WHEN TRUST MATTERS

Rule development and statutory news

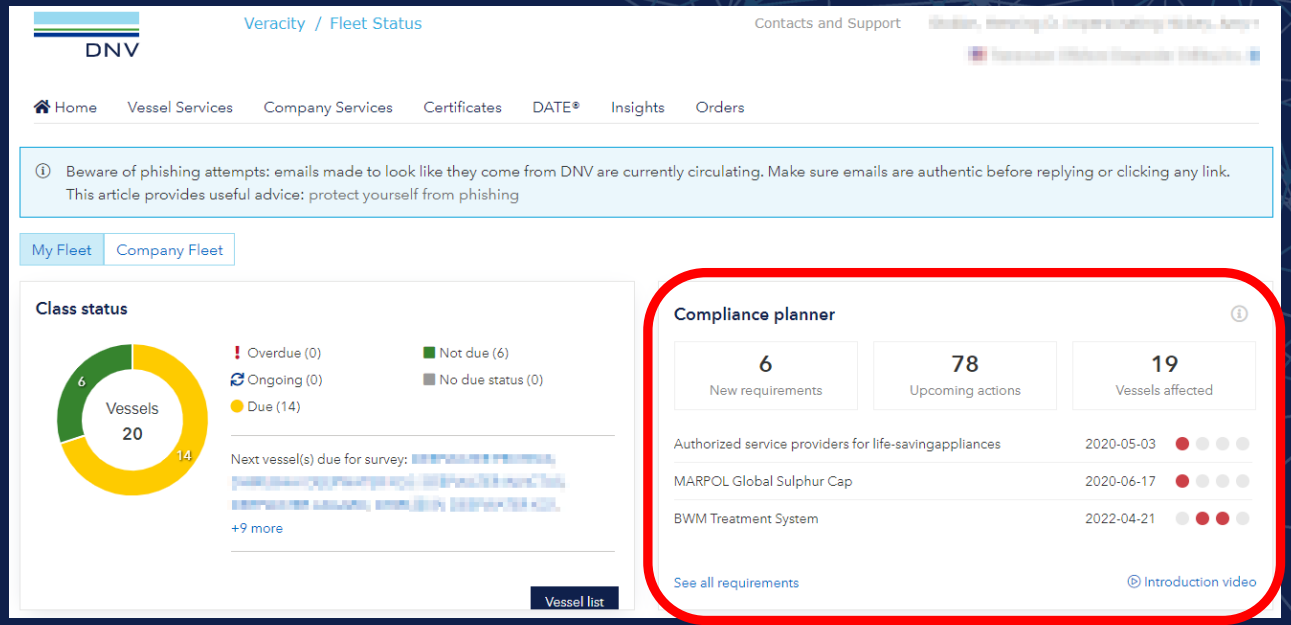
ROC Houston

Are Torstensen / Henning Stokke, 5. May 2022

Contents:

- Compliance planner
- Outlook on:
  - Maritime Regulators
  - Coastal state Regulators
  - DNV Class

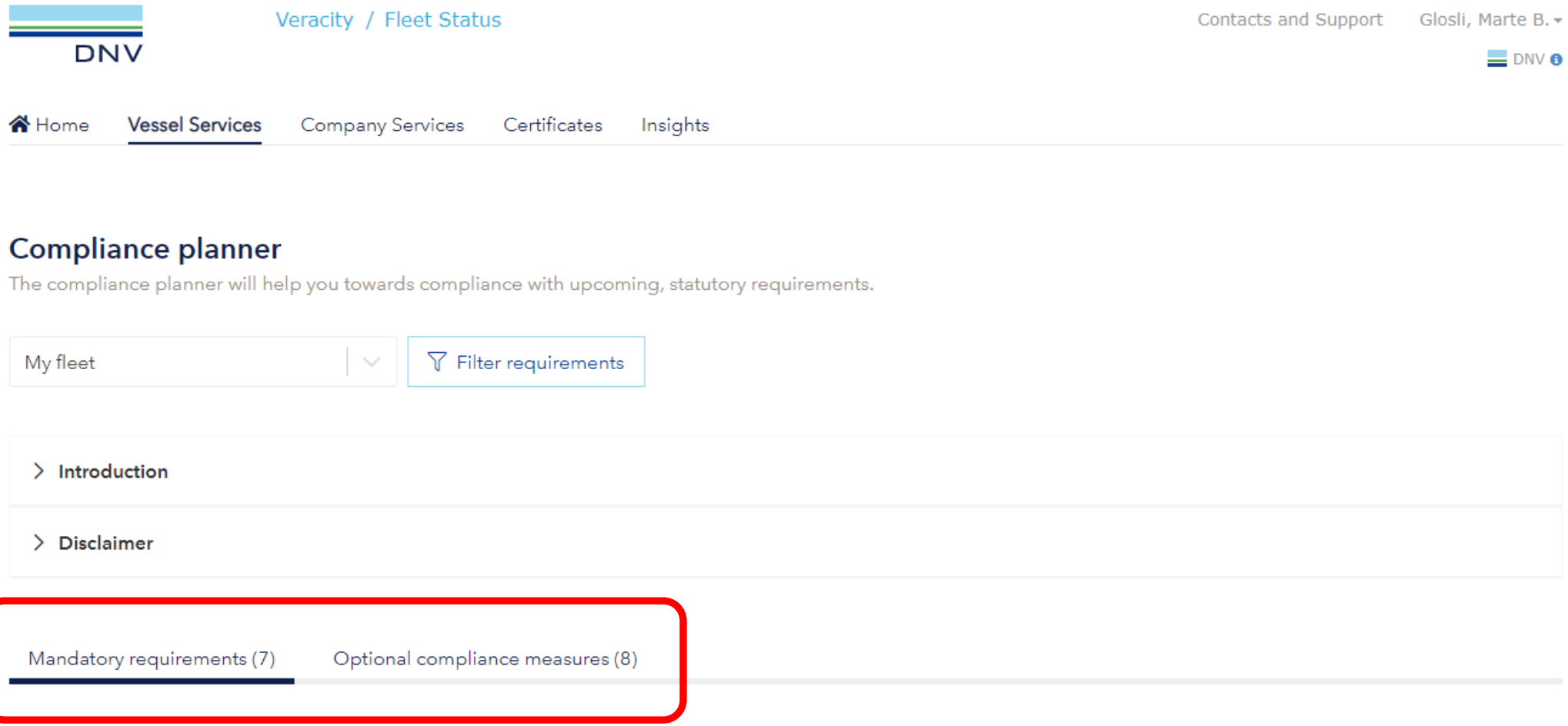
Compliance Planner



Helps you to stay **ahead of the regulatory curve.**

- **Overview of current and future IMO regulations** impacting the customer's fleet.
- T**ailored list of requirements** for the fleet to achieve compliance.

DNV Compliance Planner on Veracity



Anti-Fouling Convention - Ban on Cybutryne (2023-06-26)

Amendments to the AFS Convention introduces a ban to apply or re-apply anti-fouling systems containing cybutryne from 1 January 2023. All ships should remove or seal such anti-fouling systems at the first Renewal after 1 January 2023.

Details and actions:

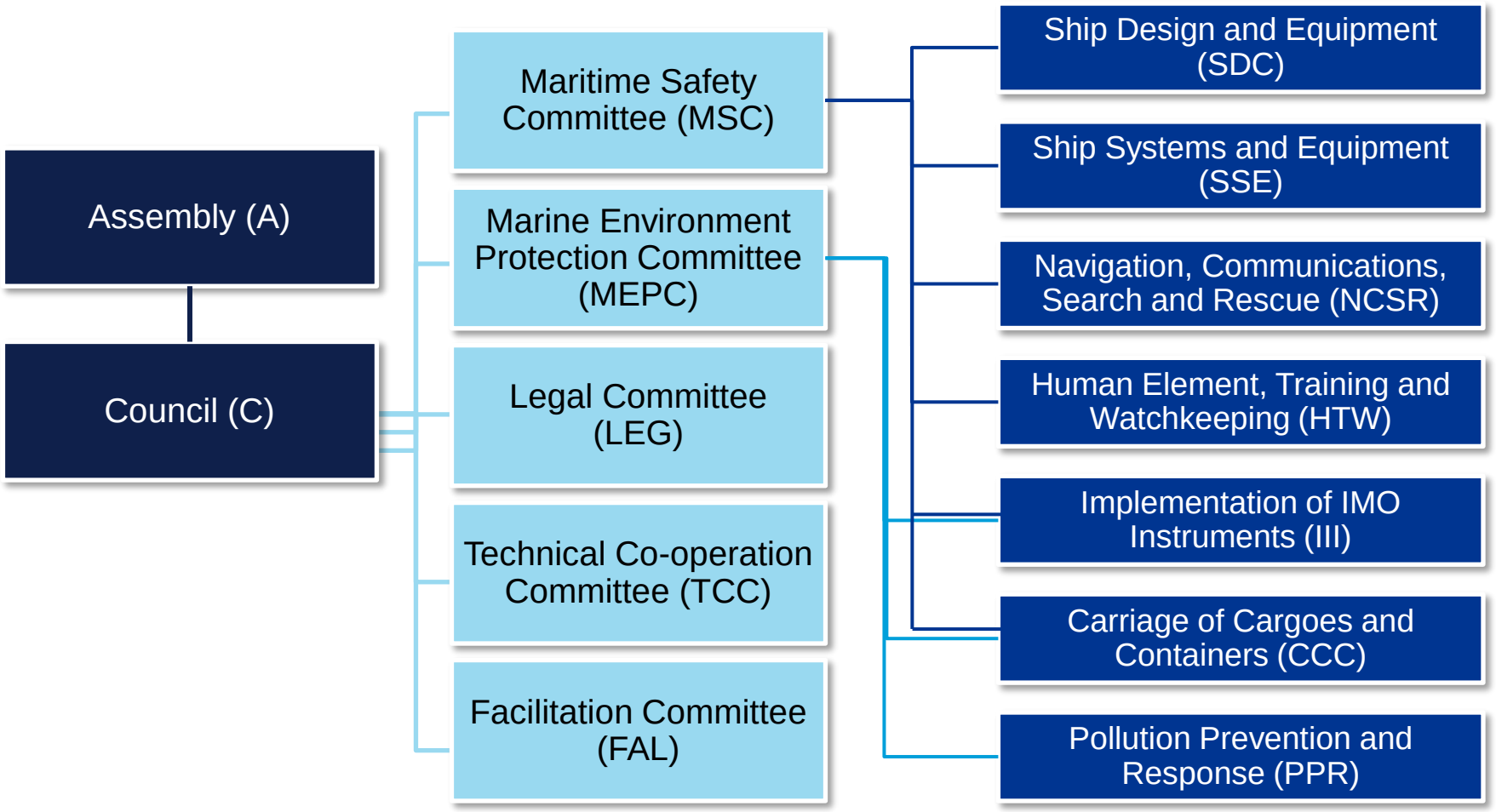
DNV report from MEPC 76

Affected vessels (10)

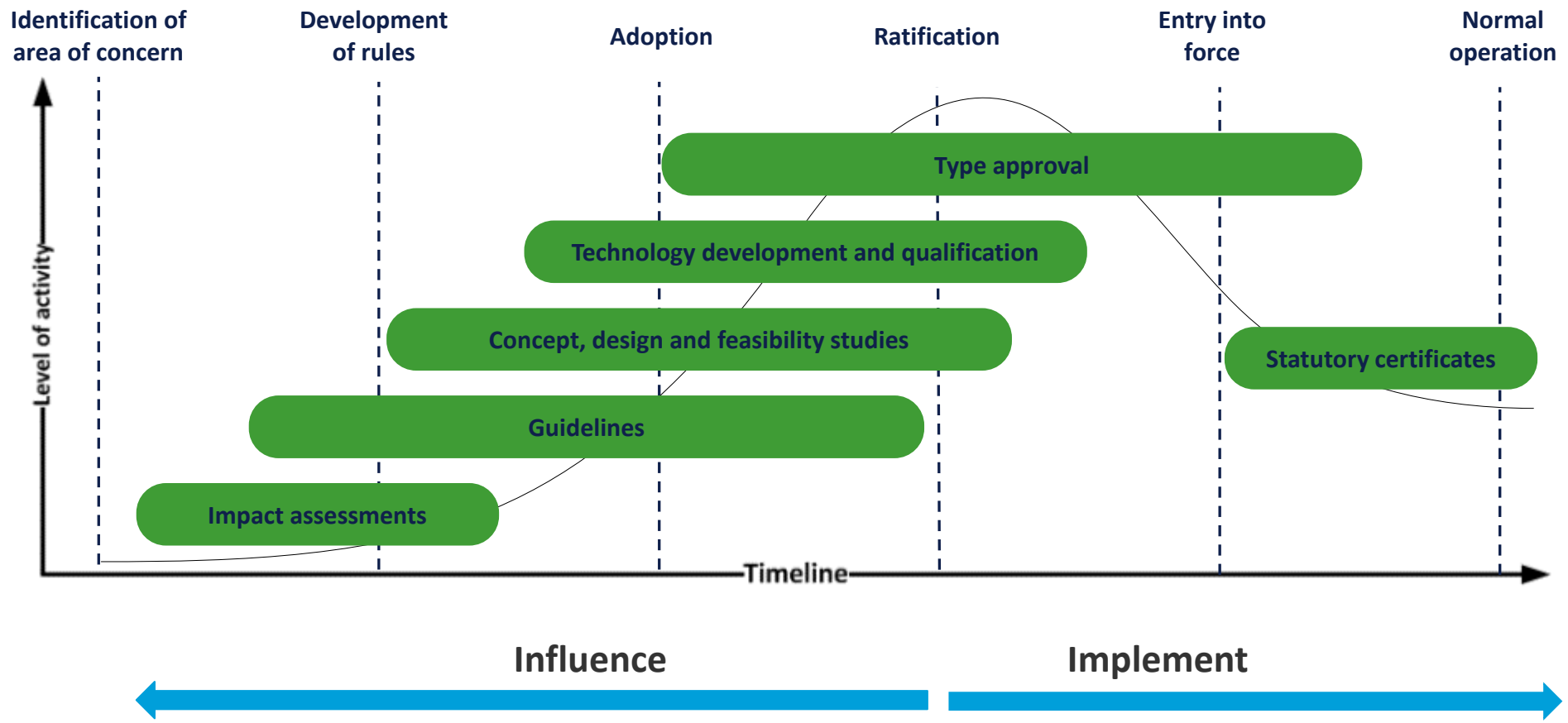
Vessel	IMO Number	Due date	Timeline
[redacted]	[redacted]	2023-06-26	
Seal or remove AFS containing cybutryne	...	2023-06-26	
[redacted]	[redacted]	2024-01-10	
[redacted]	[redacted]	2024-02-03	
[redacted]	[redacted]	2024-07-02	
[redacted]	[redacted]	2024-10-28	
[redacted]	[redacted]	2025-02-02	
[redacted]	[redacted]	2026-05-31	
[redacted]	[redacted]	2026-12-10	
[redacted]	[redacted]	2027-10-27	
[redacted]	[redacted]	2027-11-04	

- IMO
- Flag States

Committees and Sub-committees of the IMO



Typical timeline for developing new regulations



*Ratification is only applicable for new instruments, and not for amendments

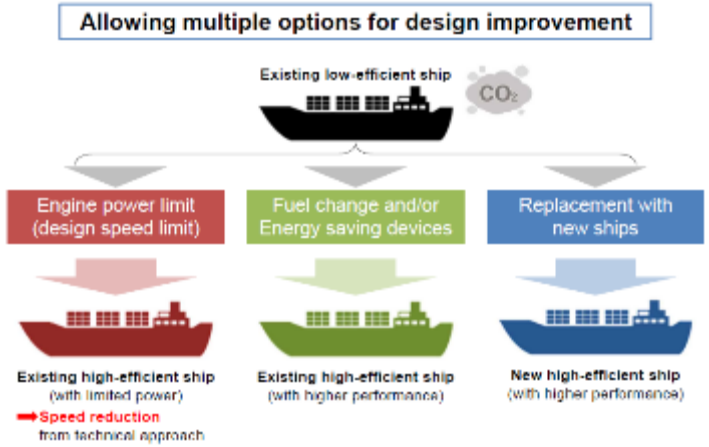
Applicability of MARPOL Annex VI, Ch. 4

Ship type/characteristics		Reg. 22: Attained EEDI	Reg. 23: Attained EEXI	Reg. 24: Required EEDI	Reg. 25: Required EEXI	Reg. 26.1: Basic SEEMP	Reg. 27: DCS Reg. 26.2: SEEMP Part 2	Reg. 28: CII rating Reg. 26.3: Enh. SEEMP
Conventional propulsion	Bulk carrier	>= 400 GT	>= 400 GT	>= 10000 DWT	>= 10000 DWT	>= 400 GT	>= 5000 GT	>= 5000 GT
	Gas carrier	>= 400 GT	>= 400 GT	>= 2000 DWT	>= 2000 DWT	>= 400 GT	>= 5000 GT	>= 5000 GT
	Tanker	>= 400 GT	>= 400 GT	>= 4000 DWT	>= 4000 DWT	>= 400 GT	>= 5000 GT	>= 5000 GT
	Container ship	>= 400 GT	>= 400 GT	>= 10000 DWT	>= 10000 DWT	>= 400 GT	>= 5000 GT	>= 5000 GT
	General cargo ship (except livestock carrier, barge carrier, heavy load carrier, yacht carrier, nuclear fuel carrier)	>= 400 GT	>= 400 GT	>= 3000 DWT	>= 3000 DWT	>= 400 GT	>= 5000 GT	>= 5000 GT
	Refrigerated cargo carrier	>= 400 GT	>= 400 GT	>= 3000 DWT	>= 3000 DWT	>= 400 GT	>= 5000 GT	>= 5000 GT
	Combination carrier	>= 400 GT	>= 400 GT	>= 4000 DWT	>= 4000 DWT	>= 400 GT	>= 5000 GT	>= 5000 GT
	Ro-ro vehicle carrier	>= 400 GT	>= 400 GT	>= 10000 DWT	>= 10000 DWT	>= 400 GT	>= 5000 GT	>= 5000 GT
	Ro-ro cargo ship	>= 400 GT	>= 400 GT	>= 1000 DWT	>= 1000 DWT	>= 400 GT	>= 5000 GT	>= 5000 GT
	Ro-ro passenger ship	>= 400 GT	>= 400 GT	>= 250+ DWT and >=400 GT	>= 250 DWT and >=400 GT	>= 400 GT	>= 5000 GT	>= 5000 GT
	Cruise ship	>= 400 GT	>= 400 GT	N/A	N/A	>= 400 GT	>= 5000 GT	>= 5000 GT
	Passenger ship (except ro-ro passenger and cruise)	>= 400 GT	N/A	N/A	N/A	>= 400 GT	>= 5000 GT	N/A
	Other ship with conventional propulsion, (e.g. heavy load carrier, livestock carrier, offshore)	N/A	N/A	N/A	N/A	>= 400 GT	>= 5000 GT	N/A
LNG carrier with any propulsion system		>= 400 GT	>= 400 GT	>= 10000 DWT	>= 10000 DWT	>= 400 GT	>= 5000 GT	>= 5000 GT
Cruise ship with non-conventional propulsion		>= 400 GT	>= 400 GT	>= 25000 GT	>= 25000 GT	>= 400 GT	>= 5000 GT	>= 5000 GT
Bulk carrier, gas carrier, tanker, container ship, general cargo ship (except livestock carrier, barge carrier, heavy load carrier, yacht carrier, nuclear fuel carrier), refrigerated cargo carrier, combination carrier, ro-ro vehicle carrier, ro-ro cargo ship and ro-ro passenger ship with non-conventional propulsion		N/A	N/A	N/A	N/A	>= 400 GT	>= 5000 GT	>= 5000 GT
Livestock carrier, barge carrier, heavy load carrier, yacht carrier, nuclear fuel carrier, passenger ship and other ship (e.g. offshore) with non-conventional propulsion, and Category A Polar Code ship		N/A	N/A	N/A	N/A	>= 400 GT	>= 5000 GT	N/A
Platforms including FPSOs and FSUs and drilling rigs		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Updated

Energy Efficiency Existing Ship Index (EEXI)

- MEPC 76 adopted initial regulations on energy efficiency with entry into force 1 November 2022. The EEXI addresses the design performance of existing ships
  - Attained EEXI to be calculated for ships above 400 GT
  - Attained EEXI ≤ Required EEXI for ships above segment specific size thresholds. Requirements similar to EEDI Phase 2/3, with some relief for a few ship types
  - Operators decide how to comply (Engine Power Limitation, fuel change, energy saving devices, retrofitting etc.)



Ship and company actions	Verification	Surveys and audits
EEXI calculation and technical file →	EEXI technical file verification →	First annual survey – new IEEC issued

Impact:

Applicable for **cargo, ro-pax and cruise ships** above 400 GT depending on propulsion type (same as for EEDI) but regardless of contract date.

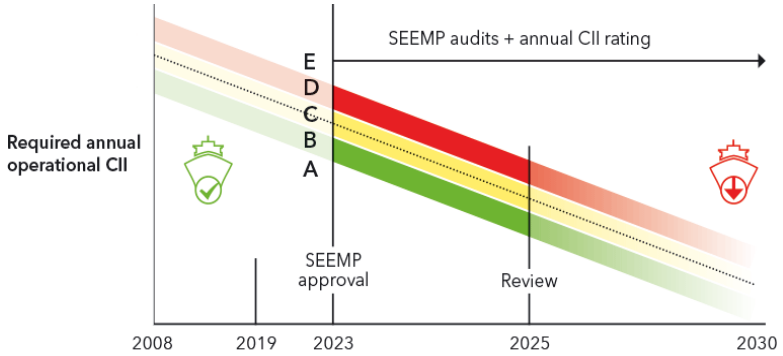
Applicable from **first annual, intermediate or renewal IAPP survey** or the initial IEE survey **on or after 1 January 2023.**

References:

Amendments to MARPOL Annex VI adopted at MEPC 76 – Res. MEPC.328(76)

Carbon Intensity Indicator (CII) and Enhanced Ship Energy Efficiency Management Plan (SEEMP)

- MEPC 76 adopted initial regulations on energy efficiency with entry into force 1 November 2022. The CII rating scheme and enhanced SEEMP address the operational performance of ships
  - Each ship needs to **achieve rating C or better.** If rating D for 3 consecutive years or rating E: develop and implement an **approved corrective action plan** as part of SEEMP to achieve rating C or better
  - Review to be conducted by 1 January 2026 – particularly:
    - Reduction factors for 2027-2030
    - Strengthened corrective actions
    - Need for enhancement of the enforcement mechanism
  - Carbon Intensity Code to be developed to ensure mandatory application



Year	Reduction from 2019 ref. (mid-point of C-rating band)
2023	5 %
2024	7 %
2025	9 %
2026	11 %
2027-2030	To be decided

Impact:

Applicable for **cargo, ro-pax and cruise ships above 5000 GT.**

By 1 January 2023: Develop and keep onboard an **approved** energy efficiency improvement and decarbonisation plan

Every year from 2023: Annually calculate and report Carbon Intensity Indicator and rating A to E. Each ship needs to **achieve rating C or better.**

References:

Amendments to MARPOL Annex VI adopted at MEPC 76 – Res. MEPC.328(76)

Updated

Cyber risk management

- Cyber risks should be addressed in safety management systems no later than the first annual verification of DoC after 1 January 2021 (MSC.428(98)).

- The “Guidelines on maritime cyber risk management” is updated with the following references:
  - The consolidated IACS Recommendation on cyber resilience (Recommendation 166).
  - The first edition of the industry developed “IAPH cybersecurity guidelines for ports and port facilities”.

- The fourth version of the industry-developed “Guidelines on cyber security onboard ships” is issued as an MSC circular.

Impact:

Non-mandatory application.

Reference to the IAPH cyber security guidelines was approved by MSC 104 and is subject to concurrent agreement by the FAL committee.

References:

- MSC.428(98)
- MSC.1/Circ.1639
- MSC-FAL.1/Circ.3/Rev.1

Non-SOLAS ships operating in polar waters

- ***Member States are <u>encouraged</u> to apply safety measures in the Polar Code also to non-SOLAS ships operating in polar waters.***

- Provisions for non-SOLAS ships under consideration:
  - Mandatory navigation, communications and voyage planning requirements
  - Guidelines for cargo ships between 300 and 500 GT

Impact:

Recommendatory measures.

References:

Resolution A.1137(31)

MSC.1/Circ.1641

MSC.1/Circ.1642

Revision of MARPOL Annex IV (Sewage)

- MARPOL Annex IV is under revision, introducing provisions for record-keeping and measures to confirm the lifetime performance of sewage treatment plants (STP).
- The amendments may include requirements for:
  - Sewage sludge (STP by-product)
  - STP effluent standards.
  - Sampling points
  - Monitoring, turbidity meter and flow meter in the STP effluent line.
  - Record keeping, Sewage Record book.
  - Sewage Management plan.
  - STP commission testing after installation
  - Enhanced survey requirements (performance test)
  - Increased frequency for periodical surveys, introducing annual surveys.

Impact:

New and existing ships >400GT or ships certified to carry more than 15 persons.

References:

- Target completion year 2023

Launching of free fall lifeboats

Free-fall lifeboats need NOT be launched with the ship making headway at speeds up to 5 knots in calm water, as there is no additional dynamic load on the launching arrangements to be accounted for.

Amendments to:

- SOLAS Chapter III/33
- LSA Code para 4.4.1.3
- Resolution MSC.81(70)

Impact:

Entry into force 1 January 2024.

Voluntary early implementation by flag States.

Applicable to all ships.

References:

Res. MSC.482(103)

Res. MSC.485(103)

Res. MSC.488(103)

Updated

Ventilation of survival craft

- Draft new ventilation requirements intend to reduce the risk of overheating and high CO2 concentrations in totally enclosed lifeboats:
  - Expected performance: CO_2 concentration less than 5000 ppm;
  - A ventilation rate of 5 m^3 per person per hours is considered to meet the performance criteria.
- Draft requirements for partially enclosed lifeboats and liferafts are under consideration.
- Interim guidelines for lifesaving appliances in polar waters already provide similar ventilation provisions (max. 5000 ppm CO_2).

Impact:

Expected entry into force 1 January 2026, subject to approval and adoption by MSC.

Expected to be applicable to new survival craft only.

References:

MSC.1/Circ.1614 for polar waters

Low-flashpoint fuels (IGF Code)

- Adopted amendments for ships using LNG as fuel (non-exhaustive list):
  - Cofferdams required for fire protection purposes (Ch. 6.7)
  - Safe fuel distribution outside machinery spaces (Ch. 9)
  - Fire protection between spaces with fuel containment systems (Ch. 11)
  - Fixed fire-extinguishing systems in LNG fuel preparation spaces (Ch. 11)
- New Interim guidelines for the safety of ships using methyl/ethyl alcohol as fuel.
- Alternative low-flashpoint fuels under consideration include low flashpoint diesel, fuel cells and LPG.

Impact:

Adopted amendments enter into force 1 January 2024.

References:

- MSC.458(101)
- MSC.475(102)
- MSC.1/Circ.1621

Onboard lifting appliances and anchor handling winches

- Draft new SOLAS regulation II-1/3-13:
  - Lifting appliances to be designed, constructed and installed in accordance with the rules of a classification society.
  - Anchor handling winches to be designed, constructed, installed and tested based on IMO Guidelines.
  - Retroactive requirements to testing, thorough examination, operation, inspection and maintenance for all appliances and loose gear.
- Draft Guidelines for lifting appliances and associated loose gear
- Draft Guidelines for anchor handling winches and loose gear

Impact:

Expected entry into force on 1 January 2024, subject to adoption by MSC.

The requirements to lifting appliances will be applicable to all ships.

The requirements to anchor handling winches will be applicable to vessels used for anchor handling operations.

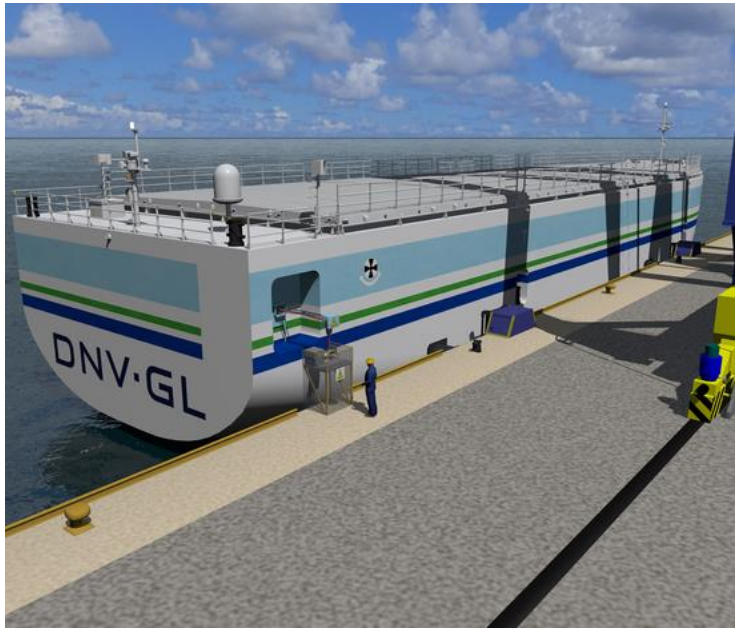
References:

- Approved in principle by MSC 102, adoption pending finalization of the guidelines for anchor handling winches.

Updated

Maritime autonomous surface ships

- Advancing technologies in shipping may gradually replace officers and crew on board.
- Currently, there is no legal IMO framework dedicated to ships operating with reduced or no qualified officers and crew.
- MSC 104 (October 2021) initiated the development of a new **goal-based instrument** for maritime autonomous surface ships (MASS)
- Previous initiatives:
  - Interim guidelines for MASS trials (MSC.1/Circ.1604) finalized in 2019
  - Regulatory Scoping Exercise (RSE) (MSC.1/Circ.1638) finalized in May 2021
    - Identification of how existing safety regulations, assuming manning and human intervention, would apply to ships with various degrees of autonomy.



Impact:

MSC 105 (April 2022) will establish a roadmap for the work on a goal-based instrument for MASS.

The ultimate goal of the MSC is to develop a mandatory MASS instrument in the IMO regulatory framework.

References:

IMO Strategic Direction SD2 (2018-2023): “Integrate new and advancing technologies in the regulatory framework”.

MSC.1/Circ.1604, MSC.1/Circ.1638

Updated

Industrial Personnel (IP) on cargo vessels

- A draft new SOLAS Chapter XV and a related draft new IP Code contain mandatory provisions for the carriage of more than 12 industrial personnel on cargo ships and high-speed cargo craft.
- The draft IP Code is based on the 2008 SPS Code, but with provisions for:
  - training of industrial personnel
  - safe personnel transfer
  - carriage of dangerous goods
    - ships carrying toxic products, low-flashpoint products and acids cannot have more than 60 persons on board.
- Grandfather provisions for existing cargo vessels already carrying IP

Impact:

Applicable to cargo ships of more than 500 GT on international voyages.

Expected entry into force 1 January 2024, subject to approval by MSC 105 (April 2022) and subsequent adoption.

A new IP Code could phase out the existing non-mandatory SPS Code.

References:

- Resolution MSC.418(97) on interim recommendations.

Updated

Covid-19 measures

- Assembly resolution on “Comprehensive action to address seafarer’s challenges during the COVID-19 pandemic” consolidates issues from MSC resolutions and circulars on:
  - Recommended action to prioritize Covid-19 vaccination of seafarers
  - Recommended actions to facilitate crew change, access to medical care and seafarer travel during the Covid-19 pandemic
  - The industry-developed recommended framework of protocols for ensuring safe ship crew changes and travel during the Covid-19 pandemic.
- Information on ports facilitating crew changes made available in IMO’s online information database GISIS.

Impact:

References:

- Resolution A.11xy(32)
  - Resolution MSC.490(103)
  - Resolution MSC.473(ES.2)
  - MSC.1/Circ.1636/Rev.1

Norwegian Maritime Authority

NMA Regulations for MOUs - Applicability

Sjøfartsdirektoratet
Norwegian Maritime Authority

General comment on applicability of NMA MOU Regulations

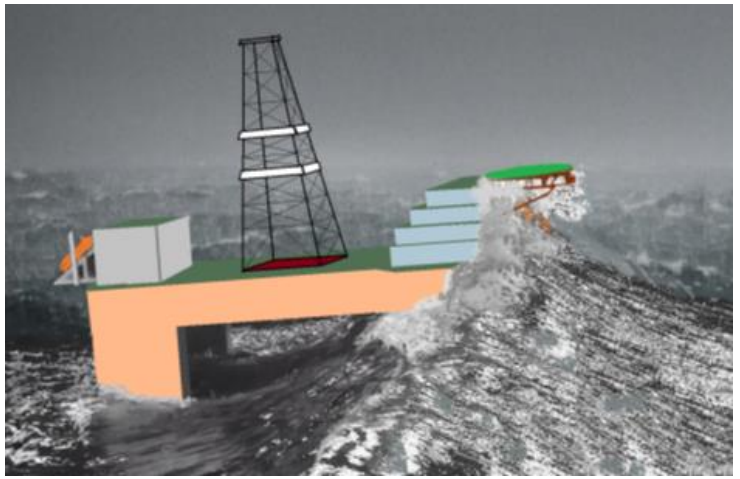
- NMA MOU Regulations apply for all Norwegian flagged mobile offshore units and floating offshore installations
- By reference to NMA from the Norwegian shelf state regulator PSA, the NMA regulations will also apply to all floating offshore units holding an Acknowledgement of Compliance (AoC) for operation on the Norwegian Continental Shelf, irrespective of flag or class
- Amendments to the NMA regulations will also be applicable for existing units with an AoC at the upcoming certificate renewal

DNV

NMA Construction Regulations – airgap for semis

Sjøfartsdirektoratet
Norwegian Maritime Authority

- Following the COSL Innovator incident, draft amendments to the NMA Construction Regulations have been subjected to several hearings, but without any updates formally issued yet:
  - Hearing no.1 2017-07-04, closing 2017-10-08
  - Hearing no.2 2017-12-20, closing 2018-02-18
  - Hearing no.3 2018-07-02, closing 2018-10-02



- Current status:
  - The proposed amendments go further than the remedial actions put in place by Class after the COSL incident
  - NMA proposals have created some controversy and large amount of hearing comments

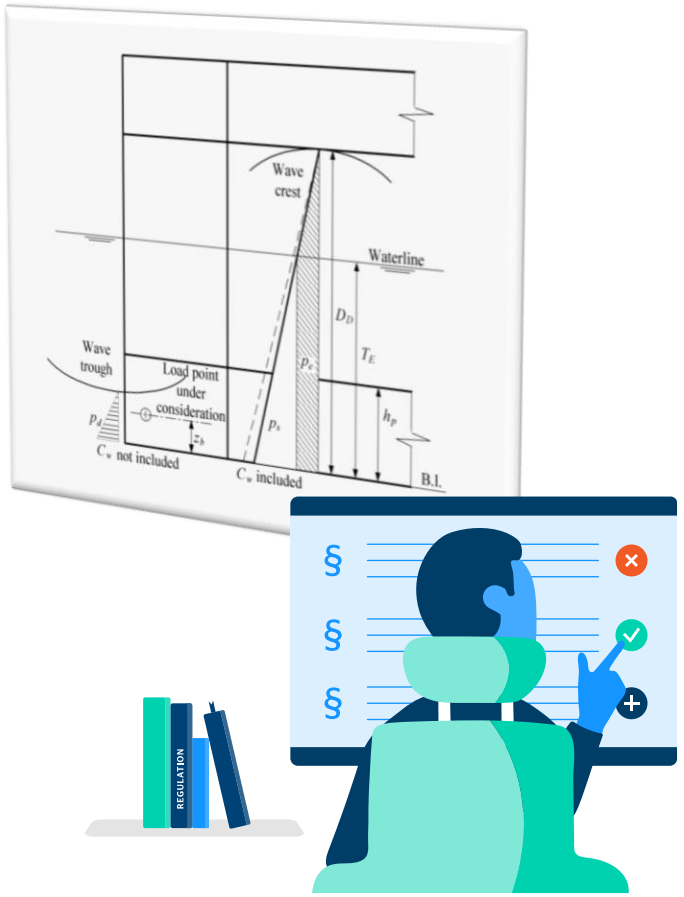
Latest info from NMA:

- NMA is working with an amended proposal for changes to Construction Regulations § 10 no. 1.1.2 and 1.1.3. This also includes an economic impact analysis. This work has taken more time than anticipated. A new hearing round will therefore not take place before earliest 2022.

DNV

NMA Construction Regulations – airgap (operational condition)

- **Proposed new requirement to semi-submersibles for a positive airgap in the operational condition**
- Proposed as retroactive requirement to be complied with when new regulations enters into force
- Purpose is protection of safety critical equipment and personnel
- Accept criteria at 100 year recurrence level
- Column run-up reaching above the underside of the deck box is not regarded as negative air gap
- The unit shall be dimensioned to withstand the effect of run-up. Work areas, access areas, escape routes and safety critical equipment shall not be exposed to run-up
- Calculations to be performed according to DNVGL-OTG-013 “Prediction of air gap for column-stabilised units” or in accordance with guidelines with an equivalent level of safety.



Status: Hearing delayed to 2022

Latest available draft proposal for new requirements to operational condition

Presented by NMA in discussion meeting with the industry 2019-03-05:

§ 10 nr. 1.1.2:

- *1: Innretningen skal ha positivt air gap i operasjonstilstand, men kan likevel ha lokalt negativt air gap under dekksboksen dersom det ikke oppstår i området med moonpool eller andre områder der personell eller sikkerhetskritisk utstyr kan befinne seg.*
- *2: For å oppfylle kravet i punkt nr. 1 skal det fastsettes en maksimal signifikant bølgehøyde (HS) for operasjonstilstand.*
- *3: Arbeidsområder, ferdselsområder, rømningsveier eller sikkerhetskritisk utstyr skal ikke være eksponert for run-up i operasjonstilstand.*
- *4. Air gap-analyser og fastsettelse av maksimal HS skal utarbeides i samsvar med DNVGL-OTG-13 «Prediction of air gap for column stabilised units» [rev.x, 2019], eller etter retningslinjer med tilsvarende sikkerhetsnivå. Minimum sikkerhetsnivå er gitt ved 90% percentilen i ekstremverdifordelingen for tre timers eksponering i den mest kritiske sjøtilstanden som tillates i operasjonstilstanden, og der assosiert vind er tatt hensyn til.*
- *5. Dersom innretningen er beregnet til å kunne pumpe ut ballast i dårlig vær for å få større avstand fra underkant av dekksboks til havflaten, skal det være fastsatt i driftsinstruksen når og hvordan dette skal utføres.*

STATUS:

- Awaiting a 4th hearing round

NMA Construction Regulations – airgap (survival condition)

- Unit shall be documented to be safe in all wave conditions with a max upwell 10 % larger than design basis
- Waves shall not reach higher than lowest weather deck, independent of wave direction
- Load and material factor can be 1,0 for the calculations
- Escapeways and safety critical equipment shall not be exposed for wave impact
- Model tests and calculations for air gap analyses are to be performed in accordance with DNVGL-OTG-13 «Prediction of air gap for column stabilised units»
- Loads shall be established in accordance with DNVGL-OTG-14 «Horizontal wave impact loads for column stabilised units», or alternative guidelines

Status: Hearing delayed

Latest available proposal for new requirements to survival condition

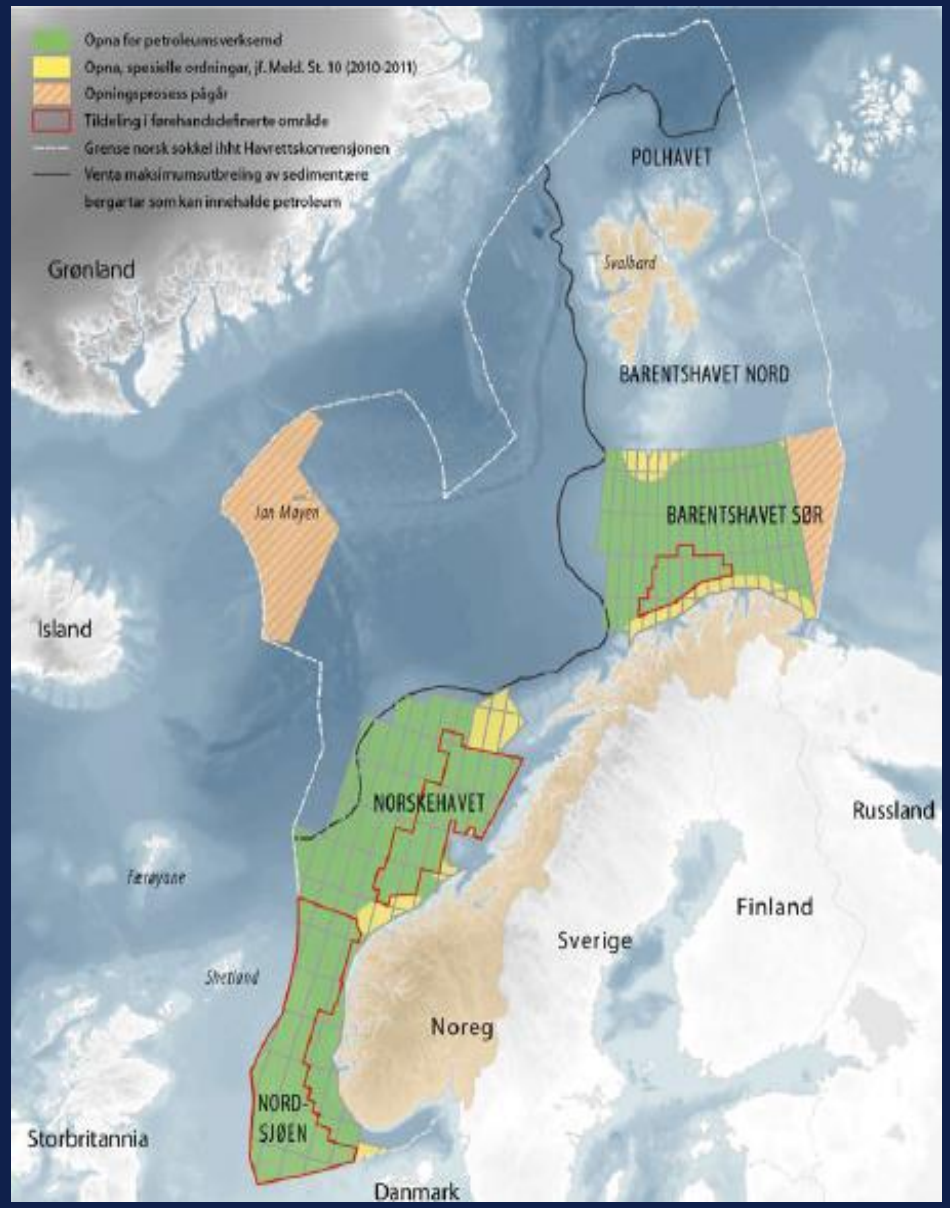
§ 10 nr. 1.1.3 skal lyde:

- *1. Det skal dokumenteres at innretningen er sikker i sikkerhetstilstand. Dette dokumenteres med at upwell-nivået oppjusteres 10 % i forhold til resultater fra air gap-analyser for sikkerhetstilstand, jf. punkt 5.*
- *2. Oppjustert upwell skal ikke nå høyere enn nivået til laveste værdekk, uavhengig av relativ bølgeretning.*
- *3. Innretningen skal være dimensjonert for lastene fra oppjustert upwell, inkludert effekten av run-up fra bølgeslag. Innretningens vann- og værtette integritet skal opprettholdes. Last- og materialfaktor skal være 1,0 for dimensjoneringsberegningene.*
- *4. Rømningsveier eller sikkerhetskritisk utstyr skal ikke være eksponert for bølgeslag eller run-up i sikkerhetstilstand med oppjustert upwell.*
- *5. Air gap-analyser for sikkerhetstilstand skal gjøres i samsvar med DNVGL-OTG-13 «Prediction of air gap for column stabilised units» [rev.x, 2019], eller etter retningslinjer med tilsvarende sikkerhetsnivå.På nye design og på design med vesentlig ikke-lineære effekter skal det gjøres modellforsøk.*
- *6. Laster med oppjustert upwell skal fastsettes i samsvar med DNVGL-OTG-14 «Horizontal wave impact loads for column stabilised units» [rev.x, 2019] for horisontale bølgeslagskrefter og kapittel 8 «Air gap and wave slamming» i DNVGL RP-C205 «Environmental conditions and environmental loads» [rev.x, 2019] for vertikale bølgeslagskrefter, eller etter retningslinjer med tilsvarende sikkerhetsnivå.*

STATUS:

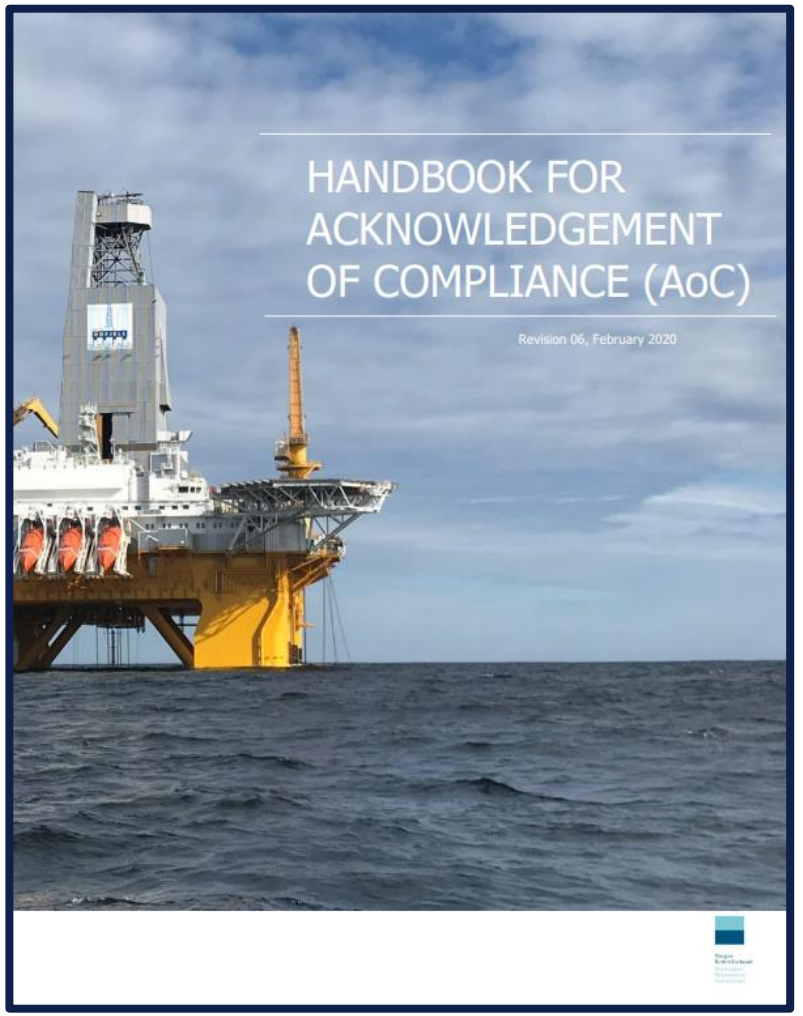
- Awaiting a 4th hearing round

Norwegian Petroleum Safety Authority (PSA)



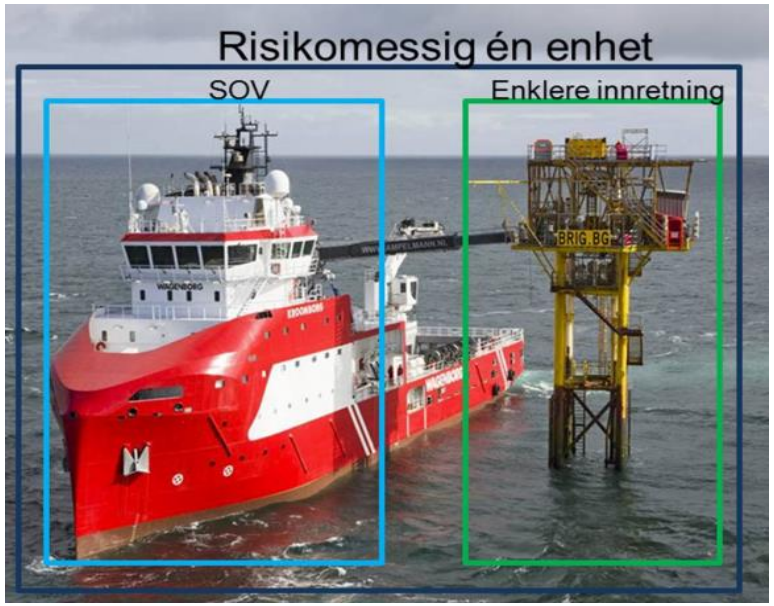
New AoC Handbook – Revision 6 issued February 2020

- New version (revision 6) issued February 2020
- Contains **updates and editorial changes** based on experience feed-back from use of the previous version from august 2015
- **No fundamental changes to the AoC principles**
- Formal owner of the Handbook is now Norwegian Ship Owners Association
  - Used to be a joint ownership with Norwegian Oil & Gas Association
- Still referred to by PSA as :
  - “Providing the acceptable technical standards for the individual areas on a mobile facility, and also clarifies what constitutes an acceptable interpretation of the technical basis for the various support systems and certain requirements for the working environment. “



Regulating «Walk to Work» (W2W) vessels

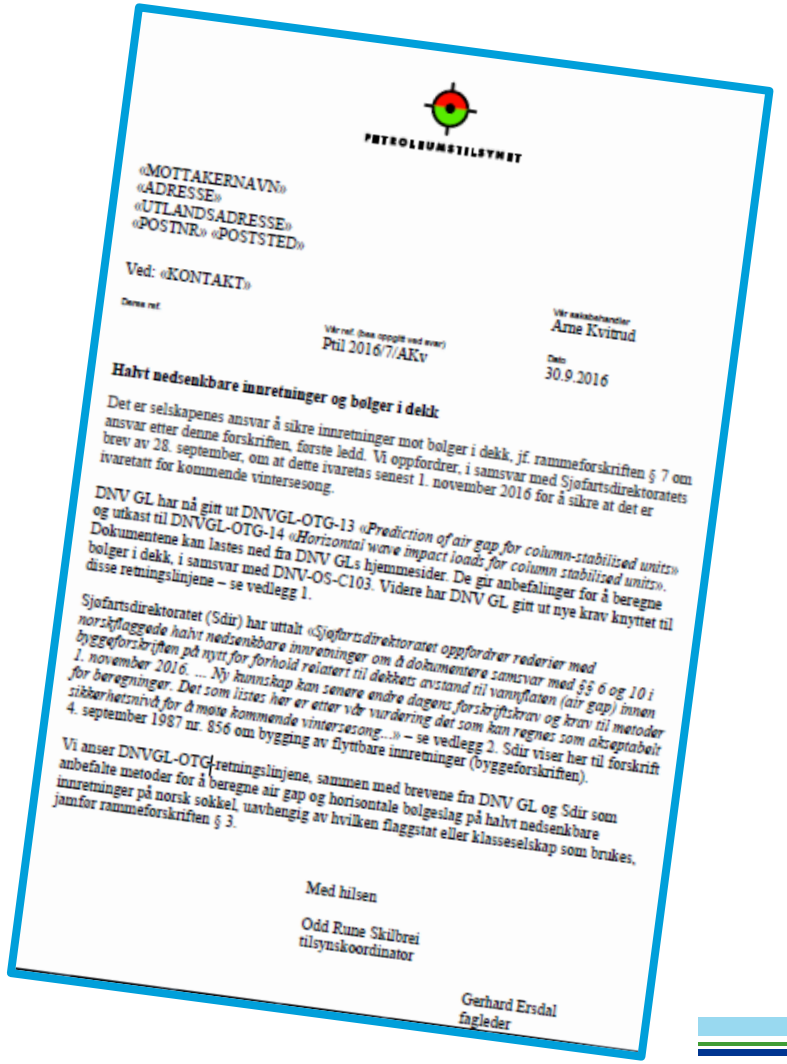
- PSA has included regulation of vessels used for transport/support of «simpler facilities without accommodation» under the Petroleum regulations
- Norwegian Working Environment Law will apply for the offshore workers staying onboard
- Specific requirements:
  - Min DP Capability IMO Category 2
  - Comply with the 2008 SPS Code and the damage stability required by IMO Res. MSC.235(82) as amended by MSC.335(90), also for vessels above 100 meters.
  - Walkways should be according to DNVGL-ST-0358 for dimensioning of structural strength and fastening to the vessel
  - For assessment of noise load on restitution and resting in cabins, it should be strived to achieve a noise level down to 50 dB(A). This is, however, not to be understood as a technical requirement for the vessel



PSA reaction to semi-sub air gap issue (Ref. COSL Innovator)

PSA have stated in letter 2016-09-30 that:

- *"DNVGL-OTG-13/14 guidelines together with procedures outlined in letters from DNV GL and NMA are to be used to calculate air gap and horizontal wave slamming on semi-submersibles on the Norwegian Continental Shelf irrespective of flag state and class society used*. "



PETROLEUMSTILSYNET

«MOTTAKERNAVN»
«ADRESSE»
«UTLANDSADRESSE»
«POSTNR» «POSTSTED»

Ved: «KONTAKT»

Deres ref.

Vår ref. (bes oppgitt ved svar)
Ptil 2016/7/AKv

Vår saksbehandler
Arne Kvitrud

Dato
30.9.2016

Halvt nedsenkbare innretninger og bølger i dekk

Det er selskapenes ansvar å sikre innretninger mot bølger i dekk, jf. rammeforskriften § 7 om ansvar etter denne forskriften, første ledd. Vi oppfordrer, i samsvar med Sjøfartsdirektoratets brev av 28. september, om at dette ivaretas senest 1. november 2016 for å sikre at det er ivaretatt for kommende vintersesong.

DNV GL har nå gitt ut DNVGL-OTG-13 «*Prediction of air gap for column-stabilized units*» og utkast til DNVGL-OTG-14 «*Horizontal wave impact loads for column stabilised units*». Dokumentene kan lastes ned fra DNV GLs hjemmesider. De gir anbefalinger for å beregne bølger i dekk, i samsvar med DNV-OS-C103. Videre har DNV GL gitt ut nye krav knyttet til disse retningslinjene – se vedlegg 1.

Sjøfartsdirektoratet (Sdir) har uttalt «*Sjøfartsdirektoratet oppfordrer rederier med norskflaggede halvt nedsenkbare innretninger om å dokumentere samsvar med §§ 6 og 10 i byggeforskriften på nytt for forhold relatert til dekkets avstand til vannflaten (air gap) innen 1. november 2016. .... Ny kunnskap kan senere endre dagens forskriftskrav og krav til metoder for beregninger. Det som listes her er etter vår vurdering det som kan regnes som akseptabelt sikkerhetsnivå for å møte kommende vintersesong....*» – se vedlegg 2. Sdir viser her til forskrift 4. september 1987 nr. 856 om bygging av flyttbare innretninger (byggeforskriften).

Vi anser DNVGL-OTG-retningslinjene, sammen med brevene fra DNV GL og Sdir som anbefalte metoder for å beregne air gap og horisontale bølgeslag på halvt nedsenkbare innretninger på norsk sokkel, uavhengig av hvilken flaggstat eller klasseselskap som brukes, jamfør rammeforskriften § 3.

Med hilsen

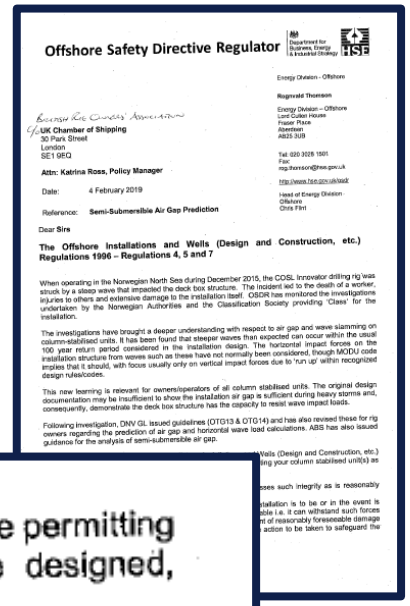
Odd Rune Skilbrei
tilsynskoordinator

Gerhard Ersdal
fagleder

UK HSE

HSE position on semi-sub airgap issue

- Letter from HSE 4th February 2019:



Offshore Safety Directive Regulator

UK Chamber of Shipping
30 Park Street
London
SE1 9EQ

Attn: Katrina Ross, Policy Manager

Date: 4 February 2019

Reference: Semi-Submersible Air Gap Prediction

Dear Sirs

The Offshore Installations and Wells (Design and Construction, etc.) Regulations 1996 – Regulations 4, 5 and 7

When operating in the Norwegian North Sea during December 2015, the COSL Innovator drilling rig was struck by a steep wave that impacted the deck box structure. The incident led to the death of a worker, injuries to others and extensive damage to the installation itself. OSDR has monitored the investigations undertaken by the Norwegian Authorities and the Classification Society providing 'Class' for the installation.

The investigations have brought a deeper understanding with respect to air gap and wave slamming on column-stabilised units. It has been found that steeper waves than expected can occur within the usual 100 year return period considered in the installation design. The horizontal impact forces on the installation structure from waves such as these have not normally been considered, though MODU code implies that it should, with focus usually only on vertical impact forces due to 'run up' within recognized design rules/codes.

This new learning is relevant for owners/operators of all column stabilised units. The original design documentation may be insufficient to show the installation air gap is sufficient during heavy storms and, consequently, demonstrate the deck box structure has the capacity to resist wave impact loads.

Following investigation, DNV GL issued guidelines (OTG13 & OTG14) and has also revised these for rig owners regarding the prediction of air gap and horizontal wave load calculations. ABS has also issued guidance for the analysis of semi-submersible air gap.

Our records show you have one or more column stabilised units with an accepted Safety Case permitting operation in UKCS. Irrespective of which Classification Society Rules the units were designed, constructed, or are classed to, you are required for each unit to:

i. Review the design documentation of the unit, with particular focus on the air gap analysis and potential of horizontal wave slamming on the deck box structure.

ii. Determine whether compliance to the DNV-GL guidance or a relevant equivalent can be achieved and, if so, how. For example by specifying revised environmental limits for the safe operation of the unit as an installation.

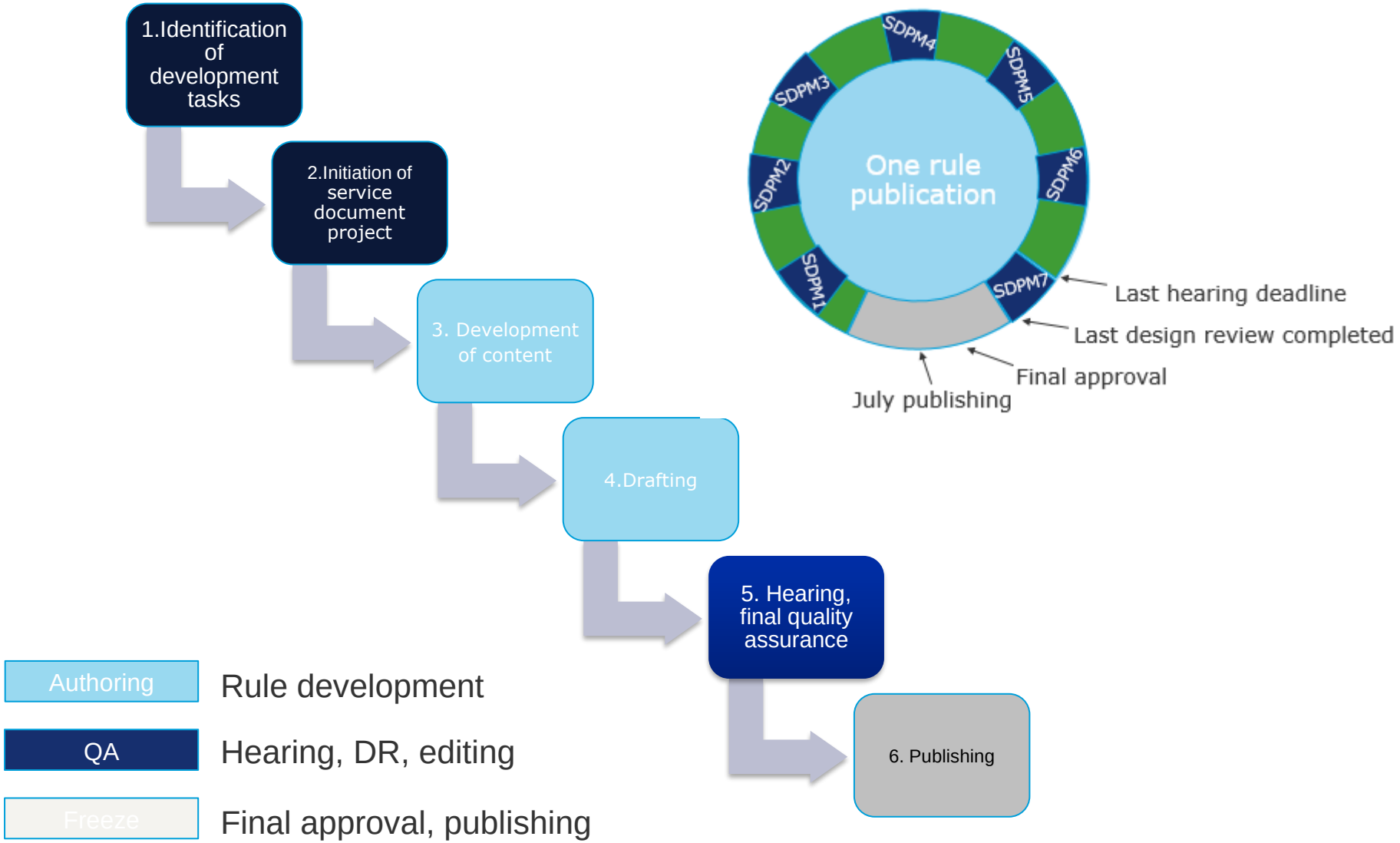
iii. Determine if any changes are required to the installation safety case to reflect the limits and the manner in which the installation is operated and, if so, state how those changes will be incorporated.

iv. Notify OSDR of your findings including a statement as to the suitability of the unit for continued operation within the UKCS, or your plans to modify the unit to achieve appropriate compliance.

v. Support your notification with comment on suitability for operation within the UKCS by your independent verifier. For example, where DNV GL has provided you with a letter of confirmation of approval, a copy of this letter should be provided. Naturally an equivalent kind of confirmation would be acceptable from other appointed verifiers.

DNV Class updates

DNV Service document process: Max one rule edition per year from 2019



Offshore Class – Annual rule update 2021

One new offshore class rule document:

- DNV-RU-OU-0571: *Floating infrastructure installations*

Revisions to 5 offshore class rule documents:

- DNV-RU-OU-0101: *Offshore drilling and support units*
- DNV-RU-OU-0102: *Floating production, storage and loading units*
- DNV-RU-OU-0103: *Floating LNG/LPG production, storage and loading units*
- DNV-RU-OU-0104: *Self-elevating units, including wind turbine installation units and liftboats*
- DNV-RU-OU-0300: *Fleet in service*

Revisions to 9 offshore standards:

- DNV-OS-A301: *Human comfort*
- DNV-OS-B101: *Metallic Materials*
- DNV-OS-C102: *Structural design of offshore ship-shaped and cylindrical units*
- DNV-OS-C401: *Fabrication and testing of offshore structures*
- DNV-OS-D101: *Marine and machinery systems and equipment*
- DNV-OS-D201: *Electrical installations*
- DNV-OS-E101: *Drilling Facilities*
- DNV-OS-E201: *Oil and gas processing systems*
- DNV-OS-E301: *Position mooring*

Highlights – ‘July 2021

- New rules for **“Floating Infrastructure Installations”**
- New notations **for “SMART”** units
- New notation **Abate** to address greenhouse gas emission reduction measures
- Specific structural requirements for **cylindrical units** introduced
- New notation **Hull+** specifying additional longitudinal hull girder strength requirements in line with NORSOK N-004
- Specific requirements for high voltage systems above 15 kV introduced to cover **energy supply from land** based or other external sources

Highlights – July 2020

Barrier:

- New notation enabling use of class rules for barrier management purposes.
- The notation comes with two options; one using class rules and a custom where customer/project specific requirements can be included
- A list of performance standards has been developed with links to offshore class standards

PROD(CAN):

- Notation for additional verification of production facilities towards Canadian costal state requirements
- Technical requirements listed in dedicated offshore technical guidance (OTG) document

(BRA) notations for Brazilian regulatory compliance:

- Introduction of a qualifier for both main class and **PROD** notations for additional verification towards Brazilian costal state requirements
- Technical requirements listed in dedicated offshore technical guidance (OTG) document

Storage unit:

- Harmonised requirements between ship and offshore rules for FSU's where this is relevant, allowing for simplification

DNV-RU-OU-0571
Floating infrastructure installations

New

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Background

- Increasing interest for using ocean space for various kinds of floating infrastructure installations.
- DNV lately being approached several times about providing assurance services both during construction and in operation.

Scope

- New classification rules based on similar templates as successfully introduced for floating fish farm and wind turbine installations.
- Technical requirements based on a mix of offshore standards and barge/pontoon rules.
- Relevant additional class notations from other rule sets incorporated.
- Scope of class focusing on substructure and position keeping
  - topside installations not included.

Consequence

- A classification service can be offered to meet demand for independent assurance for floating infrastructure installations from designers, insurance, finance institutions, regulators, etc.

SMART operation

- New notations for data-driven services, highlighting that the units are utilizing smart class services
- Previous descriptive notation **Smart** deleted, and replaced with new class notations:
  - **Smart**, for operations based on digital or environmentally friendly solutions.
  - **D-INF**, for data collection infrastructure.
  - **DDV**, for data-driven verification.
  - **REW,** for remote witnessing
- Technical requirements specified by reference to DNV-RU-SHIP Pt.6 Ch.11

Barrier notation
Class service for barrier management

Class requirements can be used directly in a barrier management system

Barrier notation can be applied to units covered by offshore class

Can be expanded to cover owner specific and/or shelf state requirements

Barrier notation comes with two options:

- Using only class rules as basis, but placing them in a barrier system
- Custom, where scope and reporting format can be tailor made

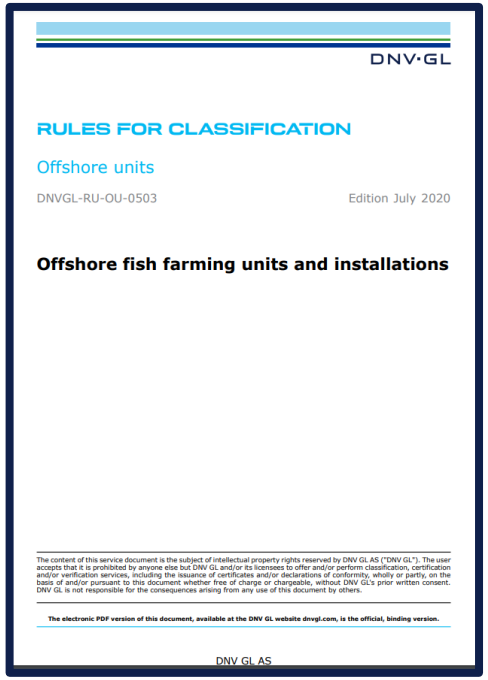
DNV has included a set of performance standards that cover the majority of risks that an offshore unit is exposed to.

Enabling re-use of class work into barrier systematics, reducing double work and cost

New ocean fish farming concepts need new rules and regulatory solutions

(Is this a ship, rig or fish farm ?)

(China is building the world's biggest offshore fish farm. Based on Norwegian offshore technology)



New Norwegian ocean farming concepts:

- Alternative regulatory basis developed by DNV based on mobile offshore unit class systematics and the Norwegian AoC scheme

DNV rules 2022

Highlights – ‘July 2022

- **PROD** notation updated with new qualifiers to cover (PED) scope, and the qualifiers (RBI) and (Analytics) for smarter follow up in-service (affected documents RU-OU-101/102/103/104/300)
- **RU-OU-0503** renamed from “Offshore fish farming units and installations” to **“Floating fish farming units and installations”** to cover all different types
- Added new **POSMOOR(W)** notation for wind specific requrements with reference to DNV-ST-0119 for design requirements in RU-OU-0512
- Created class notations covering new infrastructure types, including **Infrastructure buoy** and **Charging buoy** in RU-OU-0571

DNV-RU-OU-0101
Offshore drilling and support units

Last edition
July 2021

Background

- Annual update of rules to keep track of industry development.

Scope

- Clarified that requirements for battery systems being part of main power generation shall follow **Battery(Power)** class requirements.
- Added DNV-OS-C102 as design standard for cylindrical units.
- Harmonised requirements for temporary mooring for semi-submersible well intervention units.

Consequence

- Requirements for hybrid systems using batteries are clarified through the **Battery(Power)** class notation.
- Class notation **FAB** is mandatory for cylindrical units operating in harsh environments.
- Clarified that semi-submersible well intervention units with redundant dynamic positioning systems may be accepted without temporary mooring arrangements.

Project	1066, 1248
Service area	Offshore classification
Contacts	Axel Stang Lund, Tore Sildnes
Planned publication	July 2022

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DNV-RU-OU-0102
Floating production, storage and loading units

Last edition
July 2021

Background

- The **PROD** class notation has previously not been able to link directly with PED certification requirements specified in the EU PED directive. Furthermore, the class notations have not covered advanced survey schemes for the in-service phase for **PROD** class notation.

Scope

- Added **PROD** class notation qualifiers showing PED compliance where DNV is notified body.
- Added **PROD** class notation qualifiers for RBI and data analytics as part of the in-service scheme.
- Clarified that battery systems that are part of the main power generation system shall follow the requirements for **Battery(Power)** class notation.

Consequence

- The **PROD(PED)** class notation will make it easier to assure compliance with both PROD and PED requirements. This will typically be helpful for units/installations that will be required to meet the EU directives. These can be projects both inside and outside of EU.

Project	**1212, 1248**
Service area	Offshore classification
Contacts	Tomas Solli
Planned publication	July 2022

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DNV-RU-OU-0103
Floating LNG/LPG production, storage and loading units

Last edition
July 2021

Background

- The **PROD** class notation has previously not been able to link directly with PED certification requirements specified in the EU PED directive. Furthermore, the class notations have not covered advanced survey schemes for the in-service phase for **PROD** class notation.

Scope

- Added **PROD** class notation qualifiers showing PED compliance where DNV is notified body.
- Added **PROD** class notation qualifiers for RBI and data analytics as part of the in-service scheme.
- Clarified that battery systems that are part of the main power generation system shall follow the requirements for **Battery(Power)** class notation.

Consequence

- The **PROD(PED)** class notation will make it easier to assure compliance with both PROD and PED requirements. This will typically be helpful for units/installations that will be required to meet the EU directives. These can be projects both inside and outside of EU.

Project	**1248, 1212**
Service area	Offshore classification
Contacts	Tomas Solli, Axel Stang Lund
Planned publication	July 2022

DNV-RU-OU-0104
Self-elevating units, including wind turbine installation units and liftboats

Last edition
July 2021

Background

- Some smaller updates and clarifications based on user experience.

Scope

- Clarification of applicability of **Battery(Power)** class notation for offshore units.
- Clarification of towing and mooring requirements for ship-shaped units.

Consequence

- Elimination of reported uncertainties through added clarifications.

Project	1248
Service area	Offshore classification
Contacts	Axel Stang Lund
Planned publication	July 2022

DNV-RU-OU-0300
Fleet in service

Last edition
July 2021

Background

- Annual update to rules.
- Keep rules up to date with industry practice, market needs and new notations/arrangements.

Scope

- Alignment with DNV-RU-SHIP Pt.7 for hull survey plan, bottom survey and **DDV** notation.
- Mooring integrity management and **POSMOOR** surveys revised.
- New qualifiers **RBI** and **Analytics** for **PROD** notation.
- Development of requirements for handling of mooring chains and components.

Consequence

- Improved clarity on survey requirements.
- New options for optimised in-service follow up of production plant.

Project	941, 1182
Service area	Offshore classification
Contacts	Henning D. Stokke
Planned publication	July 2022

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DNV-RU-OU-0503
Floating fish farming units and installations

Last edition
July 2021

Background

- The market for floating fish farms is expanding, but the terminology 'offshore' is often misunderstood to mean only harsh environments with respect to requirements.
- The market is requesting dedicated class requirements for feed barges and other fish farm service units, which up until now has been unavailable.

Scope

- Changed title to *Floating fish farming units and installations*.
- Restructured document to include type of unit in the class string, example **1A Ship-shaped Fish farming unit**.
- Added requirements for fish farming service units, with relevant technical requirements for these types of units.

Consequence

- Document updated to follow industry development.
- Class service is now an option for service units, using a tailor-made scope while retaining the knowledge and proven processes for classification services.

Project	1248
Service area	Offshore classification
Contacts	Per Arild Åland, Axel Stang Lund
Planned publication	July 2022

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DNV-RU-OU-0512
Floating offshore wind turbine installations

Last edition
July 2021

Background

- Structural design of cylindrical units have been included in DNV-OS-C102, but this has not yet been reflected in this rule set.
- Position mooring requirements are not easily comparable between these rules and DNV-ST-0119.

Scope

- Update structural design requirements to harmonise with DNV-ST-0119.
- Add DNV-OS-C102 for cylindrical installations.
- Add new **POSMOOR(W)** notation with reference to DNV-ST-0119 for design requirements.

Consequence

- Harmonization of design requirements between DNV-RU-OU-0512 and DNV-ST-0119 for structural design and mooring systems.

Project	1248
Service area	Offshore classification
Contacts	Axel Stang Lund, Erik Henriksen
Planned publication	July 2022

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DNV-RU-OU-0571
Floating infrastructure installations

Last edition
July 2021

Background

- New types of infrastructure installations are being developed, including charging buoys.

Scope

- Created requirements for infrastructure buoys, including charging buoys.
- Created class notations covering new infrastructure types, including **Infrastructure buoy** and **Charging buoy**.

Consequence

- The market and stakeholders now have a classification product that may be used for new infrastructure types.

Project	1268
Service area	Offshore classification
Contacts	Axel Stang Lund, Tore Sildnes, Are Torstensen
Planned publication	July 2022

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DNV standards 2022

Highlights – ‘July 2022

- **OS-C104 Structural design of self-elevating units - LRFD method** updated to better cover large WTI units in addition to general updates
- General update of **DNV-OS-D201 Electrical installations** to cover new development
- **DNV-OS-E302 Offshore mooring chain** updated to follow new industry practice and include experience from R5 failures
- **DNV-OS-E403 Offshore loading and infrastructure buoys** Expanded and developed standard to cover infrastructure and charging buoys, in addition to loading buoy. Also renamed standard from *Offshore loading units* to *Offshore loading and infrastructure buoys*.

DNV-OS-C104
Structural design of self-elevating units - LRFD method

Last edition
July 2019

Background

- The ongoing wind turbine installation unit (WTIU) projects with increasing size and complexity of ship-shaped self-elevating units has unveiled that some parts of the standard must be made clearer and more self-contained, particularly the parts dealing with the effects of structural continuity and openings/penetrations.
- It is also seen that the requirements dealing with accidental loads needed an update, particularly in order to reflect the operational modes of WTIUs and to align with the revised requirements to accidental drop of load that was introduced in the October 2021 edition of DNV-RU-SHIP Pt.5 Ch.10 Sec.2 [3.1.3].

Scope

- Updated requirements related to structural continuity and openings/penetrations.
- General update where needed.

Consequence

- Clearer requirements with respect to structural continuity, openings/penetrations and fatigue sensitive structure.
- Improved requirements to self-elevating units in general.

Project	1237
Service area	Offshore classification
Contacts	Ove Garen, Johannes Ottersen, Arild Rogne
Planned publication	July 2022

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DNV-OS-D201
Electrical installations

Last edition
July 2021

Background

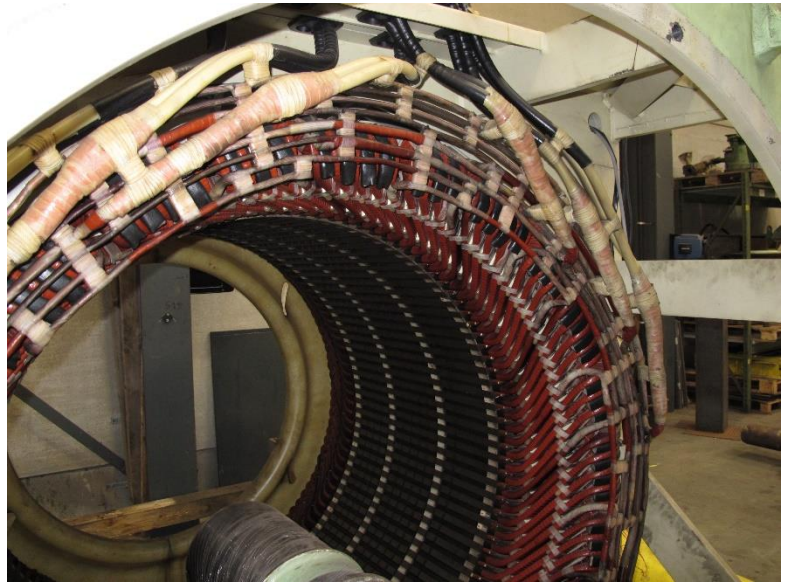
- New power sources and power system arrangements are developed, and the standard has been updated to be aligned with the industry development.
- Rules for ships have been updated, and this standard is harmonised with those requirements where possible.

Scope

- Requirements to power sources and power system arrangement are made more generic to allow for new power sources and power system arrangements.
- Added requirements for accepting external sources of electrical power.
- Modified redundancy principles and requirements to DC distributions.

Consequence

- Requirements aligned with ship rules. The standard can be used for new types of power sources and external power sources. The standard is more suitable for utilising DC and hybrid systems.



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Project	1104
Service area	Offshore classification
Contacts	Jon Ole Overrein, Øyvind Birkeland, Trond Sjåvåg
Planned publication	July 2022

DNV-OS-E201
Oil and gas processing systems

Last edition
July 2021

Background

- The new **PROD(PED)** notation has been developed as a service to projects that will meet both DNV PROD requirements and the EU PED Directive. To comply with the PED directive will typically be required for units/installations that will operate in the European economic area. In addition there may be projects with European owners that may wish to comply as a company policy.

Scope

- The **PROD(PED)** systematic has been developed as a compliance tool and is taking into account synergies between PROD classification requirements and the PED directive requirements. This means that DNV can assist with taking advantage of the synergies between the classification scope and potential EU directive scope.

Consequence

- The **PROD(PED)** notation will make it easier to assure compliance with both PROD and PED requirements.

Project	1212
Service area	Offshore classification
Contacts	Sinisa Sedlan, Tomas Solli
Planned publication	July 2022

DNV-OS-E302
Offshore mooring chain

Last edition
July 2018

Background

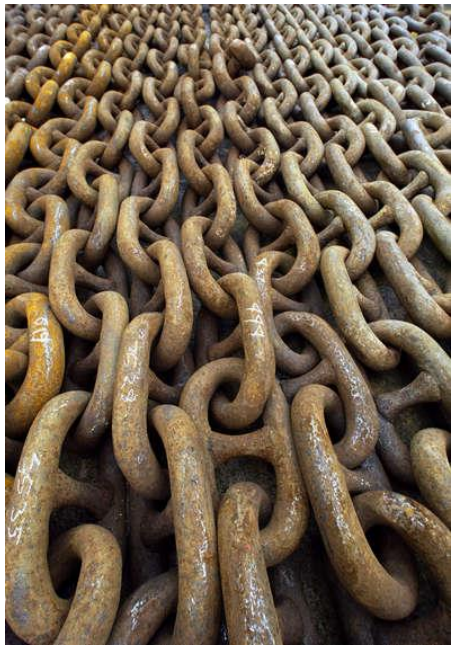
- The industry has developed since the last edition was published in 2018. The new edition will bring the standard up to date.

Scope

- Clarifications to improve standard.
- Include new ISO 20438 standard for offshore chains (similar to ISO 1704 for ship's chains).
- Following R5 chain failure investigations, the previous guidance note on yield and tensile max strengths is changed to a requirement.

Consequence

- The standard now follows industry development and practice.
- More ductile chain materials to avoid failures.



Project	1235
Service area	Offshore classification
Contacts	Pierre-Eric Moulia, Axel Stang Lund
Planned publication	July 2022

DNV-OS-E401
Helicopter decks

Last edition
July 2019

Background

- Specification on how to apply some of the design loads have not been clear enough, and have been misunderstood by designers.

Scope

- Rewritten section for design loads to clarify how the loads and load combinations shall be applied.

Consequence

- Better description of loads and their application.
- Better alignment of the minimum design loads, for the transit condition, between DNV-OS-E401 and CAP 437.

Project	1261
Service area	Offshore classification
Contacts	Arild Rogne, Svein Leite, Rune Jacobsen
Planned publication	July 2022

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DNV-OS-E403
Offshore loading and infrastructure buoys

Last edition
July 2020

Background

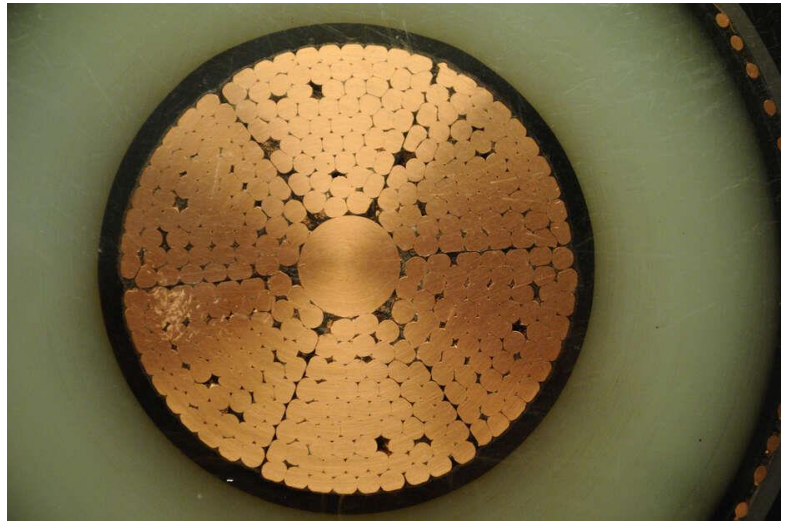
- The buoy type structure is being used in new areas, such as charging buoys and infrastructure buoys. While the standard in principle covers those new areas it has not been clear how to adopt the standard to new areas.

Scope

- Expand and develop standard to cover infrastructure and charging buoys, in addition to loading buoy.
- Rename standard from *Offshore loading units* to *Offshore loading and infrastructure buoys*.

Consequence

- The standard is now clearly covering other types of buoy type units, including charging buoys. This facilitates market needs for these new areas.
- DNV-RU-OU-0571 *Floating infrastructure installations* now refers to this standard for buoy type installations, linking class rules with offshore standards.



Project	1268
Service area	Offshore classification
Contacts	Are Torstensen, Tore Sildnes, Axel Stang Lund
Planned publication	July 2022

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Thank you for your attention

For additional information

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