



Client and Operator Cooperation for High Operational Safety

Shared Perspectives, Crew Involvement, and Lessons Learned

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THE OIL & GAS HUB OF THE FUTURE IN THE NORWEGIAN SEA



Power of change



Great place
to work



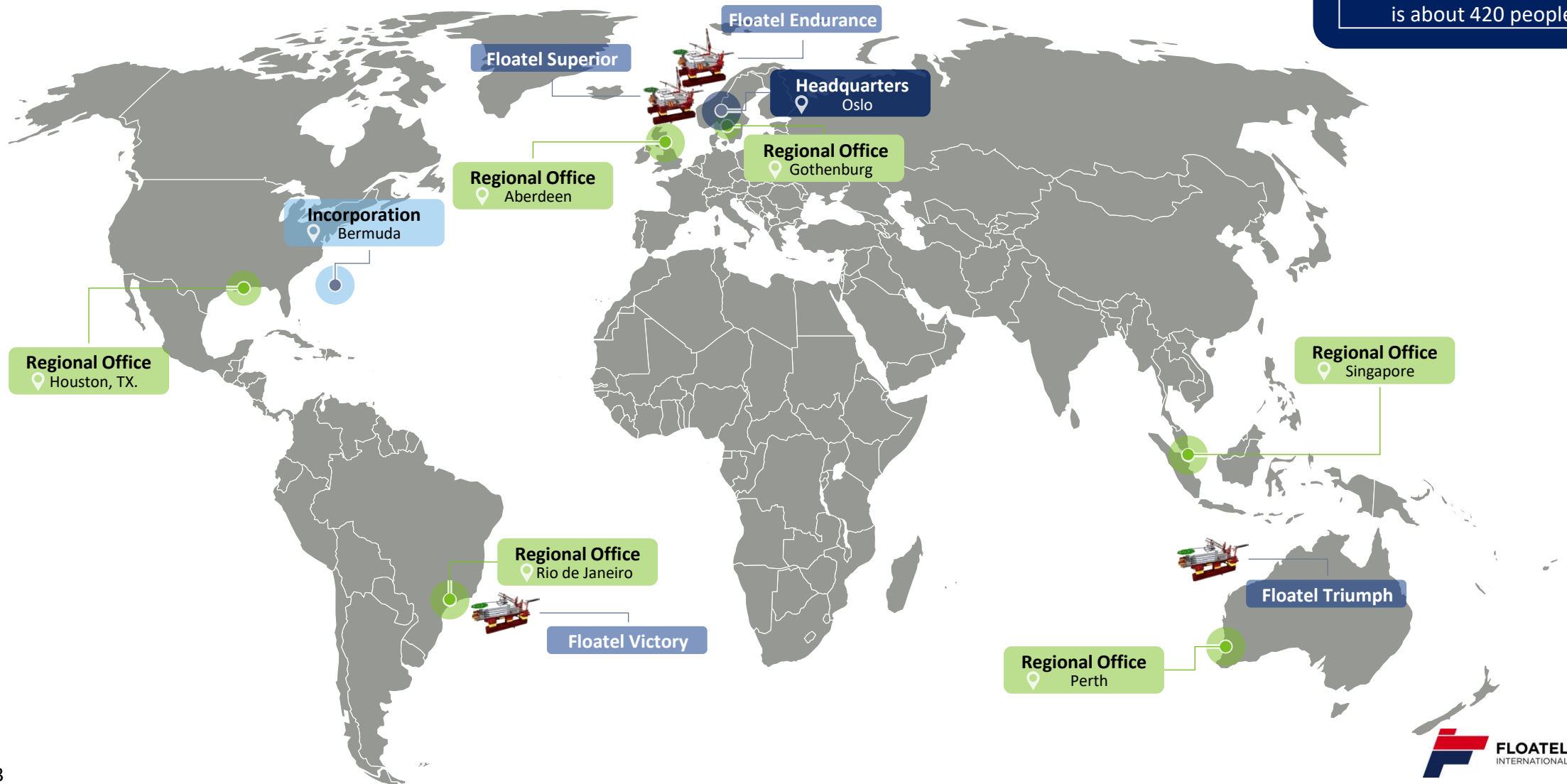
Performance first

Floatel International

Fully integrated contractor



Present number of employees including hired offshore crew is about 420 people



Uptime/Waiting on weather

2024 vs. 2026

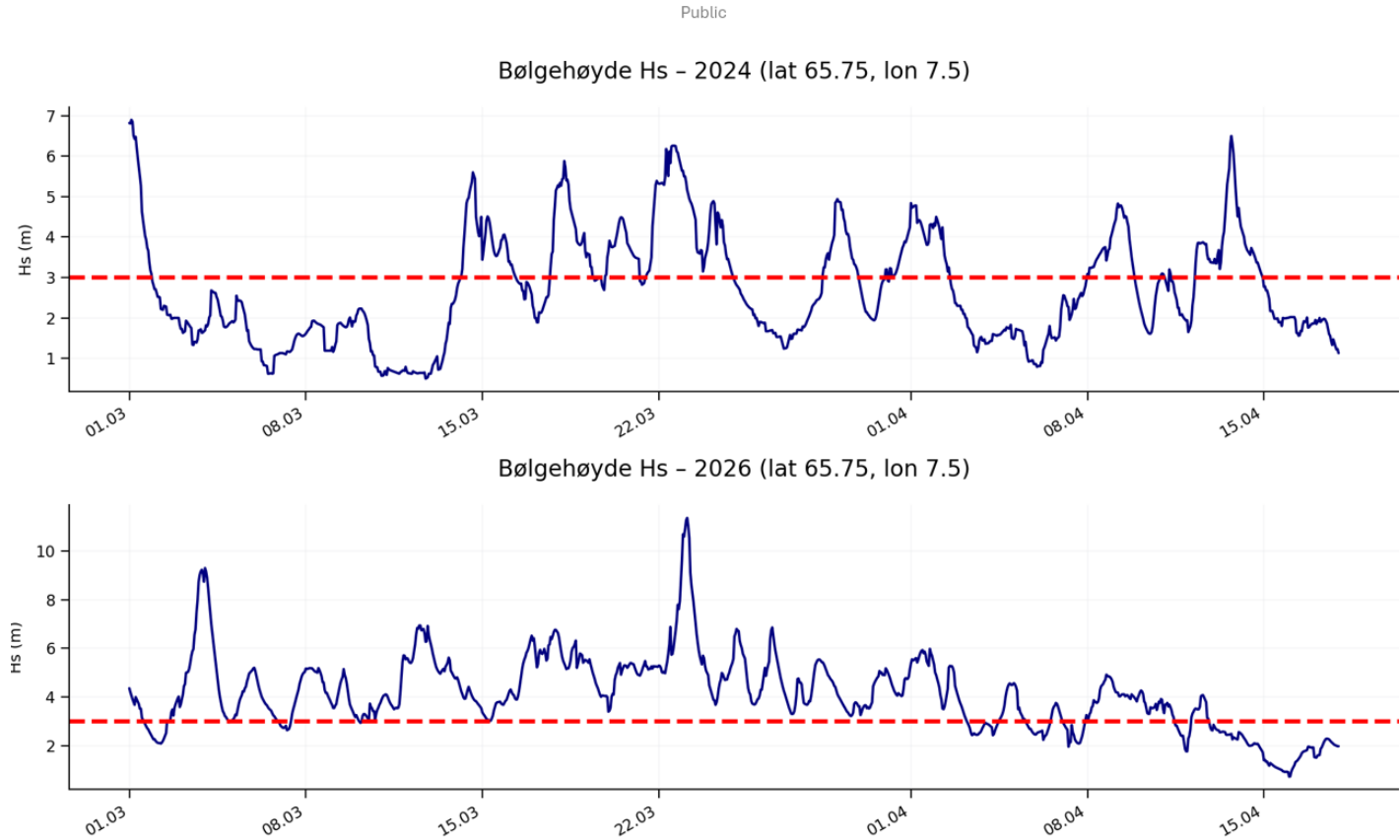
2024

88%

Gangway connection

12%

Waiting on weather



Lessons Learned from 2024 campaign

The benefits of a common workshop and scenario training



Shared perspectives



Contribute to safe and effective operation



High awareness and support in daily operations



Risk mitigation



Contribute to a successful project

Timeline

Floatel activities at Skarv FPSO 2026 campaign



Key enablers for success

- Dedicated cross-functional team
- Focus on experience transfers and lessons learned from the 2024 campaign
- Simulator training/Workshop for relevant personnel
- Collaboration with between Aker BP and Floatel International
- Strong involvement from offshore organizations

#ONE TEAM



Announced that Floatel Superior will start operations at Skarv 1st of March
December 2025

Successful and incident free hook-up of Floatel Superior gangway to Skarv
1st March 2026

January/February 2026

Workshops held in Trondheim for maritime personnel

14th March 2026

Successful and incident free swop between floatels. Floatel Endurance commence operations

Crew involvement Workshop



Location

Held at Kongsberg Maritime Simulator Centre at Grilstad, Trondheim



Participants

- Floatel and Skarv marine, process, CCR crew
- Project teams – Aker BP and Floatel



Workshop Content

- Shared different operational perspectives
- Emergency preparedness
- Review of:
 - Operational and Emergency Bridging document
 - ASOG
 - Gangway response forecast presented by Delmar
 - DP operations (Follow Target mode / Reference System Management)
- Scenario training



Brodokument

Brodokument for Beredskap:
Flotell på Skarv HAP 2026

Dokument nr.: SKA-002428
Rev. no.: 5.0
Date: 2026-02-26

ASOG - Floatel Endurance 3-Split / 2-Split operation					
Condition	GREEN		YELLOW		RED
	NO	YES	NO	YES	YES
Category	Action Required *	CONTINUE NORMAL OPERATIONS	IMMEDIATELY CONSIDER (IF FEASIBLE) CONDUCTING OPERATIONS IN A CONTROLLED MANNER	PREPARATIONS SHOULD BE MADE TO SUSPEND OPERATIONS IN A CONTROLLED MANNER	ABANDON OPERATIONS
Category	Gangway stroke *	Normal	> 45cm or if signal lost	> 45cm	> 45cm
	Gangway elevation *	Normal	> 10°	> 10°	> 10° / 10°
Weather / Environment Conditions and Visual Performance	Response forecast gangway stroke (optimal heaving motion)	Normal	> 45cm	OM Decision	OM Decision
	Wind speed (Big Wind sensors)	Normal	> 40 knots	> 40 knots	> 40 knots
Mainm. (Mainm. Performance)	Current speed (DP)	0-2 knots	> 2 knots	FE OM Decision	FE OM Decision
	Heading deviation *	Normal	Frequent > 3	FE OM Decision	FE OM Decision
DP Consequence Analysis	DP Consequence Analysis	Consequence analysis enabled and no active alarms	Consequence analysis off or warning condition not held period	Consequence analysis off or warning condition with no means to revert condition within a reasonable time span	OM Decision
	Weather / Environment Forecast	Valid operating limits *	Exceeding operational limits *	Exceeding operational limits *	OM Decision
Weather / Environment Conditions and Visual Performance	DP1 OFF / DRIVE OFF	No discrepancies observed in Position Reference System and Thruster loading	Discrepancies observed in Position Reference System and/or thruster loading	Immediately when recognized by DP0	Unable to bring the vessel under control
	Forecast / Weather / Environment Related Deviation (From Setpoints)	No position alarms or warnings	Position excursions, frequent alarms or exceeding position warning limit (1.3m)	OM Decision	OM Decision
Mainm. (Mainm. Performance)	Box bottom slamming **	Forecasted weather below limits in algop study	Forecasted weather above limits in algop study as per item "B" below	According to advisory meeting decision	Experienced below bottom slamming
	Thrusters	6 selected and online	Less than 6 thrusters online *	Consequence Analyst Alarm	Consequence Analyst Alarm
Mainm. (Mainm. Performance)	Thrust consumption (% of available system thrust)	All thrusters to operate in less than 60% of total V-load	Any relevant PMS warning/ alarm for station keeping or any over 60%	Thrustor load above 60%	Insufficient thrust for maintaining position
	Direct generators	Minimum 1 online and 1 available on each sub-board	Any other set up or change in set up *	Loss of main or auxiliary generator connected to any auto-hold or if not in	OM Decision
Power	Direct Generators loading 3-Split / 2-Split	No PMS warning/ alarm for station keeping	Any relevant PMS warning/ alarm for station keeping	Consequence Analyst Alarm OM Decision	OM Decision
	Power consumption (% of available system power) 3-Split / 2-Split	Spring reserve should always allow for the loss of one pump	Any relevant PMS warning/ alarm for station keeping	Consequence Analyst Alarm OM Decision	OM Decision
DP Control System	Loss or Problem with any Essential Communications (CCRS/DP/Gangway Cable)	Redundant communications	Reduced communications	One system remaining	OM Decision
	DP Networks	A and B	Any alarms or poor performance	Network lost	OM Decision
Position Reference Systems	DP Position Reference System **	3 or more relative independent reference systems (4 GPS)	Less than 2 relative independent reference systems (3 GPS)	Poor performance, unexpected or unexplained event as per OM Decision	Total loss of all Relative or Absolute Reference Systems
	Target heading sensor voting_with DP-tilt	Minimum 3 - Tp-2 + 2 unique TP pairs (172° Vmax or 180° Vmax or 180° Vmax)	Minimum 2 - Tp-1 + 1 unique TP pair - 90° Vmax or 180° Vmax	Poor performance, unexpected or unexplained event as per OM Decision	Total loss of all Relative or Absolute Reference Systems
Sensors	Target heading sensor voting_without DP-tilt	Tp-Tp3 + 3i unique TP pairs	Tp-Tp2 + 2i unique TP pair	Poor performance, unexpected or unexplained event as per OM Decision	Total loss of all Relative or Absolute Reference Systems
	Heading Sensors (Gyro) into DP *	3-1 gyro	Loss of 1 gyro or any alarm	Loss of 2 Gyros	Total loss of Gyros
Control Systems	MOION REFERENCE SENSORS (MRU) into DP *	2-1 MRU's	Loss of 1 MRU or any alarm	Loss of 2 MRU's	Total loss of MRU's
	Wind Sensors *	2-1 wind sensors	Loss of any wind sensor or alarm	Loss of 2 Wind sensors	Total loss of Wind Sensors
Control Systems	DP Controllers	All controllers and power supplies available	Any alarm, poor performance, unexpected or unexplained event	Two controller or power supply operating	One controller or power supply operating
	DP Control System (Mimics)	All display checked and up to date	Any incorrect information	Incorrect information that affects DP operation	OM Decision



FLOATEL INTERNATIONAL



AkerBP

Joint Scenario training

Class A simulator at Kongsberg Maritime simulator centre

Set-up

- Skarv FPSO manned by Skarv crew
- Flotel Endurance/Superior manned by Floatel crew

Scenarios

- Approach and gangway landing
- Loss of reference system
- Black-out Skarv FPSO
- SIMOPS (Shuttle tanker / PSV operation)
- Flotel worst case failure



Exhaust After Treatment System (EATS)

Solution for improved treatment of emissions




Background

- During 2024 exhaust gases caused discomfort for personnel
- Floatel in cooperation with Chalmers University of Technology and Semco Maritime to identify the most **efficient technologies**
- The main goal of the EATS solution is to **reduce NO_x** emissions as well as **particles** that affect personnel on site

System implementation

- The final solution was selected following a **detailed engineering study** and includes:
 - **Selective Catalytic Reduction (SCR)** - Reduces nitrogen oxides (NO_x) emissions + Mixing unit due to SCR needing Urea Mix for functionality
 - **Diesel Oxidation Catalyst (DOC)** - Targets carbon monoxide (CO), hydrocarbons (HC)
 - **Water Mist** – Targets exhaust soot (particulate matter (PM))
- The system was installed at a shipyard in Bergen during Q1 2026, prior to the Aker BP Skarv Charter



Results

88%
Reduction in weighted NO_x emissions

96-99%
Reduction in weighted THC emissions

Overall conclusion
The SCR installation on Floatel Endurance demonstrates a **significant reduction** in weighted NO_x emissions, a **substantial reduction** in hydrocarbon emissions, and **maintains low ammonia slip**

Key takeaways

Client and Operator Cooperation



Focus on awareness of different perspectives

Crew involvement



Understanding the risk picture

Building a resilient organisation



Safe and efficient operations

Lessons learned



Clear and concise bridging procedures

Ensuring that roles and responsibility is understood



Close collaboration between Floatel and Aker BP

One team spirit



Thank you for your attention!

Any Questions?

#ONE TEAM