

# Notifiable incident

<b>Notification ID</b>	<a href="#">NTF11969</a>
<b>Duty holder</b>	Woodside Energy Ltd
<b>Facility/Activity</b>	CWLH OKHA FPSO
<b>Nearest state</b>	WA
<b>Incident</b>	OHS-OKNI Hoarser failed during offtake activity

Basic information provided at time of notification	
<b>Notification type</b>	Incident
<b>Incident date</b>	31/12/2022 08:20 AM (AWST)
<b>Notification date</b>	31/12/2022 10:56 AM (AWST)
<b>NOPSEMA response date</b>	31/12/2022 11:15 AM (AWST)
<b>Received by</b>	[REDACTED]

Summary of information provided	
<b>Brief descriptive title</b>	OHS-OKNI Hoarser failed during offtake activity
<b>Incident location</b>	
<b>Subtype/s</b>	Lifting operations
<b>Summary</b> <i>(provided at notification)</i>	<p>During the start of offtake activities the Hauser failed. The offtake vessel was within the 70m zone, the seas were a little rougher than normal but within acceptable levels for offtake to occur.</p> <p>As the Hauser was taking the weight it broke with a clean break, not linked to either the thimbles or any known friction points. The weight was within the acceptable range (84Tonnes) and no alarms were set off during the incident,</p> <p>The vessel was instructed to move off to a safe distance and the Hauser was retrieved back on deck of the OKHA FPSO. This was to ensure it did not get lost at sea or tangled in any part of the OKHA or vessel.</p> <p>No persons were hurt and no dropped objects to sea.</p> <p>OIM confirmed 3 day report to follow.</p>

Request permission to disturb the site	
<b>Permission given</b>	Not Applicable
<b>Permission given by</b>	
<b>Permission given on</b>	

Initial spill and release amounts	
<b>Gas (kg)</b>	
<b>Liquid (L)</b>	
<b>Release type</b>	
<b>More information</b>	

Details of person providing information to NOPSEMA	
<b>Full name</b>	[REDACTED]
<b>Job title</b>	[REDACTED]

Initial notification category
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<b>Initial category type</b> <i>(based on notification)</i>	Dangerous Occurrence
<b>Initial category</b> <i>(based on notification)</i>	OHS - other kind needing immediate investigation

#### Running sheet

There are no running sheet entries for this notification

#### Decision

<b>Escalate to level 1</b>	Yes
<b>Inspector</b>	
<b>Escalated on</b>	05/01/2023 07:44

#### Final notification category

<b>Final category type</b> <i>(based on final report)</i>	Dangerous Occurrence
<b>Final category</b> <i>(based on final report)</i>	OHS - other kind needing immediate investigation

#### Immediate causes

<b>Details</b>	Equipment failure - (Hawser rope)
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#### Initial report

<b>Due date</b>	03/01/2023
<b>Received date</b>	02/01/2023
<b>Reviewed date</b>	12/01/2023
<b>Reviewed by</b>	

<p><b>Additional details provided by duty holder</b></p>	<p>Brief description of incident During offtake operations, whilst the offtake tanker was making fast and prior to connecting the floating hose, one of two lengths of the hawser rope parted. There was no impact to personnel or other equipment, and no dropped objects to sea.</p> <p>The load on the hawser rope at the point of failure was approximately 113T, which is less than the 422000kgf (Minimum Dry Breaking Load) and implies that the failure was internal to the hawser rope. The location of failure was mid-way along the length of the hawser, away from thimbles and areas of chafing. There was no whiplash as the two lengths are lashed together, and one of two parallel lengths of the hawser remained in place with the tanker connected.</p> <p>Work or activity being undertaken at time of incident Offtake Tanker mooring</p> <p>What are the Internal Investigation Arrangements Internal investigation in accordance with the Woodside "Health, Safety and Environment Event Reporting, Investigating and Learning Procedure. The event has been internally classified as a "High Potential Incident", which drives the highest possible level investigation. The terms of reference is to be developed and the investigation team to be stood up.</p> <p>Was there any loss of containment of any fluid (liquid or gas)? No</p> <p>Action taken to make the work-site safe Action taken The tanker was released and the hawser retrieved onboard the FPSO Okha. Offtake operations suspended. Investigation commenced. Details of any disturbance of the work site : Tanker was released and the hawser retrieved onboard the FPSO Okha</p> <p>Was an emergency response initiated? No Was anyone killed or injured? No</p> <p>Immediate action taken/intended, if any, to prevent recurrence of incident.</p> <p>Action Investigation of Hawser Rope Failure mode Responsible party [REDACTED] Completion date 31-Mar-2023 Actual or Intended Intended</p> <p>Action Replacement of Hawser Rope Responsible party [REDACTED] Completion date 17-Feb-2023 Actual or Intended Intended</p> <p>Action Visual and mechanical Inspection of FPSO Okha Hawser securing arrangement Responsible party [REDACTED] Completion date 01-Jan-2023 Actual or Intended Actual</p> <p>Action Notify Woodside FPSO fleet of event - Recommend visual inspection of facility hawser arrangements Responsible party [REDACTED] Completion date 05-Jan-2023 Actual or Intended Intended</p>
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Final report	
Due date	13/02/2023
Received date	13/02/2023
Reviewed date	15/02/2023
Reviewed by	[REDACTED]
Additional details	Full Report

Describe investigation in detail, including who conducted the investigation and in accordance with what standard/procedure

A Significant Event investigation was conducted, led by the Planning Superintendent. A detailed chronology of events was

built to understand the history of the Hawser and identify causal factors.

The mooring hawser was ordered by the CWLH redevelopment project and manufactured by [REDACTED] Ropes, with

certificate of conformity issued April 2010. It is a vessel tandem grommet hawser installed with seizings at 3 metre intervals.

The Hawser minimum dry breaking load is 717 tonnes, or 422T for a single leg. Prior to installation on facility, the Hawser

spent four years located outside at [REDACTED] before being transferred to Perth Distribution Centre, where it is

believed it also spent time outside. This inadequate storage is the likely root cause of the failure (Root Cause 1), to be

confirmed via destructive testing by vendor.

The Hawser was installed on OKHA in early 2018. Upon receipt at the facility, archived photos show the wooden shipping

packaging deteriorated, the hawser discoloured, and appearing less flexible when compared to photos of the 2023

replacement hawser. The hawser was installed successfully and put into operation where it performed 40 offtakes between

January 2018 and November 2022. Change out of the hawser was originally scheduled in 2021, however this was deferred

based on the Global Maintenance Strategy (GMS) which stated 75 offtakes with no in service period constraint. Should this

change out have gone ahead the exposure of the poorly stored hawser would have been removed, hence this is a

causal/contributing factor (Root Cause 2)

On the 31 December 2022, the Offtake Tanker approached the OKHA for the purpose of connecting and completing offtake.

All normal procedures were followed, and the approach and hook-up were all within limits. At the time of tensioning of the

hawser, one person was located at the aft stack light platform on Okha and three personnel behind large decking columns.

At the time of the failure of the hawser, a tensioning load of 113T was captured on the hawser Human-Machine Interface

(HMI), which has been verified to be conservative. This was well below the single leg breaking strain (422T), confirming that

the conditions experienced in the event were not a contributing factor.

It was concluded based on evidence of the behaviour of the hawser during single leg failure that any snapback potential was

contained by the seizings. It was not possible to rule out both legs failing at one time and snapback behaviours are difficult to

predict, however it is only credible for a single person to be in the line of fire. This is reflected in the updated Health and

Safety risk potential of C1 (single fatality, highly unlikely). Environmental risk potential is updated to D3 based on hawser

failure with the offtake hose connected and loading in progress, with demand placed on the main break away coupling

(~16m<sup>3</sup> of oil lost to sea, possible = D3).

The Hawser was successfully replaced in January as per 3-day report action and was utilised for offtake with no incident.

Actions to prevent recurrence of same or similar incident

Action Ensure that hawsers currently in inventory are stored inside.

Replace packaging that is not fit for purpose.

Implement procedures to ensure future deliveries of new hawsers are stored inside from time of delivery.

Responsible party [REDACTED]

Completion date 01-May-2023

Actual or Intended Intended

Action Update the GMS to include time-based criteria, destructive testing on retirement and revised inspection criteria. Update Okha procedures and SAP as required.

Responsible party [REDACTED]

Completion date 01-Sep-2023

Actual or Intended Intended

Action Confirm failure mode via destructive testing at vendor overseas premises. Revisit investigation if testing doesn't support storage/preservation as root cause.

Responsible party [REDACTED]

Completion date 15-Jul-2023

Actual or Intended Intended

#### Final spill and release amounts

Gas (kg)	0.00
Liquid (L)	0.00
Release type	
More information	

#### Root causes

Code	
Description	<p>Has the investigation been completed? Yes Root cause analysis</p> <p>Root Causes Analysis Factor: EQ2-4 Equipment/Parts Defective - Storage Comments Prior to installation on facility in 2018, the Hawser had been in storage for 8 years and was stored outside for at least 4 of these years. Vendor recommendation is that Hawsers be kept in a dry, cool place protected from prolonged exposure to sunlight. Note this is the suspected root cause - to be confirmed via destructive testing by vendor.</p> <p>Root Causes Analysis Factor: EQ3-0 Equipment Predictive/Preventative Maintenance Comments At the time of the failure the hawser was 12 years old (8 years storage and 4 years in service) and had performed 40 offtakes. Global Maintenance Strategy (GMS) requires Hawser replacement after 75 offtakes with no in-service period constraint, so replacement was not due under current maintenance strategy. Noted that industry body OCIMF has no clear guidance on Hawser age.</p>

#### All data received

Date	13/02/2023
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