

RIG INTAKE FRAMEWORK

A framework for improved collaboration and sharing during rig intake and start-up phase

Abstract

This document outlines a framework for rig intake assurance activities to facilitate improved collaboration and sharing of information between operators. Based on input from various oil companies on NCS, a typical example list of main rig intake deliverables is described.



Contents

1. Purpose of this document	2
2. Summary of findings from data gathering exercise	2
3. Definition of «Rig Intake».....	3
4. Determining required Rig Intake Assurance Level (RIAL).....	4
5. The Acknowledgement of Compliance (AoC) scheme	4
6. Proposed workflow for rig intake process	6
7. Proposed structure and contents of rig intake process	7
8. Sharing and collaboration	10
9. Links and references.....	10

Appendix 1 Example Rig intake handover document

Contributors:

Torbjørn Agdesteen Pedersen
Halvor Hodnefjell
Rune Hatleskog
Stein Arild Tønning
Paul Bonte
Geir Ivan Tangen
Arve Kallum

1. Purpose of this document

This document provides a framework for companies that will participate in- and contribute to the «Shared Rig Intake» initiative as described below:

Most operators have procedures and internal requirements for the process of contracting a rig. It is the duty of the operator to ensure operations are conducted safely and within existing regulatory framework, in addition to satisfying any additional internal requirements that may exist. As many rigs tend to have contracts with short duration, several rig intakes, inspections, and acceptance testing can take place frequently. Many of the inspections performed by different operators and 3rd party services are overlapping with duplicate work that can be demanding for the rig contractor and operator.

To have a common framework for structuring and categorizing rig intake assurance activities will facilitate improved collaboration and sharing of data when a drilling rig goes from one operator to another. The framework also outlines the foundation for activities and proposed inspections / audits that will meet the intent of the «see-to-it-duty» laid out in the regulatory framework.

This common framework will also enable operators to have structured engagements, experience transfer and handover process where ongoing issues, open action items or gaps can be transferred more easily.

2. Summary of findings from data gathering exercise

In Q4 of 2019, several companies were invited to fill out a questionnaire covering various aspects of their rig intake and start-up process. The purpose of the questionnaire was two-fold:

1. To get an overview of typical duration and internal resources and cost associated with the rig intake process
2. Attempt to map out the most common elements of the rig intake process and compare between companies in order to look for duplicate efforts and opportunities for sharing of data

Number of rig intakes per year

Most of the operators who filled in the questionnaire are relatively small companies with ~1 rig intake per year on average. These companies are typically set up to handle one drilling operation simultaneously, and/or may only drill 1-2 wells every 1-2 years.

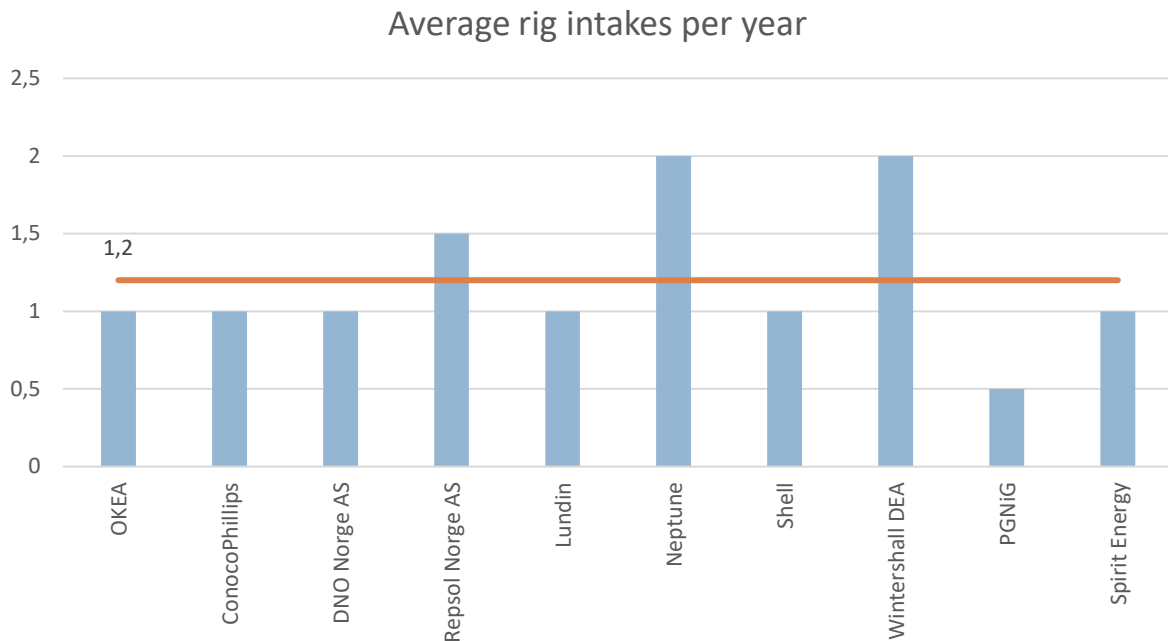


Figure 1 Number of rig intakes per year by company and average.

Duration of rig intakes

There was a large span in duration of the rig intake process between the different companies. There are many factors that contribute to this:

- Internal decision making / FID commitment process and timing of the rig tender process ahead of operations. Once a drill decision has been made, work on rig tender and award can proceed. Depending on rig availability and aspired timeline for start of drilling operations, the duration of the rig intake process will vary accordingly.
- Whether the rig is active, cold- or warm stacked or a new build will have an impact on the level of assurance needed in the rig intake process. Also, whether the company have had previous experience with the rig and/or the rig contractor.
- Each company have different internal processes and requirements that will have direct impact on the duration of the rig intake. Typically, larger companies have more comprehensive and time consuming rig intake processes than smaller and more lean companies.

Internal resources

The number of internal resources used for the rig intake process depend on many of the same factors that dictate the duration of the rig intake process (explained in previous section). Many companies also rely heavily on use of external specialist services due to lack of available internal competency and capability on this topic. Where such capabilities exist within the company, additional resources are assigned on a temporary or ad-hoc basis as and when required. On average, approximately 6 x Full Time Employees (FTE) are required for the duration of the rig intake process.

3. Definition of «Rig Intake»

For the purpose of this framework, the Rig Intake process is defined as follows:

The assurance, verification and inspection activities that take place between contract award and commencement of scope in order to ensure rig contractor operate in line with regulatory requirements and HSE risks are managed to As Low As Reasonably Practicable (ALARP).

In other words, activities associated with rig tender, scouting and initial contractor engagements are not considered part of the Rig Intake process.

4. Determining required Rig Intake Assurance Level (RIAL)

The figure below illustrates a simplified approach for determining which Rig Intake Assurance Level (RIAL) to be used dependent on some basic assumptions and status for the actual drilling unit. The type, complexity and duration of the planned wells activities should also be considered when assessing the RIAL.

The operator’s rig start team is responsible for describing and justifying the selected RIAL in the detailed rig intake assurance plan based on an overall assessment, including access to previous documentation / inspection reports from other operators or PSA of the selected rig. Refer to more detailed flowchart in Section 6.

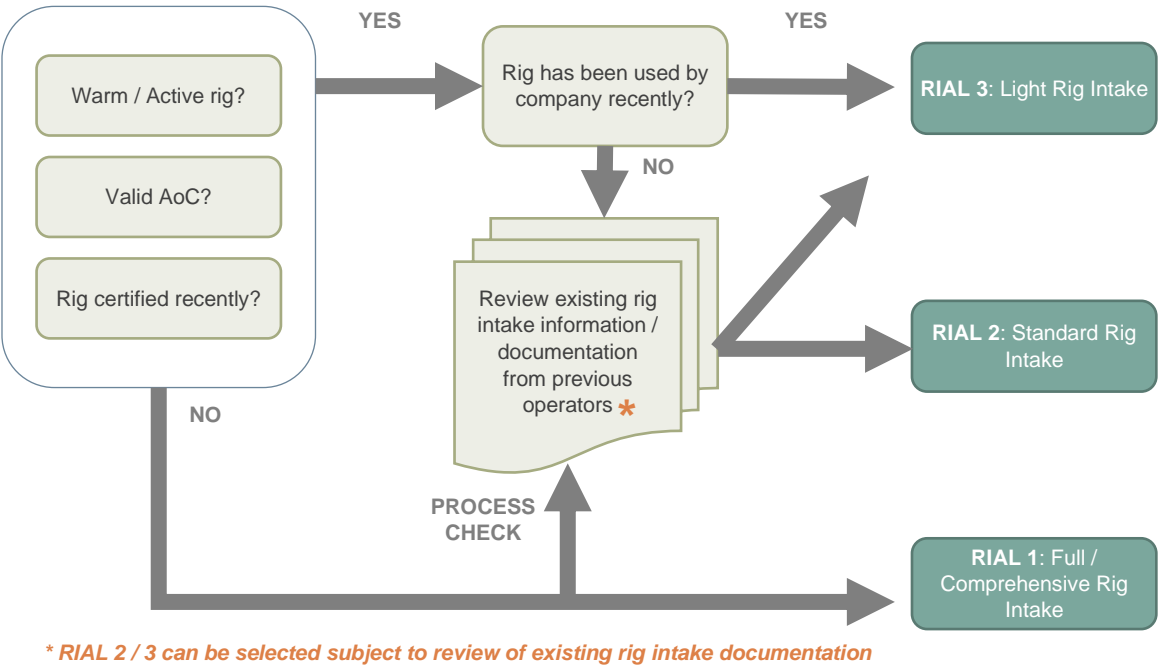


Figure 2 Flow chart for risk assessment to assist with determining required rig intake assurance level

5. The Acknowledgement of Compliance (AoC) scheme

The AoC (Samsvarsuttalelse) scheme was introduced in 2000 and became mandatory for all MODUs on the Norwegian Continental Shelf (NCS) in January 2004.

All MODUs registered in a national ship register must have an AoC in order to participate in petroleum operations on the NCS. An AoC is not required for mobile facilities operated directly by the field operator, and for storage ships. The Applicant may be the owner of a MOU, or anybody else who will be in charge of the daily operations of the MOU when undertaking petroleum activity subject to Norwegian shelf legislation.

The AoC is given based on the information that the Applicant has provided concerning the MOU and organisational conditions, and the authorities' follow-up of the Applicant. There is no defined expiry date for an AoC granted by the Petroleum Safety Authority (PSA). However, the Holder of the AoC is responsible for maintaining the AoC application documentation and informing PSA of major changes to the MOU or the related management system.

According to Section 3 of the Framework Regulations Application of maritime regulations in the offshore petroleum activities, mobile facilities which follow a maritime operational concept can use relevant technical requirements in the NMA regulations for mobile facilities, with supplementary classification rules provided by a MODU classification society recognised by NMA. Alternatively, international flag state rules with supplementary classification rules providing the same level of safety to technical requirements laid down in pursuance of the Petroleum Activities Act can be used. More information about this can be found in the "[Handbook for acknowledgement of compliance \(AoC\)](#)" [1].

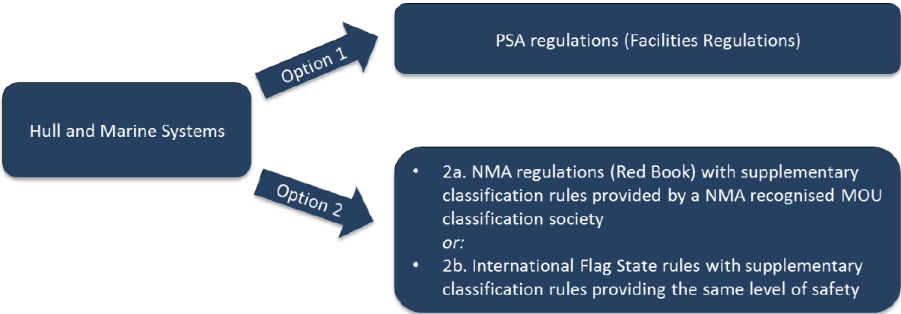


Figure 3 Options for technical requirements to maritime areas. Section 3 of the Framework Regulations is the "entry gate" to options 2a and 2b

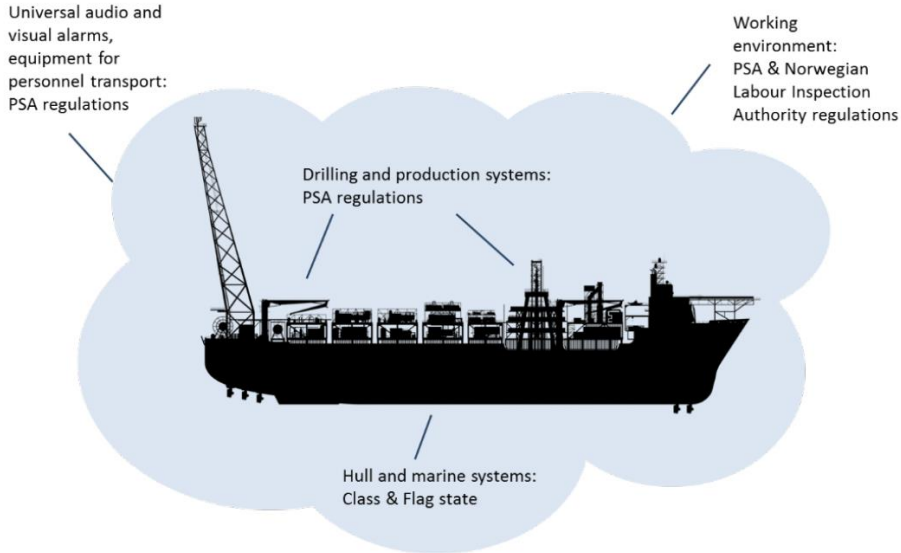


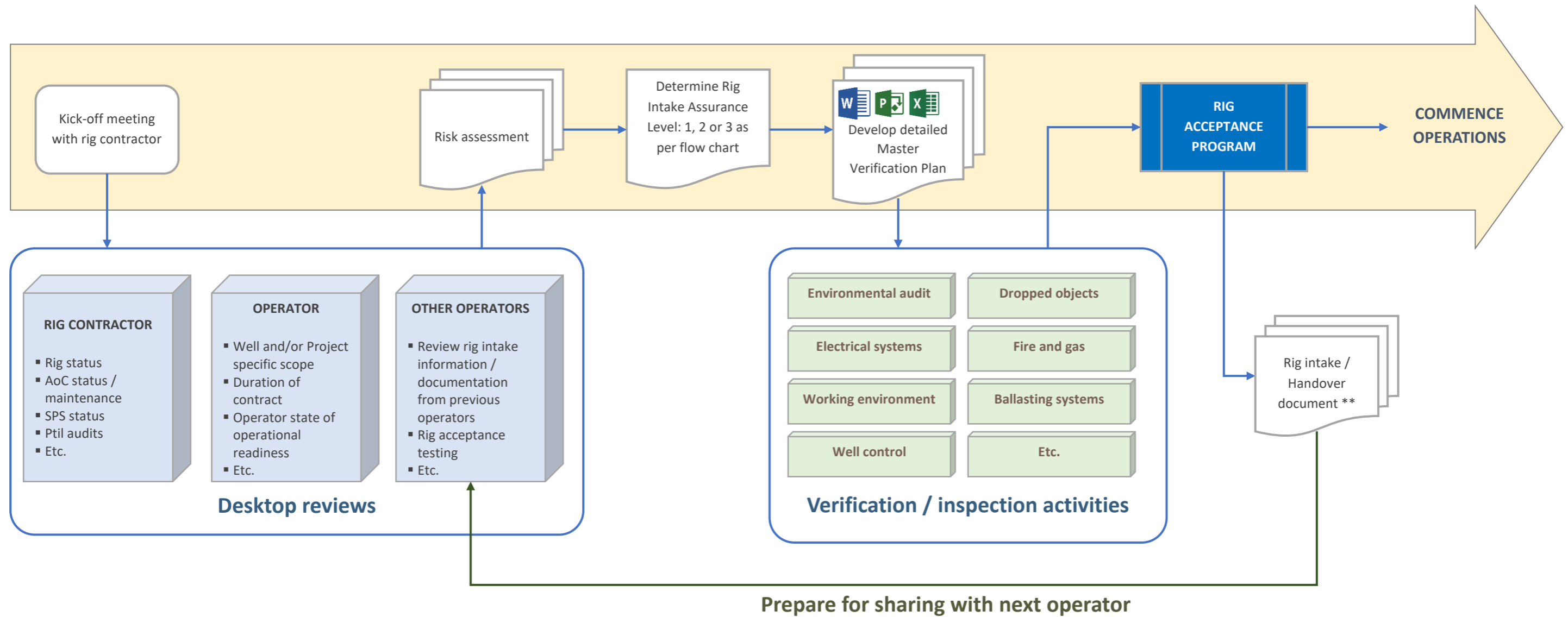
Figure 4 Application of regulations for MOUs

All operators on the NCS have responsibility ("See-to-it-duty") to ensure the unit planned for use is in compliance with laws and regulations and that the AoC has been maintained. Therefore, the assurance work in rig intake revolves around the AoC contents and structure.

An overview of the various assurance activities in reference to AoC structure and regulatory requirements can be found in Section 7.

6. Proposed workflow for rig intake process

The figure below illustrates an example workflow for determining scope and contents of the rig intake plan. Note the «Rig intake / Handover document» which is a compilation or collection of documentation that is prepared both for internal audit purposes but also to facilitate sharing of data and information with other operators. Ideally, the contents of the compilation should be in a recognisable structure in line with thematic topics that can be found in Section 7.



An example «Rig intake handover document» can be found in **Appendix 1.

7. Proposed structure and contents of rig intake process

The table below outlines some of the main components of a typical rig intake / assurance process where reports, findings and status of close-out could be shared between operators during transfer / handover of rig. The contents is mainly following the AoC structure, which should be consistent and recognisable for all / most rigs operating in Norway.

No	Activity description	Topics	Regulatory	Verification of Compliance		
				RIAL 1 Scope (9-12 months) Full / Comprehensive Rig Intake	RIAL 2 Scope (6-9 months) Standard Rig Intake	RIAL 3 Scope (3-6 months) Light Rig Intake
0	<p>General Description of the overall activities, regulations, company specified requirements and activities for verification of compliance.</p>	General	<p>Petroleum Safety Authorities (PSA): The Framework Regulations The Facility Regulations The Activities Regulations The Management Regulations Other applicable legislations</p> <p>§ 3 Application of maritime regulations in the offshore petroleum activities Option in the Framework Regulation § 3 to a maritime operations concept where the PSA regulations accept this. This involve that relevant, maritime, technical requirements are used as an alternative to the Petroleum Regulations. This implies that detailed, technical requirements in the Facility Regulation are superseded by referred requirements in the NMA Regulations and classification requirements.</p> <p>Norwegian Maritime Directorate (NMD): Maritime certificates Class certificates</p>	<p>Full MVP verification scope onshore and offshore:</p> <ul style="list-style-type: none"> - AoC - Management systems - Emergency Preparedness - Technical Safety - Technical Working Environment - Technical systems and lifting appliances - Electrical installation, ESD and F&G systems - Drilling and Well Control - Marine systems - PSA audits and incident investigations <p>Rig Acceptance Test Program (ATP): Prepare and conduct ATP covering all main systems and functions (based on drilling contractors SIT's).</p> <p>SIT 1: Control, Communication and Navigation Equipment SIT 2: Power Supply and Management SIT 3: Fire Fighting and Life Saving Appliances SIT 4: Drill Floor Systems SIT 5: Marine Systems SIT 6: Cranes and Material Handling SIT 7: Mud and Bulk Systems SIT 8: BOP Systems SIT 9: Skidding SIT 10: Ballast and bilge</p>	<p>Partly MVP verification scope onshore and offshore:</p> <ul style="list-style-type: none"> - Status for AoC and GAP-studies - Verification of selected part of the drilling contractors management system - Verification of selected part of technical systems with focus on safety critical systems - PSA audits and incident investigations <p>Rig Acceptance Test Program (ATP): The offshore inspection may be combined with ATP covering selected main systems and functions (based on drilling contractors SIT's 1-9).</p>	<p>Rig Intake document sharing: Familiarization with previous operator's rig intake documentation, review action log, prepare check list items for spot checks onshore/ offshore and adopt any open actions.</p> <p>Onshore verifications: Onshore check list based verification of some selected/ prioritized topics/ barriers.</p> <p>Offshore verifications: Offshore check list based inspection of some selected/ prioritized topics/ barriers.</p>
1	<p>AoC application and demonstration of compliance. Introduction to the AoC application and a description of how the Applicant will demonstrate compliance with regulatory and company requirements as well as external stakeholders' expectations.</p>	<ul style="list-style-type: none"> - Managing change - Managing regulatory updates - Communication between Operator-AoC Holder-PSA - Maintaining the AoC during lay-up and operations in external waters 	<p>PSA Framework Regulation § 25 Application for Acknowledgement of Compliance for certain offshore mobile facilities <i>Handbook for Acknowledgement of Compliance (AoC)</i>, revision 05, issued by the Norwegian Shipowners Association and the Norwegian Oil and Gas Association in August 2015 can be used as a recognised standard.</p>	<p>Example verification / assurance activities: Verification of Drilling Contractors AoC Procedures and routien for maintenacne of all relevant PARTS in the AoC</p>	<p>Example verification / assurance activities: Verification of Drilling Contractors AoC Procedures and routien for maintenacne of all relevant PARTS in the AoC</p>	<p>Example verification / assurance activities: Verification of Drilling Contractors AoC Procedures and routien for maintenacne of all relevant PARTS in the AoC</p>

No	Activity description	Topics	Regulatory	Verification of Compliance		
				RIAL 1 Scope (9-12 months) Full / Comprehensive Rig Intake	RIAL 2 Scope (6-9 months) Standard Rig Intake	RIAL 3 Scope (3-6 months) Light Rig Intake
2	Drilling Contractors management system. Drilling Contractor's management system and presents HSE management objectives that must be met to demonstrate assurance that HSE risks are reduced to a tolerable level of risk.	<ul style="list-style-type: none"> - Management System Elements - Demonstrating Assurance of HSE Management Objectives - HSE Management Objectives - Policies and objectives - Organization, responsibilities and resources - Standards and procedures - Performance monitoring - Management and improvement 	PSA Act 29 November 1996 No. 72: Relating to petroleum activities LOV 2005-06-17-62: Arbeidsmiljøloven LOV-1984-03-30-15: Helsetilsynsloven LOV 1981-03-13-06: Forurensningsloven LOV-1992-12-04-132: Legemiddeloven FOR-2010-04-29-611 The Management Regulations FOR-2010-02-12-158 The Framework Regulations	Example verification / assurance activities: <ul style="list-style-type: none"> - Audit, interviews and assessment of HSE Management systems and frameworks 	Example verification / assurance activities: <ul style="list-style-type: none"> - Desktop review and assessment of HSE Management systems and frameworks - Spot checks to test / verify compliance with internal requirements (examples: MOC process, competency assurance/training) 	Example verification / assurance activities: <ul style="list-style-type: none"> - Review copy of certification of Management System
3	MODU description and supporting documentation. Equipment and systems necessary to meet the HSE management objectives described in Part 2 and to fulfil the requirements of the Drilling Contractor's Scope of Operations.	<ol style="list-style-type: none"> 1) General information 2) Primary Structure 3) Drilling, Completion and Well Control 4) Plant and Utilities 5) Fire and Explosion Protection 6) Evacuation and Escape Systems 7) Accommodation 8) Well Testing 9) Other Service Provider Equipment 	The units flag and class certificates that outlines the technical and functional requirements for the unit. To be specified for the selected rig	Example verification / assurance activities: <ul style="list-style-type: none"> - Review PART 3 to ensure that unit will meet the minimum COMPANY requirements - Offshore Check List verification of technical condition and safety functions - System Integretion test or Acceptance Test of systems and equipment 	Example verification / assurance activities: <ul style="list-style-type: none"> - Review PART 3 to ensure that unit will meet the minimum COMPANY requirements - Offshore Check List verification of technical condition and safety functions 	Example verification / assurance activities: <ul style="list-style-type: none"> - Review PART 3 to ensure that unit will meet the minimum COMPANY requirements
4	Risk Management. Risk Management Process for assuring that the risks associated with a Drilling Contractor's Scope of Operations are reduced to a level of risk that is tolerable to the Drilling Contractor and other stakeholders.	<ul style="list-style-type: none"> - Risk management process overview - Major accident hazard identification and control - Operational risk control - Maintenance Management - Risk acceptance - Risk communication 	Norsok Z-013	Example verification / assurance activities: <ul style="list-style-type: none"> - Review PART 4 to ensure that the required risk analysis are performed and implemented in organisation and management system - Include verification of risk analysis in audit programme - Perform verification of risk measures onshore and offshore 	Example verification / assurance activities: <ul style="list-style-type: none"> - Review PART 4 to ensure that the required risk analysis are performed and implemented in organisation and management system - Perform relevant spot checks with onshore and offshore organisation 	Example verification / assurance activities: <ul style="list-style-type: none"> - Review PART 4 to ensure that the required risk analysis are performed and implemented in organisation and management system
5	Emergency response. HSE management objectives for emergency response of incidents - to mitigate the consequences (severity) identified in Part 4 and the measures to recover.	<ul style="list-style-type: none"> - Emergency response management - Command and communication - Training and emergencies - Temporary refuge assessment - Details of evacuation and escape equipment - Establishing and approving location specific emergency response arrangements with customer 	Ref. Regulatory Library with latest revision of rules and regularions	Example verification / assurance activities: <ul style="list-style-type: none"> - Review PART 5 to ensure that the required analysis are performed and implemented in the emergency response organisation and management system - Include verification of emergency plans in audit programme - Verify emergency response training and competence, including reporting - Verify implementation of emergency response onboard 	Example verification / assurance activities: <ul style="list-style-type: none"> - Review PART 5 to ensure that the required analysis are performed and implemented in the emergency response organisation and management system - Perform relevant spot checks with onshore and offshore organisation - Verify emergency response training and competence, including reporting 	Example verification / assurance activities: <ul style="list-style-type: none"> - Review PART 5 to ensure that the required analysis are performed and implemented in the emergency response organisation and management system

No	Activity description	Topics	Regulatory	Verification of Compliance		
				RIAL 1 Scope (9-12 months) Full / Comprehensive Rig Intake	RIAL 2 Scope (6-9 months) Standard Rig Intake	RIAL 3 Scope (3-6 months) Light Rig Intake
6	Performance monitoring. Arrangements for monitoring to ensure that the risk management measures identified in Part 4 are implemented, maintained and effective at the workplace.	<ul style="list-style-type: none"> - Performance monitoring - Periodic monitoring - Audit and audit compliance - Verification of HSE critical activities/task and equipment/system - Certification - Management review 	Ref. Regulatory Library with latest revision of rules and regularions	Example verification / assurance activities: <ul style="list-style-type: none"> - Review PART 6 to ensure that the management, maintenance and continous improvement plans are described and implemented in the organisation and management system - Include verification of emergency plans in audit programme - Include verification of HSE plans, audit programme, safety initiatives in a Audit - Verify implementation of KPI's, improvement proposals and maintenance system onboard unit 	Example verification / assurance activities: <ul style="list-style-type: none"> - Review PART 6 to ensure that the management, maintenance and continous improvement plans are described and implemented in the organisation and management system - Perform relevant spot checks with onshore and offshore organisation - Verify HSE plans, audit programme, safety initiatives 	Example verification / assurance activities: <ul style="list-style-type: none"> - Review PART 6 to ensure that the management, maintenance and continous improvement plans are described and implemented in the organisation and management system
7	Compliance and verification management. Describes the different measurements that have been conducted in order to ensure compliance with all relevant regulations and associated standards. <ul style="list-style-type: none"> - Verification of Technical Compliance and Documentation - Monitoring, Updates and Maintenance - Non-conformances and deviation management - Documentation of compliance 	<ul style="list-style-type: none"> - Regulatory changes - Changes in the unit's use - Major organizational changes - Unit modifications - Identification of new non-compliances which require an exemption application - The Framework Regulations Compliance Matrix Report - The Facility Regulations Compliance Matrix Report - The Activities Regulations Compliance Matrix Report - The Management Regulations Compliance Matrix Report - Summary of other legislations that has been compliance measured 	Ref. Regulatory Library with latest revision of rules and regularions	Example verification / assurance activities: <ul style="list-style-type: none"> - Audit programme to include verification of compliance matrix - Detailed assessment of current Non Conformities - Identify potential new Non Conformities due to new regulations - Verify that effect of regulatory changes ar part of Modifications and Management of Change 	Example verification / assurance activities: <ul style="list-style-type: none"> - Review PART 7 to ensure that the compliance matrix is maintained and up to date and that required regulations are identified - Assess current Non Conformities - Identify potential new Non Conformities due to new regulations - Verify routines for GAP analysis 	Example verification / assurance activities: <ul style="list-style-type: none"> - Review PART 7 to ensure that the compliance matrix is maintained and up to date. - Assess current Non Conformities
8	Interfaces and bridging Identification and verification of all interface issues (organizational, technical, operational) between the involved parties.	<ul style="list-style-type: none"> - Well Control - 3.party companies and equipment - Location specific issues - Emergency Preparedness - Logistics; Helicopter, supply vessels - Etc. 	Ref. Regulatory Library with latest revision of rules and regularions	Example verification / assurance activities: <ul style="list-style-type: none"> - Audit programme to include verification of interfaces listed in columns Topic - Revisit critical elements in Well Control manuals and bridging documents - Document Emergency response interface and communication - Verify that requirements and responsibilities for 3 party are managed and controlled. 	Example verification / assurance activities: <ul style="list-style-type: none"> - Review bridging document to ensure that adequate requirements are implemented - Verify that requirements and responsibilities for 3 party are managed and controlled. - Review Well Control bridging document - Review Emergency response bridging document - Review incipient training and emergency training interface 	Example verification / assurance activities: <ul style="list-style-type: none"> - Review bridging document to ensure that adequate requirements are implemented - Verify that requirements and responsibilities for 3 party are managed and controlled.
9	Experience transfer from PSA Audits and Incident Investigations. Extract drilling contractor/ MODU relevant deviations and prepare input to checklist for onshore and offshore verifications.	<ul style="list-style-type: none"> - PSA Audit devitions and observations - PSA deviations and observations from incident investigations 	PSA Management Regulations §§6, 15, 19, 20-23	Example verification / assurance activities: <ul style="list-style-type: none"> - Audit programme to ensure that PSA findings after audits and investigations are managed, closed and reported. - Provide evidence of systematic control to avoid reoccurrence - Provide evidence that measure to correct findings are in place 	Example verification / assurance activities: <ul style="list-style-type: none"> - Verify effective closing of PSA findings issued to drilling contractor last 2 years - Verify that that lesson learnt and correction of findings are transferred across organsiation 	Example verification / assurance activities: <ul style="list-style-type: none"> - Verify effective closing of PSA findings within selected areas either topic or contractor.

8. Sharing and collaboration

As part of developing the project-specific rig intake assurance plan it is a good idea for the local rig start team to contact previous operators of the rig to gather information about the rig (both HSE and operational performance). This will also enable sharing of findings, observations and reports from previous rig intake activity which can avoid duplication of work. On a similar note, it is important that all rig intake assurance activities are attempted logged and categorized consistently with this framework to better facilitate sharing of information and documentation with the next operator of the rig. An example «Rig intake handover document» can be found in **Appendix 1**.

9. Links and references

[1] [«Handbook for acknowledgement of compliance \(AoC\)» Rev 06, Feb 2020, Norges Rederiforbund](#)

[2] <https://www.ptil.no/en/regulations/all-acts/>

Appendix 1 Example Rig intake handover document

RIG INTAKE HANDOVER DOCUMENT

Rig information

Rig contractor	
Rig name	
Period on lease	
Well activities / scope	
Transferring Operator	
Receiving Operator	

Summary of main open items / actions from audits or inspections

Item / Ref	Description	Classification	Status and recommendation

Assurance log as per shared rig intake framework

No	Activity description	Verification / inspection activities	Date / Validity and link
0	<p>General Description of the overall activities, regulations, company specified requirements and activities for verification of compliance.</p>		
1	<p>AoC application and demonstration of compliance. Introduction to the AoC application and a description of how the Applicant will demonstrate compliance with regulatory and company requirements as well as external stakeholders' expectations.</p>		

No	Activity description	Verification / inspection activities	Date / Validity and link
2	<p>Drilling Contractors management system.</p> <p>Drilling Contractor's management system and presents HSE management objectives that must be met to demonstrate assurance that HSE risks are reduced to a tolerable level of risk.</p>		
3	<p>MODU description and supporting documentation.</p> <p>Equipment and systems necessary to meet the HSE management objectives described in Part 2 and to fulfil the requirements of the Drilling Contractor's Scope of Operations.</p>		
4	<p>Risk Management.</p> <p>Risk Management Process for assuring that the risks associated with a Drilling Contractor's Scope of Operations are reduced to a level of risk that is tolerable to the Drilling Contractor and other stakeholders.</p>		
5	<p>Emergency response.</p> <p>HSE management objectives for emergency response of incidents - to mitigate the consequences (severity) identified in Part 4 and the measures to recover.</p>		
6	<p>Performance monitoring.</p> <p>Arrangements for monitoring to ensure that the risk management measures identified in Part 4 are implemented, maintained and effective at the workplace.</p>		
7	<p>Compliance and verification management.</p> <p>Describes the different measurements that have been conducted in order to ensure compliance with all relevant regulations and associated standards.</p> <p>Verification of Technical Compliance and Documentation</p> <p>Monitoring, Updates and Maintenance</p> <p>Non-conformances and deviation management</p> <p>Documentation of compliance</p>		

No	Activity description	Verification / inspection activities	Date / Validity and link
8	Interfaces and bridging Identification and verification of all interface issues (organizational, technical, operational) between the involved parties.		
9	Experience transfer from PSA Audits and Incident Investigations. Extract drilling contractor/ MODU relevant deviations and prepare input to checklist for onshore and offshore verifications.		

Additional documentation received or reviewed

No	Activity description	Verification / inspection activities	Date / Validity and link
1	Cyber security		
2	Lifting & Hoisting		
3	Helideck inspection		
4	Temporary Pipework		
5	DROPS		
6	Line of Fire		
7	Medical facilities		
8	DP assurance and WSOG		
9	etc		

Re-cap of Major or High Potential incidents

Date	Description	Classification	Key learnings