Havtil
Havindustritilsynet

Investigation report

Report	
Report title Report following investigation of fall incident at Hammerfest LNG on 24 April 2025	Activity number 001901060/347000002

Classification	
☐ Unclassified	☐ Exempt from publication

Parties involved	
Team A4/A3	Approved by / date [redacted] 25 February 2026
Investigation team participants [redacted]	Investigation leader [redacted]

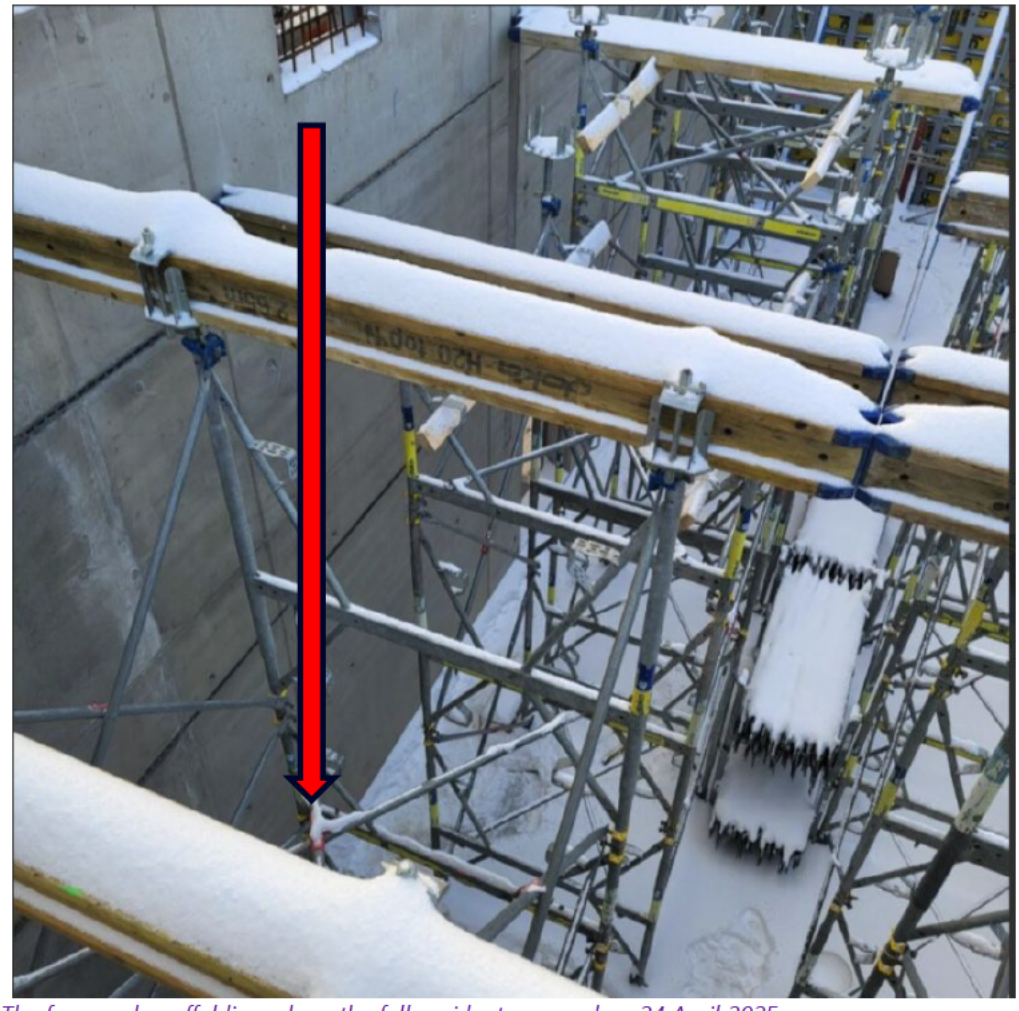

Figure 1 The formwork scaffolding where the fall accident occurred on 24 April 2025

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During the assembly of formwork scaffolding for the emergency power generator building, a serious accident occurred on 24 April 2025, at Equinor's Hammerfest LNG (HLNG) onshore facility at Melkøya. A worker hired by Consto Anlegg Nord AS (Consto) fell 4.4 metres onto a concrete floor while working on the assembly of the formwork scaffolding.

Havtil was informed that the person concerned had been taken care of by Equinor's emergency response personnel and transported to hospital in Hammerfest. The work that Consto is carrying out at HLNG is part of the Snøhvit Future Project-EPCI.
The Norwegian Ocean Industry Authority (Havtil) decided to investigate the incident on the same day.

A direct cause of the incident was that the injured person (IP) lost his balance and fell from the scaffolding to ground level. The fall arrest harness with dual lanyard and shock absorber that the IP was assigned to use was not attached to a secure anchor point. The investigation has also revealed that the main cause of the incident was that Consto had not made provisions for the use of work platforms during the assembly of the formwork scaffolding.

Under slightly different circumstances, the injured person could have suffered far more serious injuries or, in the worst case, died.

On 29 April 2025, after Havtil had completed the initial interviews and inspection, an order was issued to suspend work at height for Consto at HLNG. The order was issued based on observations made during inspections and information obtained during interviews.

The incident was the result of several factors.

Direct cause:
A direct cause of the incident was that the injured person (IP) lost his balance and fell from the scaffolding to ground level. The fall arrest harness with dual lanyard and shock absorber that the IP was assigned to use was not attached to a secure anchor point. The investigation has also revealed that the main cause of the incident was that Consto had not made provisions for the use of work platforms during the assembly of the formwork scaffolding.

In addition to the lack of work platforms to prevent falls, fall protection equipment was not used correctly.

Underlying circumstances that had an impact on the incident (section 7.2):

- Risk understanding and planning, sections 7.2.1-7.2.5
- Competence and training, sections 7.2.6-7.2.8
- Framework conditions and working environment factors, sections 7.2.9-7.2.17
- Regulations and compliance, section 7.2.18
- See-to-it duty and verification activities, section 7.2.19

Lessons learned from the incident.
In Chapter 8 of the report, we have chosen to highlight learning points related to working at height and performing work on petroleum facilities, but also in the construction industry in general.

Non-conformity:
The investigation identified a total of 11 non-conformities on the parts of Equinor, Aibel, and Consto; see Chapter 11.

Equinor's non-conformities

- Follow-up of other participants
- Risk reduction
- Safety clearance of activities

- Continuous improvement

Aibel's non-conformities

- Follow-up of other participants
- Risk reduction

Consto's non-conformities

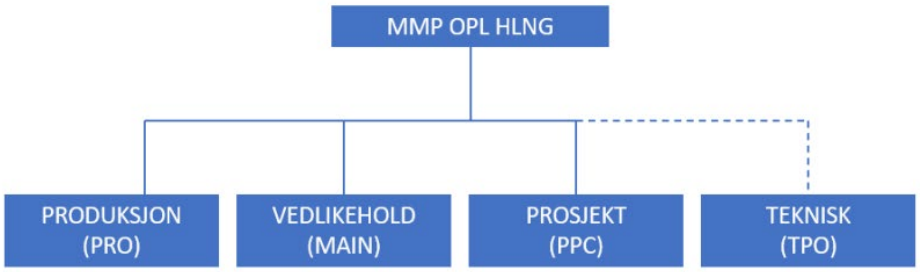
- Risk analyses
- Work arrangements
- Competence
- Organisational, psychosocial working environment, and whistleblowing culture
- Safety delegates

2 Background information

2.1 Description of the facility and organisation

Hammerfest LNG (HLNG) is a facility for receiving and processing natural gas and condensate from the Snøhvit field (Snøhvit, Askeladd and Albatross) in the Barents Sea. The facility was commissioned in 2007. Equinor (then called Statoil) was responsible for its development and is now the operator of the facility. The facility is located at Melkøya outside Hammerfest.

Hammerfest LNG is organised together with Equinor's other onshore facilities in MMP OPL (Marketing, Midstream and Processing – Onshore Plants). Each individual onshore facility has its own operating organisation and units for maintenance (MAIN), projects (PPC), and technical support (TPO).



Figur 1 Forenklet organisasjonskart HLNG.

Equinor received approval for plans to develop the Snøhvit Future Project in August 2023. In 2024, a development project involving onshore compression and electrification of the facility, called the Snøhvit Future Project (SFP), began at Melkøya.

Overview of HLNG (photo: Havtil)

There has been a high level of activity at HLNG in recent years, with work following the fire at the facility in 2020, the SFP project, and planning for a turnaround, alongside normal operations. This has resulted in a large number of contractors and subcontractors, including hired workers, being present at the site. Some of the companies and personnel have no previous experience of working on petroleum facilities.

In connection with SFP, Aibel was awarded the main contract, an EPCI contract that involved a turnkey contract for engineering, procurement, construction and installation, remunerated on a time spent basis. The project aims to extend the plant's service life until 2050 and reduce CO2 emissions.

Aibel holds the main contract and will build two new process modules, as well as construct a receiving station for power from the mainland and electrify Hammerfest LNG. Consto has the largest subcontract for construction and civil engineering work under Aibel. They are delivering two concrete buildings in areas L201 and L202, subsurface infrastructure, and building modifications. The SFP project has estimated 1,200 man-years in the construction and installation phase, of which Consto's share is 200 to 300 man-years, and the project is scheduled for completion at the end of 2029.

Consto is a major player in the construction industry and has experience in municipal and national construction projects. Among other projects, Consto was responsible for the construction of the new Hammerfest Hospital. Consto has its head office in Tromsø and operations throughout Norway, as well as construction activities in southern Sweden. The group has more than 1,300 full-time equivalents in Norway and Sweden. Consto has used its own employees, hired labour, and Consto's partners, including for transport related to work at Melkøya. Concrete work and formwork were part of Consto's deliverables.

For the concrete work, Consto hired personnel from several different temporary-work agencies. The work team to which the IP belonged consisted of foreign personnel from the Adecco temporary-work agency. This work team had been working together at the facility in the months leading up to the accident.

Both Aibel and Consto had senior personnel stationed at the facility, and there were daily cooperation meetings between Aibel and Consto's management.

During the project, joint safety delegate meetings were established between Equinor's SFP project chief safety delegate, Aibel's project chief safety delegate, and Consto's safety delegate.

In order to perform work at HLNG, everyone must go through an onboarding process, which is a general training programme consisting of:

- HSE 24 course organised by Equinor, approx. 6-7 hours
- Safety course organised online by Equinor, approx. 2 hours
- Work permit and safe job analysis organised online by Equinor, approx. 1 hour

2.2 Delays in the Snøhvit Future Project (SFP)

SFP has been subject to delays. Shortly after the contract between Equinor and Aibel for SFP was awarded in autumn 2020, a fire broke out in a gas turbine at HLNG. The work to return the facility to operation meant that SFP was postponed, and personnel who were to prepare the project were transferred to the Cold Return project that was established after the fire at HLNG. The collaboration contract between Aibel and Consto was first signed at the end of 2023, more than a year behind schedule.

The planned turnaround in 2024 was also postponed to the period April-July 2025 as a result of the plant having been closed for a year and a half after the fire.

Preparation of the site for the construction of gas compression and an emergency power facility took longer than planned. Preparations for the project were still underway when Consto personnel arrived at HLNG in 2024. Many facilities such as toilets, drying rooms, canteens, and barracks were not ready and had to be partially located elsewhere.

Progress has been a key topic for all companies, as gas compression from the new plant is necessary for maintaining deliveries to HLNG from the Snøhvit field. The delays since 2020 have reinforced this focus.

Interviews show that time-outs for Consto personnel due to weather conditions were more frequent than anticipated, which caused frustration among both operational personnel and line management. In addition, the project has been affected by

numerous shutdowns of the hot site, implemented by Equinor HLNG under various operating conditions, such as during gas venting.

Originally, the formwork scaffolding was to be built on the outside of the building in L202, and then lifted in by crane. Due to weather conditions, the crane lift was cancelled, and the formwork scaffolding had to be built inside L202 by workers (concrete workers) hired by Consto. The IP was hired by and was part of this work team.

2.3 Incident area

The accident occurred in area L202 near the administration building on Melkøya, where a building for an emergency power generator is currently under construction. This area is located outside the part of the facility that is classified as potentially explosive, referred to as a hot site. However, Consto had a similar formwork scaffolding setup inside the hot site in area L201 for a long time.

Overview of HLNG area L202 where the incident occurred (photo: Havtil)

The Consto work team involved began the shift period at the plant on Monday and Tuesday, 21-22 April 2025, the week of the incident. The operations manager started his shift on 23 April 2025. The formwork job consisted of building formwork scaffolding for casting floor slabs and walls for the power station in L202.

There were variable weather conditions with wind and snow on Thursday, 24 April 2025. The formwork scaffolding in L202 had reached a height of approximately 4.5 meters. The work consisted of continuing to lay Doka beams for floor formwork for casting the next level of the building. The work team consisted of eight people hired by Consto from Adecco. The work team was subdivided into two teams of four in the relevant area when the incident occurred at 12:35.

3 Havtil's investigation

Havtil's investigation consists of three separate mandates: one to examine the obligations of the operator Equinor and two to examine the obligations of each of the contractors Aibel and Consto.
Composition of the investigation team:

- [redacted] logistics and emergency preparedness (Investigation Leader)
- [redacted] logistics and emergency preparedness
- [redacted] working environment

The investigation mandates for the investigations of Equinor, Aibel, and Consto are identical. In the investigation report, the focus of the various observations will be on the individual actor.

3.1 Mandate

a. Determine the scope and course of the incident (using a systematic review that typically describes the timeline and events)
b. Assess the actual and potential consequences
c. Assess direct and underlying causes
d. Identify regulatory non-conformities and improvement points
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, or barriers that mitigated the consequences of an accident.)
g. Assess Equinor's own learning and experience transfer from previous incidents
h. Prepare a report and covering letter (potentially including proposals for the use of reactive measures) in accordance with the template
i. Recommend, and normally contribute to, further follow-up

3.2 Procedure.

Havtil decided to investigate the incident after receiving notification on the day it occurred, 24 April 2025. Havtil's investigation team arrived at Melkøya on Friday, 25 April 2025, and held an opening meeting with Equinor, Aibel and Consto on the same day, as well as making an on-site inspection.

The investigation covered:

- Interviews at Melkøya and Hammerfest hospitals from 25 to 27 April, and with teams in August and September 2025.
- Verifications:
  - examination of the safety harness the IP was using when the accident occurred

- inspection of the accident site
- review of documentation from Equinor, Aibel and Consto

Havtil has used the human, technology, and organisation (HTO) perspective to identify and emphasise causal factors related to HTO conditions, both direct and underlying. The factors are given equal consideration. We have examined physical, organisational and psychosocial working environment conditions in SFP that may have contributed to the occurrence of the incident. Among other things, we have looked at interfaces between the companies, clarifications of roles and responsibilities, and how contracts and related documents between the parties have addressed the working environment and safety.

In the investigation report, we have chosen to include information from the Norwegian Labour Inspection Authority to highlight that there are only minor differences between the requirements for working at height on petroleum facilities and the requirements that apply to the construction industry, where Consto normally operates and which are monitored by that authority.

This investigation report has been prepared as a single document, but with sections identifying findings concerning each individual party: Equinor, Aibel and Consto.

3.3 Abbreviations, definitions and glossary.

AT	Equinor work permit
CRA	Construction Risk Assessment
EJS	Post-job interview
EPCI	Engineering, Procurement, Construction and Installation. Type of contract.
FJS	Pre-job interview
FUA	Regulations concerning the Performance of Work
HAZID	Risk identification in the early stages of a project (Hazard Identification)
HLNG	Hammerfest LNG facility
HSSE	Health Safety Security Environment
HTO	Human, Technology and Organisation
Norms/standards	Standards or recommended guidelines that can be used to meet regulatory requirements
NS	Norsk Standard (Norwegian Standard)
Onboarding	Preparatory/phasing in/start-up programme for new personnel
PPE	Personal protective equipment
QIE	Quality in Execution Risk assessment form used in the field before starting a job.

ROS analysis	Risk and vulnerability analysis
RS	Turnaround
RUH	Report on undesirable incident
SFP	Snøhvit Future Project
SfS	Samarbeid for Sikkerhet (safety collaboration)
Sibe	Sikker Bemanning AS (temporary-hire agency)
IP	Injured person
SSU	Safety sustainability
STEP	Sequentially Timed Events Plotting Analytical method
Synergi	System for recording, analysing, processing, and following up accidents, near misses, and undesirable incidents
TOF	Technical and Operational Regulations
TT	Rope-based access technique

3.4 Order issued to Consto Anlegg Nord AS

Following an inspection of L202 and preliminary interviews on 25 April 2025, the parties decided to suspend Consto's work at height at HLNG. On 29 April 2025, after Havtil had completed the initial interviews and inspection, the following order to suspend Consto Anlegg Nord AS's work at height at HLNG was issued:

> *Consto Anlegg Nord AS shall halt all work at height at HNLG until the following measures have been implemented:*
>
> *• A procedure for working at height, covering the assembly, dismantling and alteration of formwork scaffolding, has been formulated so that the specific risk factors associated with the activity are managed. The procedure must describe how the work is to be planned, organised and performed, the risk assessments that are to be carried out and by whom, and the safety measures that are to be implemented; cf. the Technical and Operational Regulations, Section 46, first paragraph on the organisation of work, and the Working Environment Act, Section 3-2, third paragraph.*
>
> *• All Consto employees and temporary workers involved in the management and performance of work at height at HLNG have been made aware of accident and health hazards that may be associated with the work at height, and have received both theoretical and practical training in the use of necessary personal protective equipment, with reference to the first bullet point and the Working Environment Act, section 3-2, first paragraph (a) and (b), and the Technical and Operational Regulations, section 50 concerning competence.*

The order was followed up by Consto and confirmed as completed on 19 May 2025, with updated procedures and the implementation of courses and user training to ensure compliance with the requirements.

3.5 Supervision and investigations with corresponding observations

In this chapter, we have looked at previous audits and investigations, as well as reported incidents with relevant observations/findings and orders at Equinor's onshore facilities. The review is limited to compliance with risk understanding, governing documents, and ensuring that their own personnel, contractors and subcontractors follow up on measures described in governing documents for ensuring adequate levels within health, safety and the environment.

Case 2024/1388 Mongstad audit of follow-up of the investigation and order ensuing from the investigation of a fall from scaffolding – January 2025
The audit revealed that Equinor had not adequately followed up on the contractor's compliance with its own governing documents and risk assessments.

Response from Equinor feedback 30 November 2025

> *Equinor would like to reiterate the roles and responsibilities involved in scaffolding assembly. The supplier owns the scaffolding equipment, assembles it, and approves it in accordance with laws, regulations and requirements. The supplier shall comply with regulatory requirements and Equinor's requirements at all times.*
> *Equinor ensures compliance with this through our operational and contractual follow-up as described above.*

Case 2024/848 HLNG audit of materials handling and work at height in Sept. 2024 – order.
The audit revealed that Equinor had not ensured adequate compliance with governing documents for work performed by subcontractors at HLNG within materials handling and work at height, which resulted in Equinor being ordered to rectify the non-conformities.

From Equinor's response on 27 February 2025

> *The verification has revealed seven findings which, together with measures, are documented and followed up in the MIS Assurance tool.*
> *The findings relate to inadequate mapping and handling of interfaces between the company's own management system and Equinor's, inadequate competence and onboarding of new personnel, inadequate learning and follow-up of risks, lack of internal control of equipment, lack of training in self-rescue, lack of documentation of regular safety rounds, and inadequate qualification of subcontractors.*

Case 2023/1705 HLNG follow-up of fall incident from scaffolding/scaffolding overturned – 24 December 2023
The case was not investigated by Havtil, but was followed up with meetings.
The underlying causes are based on a lack of risk understanding, a lack of role allocation, and a lack of follow-up on the part of Equinor in relation to the ISO supplier.

Excerpt from Equinor's investigation report of 12 April 2024
The investigation group has identified the following underlying causes:

- *Weather conditions*
- *Lack of anchoring during scaffolding assembly*
- *Removed fastenings in winds exceeding 17.6 m/s*
- *Unclear division of roles among scaffolding supplier personnel*
- *Access to scaffolding*
- *AT (work permit) handling by Equinor and scaffolding supplier*
- *Lack of ISO follow-up from Equinor*

Case 2023/179 HLNG follow-up of fall from scaffolding – 27 January 2023
The case was not investigated by Havtil, but was followed up with meetings.
The underlying causes are linked to a lack of planning and risk understanding, as well as expertise and the use of governing documents. Learning in respect of the use of fall protection equipment was also a key element in the review of the incident.

Excerpt from Equinor synergi report 27 January 2023

All work at height was immediately halted after the incident at Hammerfest. Work shall not resume until a time-out has been completed with all personnel in all disciplines.
Agenda for time-out 3 February 2023

- *review of fall incident at Mongstad*
- *review of fall incident at HLNG*
- *review of attachment of fall protection equipment*
- *review of visual inspection of fall protection equipment and ensuring that it has the necessary approvals*

Case 2023/116 Mongstad investigation of fall incident on 18 January 2023 – order
The investigation revealed that Equinor had not ensured adequate compliance with governing documents for work performed by subcontractors at Mongstad involving work at height. In this investigation, an order was also issued to halt the activities of a subcontractor in connection with work at height.

From Havtil order to Equinor 5 July 2023

1. *Conduct an integrated and systematic overall risk assessment of work at height in order to ensure that risk factors in the work are followed up by its own organisation and by contractors, including ensuring that collective safety measures are preferred over measures directed at individuals, and apply lessons learnt from similar incidents in work on risk reduction.*

Excerpt from Equinor's response of 30 August 2023

Equinor has engaged DNV (Det Norske Veritas) to conduct a risk analysis of work at height, focusing on the construction and dismantling of scaffolding. The approach will be to conduct a systematic review of background information and a thorough HAZID working meeting at Mongstad with a special focus on humans, technology and organisation (HTO).

2. *Conduct a comprehensive and systematic review of management systems at contractors that perform work at height, to ensure the necessary competence and compliance with the regulations and Equinor's internal requirements.*

Excerpt from Equinor's response of 30 August 2023

The requirement is met by conducting verification of the management system with regard to the management of competence by both ISO suppliers at Mongstad.

The verification shall address the following requirements/conditions:

•Management Regulations, section 21 concerning follow-up and section 15 concerning information

•Technical and Operational Regulations, section 50 concerning competence

• "OM205.04 Performing work at height," and "OM205.04.01 Assembling, dismantling and decking of scaffolding."

•The contract between Equinor and ISO suppliers •Industry and sectoral standards

Case 2022/252 HLNG lifting of light pole – 28 January 2022

The case was not investigated by Havtil, but was followed up through meetings. The underlying causes are linked to a lack of planning and risk understanding, as well as challenges related to expertise and compliance with governing documents.

Excerpt from Equinor's investigation report 25 March 2022 – measures:

- *Prepare a material handling plan for the mast (create a procedure for strapping the telecom mast and mark attachment points on the mast). Documented in STID*
- *Review of Aris OM210 – Material handling – Mid & downstream with suppliers for cranes and rigging*
- *Ensure transfer of experience from this incident, in particular, but not limited to cranes and lifting*

- *Site testing of signal transmitters/receivers and riggers*

Case 2021/1868 Mongstad audit of work at height and working environment Jan. 2022
Non-compliance with governing documents in connection with work at height. Necessary risk assessments and compliance with Equinor's governing documents for working at height.

Improvement point in Havtil report of 7 March 2022

> *5.2.1 Follow-up of contractors and suppliers*
> *Improvement point*:
> *Follow-up of other participants and identification of technical, operational or organisational weaknesses, errors and deficiencies.*
> *Management Regulations, section 21 concerning follow-up*

Excerpt from Equinor's response to improvement measures

> *However, in collaboration with the protective equipment committee, we will include this in our dialogue with suppliers in order to risk-assess which helmets personnel using fall protection equipment should wear. The intention is to protect personnel as well as possible against potential risks.*

4 Working at height – risks and requirements

Working at height involves a significant risk of falls, which are among the most serious and frequent causes of injury and death in the construction industry. This type of work is considered risky and places increased demands on planning and risk assessment. Due to the high risk involved, Equinor has included working at height in one of its nine life-saving rules: *"Working at height – protect yourself from falls when working at height."*
The rule emphasizes the importance of using appropriate safety measures and following established procedures to reduce the risk of falls.

Requirements for working at height are laid down in *Technical and Operational Regulations (TOF), section 46 concerning the organisation of work*. The guidelines to the regulations refer to *Regulations concerning the Performance of Work, section 17* as the standard for planning and execution.

Detailed requirements for employers regarding risk assessments for work at height are set out in section 17-1 of the Regulations concerning the Performance of Work (FUA) on risk assessment for work at height – requirements that both Equinor and Aibel refer to in their governing documents.

In its governing document OM205.04 – Working at height, Equinor refers to national regulations for working at height, including requirements for planning, competence, necessary risk assessment, and the principle that collective fall protection should be prioritised over personal fall protection equipment. (ref. R-108380)
For competence in the use of fall protection, Equinor refers in OM205.04 to Offshore Norge's guideline 113: *Recommended guidelines for fall protection and fall rescue (in Norwegian only).*

In Aibel's review of Hazid E066-AI-S-RS-1132, work at height was included under point 38. However, the focus here is on the use of scaffolding in connection with work at height and the risks associated with the covering of sensors. The Hazid review has not taken into account that the assembly of formwork scaffolding also constitutes work at height.

Consto sets requirements for working at height through procedure 3.2.4-4 – Working at height – which refers to the Norwegian Labour Inspection Authority and the Regulations concerning the Performance of Work (FUA). A review of Consto's ROS analysis, revised on 16 September 2024, shows that, in Chapter 10, the risk of falling was originally assessed as red (hazard level 15), but was later downgraded to yellow (hazard level 5). The measures specified are: work permit (AT), good planning, collective fall protection, and a requirement that the work procedure for each work operation must be reviewed.

When planning and carrying out work at height, the employer shall (ref. FUA, section 17-1) assess the risk so that the work is carried out safely, including an assessment of the risk of persons or objects falling. This also applies to tasks related to the assembly and dismantling of formwork scaffolding that employees are assigned to undertake.

From the Norwegian Labour Inspection Authority's article on fall protection (ref. Arbeidstilsynet.no):
"The Norwegian Labour Inspection Authority recommends that employees receive training in the use of fall protection equipment. The courses should include both theoretical and practical components, with the practical component providing training in the correct use of anchor points, adjustment of harnesses and lanyards, rescue, control, and criteria for discarding equipment", says Sørhaug. He points out that employers can conduct the course themselves if the instructor has the necessary expertise and qualifications.
"Online courses alone are not sufficient for this", warns Sørhaug. "Without a practical component, the course will not meet the regulatory requirements for training", he concludes.

The user manual provided by the manufacturer of Doka Staxo 40, which was the type of formwork scaffolding in use during the incident, describes the risks and requirements for working at height.
The user manual will serve as a natural basis for risk assessments for the work equipment used, in conjunction with local risks.

4.1 Planning of the work

Aibel, together with Equinor, has been responsible for project planning of the SFP-related activities. On signing the contract with Consto, a kick-off meeting was held and the planning was divided into two phases:

- Phase 1, which was largely carried out at Aibel's premises in Asker, but where Consto was made aware of the work to be performed. In this connection, project risk assessments were carried out, which also included Consto's activities. This phase saw the preparation of work packages and the project (Aibel and Consto conducted a physical visit to HLNG).

  Tasks for Phase 1 included:
  - *Prepare progress plans for the implementation phase*
  - *Plan the execution of the work, working methods*
  - *Conduct risk mapping and identify risk mitigation measures*
  - *Ensure understanding of the remuneration model*
  - *Ensure common understanding of interfaces*
  - *Ensure a common understanding of HSE requirements and framework conditions at the facility*
  - *Ensure a common understanding of goals and what drives value at Equinor, Aibel and the contractor*

- Phase 2, which began when work started at Melkøya, was Consto's first time working at an onshore petroleum facility.

  Tasks assigned for Phase 2 included:
  - *Completion of engineering, procurement, implementation activities, testing and commissioning in accordance with the requirements and solutions specified in the contract for phase 1, including any additions to the work done in phase 1.*
  - *The contractor is expected to have a strong focus on project management to ensure that the project objectives are achieved. In phase 2, the contractor shall perform all activities necessary for the full completion of the scope described in phase 1, in accordance with the requirements of the agreement for phase 2.*

4.2 Description of equipment involved

In the area where the fall occurred, formwork scaffolding was used to support a floor that was to be cast. Personnel who were to work on the formwork scaffolding were provided with fall protection equipment.

4.2.1 Formwork scaffolding

Formwork scaffolding is referred to by several different terms, such as scaffolding formwork, load-bearing tower, shoring system (see illustration below). We use the term formwork scaffolding for this equipment in our investigation, since this type of formwork scaffolding also complies with the same standards used for the production of ordinary scaffolding.

Formwork scaffolding is scaffolding used in the erection of formwork, i.e. the support structure for concrete work. It is a type of scaffolding specially designed to withstand the weight and pressure of fresh concrete, as well as to allow workers to work at height during the casting process.

For the formwork support for the floor of level 2 in L202, Doka Staxo 40 formwork scaffolding was used. Doka Staxo 40 is designed so that temporary working platforms can be installed inside the scaffolding, facilitating safe working at height.

Formwork scaffolding is to be regarded as work equipment for temporary work, ref. FUA chap. 17. Standards NS-EN 12811-1:2023 and NS-EN 12811-1:2003 are used for the erection of formwork scaffolding. *Equipment for temporary works – Part 1: Scaffolding*, which are the same standards referred to in the guidelines to FUA section 17-7. This European standard specifies performance requirements and methods for strength calculation and general design of access and working scaffolds, hereinafter referred to as working scaffolds. The illustration below shows how formwork scaffolding is assembled and how collective fall protection in the form of a work platform is an integral part of the structure.

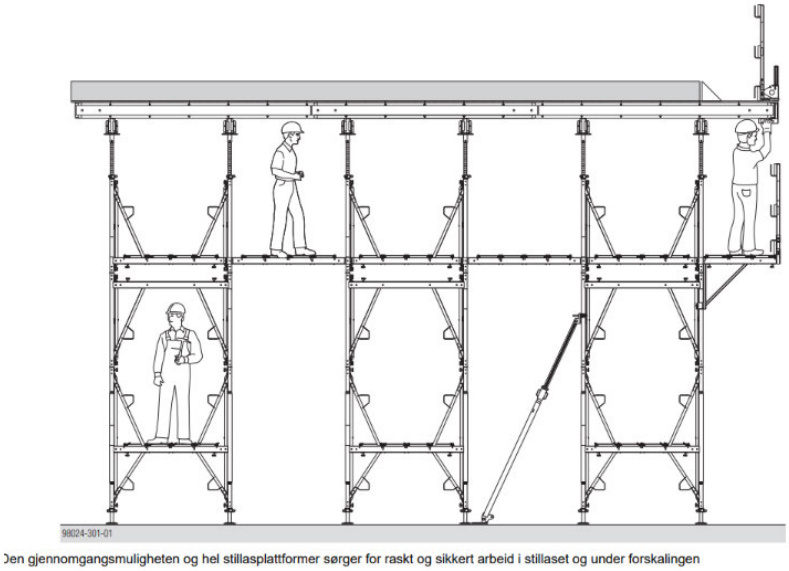


Illustration taken from the Doka Staxo 40 user information booklet

Information taken from the user information booklet (www.doka.com):

- *This booklet is aimed at all persons who will be working with the Doka product or system that it describes. It contains information on the standard design for setting up this system, and on correct, compliant utilisation of the system.*
- *All persons working with the product described herein must be familiar with the contents of this booklet and with all the safety instructions it contains.*
- *Persons who are incapable of reading and understanding this booklet, or who can do so only with difficulty, must be instructed and trained by the customer.*
- *The customer is to ensure that the information materials provided by Doka (e.g. User Information booklets, Instructions for Assembly and Use, Operating Instruction manuals, plans etc.) are up to date and available to all users, and that they have been made aware of them and have easy access to them at the usage location.*
- *In the relevant technical documentation and formwork utilisation plans, Doka shows the workplace safety precautions that are necessary in order to use the Doka products safely in the usage situations shown.*
- *In all cases, users are obliged to ensure compliance with national laws, standards and regulations throughout the entire project and to take appropriate additional or alternative workplace safety precautions where necessary.*
- *The customer is responsible for drawing up, documenting, implementing and continually updating a hazard assessment at every job-site.*
  This booklet serves as the basis for the site-specific hazard assessment, and for the instructions given to users on how to prepare and utilise the system. It does not substitute for these, however.

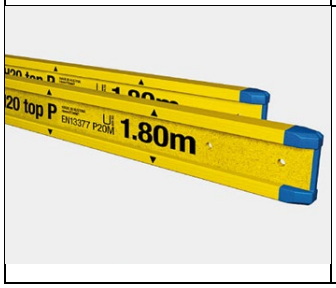
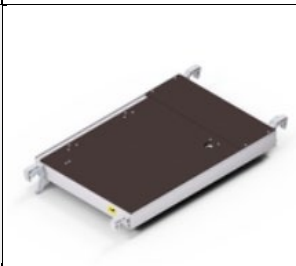
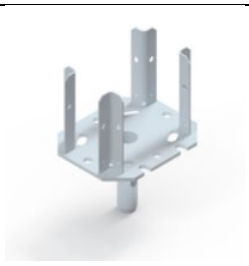
"Doka beams H20 top" are used, among other things, as supports for casting the top deck.	Work platforms for integration into formwork scaffolding	Frames with integral climbing aid	Top fork for formwork beam
			

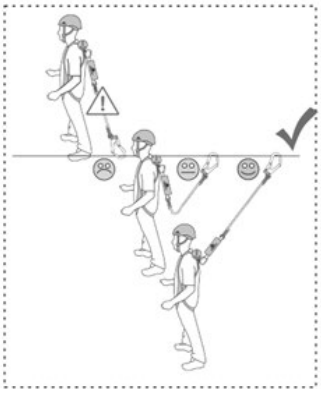
Image taken from www.doka.com.

4.2.2 Fall protection equipment

Fall protection equipment from Cresto AB was used (www.cresto.com). It consists of:

- Cresto Worker Pro 1123 fall arrest harness
- Cresto 1602 lanyard

Taken from the manufacturer's user manual:
The fall arrest system must always be anchored above the user's position. The minimum strength anchored is 12 kN and in the case of textile anchorage points, the minimum strength is 18 kN.
The minimum depth below the worker using the fall arrestor is 6.5 m.
It is also necessary to have a rescue plan that takes into account all emergencies at work. Never use the product for purposes other than fall protection.

Cresto Worker Pro 1123	Cresto 1602 lanyard	Instructions for using the lanyard
		

The image shows the Cresto Worker Pro 1123 fall arrest harness and Cresto 1602 lanyard used by the personnel involved in the incident. The image is taken from www.cresto.com

5 Sequence of events

5.1 Situation before the incident

The work team that was to complete the erection of formwork scaffolding in area L202 had started work on the site a few days before the incident occurred. The work team consisted of eight temporary workers from Adecco AS and was led by another temporary operations manager from Sikker Bemanning AS (Sibe).

On Monday, 21 April 2025, the work team began preparing and assembling the formwork scaffolding. The work team asked the operations manager to provide Doka work platforms for the work, but was told that these were not available as the work platforms were located inside L201, which was closed to access.
The work team therefore requested fall arrest blocks and steel safety wires, but were told that these were not available. The work team was issued with fall arrest harnesses with Y-shaped lanyards with two hooks for use when working at height (see also section 7.2.5 of this report).

On Wednesday, 23 April 2025, there was a crew change for operations managers at Consto. As part of the change, a written activity report was exchanged between the outgoing and incoming operations managers.

Equinor and Aibel conducted a management review of area L202 on 23 April 2025. There were fewer managers than usual from Consto at the site on this day (they were attending a meeting in Tromsø), and neither the manager from Consto nor the operations manager for the work team in L202 were present at the review.

Order and tidiness in the area, including the securing of equipment at height, was so poor that those involved in the management team decided on and ordered a time-out until the area had been cleared. The observation concerning the lack of tidiness in the area applied both to the area outside the building, to scaffolding and scaffolding storage, and inside the actual area where the scaffolding formwork was assembled. The observations were made in both the scaffolding contractor Bilfinger's and Consto's work areas, ref. report following HSE inspection on 23 April 2025, week no. 17.

It was also pointed out that the use and marking of barriers made it difficult to know whether they were inside or outside the barriers.

We were informed that there was discussion of an observation regarding the anchoring of a fall arrest block and fall arrest harness (observation 13 in report 17 HSE review) that was attached to rebar on the top of a cast wall in a room at the rear of the area where the formwork scaffolding was ready to be placed on the deck formwork. See the image below which shows a fall arrest block attached to rebar.

Photo taken by Havtil. The red circle shows where the arrest block was attached.

On the afternoon of 23 April 2025, after the HSE round had been completed, notice was given to stop work and it was decided to clear area L202 so that the area would be ready for work to continue on the next day.

On Thursday, 24 April 2025, weather conditions on Melkøya were: approx. 2°C, rain and snow with a fresh breeze from the northwest and gusts of wind up to 14 m/s. There was snow and ice in the L202 area.
Aibel's regular coordination meeting in the morning was attended by representatives of the project management teams from Aibel and Equinor, as well as an HSE resource from Consto. It was communicated at the meeting that a time-out had been decided on for L202, based on observations of a lack of tidiness from the HSE management round the day before, i.e. 23 April 2025.

Both Consto work teams for L202 started the day with a morning meeting at 7.30 a.m. at Consto's office barracks at L202. It is unclear whether Aibel and Equinor's decision on a time-out at L202 was communicated at Consto's morning meeting on 24 April 2025.

5.2 The incident

On Thursday, 24 April 2025, at approximately 12.35 p.m., a worker from Adecco was seriously injured after falling from a formwork scaffold under construction at L202. The incident occurred during the placing of Doka formwork beams. The IP stood on the formwork scaffolding and was receiving Doka formwork beams from his colleague, who was standing on scaffolding on the outside of the concrete wall in

L202. In the absence of an attachment point for securing a lanyard hook so that the IP could move, the IP had detached both lanyard hooks so as to position himself better for the work being carried out. The IP was therefore without fall protection. When the incident occurred, the IP was in the process of changing position and was standing on unsecured and unstable formwork beams. The IP stepped on the outside of the support for the unsecured formwork beams and lost his balance, causing him to fall. During the fall, the IP tried to grab nearby formwork beams, but ended up pulling them down with him. The IP was partially crushed by the beams when he landed on the concrete floor 4.4 metres below.

Figure 3 The image shows how Doka beams were laid as a base in the absence of Doka flooring. The red circle clearly shows how the beams protrude beyond the support beam on which they rest.

The IP's colleagues immediately reported the accident, and the IP was rapidly taken into care by Equinor's emergency response personnel and transported to the hospital in Hammerfest. The incident was quickly assessed as a serious work accident and reported to Havtil, which decided to investigate the incident on the same day.

5.3 Timeline

Date	Time Approx.	Description
01.02.2023		Equinor decided to exercise the option for EPCI
28.11.2023		Consto signs contract for work on HLNG
Q2 2024		Start of work/onboarding for Consto HLNG

April 2025		Start of work L202
14.04.2025		AT for work was prepared and began with a duration until 27.04.25 for the hours of 7.00 a.m. to 7.00 p.m.
21-22.04.2025		Work team start for Consto's Adecco team in L202.
21.04.2025		The work team asked the operations manager about work platforms in connection with the start of construction of formwork scaffolding.
21.04.2025		The work team asked the operations manager to have a steel safety wire stretched across the work area.
23.04.2025	11.00	The operations manager (1) finishes his work period and travels home.
23.04.2025 23.04.2025	after 11.00	New operations manager (2) starts work in the afternoon. Received written transfer via email.
23.04.2025	13.00	Management's safety/HSE round on L202 by Equinor and Aibel
23.04.2025	16.00	Aibel holds coordination meetings with subcontractors every afternoon (Consto, Nordic Crane, etc.).
23.04.2025	18.30	Afternoon meeting for Consto's operational work team
24.04.2025	07.30	Morning coordination meeting between Aibel and subcontractors. It was decided to have a time-out in area L202 in order to review fall protection at height, as well as work at several levels and barriers.
24.04.2025	07.30	Morning meeting Consto
24.04.2025		QIE was prepared for the working day by the work team.
24.04.2025	08.00	The day's work started at L202
24.04.2025	Approx.12.00	The work team returned from lunch.
24.04.2025	12.35	Fall accident

6 Potential of the incident

6.1 Actual consequences

A serious personal injury occurred as a result of a fall from a height of approx. 4.4 metres onto a concrete floor during the assembly of formwork scaffolding. According to Equinor's matrix for actual consequences, the incident was classified as "Red 2" on a scale of 1 to 5 for actual severity of personal injury, where 1 is the most serious category.

The IP suffered several serious fractures in his legs and knees, with the risk of permanent damage.

6.2 Potential consequences

Under slightly different circumstances, the injured person could have suffered far more serious injuries or, in the worst case, died.

The area where the IP fell was narrow, and he landed between scaffolding on one side and a concrete wall on the other. Several Doka beams fell at the same time as the IP and landed right next to and partially on top of him. The Doka beams that fell could, under slightly different circumstances, also have caused serious injury to the IP.

7 Direct and underlying causes

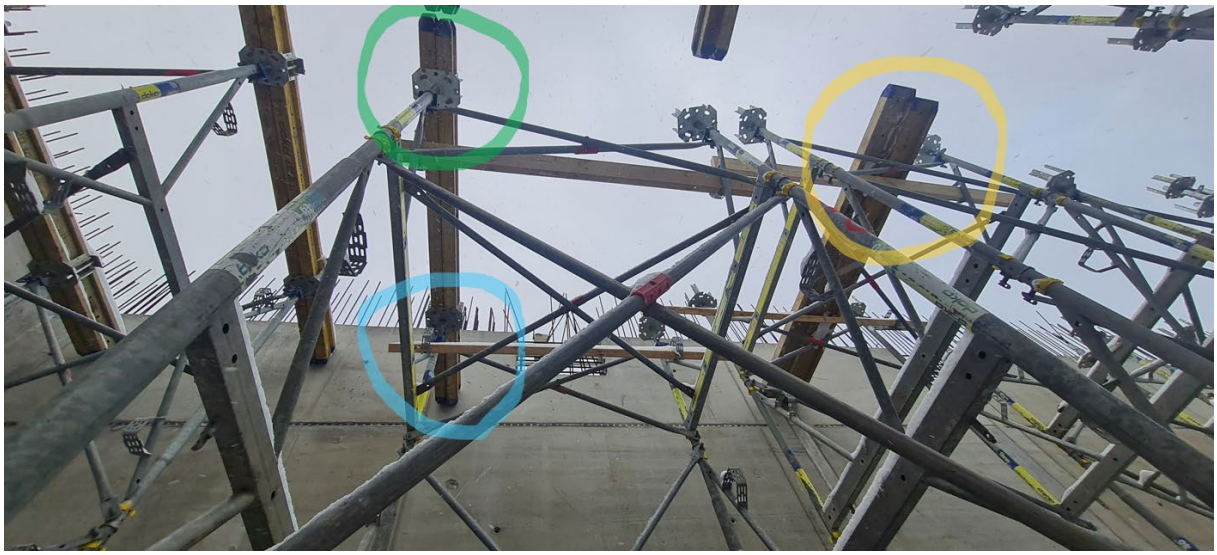
7.1 Direct causes

A direct cause of the incident was that the injured person (IP) lost his balance and fell from the scaffolding to ground level. The fall arrest harness with double lanyard with hooks and shock absorber that the IP was assigned to use was not attached to a secure anchor point. The investigation has also revealed that the main cause of the incident was that Consto had not made provisions for the use of work platforms during the assembly of the formwork scaffolding.

In addition to the lack of work platforms (collective fall protection) to prevent falls, fall protection equipment was not used correctly in accordance with the description in the user manual for the lanyard.

Without platforms, the work was carried out using personal fall protection equipment. There was no running line attached to secure the harness to the fall arrest block above the body. The fall protection equipment provided was not the correct type for the height at which the work was being carried out.

The incident occurred during the placing of Doka formwork beams. The IP stood on the formwork scaffolding and was receiving Doka formwork beams from his colleague, who was standing on scaffolding outside the concrete wall in L-202. In the absence of an attachment point for securing a lanyard hook so that the IP could move, the IP had detached both lanyard hooks so as to position himself better for the work being carried out. The IP was therefore without fall protection. When the incident occurred, the IP was in the process of changing position and was standing unsecured on loose and unstable formwork beams. The IP stepped on the outside of the support for the unsecured formwork beams and lost his balance, causing him to fall. During the fall, the IP tried to grab nearby formwork beams, but ended up pulling them down with him. The IP was partially crushed by the beams when he landed on the concrete floor 4.4 metres below.



Source: Havtil. Photo taken during inspection on 25 April 2025. The yellow circle in the photo shows the Doka beams that served as a base to stand on when the accident occurred. The blue circle in the photo shows how the Doka beams were laid on 2x4 beams. The green circle in the photo shows the fully assembled H20 Doka beams placed in the top fork, ready for use as a foundation for casting the floor.

The fall arrest harness with double lanyard and hooks with shock absorber that the IP was assigned to use was not attached to a secure anchor point in the structure. The IP explained that there were insufficient opportunities to attach the hooks while he was lifting the beams and mounting them in the fork at the top. As the hooks on the lanyard were not secured, this caused the IP to fall without any form of fall arrest. Even if the hooks had been attached to the structure of the formwork scaffolding, the IP would still have fallen to the floor below, as the wrong type of lanyard was used for the height at which the work was being carried out.

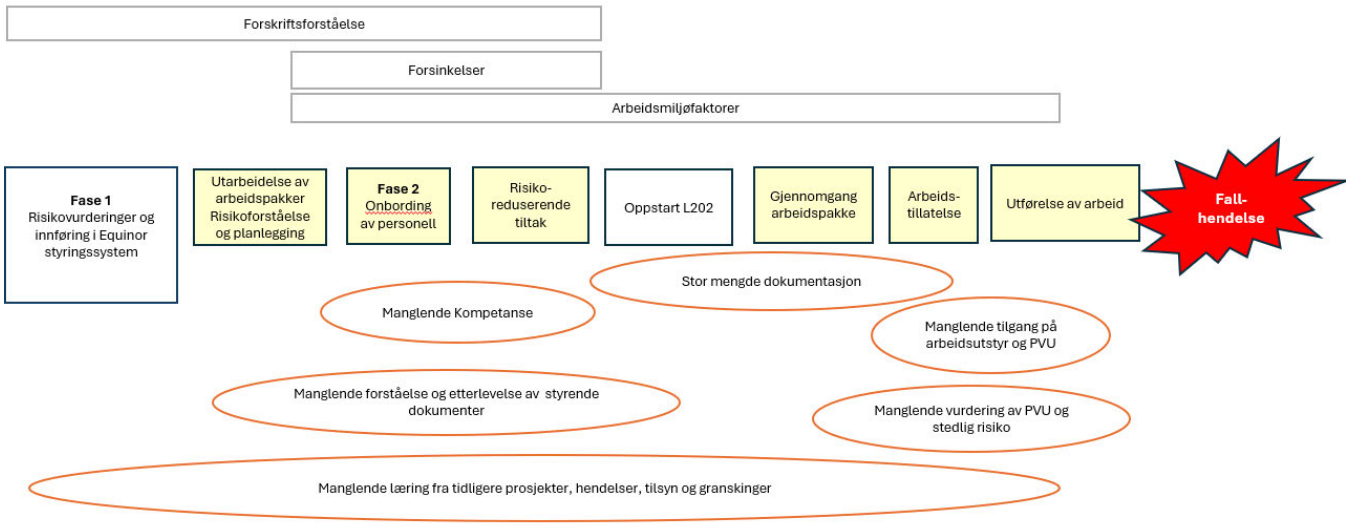
No running line was installed to attach the fall arrest block above the work site, as described by the manufacturer of fall arrest equipment in the instructions for use of a lanyard with fall arrest. The work team had requested a running line to connect the Y-lanyard above the work site.

7.2 Underlying causes

There were several underlying causes for the incident. These mainly relate to:

- Risk understanding and planning, sections 7.2.1-7.2.5
- Competence and training, sections 7.2.6-7.2.8
- Framework conditions and working environment factors, sections 7.2.9-7.2.17
- Regulations and compliance, section 7.2.18
- See-to-it duty and verification activities, section 7.2.19

Havtil has chosen to present the underlying causes by starting with the conditions that applied at the start of the contract and then describing the developments leading up to the conditions that applied at the time of the accident.



Yellow boxes in the model show where Equinor and Aibel's 'see-to-it' responsibilities did not work.

Risk understanding and planning

7.2.1 Risk understanding in the planning of work in SFP

The investigation shows that Consto at HLNG did not have sufficient risk understanding or management when preparing for the installation of formwork scaffolding.

Interviews and documents show that Equinor's governing documents for planning mainly focused on major accident risk. No emphasis was placed on documents describing work processes for performing work at HLNG and activities such as working at height and crane and lifting operations. Consto was therefore unable to perform a GAP analysis between its own and Equinor's governing documents at an early stage. Interviews also show that Consto did not receive the necessary access to Equinor's documents in ARIS, and that the training in ARIS for Consto was inadequate. Consto was therefore unable to fully understand Equinor's management of work processes, including requirements for working at height, which had to be followed on site.

In week 49 of 2023, a preparatory meeting for "Phase 1" of the SFP contract between Equinor/Aibel and Consto was held prior to the contract signing in week 50.
In Phase 1, Aibel and Consto personnel met at Asker to establish a cooperation model, get to know each other, and identify risks associated with the work on SFP, among other things.

One of the issues relating to the risks associated with the project was access to sufficient and appropriate specialist personnel.

During interviews, it also emerged that several of Consto's employees who contributed to planning and risk assessments in Phase 1 did not continue in Phase 2.

On 30 September and 1 October 2024, after the start of SFP "Phase 2", a HAZID workshop was held for construction activities to be carried out at HLNG in 2025. The workshop, which was chaired by DNV, was attended by relevant personnel from Equinor, Aibel, Consto and Norconsult. Representatives from engineering and construction, as well as project and operating organisations, participated in the workshop. This work resulted in a HAZID report, DNV report 2024-2026, rev 0. doc. no. 2429573.

Risk elements assessed in phases 1 and 2 included inadequate assessments in relation to the hiring of new contractors with temporary workers who had not previously performed work at an operational petroleum facility. Upon reviewing the risk assessments that were submitted, we find that there are missing assessments related to Equinor's governing documents for working at height.

Neither the risk assessments we have received nor the interviews we have conducted showed that lessons learned from previous projects, supervision, reported incidents, and investigations were discussed.

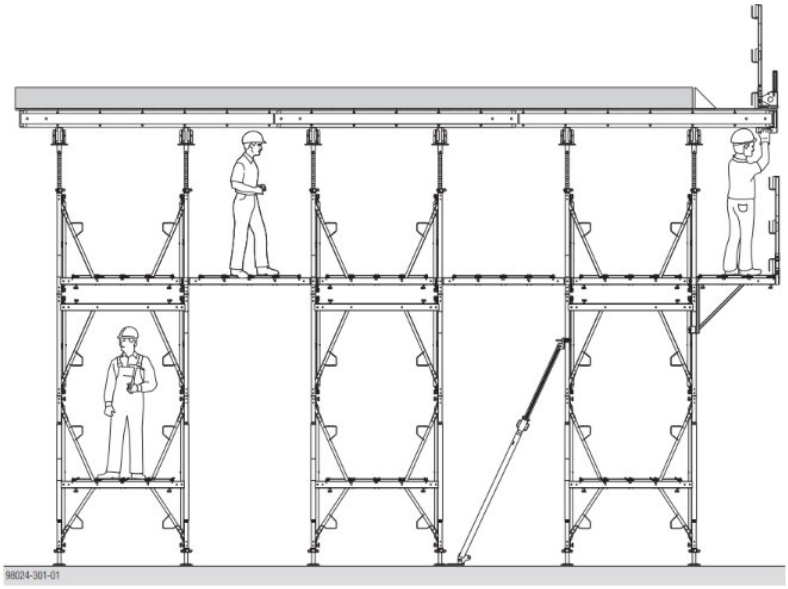
7.2.2 Risk mitigation measures

Document reviews and interviews show that Consto has not adequately assessed the risks involved in assembling formwork scaffolding in terms of the equipment necessary for safe execution. When working at height, this involves, among other things, the use of integral work platforms where possible, instead of – or in addition to – fall arrest harnesses. This also applies to personnel who assemble and dismantle formwork scaffolding.

The HSE regulations (e.g. section 11 of the Framework Regulations) require companies to use a hierarchy of measures. This involves prioritising measures to control and reduce exposure to risk. The main elements of the hierarchy of measures are elimination, substitution, technical barriers, administrative barriers, and the use of personal protective equipment. Collective measures should always be chosen over individual measures, as they will have a greater risk-reducing effect for more employees. Collective protective measures can be technical or organisational measures that provide protection to an entire group.

Collective fall protection refers to systems and measures such as guardrails, barriers, scaffolding, and safety nets. The main purpose of collective fall protection is to create a safe working platform and minimise the risk of falls before considering the use of personal fall protection equipment.

The manufacturer of formwork scaffolding, Doka, has designed the system so that collective fall protection can be established using work platforms when the formwork beams at the top are installed.



Den gjennomgangsmuligheten og hel stillasplattformer sørger for raskt og sikkert arbeid i stillaset og under forskalingen
.
Illustration taken from the Doka Staxo 40 user information booklet

In area L202, no working platforms were used between or within the tower itself, as shown in the illustration from the Doka Staxo 40 user information booklet.

The use of personal protective equipment should be the last line of defence against risk where it is not possible to eliminate residual risk through collective measures..

Consto did not follow its own procedures for selecting safety equipment for work at height.

Equinor's work processes for work at height and selection of measures were also not used.

Summary

- No safe work platform was used.
- No running line was installed for securing fall protection equipment above the workplace.
- No fall arrest blocks were used.

- The fall protection equipment that was provided was not suitable for the height at which the work was to be carried out.

7.2.3 Work package

The work package prepared by Consto consisted of a 472-page document. Of these, 397 pages were OM instructions that Consto received from Equinor and 31 pages were Consto procedures.

Equinor's governing documents described the requirements for performance and competence for the individual tasks.

The volume of documentation was disproportionate to the work to be performed. Consto had not made the necessary extracts from relevant sections of governing documents describing current requirements and risks for the erection of formwork scaffolding.

The operations manager at Consto is responsible for following up on the work packages for each sub-project. The documentation accompanying the work package appeared overwhelming to the operations manager and work team, and much of the information was not relevant to the work they were to perform.

7.2.4 Work permit (AT)

An AT is intended to ensure area safety and manage risks in the work. Risk assessment in the planning and organisation of work covered by an AT is to be carried out by the employer – in this case Consto. Employees must review the AT and risk assessment and prepare the QiE before starting work for the day.

The AT for the work on L202 was prepared by Consto and covered the period 14–27. 04.2025. The work was to be carried out during daytime hours.

The AT was accompanied by requirements for:

- Planning and risk assessment of lifting operations – onshore
- Rescue plan using fall rescue equipment
- Drawings and description of buildings
- FJS (pre-job interview) and EJS (post-job interview)
- Discussion in the field

The work team did not use Equinor's checklist for work at height (OM 205.04, ref. R-109206 – planned rescue in AT). Operational safety preparations in the AT were not signed, and the section on fall protection equipment and rescue plan was not completed.

We were informed in interviews that Consto was to use Aibel's QiE for risk assessment in the workplace before each day's work performance. We are unable to see that this is included in the documentation that accompanied the AT that was prepared.

According to the role description for HSE coordinators (blue jackets) at Aibel, section 2.2, they were to assess the AT before work commenced. The AT for the period 14–27 April 2025 was not suspended even though it had a number of shortcomings. They also failed to check that the correct safety equipment was available, as specified in the role description.

The area manager at Equinor, who opens and closes the AT, also failed to notice the deficiencies. When work on L202 was halted on 24 April 2025, the AT was not revoked.

7.2.5 Start-up and performance of work

When starting the assembly of the formwork scaffolding on Monday, 21 April 2025, the work team asked the L202 operations manager for work platforms for assembly at height. The work team was informed that the stores were out of work platforms that could be mounted in the formwork scaffolding. The work platforms used on L201 were not available due to gas venting. The operations manager asked the work team to use the equipment available at L202.

The work team was provided with fall arrest harnesses and lanyards, but the requested fall arrest block was not delivered until a few days later. The work team also requested a running line for attaching a fall arrest line above the workplace, but was told that this was not available. The work team was also instructed by the operations manager who was involved in the start-up to improvise as best they could.

When the decision was made to use fall protection equipment instead of work platforms (collective protection), the operations manager had not ensured that a rescue plan had been drawn up, nor had he procured the necessary rescue equipment for the work.

After work commenced on L202, the operations manager was changed on 23 April 2025. Information and status updates between operations managers 1 and 2 were communicated via reports sent by email. However, the handover lacked information about the lack of necessary equipment.

On the day of the accident, a local QiE was carried out, dated that day, and signed by nine people. The risk of falls and falling objects was identified. The attachments that accompanied the AT for the working week were not used as a basis for carrying out the QiE for this working day.

When a work team lacks training in self-rescue or companion rescue and does not have suitable equipment, the rescue team must be contacted. A rescue plan must be drawn up, and the rescue team informed of the activity in order to be able to assist in the event of an incident (ref. FUA section 17-1).
Risks associated with work at height with the potential for falling and personal injury were not satisfactorily assessed in the AT for the work on L202. Adequate risk assessments were not carried out, no rescue plan was prepared, and the rescue team at HLNG was not contacted.

Competence and training

7.2.6 Training and competence

The SFP development entails using companies whose employees have little or no experience of working on a petroleum facility that is in full operation during the construction period. The training provided in order to obtain permission to work at HLNG is general in nature and provides an overview of general guidelines and requirements, but does not include detailed instructions on procedures and work tasks. It is the employer's responsibility to provide detailed training for employees.

The investigation revealed that Consto had not ensured that employees – whether its own and temporary hires – had the necessary skills to perform the work safely. This included providing adequate training, practice and instruction, and ensuring that employees were familiar with internal procedures, safety rules and the correct use of equipment and personal protective equipment.

According to job descriptions, responsibility for monitoring competence was divided between the site manager, HSE engineer, HSE manager, HSSE manager at Aibel, and the project manager.

To ensure competence in working at height, Equinor OM205.04 – *Performing work at height* forms the basis for all work carried out within the petroleum industry.

In addition to the requirements in OM205.04 – Performing work at height, which specifies basic training, the employer shall also provide equipment-specific training on the work equipment used. The manufacturer's instructions for use

shall form the basis for equipment-specific training, and the training shall be documented.

Shortcomings in training and equipment led to improvisation and mistakes.

7.2.7 Training in the assembly and dismantling of formwork scaffolding

The investigation revealed that there was inadequate training in the assembly and dismantling of Doka Staxo 40 formwork scaffolding. Consto was unable to document theoretical and practical training in accordance with the requirements of the applicable regulations; see the regulations described below.

The competence requirements for assembling and dismantling formwork scaffolding are not the same as for ordinary scaffolding (FUA sections 17-2 to 17-5). Formwork scaffolding is work equipment that supports formwork and can also be used as a work platform. The competence requirements therefore follow FUA Chapter 10 on the use of work equipment.
According to FUA Chapter 10, the manufacturer's instructions for use should normally be used as a basis for risk assessment and for assembly and disassembly at the individual workplace.

In addition to user manuals, the manufacturer of Doka Staxo 40 has produced instructional videos about assembly. These can be found at www.doka.com and were available in several languages.

7.2.8 Training in the use of fall protection equipment

Interviews and document reviews show that Consto did not follow the training curricula described in Equinor's governing documents.

Documentation submitted shows that the workers who assembled the scaffolding received digital training via the Munio course "Working at Height", course no. EO-0015-NO. The course lasted 1 hour and 10 minutes and covered several topics, including fall protection and rescue plans. A review of training documentation shows that the course does not meet Equinor's requirements for training in the use of fall protection equipment.

Equinor sets competence requirements through R-4551, which refers to guideline 113 (Offshore Norge):

- **Fall protection:** Theory minimum 3.5 hours, practical training minimum 4 hours.

- **Companion rescue:** Theory 6 hours, practical training 14 hours.
  In addition, equipment-specific training is required for equipment that is not included in the basic training.

The fall arrest harness with dual lanyard (Y-lanyard) and fall arrestor used by the IP was not of the correct type. Neither of the safety hooks were attached to a secure point when the IP lost his balance and fell.

Framework conditions and working environment factors

7.2.9 Framework conditions

Framework conditions are factors that influence the ability of an organisation, unit, group, or individual to control major accident and occupational health and safety risks (Rosness et al., 2009). They influence the HSE level through indirect and complex mechanisms. In the petroleum industry, the operating companies largely determine the framework conditions that affect contractors.

Important framework conditions with significance for HSE are stipulated in the contract, e.g.

- Capacity and scope of action for the contractor
- Organisation of the work
- Staffing levels
- Compensation format (e.g., unit price/fixed price or hourly payment)
- KPIs – what should be measured and associated bonuses.

The investigation examined the contractual terms between the companies. The main supplier, Aibel, opted for a collaboration contract for SFP, whereby the client (Aibel) and contractor (Consto) work closely together on planning and implementation.

The contract involves hourly pay, a choice made to counteract work pressure at the expense of HSE. Even if delays did not cause financial strain, the need for greater progress was a recurring theme in the minutes of various meeting and logs prior to the incident. It cannot be ruled out that this created an indirect pressure on work.

During the summer of 2024, expressions of concern were sent to Havtil regarding a number of issues at HLNG. Some of the challenges mentioned concerned inadequate facilities at the plant for temporary workers, including toilets, changing rooms, drying facilities and drinking water. Interviews revealed that Equinor itself was aware that preparations for SFP and the readying of facilities were not on schedule for the arrival of Consto personnel. The expressions of concern were also communicated internally within the companies.

Interviews and a review of meeting minutes showed that Equinor, Aibel and Consto's follow-up of the expressions of concern revealed that several issues had not been addressed and followed up during the onboarding phase in SFP. The shortcomings addressed in the expressions of concern and discussed in the subsequent meetings revealed that there was a low level of trust between temporary workers and employees/managers at Consto, Aibel and Equinor. Low trust affected the HSE culture in the project.

7.2.10 Physical working environment

The incident occurred at a weather-exposed onshore facility subject to winter darkness. In the weeks before and during the accident, there was changeable weather with heavy snow and wind, requiring daily snow clearing and gritting. The risk of falls and cold injuries affected work in the field. Cold and wet weather made drying clothes difficult. The lack of available drying cabinets was a recurring theme in reports on undesirable incidents (RUHs), expressions of concern, and meetings.

Bird control to prevent birds from nesting in the work areas was a recurring additional task for the teams during the period when the incident occurred.

The L202 area is located near the tunnel entrance to the island, which generated a lot of motorised traffic, requiring special attention to traffic safety and logistics.

Storage areas for materials for the emergency generator building had to be constantly moved and reorganised. Untidiness and storage challenges were also discussed in meetings.

Minutes from Consto's afternoon meetings showed that the physical working environment caused daily time-outs due to weather conditions and that the weather also prevented crane and scaffolding work by the companies that supported Consto's work teams with various activities.

The consequences of the physical working environment conditions were delays, which in turn led to constant changes in plans and additional tasks for operational personnel.

7.2.11 Organisational work environment

Modern safety thinking does not view individuals as "sources of error", but rather errors as symptoms of systemic weaknesses. Experience from Havtil's

investigations shows that human error rarely occurs in isolation, but in conjunction with organisational, technical and operational factors – that is, at the interface between individuals and systems and the framework conditions in which personnel and companies operate.

7.2.12 Clarification of roles and responsibilities between companies in SFP

SFP has many interfaces between the companies and between units at HLNG and the head offices. There were also clear distinctions between Equinor's operating organisation at HLNG and the project organisation for SFP. Prior to the incident, HLNG operations were particularly concerned with the upcoming shutdown.

The roles and responsibilities across the companies were depicted in the various organisational charts that Havtil was shown at the kick-off meeting and in submitted documents. There was no common organisational chart for the project. Aibel's organisational chart was 30 pages long, which made it difficult to get a clear picture of the lines of communication between planning and operations once the project was underway.
There were organisational charts for each of the different companies involved in SFP:

- Equinor's organisational chart for HLNG operations
- Equinor's organisational chart for SFP
- Aibel's organisational chart for SFP
- Consto's organisational chart
- In addition, there were documents referring to the roles and responsibilities between Consto and the various temporary-work agencies from which workers were hired, including Adecco.

Aibel divided SFP into two axes (Civil and Construction), with different reporting lines to Consto's managers. Interviews revealed that it was unclear who at Consto was responsible for following up on HSE and risk for L202.

It emerged from interviews that there was a lack of HSE resources in SFP from the outset. Equinor acquired its first local HSE resources in autumn 2024, and the last one arrived just before the incident. SFP used "blue jackets", personnel with special responsibility for following up HSE in the project, from the HSE departments at Consto, Aibel and Equinor, but the follow-up appeared to be insufficiently coordinated.

SFP has been a large and long-term project involving job rotation and commuting. This has led to personnel changes during the project. This added to the challenge of continuity and keeping up to date with changes. Expressions of

concern, unclear roles and delays made it difficult to abide by the conditions set out in the collaboration contract between Aibel and Consto, in which one of the premises was close cooperation on planning and implementation.

Interviews and documents also revealed inconsistent use of management titles at Consto, for example, "operations manager" vs. "production manager."

The week the incident occurred, several managers from Consto's site management were attending a meeting off the facility. The remaining operations manager had fewer management resources to rely on, while also having an extra 20 personnel transferred from L201 to L202 on the day of the accident. There is no documentation that the operations manager or HSE personnel were given additional responsibilities. Unclear roles and reporting lines may have contributed to the operations manager not being informed of the decision to halt work on L202, meaning that the information did not reach the personnel performing the work. The AT for L202 was not closed, even though the coordination meeting in the morning had decided on a time-out.

The safety delegates service at Consto had been established, but did not function as intended. Equinor and Aibel's project chief safety delegates stated that it was difficult to get safety delegates from Consto to attend joint meetings. Minutes also showed low attendance at safety delegate meetings. There was no safety delegate at L202 on the day of the accident, and the Adecco team was therefore not represented. The minutes from the safety delegate meeting contain no items regarding working at height, lack of protective measures or time-out decisions.

Roles and responsibilities for monitoring risk across companies were governed by a common understanding and systematic approach to only a small degree. Havtil's impression was that safety work largely occurred at a generic level and did little to address or identify actual risks in planned and ongoing work operations. The daily safety work seemed to follow up on the use of PPE and clearing of the areas once the activities were already underway.

7.2.13 Hired labour

The temporary-work agencies have formal employer responsibility for temporary workers. As the hiring contractor, Consto is responsible for risk management and a safe working environment for its own workers and hired personnel.

Within SFP, Consto as subcontractor has made extensive use of temporary workers (over 100 people) of various nationalities and from many different

temporary-work agencies. The majority of Consto's operational staff and some middle managers came from temporary-work agencies.

The work teams under Consto were mainly composed of personnel from the same temporary-work agencies. The work team that was performing work when the accident occurred consisted mainly of Polish workers from the Adecco temporary-work agency. The operations manager (line manager) for the work team was hired from the SIBE temporary-work agency.

Contract workers have a looser connection to the company that hires them than permanent employees, which results in less commitment and greater job insecurity (ref. *Changed parameters and consequences for safety and the working environment in the petroleum industry, Safetec report 2023, section 4.3*).

Research and statistics show that temporary workers, especially foreign ones, have a higher risk of injury and accidents. The Norwegian Labour Inspection Authority's "Kompass 2025" report states that 50% of fatal accidents in the construction industry in 2023 involved foreign workers.

7.2.14 Language

Language was not highlighted as a challenge, but Havtil believes that the issue has received little attention in connection with the large number of foreign workers that SFP has brought in. Workers from different countries do not necessarily speak each other's languages or understand each other's cultures. This requires clear communication about risk and safety in a language everyone understands.

Consto's management and HSE personnel were mainly Norwegian. The working language in the teams was English or Polish. Assembly and concrete workers mostly used Polish. Interviews conducted during the investigation revealed that English language skills varied considerably among workers performing formwork and casting tasks.

Cultural differences, particularly at middle management level, relating to what was communicated and how communication took place, were mentioned in interviews as a challenge. This issue was also part of an expression of concern by temporary workers within SFP in the summer of 2024, which was sent to the authorities, the press, trade unions, Aibel and Equinor.

The governing documents Havtil received from Consto in connection with the investigation were in Norwegian.

Most of Equinor's procedures referred to in connection with the AT were in Norwegian. This may have made it difficult for operational personnel to know what they might not have understood, or whether they were acting correctly in relation to the procedures.

7.2.15 Psychosocial working environment

Psychosocial factors can have a direct impact on safety. When the working environment is not properly organised and there are shortcomings in training, communication and trust, the risk of wrong decisions and mistakes increases significantly. Ref. Technical and Operational Regulations, section 47 concerning psychosocial aspects, with requirements for employers to place particular emphasis on the interaction between work performance requirements and employees' perception of control over their own work.

In an organisation with a large and constantly changing workforce, it is challenging to create and maintain a cohesive culture of cooperation and safety. A common understanding of roles and responsibilities, coordination and cooperation arenas and applicable requirements and procedures must be known to everyone involved, including personnel with limited experience at the facility.

Interviews revealed that Consto personnel felt that the risk management regime was different from that at construction sites where Consto normally operates and where they are accustomed to playing a more independent role. Multiple interfaces between work teams, disciplines, and companies led to increased organisational complexity and may have been a contributing factor to communication challenges and misunderstandings about risk, responsibilities and roles between Equinor, Aibel, Consto and hired personnel.

Consto's reduced management capacity at the site on 23 and 24 April 2025 was not assessed in terms of the workload for the remaining operations manager or possible HSE consequences of personnel recently transferred to L202.

Personnel hired by Consto stated in interviews that they felt that, above all, the blue jackets pointed out errors and shortcomings in tidiness and the use of personal protective equipment (PPE) during their rounds. Lack of tidiness was thus a recurring theme in the minutes Havtil reviewed from the week prior to the incident. However, the documents reviewed by Havtil did not indicate that the lack of safety equipment, such as scaffolding decks, had been identified in any of these rounds or had been discussed in afternoon or morning meetings at Consto.

7.2.16 HSE and whistleblowing culture

Knowledge sharing across organisations is crucial for a good HSE and whistleblowing culture, but is often challenging in complex projects with many interfaces and collaboration arenas, such as SFP. Coordination and knowledge transfer require a good flow of information between companies, shifts, technical disciplines and cultures, as well as between facilities and management located elsewhere.
Reporting should contribute to learning and prevent unfortunate situations. Trust is crucial in allowing people to report incidents, and it must be clear that reporting will not result in sanctions.

In SFP, reports of undesirable incidents (RUHs) were made in three systems: Equinor's Synergi and Aibel's PIMS and Consto's Dalux. During interviews, it emerged that personnel hired by Consto were unsure whether RUHs were being registered or triaged by managers. It was suggested that reporting could lead to not having one's work assignment renewed after the end of the work period. This was also evident in our document review. Confidence in the incident reporting system and its potential consequences was low among temporary workers, as confirmed by Equinor and Aibel.

Following an expression of concern in the summer of 2024, measures were introduced in the autumn and winter of 2024-2025, including regular meetings between Consto and employee representatives. The concern was followed up, but confidence in Consto's management was still weak when the accident occurred.

7.2.17 Employee participation

Studies (including Safetec report 2023, *Changed parameters and consequences for safety and the working environment in the petroleum industry*) have shown that there are major differences among subcontractors in terms of the extent to which safety delegates are involved and have the opportunity to exercise genuine participation. Long contract chains and limited continuity in the relationships between operators and suppliers are considered to contribute to safety delegates at contractors and subcontractors being less involved than safety delegates in operating companies.

Training, understanding of roles, and time for safety work are prerequisites for the ability of safety delegates to perform their roles. In a project involving so many different personnel groups, companies and work areas that have not previously worked together, this will mean a greater need for management to both facilitate employee participation and verify that it works in practice.

The high proportion of temporary workers hired by Consto from various temporary-work agencies for SFP, with safety delegates who had minimal knowledge of the facility, the operational management and the inter-company organisation, contributed to low involvement and participation by the safety delegates in SFP. Regular meetings and safety rounds were arranged with safety delegates from the various companies involved in the project. HLNG had its own Equinor project chief safety delegate, who, together with Aibel's project chief safety delegate for SFP, met Consto safety delegates.

A recurring point in the meeting minutes reviewed by Havtil was that it had been difficult to get Consto safety delegates to attend joint safety delegate meetings between Equinor project, Aibel and Consto. This was also confirmed in interviews.
Some safety delegates at Consto were new to the role when they joined the project. A lack of experience and expertise in participation, a lack of expertise in the working environment, combined with a new workplace, new risk conditions, new systems and new managers, created a challenging starting point for genuine participation for safety delegates from temporary-work agencies.

Regulations and compliance

7.2.18 Understanding of and compliance with the regulations

The investigation revealed that Consto lacked understanding of and compliance with the HSE regulations, including those with associated standards/norms for risk management when performing work at petroleum facilities. This appears to be a contributory factor in the incident. Understanding of the Norwegian safety regime at petroleum facilities, the arrangement of necessary training and the facilitation of work performance were not adequately communicated to Consto.

Petroleum facilities are high-risk, and certain norms have therefore been developed alongside the regulations to describe the safety levels expected when performing work.

When working at height on petroleum facilities, specific requirements are imposed on the competence that employers must provide to their employees. This is described, for example, in Offshore Norge's guideline 113, which is referred to in OM205.04. The guideline provides a detailed description of the learning content required before fall protection equipment can be used. The requirements include both theoretical and practical training following a set training plan, as well as equipment-specific training in accordance with the manufacturer's instructions for use. (See also section 7.2.8)

Consto was accustomed to performing work in accordance with regulations issued by the Norwegian Labour Inspection Authority. These regulations require employers to arrange the necessary training in the use of fall protection equipment through risk assessment and the use of the instructions accompanying the equipment. However, there is no set training plan that provides guidelines for the content that employers should include in the training.

See-to-it duty and verification activities

7.2.19 See-to-it duty and verification of subcontractors

Operators and contractors who hire services to perform work at onshore facilities are responsible for 'seeing to it' and verifying that subcontractors have the competence required by regulations and procedures for the work to be performed.

The investigation revealed that Equinor and Aibel had not performed the necessary verifications to ensure that Consto's governing documents met the companies' requirements for risk management and competence. Nor had Equinor and Aibel verified whether Consto complied with applicable regulatory requirements when performing work.

The focus on onboarding in the early stages of Consto as a concrete contractor was largely directed toward major accidents and the activities surrounding work packages related to progress. We saw no signs that emphasis had been placed on work performance within the individual work operations, such as working at height. This was also a finding in Havtil's audit of Equinor at HLNG in September 2024 (case 2024/848), for which, on 18 October 2024, an order was issued to Equinor in relation to material handling and work at height.

Interviews and document reviews showed that Equinor did not adequately follow up on the rectification of non-conformities concerning competence in material handling and work at height (ref. case 2024/848).

8 Learning points for work at height

Learning from incidents is an important part of continuous improvement, particularly in high-risk industries such as the petroleum industry. Serious falls can have major consequences for both individuals and the organisation's operations and reputation. In this investigation, we have chosen to highlight three learning points that we believe are relevant for all companies involved in working at height – whether as the operating entity or as the client commissioning the work.

Learning point 1

Supervisory role vis-à-vis contractors and subcontractors

Companies that use contractors, and in particular those that use hired personnel to perform work on petroleum facilities, must set aside sufficient time to follow up on these companies and their personnel. Sufficient time and resources must also be allocated for onboarding suppliers/subcontractors who do not have experience working on this type of facility. The main contractor and responsible companies must coordinate, support and ensure that contractors and subcontractors understand and comply with regulatory requirements at all stages.

Learning point 2

Securing the necessary competence

The employer, or the person who assigns work to an employee, must verify that the person performing the work has received the necessary training. The skills with which a training programme provides an employee are not necessarily fully sufficient for the work to be performed. At all stages, the main contractor and responsible companies must coordinate, support and ensure that contractors and subcontractors understand and comply with the regulatory requirements.

Learning point 3

Risk assessments for working at height.

All work at height must be risk assessed in advance of the work. Employers have a special responsibility for ensuring that employees can work safely. Personal protective equipment should only be used when safety cannot be ensured in another way.

9 Emergency preparedness

The investigation team believes that the emergency preparedness linked to handling of the incident functioned as intended.

The fall occurred at a construction site next to the administration building at Melkøya, which is also the area where emergency equipment and personnel are stationed.

When working at height where the work team does not consider themselves capable of self-rescue, the rescue team that performs rescue using access techniques must be notified before work commences. This ensures that the rescue team has time to prepare a rescue plan and is informed that work at height is to be carried out, with reference to Equinor's checklist for working at height.

The incident occurred on 24 April 2025.

Time	Action

08.00	Work began at L202
12.35	Worker fell from formwork scaffolding
12.36/7	Colleague called 113
12.39	Incident reported by radio
12.40	Industrial protection team assembles
12.41	Control room alerts emergency medical services and police
12.45	Ambulance arrives
12.50	Industrial protection team arrives
12.53	Technical access team arrives
13.09	IP on the way to the ambulance
13.10	The police arrive
13.17	IP is transported to a local hospital for treatment.

9.1 Handling of the incident itself

Our overall impression is that the emergency response efforts from the alarm/alert phase to the normalisation phase worked well and complied with the emergency response plan and the performance requirements that apply at HLNG.

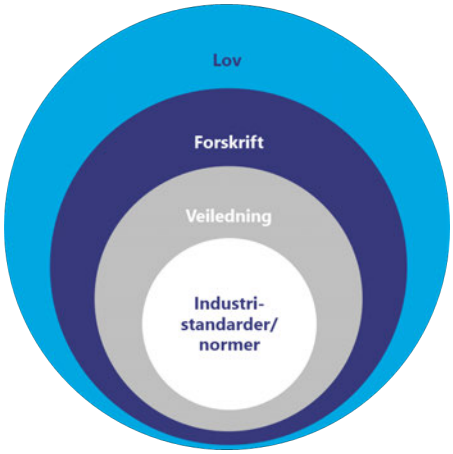
10 Regulations and norms

In this chapter, we will describe how regulations and norms are applied, and how parts of the regulations under the Working Environment Act also apply within petroleum facilities. In some cases, the guidelines to the petroleum regulations refer to regulations under the aegis of the Norwegian Labour Inspection Authority, even though petroleum activities are exempt from certain provisions.

The guidelines for the *Technical and Operational Regulations, section 46 concerning the organisation of work* refer to the Regulations concerning the Performance of Work (FUA) Chapter 17. Petroleum facilities are exempt from this chapter of the FUA and they accordingly do not apply directly (ref. FUA section 1-2 fifth paragraph). FUA Chapter 17 nevertheless applies as a recognised norm for achieving an adequate level of safety in accordance with the Technical and Operational Regulations, section 46.

The use of standards in connection with fulfilling the requirements of the regulations in the areas of health, safety and the working environment is described in the *Framework Regulations, section 24*.

Regulations – key principles



Source: Havtil presentation

- Our regulations are mainly performance-based – they specify what level of safety is to be achieved, but not how.
- Companies are required to establish HSE targets and manage activities accordingly.
- The regulations reference norms and industry standards
  – providing predictability for users and indicating the expected standard for solutions.
- They give companies the freedom to choose their own solutions – and underline where responsibility lies.
- They emphasise the responsibility of the industry/companies for developing relevant and prudent norms and standards.

The most important regulatory provisions that the industry complies with in relation to work at height and the use of personal protective equipment are set out in:

- Regulations concerning the Performance of Work
  - Chapter 10. Requirements for the use of work equipment (also applies within the Norwegian Ocean Industry Authority's area of jurisdiction)
  - Chapter 11. Facilitating the use of work equipment (also applies within the Norwegian Ocean Industry Authority's area of jurisdiction)
  - Chapter 12. Inspection and maintenance of work equipment and plant (also applies within the Norwegian Ocean Industry Authority's area of jurisdiction)
  - Chapter 17. Work at height (applies as a standard within the Norwegian Ocean Industry Authority's area of jurisdiction)
- Regulations concerning Organisation, Management and Employee Participation
  - Chapter 10. Planning, facilitation of the work and safe operations (also applies within the Norwegian Ocean Industry Authority's area of jurisdiction)
  - Chapter 15. Use of personal protective equipment (also applies within the Norwegian Ocean Industry Authority's area of jurisdiction)

10.1 Equinor's process for complying with the regulations

In this chapter, we describe how regulations and norms are incorporated and used in Equinor's governing documents to ensure an acceptable level of health, safety and environmental protection for work at height. To clarify the process requirements, we also highlight the relevant requirements in OM205.04 that apply to Consto's work at height at the facility.

Equinor's requirements for performing work at height are governed by OM205.04 *Performing work at height – Mid & downstream*. The work process and guidelines have been developed to underpin and make specific the requirements in the regulations.

- R-107525 – Personal safety
- R-108380 – Planning of work at height
- R-4551 – Safe use of fall protection equipment
- R-4920 – Safe use of scaffolding

R-107525 – Personal safety
Purpose: To ensure the safety of personnel working at height.
All work that is considered to be work at height and is described in national regulations requires, in most cases, either a fixed platform with guardrails, approved scaffolding, or the use of approved fall protection equipment attached to a suitable anchor point to limit free fall.

R-108380 – Planning of work at height
Purpose: To prevent falling objects and personal injury when working at height.
Before working at height, be sure to:

- survey the work tasks and assess whether there are any aspects of the work that could be risky and lead to injuries. Demanding and risky tasks require more extensive measures and planning than tasks that have a low risk.
- take measures that reduce the risk of injury and ensure the safety of employees
- consider whether any of the tasks previously performed at height can instead be performed from the ground
- use protective measures such as scaffolding, stair towers, guardrails, and lifts (personnel lifts) if the work must still be performed at height
- secure tools
- identify simultaneous operations in the area
- cordon off the work area and secure the area against falling objects
- appoint a team leader to carry out the job
- appoint a tool manager in the work team. The designated person signs the AT as responsible for this role. The tool manager is responsible for ensuring that tools taken up to height are brought back down again.

Collective fall protection shall be prioritised over personal fall protection equipment.

R-4551 – *Safe use of fall protection equipment*
When using fall protection equipment, you must be able to:

- conduct risk assessments when working at height
- apply the regulations and standards, guidelines, user manuals, and best practices relevant to fall protection

- explain the structure, operation, performance characteristics and areas of application of fall protection equipment
- choose the right securing method when working at height
- perform self-checks and store the equipment correctly
- master different types of fall protection equipment
- perform a companion rescue
- take responsibility for your own safety and that of others when working at height

To ensure the correct use of fall protection equipment and contribute to the safe performance of work at height, competence requirements:

- 113 Recommended guidelines for fall protection and fall rescue (Offshore Norge)
- Recommendation 024N/2018: Prevention of falling objects (SfS)
-

R-4920 – Safe use of scaffolding

When using scaffolding, you must be able to:

- understand the information on the scaffolding control card
- accept that scaffolding is not to be assembled, dismantled or modified
- seek advice from the scaffolding manager/scaffolding foreman if you are unsure whether the scaffolding is approved for use.

To prevent injuries and serious accidents resulting from falls from height, competence requirements:

- Regulations concerning the Performance of Work, section 17-5, Requirements relating to the training of users of scaffolding

Petroleum activities at onshore facilities are exempt from parts of the Norwegian Labour Inspection Authority's regulations; see the provision concerning scope in the individual regulations. Equinor has nevertheless chosen to apply the regulations in their entirety as internal requirements for its operations, with reference to the Management Regulations, section 8.

11 Observations

Havtil's observations are generally divided into two categories:

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

Improvement point: Observations 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 Equinor's non-conformities

11.1.1 Follow-up of other participants

Non-conformity:
Equinor had not followed up to ensure that Aibel and Consto complied with health, safety and environmental requirements when working at height at HLNG.

Requirements:
Framework Regulations, section 8 concerning the employer's duties toward employees other than its own
Framework Regulations, section 18 concerning qualification and follow-up of other participants
Management Regulations, section 21 concerning follow-up

Rationale:
Equinor, as the main contractor, had not ensured that deficiencies in the contractors' management systems were corrected or adapted to ensure the necessary overall coordination in the performance of work at height at HLNG in respect of SFP.

Equinor had not ensured that employees from other companies performing work at HLNG in SFP had received the necessary instructions in addressing the safety and health risks associated with the work. Equinor had also failed to ensure that the individual companies' safety and working environment efforts were adequately coordinated, or that safety delegates and HSE personnel had the necessary insight into the risks associated with work operations at the work site. As described in section 7.2.1 on risk understanding in planning work in SFP, it appears that Consto did not have sufficient access to Equinor's governing documents in ARIS.

A document review and interviews showed that:

- Equinor had not ensured that Aibel's project organization for SFP was given sufficient information and access to Equinor's governing documents in ARIS for the performance of work at HLNG, see section. 7.2.1.
- Equinor had not followed up to ensure that Aibel had provided Consto with the necessary instructions and access to governing documents so that employees had an overview of the requirements for risk management at the facility, see section. 7.2.1.
- Equinor had not followed up to ensure that the competence requirements for performing work at HLNG were adequately described or followed by Consto's personnel performing the work, see section 7.2.6 and section 10.1.

- Equinor had not made Consto aware of the applicable standards for necessary training prior to performing work, including OM 205.04 performing work at height at onshore facilities.
- Equinor had not carried out the necessary verifications to ensure that Aibel's governing documents met Equinor's requirements for risk management and competence.
- Equinor had not carried out the necessary verifications to ensure that Consto's governing documents met Equinor's requirements for risk management and competence.
- Equinor had not provided Consto with training in the use of Equinor's work processes for performing work in connection with the planning of work packages and preparing the AT.
- Equinor had not sufficiently coordinated the individual companies' safety and working environment efforts to ensure that they functioned as intended. There was very low attendance on the part of Consto at joint safety delegate meetings in the project, and organisational and psychosocial conditions (described in section 7.2.12) that influenced decisions in the organisation and performance of the work were not adequately followed up.
- Equinor had not risk assessed or adequately followed up Consto's use of temporary workers in connection with SFP, even though several concerns had been reported by temporary workers as early as the summer of 2024.

11.1.2 Risk reduction

Non-conformity:
Equinor had not ensured that technical, operational, and organisational solutions were chosen that reduced the likelihood of injury, errors, and hazard and accident situations occurring at HLNG in connection with the planning and execution of SFP.

Requirements:
Management Regulations, section 4 concerning risk reduction, with reference to the Framework Regulations, section 11 concerning risk reduction principles

Rationale:
Equinor had not ensured that internal requirements and acceptance criteria that were important for complying with legal requirements were followed.

A document review showed that risk assessments were not linked to regulatory requirements within the HSE regulations. Several meetings had been held between Equinor, Aibel and Consto to review and describe the risks. The reports and measures from these meetings showed that Equinor's governing documents were not used as a basis for the risk assessments carried out by Aibel or Consto.

A review of risk assessments shows that:

- Identified risks in the reports; Hazid (Aibel) and ROS (Consto) were used only to a limited extent in connection with the planning of work packages and work permits.
- Risk assessments prior to formwork activities in L202 were not sufficient for assessing local risk conditions at the work site. See section 7.2.1
- The risk assessments and interviews showed that lessons learned from previous projects and reported incidents had not been discussed in connection with the ROS and Hazid analyses. This also applied to RNNP data, audits and investigations that could be relevant to the project. See section 3.5.

11.1.3 Safety clearance of activities

Non-conformity:
Equinor had not obtained safety clearance for the planned activities to be carried out at L202 through the AT system.

Requirements:
Technical and Operational Regulations, section 56 concerning the safety clearance of activities

Rationale:

- The clearance, in this case the AT, shall specify the conditions that are to be met, including the measures to be implemented before, during and after the work, so that those who participate in or could be affected by the activity are not harmed, and so that the likelihood of mistakes that could lead to hazard and accident situations is reduced, with reference to the Technical and Operational Regulations, section 56.
  A review of the AT for work at L202 revealed that Equinor's area manager, who opens and closes all ATs for work on HLNG, had not noticed that the AT in question was not divided into different subtasks, and it was therefore unclear which risk assessments were relevant to the various parts of the work on L202, whether the risk conditions had been described in sufficient detail, or which requirements were to be followed. The area manager had also not questioned the fact that the AT covered several different types of activities in the area and that it had been made applicable for an extended period of time. The AT in question lacked clearer sub-tasks and risk assessments of the various factors, as well as a clarification of which requirements applied to the various sub-tasks.

- The AT was not closed despite the decision made at the morning meeting on 24 April 2025 for a time-out in L202; see also section 7.2.4.

11.1.4 Continuous improvement

Non-conformity:
Equinor had not implemented necessary improvement measures identified by its own and external investigations relating to work at height at HLNG.

Requirements:
Management Regulations, section 23 concerning continuous improvement

Rationale:

- The investigation showed that Equinor had not implemented lessons learned from its own investigations and Havtil's previous audits/investigations, which had revealed a lack of follow-up of competence among entities at Equinor's facilities and installations. We refer, for example, to the investigation report following a fall incident at Mongstad on 18 January 2023, where a scaffolder was seriously injured after falling while assembling scaffolding (case 2023/116). The current investigation revealed many of the same shortcomings that were detected during the investigation of the incident on 18 January 2023 at Mongstad.
- The investigation showed that new contractors and their employees had not been given sufficient information about lessons learned from incidents. See also section 3.5, which deals with Equinor's response to an audit and order, with findings from their own verifications relating to inadequate mapping and handling of interfaces between their own and Equinor's management systems, inadequate competence and onboarding of new personnel, inadequate learning and follow-up of risk, lack of own control of equipment, lack of training in self-rescue, lack of documentation of regular safety rounds, and inadequate qualification of subcontractors.

11.2 Aibel's non-conformities

11.2.1 Follow-up of other participants

Non-conformity:
Aibel had not followed up to ensure that Consto complied with health, safety and environmental requirements when working at height at HLNG. Deficiencies in Consto's management system and non-conformity handling were neither rectified nor adapted to ensure the necessary overall coordination when performing work at height at HLNG in respect of SFP.

Requirements:

Framework Regulations, section 18 concerning qualification and follow-up of other participants
Management Regulations, section 21 concerning follow-up, with reference to the Technical and Operational Regulations, section 50 concerning competence
Management Regulations, section 22 concerning the handling of non-conformities

Rationale:
Interviews and document reviews showed that:

- Aibel had not carried out the necessary verifications to ensure that Consto's governing documents met the companies' requirements for risk management and competence for performing work tasks at HLNG.
- Aibel had not followed up and ensured that Consto organised its work in such a way as to reduce the likelihood of mistakes that could lead to hazard and accident situations. See section 7.2.5, which deals with deficiencies in the start-up and performance of the work.
- Aibel had not risk assessed or followed up Consto's use of temporary workers in connection with SFP, despite expressions of concern by temporary workers as early as in the summer of 2024. See section 7.2.15 on the psychosocial working environment.
- Aibel had not sufficiently coordinated the individual companies' safety and working environment efforts to ensure that they functioned as intended. There was low attendance on the part of Consto at joint safety delegate meetings in the project, and organisational and psychosocial conditions (described in sections 7.2.12 and 7.2.13) that influenced decisions in the planning, organisation and performance of the work were not adequately followed up.

11.2.2 Risk reduction

Non-conformity:
Aibel had not ensured that Consto chose the solutions and barriers that had the greatest risk-reducing effect when working on L202.

Requirements:
Management Regulations, section 4 concerning risk reduction
Framework Regulations, section 11 concerning risk reduction principles
Management Regulations, section 15, concerning information

Rationale:
A review of Aibel's governing documents related to SFP revealed that risk assessments did not refer to regulatory requirements applicable to petroleum facilities, or to Aibel and Equinor's internal requirements in governing documents. See section 7.2.1 on risk understanding in planning work in SFP.

No emphasis was placed on documents describing work processes for performing work at HLNG and activities such as working at height and crane and lifting operations. Consto was therefore unable to perform a GAP analysis between its own governing documents and those of Equinor and Aibel at an early stage. Interviews also show that Consto did not receive the necessary access to Equinor's documents in ARIS, and that the training in ARIS for Consto was inadequate.

Aibel had not ensured through risk assessments and measures that Consto chose collective protective measures rather than protective measures aimed at individuals when working at height.

During our review of the documentation, we noted that:

- Risks assessed in phases 1 and 2 showed few signs of assessments related to the hiring of a new contractor using temporary workers who had not previously performed work at an operational petroleum facility.
- The measures identified in the Hazid and ROS reports were not particularly evident in work packages and work permits. See section 7.2.1 on risk understanding in planning work in SFP.
- The lack of risk assessments and measures in work packages did not provide a sufficient basis for local risk assessment in the AT and QiE before work commenced at L202.

11.3 Consto's non-conformities

11.3.1 Risk analyses

Non-conformity:
Consto had not performed risk analyses that provided a nuanced and comprehensive picture of the risks involved in erecting formwork scaffolding and working at height at HLNG.

Requirements:
Management Regulations, section 17 concerning risk analyses and emergency preparedness assessments

Rationale:
A review of governing documents, including ROS analysis doc. section 3.6.1-1, shows that the risk assessments do not sufficiently cover the erection of formwork scaffolding and work at height. No hazard or accident situations were identified as a basis for determining operational conditions and restrictions. The analyses also failed to take into account the rescue aspect of working at height. The reports, as they stand, did not provide sufficient decision support for planning the erection of

formwork scaffolding and work at height, nor did they provide the operations manager and workers with sufficient information to assess the residual risk involved in carrying out the work.

11.3.2 Organisation of work

Non-conformity:
Consto had not ensured that the likelihood of mistakes that could lead to hazard and accident situations had been adequately reduced for work at height at HLNG.

Requirements:
Management Regulations, section 4 concerning risk reduction
Technical and Operational Regulations, section 46 concerning the organisation of work, with reference to the guidelines para. 7, which states that, for work at height, chapter 17 of the Regulations concerning the Performance of
Work is to be used.
Framework Regulations, section 24 concerning the use of recognised standards, with reference to the Regulations concerning the Performance of Work, section 17-1 on risk assessment and requirements relating to work at height.

Rationale:
It emerged during interviews that the work team had not been provided with the necessary equipment to carry out work at height.

- No work platforms had been acquired as collective safety equipment, as described in the user manual for the formwork scaffolding manufacturer, see section 7.2.5.
- Appropriate personal fall protection equipment that could prevent falls during work was not provided; see section 7.2.5.
- The necessary measures had not been taken to assess the need for rescue in connection with work at height, and rescue plans had not been prepared.

The work package that formed the basis for the AT consisted of a large number of documents, which made it difficult for the work team to assess which measures and requirements were relevant. See section 7.2.3

- The work permit had been drawn up for an extended period and was not sufficiently detailed to identify and reduce risks during execution. No documentation was attached that could help employees assess the risks they were exposed to in their work. See section 7.2.4 on work permits.
- Consto was unable to document that risks associated with working at height and the use of personal protective equipment had been assessed beyond the general risk assessments provided in the Quality in Execution (QiE) forms, corresponding to the A standard and work permit (AT). Collective fall

protection measures, which should be considered in preference to personal protective measures, had also not been implemented in the work operation in question in L202.
- Interviews revealed that several employees had previously questioned the working method to be used for work at height at HLNG. This applied to a lack of access to a temporary platform in the form of decking in the formwork scaffolding when installing Doka beams (collective fall protection measures) and a lack of a running line for attaching fall protection.

11.3.3 Competence

Non-conformity:
Consto had not ensured control and verification that personnel at all times had the necessary competence to perform work at height and assemble formwork scaffolding at HLNG.

Requirements:
Technical and Operational Regulations, section 50 concerning competence
Technical and Operational Regulations, section 51 concerning training in safety and working environment

Rationale:
Interviews and documents revealed that Consto had not ensured that employees performing work at height at L202 had received adequate training for the work they were assigned to perform.
- Equinor's guideline R-4551 sets requirements for competence and training to be provided for the use of fall protection equipment. The employees who performed work for Consto were not given this training.
- Consto had not ensured and documented equipment-specific training in the use of fall protection equipment.
- Consto had not ensured that workers who used fall protection equipment were trained in companion rescue as described in guideline R-4551.
- Consto was unable to document in writing that the necessary training in connection with the assembly of Doka formwork scaffolding had been provided and verified.
- The submitted overview of OHAS expertise for managers at Consto in SFP showed that the operations manager in L202, as the immediate line manager for the work teams, had not received the legally mandated training in occupational health and safety.

For work on HLNG, Equinor requires that OM205.04 on work at height is also followed by contractors. OM205.04 contains guidelines describing what must be complied with for activities that are carried out.

11.3.4 Organisational and psychosocial working environment, and whistleblowing culture

Non-conformity:
Consto had not ensured that the work was arranged so that any harmful exposure and adverse physical and psychological stresses were avoided for individual employees, and so that the likelihood of mistakes that could lead to hazard and accident situations for temporary hires in SFP was reduced.
Consto had not ensured a good psychosocial working environment by taking into account factors that could affect the health, safety and welfare of employees working at height at L202.

Requirements:
Technical and Operational Regulations, section 46 concerning the organisation of work
Technical and Operational Regulations, section 47 concerning psychosocial aspects

Rationale:

- In interviews and our review of expressions of concern in connection with the investigation, as well as minutes of meetings at Consto to deal with the expressions of concern, it emerged that temporary staff employed by Consto had on several occasions reported, among other things, inadequate management support, harassment of temporary workers by certain managers, and a culture of fear. There were also reports of a lack of work equipment and training for temporary workers, as well as a lack of facilities (including poor drying facilities for wet clothes at the work site). Temporary workers found that colleagues who spoke up about issues they considered problematic did not return for their next period of employment. It was clear that confidence in Consto's management was low; see also section 7.2.11 on the organisational working environment and section 7.2.15 on the psychosocial working environment.
- No psychosocial assessments of personnel, whether employees or contractors, at Consto for SFP had been carried out since the start of work at HLNG. Documents received during the investigation refer to Equinor, Aibel and Consto's handling and follow-up work related to the challenges addressed in the 2024 expression of concern. Here it emerges that several of the physical, organisational, and psychosocial conditions that had been reported had been changed and improved. Nevertheless, a new expression of concern was issued in the spring of 2025, indicating that trust between temporary workers and Consto's management was still low.
- During the interviews, we were informed that the employees on the shift who were working at L202 when the accident occurred had requested a temporary work platform/deck for the work operation. They had then received feedback from Consto's local management that they had to complete the tasks with the

equipment that was available at L202. In interviews, it emerged that the temporary workers' experience was that there was no point in repeating themselves when they had received an answer to a question, such as when equipment needed for the job was missing.

11.3.5 Safety delegates

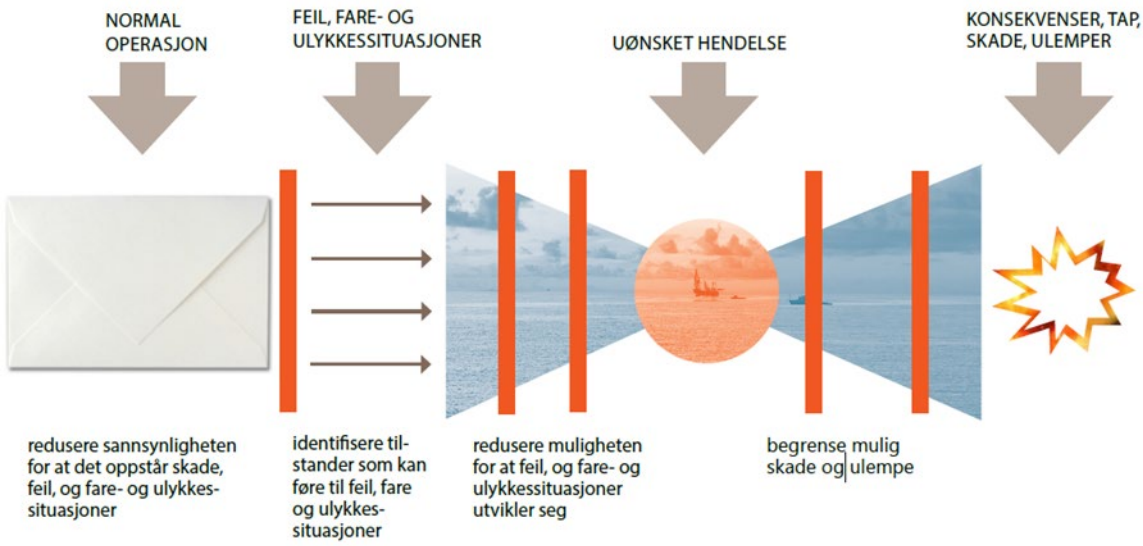
Non-conformity:
Consto had not ensured that their safety delegates in SFP were given sufficient opportunity to participate in matters that were important for the working environment at HLNG.

Requirements:
Framework Regulations, section 13 concerning facilitating employee participation
Regulations concerning Organisation, Management and Employee Participation, section 2-2 concerning the duties and participation of safety representatives.

Rationale:

- Interviews and minutes from safety delegate meetings showed that Consto had not ensured that safety delegates had sufficient time and opportunity to perform their duties, including participating in joint safety delegate meetings in SFP with Aibel and Equinor.
- There was no safety delegate present for the team working on L202 in the week when the incident occurred. The elected safety delegate was on sick leave at this time, and there were no substitutes or other safety delegates who had been assigned this role in the safety delegate's absence.

12 Barriers that did function



Traditional barrier diagram – From PSA barrier memorandum 2017

In this incident, several barriers on the left side of the bowtie diagram described in Chapter 11 were breached. On the right-hand side of the diagram, the following barrier elements worked:

- Emergency preparedness teams and first-aid personnel mustered in accordance with the relevant instructions and performance requirements.
- Notification of AMK (emergency medical services) and the police in accordance with instructions.

13 Discussion concerning uncertainties

Consto has no previous experience with the risk management regime used in the petroleum industry. In interviews, it was stated that working on a petroleum facility was cumbersome compared to, for example, the project they had recently completed to build Hammerfest Hospital. Changes from previous assignments for Consto in how work was managed, including risk management, may have contributed to the risk of work at height not receiving the focus it should have at L202.

Framework conditions and management of the organisational and psychosocial working environment may have indirectly contributed to the work at L202 developing into an accident. The combination of a company with no experience of risk management in the petroleum industry, a high proportion of temporary staff, different languages and cultural differences, and poor experience with reporting may collectively have contributed to a lack of trust between operational staff and Consto's local management/HSE personnel at the site. Nevertheless, it is not possible to assert that these circumstances contributed to the incident itself.

14 Assessment of the company's investigation report

The company's report covers many of the same elements detected by Havtil's investigation. It contains a structured presentation of the incident, causal factors and relevant measures. The report provides a sound basis for further work to improve workplace safety and processes.

Havtil also has a positive view of Equinor having made the report available to the public so that lessons learned from the incident can be used by other companies to prevent similar incidents.

15 Annexes

A: Relevant sketches/figures/etc.

B: The following documents were used as a basis for the investigation:

- OM205.04 – Performing work at height – Mid & downstream
- R-109415 – Use of fall protection equipment – Mid & downstream
- HLNG area map
- E066-AI-S-RE-1130 Construction Risk Assessment – SFP 29.05.2024
- E066-AI-S-RS-1132 Construction risk hazard, 2025 activities 17.10.2024
- Aibel civil construction follow-up
- Aibel civil construction follow up 1
- Aibel civil construction follow up 2
- Onboarding SFP
- Snøhvit org EPCI MASTER April25_Aibel (1)
- Consto_HMS activity plan SFP Main Civil Contract
- Consto_Coverage overview 1-page Adecco Solutions
- Consto_Job description Ba
- Consto_Job description Foreman
- Consto_Safety Delegate
- Consto Site Manager
- Aibel_Work permit HLNG-0002898161
- Aibel_Organisational Chart Snøvit Aibel org EPCI April25
- Aibel HSE inspection report no. 17
- Consto_Work packages B10 Power section level 4 complete printout
- Consto_QIE 1 dated 24.04.2025
- Consto_QIE 2 dated 24.04.2025
- Consto_ROS Analysis HELSE, project SFP Main Civil Contract
- Consto_ROS Analysis HSE and working environment. SFP Mail Civil Contract, REV 01
- Consto_HMS requirements for hirers, Adecco 06-2018
- Consto_Adecco Personal Safety Instructions (PSI), 06-2018

- Consto_Agreement Consto-Adecco SFP
- Consto HSE activity plan 24.05.2024
- Consto_certificate of competence working environment managers
- Consto certificate of competence for working at heights
- Consto_Overview of expertise working environment managers
- Consto ROS analysis Helse – SFP Main Civil Contract 30.01.2024
- Consto ROS analysis HSE and Working Environment – SFP Main Civil Contract 18.03.2024
- Consto SBL-70 status report
- Norwegian Labour Inspection Authority report Kompass No. 1 2025 (Health problems and accidents in construction and civil engineering report 2024)
- Safetec report 2023, Changed parameters and consequences for the working environment and safety in the petroleum industry

C: List of interviewed personnel.