

Barrierestyring i daglig drift

Operasjonell implementering organisatorisk forankring

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Offshore Installation Manager
3 Marts 2020

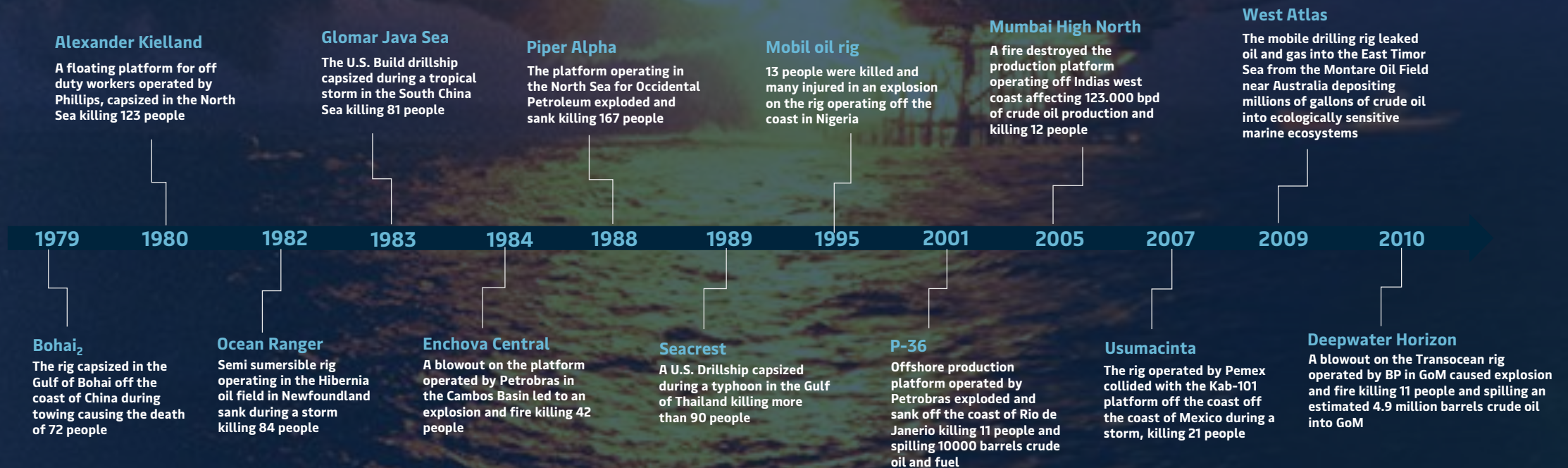


Agenda

- 1 Introduksjon – Baggrund for barrierestyring
- 2 Hoveddriverne for barrierestyring I Maersk Drilling
- 3 Barrierestyringsstrategi og Vores forpliktelse
- 4 Organisatorisk forankring av barrierestyring
(Kompetencer og ansvar)
- 5 Rammeværk for barrierestyring
- 6 Utvikling av performancestandarder
- 7 Ikke tekniske verifikationsaktiviteter
- 8 Barrierstyring I daglig drift
- 9 Kommunikation af barrierestatus
- 10 Q&A

Baggrund

Historien viser at boreoperationer offshore indebærer et farepotentiale som kan udløse storulykkesscenarier med alvorlige konsekvenser for både menneskeliv, tab af installation og forurening af miljøet



Hoveddriverne for barrierestyring I Maersk Drilling

CHAPTER II RISK MANAGEMENT

Section 4 Risk reduction

In reducing risk as mentioned in [Section 11 of the Framework Regulations](#), the responsible party shall select technical, operational and organisational solutions that reduce the likelihood that harm, errors and hazard and accident situations occur.

Furthermore, barriers as mentioned in [Section 5](#) shall be established.

The solutions and barriers that have the greatest risk-reducing effect shall be chosen based on an individual as well as an overall evaluation. Collective protective measures shall be preferred over protective measures aimed at individuals.

[Guidelines](#) [Interpretations](#)

Section 5 Barriers

Barriers shall be established that at all times can

- a) identify conditions that can lead to failures, hazard and accident situations,
- b) reduce the possibility of failures, hazard and accident situations occurring and developing,
- c) limit possible harm and inconveniences.

Where more than one barrier is necessary, there shall be sufficient independence between barriers.

The operator or the party responsible for operation of an offshore or onshore facility, shall stipulate the strategies and principles that form the basis for design, use and maintenance of barriers, so that the barriers' function is safeguarded throughout the offshore or onshore facility's life.

Personnel shall be aware of what barriers have been established and which function they are intended to fulfil, as well as what performance requirements have been defined in respect of the concrete technical, operational or organisational barrier elements necessary for the individual barrier to be effective.

Personnel shall be aware of which barriers and barrier elements are not functioning or have been impaired.

Necessary measures shall be implemented to remedy or compensate for missing or impaired barriers.

[Guidelines](#) [Interpretations](#)

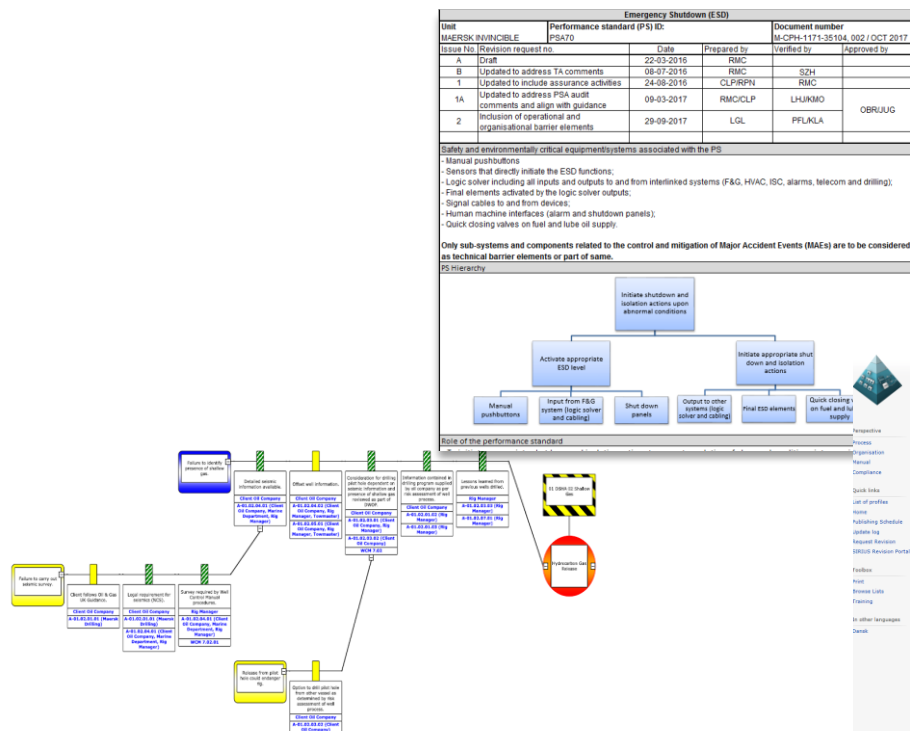


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I løbet af 2017, blev alle performance standarder videreudviklet til også at indeholde de ikke-tekniske barriere elementer.



Barrierestyringsstrategien definerer hvordan barriereelementer er identifiseret og vedligeholdt.



Module ID	Assessment ref	Risk	T/S	Assessment Statement/ Criteria	Current status	TF	YES	NO	Last Assessment date	Expiry date
SCT-MODU	PSA-07-05	H	T	Demonstrate the drivers instrumentation system and controls • Setting up alarm points for main functions • Understand and be able to respond to alarms • Changing gear selection on draw works • Review Zone management / anti-collision settings • Demonstrate how to read and interpret information on circulating conditions from the drivers console • Pit and tank volumes • Flow alarms • Pump rate • Temperature gauges • Pressures across the circulating system • Demonstrate how to read and interpret information on circulating conditions from the drivers console • Pit and tank volumes •	Green				01/05/2015	01/05/2018
SCT-MODU	PSA-08-05	H	T	Demonstrate how to read and interpret drilling parameters • Weight on bit • RPM • Direction whilst working with directional driller • Explain how to monitor the driller's console during drilling operations. •	Green				01/05/2015	01/05/2018
SCT-MODU	PSA-09-05	H	T	Demonstrate how to • Set up circulating systems for drilling operations • Choke and kill manifold line-up • Live up standpipe manifold • Live up blowout system •	Green	X			01/05/2016	01/05/2018
CDT-05	Non PS	M	S	SSA	Green				01/05/2013	01/05/2016

MAERSK DRILLING

MAERSK FPSOs

HD - Process Instruction

Operational and Organisational Barrier Management in Daily Operation

006 / APR 2017

Operational and Organisational Barrier Management in Daily Operation

MAERSK DRILLING

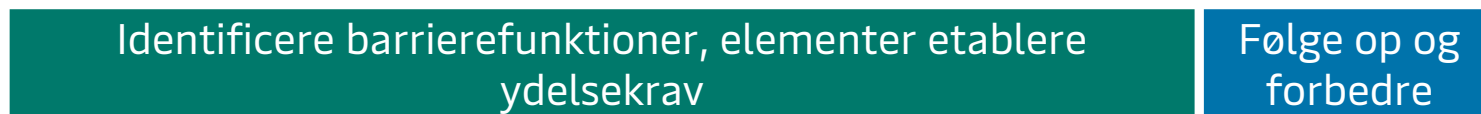
MAERSK FPSOs

Operational and Organisational Barrier Management in Daily Operation

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Vort løfte: En forpligtelse til at minimere risikoen for storulykker

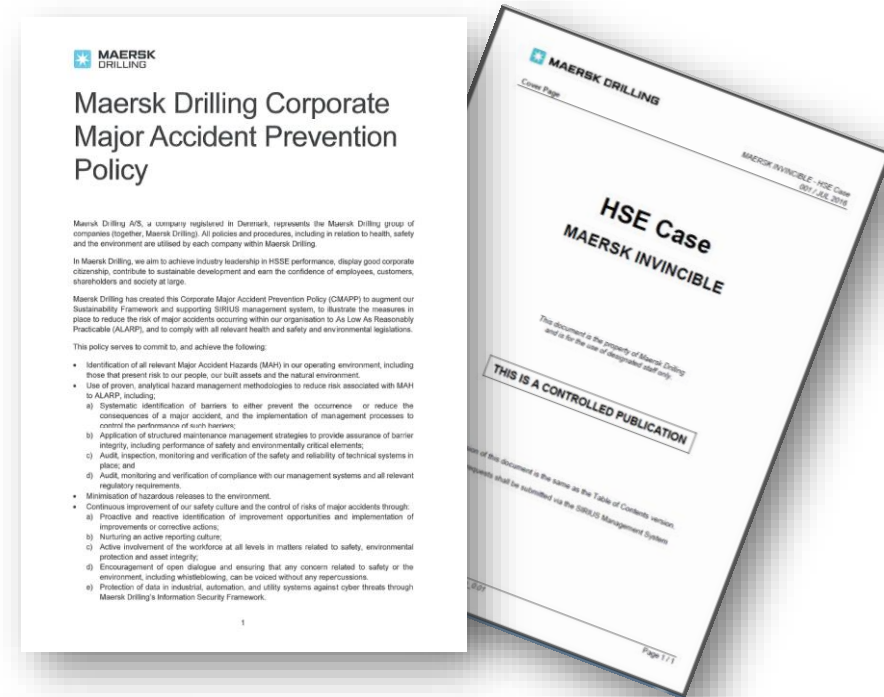
Corporate Major Accident Prevention Policy (CMAPP)

Identifikation af alle relevante storulykkerisici (Major Accident Hazards - MAH) i vort operationelle miljø.

Brug af godkendte / prøvede analytiske risikohåndterings metoder for at reducere risici relateret til storulykker til et ALARP niveau

Minimere/ skadelige udslip til miljøet

Kontinuerlig forbedring af vores sikkerhedskultur og vores kontrol af storulykkerisici



Uddrag fra CMAPP

COMMITMENT FROM OUR LEADERS

From our CEO down to rig crew level, all levels of leadership within Maersk Drilling are committed to work actively to reduce the potential for major accidents to ALARP.

Maersk Drilling is committed to ensure that personnel at all levels in the organisation are skilled, knowledgeable and competent in their position.

Organisatorisk forankring

I Maersk Drilling, er vi overbeviste om at første skridt på vejen, mod en bæredygtig implementering af et successfuldt- og velfungerende operationelt barrierestyrringrammeverk, er en stærk organisatorisk forankring samt etablering af formåls- og behovsforståelse. Dvs skabelse af ejerskab hos de ansatte.

Vi har gennem en metodisk og struktureret indlæringsprocess, efterstræbt at sikre at kompetencer er implanteret i organisationen på rette niveau.

Ligeledes har vi ved en metodisk tilgang sikret en transparent ansvarsfordeling i hele barrierestyrringsrammeverket (RACI matrisen)



Vore organisatoriske ansvarsfordeling – dækket af en RACI matrise

Offshore ledelsen er ansvarlig for at velfungerende barrierer er på plads og vedligeholdt, at sikkerhedskritiske aktiviteter er forstået og mitigeret, at enhver svækkelse er identificeret og at integriteten af barriereelementerne er verificeret.

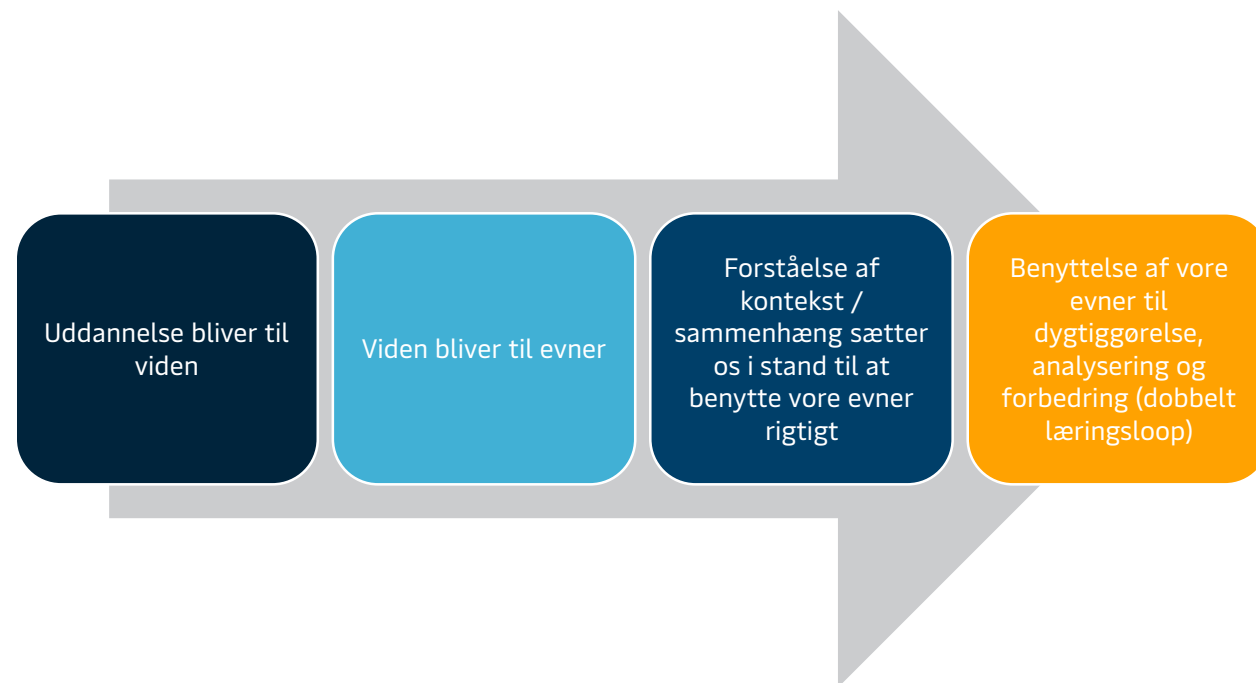
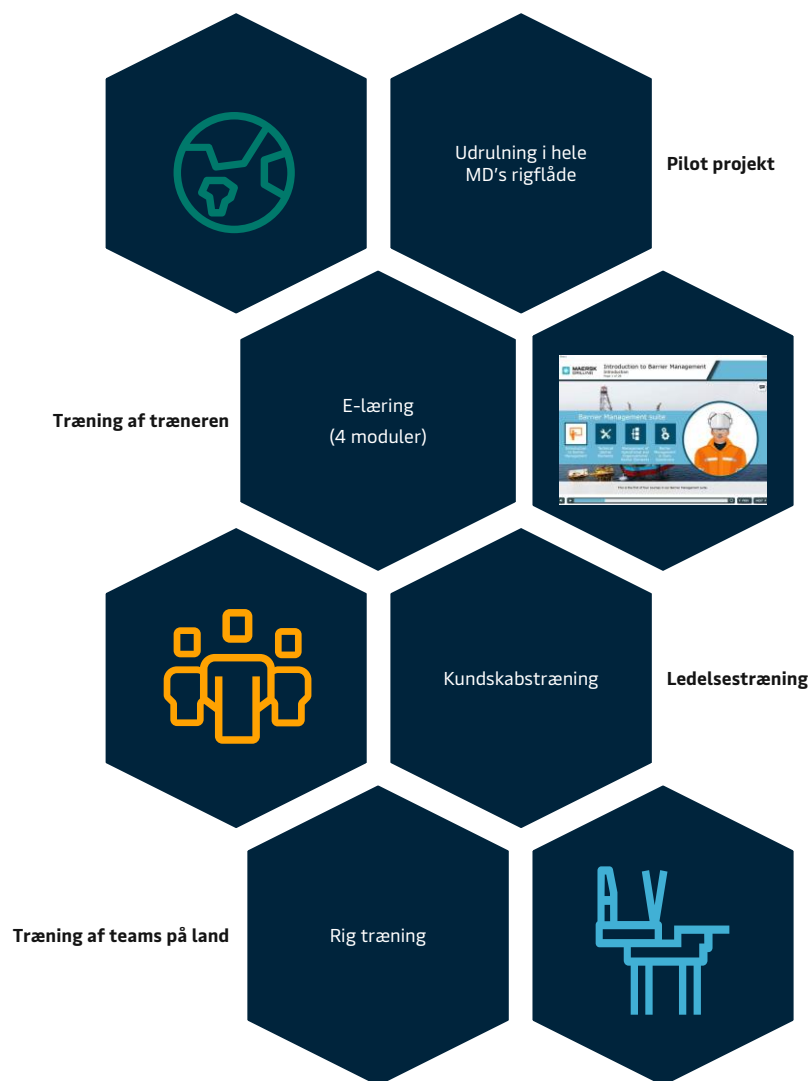
Besætningen er gennem et aktivt barrierestyringsmindset ansvarlig for at vurdere udstyret, sikre samsvar med kompetencer og procedurer i planlægning og udførelse af jobs

Role	Offshore operations					Onshore operations								HSSE		Technical Organisation				
	OIM	Head of Departments	Safety Officer	Task Leader	Middle Managers	Rest of personnel	COO	Asset teams	Rig Manager	Assistant Rig Manager	Technical Superintendent	HSE Coordinator / Adviser	HR Coordinator	Training Coordinator	Head of HSSE	BPE for BM	HSE Support	Head of E&I and Technical Safety	Head of Maintenance and Materials	Technical Safety Engineers
Management																				
Managing the Operations integrity and barrier							A	R												
Support its																				
Protect the assets of																				
Managing barrier																				
Responsible for creating	A	R	R	R	R	I			R	I		C	I	C						
Managing barrier																				
Responsible for creating							A	R	R			R			R	C	R	R		C
Document Control																				
Document Strategy	I						A		I			I			C	C		R		C
Organisational Barrier	R						C		I			I			A	R		C		C
Daily Operation																				
Performance standards upon	I								I						R			A		C

Ledelsen på land er ansvarlig for at forpligte operationen til barrierestyringsstrategien og for at sikre organisatorisk kundskab.

HSE på land er ansvarlig for at tilsikre og iværksætte regelmæssig gennemgang af performance standarder, inklusiv ydelseskrav og verificeringsaktiviteter.

Organisatorisk forankring – læring på rette niveau



Barrirestyringsrammeverket

Sikkerhedskritiske aktiviteter	Barriere Elementer	Verifikations aktiviteter		Activitets – Success kriterier	Værktøjer
	Tekniske	Vedligeholdelses-aktiviteter		100% samsvar med performance standarder	IFS Technical Barrier Status Workbench
	Organisatoriske	Kompetence-vurderinger	Øvelser og scenare træning incl well control	100% samsvar med øvelser 80% samsvar med Sikkerhedskritiske CA's (kompetencevurderinger)	CAS / PoBCo
	Operationelle	Selv-Verifikationer Control of Work aktiviteter	Intern/ekstern Audits/revisioner	100% samsvar med Selv-Verifikations matrisen	SIRIUS COW Synergi IFS

Barrierstyringsrammeverket er baseret på værktøjer vi allerede bruger

Tekniske barriereelementer

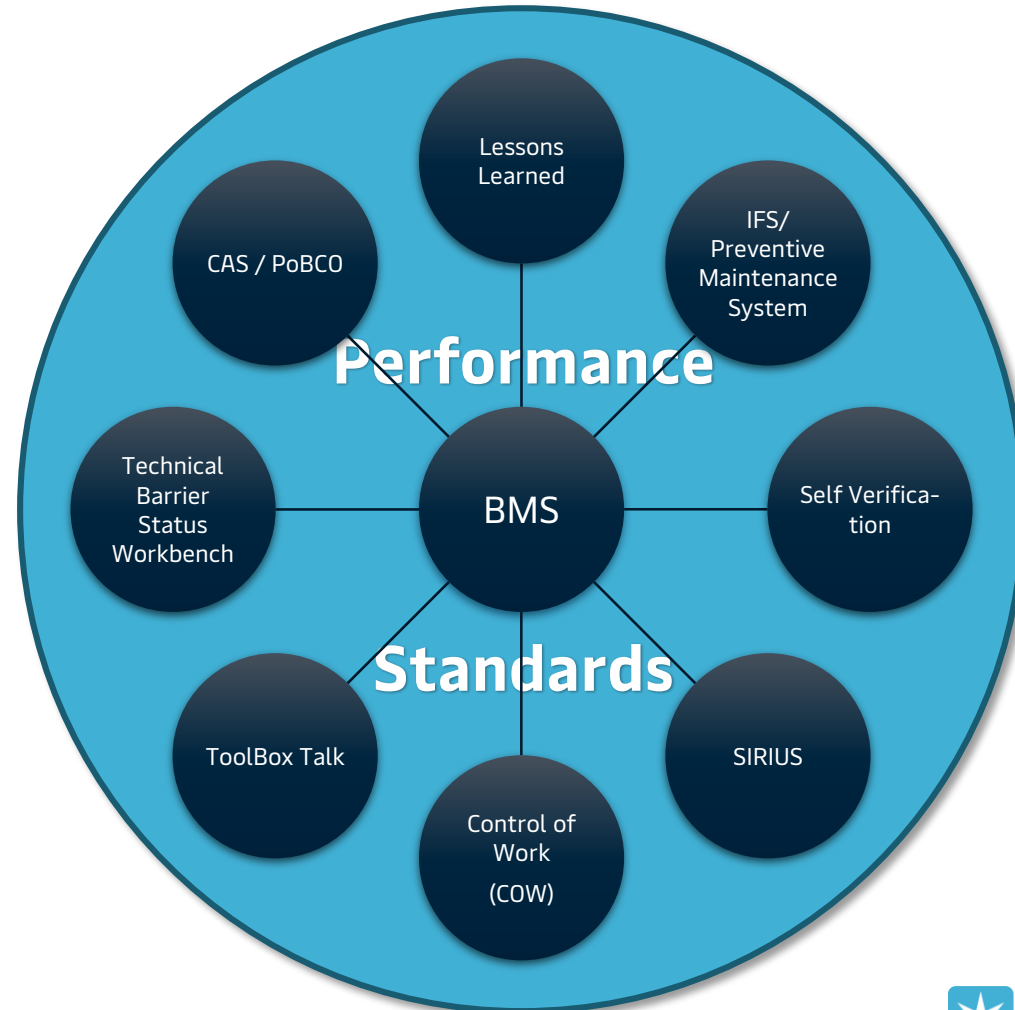
- IFS/Technical Barrier Status Workbench

Organisatoriske barriereelements

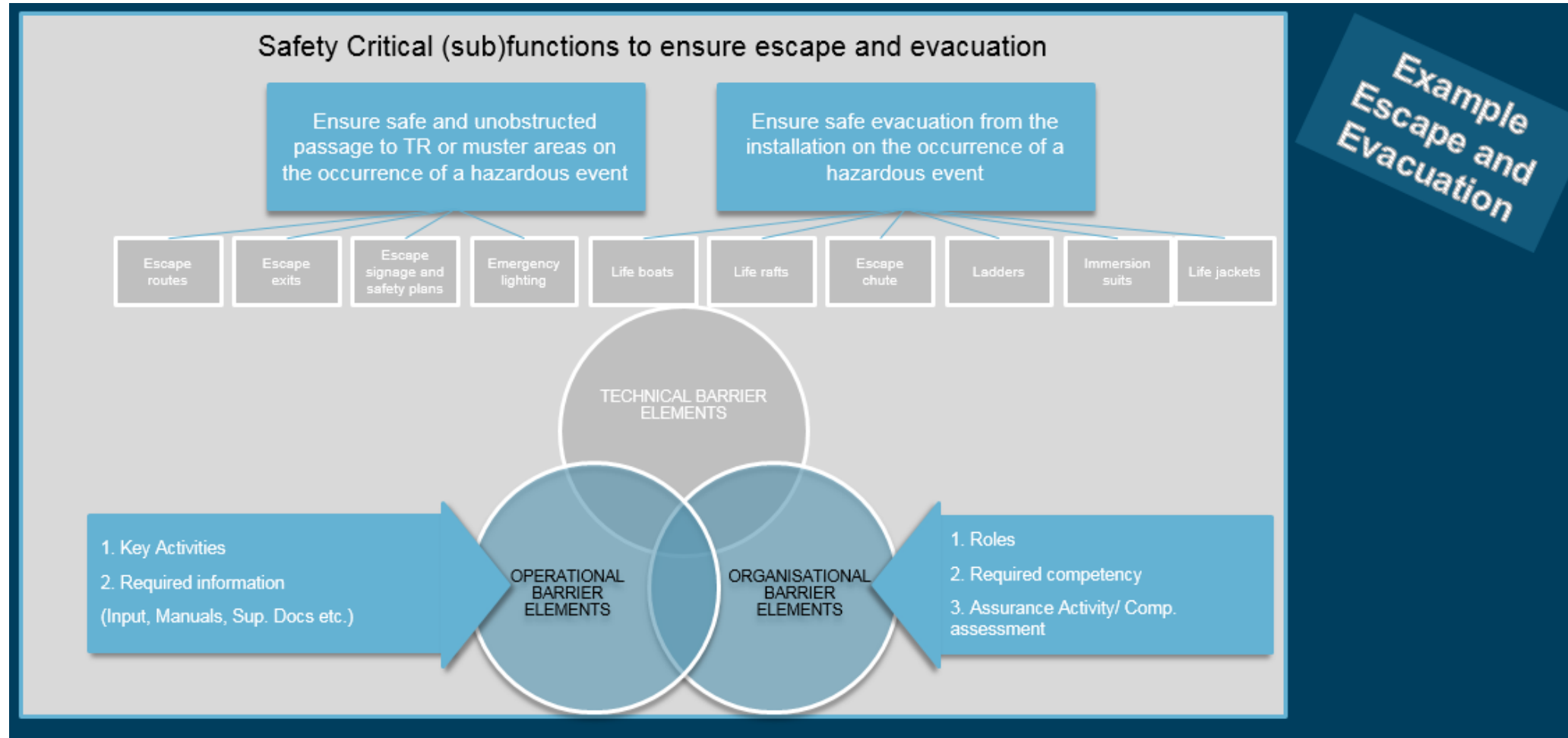
- CAS / PoBCO
- Selv-Verifications
- Toolbox Talk

Operationelle barriereelementer

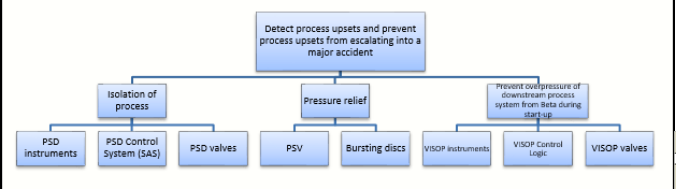
- Procedurer / Checklists (i Sirius)
- Selv-verifikationer
- Arbejdstilladelse vurderinger
- Toolbox Talk



Vore performance standarder



Vore performance standarder

Process Safety					
Unit	Performance standard (PS) ID:				
MÆRSK INSPIRER	PSa110				
Issue No.	Revision	Date	Forside		
1	Original	01-02-2013			
2	Updated to address SME comments and revised assurance activities	24-09-2014	LHJ	RMC	BPH/TTP
3	Separate HSE Case and Performance Standards	24-10-2014	NHO		
4	Addition of new reporting requirements	04-02-2016	LHJ		
5	Updated for Yme development	24-07-2019	RMC	TIA, SKJ, IHO, ATA, AMC, SPP	Technical Authorities
Safety and Environmentally Critical Equipment / Systems Associated with the PS					
The equipment associated with this performance standard comprises: - PSD instrumentation (including car sealed/locked open valves, heat tracing where required) - PSD control system (SAS) - PSD actuated valves - PSVs (including key interlock system and locked open valves, heat tracing where required) - Bursting discs - VISOP (instruments, control logic and valves).					
Only sub-systems and components related to the control and mitigation of Major Accident Events (MAE) are to be considered as technical barrier elements or part of same.					
PS Hierarchy					
					
Performance Objectives					
The role of the Process Shutdown system is to prevent the process plant from operating outside of its safe working envelope and to provide pressure relief if process shutdown fails					
Relevant Top Events from Bow-Tie	PS Functions to Prevent & Mitigate Top Events	Bow-tie number (Refer to HSE Case, Section 11)			
Process hydrocarbons / Loss of Containment	Prevent escalation of process upset by process isolation and pressure relief.	6			

Mærsk Inspirer - Performance Standard PSa110 for Process Safety - Technical Barrier Elements						
Performance Requirement				Assurance Activity		
Functionality	Requirement Reference No.	Sub-Element	Performance Requirement	Regulation Codes, Standards and Internal Requirements	Assurance Activity ID	Assurance Activity
Isolation of process	F1	PSD instrumentation and control system	Process instrumentation shall detect process upset at levels defined by alarm and trip schedule and initiate appropriate process shutdown actions in accordance with system control diagrams	NORSOK S-001, Section 10 Alarm and trip schedule System Control Diagrams	AA F 1.1	Check functionality of input/output process transmitters of the PSD Down (PSD) system. PASS: PSD transmitters are functional and initiate appropriate process shutdown actions in accordance with system control diagrams as defined by alarm and trip schedule.
					AA F 1.2	Check that all block valves installed upstream of process instrumentation are in "Open" position with a car seal (CSO). PASS: All block valves installed upstream of process instrumentation found in "Open" position with a car seal (CSO).
					AA F 1.3	Check that heat tracing on pressure instrumentation, where installed, is operational. PASS: Heat tracing is functional and in good condition.
	F2	PSD Valves	PSD valve closing times shall be sufficiently fast to ensure that the primary level of protection has fulfilled its task without activation of the secondary level of protection (PSVs/bursting discs).	NORSOK S-001, Section 10 4.5 CRITICAL PROCESS VALVES	AA F 2.1	Carry out stroke test of process shutdown valves and measure travel time via the event log Visual verification of smooth operation. PASS: PSD valves travel time meets criteria given in VO-P-99-B-RP-02007-001 for critical valves or is less than 2 sec/in for all other valves, with smooth operation.
					AA F 3.1	Check certification tag is sealed, readable and less than two years old.

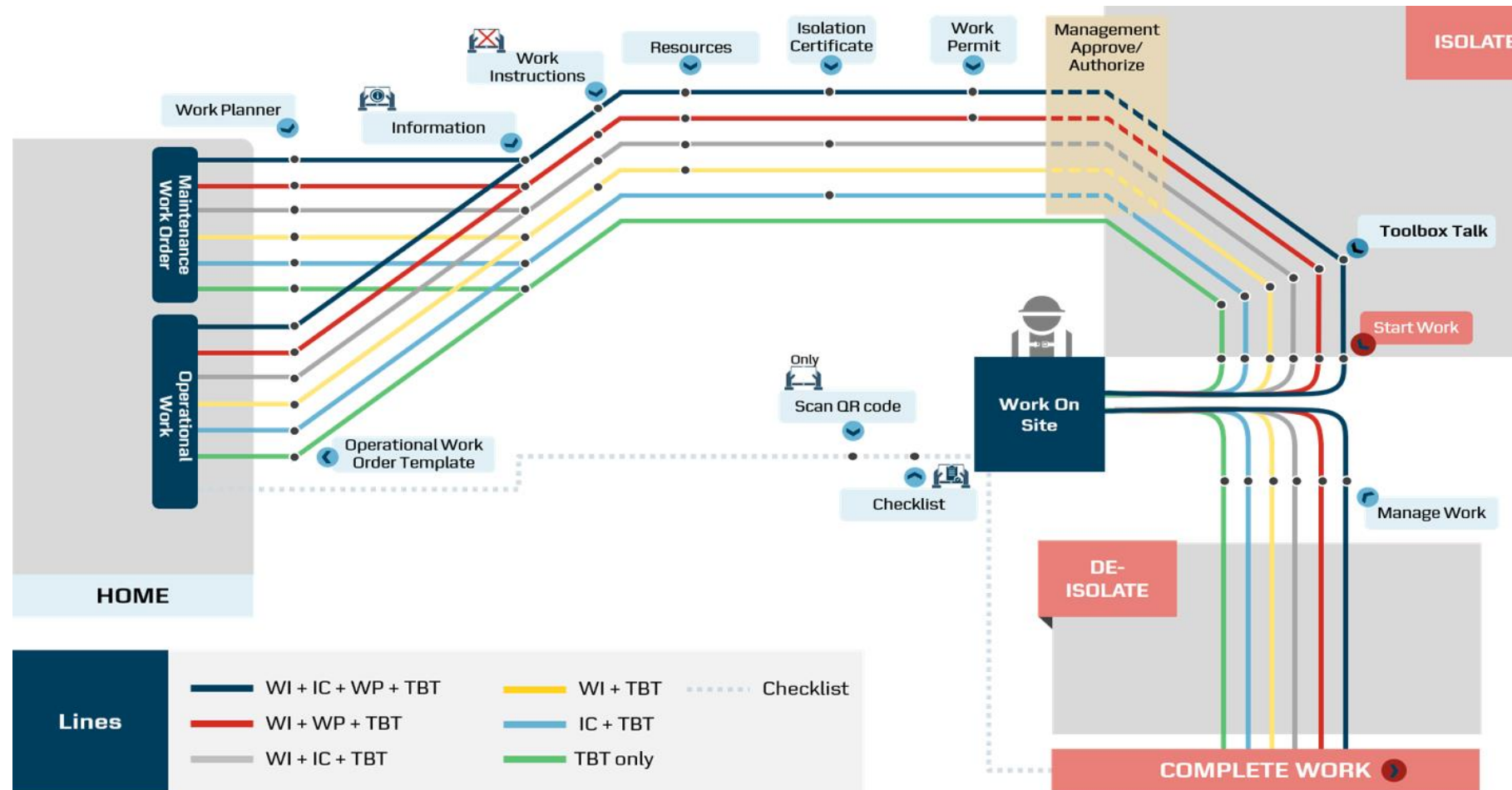
Tekniske
barriere
elementer

Mærsk Inspirer - Performance Standard PSa110 for Process Safety - Operational and Organisational Barrier Elements						
Barrier Function	Sub function	Safety critical activity	Input	Operational Barrier Element	Organisational Barrier Element	
Detect process upsets and prevent process upsets from escalating into a major accident	2. Pressure relief	Identify cause for unsuccessful PSD	Output from ABB HMI screens Feedback from Process Operator Feedback from Instrument Technician Operational status	ABB System manuals System control diagrams (SCDs) Technical System manuals Operating procedures P&IDs ABB Alarm philosophy	Senior Process Technician (SPT) Senior Process Technician Lead (SPTL) Production Section Leader (PSL) Instrument Technician (IT)	
		Initiate manual blow down of relevant segment	Output from ABB HMI screens Feedback from Process Operator Operational status	ABB System manuals System control diagrams (SCDs) Technical System manuals Operating procedures P&IDs ABB Alarm philosophy	Senior Process Technician (SPT) Senior Process Technician Lead (SPTL) Production Section Leader (PSL)	
		Verify pressure stabilisation	Pressure reading from ABB HMI screens Pressure readings from local gauges	ABB System manuals	Senior Process Technician (SPT) Senior Process Technician Lead (SPTL) Production Section Leader (PSL)	
	3 Prevent overpressure of downstream process system from Beta during start-up	Line up topside for Beta flow, including equalisation	Status on valves from ABB HMI screens Output from ABB HMI screens Feedback from Process Operator Operational status	Visop manual P&IDs Methanol manual System control manuals Technical system manuals Operation manuals	Senior Process Technician (SPT) Senior Process Technician Lead (SPTL) Process Operator (PO) Production Section Leader (PSL)	
Open riser ESD valve and normalize		Status on valves from ABB HMI	Visop manual	Senior Process Technician (SPT)	1) Knowledge of potential	

Operationelle &
Organisatoriske
barrierelementer

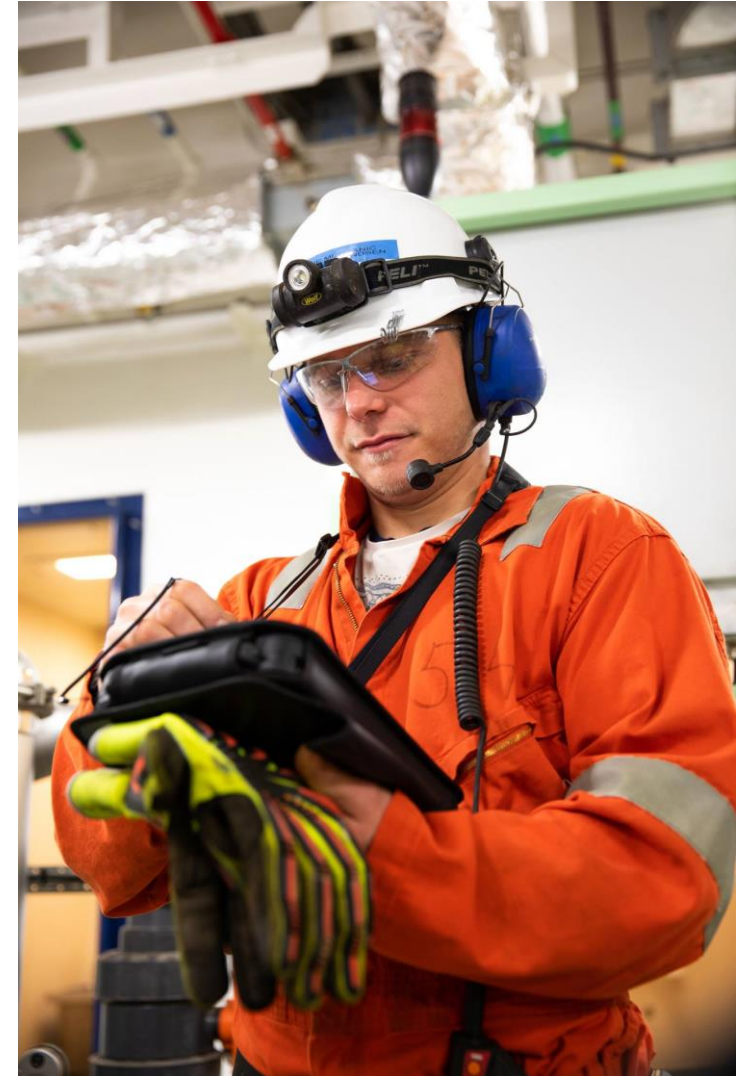


Kontrol med de operationelle barrierelementer: Control of Work



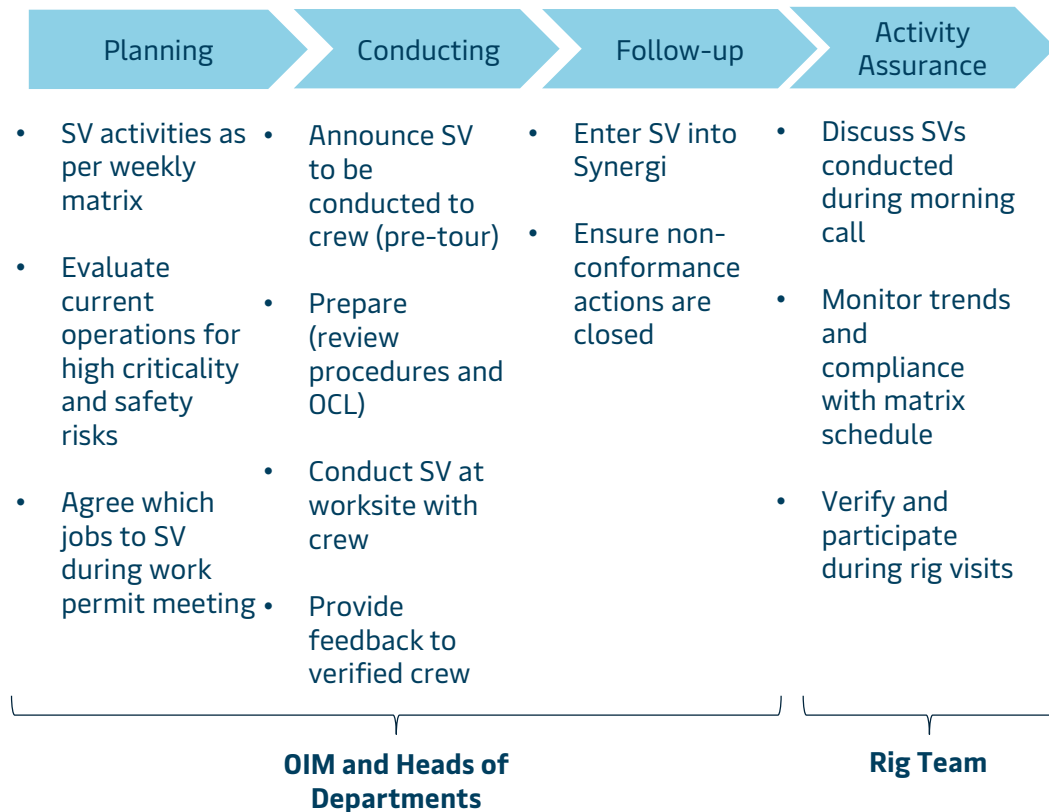
Kontrol med de operationelle barrierelementer: Self-Verification

- Selv-verifikationer er et veldokumenteret og robust system til at teste og sikre at de rette operationelle barrierer er på plads samt at sikre at deres integritet er intakt, mens der bliver udført sikkerhedskritiske aktiviteter.
- I tillæg til dette fungerer selv-verifikationerne også som en verifikationsaktivitet i sig selv, til at sikre at de operationelle barrierelementer ikke er truet af noget storulykkesrisiko.
- Selv-verifikationer er et nøgleelement i at sikre at Maersk Drillings generelle styringssystem er både forstået og fulgt samt at mangler i vore procedurer bliver identificeret og fulgt op.
- Selv-verifikationer engagerer ledere i at verificere samsvar med styringssystemet, at kontrollere at forståelsen er den rette og hjælpe til at coaching i manglerne. Endvidere er det et hjælperedskab til at anerkende og indskærpe den rette adfærd.



Kontrol med de operationelle barrierelementer: Self-Verification

- Praktisk og enkelt at inkludere i den daglige operation
- Følger tanken med vores PDSA / dobbelt loop lærings filosofi



Self-verification, Well Control

Work Description: _____

Reference, if available: (i.e. job no., Work Permit No.) _____

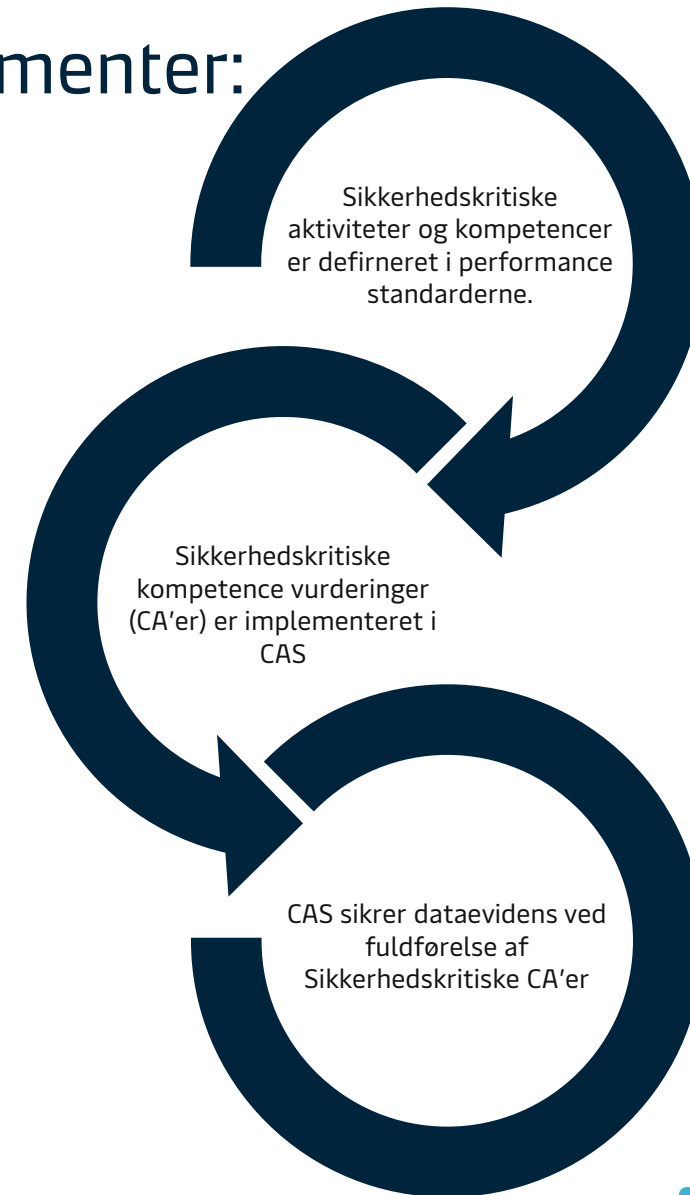
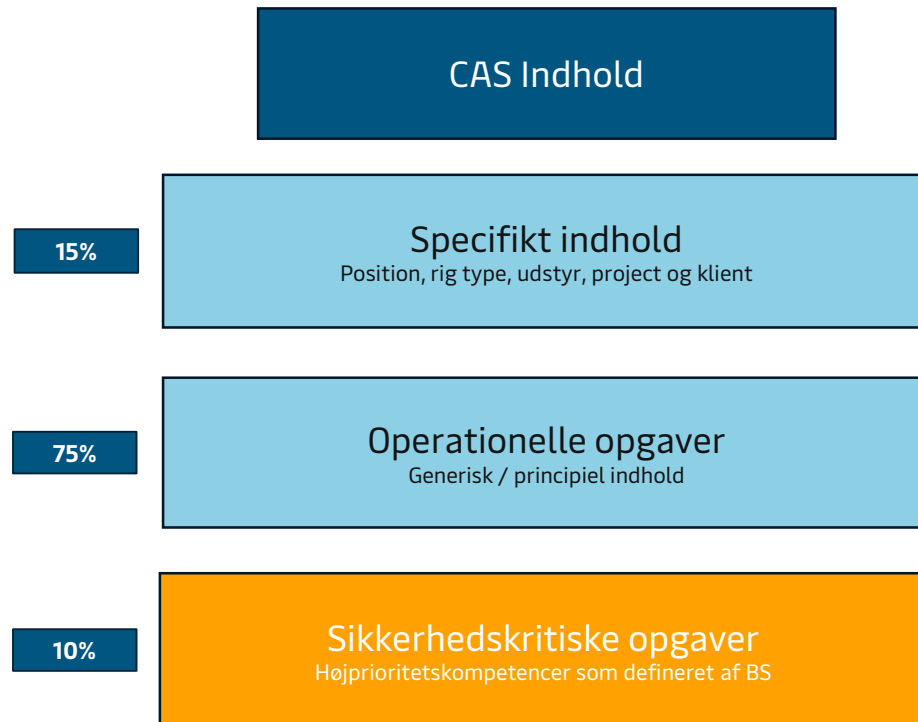
Date and time: _____

Self-verifier name: _____ Department: _____

Name: _____

#	Verification	C	NR	N
1.	Were relevant positions familiar with the content of the well control bridging document? Comments: _____	☐	☐	☐
2.	Were there any deviations in place relating to equipment, policies or procedures? If so, was risk assessed individually and cumulatively and were all relevant personnel made aware of the deviations in place? Comments: _____	☐	☐	☐
3.	Was the well shut-in first response procedures posted and were next steps recorded and documented? Comments: _____	☐	☐	☐
4.	Was it clear to all who had the authority to close in the well? Comments: _____	☐	☐	☐
5.	Was the required space out for shut in on an annular and ram understood? Comments: _____	☐	☐	☐
6.	Was the basis and authority for deciding when to flow checks clearly understood? Comments: _____	☐	☐	☐
7.	Was it clear what alarm levels the gain/loss and return flow sensors are set to? Comments: _____	☐	☐	☐
8.	Were kick sheets and kick tolerance calculations available and updated at appropriate intervals? Comments: _____	☐	☐	☐
9.	Were regular well control drills conducted according to an agreed matrix and against a success criterion? Comments: _____	☐	☐	☐
10.	Were well control drills recorded with gaps identified, rectified and documented? Comments: _____	☐	☐	☐

Kontrol med de organisatoriske barrierelementer: CAS indhold og opbygning



Kontrol med de organisatoriske barrierelementer: Personnel on Board Competency overview (PoBCo)

Click on "Fulfilled" and "Expired" so they are greyed out.
Now you have an overview of gaps between required and fulfilled training

Reset View Unit overview

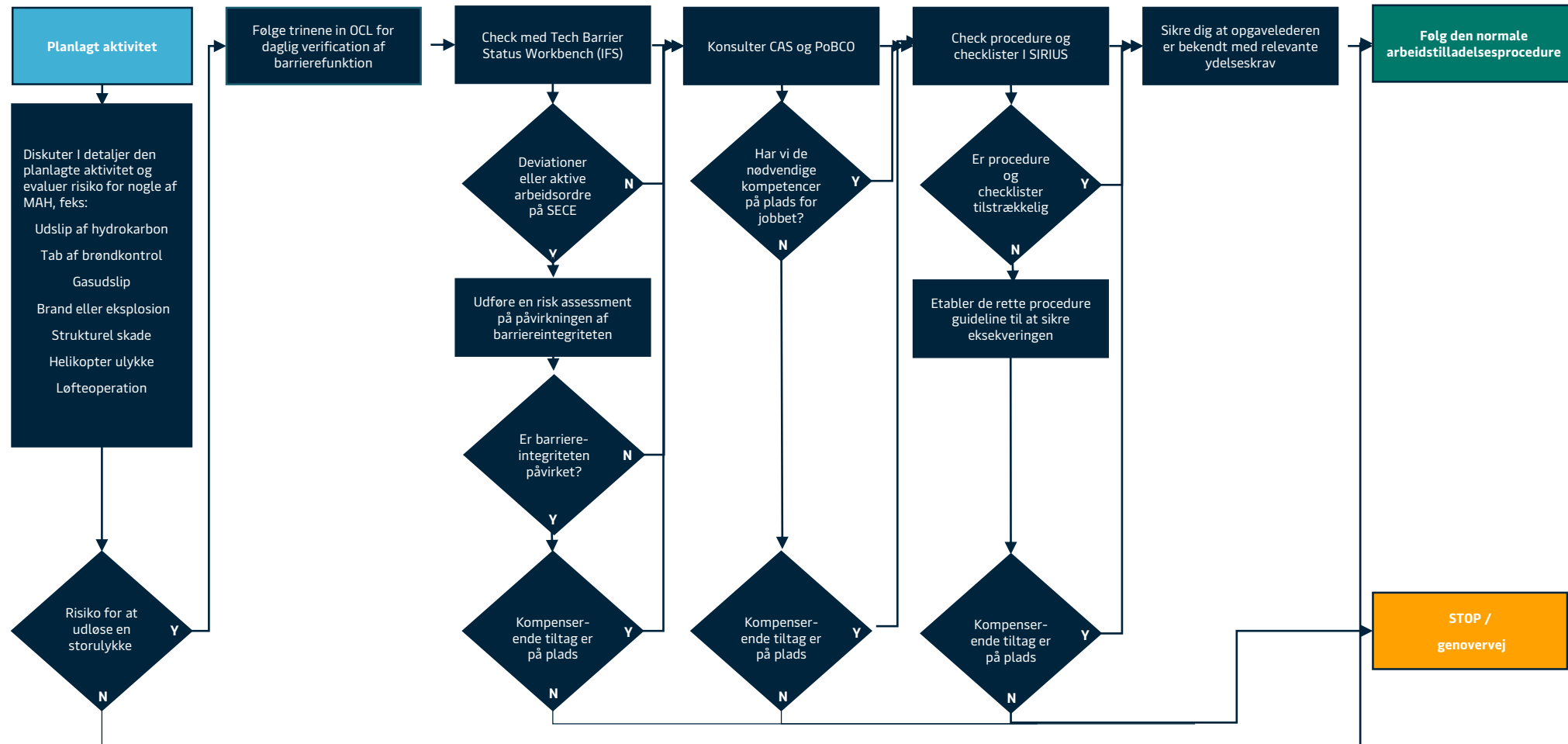
Fulfilled Planned Expired **Not fulfilled** Additional Print PoB today

Expand all	Administration	Technical	Operational	Operational
Expand all qualifications	87%	88%	91%	91%
Industry and Regulatory Requ.	100%	100%	100%	100%
Emerg. Response Requirements	100%	90%	100%	100%
Safe Manning Requirements	100%	100%	-	-
Client Requirements	100%	100%	100%	100%
Job Role Requirements	77%	86%	91%	90%
Newbuilding Equipment Training	100%	100%	85%	85%
Personal Development	100%	100%	75%	84%
OJTs/CAFs	100%	90%	100%	91%

Expand the department you want to explore

Expand the qualifications group you want to explore

Barrierestyring - beslutningsdiagram - Daglig håndtering.



Verificering af barriereintegritet under daglige møder

1. Checklisten er delegeret på skift til mødedeltagere (alle har fået management træning)
2. Den delegerede sikrer, ved aktiv deltagelse, at alle emner på checklisten er dækket under mødet.
3. Under mødet når aktiviteterne diskuteres skal den delegerede sikre at alle tre barriereelementer er dækket af
4. Efter mødet og de nødvendige diskussioner baseret på beslutningsflow, opsummerer den delegerede emnerne således der er en fælles forståelse for mitigations og nødvendige opfølgninger.
5. Ved mødets afslutning skal det samlede risikobillede defineres og besluttet. Den overordnede barriere integritet opsummeres ved hjælp af Barrier Strength Indicator (BSI). Denne kommunikeres på daglig basis ud til rigorganisationen on/off shore samt til operatør
6. Aftalte selv-verificationer på sikkerhedskritiske aktiviteter noteres direkte på PTW's.
7. Overordnet er det sikret at den samlede barriereintegritet ikke er kompromitteret af nogle af de planlagte aktiviteter næste 24 timer (både aktiviteter dækker af PTW og de uden)

This checklist shall be used as part of the daily work planning (permit) meeting. The list does not define the agenda of the meeting but ensures that the barrier management thought process has been covered. It will guide you through the process of evaluating the integrity of the barriers on the unit in relation to upcoming Safety Critical Activities (SCA).
An SCA is one which involves a risk of releasing any of the Major Accident Hazards. Examples of such activities are drilling operations, helicopter operations or repair/function test of Safety and Environmentally Critical Equipment (SECE).
The evaluation of the overall integrity of the unit shall be done by the Offshore Installation Manager (OIM) and the Heads of Department. The OIM shall have the final responsibility of verifying the overall integrity of the unit.
The task of filling out the checklist can be delegated to any participant in the meeting.

#	Description	Remarks	Check
1.	It has been evaluated, based on the daily input from after action review (AAR) active cards and findings from self-verification , whether there is an identification of weakened barrier functions	☐	☐
2.	Technical: A brief summary of the status on SECE has been given to indicate the following: • Whether all assurance activities have been undertaken according to required frequency • Whether there are corrective work orders or any raised deviation permits • If there is any need for additional mitigation. Consult: IFS Operations line characteristic PSX and Technical Barrier Status workbench	☐	☐
3.	Organisational: It has been assured that the personnel planned to be involved in the activities have the required qualifications/competency. Consult: Qualification matrix for information if needed	☐	☐
4.	Operational: It has been assured that the relevant procedures/checklists are referenced in the permit. It has been assured that procedures/checklists are available for SCAs without permit. Consult: SIRIUS for information if needed	☐	☐
5.	Discuss/coordinate opportunities for self-verification on the planned SCAs with other Heads of Department	☐	☐
6.	It has been assured that the overall barrier integrity will not be compromised by any of the planned activities for the next 24 hours. This applies to activities covered by a Work Permit (WP) and activities outside a WP	☐	☐

Evaluering og kommunikering af daglige barrierestyrke

Barrier Strength Indicator (BSI)

Formål

- Opsummering af identificerede **svækkede barriereelementer**, deres **kompenserende tiltag**, inklusiv evt **risk assessments**.
- Til at støtte off shore management i at skabe et fælles oversigtsbillede af **barriereintegriteten** om bord.
- Støtte den overordnede barrierestyringsdiskussion under de daglige operationsmøder.
- Hjælpe til at vurdere hvilke aktiviteter der har indflydelse på de ønskede barrierefunktioner (iht Performance standarderne)
- Hjælpe offshore ledelsen med at kommunikere barrierestatus

Vurderingsskala:

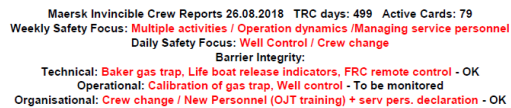
Score 1:	Score 2:	Score 3:	Score 4:	Score 5:
Mindst 1 barriere er påvirket uden nogen robust kompensation er tilstede	Adskillige barrierer er påvirket med behov for stærke kompenserende tiltag, eller barrierer edundans er påvirket	Mindst en barriere er påvirket og har behov for kompensation eller deviation.	Ingen barrierer er betydelig påvirket	Komplet barriere integritet til stede



Daily Barrier Strength Indicator : [Unit Name] 19-Aug-19				
Barrier	Barrier Elements affected	Barrier Elements Assessment (1-5)	Key Mitigating Measures Barrier Elements	Assessment after mitigation (1-5)
Technical	1. FRC remote 2. ACS Hydra Tong 3. SY test on fire loop 11 4. Crane boom wires overdue 5. FW pump on VFN u/s	3	1. Centralized launching possible, remote taken out of use 2. Update SJA to capture learnings (AAR) 3. Mitigated through PTW 4. Evaluate use of cranes, perform visual inspection, PM, prepare deviation 5. Share risk assessments, minimize exposure time (push for delivery)	4
Operational	1. POB control VFN/INV 2. Ambiguous helicopter procedures 3. Challenging volume control (ultra light mud)	3	1. T-card system in place and working 2. Full procedural compliance, helideck crew training 3. Ensure supply of fresh mud available	5
Organisational	1. Crew change in operations department - for many this is the first time drilling with Maersk	3	1. After action review process, handover procedures, familiarization on VFN, OJT	5



Opsummering af det daglige møde baseret på en gennemgang af checklisten for verificering af barriereintegritet samt ved udfyldelse af BSI

Verification of Barrier Function Integrity 002 / MAR 2018

The task of filling out the checklist can be delegated to any participant in the meeting.

Daily Barrier Strength Indicator :			[Unit Name]	18 April 2023
Barrier	Barrier Elements affected	Barrier Elements Assessment (1-5)	Key Mitigating Measures Barrier Elements	Assessment after mitigation (1-5)
Technical	1. FRC remote 2. ACH hydro fong 3. 50 feet on fire loop 11 4. Crane boom wires overdue 5. FW pump on VFN 4/3	3	1. Centralized launching possible, remote taken out of use 2. Update SDA to capture learnings (AAR) 3. Mitigated through PTW 4. Evaluate use of cranes, perform visual inspection, PM, prepare deviation 5. Share risk assessments, minimize exposure time (push for delivery)	4
Operational	1. POB control VFN/INV 2. Ambiguous helicopter procedures 3. Challenging volume control (ultra light mud)	3	1. T-card system in place and working 2. Full procedural compliance, helideck crew training 3. Ensure supply of fresh mud available	5
Organizational	1. Crew change in operations department - for many this is the first time drilling with Maersk	3	1. After action review process, handover procedures, familiarization on VFN, O/V	5

Meeting Agenda

TOPIC	KEY POINTS	DISCUSSION LEADER	TIME REQUIRED
Operations the last 24 hours	- For safety, drilling operations, maintenance and marine: - What has taken place (bigger subjects)? - Performance highs/lows and root causes - Preventive actions identified based on lessons learned - Go through top 3 safety cards and top 3 AAR cards/reviews.	OIM (HOD round table)	00H15
Operations the next 24-48 hours	- Upcoming operations - refer to weekly plan and pre-phase meetings - Ensure that risks have been managed: - Safety risks - Equipment risks - Identified preventive actions. - Decide on actions to ensure good operational performance - Identify coordination needs between departments - Decide on next pre-phase meeting.	OIM (HOD round table)	00H20
Actions	- Status on previous actions - Summarise what actions are agreed on - Check that a responsible is assigned to all actions - Update action log and distribute to participants.	RM	00H05
Closing comments		RM	00H05

Tak!



Back up slides

Bringing Barrier Management into the Toolbox Talk

Do we all have the
required competency for
the job?

Are we trained and
certified for the task?

Do we have the instructions
we need?

Are we well informed?

Are the procedures sufficient?

Are there any deficiencies
in the equipment?

Is it safety critical
equipment?



Safety as Capacity = BM + human factors

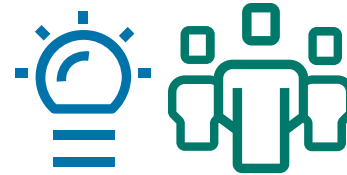
Safety is not the absence of events – it is the presence of capacity.
Capacity is our ability to manage the unexpected without consequence.



=



+



Capacity =

safeguards +

Performance shaping factor →

fail safely

=

- ✓ Safeguards that flex, bend and recover to failures or abnormal conditions:
 - Technical barriers
 - Operational barriers
 - Organisational barriers

=

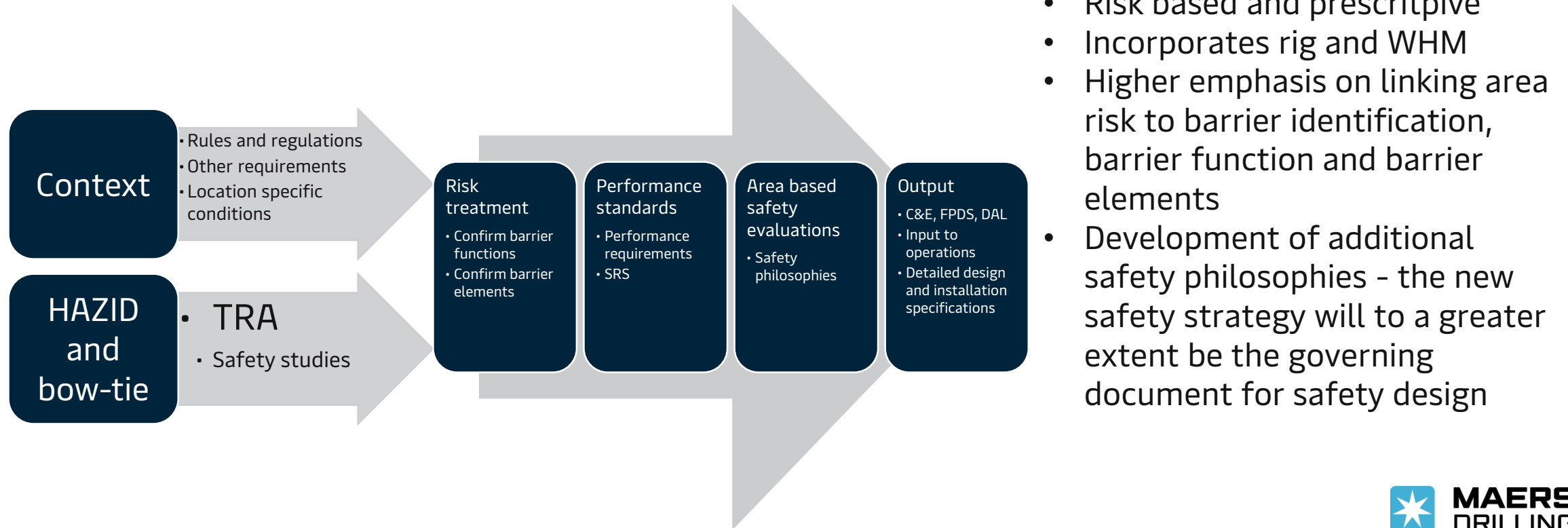
- ✓ Our ability to identify and know how to react when things change and recover when we fail:
 - Maintain overview of conditions and systems
 - Knowledge and experience
 - Learning to improve
 - Stop the job authority
 - Human factors

=

- ✓ Achieve the best result without anybody getting hurt

Status on Barrier Management System for Mærsk Inspirer at Yme

Development of new Yme safety strategy and philosophies



Governance - How do we meet our commitment?

- Barrier Management **governing documents**:
 - Barrier Management strategy
 - Operational and Organisational Barrier Management in daily operation
- Technical, Operational and Organisational barrier elements identified and defined in **performance standards**
- Barrier Management **Operational Checklist** for work planning meeting
- **Training** and **coaching**



Sustaining barrier management as a factor in work culture in Maersk Drilling - a shared language