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Investigation report

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Contents

1 Summary 3
2 Abbreviations and terms 4
3 Background information 5
3.1 Description of facility and organisation 5
3.1.1 Oseberg H 5
3.1.2 Organisation 6
3.1.3 Island Offshore Management (Island Offshore) 8
3.1.4 Island Clipper 8
3.1.5 Gangway 9
3.2 Gangway operation and organisation 11
4 Havtil's investigation 12
4.1 Mandate and composition of the investigation team 12
4.2 Implementation 13
5 Sequence of events 14
5.1 Sequence of events 14
5.1.1 Swivel failure on 14 May, and subsequent repairs 14
5.1.2 Arrival at the Oseberg field on 29 May 14
5.2 Sequence of events on 30 May 14
5.3 Sequence of events on 28 October 17
6 Potential of the incident 17
6.1 Actual consequences of the incident on 30 May 17
6.2 Potential consequences of the incident on 30 May 18
6.3 Actual consequences of the incident on 28 October 18
6.4 Potential consequences of the incident on 28 October 19
7 Direct and underlying causes 19
7.1 Direct causes 19
7.1.1 A failure in a single component caused the W2W system's loss of function 19
7.2 Underlying causes 20
7.2.1 Comprehensive risk assessment 20
7.2.2 Use of hydraulic hoses 21
8 Emergency response 22
8.1 Emergency response management of the incident on 30 May 22
8.2 Emergency response management of the incident on 28 October 25
9 Key learning points 28
10 Regulations 28
11 Audit findings 29
11.1 Non-conformities 29
11.1.1 Inadequate risk assessment of the use of the gangway at Oseberg H 29
11.1.2 Deficient communication on Oseberg H 30

11.1.3 Lack of emergency response training and drills on the loss of the gangway between Oseberg H and the SOV 30
11.2 Improvement points 31
11.2.1 Deficient follow-up of the gangway system 31
11.2.2 Inadequate change management 31
12 Barriers and safety functions that worked 32
13 Assessment of the company's investigation reports 32
14 Annexes 33

1 Summary

On two occasions, on 30 May 2025 and 28 October 2025, the gangway connection between Oseberg H and the service operation vessel Island Clipper lost functionality due to ruptures in the hydraulic system's supply hoses. On 3 June, the Norwegian Ocean Industry Authority (Havtil) decided to investigate the first incident, and subsequently incorporated the second incident into the investigation work.

The gangway is the primary evacuation route when personnel are present on Oseberg H. In both situations, the personnel on Oseberg H were evacuated by SAR helicopter to the Oseberg Field Centre. The gangway was freed from the Oseberg H landing area by using the pedestal's lifting function in combination with ballasting the vessel. Nobody was harmed during the incidents.

The incident on 30 May occurred as a result of a rupture in the press coupling of one of the supply hoses, leading to loss of hydraulic pressure. An examination points to a material defect in the coupling's press sleeve, which likely occurred during steel production. The loss of hydraulic pressure resulted in the loss of control and of emergency operation of the gangway's functions. The gangway was moving erratically and was unavailable for evacuation purposes. Eighteen people were evacuated by SAR helicopter to the Oseberg Field Centre. The cone loosened from the gangway, and sparks and smoke were observed as the gangway scraped against the railings around the landing area. This led to the shutdown and depressurisation of Oseberg H. Attempts at disconnection failed because a transverse beam on the underside of the gangway hooked onto the railings around the landing area. The gangway was detached from the landing area after about an hour and a half by using the pedestal's lifting mechanism and ballasting the service operation vessel.

A failure in a single component of one of the four supply hoses in the hydraulic system resulted in the loss of the gangway's functions. No risk assessments were conducted on the loss of control of the gangway when it is connected to the landing area on Oseberg H and the SOV needs to be disconnected. Consequently, it has not

been determined that the railings around the landing area constituted an obstacle to disconnection.
When replacing a damaged swivel, hydraulic hoses had been temporarily installed to replace fixed pipes.

The incident on 28 October occurred when a supply hose in the hydraulic system suffered a coupling failure, resulting in a loss of hydraulic pressure and of the gangway's functions. An examination shows that the wrong type of coupling was used. Combined with insufficient crimping pressure during the assembly of the coupling, this caused the hose to come loose from the coupling. Attempts at emergency operation of the gangway were unsuccessful. The gangway was freed after about 13 minutes by using the pedestal's lifting mechanism and ballasting the service operation vessel. Three people were evacuated by SAR helicopter to the Oseberg Field Centre.

The incidents caused material damage to the gangway and the landing area.
In both incidents, personnel had unrestricted access to the landing area, with no barriers in place to prevent their presence. Personnel could have been in the area, and someone could have been crossing from the gangway stairs to the landing area when the incident occurred. Personal injury therefore could not be excluded, had the circumstances been only slightly different.

The findings of the investigation include non-conformities related to inadequate risk assessment, inadequate communication, and a lack of emergency preparedness training and drills. Improvement points observed relate to inadequate follow-up of the organisation's management system and deficient change management.

2 Abbreviations and terms

ASOG: Activity-Specific Operating Guidelines
DSHA: Defined situation of hazard and accident
DP: Dynamic Positioning
FMEA: Failure Mode and Effects Analysis
GA: General Alarm
HPU: Hydraulic Power Unit
Knot: equivalent to 1.852 km/h
LOL: SAR Coordinator
M1: Proposed modifications to the SAP maintenance system
MOB: Man Overboard Boat
MPS: Manual Protection System
ESD: Emergency Shutdown System
NDT: Non-destructive testing
OOM: Offshore Operations Manager

OSF: Oseberg Field Centre (comprising the gangway-connected facilities Oseberg A, B, D and Oseberg H)
OSH: Oseberg H
POB: Personnel On Board
SAR: Search and Rescue
W2W: Walk-to-Work, service operation vessel connected to a platform via a gangway system

3 Background information

During a maintenance campaign at Oseberg H (OSH) on 30 May 2025, at 13:31, the service operation vessel Island Clipper lost hydraulic pressure to the gangway (walk-to-work system). The gangway's functions were inoperable, and the gangway was deemed unavailable for evacuation purposes. Personnel on Oseberg H were evacuated by SAR helicopter to the Oseberg Field Centre.

A similar incident involving a loss of hydraulic pressure to the gangway occurred on 28 October at 09:02. The gangway's functions were inoperable, and the gangway was unavailable for evacuation purposes. Personnel on Oseberg H were evacuated to the Oseberg Field Centre by SAR helicopter.

3.1 Description of facility and organisation

Photo 1: Service operation vessel connected to Oseberg H. (Source: Equinor)

3.1.1 Oseberg H

Oseberg H is an unmanned, fixed wellhead facility that transports the well stream via pipeline to Oseberg B. Oseberg H is remotely operated from the central control room at the Oseberg Field Centre. The facility does not have any process equipment, living quarters or helideck. During maintenance campaigns, inspections and minor well interventions, service operation vessels equipped with motion-compensated gangways are used for personnel access.

The gangway is connected to Oseberg H when personnel are on board the facility, and the gangway-equipped service operation vessel serves as the primary evacuation method from Oseberg H. As an alternative, helicopter evacuation of personnel by hoisting from the weather deck is possible. The third evacuation option involves using an evacuation chute to the sea and a life raft, from which personnel can be picked up by the service operation vessel's man-overboard boat or fast rescue craft.

On the lower level (spider deck), the gangway's landing areas are positioned so that collisions between the gangway and hydrocarbon-carrying pipes and other sensitive equipment cannot occur. The eastern landing area is designed for, and was previously used as, a container landing area. The railings around this landing area are sturdily constructed to accommodate the handling of cargo containers.

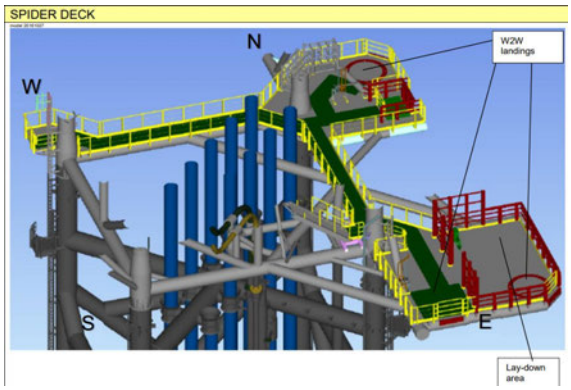

Photo 2: Landing areas (spider deck). (Source: Equinor)

Photo 3: Eastern landing area with W2W system in cone mode. (Source: Equinor)

The landing areas can be used by W2W systems in both bumper mode and cone mode.

3.1.2 Organisation

The Oseberg field is part of the Exploration and Production West (EPW) business area, in which Oseberg H is managed as an extension of the Oseberg Field Centre. Within the Oseberg H 500-meter safety zone, Equinor has primary responsibility for all industrial personnel deployed on the service operation vessel.

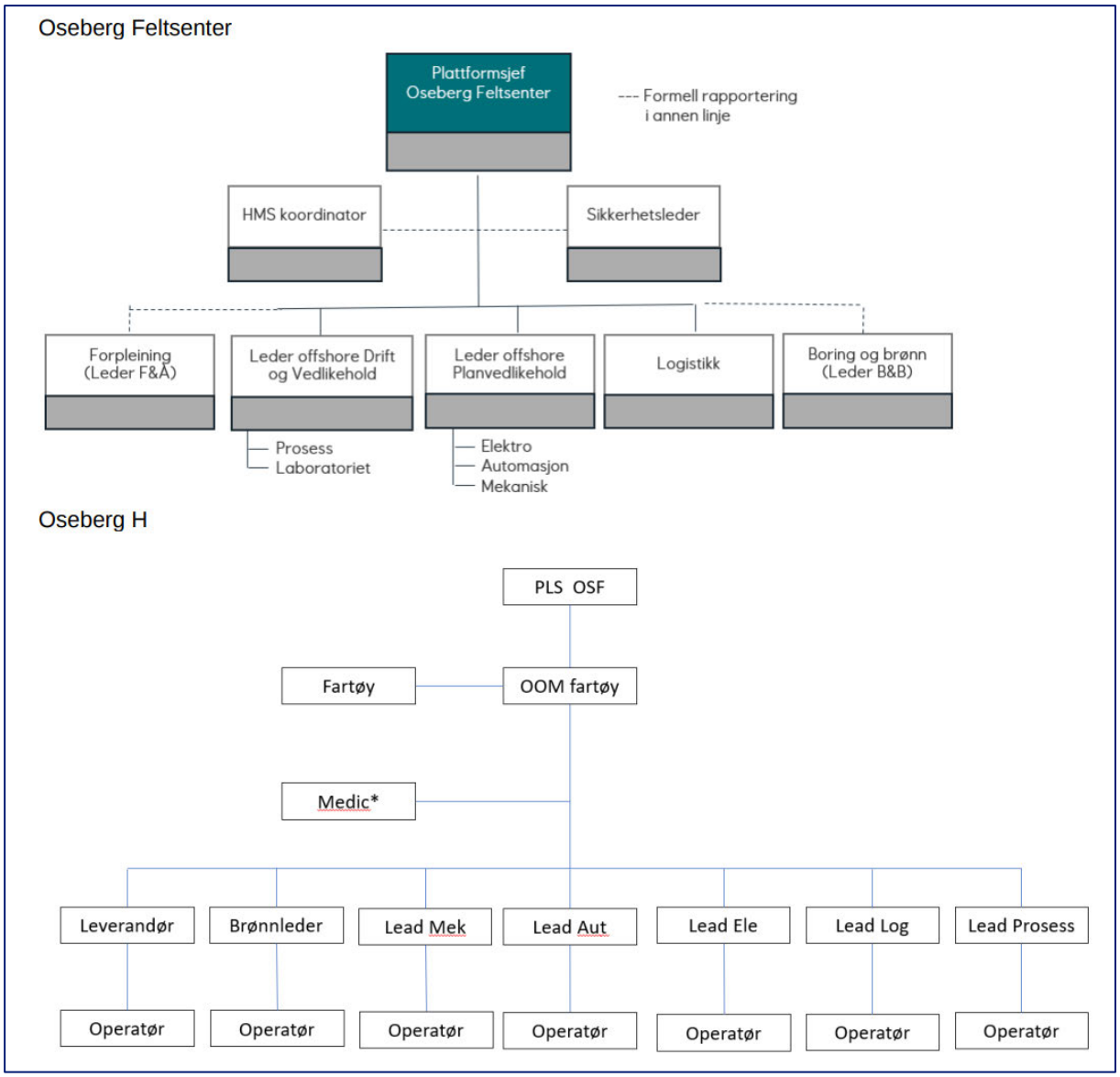

Figure 1: Organisation for the Oseberg Field Centre and Oseberg H. (Source: Equinor)

The document *Samhandling OSF, OSH og SOV – Organisasjon, ledelse og styring (Coordination between OSF, OSH and SOV – Organisation, management and control)* describes the organisation and management of activities between the Oseberg Field Centre when Oseberg H is manned by personnel from a service operation vessel. The Offshore Operations Manager (OOM), who is stationed on board the service operation vessel, serves as the liaison between industrial personnel and the maritime crew. The OOM serves as the work team leader, responsible for ensuring health, safety and environmental compliance on Oseberg H, and acts as the OSF platform manager's representative in emergency situations. Communication and coordination of activities between the Oseberg Field Centre and the service operation vessel take place directly between the Operations and Maintenance Manager (O&M Manager OSF) and the OOM.

The Maritime Operations Sector (JOS LE MO) within the Joint Operational Support, Logistics, and Emergency Response Unit is the contracting authority for chartered

vessels under both short-term and long-term agreements. SOV Island Clipper has been chartered for services primarily focused on Oseberg H and Hywind Tampen. The point of contact between Equinor and the shipowner is Maritime Operations, through the Company Representative (CR). The department is responsible for maritime operations, including vessels equipped with gangway systems and W2W operations.

Requirements for and inspection of W2W vessels are described in *Equinor's specific guidelines. Supplement to GOMO and the Operations Manual for Offshore Service Vessels on the Norwegian Continental Shelf* and *WR2943 Offshore Vessel Inspections*. The technical requirements for vessels are set out in *TR2217 Ship and Maritime Requirements*.

WR2943 Offshore Vessel Inspections describes, among other things, the intervals between inspections based on the contract duration and which department can provide personnel/inspectors with the relevant expertise.

3.1.3 Island Offshore Management (Island Offshore)

The operation of W2W vessels is organised through the Technical Operations department, led by the Technical Manager.

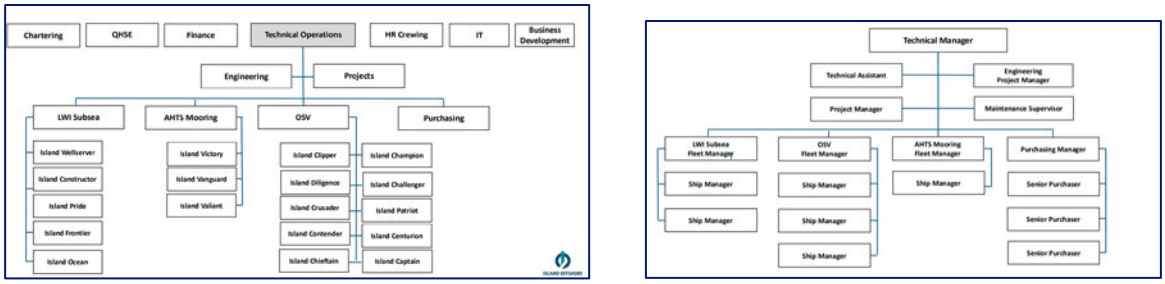

Figure 2: Organisation Chart for Island Offshore. (Source: Island Offshore)

Island Offshore owns the gangway system and its associated pedestal, and is responsible for the operation and maintenance of the system. The day-to-day operation and maintenance of the gangway system are carried out by the vessel's engine department, in consultation with the Ship Manager/Technical Manager onshore. The Chief Engineer is ultimately responsible for ensuring that maintenance is performed and logged in accordance with the manufacturer's recommendations and classification society requirements, and that it is followed up and recorded in the maintenance system.

3.1.4 Island Clipper

SOV Island Clipper is a vessel registered in the Norwegian Ship Register and classified by DNV.
The vessel is designed as a supply vessel and has, among other things, the following DNV class notations and additional notations:

- Offshore Service Vessel

- Standby Vessel
- Dynpos AUTR (DP Class 2)
- Walk2Work

Length (L_{oa})	97 metres
Beam	20 metres
Year of construction	2015

Island Clipper has a maritime crew of 17. The maximum number of persons on board is 56.

3.1.5 Gangway

Island Clipper is equipped with a permanently mounted gangway. The installation consists of a telescopic gangway with a maximum reach of 30 metres and active motion compensation of the boom.
The gangway is operated from a control station on the navigation bridge. A separate hydraulic power unit (HPU) supplies power to the gangway's functions.

The pedestal has a telescoping mechanism for adjusting its height relative to the landing areas so that the gangway is as horizontal as possible. The pedestal's height adjustment is powered by the vessel's HPU.

Manufacturer	Uptime International AS
Model	Uptime 032, Type 1 and Type 2
Reach	30 metres
Design Basis	DNV Standard DNV-ST-0358 Offshore Gangway

The gangway is designed to be used in both bumper mode and cone mode. At Oseberg H, cone mode is used. This means that the gangway is equipped with a cone mounted at one end of the gangway. The weight of the gangway and friction between the landing area and the cone create a stable connection between the gangway and the facility. The gangway remains continuously connected as long as there are people on Oseberg H.
The cone is designed with extra height, specifically for OSH, due to the height of the railings around the landing area. The cone is suspended from a transverse beam at the end of the gangway.

Photo 4: Gangway with landing area (Source: Equinor)

A hydraulic swivel is mounted at the top of the pedestal to transmit hydraulic power from the fixed pedestal to the rotating section of the gangway for the boom lift, swing and telescoping functions.

Photo 5 below shows the swivel with hydraulic pipe spools. While replacing the swivel, hydraulic hoses were temporarily installed, as shown in Photo 6, pending the prefabrication of new fixed pipes.

Photo 5: Swivel and hydraulic pipe spools (Source: Equinor/Island Offshore)

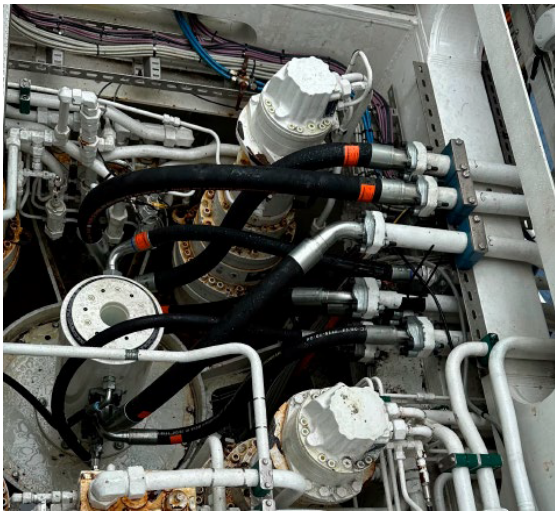

Photo 6: Swivel with temporary hydraulic hoses (Source: Equinor/Island Offshore)

The supply lines on the underside of the swivel are hydraulic hoses in accordance with the original design.

3.2 Gangway operation and organisation

The captain of the vessel has overall responsibility for the crew on board.
The DP operator on board the vessel is responsible for positioning the vessel.
The W2W operator is responsible for the operation of the gangway and for the personnel during the transfer.
Users of the gangway are responsible for following the procedures pertaining to the transfer.

The crew performs a pre-use check of the gangway and associated systems before each connection, in addition to performing maintenance in accordance with the maintenance programme. The gangway supplier conducts an annual inspection and assists with major maintenance activities, modifications and repairs.

Island Clipper has the DNV Walk2Work class notation, which means that the classification society has approved the design of the gangway and conducts periodic inspections of the gangway system.

4 Havtil's investigation

On 1 June, Havtil received a report from Equinor regarding an incident in which the service operation vessel Island Clipper experienced a loss of the gangway's compensation function due to a hydraulic leak. A meeting was held on 2 June, during which Equinor provided further details about the incident. On 3 June, Havtil decided to investigate the incident and, at the same time, established the investigation team and defined its mandate. The investigation covered both Equinor and Island Offshore, and both parties were informed of the investigation's mandate.

On 29 October, Havtil received a report from Equinor regarding an incident that occurred during the connection of Island Clipper to Oseberg H. The incident involved loss of the gangway's compensation function on 28 October due to a hydraulic leak. Equinor provided an update on the sequence of events at a meeting on 30 October, and it was decided to incorporate the follow-up of the incident into the ongoing investigation.

4.1 Mandate and composition of the investigation team

The following mandate was approved for the investigation team:

a. Determine the scope and course of the incident (using a systematic review that typically describes the timeline and events), including an assessment of emergency response
b. Assess the actual and potential consequences
    1. Harm sustained by people, property and the environment.
    2. The incident's potential for harm to people, property and the environment.
c. Assess direct and underlying causes
d. Identify non-conformities and improvement points in respect of regulations (and internal requirements) and other knowledge that can help prevent similar incidents from recurring.
e. Discuss and describe any uncertainties/unclear issues.
f. Consider barriers that did function (i.e. barriers that helped to prevent a hazard from developing into an accident, or barriers that mitigated the consequences of an accident).
g. Assess the company's own investigation report.
h. Prepare a report and cover letter (potentially including proposal for use of reactive measures) in accordance with the template.
i. Recommend – and normally contribute to – further follow-up

The investigation shall cover only activities that are considered petroleum activities. The investigation shall cover conditions on the vessel that are relevant to ensuring the proper performance of the vessel's petroleum operations and that address the implications of the vessel and the facility being considered a single entity for risk

purposes. This includes the technical design, maintenance and operation of the gangway, as well as the competency requirements associated with this activity.

The mandate covers the events of 30 May and 28 October 2025.

The investigation group:
[redacted], provided assessments concerning maintenance management and performance during the latter part of the investigation period.

4.2 Implementation

The investigation into the incident on 30 May included an on-site inspection aboard the service operation vessel during its stay at the dock in Bergen, as well as interviews with the maritime crew. Interviews were conducted with a selection of personnel who were present on 30 May at Oseberg H, personnel from the emergency response organisation at the Oseberg Field Centre, and the chief safety delegate. Meetings have been held with Equinor, Island Offshore and Uptime International. We have obtained technical and governing documents related to the operation and maintenance of the gangway system and the service operation vessel.

The investigation was conducted with the aim of determining the sequence of events on 30 May from 13:31 until the end of the emergency situation at 15:55, as well as identifying the underlying causes.

Equinor's internal investigation report on the first incident was received on 11 August. On 14 November, Equinor presented the causes of the incident and the status of recommendations for corrective actions from the internal investigation.

Regarding the incident on 28 October, a meeting was held on 14 November with Equinor and Island Offshore, during which the sequence of events was presented. Additional documentation was then obtained. This section of the investigation is based on Equinor's own investigation report, received on 9 January 2026. Information from the hose supplier's root cause analysis, annexed to Equinor's investigation report, has been reviewed and used as a basis for the investigation. On 17 February 2026, a meeting was held with Island Offshore to reach a common understanding of the sequence of events and the causal factors identified in Equinor's investigation report.

In this investigation, we have used the Human, Technology and Organisation (HTO) methodology to clarify emergency response procedures, causal relationships and underlying causes.

5 Sequence of events

This chapter focuses primarily on the sequence of events on 30 May, based on the duration of the incident and the mobilisation of the full emergency response organisation. Details regarding the sequence of events on 28 October are provided in a separate annex.

5.1 Sequence of events

5.1.1 Swivel failure on 14 May, and subsequent repairs

The gangway's swivel mechanism failed on 14 May. Repairs were completed on 22 May. A new swivel was installed, but this one had a different design. The steel pipes originally mounted on the top of the swivel did not fit the new swivel and were replaced with hydraulic hoses as a temporary solution.

The hydraulic hoses on the underside of the swivel were damaged during the swivel failure and were replaced.

5.1.2 Arrival at the Oseberg field on 29 May

Island Clipper arrived at OSH on 29 May and was connected to the facility from approximately 18:00 until approximately 22:00.

During discussions with personnel, we were informed about the weather conditions at the time of the connection on 29 May. Some found the weather to be rather rough compared to previous maintenance campaigns. However, the crew of Island Clipper reported that weather conditions were within the operational criteria for the gangway's ASOG. Weather forecast data received for the Hywind Tampen site indicate, with a high degree of confidence for the time interval from 18:00 to 23:00, that wind speed and significant wave height were within the ASOG criteria.

5.2 Sequence of events on 30 May

The weather was good, with a 10-knot wind from north-northwest, good visibility, and a significant wave height of approximately 1.6 metres.

Island Clipper connected to OSH at approximately 07:00. Maintenance personnel boarded in accordance with the connection and boarding procedures.

Personnel (OSH maintenance staff) who crossed the gangway at around 09:00 detected a faint smell of hydraulic oil.

Around lunchtime, the personnel noticed a growing smell of hydraulic fluid and reported it to the maritime personnel on board the vessel. At around 13:00, maritime personnel were dispatched to inspect, through the pedestal hatch, for possible leaks. At approximately 13:25, hydraulic fluid droplets/a leak were observed inside the pedestal.

It was unclear whether the leak was new or whether the oil was from the previous swivel repair. During a discussion about disconnecting the gangway from OSH, a loud bang was heard, and the alarm on the gangway was triggered at 13:31. At the same time, a cloud of hydraulic oil was observed coming from the gangway pedestal.

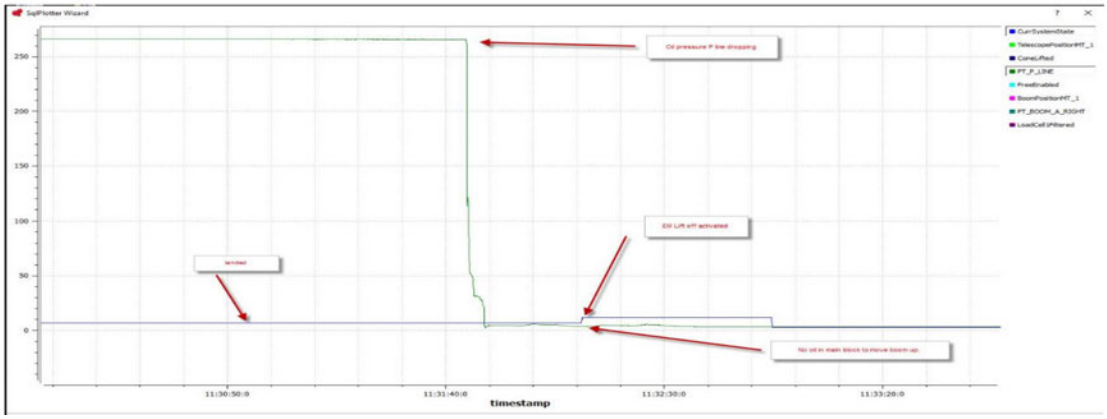

Figure 3: Hydraulic oil pressure (Source: Uptime)

The figure shows a rapid drop (less than 5 seconds) in hydraulic oil pressure (green line) to 0 bar. The leak reduced the oil level in the HPU tank to a critically low level.

The alarm and warning lights on the gangway were triggered. There were no people on the gangway when the incident occurred. The loss of hydraulic pressure resulted in the loss of the compensation function and a gangway caught on the landing area on OSH. The primary evacuation route (gangway) remained stuck in a locked, stationary position on the landing area on OSH and was therefore deemed unavailable. The movement of the vessel caused the gangway to move up and down, as well as horizontally along the railings around the landing area. The movements eventually caused the cone to be detached from the gangway, and the gangway made contact with the railings on OSH. Due to the gangway's movement along the railings, maintenance personnel on OSH observed noise and vibrations, as well as smoke and sparks, at the point of contact between the gangway and the railings.

At 13:32, Island Clipper radioed OSH to report that the gangway must not be used and that the landing area should be avoided. The MPS (Manual Protection System) button was activated, but without the desired effect.

At 13:36, OOM notified the Oseberg Field Centre of the situation. Island Clipper attempted to raise the gangway using accumulator power from the HPU.

Several attempts were made to disconnect the gangway from the landing area on OSH, both by using the gangway system's hydraulics and by manoeuvring the vessel away from the facility. This did not work because the transverse beam at the end of the gangway hooked onto the landing area railings.

At 13:39, an attempt was made to reposition Island Clipper away from the platform in order to free the gangway.

At 13:41, the transverse beam on the gangway hooked onto the railings. The repositioning attempt was aborted.

At 13:45, the platform manager at the Oseberg Field Centre activated the emergency response organisation in accordance with DSHA-18; this included a General Alarm on OSH, the mustering of the emergency response management and resources, and notification of the 2nd line of command.

At 13:46, the platform manager decided to shut down (ESD 2 H) OSH, with depressurisation, following a report of sparks between the gangway and the railings.

At 13:55, OOM reported that Island Clipper was stuck and it was not possible to operate the gangway. Warns of sparks caused by metal-to-metal contact between the gangway and the landing area.

At 13:58, a POB check was performed, with 18 people for OSH and 23 people for Island Clipper.

OSH personnel mustered on the upper deck in accordance with instructions for evacuation by SAR helicopter.

At 14:34, it was decided to evacuate OSH personnel by hoisting them into a SAR helicopter.

Island Clipper was in direct contact with service personnel at the gangway manufacturer. Following consultation, it was proposed to use the lifting function on the pedestal in conjunction with ballasting the vessel.

At 14:40, Island Clipper was ballasted to starboard to raise the gangway.

The evacuation of personnel by SAR helicopter was carried out in three lifts between 14:54 and 15:50.

At approximately 14:55, work began on raising the pedestal to lift the gangway.

At 15:02, the gangway detached from OSH. Island Clipper was positioned 75 metres from OSH and maintained a man-overboard (MOB) watch until the evacuation from OSH was complete.

At 15:50, the 2nd line was demobilised.

At 15:55, the Oseberg Field Centre declared the emergency situation over.

At 16:05, Island Clipper left the 500-metre safety zone and secured the gangway to sail to shore.

Following agreement with the Oseberg Field Centre regarding the use of a drone to inspect OSH for damage and leaks, Island Clipper entered the 500-metre safety zone at 17:20.

At 18:00, Island Clipper left the safety zone and headed for shore.

5.3 Sequence of events on 28 October

On 28 October 2025, an incident occurred at Oseberg H, where the gangway between OSH and the service operation vessel Island Clipper was rendered inoperable due to a hydraulic failure. The incident caused the gangway to follow the vessel's movements, and attempts to disconnect it using standard emergency procedures failed. Three people were in a safe location on OSH. They were evacuated by SAR helicopter to the Oseberg Field Centre. After 13 minutes, the gangway was freed by raising the pedestal and ballasting the vessel. Weather conditions were good, and a MOB watch was maintained throughout the SAR operation.

Annex D provides details on the sequence of events.

6 Potential of the incident

6.1 Actual consequences of the incident on 30 May

The actual consequence of the incident on 30 May was the loss of the gangway as the primary evacuation route.

There were no personnel crossing the gangway at the time of the incident.

The movement of the gangway caused physical damage to the deck grating and railings in the landing area. The cone came loose from the gangway, and the end of the gangway was damaged.
A fractured press coupling and a ruptured hydraulic hose caused a hydraulic oil leak in the upper part of the pedestal.

There was no spill of hydraulic oil into the sea.

Production at Oseberg H was shut down for 21 hours as a result of the incident.

Photo 6: Landing platform with damaged deck grating and detached cone (Source: Equinor/Island Offshore)

Photo 7: Damage to the gangway (Source: Equinor/Island Offshore)

6.2 Potential consequences of the incident on 30 May

The landing area was accessible during the incident, allowing free movement of personnel. One or more people could therefore have been in the landing area when the incident occurred. Nor can it be ruled out that a person could have just stepped off the stairs onto the landing area at the time of the incident. Both the cone and the staircase moved across the landing area, and the possibility of personal injury under slightly different circumstances cannot be excluded.

The scraping caused by metal-to-metal contact between the gangway and the railings produced sparks and could have been a potential ignition source, had there been gas in the area at the time.

If the ballasting and lifting mechanism on the pedestal had been insufficient to raise the gangway above the railings, this could have caused further damage to the gangway.

6.3 Actual consequences of the incident on 28 October

The actual consequence of the incident on 28 October was the loss of the gangway as the primary evacuation route.

There were no personnel crossing the gangway at the time of the incident.

The movement of the gangway caused damage to the deck grating on the landing area and to the gangway itself.

A hydraulic hose detached from its coupling and caused a hydraulic oil leak in the lower part of the pedestal.

There was no spill of hydraulic oil into the sea.

It was not necessary to shut down Oseberg H.

6.4 Potential consequences of the incident on 28 October

The landing area was accessible during the incident, allowing free movement of personnel. One or more people could therefore have been in the landing area when the incident occurred. Nor can it be ruled out that a person could have just stepped off the stairs onto the landing area at the time of the incident. Both the cone and the staircase moved across the landing area, and the possibility of personal injury under slightly different circumstances cannot be excluded.

7 Direct and underlying causes

This chapter describes the actual circumstances that did contribute to the incident, or are justifiably believed to have done so. A distinction is made between direct triggers and underlying causal factors.

7.1 Direct causes

7.1.1 A failure in a single component caused the W2W system's loss of function

A fracture in a hydraulic hose press coupling during the first incident on 30 May resulted in a loss of hydraulic pressure in the gangway.
The press coupling and hydraulic hose have undergone materials testing at Equinor's materials laboratory. The report from this examination indicates that a material defect in the outer sleeve of the press coupling was likely introduced during the sleeve's fabrication.

The material defect, combined with the pressing of the sleeve during fitting, is believed to have caused the fracture. When the press coupling failed, one of the four supply hoses in the swivel ruptured. This resulted in a loss of hydraulic oil and pressure, and a consequent loss of control over the gangway's functions. The

emergency operations rely on the same supply hoses in the swivel, and were therefore rendered inoperable.

The gangway then went into "fail-safe mode", in which the hydraulic boom lift cylinders were held in place by load-holding valves. It was therefore not possible to raise the gangway so that it could be freed from the landing area. Viewed in isolation, this solution worked in accordance with the design of the gangway. However, in conjunction with the design of the landing area on OSH, this meant that the gangway could not be detached in the event of a loss of hydraulic power.

A hydraulic hose that was detached from its coupling during the incident on 28 October caused a loss of hydraulic pressure to the gangway's functions. Examinations point to the use of the wrong type of coupling, combined with insufficient pressure during assembly, as causes of the failure. Based on the experience from the previous incident, on this occasion the gangway was freed after a short while by raising the pedestal and ballasting the vessel.

7.2 Underlying causes

7.2.1 Comprehensive risk assessment

The gangway used between the SOV and Oseberg H is designed in accordance with the DNV standard *DNV-ST-0358 Offshore gangways*. This standard specifies the technical requirements for gangways as standalone systems.

DNV-ST-0358 provides no guidance on how a gangway should be operated during the operational phase, nor does it specify requirements for the design of the landing areas on which the gangway is to be used, beyond strength requirements related to the forces to which they are subjected by the gangway.
The standard sets requirements for redundancy in the gangway's systems. Examples of this include accumulators for emergency operation in the event of a power outage and the shutdown of hydraulic pumps. Load-holding valves have been installed on the boom lift cylinders to prevent the gangway from falling in the event of a hose rupture.

The design of the landing area on Oseberg H requires the gangway to be lifted over railings to free it. In the event of a hose rupture, it will not be possible to lift the gangway clear of the landing area. Based on the documentation we have received and interviews with both Equinor and Island Offshore, we cannot see that this situation has been identified as a risk or compensated through appropriate measures.

The railings at OSH posed significant challenges for the bridge operators when connecting the gangway. The railings prevent the bridge operator from seeing the deck where the gangway is to land. This was communicated to Equinor at an early

stage. In 2024, Equinor submitted a change request to remove the railings. This work had not yet been completed.

Inadequate risk analysis of systems and equipment has resulted in consequence classification being unaccounted for, whether in design changes, maintenance activities, or in procurement and the follow-up of subcontractors. As a direct consequence of the lack of awareness of the system's consequence classification, work on hydraulic hoses and related components has also not been carried out with an adequate consequence classification in respect of health, safety and the environment in the event of potential functional failure. In addition, it has come to light that the hydraulic hose couplings are not labelled, which makes both traceability and proper verification difficult. This increases the likelihood that faults and weaknesses will be transferred undetected into operational use.

7.2.2 Use of hydraulic hoses

The swivel broke on 14 May and was replaced with a new swivel of a different design. The steel pipes originally mounted on the top of the swivel did not fit the new swivel and were replaced with hydraulic hoses as a temporary solution.

It was one of these hoses that caused the incident on 30 May due to a failure in a press coupling. A material examination conducted by Equinor showed that the press coupling likely had a material defect deriving from the sleeve's fabrication.

Between 14 May 2025 and 27 November 2025, the hoses on the underside of the swivel were replaced several times. The hydraulic hoses were damaged during the swivel failure on 14 May, and all the hoses were replaced at that time. Subsequently, several hoses were replaced because their pressure rating was considered too low. Three hoses were later damaged due to improperly installed electrical cables that caused contact damage; this was discovered on 28 June. On 27 November, another 7 of the 9 hoses were replaced with a more robust design.

Three new hoses were ordered after damage was discovered on three of the hoses on 28 June. These were delivered overnight. Based on Equinor's investigation report and the hose supplier's own report following the incident, we observe the following:

- Island Clipper was scheduled to set out on another mission the following day, so an urgent order was placed for new hoses.
- The task was assigned to a supplier of hydraulic hoses. Their nightshift mechanic produced new hoses overnight. However, the supplier did not have enough hose couplings of the correct type in stock. A different type of coupling was therefore installed on two hoses, which the mechanic deemed acceptable. As a compensatory measure, a pressure test was conducted with a

longer hold time than usual. The supplier's own report indicates that the coupling was inadequately pressed and, combined with the incorrect choice of coupling, this was likely the cause of the failure.
- One of the two incorrect hose couplings failed and was the direct cause of the incident on 28 October.

Our investigation shows that:
- The switch from steel pipes to hydraulic hoses as a temporary solution was implemented without a change management process or risk assessment, other than the fact that Island Offshore received approval from the gangway manufacturer Uptime.
- Orders were placed with the hose suppliers by submitting specifications provided by the gangway manufacturer or by supplying the old hoses as templates.
- New hoses were installed on the vessel without reception control by Island Offshore. The hose supplier delivered its products without any markings on the press sleeves, which made it difficult to verify that the correct hoses had been delivered.

The hydraulic hoses were not considered critical components. In the gangway's use in respect of OSH, the hoses became key components of the system; see Chapter 7.2.1 of the report.

8 Emergency response

Emergency response organisation
The organisation of emergency preparedness, roles and responsibilities for the emergency response organisation for OSH and Island Clipper are described in "Emergency Preparedness Analysis Oseberg H" and "Emergency Preparedness on the Norwegian Continental Shelf."

The emergency response management is located at the Oseberg Field Centre, and communication with Oseberg H is handled by the incident manager for Oseberg H.

8.1 Emergency response management of the incident on 30 May

This section of the report is based on interviews with personnel who were directly involved in the incident, including emergency response personnel, senior operational staff and emergency response managers. In addition, relevant documentation such as emergency response plans, logs and other operational information related to the sequence of events has been used.

The description provides an overview of the emergency response measures that were activated from the moment the incident occurred. This includes alarms and

notifications, mobilisation of emergency response resources, evacuation of personnel and actions taken to deal with the situation. The report also discusses the normalisation phase and the conclusion of the emergency response operation, after all individuals had been evacuated and Island Clipper was freed from OSH.

Alarms, notifications and mobilisation

When the situation arose, the necessary safety measures were quickly implemented both on board Island Clipper and on OSH to ensure the safety of the personnel. The gangway operator on Island Clipper contacted the incident manager for OSH and reported technical problems with the gangway, instructing everyone to stay away from the landing area.

The Offshore Operations Manager called and notified the platform manager at the Oseberg Field Centre at 13:36 via Teams. It emerged during interviews that there were problems contacting OSF by UHF/VHF; calls went unanswered.

The OSF platform manager answered the Teams call, went into the OSF central control room, and alerted the on-duty personnel to the problems with the gangway on Island Clipper. The platform manager then activated DSHA-18 (Loss of gangway between Oseberg OSH and SOV), which triggered a GA on OSH.
Contact was established between the central control room at OSF, OSH and Island Clipper on UHF channel 5.
The emergency response centre at OSF was manned. Equinor's onshore emergency response organisation was mobilised to provide support, and the relevant authorities were notified.

There were a total of 18 people on board OSH and 23 people on board Island Clipper when the incident occurred. Personnel on OSH observed sparks between the gangway and the railings, prompting the platform manager at the Oseberg Field Centre to decide to halt production on OSH (ESD 2 H) by depressurising the system as a precautionary measure.

According to "App. B Sikkerhetsstrategi – Oseberg H," all personnel on board must be equipped with UHF radios for both operational and emergency communications, as the facility does not have loudspeakers or telephones for public address announcements. However, during interviews it emerged that not everyone on board was equipped with a radio. This was addressed by the crews organising themselves into teams, with one member always in possession of a radio, so that communication could be maintained. It also emerged during interviews that there had been no prior training or drills for DHSA-18: Loss of gangway between Oseberg H and SOV.

Response and rescue

The emergency response organisation responded quickly and effectively to a potentially critical situation. When the hydraulic pressure dropped, an alarm sounded and the gangway warning lights came on. The gangway operator notified the incident manager for OSH that everyone had to stay away from the landing area so that Island Clipper could disconnect the gangway.

At the Oseberg Field Centre, the platform manager ordered an ESD 2 production shutdown, with depressurisation, based on the report of sparks between the gangway and the railings.
Since the main evacuation route was unavailable, it was decided to evacuate the crew on OSH by SAR helicopter to the Oseberg Field Centre.

PSV Viking Energy, which was stationed at the Oseberg Field Centre, was redirected to OSH to provide an MOB watch for the SAR operation, while Island Clipper attempted to break free from OSH.

The evacuation began at 14:54. The SAR helicopter made three trips to OSH, transporting 4, 6 and 8 people, respectively. All 18 people were evacuated to the Oseberg Field Centre in less than 45 minutes, and the evacuation was completed at 15:50.

After Island Clipper broke free from OSH, the vessel positioned itself 75 metres away to maintain a MOB watch during the ongoing evacuation. Once everyone on board OSH had been evacuated, Island Clipper moved out of the 500-metre safety zone.

POB check and preparation of personnel for evacuation
The gangway between Island Clipper and OSH is equipped with a digital POB system, featuring a screen on the bridge that provides a full list of who is on board the vessel and on OSH. In addition, the incident manager conducted a manual headcount of the personnel on the facility. A total of 18 people were recorded as being on board OSH. The personnel on board OSH mustered on the top deck in accordance with instructions for evacuation by SAR helicopter.

Following the muster, all ongoing work was halted, work areas were secured and all open ATEX enclosures were closed. Preparations were then made to receive the SAR helicopter. To minimise exposure to the gangway, which was stuck at that point, it was decided that only two people would be sent down to the lower deck to retrieve the survival suits. The survival suits are stored in a cabinet on the same level as the landing area on the opposite side. The survival suits were hoisted up to personnel located on a higher level using a horizontal ladder.

Normalisation and conclusion of the emergency situation

Island Clipper used the lifting mechanism on the gangway pedestal in combination with ballasting to free the vessel from OSH.
After disengaging, the vessel remained on standby as a MOB boat during the ongoing evacuation.
Once everyone had been evacuated, Island Clipper left the safety zone and set course for shore. The gangway was secured before departure. The vessel arrived at Bergen at 03:00 on 31 May.

The evacuated personnel were transferred to the Oseberg Field Centre, where they were provided with clothing and gathered in the cinema room for interviews and care. The emergency situation was concluded after all persons had been evacuated and Island Clipper had been freed from OSH.

The following day, the evacuated personnel were transported by helicopter to Flesland Airport. A debriefing was subsequently held on board Island Clipper while the vessel was docked in the Port of Bergen.

8.2 Emergency response management of the incident on 28 October

The incident was handled effectively in terms of technical control of the situation, communication, coordination between units and the performance of the evacuation. Nevertheless, the investigation reveals weaknesses in filling emergency response roles, compliance with notification procedures and a lack of training in OSH's emergency preparedness.

On the positive side, the situation was handled quickly and effectively from a technical standpoint, and coordination between the vessel, OSH and the Oseberg Field Centre functioned well. Communication was clear, the SAR evacuation proceeded quickly and without issues, and the personnel were well cared for. Many of the barriers that are critical in this type of incident, such as the alarm systems and the pedestal's functionality, also worked as intended.

At the same time, it is clear that the emergency preparedness measures did not fully meet the requirements. The mustering in the emergency response centre was inadequate; key roles – such as the status board operator – were not mobilised. The notification routines were not adhered to in accordance with the emergency response plan, and a regular radio channel was used instead of the dedicated emergency response channel. In addition, the OSH emergency response organisation lacked the necessary year-round training and drills. Overall, this indicates that the emergency preparedness organisation functions well in practice once a situation arises, but that it also has some organisational weaknesses and shortcomings in preparedness that must be addressed to ensure a more robust response to future incidents.

Emergency response organisation

The emergency response organisation that handled the incident consisted of several levels: incident management for OSH, crew on Island Clipper and the emergency response management in OSF central control room. When the incident occurred, three people were on OSH for a pre-check. The emergency response room at OSF was staffed by the emergency response manager, two operations and maintenance managers, and a maintenance planning manager. The emergency response organisation was not fully mobilised in accordance with DSHA-18 "Loss of gangway between Oseberg H and SOV," even though a critical incident such as the loss of a gangway requires full mobilisation of the emergency response management. Despite this, the emergency response organisation appeared to be operational and capable of making necessary decisions quickly. At the same time, the crew of Island Clipper played a key role in the response, particularly through the technical measures implemented on board the vessel.

Emergency response management of the incident

The incident occurred at 09:02 when the gangway lost hydraulic pressure due to a hose rupture. The gangway issued a red-light warning. The incident manager for OSH and Island Clipper's bridge maintained good communication during this phase. The crew of Island Clipper first tried twice to activate the gangway's emergency operation, but to no avail, as the hydraulic system was inoperable. When these attempts failed, they considered alternative measures and decided to raise the pedestal using the vessel's own hydraulic system, which is independent of the gangway system. This decision was crucial in reducing the risk of injury and damage and made it possible to lift the gangway free of OSH after only 13 minutes. At the same time, the incident manager ensured that the personnel on the facility were mustered and kept in a safe location, a measure that helped protect their safety until the evacuation could be carried out.

Several of the measures taken and assessments made can be attributed to lessons learned from the incident on 30 May. This includes, among other things, the availability of hearing protection and clearer positioning of personnel, a better understanding of failure modes in the gangway system, and clearer coordination between Island Clipper and OSH.

Alarms, notifications and mobilisation

The alarm was quickly relayed from Island Clipper to OSH, and then from the incident manager to OSF central control room via UHF channel 3. The notification was made quickly, but not entirely according to plan, since the regular channel was used instead of the dedicated emergency channel. During interviews, it emerged that this meant all communications were overheard by OSF personnel, which caused unease and uncertainty among some of the crew. The emergency response manager at OSF reported for duty in the central control room shortly after the notification was received.

Since the situation was deemed to be under control, the full emergency response management was not mobilised. As a result, the status board operator was not mustered, and therefore no continuous status log of the incident was maintained. The emergency response manager nevertheless quickly notified the SAR coordinator of the need to evacuate three people by SAR helicopter.

Response and rescue
The most important measure to reduce risk was the freeing of the gangway, and thus Island Clipper, from OSH. The crew of Island Clipper raised the pedestal and ballasted the vessel to free it from the platform. The SAR coordinator was notified early on and mobilised resources for the evacuation. The SAR helicopter departed Bergen at 09:57, arrived at OSH at 10:37, and picked up the three people. The evacuation proceeded as planned, and a designated store of hearing protection equipment, a measure implemented following the previous incident, was utilised. The operational management of the rescue phase therefore appears to have been effective and characterised by good coordination between the vessel, the facility and the field centre.

POB check and preparation of personnel for evacuation
A POB check was quickly conducted following the incident. The incident manager for OSH had a clear overview of the three people on the facility and, since they all had radios, they received the same information in real time. This ensured effective coordination. The crews were prepared for the SAR evacuation well before the helicopter arrived. Except for the fact that the incident manager lost his hearing protection during the lift, the entire process proceeded in accordance with standard practice. The evacuation was carried out as a coordinated operation, and the personnel were then transported to the Oseberg Field Centre for further follow-up and debriefing.

Normalisation and conclusion of the emergency situation
Normal operations resumed immediately after the crew had been evacuated and Island Clipper had been freed from OSH. The emergency response management determined that no further measures, such as a shutdown, were necessary, as there were no signs of fire risk or mechanical damage to critical systems on OSH. Upon arrival at OSF, the emergency response management and the personnel involved held a debriefing at 13:00. Everyone was offered a hearing test, and no one reported any injuries. Island Clipper later returned to Bergen for technical repairs to the gangway. Following the incident, it was revealed that the OSH emergency response organisation had not conducted any facility-specific drills in 2025. This is considered particularly regrettable, as emergency response drills are essential for ensuring that the emergency response organisation is trained in various scenarios and can handle facility-specific risks in a robust manner.

9 Key learning points

This chapter highlights factors we believe the industry, or parts thereof, must be aware of in order to evaluate measures and changes related to gangway operations.

Learning from incidents is an important part of continuous improvement, particularly in high-risk industries such as the petroleum sector.

We highlight one finding from this investigation that stakeholders can learn from and use to improve their risk management.

Comprehensive risk management
To ensure comprehensive risk management when integrating an SOV, a gangway and the landing area on a facility, the risk assessments must cover technical and operational factors across the board. It is crucial to understand how the interface between the gangway, the landing area and their use can affect each other, as well as how the operational context and constraints can exacerbate risks.

The gangway's functions are controlled hydraulically. Some parts of the hydraulic system lack redundancy. The components without redundancy are shared with the emergency control system. In the case of OSH, freeing the gangway from the landing area depended on being able to lift it clear. The industry standard on which the gangway is based does not specify an interface with the landing area.

Comprehensive risk management is predicated on all parties involved – design, operation and maintenance – sharing a common understanding of their own contribution to risk and the operational consequences thereof.

10 Regulations

SOV Island Clipper is a Norwegian-flagged vessel that complies with the requirements of the Norwegian Maritime Authority as well as classification society requirements.

The gangway is certified in accordance with the DNV standard DNV-ST-0358 Offshore Gangways (2017). This means that the gangway has been designed in accordance with this standard.
In addition, the vessel has a DNV additional class notation *Walk2Work*. This means that the gangway system will be monitored by the classification society during the operational phase by means of periodic inspections.

Oseberg H is a fixed installation and is subject to the HSE regulations for petroleum activities.

Activities related to gangway operations count as petroleum activities and are subject to the relevant safety requirements set out in the HSE regulations pursuant to the Petroleum Act.

11 Audit findings

We have two main categories of audit findings:

Non-conformity: Audit findings where we *prove* the existence of a breach/non-compliance with respect to the regulations.

Improvement point: Audit findings where we *believe we have seen a* breach/non-compliance with respect to the regulations, but do not have sufficient information to be able to prove it.

11.1 Non-conformities

11.1.1 Inadequate risk assessment of the use of the gangway at Oseberg H

Non-conformity
Equinor had not ensured that the loss of control of the gangway connected to Oseberg H had been risk-assessed in a way that provided a balanced and most comprehensive possible picture of the risks associated with gangway operations.

Requirements
Management Regulations, section 17(1 and 3b) concerning risk analyses and emergency preparedness assessments

Rationale
The comprehensive risk assessment related to the connection of the gangway from Island Offshore to Oseberg H was inadequate. The loss of control of the gangway due to a failure in the hydraulic system had not been identified as a relevant scenario, and therefore no assessment had been conducted of the associated consequences or the need for risk-mitigation measures.

The gangway is designed to enter a safe state in the event of a loss of control, which means that it locks into its current position. When connected to Oseberg H, the safe state did not function as intended. Sturdy railings in the landing area prevented the SOV from withdrawing from the facility. While, in isolation, the gangway was in a safe state, the combination of the gangway's safe state and the landing area at Oseberg H posed an operational risk.

Nor had the control and hydraulics been subject to a criticality assessment for this operation, which meant that the significance of these functions had not been

adequately taken into account in the planning of maintenance and in the modifications carried out on the gangway.

11.1.2 Deficient communication on Oseberg H

Non-conformity
Equinor had not ensured that necessary internal and external communications were maintained at all times during operations, and in hazard and accident situations on Oseberg H.

Requirements
Activities Regulations, section 80(1) concerning communication

Rationale
It is stated in Equinor's document "App. B - Sikkerhetsstrategi - Oseberg H" that all personnel on Oseberg H must have their own UHF radios for communication, and these will be used for emergency communication. However, during interviews conducted after the incident on 30 May, it emerged that not everyone had personal radios while working on board Oseberg H.

In addition, it emerged that there were problems with radio communication between Oseberg H and the incident manager at the Oseberg Field Centre due to limited coverage in certain areas on Oseberg H.

11.1.3 Lack of emergency response training and drills on the loss of the gangway between Oseberg H and the SOV

Non-conformity
Equinor had not ensured that necessary training and drills had been conducted, so that the personnel were at all times able to handle operational disturbances and hazard and accident situations in an effective manner on Oseberg H.

Requirements
Activities Regulations, section 23(1) concerning training and drills

Rationale
It emerged during interviews that personnel working on Oseberg H had not received training or drills for DSHA-18 "*Loss of gangway between Oseberg H and SOV*", despite the fact that operations involving the gangway are carried out regularly.

There had been no drills for DSHA-18 prior to the incident on 30 May. Nor were any training sessions or drills conducted in the period leading up to the second incident, in which the gangway between Oseberg H and Island Clipper was rendered inoperable on 28 October 2025.

11.2 Improvement points

11.2.1 Deficient follow-up of the gangway system

Improvement point
Equinor does not appear to have ensured compliance with its internal requirements, which were established to ensure that chartered vessels comply with the requirements set out in health, safety and environmental legislation covering gangway systems.

Requirements
Framework Regulations, section 7, para 1(2) concerning responsibilities pursuant to these regulations, with reference to para 2, and the Management Regulations, section 8, para 1(1) concerning internal requirements

Rationale
Equinor has not conducted an inspection of Island Clipper's gangway system in accordance with the requirements set out in its own governing documents in respect of periodic inspections.

Equinor has signed a long-term contract with annual options for Island Clipper. Equinor's governing document *Offshore Vessel Inspections* specifies a three-year inspection interval for gangway systems. Equinor has stated that no inspection of the gangway system has been carried out since the contract for the charter of the vessel was signed in 2019.

11.2.2 Inadequate change management

Improvement point
Island Offshore does not appear to have ensured that components in the hydraulic system controlling the gangway function to connect to Oseberg H were maintained so as to be capable of performing their required functions.

Requirements
Activities Regulations, section 45 concerning maintenance

Rationale
When replacing the swivel following the damage sustained on 14 May, the repair involved the temporary installation of hydraulic hoses to replace the fixed pipes. The installation of hydraulic hoses was carried out on the basis of verbal approval by the gangway manufacturer. Island Offshore does not appear to have sufficiently established its own processes for managing change.

During the incidents on 30 May and 28 October, a rupture in one of four supply hoses resulted in a loss of hydraulic fluid and pressure, causing loss of control of the gangway's functions.

12 Barriers and safety functions that worked

One of the most critical technical barriers that functioned as intended in both incidents was the alarm and lighting system on the gangway. When the gangway's functions failed and it began to move erratically, the alarm was triggered and the red traffic light functioned as designed. This sent a clear signal to staff that the gangway was unsafe, and helped ensure that no one was in the danger zone.

At the organisational level, the emergency response plan for OSH was activated quickly and effectively. The Offshore Operations Manager (OOM) alerted the Oseberg Field Centre early on, and the incident manager for OSH was immediately instructed to halt all work and secure the area. DSHA-18 (Loss of gangway between Oseberg H and SOV) was initiated. Production at OSH was halted and the installation was depressurised.

In both incidents, a SAR helicopter was deployed, and the personnel on board OSH were safely evacuated to the Oseberg Field Centre without injury.

During the incident on 30 May, Viking Energy provided the MOB watch while Island Clipper was stuck fast on OSH.

13 Assessment of the company's investigation reports

Equinor's investigations were conducted at assignment level 3, with the Operations Manager at the Oseberg Field Centre serving as the instructing entity.
The investigation report for the first incident was received on 11 August 2025, and the report for the second incident was received on 6 January 2026.
Both incidents have been classified with an actual severity level of Yellow 3, which indicates a moderate impairment or fault in safety barriers. An operational gangway is an available barrier that is considered lost when the gangway becomes unavailable, and incidents involving hydraulic hose rupture are considered to be losses of a necessary safety barrier.

Equinor classifies these incidents as Green 4 in terms of potential severity, which includes medical treatment, material damage and other financial losses. Video footage taken after the incidents shows the gangway swaying back and forth in a jerky motion. There was free movement of personnel in the gangway landing area, and there were no barriers that physically prevented the presence of personnel there.

One or more people could therefore have been in the landing area when the incident occurred. Nor can it be ruled out that a person could have just stepped from the stairs onto the landing at the time of the incident. Since both the cone and the stairs were moving across the landing area, the possibility of personal injury under slightly different circumstances cannot be excluded.

Island Offshore sent a representative to the investigation team following the incident on 30 May. Materials testing of the damaged hydraulic hose and press coupling was conducted on behalf of the investigation team at Equinor's materials laboratory.
The investigation team outlines 13 short-term and four long-term measures aimed at preventing the recurrence of similar incidents, as well as contributing to a general improvement in HSE standards. The status of the implementation of these measures was presented at a meeting on 14 November.

Equinor's investigation following the incident on 28 October outlines measures aimed at strengthening the management and quality systems of the parties involved, through improved planning, risk assessment, and clearer requirements for equipment and competence. It is noted that organisational and technical weaknesses increased the risk of failures and undesirable incidents, and that there are widespread challenges related to procedures, risk assessment, planning and learning in the maintenance of the gangway system. Measures are recommended that target Equinor's own organisation and Island Offshore's. At the meeting on 17 February, Island Offshore confirmed that it had incorporated the measures into its own follow-up.

14 Annexes

A: Documents used in the investigation.
B: List of interviewed personnel.

Annex C
Examination of a failed press coupling and hydraulic hose – the incident on 30 May 2025

The damaged press coupling and hydraulic hose were examined at Equinor's materials laboratory. The examinations revealed that the sleeve in the press coupling had an axial fracture along its entire length. The end of the hose that had been torn out or detached from the sleeve had a frayed end (steel reinforcement) and a partial tear in the rubber.

Photo 7: Sleeve with an axial fracture (Source: Equinor)

Photo 8: Torn hose end (Source: Equinor)

Furthermore, the examinations revealed that the sleeve had a material defect at its open end (the narrow end). The material defect appears as a relatively large piece of slag or oxide, originating from the steel production process. Equinor states that the material defect will reduce the load-bearing cross-section of the sleeve locally, and since the pressing of the sleeve generates high compressive stresses on it, it seems likely that a partial axial fracture or crack occurred. If the sleeve was already cracked, the fracture may have occurred during normal operation as a result of a further reduction in the load-bearing cross-section, combined with a certain notch effect caused by the existing crack. As a result, the hose eventually tore, causing a leak.

Annex D

Incident at Oseberg H on 28 October – Loss of gangway

On 28 October, a new and similar incident occurred on Oseberg H, where the gangway between the facility and the service operation vessel Island Clipper was rendered inoperable. During maintenance work, the vessel was positioned with the gangway connected to the landing area on OSH. Weather conditions are reported to have been good, with good visibility and a northerly wind of about 12 knots. The significant wave height was approximately 3 metres. Three people had boarded OSH to conduct a pre-check.

Sequence of events

At 09:02, a hydraulic failure occurred, causing the gangway to move in sync with the vessel's motion. A red light is observed on the gangway, indicating that it is closed.

At 09:05, an attempt to disconnect the gangway from the operator station on the navigation bridge by emergency manual operation yielded no response. The gangway remained physically connected to the landing area.

At approximately 09:08, OSF central control room was notified of the incident and informed the emergency response management.
New attempt at emergency operation of the gangway from the pedestal. The emergency operation did not work.

At 09:09, ballasting of the vessel and raising of the pedestal began.

At 09:15, Island Clipper was freed by raising the pedestal and ballasting, to lift the gangway's cone clear of the railings.
The emergency response manager and incident manager in the central control room are notified of the incident.

At approximately 09:23, the emergency response management mustered at the Oseberg Field Centre.

At 09:25, the emergency response manager contacted LOL (SAR coordinator) and informed them of the possible need to pick up personnel from OSH. LOL notified the SAR crew in Bergen.

At 09:35, the emergency response manager confirmed the need for a SAR helicopter to pick up three people from OSH.

At 10:55 A SAR helicopter evacuated three people from OSH.

At 11:02 arrival at OSF.

At 13:00 Debriefing with the emergency response management and relevant personnel, including Equinor's personnel on board Island Clipper.

Root cause analysis
During an inspection on 28 June, damage was observed to three hydraulic hoses beneath the swivel. The damage was caused by friction between the hoses and electrical cables, due to the electrical cables being installed incorrectly relative to the positioning of the hoses. Replacement hoses were ordered and delivered, but two of the couplings used were the wrong type, as the correct couplings were not in stock. The use of the wrong type of coupling, combined with insufficient pressure during fitting, caused the hose end to be detached from the coupling. An examination shows that there was no internal crimp in the insert. A rupture in one of the supply hoses in the hydraulic system led to a loss of pressure and a subsequent failure of the gangway function.

Photo 9: Hydraulic hose (Source: Equinor/Island Offshore)

Photo 10: Press coupling with the end of the hydraulic hose (Source: Equinor/Island Offshore)

The hose supplier's root cause analysis indicates that two out of three replacement hoses were delivered with the wrong type of coupling, as the correct coupling was not available in stock. Pressure testing was performed with an extended hold time, and a final visual inspection was performed. When the hoses were handed over, the recipient was not informed that the wrong type of coupling had been used. The analysis shows that the insert lacked an internal crimp, which indicates insufficient pressure being applied. In combination with the wrong type of coupling, this is considered the likely cause of the hydraulic hose being detached from the coupling.

Equinor's investigation report identifies underlying causes related to:

- A lack of redundancy in the hydraulic system, where a single failure caused the gangway system to malfunction. The hydraulic system has a *single point of failure* in the pipe system. A rupture in one of the supply hoses results in the loss of the gangway's functions.
- The wrong type of press coupling was installed because the correct ones were not in stock. An examination shows that there was no internal crimp in the insert, indicating insufficient pressure having been applied. A pressure test with a longer hold time was intended to compensate for the chosen solution.
- Lack of written and verified specifications/requirements for replacement hoses.
- Operational pressure to complete the replacement hoses in order to get the vessel ready for its next mission.