



PORT OF DAMPIER - CYCLONE RESPONSE PLAN



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DOCUMENT AMENDMENT TABLE

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17	Administration Officer	10/06/2016	New format established.
18	DHM	01/10/2017	Adapted for Port of Dampier
19	DHM	22/10/2018	Annual Review
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POLICY STATEMENT

This cyclone response plan acknowledges and gives effect to the Pilbara Ports Authority's (PPA) function under the *Port Authorities Act 1999* (The Act) to be responsible for the safe and efficient operation of the Port over which it has jurisdiction.

The aim is to ensure the Port of Dampier are as safe as is possible under cyclonic threat, and that the PPA properly discharges its 'duty of care' to all mariners and their vessels, and to port users and their marine infrastructure within the Ports.

The policy also acknowledges the sensitive nature of the marine environment of the Dampier Archipelago and the PPA's responsibility to protect the environment at the Port of Dampier.

In dealing with cyclones, the safety of people will at all times remain paramount.

The preparation, shutdown and re-opening of the Port in the event of a cyclone will be managed in accordance with these obligations, taking into account all available and relevant factors.

PREFACE

Tropical cyclones are amongst the most powerful and destructive meteorological systems on earth. On an average about eleven cyclones form in the Australian Region each cyclone season. This represents about 13% of the global total. About half of these occur in the western region and about half of the total number of tropical cyclones become severe. Tropical cyclones in the western and eastern basins have around 25% chance of making landfall, while those in the northern basin have an 80% chance of making landfall.

Before a tropical cyclone forms it is difficult to predict its exact strength and path, including whether it will make landfall. Tropical cyclones which remain out to sea can still cause storm surges, gales and areas of heavy/flooding rainfall over land.

The use of satellite imagery and improved data acquisition, combined with the latest technology in computer modelling have all but converted the art of predicting the weather and avoiding or being prepared for cyclones to a reasonably precise science. Despite these advances, there is no room for complacency or disrespect in relation to cyclones.

The aim of these procedures is to have in place appropriate measures to minimise the adverse effects of a cyclone and associated gales on all port users

DEFINITIONS AND ABBREVIATIONS

DEFINITIONS				
Blue Alert	Cyclone Expected to impact within 48 hours			
Bureau of Metrology Cyclone Classification	Category	Maximum Mean Wind Speed (km/h)	Max Gust (km/h)	Central Pressure
	1	63-88	<125	>985
	2	89-117	125-164	985-970
	3	118 -159	165-224	970-945
	4	160-199	225-279	945-920
	5	>200	>279	<920
Community Cyclone Stages	Level of Alert	Indication		
	Blue	Get Ready for a cyclone		
	Yellow	Take action and get ready to shelter from a cyclone		
	Red	You need to go to shelter immediately		
	All Clear			
Cyclone	A large scale storm system with winds that rotate anticlockwise in the northern hemisphere and clockwise in the south hemisphere around and towards a low-pressure centre.			
Cyclone Mooring	An approved mooring with a minimum capability of holding a nominated vessel in 30-second gusts, wind speeds of 90 knots (at 10 metres above sea level) for a 50 year return period.			
Gale force Winds	Winds of 34 – 40 Knots. Gusts may be 40% higher			
Hazard Management Agency	Organisation that because of its expertise has Legislative Responsibility for overall control of an emergency situation.			
Red Alert	Cyclone impact is imminent			
Strong Gale	Winds of 41 – 47 Knots. Gusts may be 40% higher			
Storm Force Winds	Winds of 48 – 55 Knots. Gusts may be 40% higher			
Terminal	Owner Operated loading/Unloading facility			
Tropical Low	A low originating from warm moist (tropical) air			
Yellow Alert	Cyclone expected to impact within 12 hours			

ABBREVIATIONS	
BoM	Bureau of Meteorology
CCP	Cyclone Contingency Plan
CA	Controlling Agency
DBLB	Dampier Bulk Liquids Berth
DCW	Dampier Cargo Wharf
WA DoT	Western Australian, Department of Transport
PPA	Pilbara Ports Authority
PPA ERP	Pilbara Ports Authority Emergency Response Plan
DFES	Department of Fire and Emergency Services
HM	Harbour Master
HMA	Hazard Management Agency
SES	State Emergency Service
TC	Tropical Cyclone
The Act	Port Authorities Act 1999
WAPOL	Western Australia Police Service (Dampier)

CONTACTS		
Pilbara Ports Authority (PPA)		
	Phone	Mobile
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Harbour Master (Dampier)	08 9159 6562	0427485708
Deputy Harbour Master (Operations)	08 9159 6565	
Deputy Harbour Master (Traffic)	08 9159 6546	0437296583
State Government Agencies		
Department of Transport	08-94357692	
WA Police - Karratha	08-91437200	
DFES	08-91591400	
DFES (regional duty coordinator) – 24/7	1800 631 227	

1. INTRODUCTION

This is an emergency procedure. This is an external document.

1.1 AUTHORITY

The PPA cyclone response plan has been drafted and is administered by the PPA in accordance with its responsibilities under The Port Authorities Act 1999.

1.2 SCOPE

The PPA has statutory authority to give effect to these procedures within the gazetted port boundaries for the Port of Dampier. The cyclone response plan applies to all port users under the Act and associated Port Authority Regulations 2001.

Directions given to Masters, Crews and Port Operators will be under the auspices of The Act, particularly Part 7 Division 3 Section 104 –108.

PPA port infrastructure includes:

- All Wharves, Berths and Navigational Aids
- Administration buildings and associated landside infrastructure
- All port owned housing
- All port owned major assets

This procedure is a source of information to be used by all PPA staff for the Port of Dampier in preparing for a cyclonic weather event and returning to normal operations once the cyclonic weather event has passed. All staff have defined roles in the event of a cyclonic weather event and information contained within the procedure is provided to assist all employees in carrying out their duties.

Responsibility for the execution of this procedure rests with the respective HM or their delegate in his absence.

1.3 Objectives

Cyclones present an indisputable risk to the port through injury, damage to assets, damage to vessels, pollution, business interruption and /or financial loss. The objective of these procedures is to eliminate or mitigate that risk. This objective will be achieved by undertaking activities for the prevention of, preparation for, response to and recovery from, the specific risks associated with near or direct cyclonic impact.

1.4 Purpose

The purpose of this cyclone response plan is to ensure that in the event of a cyclone affecting the Port of Dampier.

- a) All large vessels, including off-shore support vessels have adequate time to clear the port and obtain adequate sea room before coming under the influence of gale or storm force winds associated with the cyclone.

- b) All small commercial vessels will be secured to their designated cyclone mooring before sea and weather conditions and or darkness make their operations, including their mooring operations hazardous.
- c) Small recreational craft and their crews are removed from, or properly secured against the pending risk.
- d) All port users ashore and offshore, including visiting vessels and those intending to include the Port of Dampier as a port of refuge in their cyclone contingency plans, understand the requirements of the PPA in relation to cyclone response.
- e) To provide a set of guidelines for decision making within the port in relation to cyclone response.

The marine cyclone response plan of terminal and other port operators should as far as practicable, compliment the PPA's procedures.

In all circumstances, decisions of the Harbour Master (HM) in relation to cyclone response will take precedence over any other cyclone plans.

1.5 Risks

The Port of Dampier lies within a stretch of coastline which is prone to cyclonic weather events with the cyclone season beginning the 1st November each year and concluding on the 30th April.

It is interesting to note that Australia has recorded a cyclonic weather event in every calendar month.

The Port of Dampier is one of the largest tonnage ports in Australia with over 6,000 ships visiting the port each year and dealing with exports such as Iron Ore, LPG, LNG, Condensate, Salt, Anhydrous Ammonia and other General Cargo. It also provides a base to the vessels that provide services to the offshore Oil and Gas Industry.

A cyclonic weather event may cause serious disruption to the operational activities of the port.

1.6 Cyclone Development and Monitoring

1.6.1 Bureau of Meteorology (BOM)

The PPA receives tropical cyclone forecasts from Bureau of Meteorology (BoM). Once a cyclone has formed off the coast these forecasts are received at regular intervals. The forecast can be accessed at <http://www.bom.gov.au/wa/forecasts/nwcyclone.shtml>

1.6.2 Department of Fire and Emergency Services (DFES)

The FES commissioner is the HMA for cyclone emergencies in WA. The Department of Fire and Emergency Services (DFES) has the role of the

Controlling Agency (CA) and is responsible for the issuing of the ALERT status for the duration of each cyclone.

The following levels of alert apply within the area:

Blue Alert (Precaution)

- A Blue Alert is the first official alert stage and warns that a cyclone has formed and may impact communities within 48 hours.
- During a Blue Alert the Port of Dampier Cyclone Response Plan will be activated, and the progress of the cyclone closely monitored.
- Please see 'PPA Stages of response' for actions to be taken by PPA Dampier Staff

Yellow Alert (ACTION)

- A Yellow Alert is issued when it is likely that a cyclone will impact communities within 12 hours.
- Please see 'PPA Stages of response' for actions to be taken by PPA Dampier Staff

Red Alert (SHELTER)

- A Red Alert is issued when the cyclone impact is imminent.
- Please see 'PPA Stages of response' for actions to be taken by PPA Dampier Staff

All Clear (Caution)

- Once the threat of the cyclone has passed and is moving away from Dampier. The recovery phase of the plan can now be commenced, and operations can return to normal.
- Please see 'PPA Stages of response' for actions to be taken by PPA Dampier Staff

2. RESPONSIBILITIES

2.1 The Plan

This cyclone response plan, as updated, remains in force throughout the year, although the officially recognised cyclone season extends from **1st November to 30th April**.

This plan has been formulated on the basis of the State Hazard Plan for Cyclone (WESTPLAN-CYCLONE)

2.2 Terminal Operators

Within the Port, terminal operators are responsible for ensuring that they have cyclone contingency plans or procedures in place. Copies of their plans should be updated at the start of the cyclone season.

Terminal Operators should nominate a contact person within their plans to liaise with the Harbour Master in the event a cyclone.

2.3 Ship's Masters

At all times the Ship's Master is responsible for ensuring the safety of their vessel and its compliance with Port of Dampier regulations, including the requirements of this cyclone response plan.

Particular emphasis is to be placed on the vessel maintaining adequate stability and suitable trim, ensuring that it can depart the port safely at short notice should the need arise.

2.4 Pilot's/Loading Masters

To assist the HM and terminal operators, Pilots/Load Masters are requested to:

- a) Ensure that vessel master's are aware of these procedures.
- b) Facilitate effective execution of these procedures and communications between the Ships Master and the Harbour Master.
- c) Ensure cargo plan and operation have been modified to comply with the plan

2.5 Port of Dampier Staff Roles and Responsibilities

ROLE	RESPONSIBILITY
Chief Executive Officer (CEO)	The CEO will provide advice and information as required to all relevant stakeholders including: The Minister Government Agencies PPA Board The CEO will also assume all media responsibilities.
General Manager Marine (GMM)	GMM has overall responsibility for the safety of PPA's Marine Operations. HM/s will ensure that adequate and timely information is provided to the GMM for a consistent response strategy to be implemented during a cyclone event.
Harbour Master (HM)	The HM is responsible for the implementation and execution of the cyclone response plan. In consultation with the terminal operator's nominated representative and the duty Pilots/loading Master the HM will: Initiate the orderly execution of the cyclone response plan. Monitor and ensure ongoing compliance. Keep port proponents informed of port status at various stages of the cyclone event.
Deputy Harbour Master/s (DHM)	The DHMs are to assist the HM with the implementation and execution of the plan.
Landside Operations Superintendent (LOS) and Landside Operations Coordinator (LOC)	The LOS and LOC are responsible for all PPA controlled berths and the safe movement of vessels to and from these berths in the lead up to the closure of the port and all facilities. Once the ALL CLEAR is given by the HM they then have the responsibility of co-ordinating the return to normal operations.

ROLE	RESPONSIBILITY
Health & Safety Advisor (HSO) and Security Supervisor (SS)	The HSO and SS will work together and are responsible for ensuring that Safety & Security is maintained throughout the event. The safety of all PPA staff and port users is the number one priority.
Maintenance Superintendent (MS)	The MS is responsible for ensuring that all port infrastructures are secured.
Vessel Traffic Service Operator (VTSO)	VTSO's will play a critical role in providing information to ships likely to be affected by the cyclone. VTSO's will maintain accurate records/tracking of the cyclone and ensure that all relevant advice is conveyed to the HM or DHM.
All other Port Personnel	Everyone has a role to play in the event of a cyclone. Preparation is the key to minimising any damage that may be associated with a cyclonic event. All personnel are to ensure that they assist where possible in preparing for the cyclone.

3. GENERAL

3.1 Pre-Season

Port of Dampier cyclone response plan is to be reviewed annually prior to 1st November and updated or amended as necessary.

It is recommended that terminal operators regularly review their procedures and documentation to ensure that they reflect the current practice.

Masters and operators of vessels working in the vicinity of the Port of Dampier must have a cyclone plan in place before the start of the cyclone season and it must be clear to all parties what each vessel will do during the approach of a cyclone.

Dampier has approximately one hundred and eighty moorings of which two thirds are cyclone rated and managed by the PPA.

The Port Authorities Regulations 2001 Schedule 1 subdivision 3 49 - 58, governs the installation and use of cyclone moorings within the port. Owners should ensure that their mooring(s) comply with the requirements of the regulations, including the requirement to supply the HM with a completed annual inspection report prior to 30th of October.

See [PPA Mooring Documents](#) for full details of mooring requirements.

Non approved, sub-standard or unidentified moorings should be removed by the mooring owner prior to the start of the cyclone season in accordance with the PPA regulations. If the mooring owner fails to act diligently in this regard, the PPA may carry this out at the owner's expense.

3.2 Port of Dampier

Mariners should note that whilst Dampier is a “Safe Port”, it affords limited protection in cyclonic conditions. There are no public cyclone moorings in the port and the mooring areas do not provide suitable shelter in other than moderate conditions. Most areas are shallow and exposed from some quarters. In some circumstances mooring areas in the Port will afford little, if any protection at all.

Vessel cyclone plans and arrangements should allow sufficient time for the vessel to enter the port, before it is closed, to secure to the mooring and vacate the vessel before the onset of gale force winds. In the interest of crew safety these operations should, whenever possible, be undertaken during day light hours.

3.3 Moorings

Operators of small vessels working in the general vicinity of the Port of Dampier that have designated the Port of Dampier as a cyclone haven, should apply to the PPA well in advance of the cyclone season, to lay to an approved cyclone mooring for each of their vessels. These moorings must be properly designed by a certified and suitably qualified Engineer or Naval Architect in accordance with the PPA’s mooring guidelines.

3.4 Cyclone Contingency Plans

The PPA anticipates that all vessels will have cyclone contingency plan in place when operating in or from the Port of Dampier.

The plan may be to:

- Proceed to sea in sufficient time to establish safe sea room between the vessel and the cyclone or;
- Proceed to a cyclone mooring

The PPA does not anticipate that vessels normally operating at the Port of Dampier will proceed to the safe haven anchorage described below as a routine.

3.5 Safe Haven

It is recommended that small vessels seeking safe haven during a cyclone should utilise an anchorage position between West Lewis Island and Enderby Island which is an area of approximately two square miles with 8 to 12m depth at chart datum. The holding ground is said to be good. The islands on either side are steep sided which tends to deflect the wind. During a cyclone PPA permits vessels seeking safe haven to enter the port and proceed to this area or elsewhere to a suitable anchor position if in the master’s opinion the vessel will be safer in the prevailing conditions at this new position. Such an anchor position will be approved by the HM on a case by case basis.

3.6 Vessel State of Readiness

Port regulations require that the Master of a vessel berthed at a wharf within the port shall ensure that the vessel is at all times capable of vacating the berth at short notice.

During the cyclone season, and particularly in the event of a tropical low or cyclone forming off the Northern or Western coast, this requirement becomes paramount.

To this end, the Master shall ensure that at all times, engines and other essential machinery is fully operational, that the vessels draft, trim and stability are adequate and that there are adequate crew members on board to enable the vessel to vacate the berth and sail at short notice.

Vessel engines should not be immobilised without the permission of the Harbour Master.

3.7 Cyclone Threat Assessment Criteria

The PPA does not have designated specific zones or distances from a cyclone as trigger points for activating these procedures. Instead cyclones and tropical lows will be assessed and dealt with on a case by case basis in relation to their potential severity. Whilst sea state is a major consideration for small craft, work boats and laden ships in the main shipping channels, the proximity of gale force winds associated with the cyclone (or low) will also have a bearing on the decision-making process at the time.

Decisions to close or open the port will be based on a worst-case scenario concept to ensure adequate margins of safety for all personnel, small craft, other vessels and port facilities.

The PPA's requirement to clear berths and close the Port may be more conservative than the various port operators plans require. When executing their plans, terminal and port operators should be aware of the fact that the port assessment and action influenced by potential winds, may be well ahead of any sea state criteria or ahead of any advice concerning the likely impact obtained from the BoM.

Decisions may also be influenced by the desirability to perform some tasks, such as mooring smaller craft, in daylight, (commercial and non-commercial craft included).

Tropical lows will be monitored and action, if deemed necessary, taken on the basis that the low may deepen to a cyclonic system at very close range to the port.

Category 1 cyclones will be viewed as having the potential to deepen to category 2 or 3 immediately prior to crossing the coast or at close range to the port. In assessing such potential, advice and information will be obtained from the BOM and other appropriate sources if available.

4. RESPONSE STAGES

Pilbara Ports Authority will respond to a cyclone threat in five (5) stages

STAGE	KEY ELEMENT	PARAMETER	ACTION
1	Monitor	Cyclone or tropical low has formed in northern waters.	Monitoring the system to make early assessment of path.
2	Prepare	Cyclone tracking toward port in such a way as to pose a potential risk.	Prepare port and secure loose gear. Check loading details. Sailing drafts and tide requirements. Communication between port and port users.
3	Clear Port	Potential for gale force winds within 12 hours.	Clear large vessels from port. Clear anchorage. Port closed to large vessels.
4	Shut-down	Potential for gale force winds within six hours.	All small vessels secured to cyclone moorings. Port closed to all.
5	Re-open port	Cyclone threat passed.	Check nav aids, channel and berths. Open anchorage. Return to normal operations.

The actions associated with each stage are summarised as follows:

4.1 Stage 1: Monitor

Advice is received that a cyclone or tropical low has formed somewhere off the Northern or Western coasts.

The PPA will monitor the system with appropriate resources to make an early assessment of its likely path and potential to eventually impact on the Port of Dampier.

4.2 Stage 2: Prepare

A tropical low or cyclone is tracking in such a way that there is potential for the system to impact on the port.

The PPA will begin to prepare the port for closing down. This stage will involve extensive communication and consultation between the Port Authority and Port Terminals, Operators and Pilots. Operational plans and intentions of the Port Users will be discussed and evaluated against possible response scenarios. Sailing drafts and tidal requirements/restrictions etc. will be discussed so that the effects on ships and operators, of any PPA action in relation to the storm will be understood by all parties. If time permits a formal meeting will be held at the PPA with all available stakeholders to discuss the measures in place and to be taken.

Once gale force winds are potentially within 24 hours off the Port, vessels will not load so as to become tidally constrained, without prior consultation and agreement with the HM. In some circumstances it may be deemed necessary or advisable to cease loading to ensure that the vessel/s does not fail to clear the Port before the onset of gale force winds. This process will be ongoing; following each forecast update or any substantial change in the prognosis, it may be necessary to revisit terminal operators and the Port's stated intentions.

4.3 Stage 3: Clear Port

Gale force winds expected (on a worst-case scenario basis) within 12 hours.

COMMERCIAL VESSELS

The PPA will commence to clear the Port and anchorages of all large commercial vessels, with a view to having all such vessels clear of port limits 12 hours prior to the possible onset of gale force winds. This timeframe is designed to ensure adequate margins of safety, and to provide ships adequate time to clear the coast before encountering storm conditions.

RECREATIONAL VESSELS

WAPOL DAMPIER in consultation with the HM and the WA DoT, normally close the port to small pleasure craft when the SES declares a blue alert. The local boat ramps will be chained off and signs erected. This precaution is to prevent craft proceeding to sea; it does not prevent returning craft from using the ramps.

In some circumstances, sea conditions within the port may cause the PPA in consultation with the WAPOL Dampier and the WA DoT, and in the interest of safety, to initiate the closure of the port to small pleasure craft prior to the DFES declaring a blue alert.

4.4 Stage 4: Shut Down

Gale force winds expected (worst case scenario basis) within 6 hours.

The port will be closed to all commercial operations. Vessels will be directed to cease normal activities and secure to their moorings, proceed to their pre-planned safe havens or proceed to sea.

All vessels on moorings should be secured, shut down and crews ferried ashore well before the onset of gales. Planning should ensure mooring and crew transfers are undertaken during day light hours, where possible, to maximise safety.

During this Shut Down stage the Port will be closed to all vessels with the exception of vessels requesting to pass through the port en route to safer waters and vessels seeking safe haven where there is no alternative.

Vessels entering the Port of Dampier at this stage, with no prior arrangements and seeking refuge should contact the Dampier VTS via VHF 11, email or phone and state their intentions.

Vessels mooring within the Port of Dampier, once securely moored and about to vacate their vessel should advise Dampier VTS on VHF 11 of their intentions.

A vessel may seek shelter within Dampier Harbour limits and maintain crew on board the vessel. In this instance the Master must advise the Western Australian Police Service (WAPOL DAMPIER) or Rescue Co-ordination Centre (RCC) Australia of this intention along with the names of persons on board.

In the interest of safety, the PPA recommends the de-crewing of all vessels on cyclone moorings should occur prior to the onset of gale force winds and during daylight hours.

In the event of an imminent “red alert” the Port of Dampier VTSC will be un manned. Sécurité message advising of this fact will be broadcast on VHF 11 & 16 prior to un-manning.

4.5 Stage 5: Re-Open the Port

Cyclone or the risk of impact has passed.

The Port will be re-opened as soon as conditions permit. This may well result in a phased re-opening. The outer anchorage or even inner anchorages may be opened, before particular berths are reopened for operations. The re-opening of the port (or part of the port) does not constitute that conditions will necessarily be suitable for normal operations. Terminal operators and Masters of vessels will need to make their own assessments as to the suitability of prevailing conditions for safe operations.

The anchorage will be opened once the wind falls below steady gale force and the sea conditions permit safe anchoring. Vessel Masters, Port users and Stakeholders will be advised by appropriate communication methods as to when the Port is re-opened.

4.5.1 Terminal Operator’s Declaration

Prior to berthing and resuming normal operations, individual operators will need to declare to the Harbour Master that their berth facilities, navigational aids and channels have not been compromised by the effects of the cyclone. The detail of the declaration required from terminal operators will be determined on a consultation basis with the PPA and will be based on the cyclone severity and the impact experienced within the Port.

This declaration will address issues such as:

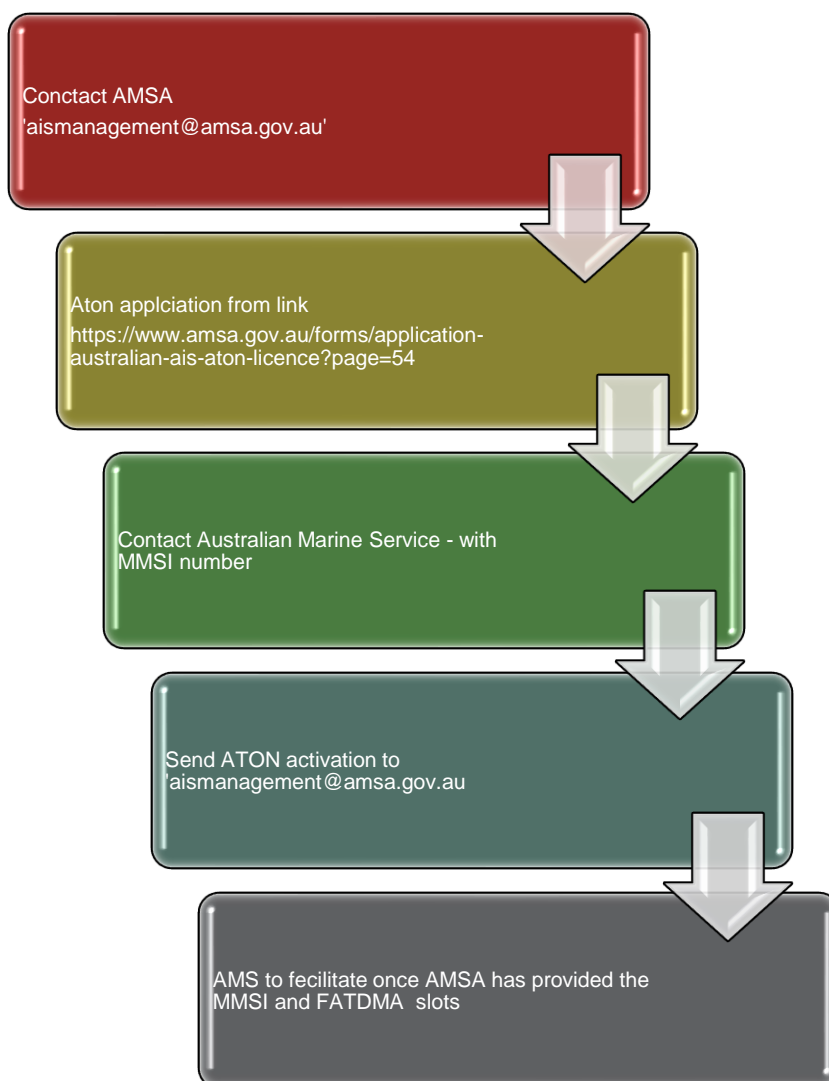
- a) Jetties and wharves still affording a safe berth for vessels alongside.
- b) Wharf fendering and mooring arrangements being serviceable.
- c) Berth pocket or basin remaining at the declared depth

- d) Navigation aids remaining in their correct position and serviceable, particularly before any night operations are undertaken. Temporary substitution of damaged Navigation Aids by activation of Virtual nav aids will be considered to facilitate night operations.
- e) Channels proved to have maintained their declared depths and width as charted.

Damage to navigation aids, channels or berth facilities resulting from the cyclone is to be reported to the HM immediately.

Any damage to the port infrastructure or matters of concern to mariners will be issued by a PPA Marine Notice.

4.5.2 Activation of Virtual Atons Flow Chart



5. EMERGENCY PROCEDURES

In the event that a vessel is unable for any reason to comply with these cyclone procedures, the Harbour Master will initiate contingency arrangements which may include activating the Emergency Response plan.

6. PROCESS OWNER

The Harbour Master is responsible for this External Document.

Date approved: 2/11/2020

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Version: 22

Approved by: General Manager Marine