aid Kits	



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28.9 APPENDIX I – Industries of Surrounding Area



King Bay Industrial Area includes the following industries:

Company	Company	Company
Agility	Halliburton	Pilbara Port Authority
Australian Marine Services	Hughes Industrial Services	Rio Tinto Coastal Supply Hub
Brambles	Karratha Gas Plant	Schlumberger
Cleanaway	Mermaid Marine	Toll Energy
Coates Hire	MI Australia	Unirig
ECM	Murujuga Aboriginal Corporation	Western Stevedores
Gearhart United	Oceanic Offshore	Woodside Pluto LNG & Supply Base



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28.10 APPENDIX J – Emergency Response Team Duty Cards

Duty Card One – Incident Controller

The function of the Incident Controller is to be in control of all incidents that occur. During small incidents the IC usually also performs the operations, planning and logistics functions.

As the incident develops in size or complexity, responsibility for managing these functions shall be performed by the SRT. The Incident Controller will accomplish the strategy developed to combat the incident by meeting the tactical objectives and directs all the incident tactical operations and the implementation of the Pre - Incident Plan

- Assume role of Incident Controller in an emergency.
 - Place the Incident Controller vest on for identification purposes.
 - Assess the incident in order to classify interim emergency level.
 - If required order all personnel on site to evacuate to muster buildings.
 - Initiate and co-ordinate the mobilisation of the ERTL
 - Initiate contact with SRT Emergency Services or their alternate.
 - Direct the Panel Operator to contact external Emergency Services to provide aid to the affected facility as required (utilise alternate methods if unable to connect to 000).
 - Verbally notify the SRT Leader of the incident, providing a detailed brief.
 - Complete an Incident Report and provide to the SRTL
 - Maintain communications with the ERTL, the SRT and external Emergency Services.
 - Regularly update the ERTL on the situation – include, what has been done, what’s going to be done, what’s changed and any critical issues requiring resolution.
 - Account for all personnel on site. Radio Ch 5 (with assistance from the Security Guard using the Gallagher System).
 - If there has been an ammonia release, determine if any Neighbouring Facilities require notification by referring to the maps in the Control Room and using the Anemometer.
 - Delegate the task to notify Neighbouring Facilities to a Panel Operator using EMQNet Message Manager.
- Note:** that if SRT is activated, this function will be conducted by 3rd Party Communications Coordinator.
- If external Emergency Services are required to come to site organise the Liaisons Officer to meet them at the Gatehouse and bring them to the Control Room if safe to do so.
 - Monitor the safety of the ERT and regularly assess the need for support from Emergency Services.
 - Command and coordinate the activities of the Control Room Operators.
 - Regularly reassess the emergency level.
 - Consider the potential for the incident to be protracted and develop a relief in place plan.

Document ID: YMSPilbara-329755810-1541

Version: 2.0

Approval Date: 11/09/2023

Document Owner:
Willie Bezuidenhout

Approved by:
Justin Zis

Next Review Date: 2025-03-16

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Duty Card Two – Panel Operator

Duty Card Two is the function of all Panel Operators when an emergency is reported to the Control Room.

Emergency Radio – **Channel 4**

Emergency Phone – **Fertiliser – 4165**

Nitrates – 4007

Call sign for radios - **EMERGENCY EMERGENCY EMERGENCY**

- Using checklist, note all information provided by the caller:
 - What has happened.
 - What may happen due to incident.
 - Number of people still in immediate area.
 - No # of injuries.
 - What current action is underway to make the plant safe?
 - What is known about the emergency – plant condition etc.
- Contact Shift Superintendent who assumes the role of Incident Controller for all Plant and Pipeline emergencies:
 - Phone Extension Fertilisers – **4165** Nitrates - **4007**
 - Radio Channel **4**.
- For an incident at the jetty, liaise with the Loading Master who will act as the Incident Controller at the Jetty.
- Replay all information to the Shift Superintendent (Incident Controller).
- If the Incident Controller is unavailable and the emergency requires immediate evacuation to the refuges, sound the emergency siren.
- Operate plant as directed by the Shift Superintendent.
- Follow all instructions given by the Shift Superintendent
- Maintain a log of events where appropriate.
- When the emergency is over sound the “All Clear” siren.

Document ID: YMSPilbara-329755810-1541

Version: 2.0

Approval Date: 11/09/2023

Document Owner:
Willie Bezuidenhout

Approved by:
Justin Zis

Next Review Date: 2025-03-16



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Duty Card Three – Security Guard

Duty Card Two is the function of all Security Guards during an emergency.

Emergency Radio – Channel 4

Emergency Phone – Fertiliser – 4165

Nitrates – 4007

Call sign for radios - EMERGENCY EMERGENCY EMERGENCY

- Upon hearing the emergency siren or being notified by the Incident Controller, stop access to the site by vehicles (signs displayed at gates) and people.
- Access the personnel onsite screen using the Gallagher System. This screen accounts for how many people are on site and as personnel reach muster points and swipe it then registers their location and print a report.
- Record and account for personnel at each muster building by radio Ch 5 to confirm numbers. Compare radio numbers with the onsite screen numbers. Notify the Control Room with this number.
- Ensure site access is maintained for emergency vehicles only.
- If Emergency Services arrive on site, record the names of and numbers of who enter the site.
- Inform the Incident Controller or Control Room when Emergency Services arrive.
- Give Emergency Services Yara Pilbara radios if required (Emergency radios kept in the Security Gatehouse).
- Maintain a log of events as required.
- Upon hearing the ALL-CLEAR siren, advise all occupants over Channel 5

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Duty Card Four – Emergency Response Team Leader (ETRL)

The function of the ERTL is to mobilize, command and coordinate the Emergency Response Team (ERT) and the ESO. When the ERTL believes that the real or potential scale of the incident will require the deployment of resources greater than those available on-site, he/she must liaise with the Incident Controller who will act to enable and coordinate the additional resources.

Emergency Radio – **Channel 4**Emergency Phone – **Fertiliser – 4165****Nitrates – 4007**Call sign for radios - **EMERGENCY EMERGENCY EMERGENCY**

- On receiving notification to attend an emergency, make your way to the Emergency Building and inform the Incident Controller of your arrival.
- Contact and mobilise your ERT to the Emergency Building.
- Account for the ERT by swiping onto the muster point
- Brief the ERT as they arrive and deploy them as required.
- Ensure that the safety of ERT members is always maintained and that the rescue of injured personnel does not expose rescuers to an unacceptable risk.
- Plan and coordinate the tactical response to the incident with the following priorities:
 - Self and Emergency Response Team preservation;
 - Extract injured personnel and reduce trauma
 - Maintain plant safety;
 - Protect the environment;
 - Protect property; and
 - Restore plant operations.
- Place all equipment at a safe distance from the incident. Consider re-positioning appliances closer to the scene once control is achieved.
- For incidents outside battery limits utilise Yara supplied equipment wherever possible.
- Upon arriving at the emergency scene, assess the emergency and update the Incident Controller with a situation report, including:
 - Situation
 - Mission
 - Execution
 - Command, communication and logistics
- Preserve the safety of all personnel, contractors and general public at or near the emergency incident site.
- Provide the Incident Controller with regular updates on the progress of the status of the incident.
- Liaise with Emergency Services and other authorities in attendance at the site. Arrange a suitable assembly area for vehicles and equipment and access routes for attending agencies.

Document ID: YMSPilbara-329755810-1541

Version: 2.0

Approval Date: 11/09/2023

Document Owner:

Approved by:

Next Review Date: 2025-03-16

Willie Bezuidenhout

Justin Zis



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Duty Card Five – Emergency Response Team (ERT)

Duty card Five is for all ERT members when they are appointed to the ERT for that shift or are called out to join the ERT in an emergency.

Emergency Radio – **Channel 4**

Emergency Phone – **Fertiliser – 4165**

Nitrates – 4007

Call sign for radios - **EMERGENCY EMERGENCY EMERGENCY**

- On receiving notification by the ERTL to attend an emergency, make your way to the Fire and Safety Building, respective Control Rooms or TAN Security Gate.
- When you arrive at the Fire and Safety Building, respective Control Rooms or TAN Security Gate inform the ERTL, who will confirm names and numbers with Security Guards.
- The ERTL will brief you on the emergency.
- The ERTL will command and coordinate the ERT.
- Work in conjunction with the ERTL to plan and coordinate the tactical response to the incident with the following priorities:
 - Self and Emergency Response Team preservation;
 - Extract injured personnel;
 - Reduce trauma;
 - Maintain plant safety;
 - Protect the environment;
 - Protect property; and
 - Restore Plant Operations.



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Duty Card Six – Emergency Services Officer

Duty Card Six is for all ESO’s when they are on shift or are called out to assist in an emergency.

Emergency Radio – **Channel 4**

Emergency Phone – **Fertiliser – 4165** **Nitrates – 4007**

Call sign for radios - **EMERGENCY EMERGENCY EMERGENCY**

- Upon hearing the emergency alarm wait for the ERTL to provide an exact location and briefing on the emergency.
- On receiving notification by the ERTL to attend an emergency, make your way to the emergency location as briefed.
- You report and liaise with the ERTL who will assist and coordinate your response.
- Remain at the First Aid Room unless responding to requests for assistance from ERTL.
- Assess the need for treatment of injuries and triaging of casualties.
- Provides transportation for sick or injured persons from site to Karratha Health Campus Advise the ERTL of the need for further medical assistance both internal and external resources.
- Communicates with DR or Karratha Health Campus regarding status of Injured Person

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Duty Card Seven – Muster Warden

Duty Card Seven is for all Muster Wardens during the event of a Muster. The function of the Muster Warden is to attend the nearest Muster Point upon hearing the emergency siren and, if the first person there, follow the below procedures.

Emergency Radio – **Channel 4**Emergency Phone – **Fertiliser – 4165****Nitrates – 4007**Call sign for radios - **MUSTER WARDEN AT MUSTER BUILDING (1/2/3 or 4 state your location)****Shelter in Place**

- Upon hearing the emergency alarm make your way to the nearest Muster building or refuge chamber.
- Don the identification vest and delegate another person to don the second vest
- Ensure all occupants swipe the EAC card at the muster building and that they are accounted for on the Muster Marshal Emergency Personnel Checklist, temporary buildings that does not have swipe facilities will account for people by contacting Security on Channel 5 and report the numbers written down on the checklist.
- Report to Security when requested the status numbers of the muster via the two-way radio (channel 5) or via phone (extension 4111)
- If instructed by the Incident Controller, search the designated areas according to the relevant **Red** Warden file (located at TAN Security Gatehouse, TAN Control Room, SRT Room and Ammonia Control Room) to ensure that everyone is within the Muster Building and accounted for.
- Anyone refusing or unable to move to the Muster Building must be reported to Security
- Report to security via two-way radio (channel 5) or via phone (extension 4111) once search is complete
- Await further instruction from Incident Controller.

Lockdown

- Upon hearing the emergency alarm make your way to the nearest Muster building.
- Don the identification vest and delegate another person to don the second vest
- Ensure all occupants swipe the EAC card at the muster building and that they are accounted for on the Muster Marshal Emergency Personnel Checklist, temporary buildings that does not have swipe facilities will account for people by contacting Security on Channel 5 and report the numbers written down on the checklist.
- Report to Security when requested the status numbers of the muster via the two-way radio (channel 5) or via phone (extension 4111)
- Secure your environment by locking doors and windows and barricading entries.
- Move away from doors and be as quiet and still as possible so you do not give away your hiding place.
- Consider looking for something you can use to defend yourself as a last resort if you are found by the offender.

Document ID: YMSPilbara-329755810-1541

Version: 2.0

Approval Date: 11/09/2023

Document Owner:
Willie BezuidenhoutApproved by:
Justin Zis

Next Review Date: 2025-03-16



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- Silence your mobile phone and other devices and turn off vibrate.
- Anyone refusing or unable to move to the Muster Building must be reported to Security
- Report to security via two-way radio (channel 5) or via phone (extension 4111) once search is complete
- Await further instruction from Incident Controller.

Site Evacuation Assembly Area

- IF INSTRUCTED** by Incident Controller guide the occupants to the nominated Site Evacuation Assembly Area.
- Assist moving people with a disability.
- Move to the nominated Site Evacuation Assembly Area (PIP No.20)
 - EAA1 - YPF car park area outside the old Gatehouse.
 - EAA2 - Watercorp gate exit gate.
 - EAA3 - YPN car park area.
 - EAA4 - Gate North /East of the Yara Pilbara Project offices.
- Distribute bottled water and assist moving any people with a disability
- Follow the instructions from the Incident Controller and guide occupants to the nominated Evacuation Assembly Area.
- Report to security via two-way radio (channel 5) or via phone (extension 4111) once occupants have arrived at the nominated Site Evacuation Assembly Area.

Offsite Evacuation Assembly Area

- IF INSTRUCTED** by Incident Controller guide the occupants to the nominated Offsite Evacuation Assembly Area.
- Ensure you are aware of the following.
 - Wind direction.
 - Affected locations.
 - Offsite assembly area.
 - Assist moving people with a disability.
 - Nominated Offsite Evacuation Assembly Area.
 - OEAA1 - Village Road pipeline corridor.
 - OEAA2 - Watercorp road towards King Bay.
 - OEAA3 - Hearson's cove beach.
- Distribute bottled water and assist moving any people with a disability
- Report to security via two-way radio (channel 5) or via phone (extension 4111) once occupants have arrived at the nominated Offsite Evacuation Assembly Area.
- Report to security via two-way radio (channel 5) or via phone (extension 4111) once occupants have arrived at the nominated Offsite Evacuation Assembly Area.

Document ID: YMSPilbara-329755810-1541

Version: 2.0

Approval Date: 11/09/2023

Document Owner:
Willie Bezuidenhout

Approved by:
Justin Zis

Next Review Date: 2025-03-16



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28.11 APPENDIX K - Plant Safety Features

The Ammonia and TAN plants are provided with several risk control features designed to prevent a major incident or mitigate the consequences of such an event. These features include the following:

Potential Emergency Scenarios	Ammonia Plant	YPN Plant
Control Room - this facility monitors and controls all aspects of the plant's operation (including pipelines as appropriate) and includes Distributed Control Systems (DCS) and Safety Instrumented System (SIS)	X	X
Emergency Isolation & Shutdown Systems - the shutdown is initiated either automatically through instrument logic on detection of upset condition without the Operator's intervention or manually by the personnel in the Control Room on visual detection through process upset condition;	X	X
Process Electronic System (PES) – the main component of the system is the ProSafe-PLC CCM (Critical Control Module), which provides basic logic solving capabilities. The shutdown systems are aimed at equipment protection and isolation of a section of the plant during an emergency	X	X
Emergency Manual Trips – actuation of these buttons will shut down each machine leading to a partial trip of that area, plant shutdown will be initiated by the Emergency Shut Down (ESD) system. All main pumps and motors have local shut down buttons	X	X
Bunded Areas	X	X
Isolation Valves	X	X
Interface communication between the plants via router which connects the existing plant network (Vnet) and the new plant network (Vnet/IP)	X	X
Plant Fire Protection Systems – this includes fire alarm system, fire water network, double fire hydrants, fire monitors, dry chemical, portable extinguishers including portable CO2 extinguishers, and FM 200 flooding agent for the Control Room (Ammonia);	X	X
Emergency Communications – this includes an emergency siren and an all clear alarm (common between the Ammonia and TAN Plants), EPABX system, and portable communications systems (radio & telephones), beacons, horns, IP PBX based digital and analogue telephone systems, and public address system	X	X



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Potential Emergency Scenarios	Ammonia Plant	YPN Plant
<p>Closed Circuit Television (CCTV) - coverage of entrances, process areas and over watch of the Bulk Loading Berth.</p> <p>Note: infrared (IR) cameras in the AN Bulk Storage Building</p>	X	X
<p>Fire and Gas Detection – fire, flammable gas and toxic gas detection systems are provided at the plant; and fire, thermal detectors and gas detection (hydrogen detectors, ammonia detectors, NOx detectors) are provided at the plant. In addition, the bulk storage is equipped with N₂O detectors as an early warning of AN decomposition</p>	X	X
<p>Weather Station - to measure precise wind speed and indicate wind direction across the plant. The weather station also gives information on ambient temperature, relative humidity etc. The weather station information is available in the Control Room and will assist in determining if any neighbouring facilities could be affected in the event of a major accidental event</p>	X	X
<p>Continuous Emissions Monitoring (CEMS) in U-12 stack and De-NOx system</p>		X
<p>Online emission analysers have been implemented in U12 stack for monitoring and measuring N₂O, NOx, oxygen and ammonia during operation</p>		X



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28.12 APPENDIX L – Abbreviations and Definitions

Term	Definition
AIIMS	Australasian Inter-Service Incident Management System
AN	Ammonium Nitrate
ANSOL	Ammonium Nitrate Solution
BIEMC	Burrup Industries Emergency Management Committee
BLB	Bulk Liquids Berth
DFES	Department of Fire & Emergency Services
EAA	Evacuation Assembly Area
EAC	Electronic Access Card
Emergency	An emergency is defined as “an event or situation, due to an actual or imminent occurrence, that endangers or threatens to endanger the safety or health of persons, destroys/ damages or threatens to destroy/damage the environment or property”.
EMP	Emergency Management Plan
EMQNet	Crisis Management System
ERT	Emergency Response Team
ERTL	Emergency Response Team Leader
ESO	Emergency Services Officer
HESQ	Health, Environment, Safety and Quality
IC	Incident Controller
INCIDENT	An event or issue that can have the potential to seriously threaten Yara's operations, reputation and the safety and well-being of its employees. Such an incident might attract intense public, shareholder and customer scrutiny; create financial, legal and governmental impacts on the business; and threaten Yara’s reputation, or even its survival
ISBL	Inside Battery Limits
MI	Major Incident

Document ID: YMSPilbara-329755810-1541

Version: 2.0

Approval Date: 11/09/2023

Document Owner:
Willie Bezuidenhout

Approved by:
Justin Zis

Next Review Date: 2025-03-16

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Term	Definition
MHF	Major Hazard Facility
PIP	Pre-Incident Plan
PPA	Pilbara Ports Authority
SCBA	Self-contained breathing apparatus
SIS	Safety Instrumented System
SRT	Site Response Team
SRTL	Site Response Team Leader
TAN	Technical Ammonium Nitrate
WAPOL	Western Australian Police
YPF	Yara Pilbara Fertilisers
YPN	Yara Pilbara Nitrates