



# Offshore Cyclone Management

## Plan

Document No.: X060-AH-PLN-60001  
Security Classification: Unrestricted

| Rev | Date       | Issue Reason   | Prepared                               | Checked                           | Endorsed                                 | Approved                    |
|-----|------------|----------------|----------------------------------------|-----------------------------------|------------------------------------------|-----------------------------|
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**RECORD OF AMENDMENT**

| Revision | Section          | Amendment                                                                                                                                                                                              |
|----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7        |                  | Various section updates to capture changes to National Warning system colour coding, Field Manager interface with Rigs outside Ichthys field, Medvevac Coverage, alert status for moving to red alert. |
| 8        |                  | Minor wording updates to capture some amendments to cyclone colour code changes                                                                                                                        |
| 9        | Appendixes C & D | CPF & FPSO Cyclone check sheets. The procedure numbers were incorrectly swapped around for the facilities. Rectified this minor issue                                                                  |
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## 1 INTRODUCTION

The Ichthys Field is located 465 km northwest of Broome, North Western Australia in a region prone to cyclone activity. The cyclone season in the Ichthys Field location in the northern area of Australia, extends from the 1st of November until the 30th of April, however cyclones can occur outside of that period. Tropical cyclones have previously formed at or near to the Ichthys Field location therefore the amount of notice prior to the formation of a tropical cyclone maybe relatively short.

This Offshore Cyclone Management Plan has been developed for the offshore Operations activities within the Ichthys Field, in accordance with the Company [Extreme Weather Management Standard](#) and [Emergency and Crisis Management Standard](#).

The response to adverse weather events, including lightning, squalls, high winds, heavy precipitation, extreme heat, and large sea swells, is documented within the [Adverse Weather \(Offshore\) Procedure](#), and is not covered by this plan.

## 2 PURPOSE

This Offshore Cyclone Management Plan is the over-arching document for response to cyclones potentially affecting the Ichthys Field. The main purpose of this plan is to:

- Provide a framework for co-ordinated actions in preparation for a cyclone;
- Detail a structured response to cyclones that considers and provides for the utmost safety of personnel;
- Define the roles and responsibilities for key positions in responding to a cyclone threat;
- Ensure effective and aligned communications with all stakeholders in the event of a cyclone threat; and
- Raise awareness of personnel of the extreme weather conditions that may occur.

### 3 SCOPE

This Plan covers both both operational and development activity in the Ichthys field. The CPF and FPSO Emergency Response Plans detail how the management of cyclones will be managed by this plan.

This document directly applies to:

- CPF;
- FPSO;
- Offtake operations; and
- Company oversight for other vessels in the Field.

This plan is intended to interface with the following cyclone plans:

**Table 3-1: Facility scopes of works**

| FACILITY/LOCATION                       | PRIMARY DOCUMENT                            | BRIEF DESCRIPTION                                                                                                                                                                                     |
|-----------------------------------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Onshore Ichthys LNG Plant, Darwin       | Onshore Cyclone Management Plan             | The Onshore Cyclone Management Plan comes into effect at 'Ready for Start-up' (RFSU), prior to this response is covered by the EPC contractor's (JKC) 'Critical Weather Event Procedure'.             |
| MODU                                    | Facility specific Cyclone Contingency Plans | MODUs operating in the Ichthys field will be covered by facility-specific Cyclone Contingency Plans, which have been formally accepted by the Company prior to Drilling operations commencing.        |
| Other Vessels                           | Individual vessel Cyclone Response Plans    | Other vessels operating in the Ichthys field will be covered by vessel specific Cyclone Contingency Plans, which have been formally accepted by the Company prior to the planned activity commencing. |
| Accommodation Support Vessels (Flotels) | Individual Cyclone Response Plans           | Any Flotel shall operate within the Field under their own individual Cyclone Response Plan which shall be formally accepted by Company prior to operations commencing.                                |

#### 3.1 CPF / FPSO

The cyclone response strategy for a progressive down man is based on forecast cyclone intensity and integrity of mooring.

#### 3.2 Drilling MODU

Each drilling MODU shall have a standalone Cyclone Response Management Plan, which details specific actions for securing the well, securing the facility and safely evacuating all personnel.

On the activation of the MODU's Cyclone Contingency Plan, the Field Manager shall be notified and updated on a regular basis by the Senior Drilling Supervisor of down manning status and progress.

### 3.3 Construction, commissioning and IMR vessels

All construction, commissioning and IMR vessels will make safe and sail away from the Field to shelter in advance of a cyclonic event. These vessels will follow the requirements specified in each vessel's Cyclone Response Plans.

On the activation of the vessels Cyclone Response Plans, the Field Manager shall be notified and updated on a regular basis on status of activities and sail away.

### 3.4 Flotel

Any Accommodation Support Vessel (Flotel) shall have Cyclone Response Plan specific to the facility which will interface with this plan, and be formally reviewed and accepted by the Company.

On the activation of the Flotel Cyclone Response Plan, personnel assigned to Flotel will depart the Field in accordance with the facility Cyclone Plan. The Field Manager and respective OIM shall be consulted as to the timeline to cease activities and sail away.

Where beds are available, a Flotel may be utilised to down man personnel from either facility. This may be via transfer prior to the bridge disconnect or by helicopter transfer during the Flotel departure from the field. There is no requirement for a Flotel to hold beds for this down manning contingency.

### 3.5 Other vessels

Offtake, platform support vessels and other vessels undertaking activities within the Ichthys Field will not typically down-man in response to a cyclone threat; instead they will sail away from the field in advance of a cyclone event. On the activation of the respective vessel Cyclone Response Plans, the Field Manager shall be notified and updated on a regular basis of the status of activities and sail away.

### 3.6 Cyclone Response Plan (aviation logistics)

The season Cyclone Response Plan (aviation logistics) interfaces with the Cyclone Response Management Plans for all field vessel activities executed within the cyclone season and details the requirements, availability and mechanisms for the provisioning of aviation assets (helicopter and fixed wing) to support down man and post cyclone up man activities.

### 3.7 Offshore Cyclone Management Plan - Addendum

The purpose of the Addendum is to describe the medevac arrangements for Offshore facilities including other vessels within the field including the Accommodation Support Vessels (ASV's) during a cyclone event in the Ichthys Field. The document provides the medevac range for INPEX supplied helicopters and will give a range of options should the INPEX helicopters not be available for any reason.

## 4 DOCUMENT OWNERSHIP

This plan is in the custody of INPEX Operations Australia Pty Ltd. It is under the control of the General Manager Offshore operations.

This document will be subject to 12-monthly review and update or when required after exercises, events or significant changes to the operational scope of work.

Issued for Use

## 5 PLAN

### 5.1 Cyclone event response management

#### 5.1.1 CPF and FPSO design premises

CPF and FPSO have been designed to remain fully manned through cyclone events. The 'survival' design case provides that there is no loss of life or hydrocarbon containment in the event of the 10,000 year storm event (cat 5 plus cyclone).

Table 5-1 provides metocean data for a 200 and 10,000 year event and corresponding cyclonic category.

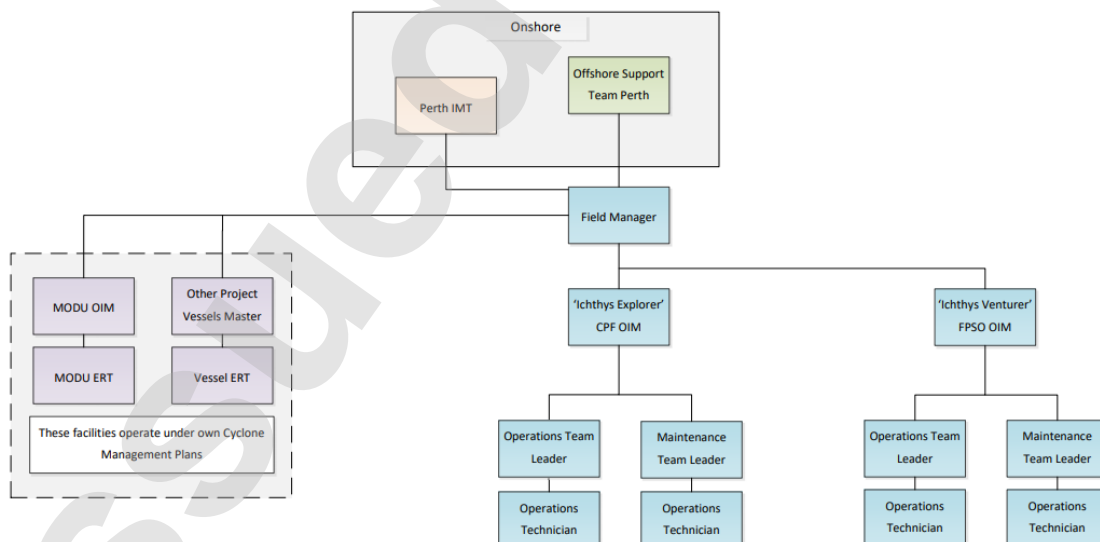
**Table 5-1: Tropical cyclone severity categories relating to design**

| FACILITY   | RETURN PERIOD    | EQUIV'T CYCLONE CATEGORY | WIND SPEED (10 MIN MEAN) | STRONGEST WIND GUST (KM/H) | SIGNIFICANT WAVE HEIGHT HS |
|------------|------------------|--------------------------|--------------------------|----------------------------|----------------------------|
| CPF / FPSO | 10,000 yrs storm | Cat 5 plus               | 250km/h                  | 380km/h                    | 18.6m                      |
|            | 200 yrs storm    | Cat 4                    | 167km/h                  | 240km/h                    | 12m                        |

For further information on tropical lows/ cyclones and weather forecasts refer to Appendix A and B.

#### 5.1.2 Organisation

The Figure 5-1 below shows the relationship between the Operations onshore and offshore management roles for the offshore operations.



**Figure 5-1: Onshore and offshore organisation chart**

The Field Manager is responsible for overall coordination of cyclone response for all facilities and vessels within the Ichthys Field. In normal operation the CPF OIM holds the position of Field Manager.

### 5.1.3 Preparation for cyclone season

Prior to the commencement of the cyclone season, preparations will be undertaken to ensure that facilities are adequately prepared. The following is a list of general tasks that should be performed prior to and at regular intervals during the cyclone season. These tasks are generally expected to be prompted and led by facility management:

- Review this plan and update where appropriate, including the checklists in Appendix C & D;
- Review the Cyclone Response Plan (Aviation Logistics) to ensure it meets requirements;
- Ensure that all relevant personnel are aware of requirements of this plan including periodic briefings, education sessions etc.;
- Obtain & interpret Bureau of Meteorology (BoM) Cyclone Season Outlook information. Where possible the responsible Perth based management or their delegate should attend the BoM pre-season tropical cyclone briefing;
- Each facility shall conduct relevant exercise/s to test and demonstrate the robustness of this plan, also an integrated desktop exercise involving all facilities and entities at start of each cyclone season to be undertaken;
- Confirm communication plan between CPF, FPSO and MODU facilities, Company IMT, Medevac Provider, Helicopter Provider, Company Logistics and Company Aviation Manager;
- Identify and secure or remove all portable and loose equipment, and materials including containers;
- Review installation / maintenance planning and priorities to minimise POB during cyclone season; and
- Drilling and other Vessels (if in field) shall review their respective Cyclone Response Plans and implement cyclone preparation activities as applicable in alignment to this Plan.

#### 5.1.4 Offshore cyclone alert status

The Company has developed a 5 stage Cyclone Alert System, Yellow, Orange, Red, Green and White) based on risk which is similar to that used by other Operators in the region. The Bureau of Meteorology (BoM) uses a similar system which is primarily designed for land-based communities along the WA and NT coastlines. Company Aviation utilise the BoM 3 stage (yellow, orange and red) notification process for daily flight planning which takes into account the BoM weather forecasts and alert status. The Company Offshore Cyclone Alert stages are categorised as shown in Table 5-2 below.

**Table 5-2: Offshore cyclone alert stages**

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>YELLOW ALERT</b> | A cyclone, or tropical low which is forecast to turn into a tropical cyclone, is located, or forecast to form between 1666km (900NM) and 2593km (1400NM) of the Ichthys Field (Yellow Zone);                                                                                                                                                                                                                                                                                                                                                             |
| <b>ORANGE ALERT</b> | A cyclone or tropical low is either: <ul style="list-style-type: none"> <li>Forecast to form within, or move into Orange zone 750km (405NM) and 1666km (900NM) semicircle East of Ichthys Field); or</li> <li>Gale force winds are within 72 hours of the Ichthys Field (daytime); and</li> <li>Forecast to pass within 150NM of the CPF and FPSO as a cyclone (grey cone of uncertainty on +72 hours forecast).</li> <li>BoM forecast shows high likelihood of TL or TC forming within the Red Zone and early down man decision is required.</li> </ul> |
| <b>RED ALERT</b>    | <ul style="list-style-type: none"> <li>TC or TL is within the Red zone; (Refer to Appendix E); or</li> <li>TC or TL is within the Orange zone and the centre is potentially within 24 hours (daylight hours) of Ichthys Field; or</li> <li>Gale force winds are forecast within 6 hours (daylight hours); or</li> <li>Weather conditions at Broome require early down man/de-manning; and</li> <li>TL or TC forecast to pass within 185km (100NM) of Ichthys Field as a cyclone (grey cone of uncertainty for +24 hour forecast);</li> </ul>             |
| <b>GREEN ALERT</b>  | Tropical cyclones or tropical depressions forming West or South-West of the field area and which are not likely to impact the CPF and FPSO facilities based upon BoM forecast track.                                                                                                                                                                                                                                                                                                                                                                     |
| <b>WHITE ALERT</b>  | The threat of the cyclone event has passed and the 'all clear' has been issued by the BoM.                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

#### 5.1.5 Cyclone watch

On notification that a cyclone has formed in the region, a cyclone watch shall be established (refer to Appendix A for definition of a cyclone watch) and the Facility OIM will brief personnel.

BoM Cyclone reports will be posted and available for all personnel to view, when the Tropical Cyclone is named and a Cyclone Watch is issued by the BoM.

#### 5.1.6 Offshore tropical cyclone monitoring and reporting

The Facility OIMs shall plot and monitor the progress of a tropical low or cyclone and determine the critical path duration, ensuring that all cyclone preparation activities can be completed. All activities on a facility shall be reviewed to determine whether they can proceed or need to be suspended. The Facility OIMs will also ensure that their crew are kept well informed by:

- Regular progress meetings will be held with team leads and other relevant to ensure that preparation activities are on schedule; and

- Briefings will be cascaded down to all personnel.

The Facility OIM is responsible for ensuring cyclone readiness on their own facility. The Facility OIM shall plot and monitor the progress of a tropical low or cyclone and determine the critical path duration, ensuring that all cyclone preparation activities can be completed. All activities shall be reviewed to ensure whether they can proceed or need to be suspended. The facility OIMs will also ensure that their crew are kept well informed by:

- Regular progress meetings will be held with team leads and other relevant to ensure that preparation activities are on schedule; and
- Briefings will be cascaded down to all personnel.

The Field manager has the responsibility to ensure the field is prepared and therefore will follow up with each OIM to ensure all facilities are prepared.

The Field manager shall be responsible for notifications to avoid multiple event notifications being raised for the same event.

### 5.1.7 Plotting tropical cyclone path

When a cyclone or a tropical low with the potential to become a cyclone is within the Yellow Zone 2593km (1400NM) of the field, the tropical low or cyclone will be monitored by the OIMs and Field Manager.

When the tropical cyclone or a tropical low with the potential to become a cyclone is within the Orange Zone 1666km to 750km (900NM to 405NM) of the field, the 'critical path' will be tracked utilising the 'Cyclone Tracking Map' by the OIMs /Field Manager.

As soon as TL or TC tracking commences the OIM will establish the critical path for securing/tie-down procedures and use the cyclone Critical Path tool (Appendix E) to develop the down-man plan for their facility. The Field Manager shall use the Cyclone Critical Path Duration Calculation Tool (Appendix E) to develop a down man plan for the field.

The lead time for the down manning process will vary considerably depending on the development of the cyclone. The lead time should take account of available air resources, field down-manning requirements (other facilities) and conflicting priorities. The field down man will be coordinated through the Field Manager in liaison with the Facility OIMs, Vessel Masters and Senior Drilling Supervisor who will liaise with the MODU OIM.

The Cyclone Alert Status levels have been depicted onto a cyclone tracking map which is detailed in Appendix E. The Field Manager and the Onshore Support Team shall establish and maintain frequent contact until the weather alert reaches the White Alert status.

### 5.1.8 Production operations

Hydrocarbon production and processing will be shut-down and process systems depressurised upon a combination over a 30 minute period of the following:

- Within radius to gales of a cyclonic event;
- Significant wave height >10m; and
- Local mean wind speed >75knots.

The OIM has the discretion to shut down earlier.

The process systems shall be shut-down and depressurised prior to down manning the facility below the minimum numbers for safe operation. Deliberate shutdown and de-manning will be taken as an option typically only in cases where an extremely severe storm is predicted as detailed in Sections 5.3.2 and 5.3.3. This will be actioned only after discussions and alignment between Company shore-based and field management in full consideration of all factors.

Wind speed and wave height readings are taken from the metocean instrumentation installed in the field. Information from the neighbouring Shell Prelude facility may be used for wave height should the INPEX wave rider buoy be out of service.

#### **5.1.9 Process trip**

During a cyclonic event, production operations may continue until the criteria detailed above are reached unless in the Facility OIMs assessment a reduced production / shutdown is deemed appropriate in deteriorating weather conditions.

In the event of an unplanned process trip or equipment failure due to weather restart will not be initiated unless it can proceed without elevated risk to personnel.

Refer to the Adverse Weather Procedure (Offshore) for further details on weather limitations on offshore activities.

Once conditions have abated to below the shutdown thresholds the facility will be inspected to confirm that no damage has been sustained and that it is safe to commence restart operations.

#### **5.1.10 FPSO Flash Gas Compressor operations**

A study performed on the FPSO Flash Gas Compressor casing stresses and shaft alignment has concluded that during a 200-year storm (Cat 4 cyclone) there is a risk of significant compressor to gearbox shaft misalignment with the potential to result in coupling failure leading to a loss of containment.

Existing vibration protection on the compressor / gearbox bearings should trip the compressor before this failure occurs. However, to minimise this risk to ALARP, the Flash Gas Compressor trains should be shut down prior to the FPSO reaching 200-year storm (category 4 cyclone) conditions. See MOC 200011661 and TSR 500002672 for further details.

#### **5.1.11 FPSO ballasting during a tropical cyclone**

The ballast requirements for the FPSO during cyclonic conditions are detailed in the FPSO Trim & Stability Booklet. The FPSO will be ballasted down below 17.6m draft prior to the arrival of a cyclone (both for turret, structure and stability). Depending on the condensate storage amount, draft will be between 17.6m to 21.5m (midship) with 1.6~4.8m trim at the stern. Ballast Operations can take up to a maximum of 48 hours, depending on the initial vessel draft.

#### **5.1.12 CPF ballasting during a tropical cyclone**

The CPF is designed to withstand a cyclonic event corresponding to a 10,000 year return period event, without the need for ballasting down, draft adjustment or ballasting plan adjustment.

#### **5.1.13 Offtake tanker disconnection criteria for cyclones**

Offtake tanker operations involving the FPSO, including cyclone response contingency actions, shall be carried out in accordance with Offshore Terminal Handbook.

The weather limits for normal terminal operations are far less than those during cyclonic conditions; as a consequence the offtake tanker will depart the Field long before radius to gales is reached.

Tanker operations may still continue whilst the field is on cyclone alert status provided it is within the weather limits as per terminal handbook.

#### **5.1.14 Drilling operations**

Any MODU contracted by Company will follow their respective approved Cyclone Procedures, and will keep the Field Manager informed of the following when a cyclone develops:

- Status of the well;
- POB;
- Timeline to secure the well;
- Minimum POB required to complete securing the well; and
- Evacuation down manning status.

#### **5.1.15 Helicopter planning**

The Field Manager is responsible for coordinating the field down man response and shall provide the field down man priority between assets in the field.

Where there are drill rigs outside of the Ichthys field that will impact on the overall field down manning, the relevant drilling representative will work in collaboration with the Field Manager to prioritise and optimise down manning and remanning of the offshore assets. In the event of any disagreement the General Manager of Offshore Operations will make the final decision in consultation with the General Manager of Drilling.

The Company Logistics Aviation team has regular meetings with the Company Helicopter Contractor to plan aviation asset requirements on a 1 month and 3 month look-ahead basis. This gives the Helicopter Contractor sufficient time to allocate aircraft and to up man with crew to meet Company requirements.

The down manning and de-manning strategy utilising helicopters is detailed within the Cyclone Plan (Aviation Logistics) which will be updated on a regular basis to align with planned field activities. Where there are Drilling Rigs outside of the field this will be included in the annual strategy.

The Company Aviation Manager shall immediately notify the Field Manager, Facility OIMs and any MODU OIMs of any potential to cease flying, or of a decision to cease flight activities for helicopters and commercial flights.

Subject to weather conditions, a helicopter crew shall be kept available in Broome for 24/7 flying in case of serious emergencies.

For details on the pitch, heave, roll and sea state limitations for helideck operations refer to the Adverse Weather Procedure (Offshore).

#### **5.1.16 Medevac Helicopter**

In accordance with the Cyclone Management Plan – Addendum, the medevac helicopter and crew may be relocated from Broome to Truscott to maintain medevac capability dependent of cyclone trajectory. Medevac capability will be discussed and agreed as part of the daily cyclone co-ordination meeting.

If a scenario presents where Medivac coverage cannot be maintained the Aviation Manager shall advise the Field Manager, Facility OIMs and any MODU OIMs formally

when coverage is planned/has been lost and again when it has been restored. The relevant OIM's are responsible for managing the facility work activities to ALARP during this period including cessation of high-risk activities i.e. Confined Space Entry, Breaking Containment, Working over water etc.

#### **5.1.17 Refuelling of helicopters during down manning / de-manning**

Each helicopter flight to a facility requires 800 litres of helifuel to be fuelled to the aircraft. Each facility that has helicopters landing for down manning/de-manning shall maintain a minimum inventory for refuelling each flight. A minimum of inventory of 8000 litres is required on the CPF and FPSO during cyclone season. Should refuelling facilities not be available on an offshore facility then the cyclone plan (aviation) shall be reviewed and where required minimum fuel stocks increased on other facilities to compensate.

On the last flight out from a facility when it is de-manned this capability will not be available, therefore the helicopter shall have the capability to return to land with the fuel reserve required by aviation legislation.

The first flight back to a facility for upmanning shall also have the capability to fly back to land without refuelling, as the facility will not have the capability at this time to refuel an aircraft.

### **5.2 Tropical cyclone communications**

The Field Manager is responsible for establishing and maintaining communications with Company IMT during a cyclone alert and providing regular updates on the status of the facilities. This includes the planned time for de-manning and shutdown of the facility, if applicable. The Field Manager will raise the event notification for the field as outlined in the INPEX Australia Major Event Internal Notification Flow Chart.

#### **5.2.1 Communications failure**

CPF and FPSO communications are normally by telephone via a fibre optic communications line. Should normal communication fail the following emergency provisions are available:

- 1 x Fixed Satellite Phone (Iridium Sat Phone M);
- 1 x Portable Satellite Phone (Iridium Sat Phone M);
- VHF Radio (Marine Communications); base channel is 16; and
- Global Maritime Distress Safety System (GMDSS) shall be in readiness and Radio Watch maintained on appropriate channels.

### **5.3 Daily Cyclone Report**

Daily cyclone reporting is required across all sites (Darwin, Offshore and Broome) upon reaching a Major Event notification trigger. This is defined as the point where the first site/division observes a weather system that generates sufficient concern to prompt initial discussion regarding potential adverse effects on the site/division should the weather system develop further.

The daily report will be Initiated by Darwin DHSEA at 0900 ACST and passed to the field Manager for completion with input from the logistics team in Broome. The report will be sent to at 0900 AWST to the following distribution lists and the Operation Support Centre (OSC):

- DL Ichthys Field Major Event

- DL Onshore Major Event
  - DL Major Event
- OSCSpecialist@inpex.com.au
- OSCLead@inpex.com.au

Daily reporting will cease when all sites return to normal operation post the weather event.

#### 5.4 Coordination of cyclone response with company Perth office

A daily telephone call shall be held between the Field Manager, facility OIMs, Master of all vessels working in the field, OSC, Perth based Management Team (includes operations, project and logistics) and the IMT Leader once the BoM forecast indicate a possibility of a cyclone or a named cyclone forming.

The purpose of the meeting is to ensure a co-ordinated response to the cyclone across the field and ensure priority and timing for any down-man is understood.

The OSC will co-ordinate this call, issue any minutes and track actions. The call itself will be chaired by the Field Manager.

As the cyclone approaches the field the frequency of meeting will increase as required.

#### 5.5 Cyclone response-- offshore POB management

The Field Manager is responsible for setting the priorities and developing the down manning plan for the field including CPF, FPSO, MODU and all vessels.

The time line required to respond to a cyclonic event will depend on the following:

- Activities in progress and time to make safe;
- Field POB;
- Resources available; and
- Cyclone forecast path and intensity.

The timings provided in this section are indicative and ultimately the decision to commence down manning shall be made by the Facility OIM in consultation with the Field Manager.

The cyclone response strategy for the CPF and FPSO is for a phased down man. The extent of the down man will vary with cyclone intensity and the status of the mooring system.

For the purpose of phasing down manning the following POB numbers should be considered:

- CPF / FPSO Maximum POB 200;
- CPF / FPSO Maximum POB with single cabin occupancy is 150; and
- CPF / FPSO Core Crew positions 90.

Down manning will typically be sequenced in the phases described in Table 5-3:

**Table 5-3: Down manning phasing of personnel**

| PHASE          | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>N/A</b>     | No de-man required                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Phase 1</b> | For personal comfort, removal of non-essential personnel to provide single occupancy in cabins. In this phase personnel Facility POB ranging from the maximum single cabin occupancy POB down to the core crew numbers will be transferred onshore by helicopter. Personnel above the core crew numbers are classified as being non-essential personnel. Non-essential personnel may include: <ul style="list-style-type: none"> <li>• Visitors;</li> <li>• Contractors not involved in HSE/Commissioning/Production critical activities;</li> <li>• Installation/Maintenance Personnel (not required due to change of activities); and</li> <li>• Catering personnel associated with the personnel numbers above core crew.</li> </ul> |
| <b>Phase 2</b> | For personal comfort removal of all non-essential personnel to maximum Core Crew.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Phase 3</b> | Full facility de-manning reserved for either: <ul style="list-style-type: none"> <li>• A combination of mooring lines and cyclone intensity outside the capability of the mooring systems; or</li> <li>• Severe cyclonic event forecast and a MODU in the field.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

On the CPF where forecast cyclone intensity at the field location (within the cone of uncertainty) might reach category 5, consideration shall be given to relocating personnel out of rooms on Level 3 of the accommodation that have an external window. This eliminates the risk to personnel in the event of water ingress to an occupied cabin in severe category 5 cyclone condition.

This issue does not apply to the FPSO.

## 5.6 Cyclone down-manning guidance

Table 5-4: Cyclone down-manning rule set

| <b>YELLOW ALERT</b> |                                                                                                                                                                                                                                                                                                                |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Action:</b>      | Commence utilisation of the Critical Path Duration Tool to evaluate at which point down manning activities need to commence.<br>Consider down manning of non-essential personnel.                                                                                                                              |
| <b>ORANGE ALERT</b> |                                                                                                                                                                                                                                                                                                                |
| <b>Action:</b>      | Commence tracking of cyclonic event.<br>Provide notification in accordance with INPEX Australia Major Event Internal Notification Flowchart commenced tracking of tropical cyclone.<br>Implement phased down man of personnel based on cyclone intensity and mooring status as detailed in Figure 5-2 and 5-3. |
| <b>RED ALERT</b>    |                                                                                                                                                                                                                                                                                                                |
| <b>Action:</b>      | Consider controlled shutdown of the CPF and FPSO at the OIM's discretion, if still possible.( For Category 4 and above systems)<br>Complete the phases down man of the facility.                                                                                                                               |
| <b>GREEN ALERT</b>  |                                                                                                                                                                                                                                                                                                                |
| <b>Action:</b>      | No down man is required. The weather system development should be monitored by the Facility OIM and Field Manager.                                                                                                                                                                                             |
| <b>WHITE ALERT</b>  |                                                                                                                                                                                                                                                                                                                |
| <b>Action:</b>      | After the Field Manager has declared 'all clear', designated personnel on returning to the facility will carry out the safety and integrity checks in accordance with the "Post Cyclone" Check lists.                                                                                                          |

The OIM is responsible for planning the extent of the down manning and the order in which personnel are evacuated from the offshore facilities.

### 5.6.1 CPF down manning

Due to the remote location of the facilities they have been designed to withstand without loss of containment the 10,000 year storm conditions, equivalent to a severe Category 5 cyclonic event passing directly over the facilities.

A phased down man approach is applied for the CPF based upon cyclone intensity, mooring status and whether a MODU is in the field.

During operation in the event of a forecast of a cyclone passing over the field (within the cone of uncertainty) which is forecast to be above the limit of the CPF mooring full de-man is required.

With a MODU in the field there is a risk in severe cyclonic events that the MODU mooring could fail resulting in loss of position of the MODU. Due to uncertainty of the potential impact on personnel full de-man may be required in the event of a forecast of a cyclone with an intensity greater than the MODU mooring capability passing over the field (within the cone of uncertainty).

Detailed guidance on down man phasing is provided in Figure 5-2 below. Note the guidance is specific to the CPF due to the mooring capability.

To use Figure 5-2 select the mooring status and read across the line for the forecast cyclone intensity with the following possible outcomes:

- **The cell is green.** The facility is within the design envelope. No down man is required (200 maximum POB). The OIM may choose to down man some non-essential personnel. Production operations may continue as detailed in Section 5.1.8.
- **The cell is yellow.** Given sufficient time before gales the OIM may choose to down man non-essential personnel to increase personnel comfort. In some instances (hashed cells) production operations may continue as detailed in Section 5.1.8. In the event of a MODU in the field full de-man may be required in the event of a cyclone forecast to exceed the MODU mooring capability at the field location.
- **The cell is orange.** Given sufficient time before gales, the OIM may choose to minimise non-essential personnel. In the event of a MODU in the field full de-man may be required in the event of a cyclone forecast to exceed the MODU mooring capability at the field location.
- **The cell is red.** The forecast cyclonic event is beyond the design capability of the mooring and full de-man is required.

The facility down man plan in response to a cyclonic event will be set by the OIM following discussion with the Field Manager as the field response requirements may impact the plan.

Any de-man will be discussed with the Perth Incident Management Team. Due to the lead time required early precautionary down man will be required to enable full de-man should the cyclonic event be forecast to increase beyond mooring capability at the field location.

During degraded mooring operation in cyclone season the POB may be capped to facilitate de-man.

## Severity of Cyclonic Event Over CPF

|                                                         | Tropical Low                                                                                                                                                                                                                                                                                                                                                                 | Cat 1 Cyclone                                                                                                                                                                                                                                                                  | Cat 2 Cyclone                                                                                                                                                                                                                                                                                                           | Cat 3 Cyclone                                                                                                                                                                                                                                                                                                        | Cat 4 Cyclone                                                                                                                                                                                                                                                                                                         | Cat 5 Cyclone                                                                                                                                                                                                                             | Beyond 10,000 yr<br>Return period<br>Survivability Limit                                                                                                                                                                                     |
|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                         | $<17.5\text{m/s mean } U_{10}$<br>$<34\text{kts mean } U_{10}$<br>$<63\text{km/h mean } U_{10}$<br><br>$<5.5\text{m Hs}$                                                                                                                                                                                                                                                     | $17.5\text{-}24.5\text{m/s mean } U_{10}$<br>$34\text{-}48\text{kts mean } U_{10}$<br>$63\text{-}88\text{km/h mean } U_{10}$<br>$<34.5\text{m/s 3-sec gust}$<br>$<67\text{kts 3-sec gust}$<br>$<124\text{km/h 3-sec gust}$<br>$5.5\text{-}7.3\text{m Hs}$<br>$>985\text{mbar}$ | $24.5\text{-}32.5\text{m/s mean } U_{10}$<br>$48\text{-}63\text{kts mean } U_{10}$<br>$88\text{-}117\text{km/h mean } U_{10}$<br>$34.5\text{-}45.5\text{m/s 3-sec gust}$<br>$67\text{-}88\text{kts 3-sec gust}$<br>$124\text{-}164\text{km/h 3-sec gust}$<br>$7.3\text{-}8.8\text{m Hs}$<br>$985\text{-}970\text{mbar}$ | $32.5\text{-}44\text{m/s mean } U_{10}$<br>$63\text{-}86\text{kts mean } U_{10}$<br>$117\text{-}158\text{km/h mean } U_{10}$<br>$45.5\text{-}62\text{m/s 3-sec gust}$<br>$88\text{-}121\text{kts 3-sec gust}$<br>$164\text{-}223\text{km/h 3-sec gust}$<br>$8.8\text{-}11\text{m Hs}$<br>$970\text{-}955\text{mbar}$ | $44\text{-}55\text{m/s mean } U_{10}$<br>$86\text{-}107\text{kts mean } U_{10}$<br>$158\text{-}198\text{km/h mean } U_{10}$<br>$62\text{-}77.5\text{m/s 3-sec gust}$<br>$121\text{-}151\text{kts 3-sec gust}$<br>$223\text{-}279\text{km/h 3-sec gust}$<br>$11\text{-}12.8\text{m Hs}$<br>$955\text{-}930\text{mbar}$ | $>55\text{m/s mean } U_{10}$<br>$>107\text{kts mean } U_{10}$<br>$>198\text{km/h mean } U_{10}$<br>$>77.5\text{m/s 3-sec gust}$<br>$>151\text{kts 3-sec gust}$<br>$>279\text{km/h 3-sec gust}$<br>$>12.8\text{m Hs}$<br>$<930\text{mbar}$ | $>74.3\text{m/s mean } U_{10}$<br>$>144\text{kts mean } U_{10}$<br>$>267\text{km/h mean } U_{10}$<br>$>105.4\text{m/s 3-sec gust}$<br>$>205\text{kts 3-sec gust}$<br>$>379\text{km/h 3-sec gust}$<br>$>18.6\text{m Hs}$<br>$<930\text{mbar}$ |
| 28 lines                                                | 200 POB                                                                                                                                                                                                                                                                                                                                                                      | 200 POB                                                                                                                                                                                                                                                                        | 200 POB                                                                                                                                                                                                                                                                                                                 | 150 POB <sup>Note 1</sup>                                                                                                                                                                                                                                                                                            | 150 POB <sup>Note 1</sup>                                                                                                                                                                                                                                                                                             | 90 POB <sup>Note 1</sup>                                                                                                                                                                                                                  | 0 POB                                                                                                                                                                                                                                        |
| 24 to 27 lines<br>(max 1 broken line in<br>any cluster) | 200 POB                                                                                                                                                                                                                                                                                                                                                                      | 200 POB                                                                                                                                                                                                                                                                        | 150 POB                                                                                                                                                                                                                                                                                                                 | 150 POB <sup>Note 1</sup>                                                                                                                                                                                                                                                                                            | 90 POB <sup>Note 1</sup>                                                                                                                                                                                                                                                                                              | 0 POB                                                                                                                                                                                                                                     | 0 POB                                                                                                                                                                                                                                        |
| > 1 broken line in any<br>cluster                       | In the event of failure of 2 lines in the same cluster production shall be immediately shutdown and topsides depressured until appropriate mitigation has been agreed with the TA and implemented (irrespective of the time of year). Refer to the detail of deviation from performance standard for manning actions to be taken in adverse and cyclonic weather conditions. |                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                              |
|                                                         | <2.5 yr Return Period<br>Cylonic<br>Event                                                                                                                                                                                                                                                                                                                                    | 2.5 - 6 yr Return Period<br>Cylonic<br>Event                                                                                                                                                                                                                                   | 6 - 16 yr Return Period<br>Cylonic<br>Event                                                                                                                                                                                                                                                                             | 16 - 81 yr Return Period<br>Cylonic<br>Event                                                                                                                                                                                                                                                                         | 81-430 yr Return<br>Period Cylonic<br>Event                                                                                                                                                                                                                                                                           | >430 yr Return Period<br>Cylonic<br>Event                                                                                                                                                                                                 | 10,000 yr Return<br>Period Cylonic<br>Event                                                                                                                                                                                                  |
|                                                         | 10 YRP<br><u>Non -Cyclonic</u> Event                                                                                                                                                                                                                                                                                                                                         | 5 YRP<br><u>Cyclonic</u> Event                                                                                                                                                                                                                                                 | 10 YRP<br><u>Cyclonic</u> Event                                                                                                                                                                                                                                                                                         | 50 YRP<br><u>Cyclonic</u> Event                                                                                                                                                                                                                                                                                      | 200 YRP<br><u>Cyclonic</u> Event                                                                                                                                                                                                                                                                                      | 1,000 YRP<br><u>Cyclonic</u> Event                                                                                                                                                                                                        | 10,000 YRP<br><u>Cyclonic</u> Event                                                                                                                                                                                                          |

## Return Period

- 1 Full de-man if MODU in the field and forecast of a cyclone, with an intensity greater than the MODU mooring capability passing over the field (within cone of uncertainty).

|  |                                                                                       |
|--|---------------------------------------------------------------------------------------|
|  | Phase 3 - de-man facility (0 POB)                                                     |
|  | Phase 2 - discretionary down-man to 90 POB                                            |
|  | Phase 1 - discretionary down-man to 150 POB                                           |
|  | No demob - consider down-man of non-essential personnel unable to work due to weather |

|            |                                                                                                                                 |
|------------|---------------------------------------------------------------------------------------------------------------------------------|
|            | Process Operational                                                                                                             |
| No pattern | Process shutdown and depressured.                                                                                               |
|            | Outside code design limitation of mooring. Shutdown process, close SSIVs and depressure topsides. Consider depressuring risers. |

Figure 5-2: Severity of cyclonic event over CPF

## 5.6.2 FPSO down manning

Due to the remote location of the facilities it has been designed to withstand without loss of containment the 10,000 year conditions, equivalent to a severe category 5 cyclonic event passing directly over the facilities.

A phased down man approach is applied for the FPSO based upon cyclone intensity, mooring status and whether a MODU is in the field.

During operation in the event of a forecast of a cyclone passing over the field (within the cone of uncertainty) which is forecast to be above the limit of the FPSO mooring full de-man is required.

With a MODU in the field there is a risk in severe cyclonic events that the MODU mooring could fail resulting in loss of position of the MODU. Due to uncertainty of the potential impact on personnel full de-man may be required in the event of a forecast of a cyclone with an intensity greater than the MODU mooring capability passing over the field (within the cone of uncertainty).

Detailed guidance on down man phasing is provided in Figure 5-3 below. Note the guidance is specific to the FPSO due to the mooring capability.

To use Figure 5-3 select the mooring status and read across the line for the forecast cyclone intensity with the following possible outcomes:

- **The cell is green.** The facility is within the design envelope. No down man is required (200 maximum POB). The OIM may choose to down man some non-essential personnel. Production operations may continue as detailed in Section 5.1.8.
- **The cell is yellow.** Given sufficient time before gales the OIM may choose to down man non-essential personnel to increase personnel comfort. In some instances (hashed cells) production operations may continue as detailed in Section 5.1.8. In the event of a MODU in the field full de-man may be required in the event of a cyclone forecast to exceed the MODU mooring capability at the field location.
- **The cell is orange.** Given sufficient time before gales, the OIM may choose to minimise non-essential personnel. In the event of a MODU in the field full de-man may be required in the event of a cyclone forecast exceeds the MODU mooring capability at the field location.
- **The cell is red.** The forecast cyclonic event is beyond the design capability of the mooring and full de-man is required.

The facility down man plan in response to a cyclonic event will be set by the OIM following discussion with the Field Manager as the field response requirements may impact the plan.

Any de-man will be discussed with the Perth Incident Management Team. Due to the lead time required early precautionary down man will be required to enable full de-man should the cyclonic event be forecast to increase beyond mooring capability at the field location. During degraded mooring operation in cyclone season the POB may be capped to facilitate de-man.

### Severity of Cyclonic Event Over FPSO

|                                                         | Tropical Low                                                                                                                                                                                                                                                                                                                                                                 | Cat 1 Cyclone                                                                                                                                                                     | Cat 2 Cyclone                                                                                                                                                                                  | Cat 3 Cyclone                                                                                                                                                                               | Cat 4 Cyclone                                                                                                                                                                                | Cat 5 Cyclone                                                                                                                                                            | Beyond 10,000 yr<br>Return period<br>Survivability Limit                                                                                                                    |
|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                         | <17.5m/s mean $U_{10}$<br><34kts mean $U_{10}$<br><63km/h mean $U_{10}$<br><br><5.5m Hs                                                                                                                                                                                                                                                                                      | 17.5-24.5m/s mean $U_{10}$<br>34-48kts mean $U_{10}$<br>63-88km/h mean $U_{10}$<br><34.5m/s 3-sec gust<br><67kts 3-sec gust<br><124km/h 3-sec gust<br><br>5.5-7.3m Hs<br>>985mbar | 24.5-32.5m/s mean $U_{10}$<br>48-63kts mean $U_{10}$<br>88-117km/h mean $U_{10}$<br>34.5-45.5m/s 3-sec gust<br>67-88kts 3-sec gust<br>124-164km/h 3-sec gust<br><br>7.3-8.8m Hs<br>985-970mbar | 32.5-44m/s mean $U_{10}$<br>63-86kts mean $U_{10}$<br>117-158km/h mean $U_{10}$<br>45.5-62m/s 3-sec gust<br>88-121kts 3-sec gust<br>164-223km/h 3-sec gust<br><br>8.8-11m Hs<br>970-955mbar | 44-55m/s mean $U_{10}$<br>86-107kts mean $U_{10}$<br>158-198km/h mean $U_{10}$<br>62-77.5m/s 3-sec gust<br>121-151kts 3-sec gust<br>223-279km/h 3-sec gust<br><br>11-12.8m Hs<br>955-930mbar | >55m/s mean $U_{10}$<br>>107kts mean $U_{10}$<br>>198km/h mean $U_{10}$<br>>77.5m/s 3-sec gust<br>>151kts 3-sec gust<br>>279km/h 3-sec gust<br><br>>12.8m Hs<br><930mbar | >74.3m/s mean $U_{10}$<br>>144kts mean $U_{10}$<br>>267km/h mean $U_{10}$<br>>105.4m/s 3-sec gust<br>>205kts 3-sec gust<br>>379km/h 3-sec gust<br><br>>18.6m Hs<br><930mbar |
| 21 lines                                                | 200 POB                                                                                                                                                                                                                                                                                                                                                                      | 200 POB                                                                                                                                                                           | 200 POB                                                                                                                                                                                        | 150 POB <sup>Note 1</sup>                                                                                                                                                                   | 150 POB <sup>Note 1</sup>                                                                                                                                                                    | 90 POB <sup>Note 1</sup>                                                                                                                                                 | 0 POB                                                                                                                                                                       |
| 18 to 20 lines<br>(max 1 broken line<br>in any cluster) | 200 POB                                                                                                                                                                                                                                                                                                                                                                      | 200 POB                                                                                                                                                                           | 150 POB                                                                                                                                                                                        | 150 POB <sup>Note 1</sup>                                                                                                                                                                   | 150 POB <sup>Note 1</sup>                                                                                                                                                                    | 0 POB                                                                                                                                                                    | 0 POB                                                                                                                                                                       |
| > 1 broken line in<br>any cluster                       | In the event of failure of 2 lines in the same cluster production shall be immediately shutdown and topsides depressured until appropriate mitigation has been agreed with the TA and implemented (irrespective of the time of year). Refer to the detail of deviation from performance standard for manning actions to be taken in adverse and cyclonic weather conditions. |                                                                                                                                                                                   |                                                                                                                                                                                                |                                                                                                                                                                                             |                                                                                                                                                                                              |                                                                                                                                                                          |                                                                                                                                                                             |
|                                                         | <2.5 yr Return Period<br>Cylonic<br>Event                                                                                                                                                                                                                                                                                                                                    | 2.5 - 6 yr Return Period<br>Cylonic<br>Event                                                                                                                                      | 6 - 16 yr Return Period<br>Cylonic<br>Event                                                                                                                                                    | 16 - 81 yr Return Period<br>Cylonic<br>Event                                                                                                                                                | 81-430 yr Return<br>Period Cylonic<br>Event                                                                                                                                                  | >430 yr Return Period<br>Cylonic<br>Event                                                                                                                                | 10,000 yr Return<br>Period Cylonic<br>Event                                                                                                                                 |
|                                                         | 10 YRP<br>Non -Cyclonic Event                                                                                                                                                                                                                                                                                                                                                | 5 YRP<br>Cyclonic Event                                                                                                                                                           | 10 YRP<br>Cyclonic Event                                                                                                                                                                       | 50 YRP<br>Cyclonic Event                                                                                                                                                                    | 200 YRP<br>Cyclonic Event                                                                                                                                                                    | 1,000 YRP<br>Cyclonic Event                                                                                                                                              | 10,000 YRP<br>Cyclonic Event                                                                                                                                                |

#### Return Period

1 Full de-man if MODU in the field and forecast of a cyclone, with an intensity greater than the MODU mooring capability passing over the field (within cone of uncertainty).

|  |                                                                                       |
|--|---------------------------------------------------------------------------------------|
|  | Phase 3 - de-man facility (0 POB)                                                     |
|  | Phase 2 - discretionary down-man to 90 POB                                            |
|  | Phase 1 - discretionary down-man to 150 POB                                           |
|  | No demob - consider down-man of non-essential personnel unable to work due to weather |

|  |                                                                                                                                 |
|--|---------------------------------------------------------------------------------------------------------------------------------|
|  | Process Operational                                                                                                             |
|  | No pattern Process shutdown and depressured.                                                                                    |
|  | Outside code design limitation of mooring. Shutdown process, close SSIVs and depressure topsides. Consider depressuring risers. |

**Figure 5-3: Severity of cyclonic event over FPSO**

### 5.6.3 MODU de-man

Each MODU shall have its own cyclone de-man plan and shall de-man in accordance with its own cyclone response plan. Full de-man may be required once the well has been made safe.

The drilling cyclone response will commence once the cyclone reaches a radius to gales trigger point which is equivalent to the duration to make the well safe and complete de-man with a margin allowed.

However, the MODU share the same helicopter fleet with the rest of the field and therefore de-man activities need to be co-ordinated across the field.

Once a cyclone alert has been announced the Drilling Supervisor shall inform the Field manager of the POB, the POB required to make the well safe, the time required to make the well safe and the trigger point to commence this activity.

The Field Manager shall instruct the MODU OIM to commence well safe and de-man activities earlier if the field cyclone response requires an earlier cyclone response from the MODU.

### 5.6.4 Development of field down manning plan

The development of the down manning plan for the field and the prioritisation of down man between facilities is the responsibility of the Field Manager. The Cyclone Critical Path Calculation Tool' will be used to aid in determining the time line for these activities.

The following points should be taken into consideration when developing the down manning plan:

- Field POB;
- Notify IMT leader if initiating down manning from offshore facilities;
- Available helicopter fleet. Close consultation with the Aviation Manager and the helicopter service provider is crucial to ensure the helicopter fleet capability is considered;
- Daylight helicopter flight limitations. Night time flying shall be avoided unless in an emergency and Company Aviation Manager has approved night time flying;
- The OSV, PSV and any anchor handling support vessels shall remain in the field for as long as possible to cover the last helicopter flight however the master may depart the field earlier at his discretion. Close consultation between the Field Manager, Company Logistics Marine advisor and Vessel master is crucial in early decision making to retain the support vessels in the field for as long as possible;
- Where spare beds are available on a Flotel, then these maybe used to facilitate the down manning of personnel. This may be by bridge transfer prior to disconnect or through helicopter transfer as the Flotel departs the field; and
- If a tropical low or a tropical cyclone has formed, or is forecast to form in the Green Alert, and is predicted by the BoM to move away from the CPF and FPSO facility's, no Down-Manning is required. The systems development should be monitored by the Facility OIMs and Field Manager.

### 5.6.5 Down manning personnel

Any decision to deman shall be taken by the facility OIM in their statutory role as Person In Charge of the facility. Generally this shall be when the forecast trigger points for the field which ensure deman status are met. Normally this will be done in full consultation with Field Manager, onshore Operations Management and logistics support. The Vice President Operations will be immediately notified.

The Field Manager in consultation with the respective OIM's may also initiate deman at any time. No further approval is required although normally full consultation with GM Offshore Operations would be expected in advance of commencement.

The GM Offshore Operations, or Vice President Operations may initiate a full deman at any time. This instruction would normally be communicated through the line. The GM Offshore Operations would instruct the Field Manager to commence deman. This could occur outside the trigger points of this plan where there are other risks to be considered.

Any deman would be in accordance with the aviation logistics down manning plan for the field.

The Company Aviation Manager is responsible for the implementation of the Aviation Logistics down manning plan for the field. The basis of this plan will be to down man personnel primarily to Broome and then onwards to Perth. Back up locations for Broome include:

- Djarindjin / Lombadina (fixed wing transit to Broome);
- Derby (fixed wing transit to Broome) and commercial / contracted fixed wing to Perth if safe to do so;
- Truscott – (backup based upon cyclone movement); and
- Darwin – (backup based upon cyclone movement).

The Field Manager shall liaise with the Company Logistics Aviation Manager on a regular basis to identify any changes to the Aviation Logistics down manning Plan.

All alternative helicopter resources shall be managed by the Company Logistics Aviation Manager.

It is possible that fixed wing operations to Broome will be affected by inclement weather while Truscott remains operational. In this case down-manned personnel will be transferred from Truscott to another location via a fixed wing aircraft. Potential locations include Perth and Darwin. From here further transport arrangement will be made on a case by case basis.

### 5.6.6 Re-manning personnel

A remanning plan will be developed as soon as practical - when advised by the BoM and confirmed by the Facility OIMs, Field Manager and responsible Perth based Management, the plan will be implemented to re-man the CPF, FPSO and MODU. The facility OIM provides the approval for the re-manning of their installation to commence in their statutory role as Person In Charge of the facility.

The Vice President Operations will be advised prior to commencing remanning activities.

It is likely that other vessels have sailed to safe locations and helideck motion may preclude landings for a day or two. Re-manning of the CPF, FPSO and MODU will normally use a combination of Broome, Derby and Truscott as bases.

The time taken to re-man installations to full operating capacity will be governed by:

- Damage condition and status of facility;
- Time to recover power and life support systems;
- Time taken to relocate personnel from Perth to Broome / Darwin / Truscott etc.;
- Ambient weather conditions and the effect on available payloads;
- Aircraft availability and maintenance following de-man operations; and
- Crew flight and duty times available following de-man operations.

#### **5.6.7 Routine crew change flights**

On becoming aware of a cyclonic event developing, the Facility OIM and Field Manager will review the forthcoming crew changes and upcoming work activities that require mobilisation of personnel. At their discretion they may bring forward or delay the crew change depending on the path of the cyclone. Every effort should be made to avoid the risk of stranding personnel in Broome (or any location onshore in the cyclone's path).

#### **5.6.8 Travel and accommodation**

Coordination of the movement of personnel down manned during a cyclone shall be performed in conjunction with Company Logistics Aviation Manager, Helicopter Provider Base Manager and Company Travel Manager.

Personnel down manned from the CPF, FPSO and MODU will generally be sent to Perth for the duration of the cyclone. In the event of a facility de-man a skeleton team may be accommodated in Broome to facilitate.

A person appointed by the OIM, will liaise with Company Aviation Logistics regarding hotel accommodation.

Company Aviation Logistics are responsible for providing accommodation for company staff. Contractor companies are responsible for their personnel and shall be notified by Company Aviation Logistics of the down man plan when activated.

Truscott Airport does not have cyclone-proof accommodation. All personnel down manned to Truscott will need to be transferred to Broome, Darwin, Perth or other suitable location via fixed wing aircraft.

### **5.7 Emergency response plans**

The CPF, FPSO, MODU, Flotels and the various vessels within the field shall have Emergency Response Plans (ERP's), which are risk based and have contingencies in place to deal with emergency events that may occur as a result of extreme weather event conditions.

### **5.8 Tropical cyclone drills and exercises**

Immediately prior to and throughout the cyclone season regular cyclone drills shall be conducted on each facility in accordance with the Company Emergency & Crisis Management Standard. These are designed to ascertain the state of readiness of all personnel on the facility, lines of communication and key.

Information from cyclone event exercise drills shall be reviewed to identify trends and improvement opportunities.

## 5.9 Post cyclone event activities

The following activities are to be coordinated following a tropical cyclone event offshore:

**Table 5-5: Post cyclone activities**

| CYCLONE CATEGORY     | CPF                    | FPSO                          |
|----------------------|------------------------|-------------------------------|
| Tropical Low         | Refer to Section 5.9.1 | Refer to Section 5.9.1        |
| Cat 1 Cyclone        | Refer to Section 5.9.1 | Refer to Section 5.9.1        |
| Cat 2 Cyclone        | Refer to Section 5.9.1 | Refer to Section 5.9.1        |
| Cat 3 Cyclone        | Refer to Section 5.9.1 | Refer to Section 5.9.1        |
| Cat 4 Cyclone        | Refer to Section 5.9.1 | Refer to Section 5.9.1, 5.9.2 |
| Cat 5 Cyclone        | Refer to Section 5.9.1 | Refer to Section 5.9.1, 5.9.2 |
| >= 10,000 year storm | Refer to Section 5.9.1 | Refer to Section 5.9.1, 5.9.2 |

### 5.9.1 Tropical Cyclone Red Alert Triggered Asset Integrity Inspections

In the event a cyclone Red Alert is reached then a Post Cyclone Event Inspection Decision Note (X900-AF-TPL-70000) shall be completed by a TA's responsible for Topside Structure, Hull Structure, Mooring and Subsea (incl SPS, URF and GEP).

The decision note will describe if an associated post cyclone inspection is required with references to work orders and appropriate records from the inspection.

Alternatively, if no post cyclone inspection is required the decision note shall describe the reasoning, with appropriate details or referenced records. The template shall be used to create a separate record for each Red Alert event in smart plant.

### 5.9.2 FPSO Firewater Pump Pup Piece Inspection

It has been identified that there is potential for clash, under certain conditions, between the two forward firewater pump inlet pup pieces of the external plug and the mooring chains.

Following a cyclone event passing through the Ichthys field with a severity of CAT 4 and above, the two FPSO forward firewater pump systems are to be tested prior to re-start to ensure that there is no reduction in volume of water. This should address the following criteria:

1. No reduction in volume of discharge water observed:  
Indicates that there is no damage or clashing with the mooring chains, Forward Firefighting System is intact.
2. A reduction is observed in any or both firewater discharge volumes:  
Indicates that the inlet pup piece is blocked due to potential collapse at the tip of the pup piece, resulting from clashing with the mooring chains.
3. If both the forward firewater systems give indication of blockage:  
The OIM will determine whether it is safe to re-start the facility with reduced firefighting capability at the forward end.

## 6 ROLES AND RESPONSIBILITIES

The key roles and associated responsibilities for activities covered by this plan are summarised in Table 6-1.

**Table 6-1: Key roles and responsibilities**

| ROLES                        | RESPONSIBILITIES                                                                           | NOTES                                                                                                                                                                                                                                                    |
|------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Perth based Management Team. | Perth based Management Team support the execution of the Offshore Cyclone Management Plan. | <ul style="list-style-type: none"> <li>The General Manager Offshore operations shall be the focal point for the Perth based Management Team.</li> </ul>                                                                                                  |
| Vice President Operations    | Documentation Development                                                                  | <ul style="list-style-type: none"> <li>Accountable for the update of this Cyclone Response Management Plan.</li> <li></li> </ul>                                                                                                                         |
|                              | Operational continuity                                                                     | <ul style="list-style-type: none"> <li>Ensure operational preparedness for the start of the cyclone season.</li> <li>Ensure operations continuity planning in the event of disruption to production operations as a result of cyclonic event.</li> </ul> |
|                              | Business continuity                                                                        | <ul style="list-style-type: none"> <li>Ensure business readiness for start of cyclone season.</li> <li>Ensure business continuity planning in the event of disruption to production operations as a result of cyclonic event.</li> </ul>                 |
| OSC Lead                     | Daily Cyclone meeting                                                                      | <ul style="list-style-type: none"> <li>Co-ordinate the daily cyclone response meeting. Issue minutes and track actions.</li> </ul>                                                                                                                       |
| Aviation Manager             | Monitor Tropical Low / Cyclone                                                             | <ul style="list-style-type: none"> <li>Check the latest forecast issued by the BoM.</li> </ul>                                                                                                                                                           |
|                              | Aviation readiness                                                                         | <ul style="list-style-type: none"> <li>Liaise with Field manager and OIM's regarding helicopter capabilities for potential down manning; and</li> <li>Liaise with Bristows.</li> </ul>                                                                   |
|                              | Plan down manning                                                                          | <ul style="list-style-type: none"> <li>Plan down manning with Operations Management and Field Manager prior to Cyclone season.</li> </ul>                                                                                                                |
|                              | Plan up manning                                                                            | <ul style="list-style-type: none"> <li>Plan up manning with Field Manager and OIM's for when cyclone threat has passed.</li> </ul>                                                                                                                       |

| ROLES                                                            | RESPONSIBILITIES                                                                                                  | NOTES                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Field Manager<br>* NOTE: CPF OIM holds the role of Field Manager | Designated HSE Authority for Ichthys Field                                                                        | <ul style="list-style-type: none"> <li>The CPF Ichthys Explorer Offshore Installation Manager (OIM) shall assume the role of Field Manager, and is the Designated HSE Authority (DHSEA) for the field. The Field Manager is responsible for Cyclone response, SIMOPS and Emergency Response.</li> </ul>                                                                                              |
|                                                                  | Monitor Tropical Low / Cyclone                                                                                    | <ul style="list-style-type: none"> <li>Check the latest forecast issued by the BoM; and</li> <li>Record BoM forecasts on Cyclone Map.</li> <li>Co-ordinate offshore input to the daily cyclone report.</li> </ul>                                                                                                                                                                                    |
|                                                                  | Cyclone readiness                                                                                                 | <ul style="list-style-type: none"> <li>Ensure the CPF, FPSO, MODU and all vessels are readied well in advance of gale force winds; and</li> <li>Focal point for communications to the Onshore Support Team and the Company IMT.</li> </ul>                                                                                                                                                           |
|                                                                  | Consult with Facility OIMs, and any other vessels or MODU's in the field on the cyclone potential                 | <ul style="list-style-type: none"> <li>Chairs the daily cyclone response call.</li> <li>Request status of tie down process and discuss down manning potential.</li> </ul>                                                                                                                                                                                                                            |
|                                                                  | Implementation of this plan on TC event occurring                                                                 | <ul style="list-style-type: none"> <li>Implementing these procedures in the event of a Tropical Low or Tropical Cyclone developing; and</li> <li>Responsible for monitoring execution of the plans and ensuring that all facilities and vessels are acting in accordance with the plans.</li> </ul>                                                                                                  |
|                                                                  | Demobilisation management by defining priorities if needed (between the various Facilities and Vessels/MODUs).    | <ul style="list-style-type: none"> <li>Communication with surrounding facilities / Aviation Manager in order to ensure demobilisation of all facilities in field area;</li> <li>Develop the Field down manning plan defining priorities between facilities; and</li> <li>Any conflict in priorities between the Facilities, Vessels and MODUs shall be co-ordinated by the Field Manager.</li> </ul> |
|                                                                  | Plan up manning management by defining priorities if needed (between the various Facilities and Vessels / MODUs). | <ul style="list-style-type: none"> <li>Plan up manning for when cyclone threat has passed; and</li> <li>Develop the Field up manning plan defining priorities between facilities.</li> </ul>                                                                                                                                                                                                         |
|                                                                  | Consult with onshore ILNG Plant Manager                                                                           | <ul style="list-style-type: none"> <li>Responsible for keeping the onshore LNG Plant Manager informed of any impact the cyclone may have on gas export.</li> </ul>                                                                                                                                                                                                                                   |

| ROLES                                 | RESPONSIBILITIES                                          | NOTES                                                                                                                                                                                                                                                                                              |
|---------------------------------------|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OIM – (CPF and FPSO)                  | Monitor Tropical Low / Cyclone                            | <ul style="list-style-type: none"> <li>Check the latest forecast issued by the BoM; and</li> <li>Record BoM forecasts on Cyclone Map.</li> </ul>                                                                                                                                                   |
|                                       | Keep facility personnel up to date with progress of TL/TC | <ul style="list-style-type: none"> <li>Update cyclone information board;</li> <li>Brief people as required; and</li> <li>Maintain a log of events, meetings weather reports and personnel movements.</li> </ul>                                                                                    |
|                                       | Consult with Field Manager on the cyclone potential       | <ul style="list-style-type: none"> <li>Inform Field Manager of tie down progress and potential for down manning;</li> <li>Inform Field Manager of status of facility on a regular basis; and</li> <li>Advise status of ballasting time of facility.</li> </ul>                                     |
|                                       | Down-man/de-man facility                                  | <ul style="list-style-type: none"> <li>Responsible for decision to down-man or de-man personnel from facility in accordance with this plan; and</li> <li>Any conflict in priorities between the Facilities, vessels and MODUs shall be co-ordinated by the Field Manager.</li> </ul>               |
|                                       | Plan up manning                                           | <ul style="list-style-type: none"> <li>Plan up manning for when cyclone threat has passed.</li> </ul>                                                                                                                                                                                              |
|                                       | Advise Marine requirement for an PSV                      | <ul style="list-style-type: none"> <li>PSV required to be put on standby to cover down manning of the facility by Helo (ditching MAE)</li> </ul>                                                                                                                                                   |
| Operations Team Leader                | Monitor Tropical Low / Cyclone                            | <ul style="list-style-type: none"> <li>Is responsible for establishing the critical path and coordinating an orderly securing of the facility; and</li> <li>Is responsible for keeping the installation's OIM fully apprised of the tie-down progress in relation to the critical path.</li> </ul> |
| Production & Maintenance Team Leaders | Initiate and undertake cyclone readiness                  | <ul style="list-style-type: none"> <li>Deploy persons to begin preparing for cyclone;</li> <li>Suspend all non-essential procedures onboard; and</li> <li>Ensure no maintenance activity required on key equipment is commenced.</li> </ul>                                                        |
|                                       | Start cyclone preparations                                | <ul style="list-style-type: none"> <li>Deploy personnel to secure the facility as per (CPF or FPSO) Tie down check list.</li> </ul>                                                                                                                                                                |
|                                       | Accommodation vent/hatch covers                           | <ul style="list-style-type: none"> <li>Closure of the vents and hatches to reduce the likelihood of the ingress water from the rough seas.</li> </ul>                                                                                                                                              |

| ROLES                                  | RESPONSIBILITIES                                        | NOTES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Offshore Operations Management Team    | Cyclone review                                          | <ul style="list-style-type: none"> <li>Conduct walk around inspection of facility to confirm cyclone readiness.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Facility Medic                         | Medical Centre                                          | <ul style="list-style-type: none"> <li>Notify OIM of Medical Centre readiness status;</li> <li>Prepare for short term stowage of the drugs. (Esky with Ice blocks); and</li> <li>Secure Esky and medical centre.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Hotel Services Coordinator (Camp Boss) | Accommodation and catering management                   | <ul style="list-style-type: none"> <li>Ensure Galley and associated equipment secure and locked as required.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Company Site Representative            | Manage impact of cyclone response on Project activities | <ul style="list-style-type: none"> <li>Support the OIM by liaising with Project Management to cancel or defer activities by contractors and vendors in alignment with the facilities cyclone response.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Drilling MODU's                        | MODU readiness and de-manning/up-manning.               | <ul style="list-style-type: none"> <li>The Company Senior Drilling Supervisor is responsible for keeping the Field Manager up to date regarding time to make safe based on drilling activity and any planned cyclone de-manning/up-manning;</li> <li>The Company Senior Drilling Supervisor will liaise with Company Logistics regarding aviation capabilities for de-manning/up-manning; and</li> <li>The OIM will prepare the facility for evacuation in accordance with the approved Cyclone contingency plan, and continually update the Senior Drilling Supervisor of the status and any issues or concerns. Any conflict in priorities between the Facility, Vessels and MODUs shall be resolved by the Field Manager.</li> </ul> |
| Contractor Vessel Masters              | Monitor Tropical Low / Cyclone                          | <ul style="list-style-type: none"> <li>Check the latest forecast issued by the BoM.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                        | Implement Cyclone Plan                                  | <ul style="list-style-type: none"> <li>Implement Vessel Cyclone Response Plan;</li> <li>Notify Field Manager of actions to date and sail away regarding any planned departure from the Ichthys location; and</li> <li>The Vessel Master is responsible for taking action to avoid a cyclone.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Company Marine Logistics Advisor       | Monitor Tropical Low / Cyclone                          | <ul style="list-style-type: none"> <li>Check the latest forecast issued by BoM.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                        | Implement Cyclone Plan                                  | <ul style="list-style-type: none"> <li>Provide support to Field Manager in management of infield vessel cyclone response activities.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## 7 REFERENCE AND COMPLIANCE DOCUMENTS

The documents listed below are relevant to the execution of this plan:

- Reference documents (R) are documents referred to in the course of completing this plan.
- Compliance documents (C) include all standards, regulatory governance, contracts, business rules or policies applicable to this plan.

**Table 7-1: Reference and compliance documents**

| DOCUMENT NAME                                                | R | C | DOCUMENT NUMBER          |
|--------------------------------------------------------------|---|---|--------------------------|
| <b>Policies</b>                                              |   |   |                          |
| Health, Safety, Security, Environment and Quality Policy     |   | C | 0000-AH-POL-70000        |
| <b>Standards</b>                                             |   |   |                          |
| Emergency and Crisis Management Standard                     |   | C | 0000-AH-STD-60051        |
| Extreme Weather Management Standard                          |   | C | 0000-AH-STD-60053        |
| <b>Procedures, Plans</b>                                     |   |   |                          |
| NT Extreme Weather (Cyclone) Management Plan                 | R |   | L060-AH-PLN-60003        |
| Adverse Weather (Offshore) Procedure                         |   | C | X060-AH-PRC-60017        |
| Offshore Terminal Handbook                                   |   | C | X060-AI-MAN-60002        |
| Support & Supply Vessel Cyclone Response Procedures          |   | C | A060-AW-PRC-0002         |
| FPSO Trim and Stability Booklet                              | R | C | S930-AS-REP-10007        |
| MÆRSK DELIVERER Tropical Cyclone Response Plan               |   | C | Drilling Contract 801555 |
| Season Cyclone Response Plan (Logistics Aviation)            |   | C | C062-AG-PLN-10005        |
| Offshore Cyclone Management Plan - Addendum                  |   | C | C050-AH-PLN-10004        |
| CPF Emergency Response Plan                                  |   | C | B060-AH-PLN-60001        |
| FPSO Emergency Response Plan                                 |   | C | S060-AH-PLN-60001        |
| Cyclone Preparedness Plan (Flotel International)             |   | C | X911-AH-PLN-10000        |
| <b>Guidelines, Work Instructions, Forms and Templates</b>    |   |   |                          |
| CPF Cyclone Season Checklist                                 | R | C | X060-AH-FRM-60041        |
| FPSO Cyclone Season Checklist                                | R | C | X060-AH-FRM-60042        |
| Cyclone Tracking Map                                         | R | C | X060-DH-LAD-60001        |
| Cyclone Critical Path Duration Calculation Tool              | R | C | X060-AH-CAL-60001        |
| INPEX Australia Major Event Internal Notification Flow Chart |   | C | 0000-AH-FRM-60028        |

## **8 MONITOR, REVIEW AND IMPROVE**

### **8.1 Monitoring**

The Vice President Operations or their delegate is accountable for monitoring the performance of this plan through regular internal reviews and self-assessments.

### **8.2 Review**

#### **Internal review**

The General Manager HSE or their delegate is responsible for initiating the review process for this document.

This plan must be reviewed every 1 year or after any significant event involving failures in the Offshore Cyclone Management Plan process that have learnings related to the plan.

#### **External review**

No external review process is considered relevant to this procedure.

### **8.3 Metrics**

Metrics are yet to be developed and can be considered after this plan has been in place for at least 12 months.

### **8.4 Improvement**

Improvements to the processes described in this procedure will be identified through regular reviews by the Vice President Operations or their delegate and through feedback from stakeholders.

## 9 ABBREVIATIONS AND DEFINITIONS

**Table 9-1: Abbreviations and definitions**

| ABBREVIATION / TERM    | DEFINITION                                                                                                                                                                                                                                                                               |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| All Clear              | A cyclone has been downgraded by the Bureau of Meteorology to a state less than a cyclone. Trigger for White Alert Status                                                                                                                                                                |
| AFSU                   | Approved for start up                                                                                                                                                                                                                                                                    |
| AMSA                   | Australian Maritime Safety Authority established under the <i>Australian Maritime Safety Authority Act 1990</i> .                                                                                                                                                                        |
| AUSREP                 | Australian Ship Reporting System established under Division 14 of Part IV of the <i>Navigation Act 1912</i> and administered by Marine Order 63.                                                                                                                                         |
| Yellow Alert           | Cyclonic gales are between 1666km (900NM) and 2592km (1400NM) from the facilities or a tropical low is in the same area and likely to develop into a cyclone within 24 hours.                                                                                                            |
| BoM                    | Australian Bureau of Meteorology.                                                                                                                                                                                                                                                        |
| CAT (Cat.)             | Category (Category strength of a Cyclone)                                                                                                                                                                                                                                                |
| Company                | Any operation or business activity under the control of Company Executive Management in Australia, whether located in Australia or another location (as a branch office).                                                                                                                |
| Critical Path Duration | The minimum time required to undertake all activities needed to ensure the safety of the facility during periods of cyclone activity.                                                                                                                                                    |
| CPF                    | Central Processing Facility now named 'Ichthys Explorer'.                                                                                                                                                                                                                                |
| Cyclonic Activity      | A tropical cyclone or tropical depression.                                                                                                                                                                                                                                               |
| Cyclone Season         | The official cyclone season is from 1 November to 30 April, although cyclone activity can occur outside this period.                                                                                                                                                                     |
| Cyclone Warning        | A cyclone warning is issued by the Bureau of Meteorology Special Services Unit (SSU) as soon as gales are expected to affect the field within 24 hours. Warnings are updated every three hours or more frequently if the cyclone is under radar surveillance and posing a severe threat. |
| Cyclone Watch          | Issued by the BoM if a cyclone is affecting or is expected to affect coastal communities within 24 hours.                                                                                                                                                                                |

| ABBREVIATION / TERM   | DEFINITION                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Daylight Helicopter   | Company Aviation Standard specifies that routine helicopter operations (including down manning due to cyclonic activity) take place only during daylight hours (06:00 to 18:00 approx.). Critical path calculations must account for daylight helicopter flight limitations. Medivac emergency flights are exempt from this condition. Refer to Aviation Standard for further details |
| De-manning            | Removal of all facility POB.                                                                                                                                                                                                                                                                                                                                                          |
| Down manning          | A planned event to reduce the number of persons on a facility where there is no immediate risk to personnel.                                                                                                                                                                                                                                                                          |
| ERP                   | Emergency Response Plan                                                                                                                                                                                                                                                                                                                                                               |
| Flash Cyclone Warning | This is the first warning issued by the Bureau of Meteorology to the facility associated with a potential cyclone that may affect the facility. It is also issued when major changes to previous warnings are necessary.                                                                                                                                                              |
| FM                    | Field Manager                                                                                                                                                                                                                                                                                                                                                                         |
| FRC                   | Fast Rescue Craft.                                                                                                                                                                                                                                                                                                                                                                    |
| FPSO                  | Floating Production Storage & Offloading Facility now named 'Ichthys Venturer'.                                                                                                                                                                                                                                                                                                       |
| Gale Force Winds      | Winds in excess of 63km/h (17m/s or 34 kt). Depending on the severity of the cyclone, these can be expected when the centre of the cyclone is between 185 to 370km (100 to 200NM) from the facility.                                                                                                                                                                                  |
| Green Zone            | Tropical cyclones or tropical depressions forming in the Green Zone (Figure 4-1) and forecast by the BoM to move away (West or South –West of the Ichthys Field area) are not likely to impact the CPF and FPSO facilities.                                                                                                                                                           |
| GMDSS                 | Global Maritime Distress and Safety System                                                                                                                                                                                                                                                                                                                                            |
| Heavy Weather         | Winds in excess of 63km/h (17m/s or 34 kt) and sea and swell greater than 3m.                                                                                                                                                                                                                                                                                                         |
| Hs                    | Significant wave height                                                                                                                                                                                                                                                                                                                                                               |
| IHUC                  | Installation Hook-up and Commissioning                                                                                                                                                                                                                                                                                                                                                |
| IMT                   | Incident Management Team                                                                                                                                                                                                                                                                                                                                                              |
| Knot (kt)             | Knot (kt) is a unit of speed equal to one nautical mile per hour (which is equivalent to 1.852 km/h or 0.514 m/s)                                                                                                                                                                                                                                                                     |
| km/h                  | Kilometres per hour                                                                                                                                                                                                                                                                                                                                                                   |

| ABBREVIATION / TERM       | DEFINITION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MAE                       | Major Accident Event                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| MODU                      | Mobile Offshore Drilling Unit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| NM                        | The standard nautical mile is 1852 metres by international agreement.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| OIM                       | Offshore Installation Manager                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| OSV                       | Offshore Support Vessel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| PAX                       | Passengers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| POB                       | Personnel on Board                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| PSV                       | Production Support Vessel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Red Alert                 | When the centre of a cyclone is less than 750km (405NM) from the facilities or when a tropical depression less than 750km (405NM) from the facility and is likely to develop into a cyclone within 24 hours.                                                                                                                                                                                                                                                                                                                                                                                               |
| RCC                       | The Rescue Coordination Centre located in Canberra, Australia responsible for coordinating search and rescue across the Australian Search and Rescue Region                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| TC                        | Tropical Cyclone                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| TL                        | Tropical Low                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| TEMPSC                    | Totally Enclosed Motor Propelled Survival Craft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Tropical Cyclone          | The Bureau of Meteorology defines tropical cyclone as "a non-frontal low pressure system of synoptic scale developing over warm waters having organised convection and a maximum mean wind speed of 63 km/h (17m/s or 34 kt) or greater extending more than half-way around near the centre and persisting for at least six hours." Tropical cyclones undergo a number of development phases, from a tropical disturbance, often manifested in organised convection and elevated thunderstorm activity, to the formation of a tropical low, and then, if conditions are favourable, to a tropical cyclone. |
| Tropical Depression / Low | A warm low with a closed isobar surrounding its centre.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| TL                        | Tropical Low                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| UHF                       | Ultra High Frequency (radio)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| VHF                       | Very High Frequency (radio)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| ABBREVIATION / TERM | DEFINITION                                                                                                                                                                                                                                            |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Orange Alert        | Cyclonic gales are between 750km (405NM) and 1666km (900NM) from the facilities or a tropical low is in the same area and is likely to develop into a cyclone within 24 hours.                                                                        |
| White Alert         | The threat of the extreme and or adverse weather event has passed and the "all clear" has been issued by the regional or country meteorological service for extreme weather events or a commercial meteorological service for adverse weather events. |

For general terms please refer to the Company Global Glossary which is available in the BMS.

## 10 DOCUMENT ADMINISTRATION

### Document endorsement

| ENDORSER          | AREA                                  |
|-------------------|---------------------------------------|
| Jason Stepatschuk | Operations Support Manager            |
| Gino Zaza         | Security & Emergency Response Manager |

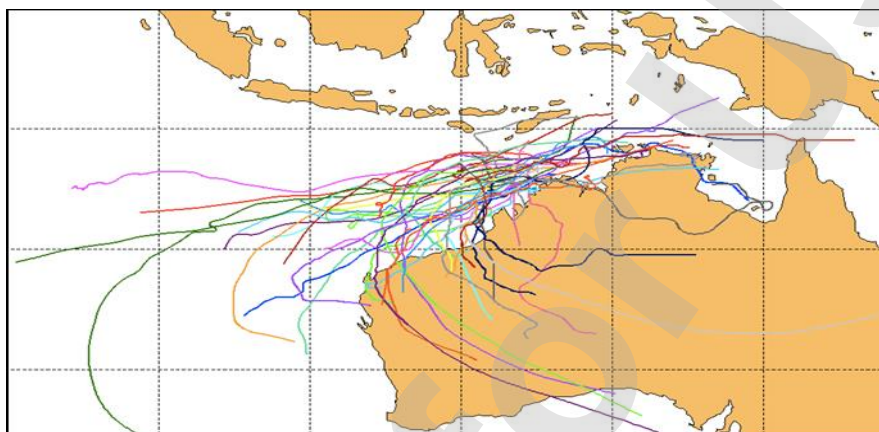
### Document squad check list

| NO. | REVIEWED BY        | AREA                                  |
|-----|--------------------|---------------------------------------|
| 1   | Manuel Sessink     | Vice President Drilling               |
| 2   | Neville Carrington | Vice President HSE                    |
| 3   | Rob Elkington      | GM Offshore Operations                |
| 4   | Jason Stepatschuk  | Operations Support Manager            |
| 5   | Gino Zaza          | Security & Emergency Response Manager |
| 6   | David Robotham     | Offshore Operations HSE Manager       |

## Appendix A: TROPICAL LOW & CYCLONE BACKGROUND

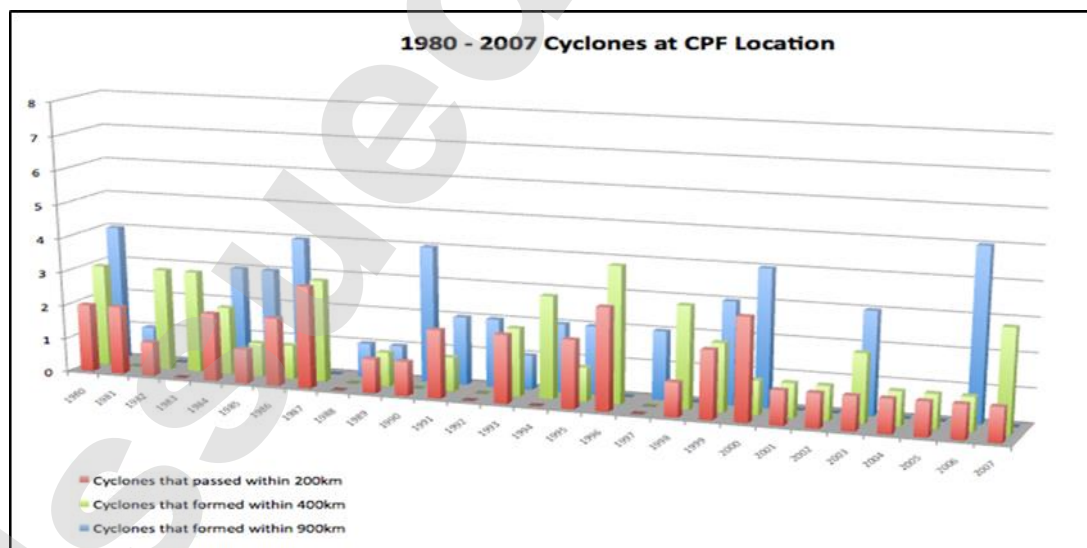
The cyclone season in the Ichthys Field location in the northern area of Australia, extends from the 1st of November until the 30th of April, however cyclones can occur outside of that period. Appendix Figure A-1 depicts Tropical Cyclone tracks that have formed or moved through the Ichthys Field location.

The CPF and FPSO, Drilling MODU's and EPCI vessels are located in a zone where tropical systems tend to develop and move west and south-west away from the area before reaching cyclone intensity. Historical trends show that the majority of cyclonic activity occurs in the area between the facility's and the Western Australian coast as shown in Appendix Figure A-1 below. However, on occasions, storms of cyclonic strength do occur and can affect the Ichthys Field location.



**Appendix Figure A-1: Tracks of the 37 TC's between 1980 & 2007 that came within 200km of facilities**

Appendix Figure A-2 below details the number of tropical cyclones that passed within 200km (108NM), 400km (216NM) and 900km (486NM) of the Ichthys Field location.



**Appendix Figure A-2: Tropical cyclones graph relating to Ichthys field**

Reference X930-AW-REP-10031 Intra-seasonal Variations in Cyclone Risk Near Ichthys.

## Tropical cyclone severity categories

Tropical Cyclones are low pressure systems that form over warm tropical waters and have gale force winds (sustained winds of 63 km/h (17m/s or 34 kt) or greater and gusts in excess of 90km/h) near the TC centre.

Gale force winds associated with a TC can extend hundreds of kilometres from the cyclone centre. If the sustained winds around the centre reach 118km/h (33m/s or 64kt) with gusts in excess 165km/h (46m/s or 89kt) then the system is called a severe tropical cyclone.

The circular eye or centre of a tropical cyclone is an area characterised by light winds and often clear skies. Eye diameters are typically twenty nautical miles but can range from under five nautical miles (9km) to over fifty nautical miles (92km).

An estimate of cyclone severity is included in all tropical notifications issued by the Bureau of Meteorology (BoM). The severity of a tropical cyclone is described in terms of categories ranging from 1 to 5 related to the zone of maximum winds. Tropical cyclones classified as severe, corresponds to cyclone categories 3, 4 and 5. These categories will produce 'very destructive winds' which have sustained surface winds of at least 118km/h (33m/s or 64kt) near the centre and gusts of at least 165km/h (46m/s or 89kt) at the edge. Appendix Table A-1 details the tropical cyclone severity categories used by the BOM.

**Appendix Table A-1: Tropical cyclone severity categories**

| CATEGORY | AVERAGE MAX WIND SPEED<br>(10 MIN MEAN)<br>km/h | STRONGEST WIND GUST (KM/H)<br>(3S PERIOD)<br>km/h | AVERAGE CENTRAL PRESSURE<br>hPa | WAVE HS<br>(BEAUFORT SCALE) |        |
|----------|-------------------------------------------------|---------------------------------------------------|---------------------------------|-----------------------------|--------|
|          |                                                 |                                                   |                                 | Min Hs                      | Max Hs |
| 1        | 63 – 90                                         | <125                                              | >985                            | 5.5m                        | 7.5m   |
| 2        | 90 – 125                                        | 125 – 170                                         | 970 – 985                       | 7.0m                        | 10.0m  |
| 3        | 125 – 165                                       | 170 – 225                                         | 955 – 970                       | 9.0m                        | 12.5m  |
| 4        | 165 – 225                                       | 225 – 280                                         | 930 – 955                       | 11.5m                       | 16.0m  |
| 5        | >225                                            | >280                                              | <930                            | 14m+                        | >16.0m |

## Tropical cyclone advice

Weather forecasting is a critical component in determining the potential impact on the offshore facilities. Company has executed contracts with the Bureau of Meteorology (BOM) and MeteoGroup Offshore Weather Service to provide meteorological and oceanographic forecasts for all areas of Company activities. As a requirement a daily general outlook and potential for cyclone development off the Western Australian coast will be provided.

The following is a table of the BOM forecast types available to offshore operations during the period 1st Nov – 30th April.

**Appendix Table A-2: Types of BoM cyclone forecasts**

| FORECAST                                                  | FREQUENCY<br>(DURING<br>NOVEMBER TO<br>APRIL) | FORECAST AREA OR DISTANCE<br>FROM CLIENT SITE              |
|-----------------------------------------------------------|-----------------------------------------------|------------------------------------------------------------|
| 1. Short Range (3 day)<br>Tropical System<br>Outlook      | Twice daily, every day                        | Forecast area:<br>Longitude 105E - 130E, latitude 5S - 35S |
| 2. Medium Range (7 day)<br>Tropical Cyclone<br>Outlook    | Daily, every day                              | Forecast area:<br>Longitude 105E - 130E, latitude 5S - 35S |
| 3. Long Range (4 week)<br>Tropical Cyclone<br>Outlook     | Weekly on a Tuesday                           | Forecast area:<br>Longitude 105E - 130E, latitude 5S - 35S |
| 4. Computer Model<br>Tropical System<br>Outlook           | Twice daily                                   | Forecast area:<br>Longitude 105E - 130E, latitude 5S - 35S |
| 5. Tropical Cyclone<br>Forecasts (Example TC<br>Forecast) | Information provided<br>by 1. and 2.          | System greater than 600nm from<br>client site              |
|                                                           | 6 hourly (4 per day)                          | System between 600nm -400nm<br>from client site            |
|                                                           | 3 hourly (8 per day)                          | System within 400nm of client site                         |

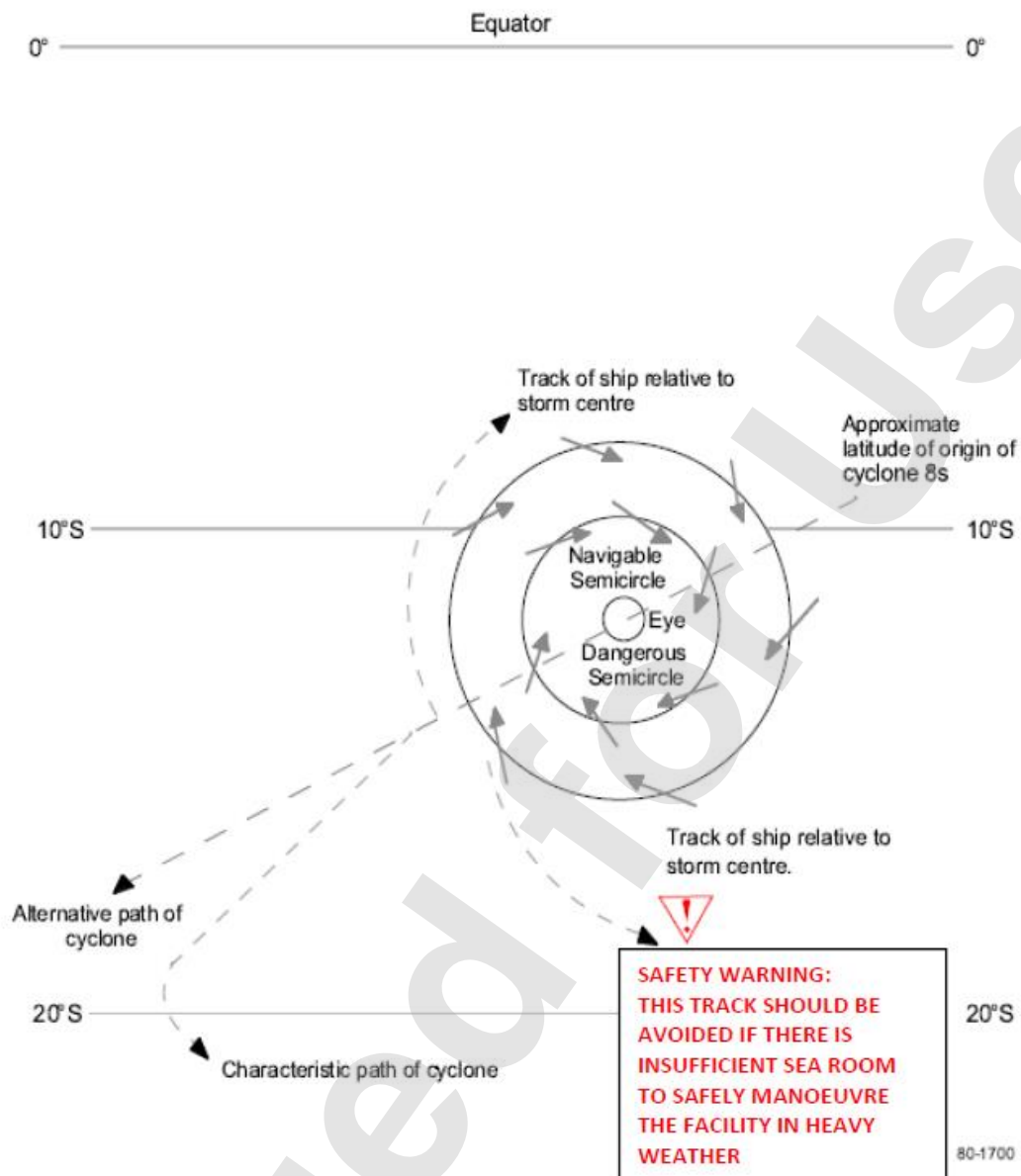
A 'cyclone watch' message indicates that gales are not expected to affect the field within 24 hours and are issued every six hours at pre-determined times. (0700hrs, 1300hrs, 1900hrs and 0100hrs). On receipt of a 'Cyclone Watch' from the BOM, Company and all EPCI Contractors in Ichthys Field shall implement actions in accordance with their Cyclone Response Procedures.

A "Cyclone Warning" message indicates that gale force winds are expected to affect the field within 24 hours. Cyclone warnings are issued every three hours at predetermined times (0700hrs, 10:00hrs, 1300hrs, 1600hrs, 1900hrs, 2200hrs, 0100hrs and 0400hrs). When a cyclone is under radar surveillance close to the field and posing a severe danger, warnings are given at hourly intervals.

A "Cyclone Warning" contains the cyclone's name, its location, intensity, including maximum wind gusts, and its movement. Where relevant, forecasts of heavy rainfall, flooding, and abnormally high tides are included. The warning also gives a forecast of the cyclone's behaviour over the next 12 hours and, when appropriate, the estimated time and place of landfall.

Cyclone information will be obtained from the Bureau of Meteorology and can be accessed at <http://www.bom.gov.au/cyclone/index.shtml>

More information regarding MeteoGroup is available at the following website <http://www.meteogrouppoffshore.com/overview.html>.

**Appendix B: PATH OF TROPICAL CYCLONES IN SOUTHERN HEMISPHERE**

## **Appendix C: CPF CYCLONE SEASON CHECKLISTS**

The following checklists are available to facilitate cyclone planning and are available in the Company DMS:

CPF Pre-Cyclone Season Checklist

- CPF Cyclone Season Checklist: [X060-AH-FRM-60041](#)

## **Appendix D: FPSO CYCLONE RESPONSE CHECKLISTS**

The following checklists are available to facilitate cyclone planning and are available in the Company DMS:

FPSO Cyclone Season Checklist: [X060-AH-FRM-60042](#)

Issued for Use

## Appendix E: CYCLONE CRITICAL PATH DURATION CALCULATION TOOL

To use the cyclone critical path tool enter data only into the cream-coloured cells. The spreadsheet will calculate all other information.

### E.1: Cyclone information

The spreadsheet will either work in metric or marine units. Ensure the correct units are specified.

- Enter user's name, BOM report date & time.
- Enter cyclone name and select the cyclone category from the drop-down box. The cyclone category is used to determine the recommended down man target.
- Enter the latitude & longitude. Verify whether the cyclone location is in the green zone and select the appropriate response from the drop-down box. This information is used to specify the cyclone alert status.
- Enter the central pressure and wind speed. This information is not used in the spreadsheet.
- Enter the distance from cyclone centre to field, the radius to gales and the cyclone speed. This information is provided in the BOM cyclone watch. The information is used to calculate ETA of cyclone at facility and time of last flight for down man. The spreadsheet will use the greater of the actual speed or 5knots.
- Enter the bearing of the cyclone from the facility. This information is not used in the spreadsheet.

The spreadsheet will calculate the cyclone alert status based upon distance to cyclone centre and whether the cyclone is in the green zone (refer to Appendix E).

### E.2: Field POB information

Enter CPF & FPSO actual POB. This information is used to calculate down man requirements.

- Enter CPF & FPSO flotel POB and beds available to company. This information is used to calculate how many additional POB could be down manned by the Flotels.
- Enter MODU POB. This information is used to calculate down man requirements. If the MODU is outside the field enter 0.
- Enter POB for all other vessels in the field. This is for information only and is not used in any calculations.
- Enter target POB for CPF and FPSO. This information is set by the OIM in discussion with the Field Manager.
- The spreadsheet will provide a recommended down man target based on the mooring status and whether a MODU is in the field.

Note: Setting CPF or FPSO POB down man target to match the actual POB will allow the tool to examine the impact on a single facility only.

### E.3: CPF / FPSO mooring status

- Select the mooring status for CPF and FPSO from the drop-down box. Take care to use the operating conditions only after first gas.
- Select whether a MODU is in the field from the drop-down box.

The spreadsheet will provide a recommended down man target based on the mooring status and whether a MODU is in the field.

#### **E.4: MODU status**

For each MODU:

- Enter the duration required to make the well safe. The time shall include a 12-hr margin. This information will be provided by the MODU. It is used to verify the trigger point for MODU activities in response to approaching cyclone.
- Enter MODU minimum crew to make well safe. The information will be provided by the MODU. This information is used by the field Manager and Aviation Logistics to plan priorities between facilities for down man.
- Enter final MODU POB target. The information will be provided by the MODU. This information is used to calculate down man requirements.
- The spreadsheet will calculate the latest time that activities to make the well safe must commence (including the 12 hr margin) and the duration until the trigger point is reached. The spreadsheet uses the final POB to calculate down man requirements.

Note: Setting MODU down man POB target to match MODU POB will allow the tool to examine CPF / FPSO impact only.

#### **E.5: Helicopter status**

Enter the helicopter fleet available for down man activities. This information is available from Aviation Logistics and is used to calculate down man flight requirements.

- Enter the seats available per helicopter. This information is available from Aviation Logistics and is based upon weather conditions. The information is used to calculate down man flight requirements.
- Enter the number of round trips per helicopter per day. Typically, this is two but should be confirmed with Aviation Logistics.
- The spreadsheet will calculate the POB which can be removed each day by helicopter.

#### **E.6: Time to gales calculations**

Enter the contingency margin (typically 12 hrs).

- The spreadsheet will calculate duration to and ETA of cyclone centre at facility, along with duration to and ETA of gale force winds at facility both with and without the time contingency specified.
- The spreadsheet will also calculate the duration to and time of the last down man flight should the ETA for gale force winds be predicted to occur outside daylight hours.

#### **E.7: Management of POB**

Select whether spare beds are to be used on Flotels to help down man facilities from the drop-down box.

- Specify any other POB removed by other means on each day of the down man. This normally would be zero unless specific alternative arrangements have been made.
- The spreadsheet will calculate the down man requirements, time of last flight and latest time down man can commence. If the daily POB profile cells are highlighted red then there is sufficient time available to complete the down man and either the

POB targets need to be revised or alternative means of removing POB will be required.

**E.8: Down man priorities**

Specify from the drop-down box the priorities for down man between MODU and fixed facilities. This information is used to sequence down man of facilities.

**E.9: Individual facility calculations**

Based on the information provided the spreadsheet will calculate number of flights and duration to down man each facility to a number of different POB target.

Report Generated by:

Shaun Cannon

Report

Date: Saturday, 1 November 2014

Time: 14:00:00

Cyclone Information

Tropical Cyclone Meteorological Data

Summary time BOM Forecast

CYCLONE Name

Cat

Location

Central Pressure

Wind Gusts to

Distance of Cyclone Centre From Facility in nautical miles (nmi)

Radius of Gale Force winds in nautical miles (nmi)

Cyclone Speed in knots

Bearing of Cyclone Centre from Facility in degrees

CURRENT CYCLONE ALERT STATUS

#####

Errol

1

12.75 126.1E

996

45

130

50

1

66

RED

80

nmi

148

Km's

Arrival

130 Hrs 5 days 10 hrs 07/11/14 00:00

80 Hrs 3 days 8 hrs 04/11/14 22:00

0 Hrs 0 days 0 hrs 01/11/14 14:00

Calculation of time buffer contingency

Cyclone Contingency Speed (Uses 5nm/h if actual speed is less)

Time until Gale Force Winds at Facility (Hrs) USING SPEED CONTINGENCY BUFFER

Time for downmanning preparation plus Any Other Delays / Accuracy Buffer (Hrs)

Maximum number of flights to Ichthys Field per day

Chopper PAX per return flight

5

nmi/h

9

Km's/hr

16

Hrs

0 days 16 hrs

04/11/14 22:00

0

hrs

3

Flights

17

pax

Last Helo if in daylight hours (Estimated time of Gales)

Last Helo calc. if time above is between 17:30 and midnight (hrs of darkness)

Last Helo if time above is between midnight and 06:00 (hrs of darkness)

Last Helo if in daylight hours (Estimated time of Gales plus contingency)

Last Helo calc. if time above is between 17:30 and midnight (hrs of darkness)

Last Helo if time above is between midnight and 06:00 (hrs of darkness)

80 Hrs 3 days 8 hrs 04/11/14 22:00

04/11/14 17:30

03/11/14 17:30

16 Hrs 0 days 16 hrs 02/11/14 06:00

02/11/14 17:30

01/11/14 17:30

Actual speed

+

TIME BUFFER

Contingency speed

+

TIME BUFFER

Available flying days before gales

Available flights per day

Total Flights available

Flights required to deman CPF

Flights required to deman FPSO

3

3

9

4

4

HELO landing must be carefully managed above 45knots and cannot land over 60kts. Ideally the HELO should have left before gales of greater than 45knots are seen at the facility.

CYCLONE CRITICAL PATH DURATION CALCULATION TOOL.

Management of Personnel

CPF Actual POB

100

Downmanning Phase 1 (Target POB 150 - stretch 77 Core crew)

Downmanning Phase 2 (Target POB 77 core crew - stretch 37 min. manning)

Downmanning Phase 3 (Target POB 37 minimum manning)

CPF Mobilising utilising all seats

| POB | Target POB | MIN HELO PAX to reach target | MAX HELO PAX | # of Flights |
|-----|------------|------------------------------|--------------|--------------|
| 100 | 150        | 0                            | 0            | 0            |
| 100 | 77         | 23                           | 34           | 2            |
| 66  | 37         | 29                           | 34           | 2            |
|     |            |                              |              | 4            |

FPSO Actual POB

100

Downmanning Phase 1 (Target POB 150 - stretch 77 Core crew)

Downmanning Phase 2 (Target POB 80 core crew - stretch 39 minimum manning)

Downmanning Phase 3 (Target POB 39 minimum manning)

FPSO Mobilising utilising all seats

| POB | Target POB | MIN PAX to reach target | MAX HELO PAX | # of Flights |
|-----|------------|-------------------------|--------------|--------------|
| 100 | 150        | 0                       | 0            | 0            |
| 100 | 80         | 20                      | 34           | 2            |
| 66  | 39         | 27                      | 34           | 2            |
|     |            |                         |              | 4            |

CPF & FPSO

Begin Demob by to achieve target

| Phase   | Target   |
|---------|----------|
| Phase 1 | 04/11/14 |
| Phase 2 | 03/11/14 |
| Phase 3 | 01/11/14 |

Flights required to deman BOTH facilities

CPF and FPSO

|                                  | Phase 1 | Phase 2 | Phase 3 |
|----------------------------------|---------|---------|---------|
| Maximum Helo PAX                 | 0       | 68      | 68      |
| Total PAX able to be demanned    | 153     | 153     | 85      |
| Target PAX unable to be demanned | 0       | 0       | 0       |
| Remaining POB                    | 200     | 132     | 64      |
| Flights Used                     | 0       | 4       | 4       |
| Remaining Flights                | 9       | 5       | 1       |

CPF ONLY

Begin Demob by to achieve target

| Phase   | Target   |
|---------|----------|
| Phase 1 | 04/11/14 |
| Phase 2 | 03/11/14 |
| Phase 3 | 03/11/14 |

Flights required to deman ONLY CPF

CPF ONLY

|                                  | Phase 1 | Phase 2 | Phase 3 |
|----------------------------------|---------|---------|---------|
| Target Maximum Helo PAX          | 0       | 34      | 34      |
| Total PAX able to be demanned    | 153     | 153     | 119     |
| Target PAX unable to be demanned | 0       | 0       | 0       |
| Remaining POB                    | 100     | 66      | 32      |
| Flights Used                     | 0       | 2       | 2       |
| Remaining Flights                | 9       | 7       | 5       |

FPSO ONLY

Begin Demob by to achieve target

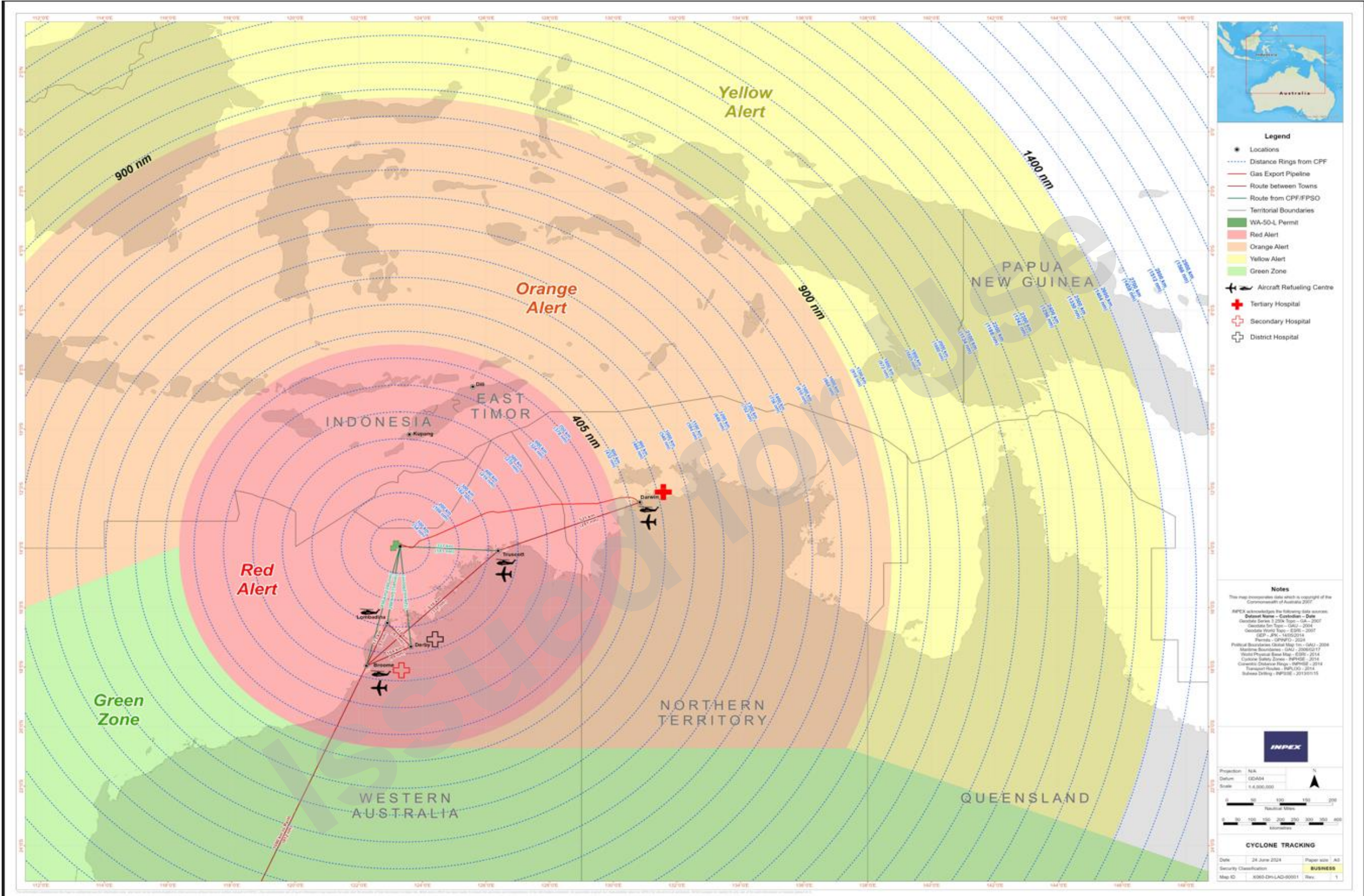
| Phase   | Target   |
|---------|----------|
| Phase 1 | 04/11/14 |
| Phase 2 | 03/11/14 |
| Phase 3 | 03/11/14 |

Flights required to deman ONLY FPSO

FPSO ONLY

|                                  | Phase 1 | Phase 2 | Phase 3 |
|----------------------------------|---------|---------|---------|
| Target Maximum Helo PAX          | 0       | 34      | 34      |
| Total PAX able to be demanned    | 153     | 153     | 119     |
| Target PAX unable to be demanned | 0       | 0       | 0       |
| Remaining POB                    | 100     | 66      | 32      |
| Flights Used                     | 0       | 2       | 2       |
| Remaining Flights                | 9       | 7       | 5       |

Appendix Figure E-1: Cyclone Critical Path Calculation Tool



Appendix Figure E-2: Cyclone Tracking Map (available in DMS)

## Appendix F: DAILY CYCLONE REPORT

### Instruction:

- The first site/division to hit a cyclone reporting trigger is required to initiate the major event internal notification.
  - The initial Major Event internal notification trigger is met, at the point where the first site/division to observe a weather system, that generates enough concern, to prompt initial discussion regarding potential adverse effects on the site/division should the weather system develop further
- Daily reporting from all sites is to follow thereafter as follows:
  - 09:00am ACST:** Bladin Point DHSEA compile onshore cyclone daily report and issue to Ichthys Field Manager (FM) DL
  - 09:00am AWST:** Field Manager consolidate Onshore and Offshore Cyclone daily report and send to:
    - DL Ichthys Field Major Event
    - DL Onshore Major Event
    - DL Major Event
  - Daily Cyclone Event reporting will cease once all sites/divisions have returned to normal operations.

### DAILY CYCLONE STATUS REPORT

|                     |  |                  |  |
|---------------------|--|------------------|--|
| <b>Reported by:</b> |  | <b>Report #:</b> |  |
| <b>Date:</b>        |  | <b>Time:</b>     |  |

### SITUATION REPORT *insert extract from BOM 7 day forecast as per below example*

|                                   |          |          |        |                                    |          |                            |          |
|-----------------------------------|----------|----------|--------|------------------------------------|----------|----------------------------|----------|
| <b>Prepared for: Inpex</b>        |          |          |        | <b>Prepared by: Austen Watkins</b> |          | <b>Phone: 08 9263 2205</b> |          |
| Likelihood of a tropical cyclone: |          |          |        |                                    |          |                            |          |
| Fri, 30 Dec                       | Sat 31   | Sun 01   | Mon 02 | Tue 03                             | Wed 04   | Thu 05                     | Fri 06   |
| Very Low                          | Very Low | Very Low | Low    | MODERATE                           | MODERATE | MODERATE                   | MODERATE |

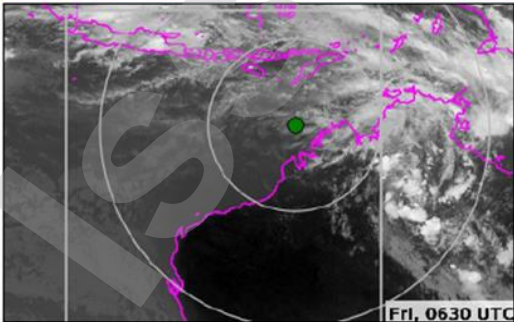
**A low may intensify off the north Kimberley coast next week.**

There are no significant tropical lows in the region currently.

Over the coming days, the monsoon trough is likely to migrate south over the Top End with monsoonal W'ly winds strengthening north of Australia. A broad, weak low situated over the central Northern Territory is expected to move north towards the Top End over the weekend and may enter the far north-east of the forecast region on Monday or Tuesday.

There is considerable spread in the model guidance with regards to the movement and intensity of the low beyond Monday which leads to a high degree of uncertainty in the forecast. Conditions in the north-east of the region are expected to be favourable for development and there are some indications that a tropical cyclone could form near the north Kimberley coast as early as Tuesday or Wednesday if the system was to move over water. Taking these factors into consideration, the ratings have been ungraded to Moderate from Tuesday.

|                                        |      |                                               |  |
|----------------------------------------|------|-----------------------------------------------|--|
| Likelihood of tropical system location |      | Rating for Northwestern Region (105E to 130E) |  |
| LESS                                   | MORE |                                               |  |



Friday 30 Dec: **Very Low** (< 5%)

Recent Infra-red satellite imagery shows scattered thunderstorm activity across Indonesia, the Arafura Sea and extending over the Northern Territory. This is associated with monsoon trough. The remainder of the region is free of any significant cloud. A broad weak low is situated over the central Northern Territory and is slow moving.

| OFFSHORE UPDATE INFORMATION <i>(Field Manager to complete)</i> |     |           |                |                 |
|----------------------------------------------------------------|-----|-----------|----------------|-----------------|
| TC Name                                                        |     |           |                | TC Category:    |
| TC Location (Lat/Long)                                         |     |           |                | Alert Category: |
| Km From Field/Facility                                         |     |           |                | Hrs until Gale: |
| Weather at Field:                                              |     | Comments: |                |                 |
| Wind Direction:                                                |     |           |                |                 |
| Wind Speed:                                                    |     |           |                |                 |
| Sea:                                                           |     |           |                |                 |
| Swell:                                                         |     |           |                |                 |
| Asset/Facility                                                 | POB | Location  | Current Status | Look ahead      |
| URF                                                            |     |           |                |                 |
|                                                                |     |           |                |                 |
| URF Support Vessels                                            |     |           |                |                 |
|                                                                |     |           |                |                 |
| Drilling                                                       |     |           |                |                 |
|                                                                |     |           |                |                 |
| Logistics Marine                                               |     |           |                |                 |
|                                                                |     |           |                |                 |

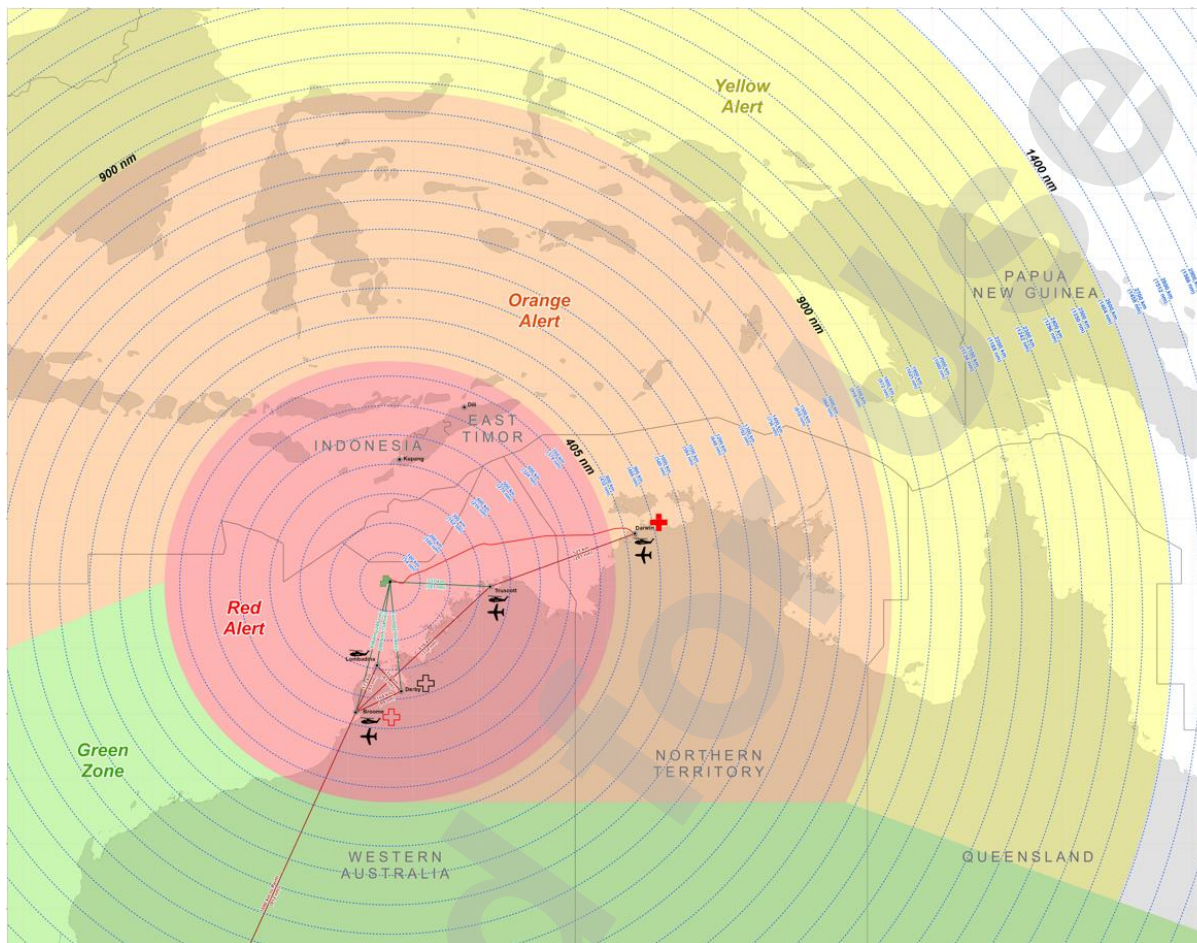
| Logistics Aviation                                                        |     |          |                |            |
|---------------------------------------------------------------------------|-----|----------|----------------|------------|
|                                                                           |     |          |                |            |
| Field Manager Contact Details                                             |     |          |                |            |
| Name:                                                                     |     |          |                |            |
| Contact Details :                                                         |     |          |                |            |
| ONSHORE DARWIN UPDATE INFORMATION <i>(Bladin Point DHSEA to complete)</i> |     |          |                |            |
| Asset/Facility                                                            | POB | Location | Current Status | Look ahead |
| Bladin Point                                                              |     |          |                |            |
|                                                                           |     |          |                |            |
| Bladin Village                                                            |     |          |                |            |
|                                                                           |     |          |                |            |
| Manigurr-Ma Village & Bens Hill                                           |     |          |                |            |
|                                                                           |     |          |                |            |
| Darwin Logistics Supply Base                                              |     |          |                |            |
|                                                                           |     |          |                |            |

| Darwin Office (CBD Mitchell Street) |  |  |  |  |
|-------------------------------------|--|--|--|--|
|                                     |  |  |  |  |
| Bladin Point DHSEA Contact Details  |  |  |  |  |
| Name:                               |  |  |  |  |
| Contact Details :                   |  |  |  |  |

### CURRENT 7 DAY TROPICAL CYCLONE OUTLOOK *(Field Manager to complete)*

|  |
|--|
|  |
|--|

## FIELD CYCLONE ALERT LEVELS



END REPORT

## Document Endorsement and Approvals

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### Document Identification

| Document Number   | Revision | Security Classification | Date           |
|-------------------|----------|-------------------------|----------------|
| X060-AH-PLN-60001 | 9        | Unrestricted            | 21/10/25 08:00 |

### Document Revision History

| Revision | Date and Time  | Issue Reason |
|----------|----------------|--------------|
| 8        | 29/10/24 08:00 | For Use      |
| 7        | 15/08/24 08:00 | For Use      |
| 6A       | 17/07/24 08:00 | For Review   |
| 6        | 13/04/22 08:00 | For Use      |
| 5A       | 28/05/21 08:00 | For Review   |
| 5        | 14/12/20 08:00 | For Use      |
| 4        | 14/11/20 08:00 | For Use      |
| 3        | 03/07/20 08:00 | For Use      |
| 2A       | 19/05/20 08:00 | For Review   |

### Delegation of Authority

| From Name | To Name | Date and Time | Action |
|-----------|---------|---------------|--------|
|           |         |               |        |

| Name | Title |
|------|-------|
|      |       |

### Electronic Endorsement and Approval

Electronic approval of this document complies with the issued INPEX Electronic Approval Standard (0000-A9-STD-60011) and records evidence that the applicable person has either endorsed and/or approved the content contained within this document. The reviewers of this document are recorded in the CDS.

| Name            | Title                   | Date and Time  | Action   |
|-----------------|-------------------------|----------------|----------|
| Daniel Cavanagh | Senior Security & Emerg | 21/10/25 15:02 | Approver |