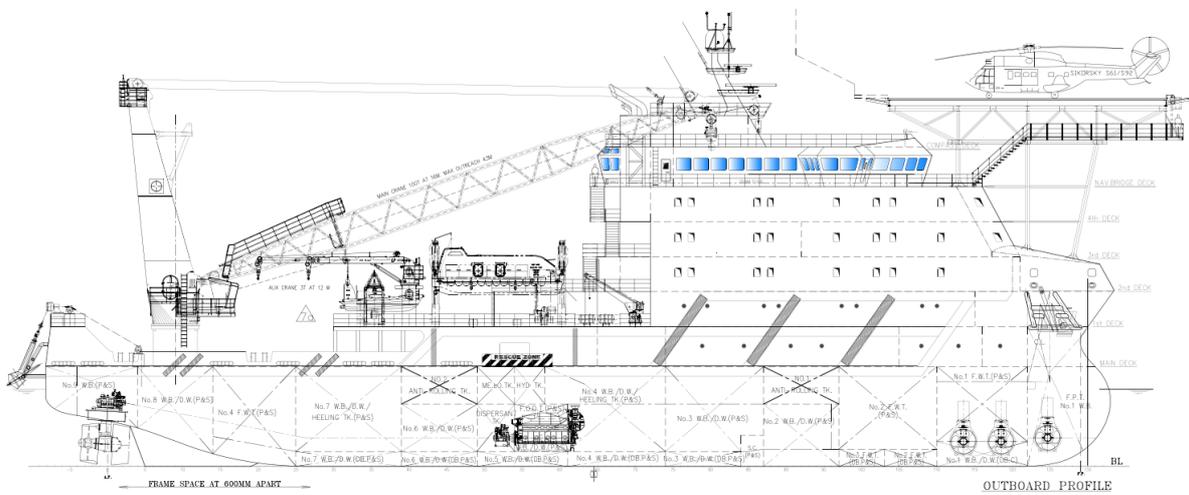


Crest Centurion 2



Safety Case

SAFETY CASE SUMMARY AND INTRODUCTION

Executive Summary

Safety Case Overview

This is the Safety Case for the Crest Centurion 2 Self-Propelled Offshore Support and Firefighting Vessel and its intended operations within the sovereign territory of Negara Brunei Darussalam. This Safety Case has been prepared by Pacific Radiance Ltd in compliance with the Brunei Government Workplace Safety and Health (Facilities) (Control of Major Accident Hazards) Regulations, 2013.

Facility Duty Holder

The Duty Holder for the Crest Centurion 2 is the Pacific Radiance Fleet Manager, Mr Isaac Chua.

Address in Singapore: Pacific Radiance Ltd.
15 Pandan Road,
Singapore 609263

Address in Brunei: CV/O KTL Services Sdn. Bhd.
Lot 5322, Simpang 116, Jalan Maulana,
KA1931, Kuala Belait, Brunei Darussalam

Justification to Operate

Pacific Radiance Ltd has a safety and environmental management system (SEMS) to conduct its business in providing offshore floating accommodations and deck space for maintenance activities.

This Safety Case document demonstrates to the extent possible that the Duty Holder has:

- taken all reasonably practicable measures necessary to prevent major accidents and limit their consequences to the public, property and the environment by conducting a Formal Safety Assessment of the Crest Centurion 2 and ensuring that all controls are in place to ensure that all risks are ALARP. (Refer to Part **Error! Reference source not found.**)
- prepared an onsite emergency plan and liaised with the authorities responsible (Refer to Section **Error! Reference source not found.**)
- prepared an offsite emergency plan in conjunction with the charterer while in Brunei waters and liaised with the authorities responsible (Refer to Section **Error! Reference source not found.**)
- described in this Safety Case the means by which the Duty Holder will ensure the adequacy of the design, construction, operation, maintenance or modification of the facility, for the relevant stage or stages in its life

(Refer to Section **Error! Reference source not found.**);

- submitted a relevant Safety Case for the facility as required by these Regulations and not operate the facility unless the Duty Holder has a Safety Case Certificate from the competent authority;
- will ensure that the procedures and arrangements described in this Safety Case are followed; and
- will make all necessary information about the vessel, its activities and hazards available to the public (Refer to Section **Error! Reference source not found.**).

In managing its hazards through hardware, procedures, supervision and nurturing a culture for HSE, it is the opinion of the undersigned that Crest Centurion 2 is fit to commence operations in Brunei waters.

This assessment has been made by:

Isaac Chua,

Fleet Manager, Document Owner and Duty Holder

Confirmation that the facility is subject to these Regulations

Pacific Radiance under section 14(1)(c) of the Workplace Safety and Health (Facilities) (Control of Major Accident Hazards) Regulations, 2013 is obliged to submit a Safety case for the Vessel Crest Centurion2. Safety Cases were submitted and it is accepted the Pacific Radiance has complied with the requirements under the Workplace Safety and Health (Facilities) (Control of Major Accidents Hazards) Regulations 2013 (COMAH). Pacific Radiance as Duty Holder shall ensure that the procedures and arrangements described in the current safety cases are followed.

An explanation in simple terms of the activity or activities undertaken at the facility.

The Crest Centurion 2 is an Offshore Support Vessel and provides accommodation for offshore personnel as well as and deck space for offshore maintenance activities. It is not designed to exploit any hazardous substances or carry out any well operations.

The vessel will be engaged in setting up alongside the Client Assets and transferring workers by use of a gangway. The vessel uses DP or Moorings to maintain position. The Client will use the deck of the vessel for fabrication purposes before transferring to Client Assets by either installation or vessel crane.

The common names of the substances and preparations involved at the facility which could give rise to a major accident, with an indication of their principal hazardous characteristics.

Substance specified in Division 2 of Part II of the Fifth Schedule to the WSHO	Present on board	Above Threshold limit
ACETYLENE	Yes – 150kg maximum	No – limit is 50,000kg
<p>ACETYLENE OVERVIEW: Unstable. Sensitive to heat or shock. May become explosive. Flammable gas. Simple asphyxiant. May cause skin and eye irritation. May cause central nervous system depression, Contents are under pressure. Temperature should be kept below 52°C/125°F. Physical state Compressed Gas.</p> <p>Acetylene and Oxygen on board the vessel will be used in welding, cutting and Burning operations</p>		
OXYGEN	Yes – 320kg maximum	No – limit is 50,000kg
<p>OXYGEN OVERVIEW: Non-flammable Gas compressed Oxygen in either the gas or liquid state. Oxygen is considered a non-flammable because it in and of itself does not burn. It is, however, required for combustion to take place. High concentration s of oxygen greatly increase the rate and intensity of combustion.</p> <p>Acetylene and Oxygen on board the vessel will be used in welding, cutting and Burning operations</p>		
MARINE GAS OIL AND LUBRICATING OIL	Yes – Marine Gas Oil 1,974.9 m ³ maximum (approx. 1,741.9 tonnes)	No – limit is 25,000 tonnes
<p>MARINE GAS OIL AND LUBRICATING OIL OVERVIEW: Flammable in liquid or vapour form. May be fatal if swallowed. Harmful if inhaled. Causes eye irritation if in contact with liquid form. May cause drowsiness or dizziness if inhaled</p> <p>Marine Gas Oil will be used as fuel in the vessel’s engines; Lubricating Oil will be used as lubricant for vessel’s engines and other machinery</p>		

General information relating to the nature of the major accident hazards, including their potential effects on the public, property and the environment.

No.	MAE (Major Accident Event)	Consequences
1.	Spills during diesel loading and subsequent fire	Potential of environmental damage due to spills of diesel fuel.
2.	Engine diesel fires	Engine fires would generate thick smoke engulfing the room and damage the engine and shutdown of the engine. However, the escalation of fire is not likely.
3.	Leaks of Acetylene and subsequent fire or explosion	Acetylene leaks and accumulate of gas in the area leading to possible fire and explosion if there is an ignition source. This may cause structural damage and potential projectiles resulting in personal injuries.
4.	Short circuit in the accommodations leading to fire	Compartment fires that can result in damage to the accommodation and also personnel fatalities.
5.	Epidemic on board	Contagious disease can result in personnel fatalities.
6.	Slings parting resulting in dropped load	Dropping of heavy lifted objects during lifting by the crane, highline or hoists -impacting personnel directly and/or damaging supporting structure
7.	Crane toppling	Overloading can result in crane toppling and boom breaking – impacting personnel directly and/or damaging supporting structure.
8.	Loss of electrical power	No power source resulting in loss of vessel control – potential of collision to other facilities and damage to the vessel.
9.	Collisions by other vessels or facilities in the vicinity	Collision with other vessels resulting in vessel damage and potential personnel fatalities.

10.	Water ingress	Water ingress into the vessel can potentially result in vessel sinking and cause damage to the vessel and personnel fatalities.
11.	Anchor Parting	Loss of position of vessel – potential of impacting other facilities, damage to vessel.
12.	Ship run aground	Run aground causing loss of stability of vessel resulting in damage to vessel.

Adequate information on how the public concerned will be warned and kept informed in the event of a major accident.

On-Site ERP

The on-site Emergency Response Plan for the Crest Centurion 2 is defined in the SEMS. On detection of an emergency, the Master will raise the appropriate alarm followed by a PA announcement to inform the crew (including visitors) regarding the nature of the alarm.

All crew and passengers will proceed to muster station. Once all personnel are reported assembled, or reasonably assembled, the Master shall announce to the Team leaders the nature and site of the emergency.

The Team leaders will then instruct and deploy their team members as per the contingency plans and the drills that had been practiced, and they shall use their initiative to alter and devise when necessary to suit the situation.

If the situation can be readily dealt with by the resources available at the site with no off-site implications to personnel, environment, assets or reputation:

- resolve the situation
- monitor it closely
- report the incident to the appropriate authority if appropriate.

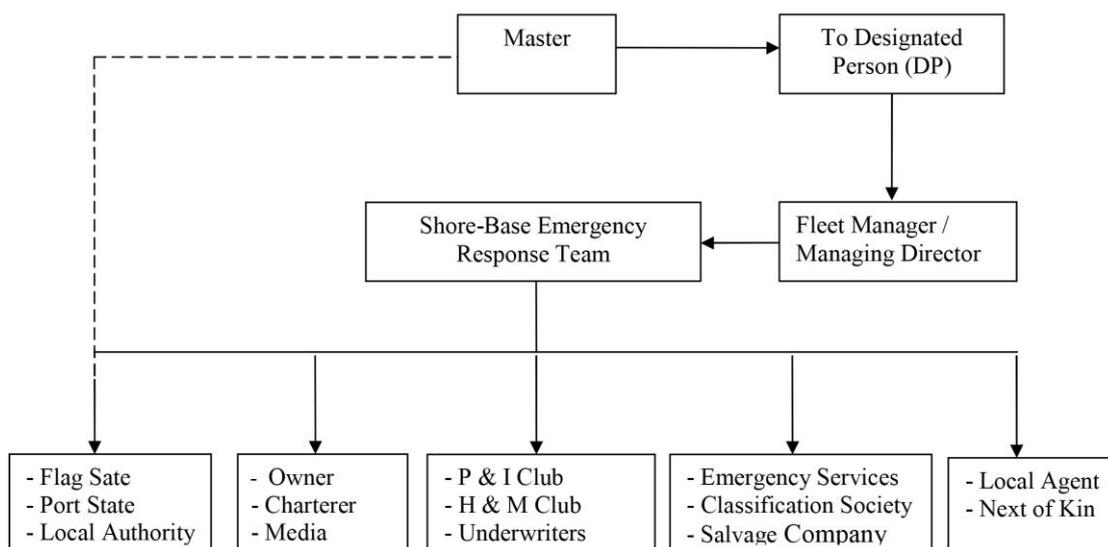
If the Master (or the Chief Officer if the Master is incapacitated) determines that it is unsafe to remain on the vessel, he will give order to abandon ship.

Off-Site ERP

Pacific Radiance has off-site emergency response procedures for its staff based in the Singapore offices as outlined by the SEMS. The Emergency Response Plan provides a framework to provide the implementation of effective response measures and ensures procedures are properly controlled and managed.

In the event of an emergency onboard the Crest Centurion 2, the Master will contact the Designated Person Ashore (DPA) via the DPA's 24-hour emergency telephone.

Upon receiving a call, the DPA will contact the Emergency Response Team Leader (ERTL) who will then proceed to continue communications with the Master. The ERTL, having discussed the situation with the Master, determines the scale of callout required to respond to an emergency. Should the emergency be considered a Major Emergency, the full onshore emergency response team will be mobilised to provide support and request extra support as necessary from external parties. Where the emergency is minor and can be handled without the need of external support, the ERTL, along with the DPA, will continue to monitor the situation from onshore. Should the emergency escalate, the Emergency Response Team will be activated as necessary.



The Onshore ERT operates from the Emergency Response Room (ERR) which is the Head Office board room in Pacific Radiance's Singapore offices. The ERR is equipped with means of direct communication with Pacific Radiance's vessels, along with telephone, email services and access to relevant files and manuals. However advice from the ERR will only be given if specifically requested to ensure that onboard personnel can operate to the greatest effect and without unwanted outside interference.

Depending on the complexity of the emergency, further assistants may be summoned.

The overall objectives and functions of the Shore-based ERT is to:

- Provide a link between the Company and the vessel
- Provide lines of communications between the Company, emergency services, regulatory bodies, underwriters, P&I clubs, agents and media, etc.
- Provide advice, assistance and guidance to the vessel
- Provide a communication centre manned by qualified personnel who have available to them all the technical details and the data necessary to mitigate the situation
- Provide a link between the Company and charterer

The Crest Centurion 2 will be on charter/contract to Brunei Shell Petroleum (BSP) for the entire duration of her stay in Brunei. When operating at a client platform, in the event of an emergency, both the client off-site emergency response and Pacific Radiance's off-site emergency response will be activated by the Crest Centurion 2 if and when required. For incidents involving the platform, the client's Emergency Response will be taken into account and as such any relevant client emergency and contingency plans are made available by the Master to the head of department along with the client's emergency contact list. This allows communication between the two onshore Emergency Response Teams.

The client has available at all times an Emergency Co-ordinator (EC) and a team of experienced senior staff to mobilise the resources of the Company to assist with any emergency. The Emergency Co-ordination Team (ECT) co-ordinates the company response from a dedicated suite of rooms in the BSP Head Office - the Emergency Co-ordination Centre (ECC).

The EC will be notified of any emergency that may significantly impact personnel, the environment, BSP assets or BSP reputation, or may require resources additional to those available on the Crest Centurion 2.

The EC is contacted by calling BSP's switchboard/radio room (VSL) and instructing the operator to "Page the Emergency Coordinator".

The EC will respond, discuss and assess the potential of the situation and help decide on appropriate responses with Pacific Radiance's ERTs, should relevant help be necessary.

While in Brunei, the following offsite resources may be utilised:

- Client Operations: Contact the client EC or Area Supervisor at the facility controlling the process or in whose area the Crest Centurion 2 is operating.
- Medical: Alert Panaga Health Centre via VSL and advise the Duty Doctor of the situation and the immediate requirements. The Duty Doctor will then ensure appropriate medical support.
- Fire and Ambulance: Alert the BSP Fire Brigade via VSL, and advise the situation and the immediate requirements.



- Logistics: Alert the STL/1 Duty Monitoring Clerk (directly, or via VSL) and advise the location and situation and the immediate requirements. Request STL to ascertain immediate availability of Marine, Aviation or Medical support, as appropriate.

Communications with external support will be handled by the client in the event of an emergency involving the platform. However, it will be the responsibility of Pacific Radiance's onshore ERT to ensure that this is done in the event of an emergency – this is achieved through communications and agreement with the client's ECT.

In the event of an emergency involving just Crest Centurion 2, Pacific Radiance's ERT will contact the relevant authorities and external support as necessary. The Fleet Manager will be responsible for contacting and informing EIDPMO within 6 hours in the event of an emergency. The EIDPMO Duty Officer will be contacted first by telephone, followed along with an Initial Incident Notification (IIN).

Communication of the necessary information to all employees, staff and visitors on the Crest Centurion 2 will still be made by the Vessel Master.

The Pacific Radiance ERT will be responsible for:

- communicating the necessary information to the public and to the emergency services and authorities concerned in the area;
- providing warning of the incident to the authority responsible for setting the offsite emergency plan in motion, the type of information which should be contained in an initial warning and the arrangements for the provision of more detailed information as it becomes available;
- arrangements with the authority responsible for providing assistance with onsite emergency response action, e.g. by activating the National Emergency Plan, if required;
- arrangements for offsite emergency response action;
- providing the public with specific information relating to the accident and the behaviour which it should adopt;
- providing of information to the emergency services in the neighbouring states in the event of a major accident with possible transboundary consequences;
- coordinating drills and exercises with offsite emergency services in response to the identified major accident events; and
- provision of recovery and restoration of the environment following a major accident.

Notwithstanding this, Pacific Radiance's onshore ERT may employ some of the client's resources to help achieve this.

Adequate information on the actions the public concerned should take, and on the behaviour they should adopt, in the event of a major accident

Communications and Recovery

As stated above, it is the responsibility of Pacific Radiance to ensure that the relevant authorities are contacted in the event of an emergency involving Crest Centurion2. As appropriate, the Master, in conjunction with the Fleet Manager / DPA and client ECC will contact:

- Pacific Radiance and client emergency support services
- Channel 16 Maritime Emergency Response Channel
- Brunei National Disaster Management Centre (NDMC)
- Brunei Search and Rescue
- The National Oil Spill Contingency Plan Management Team (NOSCOP)
- Energy Department (EIDPMO)

The nature of the emergency will be communicated together with the relevant information regarding requirements for support and danger to the public and /or natural environment. Any concerned parties of the Crest Centurion2 will be directly contacted by Pacific Radiance's onshore ERT (such as by telephone). Following the initial alert and communications, it has been agreed between the client and Pacific Radiance, as per the bridging document, that the client ECC will coordinate further communications as necessary with all external parties in Brunei. The Master or his designate will continue to be responsible for communications between the vessel and the client ECC.

All Major Accident Events that occur on the vessel are to be reported by the Fleet Manager to EIDPMO within 6 hours directly by telephone. Emergency services are called out as needed and provided with all the necessary information in order for them to help aid in an emergency scenario.

In the event of a MAE, information to the public will be released with authorisation from the Managing Director. Typically, in the event of a MAE, Pacific Radiance will provide information to the public via a secured website and through media releases (news press) etc. Information will include details of the MAE and the resulting losses and damages and any potential long-term effects for the public (though in this case, the only long term damage of concern to the public from any MAE would be the results of an oil spill). Only the Managing Director is authorised to make any press statements, unless otherwise explicitly delegates an alternative person.

If there are any trans-boundary effects, potential or actual from the incident, these will be communicated by the client's ECC in accordance with the client emergency response procedures if the client's platform is involved (assuming the platform's assets are



responsible for most of the trans-boundary effects). If the incident purely involves Crest Centurion 2, Pacific Radiance will be responsible for this. This includes contacting any emergency services as appropriate in neighbouring states (such as marine authorities in the event of an oil spill).