Verification for compliance with Norwegian shelf regulations
FOREWORD

DNV GL statutory interpretations contain the Society's own interpretations of statutory regulations. These are valid when not instructed otherwise by the flag or coastal state administration, and when no interpretations exist from IACS or regulatory bodies. The publication covers only selected relevant topics and shall under no circumstances be taken as the Society's complete interpretations of such regulations.

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Any comments may be sent by e-mail to rules@dnvgl.com

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Changes – Current

This document supersedes the July 2015 edition. Changes in this document are highlighted in red colour. However, if the changes involve a whole chapter, section or sub-section, normally only the title will be in red colour.

Main change April 2016, entering into force 1 October 2016

- General
  Updates in line with the updates of other DNV GL service documents, that is:
  - Description of requirements related to offshore cranes completed and replacing reference to the old certification standard DNV SfC 2.22 by DNVGL-ST-0378 under definition of a new notation name Crane-offshore.
  - Further completion of Crane-offshore(N) service delivery, including in operation survey requirements
  - Inclusion of Enterprise of Competence as described in NORSOK-R003 in Crane-offshore(N) service.
  - Definition of COMF-MOU(N) class notation

- Ch.1 Sec.1 Introduction
  - Table 5: NORSOK R-002 and R-003 added
  - Table 6: EoC and OEM added.

- Ch.1 Sec.2 Introduction
  - [2.2] Updated listings of applicable class notations

- Ch.2 Sec.11 Crane-offshore(N)
  - Descriptions related to offshore cranes completely revised under update notation naming Crane-offshore(N).

- Ch.2 Sec.12 COMF-MOU(N)
  - New section covering requirements for the class notation COMF-MOU(N) as relevant for newbuilding projects.

- Ch.3 Sec.2 Periodic survey for (N)-notations
  - [8]: Survey requirements for Crane-offshore(N) added
  - [9]: Survey requirements for COMF-MOU(N) added.

- App.B DNV GL Enterprise of Competence (EoC) for lifting equipment
  - New appendix including description of EoC.

Editorial corrections

In addition to the above stated changes, editorial corrections may have been made.
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CHAPTER 1 PRINCIPLES AND PROCEDURES

SECTION 1 INTRODUCTION

1 Introduction

1.1 General

1.1.1 GL offshore classification aims to assure safety and reliability of offshore units and installations with regard to design, construction and operation. Wherever possible DNV GL offers additional, integrated services to assist clients towards fulfilling coastal state legislation, giving credit for classification activities.

1.1.2 This publication presents standardised DNV GL verification services building on class, which may be used to document partial compliance with verification obligations related to operation on the Norwegian continental shelf (NCS).

1.2 Structure

This document is divided into three main chapters:

— Ch.1: General information about classification services related to operation on the Norwegian continental shelf (NCS)
— Ch.2: Design and construction requirements for the newbuilding phase
— Ch.3: Requirements for maintenance of NCS related class notations in the operational phase.

1.3 Objects covered

This document covers NCS related class services for offshore objects of the following types:

— drilling units
— production units
— storage units
— well intervention units
— accommodation units.

and the following types of installed facilities:

— drilling plants
— production plants
— well Intervention plants
— helicopter decks
— cranes.
2 Definitions

2.1 Verbal forms

Table 1 Verbal forms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>shall</td>
<td>verbal form used to indicate requirements strictly to be followed in order to conform to the document</td>
</tr>
<tr>
<td>should</td>
<td>verbal form used to indicate that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required</td>
</tr>
<tr>
<td>may</td>
<td>verbal form used to indicate a course of action permissible within the limits of the document.</td>
</tr>
</tbody>
</table>

2.2 Definitions (continued)

Table 2 Definitions (continued)

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>acknowledgement of compliance (AOC)</td>
<td>a statement from the Petroleum Safety Authority Norway (PSA) that expresses the authorities' confidence that petroleum activities can be carried out using the facility within the framework of the regulations. The decision is based on information provided in the AOC application relating to the facility's technical condition and the applicant's organisation and management system, as well as the authorities' verifications and other processing. The party that will handle the daily operation of such a facility, shall have an AOC when such a facility participates in petroleum activities subject to Norwegian shelf jurisdiction. (Ref. guidelines to Sec.25 of PSA Framework regulations).</td>
</tr>
<tr>
<td>approval or approved</td>
<td>denotes acceptance by DNV GL of documentation showing design solutions, arrangements and/or equipment to comply with the rules.</td>
</tr>
<tr>
<td>assigning class</td>
<td>originally signified designation of one of several classes to a ship based on its condition, ranging from good to bad. Today only the highest class is assigned, comprising the main class, 1A1, and an obligatory additional class notation, e.g. Drilling Unit, where applicable. Voluntary additional class notations may also be assigned covering special service, equipment or systems, e.g. DRILL denoting a classed drilling plant.</td>
</tr>
<tr>
<td>CE-mark</td>
<td>CE denotes “Communauté Européenne”, and confirms that equipment complies relevant European Union Directives</td>
</tr>
<tr>
<td>classification</td>
<td>comprises those services rendered by DNV GL in accordance with the rules. Classification of offshore units is conducted in accordance with the requirements of the rules and any standards referred to by the rules.</td>
</tr>
<tr>
<td>classification certificate</td>
<td>issued upon assignment or renewal of class. Its validity is five years subject to successful completion of annual and intermediate surveys.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| client                      | the party having requested classification or having assumed ownership of a classed offshore unit or installation  
In cases where owners have authorised another party to operate the unit or installation on their behalf, such party is regarded as the client. |
| contract                    | the specific agreement between DNV GL and the client.  
It defines the extent of services requested by the client, and is concerned with:  
— the classification of offshore units or installations, both newbuildings and in operation  
— statutory work carried out on behalf of national maritime authorities  
— equipment and materials. |
| DNV GL                      | DNV GL undertakes classification and certification and ensures the quality of ships, offshore units and installations, facilities and systems, and carries out research in connection with these functions.  
DNV GL operates a world wide network of survey stations and is authorised by more than 120 national administrations to carry out surveys and, in most cases, issue certificates on their behalf. |
| guidance note               | advice which is not mandatory for assignment of class, but with which DNV GL, in light of general experience, advises compliance  
The client may decide whether to apply the note or not. |
| mobile offshore unit (MOU)  | a buoyant construction engaged in offshore operations including drilling, production, storage or support functions, not intended for service at one particular offshore site and which can be relocated without major dismantling or modification |
| notified body               | independent organisations appointed by EEA national authorities to undertake conformity assessment before a product is CE-marked according to a EU directive  
DNV GL is notified body for many EU directives |
| offshore installation       | a collective term to cover any construction, buoyant or non-buoyant, designed and built for installation at a particular offshore location |
| owner                       | in the context of this service specification, the Owner is defined as the party responsible for the offshore unit or installation including its operation and safety |
| recognised classification society | a classification society which is a full or associate member of IACS |
| statutory certificates      | IMO convention certificates issued on behalf of, or by, national authorities |
| supplier or manufacturer    | supplies materials, components, equipment and systems to newbuildings to be classed, or to classed units in operation, whose production is subject to design approval, surveys and testing in accordance with the rules |
3 References

3.1 Normative references

3.1.1 This service specification includes references to other DNV GL documents and regulations, codes and standards which shall be used in conjunction with the requirements given herein, for assignment of (N)-notation.

Latest issue of the references shall be used unless otherwise agreed.

3.1.2 DNV GL documents referred to are given in Table 3 and Table 4.

Table 3 DNV GL rules for classification: Offshore units

<table>
<thead>
<tr>
<th>Reference</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNVGL-RU-OU-0101</td>
<td>Offshore drilling and support units</td>
</tr>
<tr>
<td>DNVGL-RU-OU-0102</td>
<td>Floating production, storage and loading units</td>
</tr>
</tbody>
</table>

Table 4 Normative DNV GL references

<table>
<thead>
<tr>
<th>Reference</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNVGL-OS-B101</td>
<td>Metallic materials</td>
</tr>
<tr>
<td>DNVGL-OS-D101</td>
<td>Marine and machinery systems and equipment</td>
</tr>
<tr>
<td>DNVGL-OS-D201</td>
<td>Electrical installations</td>
</tr>
<tr>
<td>DNVGL-OS-D202</td>
<td>Automation, safety, and telecommunication systems</td>
</tr>
<tr>
<td>DNVGL-OS-E101</td>
<td>Drilling plant</td>
</tr>
<tr>
<td>DNVGL-OS-E201</td>
<td>Oil and gas processing systems</td>
</tr>
<tr>
<td>DNVGL-OS-E401</td>
<td>Helicopter decks</td>
</tr>
</tbody>
</table>

3.1.3 Non-DNV GL standards and other verification references as referred to herein are given in Table 5. Only parts referred to in Ch.2 are applicable for the verification activity. Latest edition of Petroleum Safety Authority Norway (PSA) and Norwegian Maritime Authority (NMA) regulations shall be used unless otherwise agreed. Below are the valid NMA regulations at time of printing listed.

Table 5 Other references (continued)

<table>
<thead>
<tr>
<th>Reference</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>API RP 14C</td>
<td>Analysis, design, installation and testing of basic surface safety systems for offshore production platforms</td>
</tr>
<tr>
<td>IEC 61508</td>
<td>Functional safety of electrical/electronic/programmable electronic safety-related systems</td>
</tr>
<tr>
<td>IMO MSC / Circular 645</td>
<td>Guidelines for vessels with dynamic positioning systems</td>
</tr>
<tr>
<td>ISO-13628</td>
<td>Design and operation of subsea production systems</td>
</tr>
<tr>
<td>Reference</td>
<td>Title</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>ISO 10418</td>
<td>Analysis, design, installation and testing of basic surface safety systems</td>
</tr>
<tr>
<td>ISO 13702</td>
<td>Petroleum and natural gas industries. Control and mitigation of fires and explosions on offshore production installations. Requirements and guidelines</td>
</tr>
<tr>
<td>NMA No. 67 of 2016-01-27</td>
<td>Regulations on ballast systems on mobile offshore units (Ballast Systems Regulations)</td>
</tr>
<tr>
<td>NMA No. 72 of 2008-01-15</td>
<td>Regulations concerning helicopter decks on Mobile Offshore Units</td>
</tr>
<tr>
<td>NMA No. 90 of 2016-02-02</td>
<td>Regulations concerning evacuation and lifesaving appliances on mobile offshore units</td>
</tr>
<tr>
<td>NMA No. 123 of 1994-02-10</td>
<td>Regulations for mobile offshore units with production plants and equipment</td>
</tr>
<tr>
<td>NMA No. 227 of 1984-01-31</td>
<td>Regulations concerning precautionary measures against fire and explosion on mobile offshore units</td>
</tr>
<tr>
<td>NMA No. 488 of 2012-02-30</td>
<td>Regulations on environmental safety for ships and mobile offshore units</td>
</tr>
<tr>
<td>NMA No. 856 of 1987-09-04</td>
<td>Regulations concerning construction of mobile offshore units</td>
</tr>
<tr>
<td>NMA No. 854 of 2007-07-04</td>
<td>Regulations concerning deck cranes, etc. on mobile offshore units</td>
</tr>
<tr>
<td>NMA No. 859 of 1987-09-04</td>
<td>Regulations concerning protective, environmental, and safety measures on mobile offshore units</td>
</tr>
<tr>
<td>NMA No. 878 of 1991-12-20</td>
<td>Regulations concerning stability, watertight subdivision and watertight/weathertight closing means on mobile offshore units</td>
</tr>
<tr>
<td>NMA No. 955 of 2014-07-01</td>
<td>Regulations on radio communication equipment for Norwegian ships and mobile offshore units</td>
</tr>
<tr>
<td>NMA No. 998 of 2009-07-10</td>
<td>Regulations concerning positioning and anchoring systems on mobile offshore units (Anchoring Regulations 09)</td>
</tr>
<tr>
<td>NMA No. 1239 of 1993-12-22</td>
<td>Regulations concerning risk analyses for mobile offshore units</td>
</tr>
<tr>
<td>NMA No. 1406 of 2015-12-04</td>
<td>Regulations on potable water and potable water systems on mobile offshore units</td>
</tr>
<tr>
<td>NMA No. 2318 of 1986-12-17</td>
<td>Regulations concerning the construction and equipment of living quarters on mobile offshore units</td>
</tr>
<tr>
<td>NOROG/ NSA</td>
<td>Handbook for application for Acknowledgement of Compliance (AOC)</td>
</tr>
<tr>
<td>NOROG GL70</td>
<td>Guidelines for the Application of IEC 61508 and IEC 61511 in the petroleum activities on the continental shelf</td>
</tr>
<tr>
<td>NORSOK L-001</td>
<td>Piping and valves</td>
</tr>
<tr>
<td>NORSOK L-002</td>
<td>Piping design, layout and stress analysis</td>
</tr>
<tr>
<td>NORSOK M-001</td>
<td>Material selection</td>
</tr>
<tr>
<td>NORSOK M-601</td>
<td>Welding and inspection of piping</td>
</tr>
<tr>
<td>NORSOK P-001</td>
<td>Process design</td>
</tr>
<tr>
<td>NORSOK P-100</td>
<td>Process systems</td>
</tr>
<tr>
<td>NORSOK R-001</td>
<td>Mechanical Equipment</td>
</tr>
<tr>
<td>NORSOK R-002</td>
<td>Lifting equipment</td>
</tr>
</tbody>
</table>
Reference | Title
--- | ---
NORSOK R-003 | Safe use of lifting equipment
NORSOK R-004 | Piping and equipment insulation
NORSOK S-001 | Technical safety
NORSOK T-001 | Telecommunication systems
NORSOK T-100 | Telecom subsystems
NORSOK U-001 | Subsea production systems
PSA – Activities | Regulations relating to conduct of activities in the petroleum activities (the Activities Regulations)
PSA – Facilities | Regulations relating to design and outfitting of facilities etc. in the petroleum activities (the Facilities Regulations), including guidelines and interpretations
PSA – Framework HSE | Regulations relating to health, safety and the environment in the petroleum activities and at certain onshore facilities (the Framework Regulations)
PSA – Management | Regulations relating to Management and the duty to provide information in the Petroleum Activities and at certain onshore land facilities
PSA YA-710 | Principles for alarm system design

### 4 Abbreviations
The abbreviations given in Table 6 are used in this document.

#### Table 6 Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>AOC</td>
<td>Acknowledgement of Compliance</td>
</tr>
<tr>
<td>DSB</td>
<td>Norwegian Directorate for Civil Protection</td>
</tr>
<tr>
<td>EEA</td>
<td>European Economic Area</td>
</tr>
<tr>
<td>EoC</td>
<td>Enterprise of Competence (Sakkyndig virksomhet)</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>FPSO</td>
<td>floating production and storage unit</td>
</tr>
<tr>
<td>FSO</td>
<td>floating storage unit</td>
</tr>
<tr>
<td>IACS</td>
<td>International Association of Classification Societies</td>
</tr>
<tr>
<td>IMO</td>
<td>International Maritime Organisation</td>
</tr>
<tr>
<td>NEA</td>
<td>Norwegian Environment Agency (ex. KLIF and SFT)</td>
</tr>
<tr>
<td>MOU</td>
<td>mobile offshore unit</td>
</tr>
<tr>
<td>NBH</td>
<td>Norwegian Board of Health</td>
</tr>
<tr>
<td>NCS</td>
<td>Norwegian continental shelf</td>
</tr>
<tr>
<td>NMA</td>
<td>Norwegian Maritime Authority</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Title</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>NOROG</td>
<td>Norwegian Oil and Gas Association (ex. OLF)</td>
</tr>
<tr>
<td>NSA (NR)</td>
<td>Norwegian Shipowners' Association (Norges Rederiforbund)</td>
</tr>
<tr>
<td>OEM</td>
<td>Original Equipment Manufacturer</td>
</tr>
<tr>
<td>PSA (PTIL)</td>
<td>Petroleum Safety Authority (Petroleumstilsynet)</td>
</tr>
<tr>
<td>SFI</td>
<td>Norwegian Ship Technical Research Institute</td>
</tr>
<tr>
<td>SOC</td>
<td>statement of compliance</td>
</tr>
</tbody>
</table>
SECTION 2 VERIFICATION PRINCIPLES AND CLASS NOTATIONS

1 Verification principles

1.1 General

1.1.1 According to the Norwegian Petroleum Act, the owner is fully responsible for verification activities ensuring that the unit/installation and related operations are in compliance with the applicable regulatory requirements.

1.1.2 The owner may utilise internal as well as external verification activities to demonstrate partial or full compliance with his verification obligations. Documentation may include:
— maritime certificates issued by flag state administrations and associated rules and regulations to which the certificates are issued
— classification certificates
— work performed by consultants/technical specialists for the owner/operator resulting typically in verification reports or statements of compliance (SOCs).

1.1.3 The (N)-notation is issued based on statutory reference regulations and standards valid at the date of contract between Yard and Owner.

Guidance note:
Offshore units will normally be required to document compliance with the latest edition of the PSA regulations and associated reference regulations and standards when applying for AOC from the Norwegian PSA.

---e-n-d---o-f---g-u-i-d-a-n-c-e---n-o-t-e---

1.2 Regulatory basis

The regulatory body on the NCS is the Petroleum Safety Authority (PSA). Requirements for petroleum activities on the NCS are stipulated by PSA together with Norwegian Environment Agency (NEA) and The Norwegian Board of Health (NBH). The services described in this document are interpreted from or contain reference to the PSA/KLIF/NBH joint regulations given in Table 1.

Table 1 PSA Regulations referred to and used under this service specification

<table>
<thead>
<tr>
<th>Formal regulation title</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulations relating to Health, Safety and the Environment in the Petroleum Activities and at certain onshore facilities</td>
<td>The Framework Regulations</td>
</tr>
<tr>
<td>Regulations relating to Management and the duty to provide information in the Petroleum Activities and at certain onshore land facilities</td>
<td>The Management Regulations</td>
</tr>
<tr>
<td>Regulations relating to Design and Outfitting of Facilities etc. in the Petroleum Activities</td>
<td>The Facilities Regulations</td>
</tr>
<tr>
<td>Regulations relating to Conducting of Petroleum Activities</td>
<td>The Activities Regulations</td>
</tr>
</tbody>
</table>

Guidance note:
The latest revision of the applicable standards may be found at http://www.psa.no

---e-n-d---o-f---g-u-i-d-a-n-c-e---n-o-t-e---
1.3 Regulatory considerations for floating units

1.3.1 PSA regulations make a distinction between mobile facilities and other offshore installations with respect to the verification basis which may be applied (refer Sec.3 of PSA Framework Regulations).

1.3.2 Mobile facilities are in this context understood as units registered in a national register of shipping, and which follow a maritime operational concept. Typical examples of such units are:
— drilling units
— well intervention units
— accommodation units
— multi-purpose units
— production and/or storage units following a maritime operational concept.

Guidance note:
In some cases it may be a matter of judgement if the object can be categorised as a "maritime practice" offshore unit according to PSA regulations. It is recommended that the PSA is contacted at an early stage in such projects for principal clarifications.

---end---of---guide---note---

1.4 Acknowledgement of compliance and verification basis

1.4.1 PSA operates approval compliance scheme for mobile facilities named “acknowledgement of compliance” (AOC). The AOC scheme is mandatory for all types of mobile facilities except floating storage units (FSO).

1.4.2 DNV GL services described in this document may be used by owners to document partial compliance with PSA requirements for an AOC application.

1.4.3 Details on the AOC scheme are given in "Handbook for Application for Acknowledgement of Compliance (AOC)", issued by Norwegian Oil and Gas Association (ex. OLF) (NOROG), and Norwegian Shipowners' Association (NSA).

Guidance note:
The latest revision of the handbook may be found at http://www.norskoljeoggass.no

---end---of---guide---note---

1.4.4 The maritime regulations and corresponding class rules that may be applied are to have a safety level minimum corresponding to the latest edition of the NMA Regulations for Mobile offshore units (NMA redbook) and supplementary DNV GL rules for classification: Offshore units (RU-OU).

1.4.5 Petroleum related aspects (e.g. drilling and production plants) shall comply directly with the provisions of the PSA Facilities Regulations, as shall working environment issues.

1.4.6 The approach described in [1.4] has been used as basis for the services described in this document.
2 Class notations

2.1 General

Ch.2 and Ch.3 of this document describe DNV GL services building on standard class notations which can be used to document partial compliance with verification obligations of the owner as described in [1].

Guidance note:

DNV GL’s results and conclusions related to services described in this document are based on DNV GL’s understanding and interpretation of the PSA’s regulations, but do not represent any formal approval on behalf of PSA.

Formal compliance with PSA requirements can only be confirmed by the PSA itself. No other authorities or organisations have delegated authority to act on behalf of PSA.

---e-n-d---o-f---g-u-i-d-a-n-c-e---n-o-t-e---

2.2 Class notations

2.2.1 Classed units/installations complying with the additional requirements of the relevant sections of this document will, after completion of prescribed design verifications and surveys, be assigned the additional class notation: (N).

2.2.2 Verification basis applied for the (N)-notation will be stated in the "Appendix to Class Certificate".

2.2.3 The following (N)-notations are currently available:

- Drilling unit(N)
- Production unit(N)
- Storage unit(N)
- Well intervention unit(N)
- Accommodation unit(N)
- DRILL(N)
- PROD(N)
- WELL(N)
- HELDK-SH(N)/-SHF(N)
- Crane-offshore(N)
- COMF-MOU(N).

3 Classification principles, procedure and legal provisions

3.1 General

3.1.1 The (N)-notations will be issued and maintained based on the following main activities:

- design verification
- certification of materials and components
- survey during construction and installation
- survey during commissioning and start-up
- periodical survey during operation.
3.1.2 General principles, procedures and legal provisions for classification applicable for this document are stated in Chapter 1 of the following DNV GL rules for classification: Offshore units:

— Rules for drilling and support units for Drilling unit(N), Well intervention unit(N), Accommodation unit(N), DRILL(N), WELL(N) and HELDK-SHF(N)/SH(N) (see DNVGL-RU-OU-0101).
— Rules for floating production, storage and loading units for Production unit(N), Storage unit(N) and PROD(N) (see DNVGL-RU-OU-0102).
CHAPTER 2 DESIGN AND CONSTRUCTION PROVISIONS

SECTION 1 INTRODUCTION

1 General

1.1 General

1.1.1 Unless otherwise stated the design and construction requirements given in this chapter are supplementary to the latest edition of relevant DNV GL class requirements. For units built to earlier editions of DNV GL rules for classification or to class rules from another IACS Society, an additional verification of compliance with the DNV GL rules for classification in force at the time when the (N)-notation is sought, shall be carried out in addition to the verification activities described in this chapter (see Ch.1 Sec.2 [1.1.3]).

1.1.2 Activities related to issuing the (N)-notation shall normally be carried out as an integral part of the activities related to the corresponding class notations to which the (N) symbol will be attached.

1.1.3 Unless otherwise stated class procedures, documentation requirements, extent of certification of materials and components, extent of surveys etc. shall as a minimum be as required for the corresponding class notations to which the (N) symbol will be attached. Generally the documentation requirements and extent of survey will be based on the additional verification basis as listed herein.
SECTION 2 DRILLING UNIT(N)

1 Introduction

1.1 Application
The verification methodology described in this section may be applied to mobile offshore drilling units satisfying the following criteria:
— The unit is being classed with DNV GL with minimum service notation Drilling unit and Enhanced System notation, ES
— The unit is registered with a national maritime administration.

1.2 Class notations
Classed units/installations complying with the relevant requirements of this section may, after completion of design reviews and surveys be assigned the class notation Drilling unit(N).

2 Technical requirements

2.1 Supplementary verification basis for Drilling unit(N)
The following SFI areas will be subject to additional design verification and survey as basis for assignment of the (N)-notation.

<p>| Table 1 Verification basis for Drilling unit(N) (continued) |
|----------------|-----------------|-----------------|
| <strong>SFI code</strong> | <strong>Area</strong> | <strong>Verification references for additional requirements</strong> | <strong>Notes / comments</strong> |
| 1 | Stability | NMA Stability Regulations | Not applicable for self-elevating units |
|   | Arrangement | NMA Construction Regulations, NMA Living Quarter Regulations, NMA Fire Regulations |   |
|   | Living Quarters * | NMA Living Quarter Regs Sec.6, 7, 8, 12, 13, 14, 15, 17, and 18 | PSA specify the following additional requirement: bunk beds should be replaced by beds on the floor |
|   | Escape ways | NMA Construction Regulations, NMA Living Quarter Regulations |   |
|   | Hazardous areas | NMA Fire Regulations | NMA refers to regulations concerning maritime electrical installations |
| 2 | Hull and Structures | NMA Construction Regulations Sec.6, 7 and 10, NMA Stability Regulations Sec.22 and Sec.30 (implications of these requirements), |   |
| 41 | Navigation and searching equipment | NMA Construction Regulations |   |
| 421 | Radio plant | NMA Radio Regulations |   |</p>
<table>
<thead>
<tr>
<th>SFI Code</th>
<th>Area</th>
<th>Verification references for additional requirements</th>
<th>Notes / comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>425</td>
<td>Calling systems, command telephone, telephone plants, walkietalkies, etc.</td>
<td>NMA Fire Regulations, NMA Crane Regulations, NMA Anchoring Regulations</td>
<td>Specific requirements for alarms systems, see SFI 811</td>
</tr>
<tr>
<td>427</td>
<td>Light and signal equipment (lanterns, whistles, etc.)</td>
<td>NMA Construction Regulations</td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>Anchoring, mooring and towing equipment</td>
<td>NMA Anchoring Regulations, NMA Towing Regulations</td>
<td>Not applicable for self-elevating units</td>
</tr>
<tr>
<td>441 - 447</td>
<td>Welding central</td>
<td>NMA Welding equipment</td>
<td></td>
</tr>
<tr>
<td>448</td>
<td>Name plates (markings) on machinery, equipment, pipes cables</td>
<td>NMA Protective, environmental</td>
<td></td>
</tr>
<tr>
<td>488</td>
<td>Jacking system, spud tank jetting system for Jack-ups</td>
<td>NMA Construction Regulations</td>
<td></td>
</tr>
<tr>
<td>505</td>
<td>Loose fire fighting apparatuses and equipment, firemen’s suit</td>
<td>NMA Fire Regulations</td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>Insulation, panels, bulkheads, doors, side scuttles, windows, skylight</td>
<td>NMA Construction Regulations, NMA Living Quarter Regulations, NMA Fire Regulations</td>
<td>It is presupposed that requirements concerning watertight integrity and load line will be considered in SFI Area 1.</td>
</tr>
<tr>
<td>52</td>
<td>Internal deck covering, ladders, steps, railings etc.</td>
<td>NMA Construction Regulations, NMA Living quarter Regulations</td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>External deck covering, steps, ladders etc., fore-and-aft gangway</td>
<td>NMA Construction Regulations</td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>Ventilation, air-conditioning and heating system</td>
<td>NMA Fire Regulations</td>
<td></td>
</tr>
<tr>
<td>66</td>
<td>Aggregates and generators for emergency power productions</td>
<td>NMA Construction Regulations</td>
<td></td>
</tr>
<tr>
<td>76</td>
<td>Distilled and make-up water systems</td>
<td>NMA Potable Water Regulations</td>
<td></td>
</tr>
<tr>
<td>79</td>
<td>Automation systems for machinery</td>
<td>NMA Ballast Systems Regulations, NMA Stability Regulations, NMA Fire Regulations, NMA Risk analyses Regulations Sec.22</td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>Ballast and bilge systems, gutter pipes outside accommodation</td>
<td>NMA Ballast Systems Regulations, NMA Pollution Regulations</td>
<td>Not applicable for self-elevating units</td>
</tr>
<tr>
<td>810</td>
<td>Fire detection, fire and lifeboat alarm systems</td>
<td>NMA Fire Regulations</td>
<td>Except specific requirements to sound and light alarms.</td>
</tr>
<tr>
<td>811</td>
<td>Fire detection, fire and lifeboat alarm systems</td>
<td>NMA Fire Regulations</td>
<td></td>
</tr>
<tr>
<td>SFI code</td>
<td>Area</td>
<td>Verification references for additional requirements</td>
<td>Notes / comments</td>
</tr>
<tr>
<td>----------</td>
<td>------</td>
<td>------------------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>812</td>
<td>Emergency shut down system</td>
<td>NMA Fire Regulations</td>
<td>Well testing facilities shall be considered as a process plant for a drilling unit.</td>
</tr>
<tr>
<td>813 - 819</td>
<td>Fire/wash down systems, emergency fire pumps, general service pumps, Fire fighting systems for external fires, Fire fighting systems with CO₂ and Halon gases</td>
<td>NMA Fire Regulations</td>
<td></td>
</tr>
<tr>
<td>82</td>
<td>Air and sounding systems from tank to deck</td>
<td>NMA Ballast System Regulations</td>
<td></td>
</tr>
<tr>
<td>85</td>
<td>Electrical systems general part*</td>
<td>DNVGL-OS-D201</td>
<td>Refer to acknowledgement from PSA stating acceptance of use of DNVGL-OS-D201 in lieu of NMA</td>
</tr>
<tr>
<td>86</td>
<td>Electrical power supply*</td>
<td>DNVGL-OS-D201</td>
<td>Refer to SFI85</td>
</tr>
<tr>
<td>87</td>
<td>Electrical distribution common systems*</td>
<td>DNVGL-OS-D201</td>
<td>Refer to SFI85 Refer to SFI Group 408 for dynamically positioned units</td>
</tr>
<tr>
<td>88</td>
<td>Electrical cable installation*</td>
<td>DNVGL-OS-D201</td>
<td>Refer to SFI85 Refer to SFI Group 408 for dynamically positioned units</td>
</tr>
<tr>
<td>89</td>
<td>Electrical consumers (lighting etc.)*</td>
<td>DNVGL-OS-D201</td>
<td>Refer to SFI85</td>
</tr>
</tbody>
</table>

* Where an asterix is used this denominates a deviation from the AOC handbook revision 4

**Notes:**
- The table is based on the “Handbook for Application for Acknowledgement of Compliance (AOC)”, enclosure D.
- The references in this table apply in addition to the class requirements for the class notation Drilling unit.
- All references to NMA relates to the technical requirements in these regulations to satisfy PSA requirements, and not a full compliance for achieving Norwegian flag.

The following items covered by AOC are not included in this (N)-notation:
- Dynamic positioning plant (SFI 408)
- Machine tools, cutting and welding equipment (SFI 441 to 447)
- Lifting and transport equipment for machinery components (SFI 45)
- Life saving equipment (SFI 422, 501 to 503)
- Medical and dental equipment, medicines and first aid equipment (SFI 504)
- Furniture, inventory and entertainment equipment (SFI 54)
- Galley and pantry equipment, arrangement for provisions, ironing/drying equipment (SFI 55)
- Personnel lifts, escalators (SFI 561)
- Deck cranes (SFI 563)
- Helicopter decks (SFI 566)
- Winterisation and arctic operation issues (SFI 11)
- Working environment issues
- Compliance with EU-directives and European law
- Owner’s management systems.
2.2 Additional technical requirements stipulated by Norwegian Petroleum Safety Authority

2.2.1 The technical requirements given in [2.2] have been stipulated by PSA in letter to classification societies with N-notation, dated 2012-06-26, as applicable for mobile facilities following the Framework Regulations Sec.3. These requirements are to be considered as part of the scope of N-notation.

2.2.2 Special and primary steel for structural applications shall have documented impact toughness properties. This applies to both new and existing structures. Tests shall be made for each batch of materials. The test scope may be reduced for existing structures provided:
— The unit has a documented good service record from similar conditions as the NCS
— The quality system at the steel supplier is certified by the classification society and can demonstrate a historic record of satisfactory results from their Charpy-testing of similar steels produced.

2.2.3 Offshore structures shall be designed with a fatigue life of minimum 20 years.

2.2.4 A control shall be made in the accidental limit state (ALS) with environmental and accidental loads with an annual probability of exceedence of $10^{-4}$.

2.2.5 For units intended for continuous offshore operation for more than 5 years, the action coefficient for slender members shall be minimum 1.3.

2.2.6 Units shall resist collision energies of at least 35 MJ.

2.2.7 Other possible causes of damage than those indicated in NMA Stability Regulations and DNV GL rules shall also be taken into account.
An analysis of possible damage cases shall be made. The likelihood and consequences shall be reduced. (Ref. PSA Management Regulation section 17 on risk analyses and emergency preparedness assessments).

2.2.8 Units should be designed with as few openings to sea as possible under the waterline.

2.2.9 Maximum flow of fire water from fire water pumps (internal or external) shall not lead to weight or stability problems for the unit.

2.3 Limitations

2.3.1 The following aspects subject to PSA requirements are not included in the Drilling unit(N)-notation in addition to the limitations from the AOC handbook as given in Table 1:
— emergency preparedness
— owner’s management system for activities onboard as well as ashore
— development of risk analyses
— prevention of harmful effects of tobacco
— worker protection and working environment issues (including noise, room acoustics, vibration, lighting, indoor climate, radiation, ergonomic aspects)
— protection against pollution
— drilling plant (can be covered through DRILL(N), see Sec.7)
— cranes and lifting appliances
— radioactive sources
— potable water (regarding water quality)
— operational requirements
— regularity and reliability issues.

**Guidance note:**

NCS regulatory items not included in the (N)-notations as listed in [2.3.1] may be covered through separate verification services by DNV GL. A statement of compliance will be issued following completion of such services.

DNV GL is Notified Body for all relevant EU-directives, and may offer CE-marking services on a world-wide basis.

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2.3.2 The verification is limited to safety aspects of the applicable standards, rules and regulations.

## 3 Procedures for verification

### 3.1 Design verification and certification of materials and components

Extent of documentation and certification of materials and components shall be according to DNVGL-RU-OU-0101, *Rules for drilling and support units* and referred offshore standards for the specific disciplines.

### 3.2 Verification during construction, installation and commissioning

Verification during construction, installation and commissioning shall be carried out according to DNVGL-RU-OU-0101, *Rules for drilling and support units* and referred offshore standards for the specific disciplines.
SECTION 3 PRODUCTION AND/OR STORAGE UNIT(N)

1 Introduction

1.1 Application
The verification methodology described in this section may be applied to mobile offshore units satisfying the following criteria:
— The unit is being classed with DNV GL with minimum service notation Production unit or Production and storage unit
— The unit is registered with a national maritime administration.

1.2 Class notations
Classed units/installations complying with the relevant requirements of this section may, after completion of design reviews and surveys be assigned class notations:
— Production unit(N)
— Production and storage unit(N).

2 Technical requirements

2.1 Supplementary verification basis for Production unit(N)
The following SFI areas will be subject to additional design verification and survey as basis for assignment of the (N)-notation:

Table 1 Verification basis for Production unit(N) or Production and storage unit(N) (continued)

<table>
<thead>
<tr>
<th>SFI Code</th>
<th>Area</th>
<th>Verification reference for additional requirements</th>
<th>Notes / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stability</td>
<td>NMA Stability Regulations NMA Production Plant Regulations Sec.17, 2-3</td>
<td>Not applicable for self-elevating units</td>
</tr>
<tr>
<td>11</td>
<td>Arrangement *</td>
<td>PSA Facilities Regulations Sec.5, 7 and 8 incl. Guidelines NORSOK S-001 NS-EN ISO 13702 IEC 61508 NOG Guideline 070 NORSOK I-002 (Ch.4)</td>
<td></td>
</tr>
</tbody>
</table>
|          | Living Quarters *  | NMA Living Quarter Regs Sec.6, 7, 8, 12, 13, 14, 15, 17, and 18                                                       | PSA specify the following additional requirement:
<p>|          |                    |                                                                                                                     | — bunk beds should be replaced by beds on the floor                             |
|          | Escape ways *      | PSA Facility Regulations Sec.13 including guideline NORSOK S-001 Ch.5, 6 and 21                                       |                                                                                  |</p>
<table>
<thead>
<tr>
<th>SFI Code</th>
<th>Area</th>
<th>Verification reference for additional requirements</th>
<th>Notes / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Hazardous areas *</td>
<td>PSA Facility Regulations Sec.5 including Guideline IEC 61892-7</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Hull and Structures</td>
<td>NMA Construction Regulations Sec.6, 7 and 10, NMA Stability Regulations Sec.22 and Sec.30 (implications of these requirements),</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Turret</td>
<td>NMA Production Sec.15, 1-4</td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>Navigation and searching equipment</td>
<td>NMA Constructions Regulations</td>
<td></td>
</tr>
<tr>
<td>421</td>
<td>Radio plant</td>
<td>PSA Facility Regulations Sec.18 and 19, including Guidelines NORSOK S-001, Ch 17 for audio and visual alarms NORSOK T-001 and T-100 for alarm and communication systems</td>
<td>Specific requirements for alarms systems, see SFI 811</td>
</tr>
<tr>
<td>425</td>
<td>Calling systems, command telephone, telephone plants, walkie-talkies, etc.*</td>
<td>PSA Facility Regulations Sec.18 and 19, including Guidelines NORSOK S-001, Ch 17 for audio and visual alarms NORSOK T-001 and T-100 for alarm and communication systems</td>
<td></td>
</tr>
<tr>
<td>427</td>
<td>Light and signal equipment (lanterns, whistles, etc.)</td>
<td>NMA Construction Regulations</td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>Anchoring, mooring and towing equipment</td>
<td>NMA Anchoring Regulations NMA Towing Regulations</td>
<td>Not applicable for self-elevating units</td>
</tr>
<tr>
<td>441 - 447</td>
<td>Welding central</td>
<td>NMA Welding equipment</td>
<td></td>
</tr>
<tr>
<td>448</td>
<td>Name plates (markings) on machinery, equipment, pipes cables*</td>
<td>PSA Facility Regulations Sec.10 including Guideline NORSOK Z-DP-002</td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>VOC/blanket gas system</td>
<td>NMA Production Plant Regulations</td>
<td></td>
</tr>
<tr>
<td>488</td>
<td>Jacking system, spud tank jetting system for Jack-ups</td>
<td>PSA Facility Regulations Sec.46 including guideline NS-EN ISO 13702 Appendix B.8.12 NORSOK S-001 Ch.20.4.7 and 8 NORSOK S-001 Ch.22.4.2.6</td>
<td></td>
</tr>
<tr>
<td>505</td>
<td>Loose fire fighting apparatuses and equipment, firemen's suit *</td>
<td>PSA Facility Regulations Sec.46 including guideline NS-EN ISO 13702 Appendix B.8.12 NORSOK S-001 Ch.20.4.7 and 8 NORSOK S-001 Ch.22.4.2.6</td>
<td></td>
</tr>
<tr>
<td>SFI Code</td>
<td>Area</td>
<td>Verification reference for additional requirements</td>
<td>Notes / Comments</td>
</tr>
<tr>
<td>---------</td>
<td>------</td>
<td>---------------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>51</td>
<td>Insulation, panels, bulkheads, doors, side scuttles, windows, skylight *</td>
<td>PSA Facility Regulations Sec.29, 30, 31 including guidelines NORSOK S-001 Ch.19 ISO 834 ISO 3008 for doors ISO 3009 for windows IMO Resolution A.754 (18) for other types of penetrations such as ducts, pipes and cable penetrations NT Fire 021 (fire resistance tests) ISO 22899-1 (jet fires)</td>
<td>It is presupposed that requirements concerning watertight integrity and load line will be considered in SFI Area 1.</td>
</tr>
<tr>
<td>52</td>
<td>Internal deck covering, ladders, steps, railings etc.</td>
<td>NMA Construction Regulations NMA Living Quarter Regulations</td>
<td></td>
</tr>
</tbody>
</table>
| 53      | External deck covering, steps, ladders etc., fore-and-aft gangway | NMA Construction Regulations Sec.14,15,16,17 | Additional PSA requirements (ref. FR Sec.13):
   a) thresholds in access routes should be avoided or made as low as possible
   b) ladders, where there is danger of falling to a lower level, should have self-closing gates, cf. NORSOK S-002 Chapter 5.1.2. |
<p>| 57      | Ventilation, air-conditioning and heating system * | NS-EN ISO 15138 NORSOK H-003 NORSOK S-001 Ch.16.4 | PSA Additional requirement: Emergency power consumers should be limited to equipment that contributes to maintaining the facility’s integrity in an emergency situation. |
| 66      | Aggregates and generators for emergency power productions * | PSA Facility Regulations Sec.38 including Guideline NS-EN ISO 13702 Chapter 9 and Appendix C.1 NORSOK S-001 Ch.18 IMO 2009 MODU CODE Ch.5 NORSOK R-002 Ch.5.15 (for lifting equipment) | |
| 76      | Distilled and make-up water systems * | PSA Facility Regulations Sec.61 including Guideline NORSOK P-100 Ch.22 Norwegian Institute of Public Health’s guideline to design and operation of offshore potable water systems | |
| 79      | Automation systems for machinery | NMA Ballast Systems Regulations NMA Stability Regulations NMA Risk Analyses Regulations Sec.22 | |</p>
<table>
<thead>
<tr>
<th>SFI Code</th>
<th>Area</th>
<th>Verification reference for additional requirements</th>
<th>Notes / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>Ballast and bilge systems, gutter pipes outside accommodation</td>
<td>NMA Ballast Systems Regulations</td>
<td>Not applicable for self-elevating units</td>
</tr>
<tr>
<td>810</td>
<td>Fire detection, fire and lifeboat alarm systems</td>
<td>PSA Facilities Regulations Sec.32+ guidelines NS-EN ISO 13702 with Appendix B.6 NORSOK S-001 Ch.12 and 13</td>
<td></td>
</tr>
<tr>
<td>811</td>
<td>Fire detection, fire and lifeboat alarm systems</td>
<td>PSA Facilities Regulations Sec.17 including guidelines NORSOK S-001 Ch.9.5 NORSOK T-001 NORSOK T-100</td>
<td></td>
</tr>
<tr>
<td>812</td>
<td>Emergency shut down system</td>
<td>PSA Facilities Regulations Sec.33 including guidelines ISO 13702 Ch.6 and 7, App. B.2 and B.3 NORSOK S-001 Ch.10</td>
<td></td>
</tr>
<tr>
<td>813-819</td>
<td>Fire/wash down systems, emergency fire pumps, general service pumps, Fire fighting systems for external fires, Fire fighting systems with CO2 and Halon gases</td>
<td>PSA Facilities Regulations Sec.36 and Sec.37 including guidelines ISO 13702 Ch.11 and App. B.8 NORSOK S-001 Ch.20</td>
<td></td>
</tr>
<tr>
<td>82</td>
<td>Air and sounding systems from tank to deck</td>
<td>NMA Ballast Systems Regulations</td>
<td></td>
</tr>
<tr>
<td>85</td>
<td>Electrical systems general part*</td>
<td>PSA Facility Regulations Sec.47 including Guideline IEC 61892 series IEC 60092 series (relevant parts)</td>
<td></td>
</tr>
<tr>
<td>86</td>
<td>Electrical power supply*</td>
<td>PSA Facility Regulations Sec.47 including Guideline IEC 61892 series IEC 60092 series (relevant parts)</td>
<td>Refer to SFI 85</td>
</tr>
<tr>
<td>87</td>
<td>Electrical distribution common systems*</td>
<td>PSA Facility Regulations Sec.47 including Guideline IEC 61892 series IEC 60092 series (relevant parts)</td>
<td>Refer to SFI 85 Note: Refer to SFI Group 408 for dynamically positioned units</td>
</tr>
<tr>
<td>88</td>
<td>Electrical cable installation*</td>
<td>PSA Facility Regulations Sec.47 including Guideline IEC 61892 series IEC 60092 series (relevant parts)</td>
<td>Refer to SFI 85 Note: Refer to SFI Group 408 for dynamically positioned units</td>
</tr>
</tbody>
</table>
### Verification reference for additional requirements

<table>
<thead>
<tr>
<th>SFI Code</th>
<th>Area</th>
<th>Verification reference for additional requirements</th>
<th>Notes / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>89</td>
<td>Electrical consumers (lighting etc.)*</td>
<td>PSA Facility Regulations Sec.47 including Guideline IEC 61892 series IEC 60092 series (relevant parts)</td>
<td>Refer to SFI 85</td>
</tr>
</tbody>
</table>

* Where an asterix is used this denominates a deviation from the AOC handbook revision 4.

**Notes:**

- The table is based on the “Handbook for Application for Acknowledgement of Compliance (AOC)”, enclosure D, and the PSA Facility Regulations Guidelines with respect to defining limitations to the extent of application of “maritime regulations” for mobile facilities that are production facilities.
- The verification references in this table apply in addition to the class requirements for the class notation **Production unit and storage unit**.
- All references to NMA relates to the technical requirements in these regulations to satisfy PSA requirements, and not a full compliance for achieving Norwegian flag.

The following items covered by AOC are not included in this (N)-notation:

- dynamic positioning plant (SFI 408)
- machine tools, cutting and welding equipment (SFI 441 to 447)
- lifting and transport equipment for machinery components (SFI 45)
- life saving equipment (SFI 422, 501 to 503)
- medical and dental equipment, medicines and first aid equipment (SFI 504)
- furniture, inventory and entertainment equipment (SFI 54)
- galley and pantry equipment, arrangement for provisions, ironing/drying equipment (SFI 55)
- personnel lifts, escalators (SFI 561)
- deck cranes (SFI 563)
- helicopter decks (SFI 566)
- winterisation and arctic operation issues
- working environment issues
- compliance with EU-directives and European law
- owner’s management systems.

### 2.2 Additional technical requirements stipulated by PSA

#### 2.2.1

The technical requirements given in [2.2] and recommendations given in [2.3] have been stipulated by PSA in letter to classification societies with N-notation, dated 2012-06-26, as applicable for mobile facilities following the Framework Regulations Sec.3. These requirements and recommendations are to be considered as part of the scope of N-notation.

#### 2.2.2

Special and primary steel for structural applications shall have documented impact toughness properties. This applies to both new and existing structures. Tests shall be made for each batch of materials. The test scope may be reduced for existing structures provided:

- The unit has a documented good service record from similar conditions as the NCS
- The quality system at the steel supplier is certified by the classification society and can demonstrate a historic record of satisfactory results from their Charpy-testing of similar steels produced.

#### 2.2.3

Offshore structures shall be designed with a fatigue life of minimum 20 years.
2.2.4 A control shall be made in the accidental limit state (ALS) with environmental and accidental loads with an annual probability of exceedence of $10^{-4}$.

2.2.5 For units intended for continuous offshore operation for more than 5 years, the action coefficient for slender members shall be minimum 1.3.

2.2.6 Units shall resist collision energies of at least 35 MJ. FPSOs using tandem loading shall resist collision energies of at least 60 MJ in the stern.

2.2.7 Other possible causes of damage than those indicated in NMA Stability Regulations and DNV GL rules shall also be taken into account.

An analysis of possible damage cases shall be made. The likelihood and consequences shall be reduced. (Ref. PSA Management Regulation section 17 on risk analyses and emergency preparedness assessments).

2.2.8 Units should be designed with as few openings to sea as possible under the waterline.

2.2.9 Maximum flow of fire water from fire water pumps (internal or external) shall not lead to weight or stability problems for the unit.

2.2.10 FPSOs shall have a double hull arrangement as specified in MARPOL, covering the entire storage tank length including fuel tanks.

2.2.11 The distance between oil tight boundaries and external boundaries (e.g. side shell and bottom shell) of an FPSO shall be larger than two meter, to facilitate acceptable conditions for inspection and repair and protection against collision.

2.2.12 Provisions should be made such that the ballast system is not contaminated in case of a leakage between a ballast tank and an oil storage tank.

2.3 Recommendations for tandem offloading area and equipment on floating production and storage units stipulated by Norwegian Petroleum Safety Authority

2.3.1 The shape of the stern of FPSOs should be rounded or partly rounded to minimize consequences in case of collision between the unit and shuttle tankers.

2.3.2 The flare tower should be located in the centerline of the FPSO with a necessary distance from the stern to prevent contact between the flare tower and a “worst case” colliding shuttle tanker.

2.3.3 Only equipment to be used for offloading operation should be located at the stern. No lifeboats shall be located at the stern.

2.3.4 The hawser, hawser winch and fairlead should be located in the centerline of the unit.

2.3.5 The speed of the hawser winch should be adjustable up to 50 m/min.

2.3.6 The offloading hose should be stored on a drum, not in a chute. The storage drum shall be located next to the hawser winch.
2.3.7 Only void space or ballast tanks should be inside the stern of the hull. If ballast tanks are chosen, the water filling volume should be maximum 75% of the total tank volume.

2.3.8 All antennas for position reference systems should be placed in the correct height at the aft of the flare tower. Signal obstructions should be avoided.

2.3.9 Gutter bar(s) should be located around the offloading area. The height of the gutter bars shall be sufficient to prevent overboard spillage of oil when the vessel is rolling and not less than 400 mm.

2.3.10 Rupture disks included return pipe to cargo tank, should be arranged from the offloading pipe to prevent damages due to surge pressure.

2.3.11 The control stations should be a safe working place giving the necessary protection for the operator from a snatch broken rope or wire. The operator should have free view to all involved equipment and the shuttle tanker.

2.3.12 Adequate capacity of nitrogen or inert gas should be available to displace the offloading hose in maximum 15 minutes.

2.4 Limitations

2.4.1 The following aspects subject to PSA requirements are not included in the (N)-notation in addition to the limitations to the AOC handbook as given in Table 1:

— emergency preparedness
— owner’s management system for activities onboard as well as ashore
— development of risk analyses
— prevention of harmful effects of tobacco
— worker protection and working environment issues (including noise, room acoustics, vibration, lighting, indoor climate, radiation, ergonomic aspects)
— protection against pollution
— production plant (can be covered through PROD(N), see Sec.8)
— cranes and lifting appliances
— radioactive sources
— potable water (regarding water quality)
— operational requirements
— regularity and reliability issues.

Guidance note:
NCS regulatory items not included in the (N)-notations as listed in [2.4.1] may be covered through separate verification services by DNV GL. A statement of compliance will be issued following completion of such services.

DNV GL is Notified Body for all relevant EU-directives, and may offer CE-marking services on a world-wide basis.

---end---of---g-u-i-d-a-n-c-e---n-o-t-e---

2.4.2 The verification is limited to safety aspects of the applicable standards, rules and regulations.
3 Procedures for verification

3.1 Design verification and certification of materials and components

Extent of documentation and certification of materials and components shall be according to DNV GL rules for floating production, storage and loading units and referred offshore standards for the specific disciplines.

3.2 Survey during construction, installation and commissioning

Survey during construction, installation and commissioning shall be carried out according to rules for floating production, storage and loading units and referred offshore standards for the specific disciplines.
SECTION 4 STORAGE UNIT(N)

1 Introduction

1.1 Application
The verification methodology described in this section may be applied to mobile offshore units satisfying the following criteria:
— The unit is being classed with DNV GL with minimum service notation Storage unit
— The unit is registered with a national maritime administration.

1.2 Class notations
Classed units/installations complying with the relevant requirements of this section may, after completion of design reviews and surveys be assigned class notation Storage unit(N).

2 Technical requirements

2.1 Supplementary verification basis for Storage unit(N)
The following SFI areas will be subject to additional design verification and survey as basis for assignment of the (N)-notation:

Table 1 Verification basis for Storage unit(N) (continued)

<table>
<thead>
<tr>
<th>SFI Code</th>
<th>Area</th>
<th>Verification reference for additional requirements</th>
<th>Notes / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stability</td>
<td>NMA Stability Regulations</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NMA Production Plant Regulations</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sec.17, 2-3</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Arrangement *</td>
<td>NMA Construction Regulations</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NMA Living Quarter Regulations</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NMA Fire Regulations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Living Quarters *</td>
<td>NMA Living Quarter Regs Sec.6, 7, 8, 12, 13, 14, 15, 17, and 18</td>
<td>PSA specify the following additional requirement:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>— bunk beds should be replaced by beds on the floor</td>
</tr>
<tr>
<td></td>
<td>Escape ways *</td>
<td>NMA Construction Regulations</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NMA Living Quarter Regulations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hazardous areas *</td>
<td>NMA Fire Regulations</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Hull and Structures</td>
<td>NMA Construction Regulations Sec.6, 7 and 10,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NMA Stability Regulations Sec.22 and Sec.30 (implications of these requirements),</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Turret</td>
<td>NMA Production Sec.15, 1-4</td>
<td></td>
</tr>
<tr>
<td>SFI Code</td>
<td>Area</td>
<td>Verification reference for additional requirements</td>
<td>Notes / Comments</td>
</tr>
<tr>
<td>----------</td>
<td>------</td>
<td>-----------------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>36B</td>
<td>Offloading equipment including crude handling</td>
<td>The Facilities Regulations including guidelines Sec.10 Sec.66 NORSOK L-001 and L-002 <strong>DNVGL-OS-E201</strong> (Ch.2 Sec.12) NMA Production Regulations</td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>Navigation and searching equipment</td>
<td>NMA Constructions Regulations</td>
<td></td>
</tr>
<tr>
<td>421</td>
<td>Radio plant</td>
<td>NMA Radio Regulations</td>
<td></td>
</tr>
<tr>
<td>425</td>
<td>Calling systems, command telephone, telephone plants, walkie-talkies, etc. *</td>
<td>NMA Fire Regulations NMA Cranes Regulations NMA Anchoring Regulations</td>
<td>Specific requirements for alarms systems, see SFI 811</td>
</tr>
<tr>
<td>427</td>
<td>Light and signal equipment (lanterns, whistles, etc.)</td>
<td>NMA Construction Regulations</td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>Anchoring, mooring and towing equipment</td>
<td>NMA Anchoring Regulations NMA Towing Regulations</td>
<td></td>
</tr>
<tr>
<td>441 - 447</td>
<td>Welding central</td>
<td>NMA Welding equipment</td>
<td></td>
</tr>
<tr>
<td>448</td>
<td>Name plates (markings) on machinery, equipment, pipes cables*</td>
<td>NMA Protective, environmental</td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>VOC/blanket gas system</td>
<td>NMA Production Plant Regulations</td>
<td></td>
</tr>
<tr>
<td>505</td>
<td>Loose fire fighting apparatuses and equipment, firemen’s suit *</td>
<td>NMA Fire Regulations</td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>Insulation, panels, bulkheads, doors, side scuttles, windows, skylight *</td>
<td>NMA Construction Regulations NMA Living Quarter Regulations NMA Fire Regulations</td>
<td>It is presupposed that requirements concerning watertight integrity and load line will be considered in SFI Area 1.</td>
</tr>
<tr>
<td>52</td>
<td>Internal deck covering, ladders, steps, railings etc.</td>
<td>NMA Construction Regulations NMA Living Quarter Regulations</td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>External deck covering, steps, ladders etc., fore-and-aft gangway</td>
<td>NMA Construction Regulations Sec.14, 15, 16, 17</td>
<td>Additional PSA requirements (ref. FR Sec.13): a) thresholds in access routes should be avoided or made as low as possible b) ladders, where there is danger of falling to a lower level, should have self-closing gates, cf. NORSOK S-002 Chapter 5.1.2.</td>
</tr>
<tr>
<td>57</td>
<td>Ventilation, air-conditioning and heating system *</td>
<td>NMA Fire Regulations</td>
<td></td>
</tr>
<tr>
<td>SFI Code</td>
<td>Area</td>
<td>Verification reference for additional requirements</td>
<td>Notes / Comments</td>
</tr>
<tr>
<td>----------</td>
<td>----------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>66</td>
<td>Aggregates and generators for emergency power productions *</td>
<td>NMA Construction Regulations, NMA Production Plant Regulations</td>
<td>PSA Additional requirement: Emergency power consumers should be limited to equipment that contributes to maintaining the facility's integrity in an emergency situation.</td>
</tr>
<tr>
<td>76</td>
<td>Distilled and make-up water systems *</td>
<td>NMA Potable Water Regulations, Norwegian Institute of Public Health's guideline to design and operation of offshore potable water systems</td>
<td></td>
</tr>
<tr>
<td>79</td>
<td>Automation systems for machinery</td>
<td>NMA Ballast Systems Regulations, NMA Stability Regulations, NMA Risk Analyses Regulations Sec.22</td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>Ballast and bilge systems, gutter pipes outside accommodation</td>
<td>NMA Ballast Systems Regulations, NMA Pollution Regulations</td>
<td>Not applicable for self-elevating units</td>
</tr>
<tr>
<td>810</td>
<td>Fire detection, fire and lifeboat alarm systems</td>
<td>NMA Fire Regulations</td>
<td></td>
</tr>
<tr>
<td>811</td>
<td>Fire detection, fire and lifeboat alarm systems</td>
<td>NMA Fire Regulations</td>
<td></td>
</tr>
<tr>
<td>812</td>
<td>Emergency shut down system</td>
<td>NMA Fire Regulations</td>
<td>Ignition source control to comply with Facility Regulations sec.10a</td>
</tr>
<tr>
<td>813-819</td>
<td>Fire/wash down systems, emergency fire pumps, general service pumps, Fire fighting systems for external fires, Fire fighting systems with CO₂ and Halon gases</td>
<td>NMA Fire Regulations</td>
<td></td>
</tr>
<tr>
<td>82</td>
<td>Air and sounding systems from tank to deck</td>
<td>NMA Ballast Systems Regulations</td>
<td></td>
</tr>
<tr>
<td>85</td>
<td>Electrical systems general part*</td>
<td>NMA Construction DSB Regulations concerning maritime electrical installations</td>
<td></td>
</tr>
<tr>
<td>86</td>
<td>Electrical power supply*</td>
<td>NMA Construction DSB Regulations concerning maritime electrical installations</td>
<td>Refer to SFI 85</td>
</tr>
<tr>
<td>87</td>
<td>Electrical distribution common systems*</td>
<td>NMA Construction DSB Regulations concerning maritime electrical installations</td>
<td>Refer to SFI 85 Note: Refer to SFI Group 408 for dynamically positioned units</td>
</tr>
<tr>
<td>SFI Code</td>
<td>Area</td>
<td>Verification reference for additional requirements</td>
<td>Notes / Comments</td>
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</tr>
<tr>
<td>88</td>
<td>Electrical cable installation*</td>
<td>NMA Construction DSB Regulations concerning maritime electrical installations</td>
<td>Refer to SFI 85 Note: Refer to SFI Group 408 for dynamically positioned units</td>
</tr>
<tr>
<td>89</td>
<td>Electrical consumers (lighting etc.)*</td>
<td>NMA Construction DSB Regulations concerning maritime electrical installations</td>
<td>Refer to SFI 85</td>
</tr>
</tbody>
</table>

* Where an asterix is used this denominates a deviation from the AOC handbook revision 4

Notes:
- The table is based on the "Handbook for Application for Acknowledgement of Compliance (AOC)", enclosure D,
- The verification references in this table apply in addition to the class requirements for the class notations Storage unit.
- All references to NMA relates to the technical requirements in these regulations to satisfy PSA requirements, and not a full compliance for achieving Norwegian flag.

The following items covered by AOC are not included in this (N)-notation:
- dynamic positioning plant (SFI 408)
- machine tools, cutting and welding equipment (SFI 441 to 447)
- lifting and transport equipment for machinery components (SFI 45)
- life saving equipment (SFI 422, 501 to 503)
- medical and dental equipment, medicines and first aid equipment (SFI 504)
- furniture, inventory and entertainment equipment (SFI 54)
- galley and pantry equipment, arrangement for provisions, ironing/drying equipment (SFI 55)
- personnel lifts, escalators (SFI 561)
- deck cranes (SFI 563)
- helicopter decks (SFI 566)
- winterisation and arctic operation issues
- working environment issues
- compliance with EU-directives and European law
- owner's management systems.

### 2.2 Additional technical requirements stipulated by Norwegian Petroleum Safety Authority

**2.2.1** The technical requirements given in [2.2] and recommendations given in [2.3] have been stipulated by PSA in letter to classification societies with N-notation, dated 2012-06-26, as applicable for mobile facilities following the Framework Regulations Sec.3. These requirements and recommendations are to be considered as part of the scope of N-notation.

**2.2.2** Special and primary steel for structural applications shall have documented impact toughness properties. This applies to both new and existing structures. Tests shall be made for each batch of materials. The test scope may be reduced for existing structures provided:
- The unit has a documented good service record from similar conditions as the NCS
- The quality system at the steel supplier is certified by the classification society and can demonstrate a historic record of satisfactory results from their Charpy-testing of similar steels produced.
2.2.3 Offshore structures shall be designed with a fatigue life of minimum 20 years.

2.2.4 A control shall be made in the accidental limit state (ALS) with environmental and accidental loads with an annual probability of exceedence of $10^{-4}$.

2.2.5 For units intended for continuous offshore operation for more than 5 years, the action coefficient for slender members shall be minimum 1.3.

2.2.6 Units shall resist collision energies of at least 35 MJ. FSOs using tandem loading shall resist collision energies of at least 60 MJ in the stern.

2.2.7 Other possible causes of damage than those indicated in NMA Stability Regulations and DNV GL rules shall also be taken into account. An analysis of possible damage cases shall be made. The likelihood and consequences shall be reduced. (Ref. PSA Management Regulation section 17 on risk analyses and emergency preparedness assessments).

2.2.8 Units should be designed with as few openings to sea as possible under the waterline.

2.2.9 Maximum flow of fire water from fire water pumps (internal or external) shall not lead to weight or stability problems for the unit.

2.2.10 FSOs shall have a double hull arrangement as specified in MARPOL, covering the entire storage tank length including fuel tanks.

2.2.11 The distance between oil tight boundaries and external boundaries (e.g. side shell and bottom shell) of an FSO shall be larger than two meter, to facilitate acceptable conditions for inspection and repair and protection against collision.

2.2.12 Provisions should be made such that the ballast system is not contaminated in case of a leakage between a ballast tank and an oil storage tank.

2.3 Recommendations for tandem offloading area and equipment on floating storage units stipulated by Norwegian Petroleum Safety Authority

2.3.1 The shape of the stern of FSOs should be rounded or partly rounded to minimize consequences in case of collision between the unit and shuttle tankers.

2.3.2 Only equipment to be used for offloading operation should be located at the stern. No lifeboats shall be located at the stern.

2.3.3 The hawser, hawser winch and fairlead should be located in the centerline of the unit.

2.3.4 The speed of the hawser winch should be adjustable up to 50 m/min.

2.3.5 The offloading hose should be stored on a drum, not in a chute. The storage drum shall be located next to the hawser winch.

2.3.6 Only void space or ballast tanks should be inside the stern of the hull. If ballast tanks are chosen, the water filling volume should be maximum 75% of the total tank volume.
2.3.7 All antennas for position reference systems should be placed in the correct height. Signal obstructions should be avoided.

2.3.8 Gutter bar(s) should be located around the offloading area. The height of the gutter bars shall be sufficient to prevent overboard spillage of oil when the vessel is rolling and not less than 400 mm.

2.3.9 Rupture disks included return pipe to cargo tank, should be arranged from the offloading pipe to prevent damages due to surge pressure.

2.3.10 The control stations should be a safe working place giving the necessary protection for the operator from a snatch broken rope or wire. The operator should have free view to all involved equipment and the shuttle tanker.

2.3.11 Adequate capacity of nitrogen or inert gas should be available to displace the offloading hose in maximum 15 minutes.

2.4 Limitations

2.4.1 The following aspects subject to PSA requirements are not included in the \((N)\)-notation in addition to the limitations to the AOC handbook as given in Table 1:

- emergency preparedness
- owner’s management system for activities onboard as well as ashore
- development of risk analyses
- prevention of harmful effects of tobacco
- worker protection and working environment issues (including noise, room acoustics, vibration, lighting, indoor climate, radiation, ergonomic aspects)
- protection against pollution
- cranes and lifting appliances
- radioactive sources
- potable water (regarding water quality)
- operational requirements
- regularity and reliability issues.

Guidance note:

NCS regulatory items not included in the \((N)\)-notations as listed in [2.4.1] may be covered through separate verification services by DNV GL. A statement of compliance will be issued following completion of such services.

DNV GL is Notified Body for all relevant EU-directives, and may offer CE-marking services on a world-wide basis.

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2.4.2 The verification is limited to safety aspects of the applicable standards, rules and regulations.
3 Procedures for verification

3.1 Design verification and certification of materials and components
Extent of documentation and certification of materials and components shall be according to rules for floating production, storage and offloading units and referred offshore standards for the specific disciplines.

3.2 Survey during construction, installation and commissioning
Survey during construction, installation and commissioning shall be carried out according to rules for floating production, storage and offloading units and referred offshore standards for the specific disciplines.
SECTION 5 WELL INTERVENTION UNIT(N)

1 Introduction

1.1 Application

The verification methodology described in this section may be applied to mobile offshore units satisfying the following criteria:

— The unit is being classed with DNV GL with service notation Well intervention unit and Enhanced System notation, ES.
— The unit is registered with a national maritime administration (has flag).

1.2 Class notations

Classed units/installations complying with the relevant requirements of this section may, after completion of design reviews and surveys be assigned the class notation Well intervention unit(N).

2 Technical requirements

2.1 Supplementary verification basis for Well intervention unit(N)

The following SFI areas will be subject to additional design verification and survey as basis for assignment of the (N)-notation.

Table 1 Verification basis for Well intervention unit(N) (continued)

<table>
<thead>
<tr>
<th>SFI Code</th>
<th>Area</th>
<th>Verification reference for additional requirements</th>
<th>Notes / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stability</td>
<td>NMA Stability Regulations</td>
<td>Not applicable for self-elevating units</td>
</tr>
<tr>
<td></td>
<td>Arrangement</td>
<td>NMA Construction Regulations</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NMA Living Quarter Regulations</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NMA Fire Regulations</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Living Quarters *</td>
<td>PSA specify the following additional requirement:</td>
<td>PSA specify the following additional requirement:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>— bunk beds should be replaced by beds on the floor.</td>
<td>— bunk beds should be replaced by beds on the floor.</td>
</tr>
<tr>
<td></td>
<td>Escape ways</td>
<td>NMA Construction Regulations</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NMA Living Quarter Regulations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hazardous areas</td>
<td>NMA Fire Regulations</td>
<td>NMA refer to regulations concerning maritime electrical installations</td>
</tr>
<tr>
<td>2</td>
<td>Hull and Structures</td>
<td>NMD Construction Regulations Sec.6, 7 and 10,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NMA Stability Regulations Sec.22 and Sec.30 (implications of these requirements),</td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>Navigation and searching equipment</td>
<td>NMA Constructions Regulations</td>
<td></td>
</tr>
<tr>
<td>421</td>
<td>Radio plant</td>
<td>NMA Radio Regulations</td>
<td></td>
</tr>
<tr>
<td>SFI Code</td>
<td>Area</td>
<td>Verification reference for additional requirements</td>
<td>Notes / Comments</td>
</tr>
<tr>
<td>---------</td>
<td>------</td>
<td>-----------------------------------------------------</td>
<td>-----------------</td>
</tr>
</tbody>
</table>
| 425     | Calling systems, command telephone, telephone plants, walkie-talkies, etc. | NMA Fire Regulations  
NMA Cranes Regulations  
NMA Anchoring Regulations | Specific requirements for alarms systems, see SFI 811 |
| 427     | Light and signal equipment (lanterns, whistles, etc.) | NMA Construction Regulations | |
| 43      | Anchoring, mooring and towing equipment | NMD Anchoring Regulations  
NMD Production Plant Regulations  
NMA Towing Regulations | Not applicable for self-elevating units |
| 441 - 447 | Welding central | NMA Welding equipment | |
| 448     | Name plates (markings) on machinery, equipment, pipes cables | NMA Protective, environmental | |
| 488     | Jacking system, spud tank jetting system for Jack-ups | NMA Construction regulations | |
| 505     | Loose fire fighting apparatuses and equipment, firemen’s suit | NMA Fire Regulations | |
| 51      | Insulation, panels, bulkheads, doors, side scuttles, windows, skylight | NMA Construction Regulations  
NMA Living Quarter Regulations  
NMA Fire Regulations | It is presupposed that requirements concerning watertight integrity and load line will be considered in SFI Area 1. |
| 52      | Internal deck covering, ladders, steps, railings etc. | NMA Construction Regulations  
NMA Living Quarter Regulations | |
| 53      | External deck covering, steps, ladders weakly, fore-and-aft gangway | NMA Construction Regulations | |
| 57      | Ventilation, air-conditioning and heating system | NMA Fire Regulations | |
| 66      | Aggregates and generators for emergency power productions | NMA Construction Regulations | |
| 76      | Distilled and make-up water systems | NMA Potable Water Regulations | |
| 79      | Automation systems for machinery | NMA Ballast Systems Regulations  
NMA Stability Regulations  
NMA Fire Regulations  
NMA Risk Analyses Regulations Sec.22 | |
| 80      | Ballast and bilge systems, gutter pipes outside accommodation | NMA Ballast Systems Regulations  
NMA Pollution Regulations | Not applicable for self-elevating units |
<table>
<thead>
<tr>
<th>SFI Code</th>
<th>Area</th>
<th>Verification reference for additional requirements</th>
<th>Notes / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>810</td>
<td>Fire detection, fire and lifeboat alarm systems</td>
<td>NMA Fire Regulations</td>
<td>except specific requirements to sound and light alarms.</td>
</tr>
<tr>
<td>811</td>
<td>Fire detection, fire and lifeboat alarm systems</td>
<td>NMA Fire Regulations</td>
<td></td>
</tr>
<tr>
<td>812</td>
<td>Emergency shut down system</td>
<td>NMA Fire Regulations</td>
<td>Yes for the drilling unit part, &quot;no&quot; for process plant (well testing facilities shall be considered as a process for a drilling unit)</td>
</tr>
<tr>
<td>813 - 819</td>
<td>Fire/wash down systems, emergency fire pumps, general service pumps, Fire fighting systems for external fires, Fire fighting systems with CO₂ and Halon gases</td>
<td>NMA Fire Regulations</td>
<td></td>
</tr>
<tr>
<td>82</td>
<td>Air and sounding systems from tank to deck</td>
<td>NMA Ballast Systems Regulations</td>
<td></td>
</tr>
<tr>
<td>85</td>
<td>Electrical systems general part*</td>
<td>DNVGL-OS-D201</td>
<td>Refer to acknowledgement from PSA stating acceptance of use of DNVGL-OS-D201 in lieu of NMA</td>
</tr>
<tr>
<td>86</td>
<td>Electrical power supply*</td>
<td>DNVGL-OS-D201</td>
<td>Refer to SFI 85</td>
</tr>
<tr>
<td>87</td>
<td>Electrical distribution common systems*</td>
<td>DNVGL-OS-D201</td>
<td>Refer to SFI 85 Note: Refer to SFI Group 408 for dynamically positioned units</td>
</tr>
<tr>
<td>88</td>
<td>Electrical cable installation*</td>
<td>DNVGL-OS-D201</td>
<td>Refer to SFI 85 Note: Refer to SFI Group 408 for dynamically positioned units</td>
</tr>
<tr>
<td>89</td>
<td>Electrical consumers (lighting etc.)*</td>
<td>DNVGL-OS-D201</td>
<td>Refer to SFI 85</td>
</tr>
</tbody>
</table>
Verification reference for additional requirements

Notes / Comments

* Where an asterix is used this denominates a deviation from the AOC handbook revision 3

Notes:
— The table is based on the “Handbook for Application for Acknowledgement of Compliance (AOC)”, enclosure D.
— The verification references in this table apply in addition to the class requirements for the class notation Well Intervention Unit.
— All references to NMA relates to the technical requirements in these regulations to satisfy PSA requirements, and not a full compliance for achieving Norwegian flag.

The following items covered by AOC are not included in this (N)-notation:
— dynamic positioning plant (SFI 408)
— machine tools, cutting and welding equipment (SFI 441 to 447)
— lifting and transport equipment for machinery components (SFI 45)
— life saving equipment (SFI 422, 501 to 503)
— medical and dental equipment, medicines and first aid equipment (SFI 504)
— furniture, inventory and entertainment equipment (SFI 54)
— galley and pantry equipment, arrangement for provisions, ironing/drying equipment (SFI 55)
— personnel lifts, escalators (SFI 561)
— deck cranes (SFI 563)
— helicopter decks (SFI 566)
— winterisation and arctic operation issues
— working environment issues
— compliance with EU-directives and European law
— owner's management systems.

2.2 Additional technical requirements stipulated by Norwegian Petroleum Safety Authority

2.2.1 The technical requirements given in [2.2] have been stipulated by PSA in letter to classification societies with N-notation, dated 2012-06-26, as applicable for mobile facilities following the Framework Regulations Sec.3. These requirements are to be considered as part of the scope of N-notation.

2.2.2 Special and primary steel for structural applications shall have documented impact toughness properties. This applies to both new and existing structures. Tests shall be made for each batch of materials. The test scope may be reduced for existing structures provided:
— The unit has a documented good service record from similar conditions as the NCS
— The quality system at the steel supplier is certified by the classification society and can demonstrate a historic record of satisfactory results from their Charpy-testing of similar steels produced.

2.2.3 Offshore structures shall be designed with a fatigue life of minimum 20 years.

2.2.4 A control shall be made in the accidental limit state (ALS) with environmental and accidental loads with an annual probability of exceedence of $10^{-4}$.

2.2.5 Units shall resist collision energies of at least 35 MJ.
2.2.6 Other possible causes of damage than those indicated in NMA Stability Regulations and DNV GL rules shall also be taken into account. An analysis of possible damage cases shall be made. The likelihood and consequences shall be reduced. (Ref. PSA Management Regulation section 17 on risk analyses and emergency preparedness assessments).

2.2.7 Units should be designed with as few openings to sea as possible under the waterline.

2.2.8 Maximum flow of fire water from fire water pumps (internal or external) shall not lead to weight or stability problems for the unit.

2.3 Limitations

2.3.1 The following aspects subject to PSA requirements are not included in the (N)-notation in addition to the limitations to the AOC handbook as given in Table 1:

— emergency preparedness
— owner’s management system for activities onboard as well as ashore
— development of risk analyses
— prevention of harmful effects of tobacco
— worker protection and working environment issues (including noise, room acoustics, vibration, lighting, indoor climate, radiation, ergonomic aspects)
— protection against pollution
— cranes and lifting appliances
— radioactive sources
— potable water (regarding water quality)
— operational requirements
— regularity and reliability issues.

Guidance note:
NCS regulatory items not included in the (N)-notations as listed in [2.3.1] may be covered through separate verification services by DNV GL. A statement of compliance will be issued following completion of such services.

DNV GL is Notified Body for all relevant EU-directives, and may offer CE-marking services on a world-wide basis.

2.3.2 The verification is limited to safety aspects of the applicable standards, rules and regulations.

3 Procedures for verification

3.1 Design verification and certification of materials and components
Extent of documentation and certification of materials and components shall be according to rules for drilling and support units and referred offshore standards for the specific disciplines.

3.2 Survey during construction, installation and commissioning
Survey during construction, installation and commissioning shall be carried out according to rules for drilling and support units and referred offshore standards for the specific disciplines.
SECTION 6 ACCOMMODATION UNIT(N)

1 Introduction

1.1 Application
The verification methodology described in this section may be applied to mobile offshore units satisfying the following criteria:
— The unit is being classed with DNV GL with service notation Accommodation unit
— The unit is registered with a national maritime administration (flagged).

1.2 Class notations
Classed units/installations complying with the relevant requirements of this section may, after completion of design reviews and surveys be assigned the class notation Accommodation unit(N).

2 Technical requirements

2.1 Supplementary verification basis for Accommodation unit(N)
The following SFI areas will be subject to additional design verification and survey as basis for assignment of the (N)-notation.

Table 1 Verification basis for Accommodation unit(N) (continued)

<table>
<thead>
<tr>
<th>SFI Code</th>
<th>Area</th>
<th>Verification reference for additional requirements</th>
<th>Notes / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stability</td>
<td>NMA Stability Regulations</td>
<td>Not applicable for self-elevating units</td>
</tr>
<tr>
<td>1</td>
<td>Arrangement</td>
<td>NMA Construction Regulations, NMA Living Quarter Regulations, NMA Fire Regulations</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Living Quarters *</td>
<td>PSA specify the following additional requirement:</td>
<td>PSA specify the following additional requirement:</td>
</tr>
<tr>
<td>11</td>
<td>Escape ways</td>
<td>NMA Construction Regulations, NMA Living Quarter Regulations</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Hazardous areas</td>
<td>NMA Fire Regulations</td>
<td>NMA refer to regulations concerning maritime electrical installations</td>
</tr>
<tr>
<td>2</td>
<td>Hull and Structures</td>
<td>NMA Construction Regulations Sec.6, 7 and 10, NMA Stability Regulations Sec.22 and Sec.30 (implications of these requirements),</td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>Navigation and searching equipment</td>
<td>NMA Construction Regulations</td>
<td></td>
</tr>
<tr>
<td>421</td>
<td>Radio plant</td>
<td>NMA Radio Regulations</td>
<td></td>
</tr>
<tr>
<td>SFI Code</td>
<td>Area</td>
<td>Verification reference for additional requirements</td>
<td>Notes / Comments</td>
</tr>
<tr>
<td>----------</td>
<td>------</td>
<td>----------------------------------------------------</td>
<td>------------------</td>
</tr>
</tbody>
</table>
| 425      | Calling systems, command telephone, telephone plants, walkie-talkies, etc. | NMA Fire Regulations  
NMA Cranes Regulations  
NMA Anchoring Regulations | Specific requirements for alarms systems, see SFI 811 |
| 427      | Light and signal equipment (lanterns, whistles, etc.) | NMA Construction Regulations | |
| 43       | Anchoring, mooring and towing equipment | NMA Anchoring Regulations  
NMA Production Plant Regulations  
NMA Towing Regulations | Not applicable for self-elevating units |
| 441 - 447 | Welding central | NMA Welding equipment | |
| 448      | Name plates (markings) on machinery, equipment, pipes, cables | NMA Protective, environmental | |
| 488      | Jacking system, spud tank jetting system for Jack-ups | NMA Construction regulations | |
| 505      | Loose fire fighting apparatuses and equipment, firemen's suit | NMA Fire Regulations | |
| 51       | Insulation, panels, bulkheads, doors, side scuttles, windows, skylight | NMA Construction Regulations  
NMA Living Quarter Regulations  
NMA Fire Regulations | It is presupposed that requirements concerning watertight integrity and load line will be considered in SFI Area 1. |
| 52       | Internal deck covering, ladders, steps, railings etc. | NMA Construction Regulations  
NMA Living Quarter Regulations | |
| 53       | External deck covering, steps, ladders etc., fore-and-aft gangway | NMA Construction Regulations | |
| 57       | Ventilation, air-conditioning and heating system | NMA Fire Regulations | |
| 66       | Aggregates and generators for emergency power productions | NMA Construction Regulations | |
| 76       | Distilled and make-up water systems | NMA Potable Water Regulations | |
| 79       | Automation systems for machinery | NMA Ballast Systems Regulations  
NMA Stability Regulations  
NMA Fire Regulations  
NMA Risk Analyses Regulations Sec.22 | |
| 80       | Ballast and bilge systems, gutter pipes outside accommodation | NMA Ballast Systems Regulations  
NMA Pollution Regulations | Not applicable for self-elevating units |
<p>| 810      | Fire detection, fire and lifeboat alarm systems | NMA Fire Regulations | except specific requirements to sound and light alarms. |</p>
<table>
<thead>
<tr>
<th>SFI Code</th>
<th>Area</th>
<th>Verification reference for additional requirements</th>
<th>Notes / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>811</td>
<td>Fire detection, fire and lifeboat alarm systems</td>
<td>NMA Fire Regulations</td>
<td></td>
</tr>
<tr>
<td>812</td>
<td>Emergency shut down system</td>
<td>NMA Fire Regulations</td>
<td>Yes for the drilling unit part, “no” for process plant (well testing facilities shall be considered as a process for a drilling unit)</td>
</tr>
<tr>
<td>813-819</td>
<td>Fire/wash down systems, emergency fire pumps, general service pumps, Fire fighting systems for external fires, Fire fighting systems with CO&lt;sub&gt;2&lt;/sub&gt; and Halon gases</td>
<td>NMA Fire Regulations</td>
<td></td>
</tr>
<tr>
<td>82</td>
<td>Air and sounding systems from tank to deck</td>
<td>NMA Ballast Systems Regulations</td>
<td></td>
</tr>
<tr>
<td>85</td>
<td>Electrical systems general part*</td>
<td>DNVGL-OS-D201</td>
<td>Refer to acknowledgement from PSA stating acceptance of use of DNVGL-OS-D201 in lieu of NMA</td>
</tr>
<tr>
<td>86</td>
<td>Electrical power supply*</td>
<td>DNVGL-OS-D201</td>
<td>Refer to SFI 85</td>
</tr>
<tr>
<td>87</td>
<td>Electrical distribution common systems*</td>
<td>DNVGL-OS-D201</td>
<td>Refer to SFI 85 Note: Refer to SFI Group 408 for dynamically positioned units</td>
</tr>
<tr>
<td>88</td>
<td>Electrical cable installation*</td>
<td>DNVGL-OS-D201</td>
<td>Refer to SFI 85 Note: Refer to SFI Group 408 for dynamically positioned units</td>
</tr>
<tr>
<td>89</td>
<td>Electrical consumers (lighting etc.)*</td>
<td>DNVGL-OS-D201</td>
<td>Refer to SFI 85</td>
</tr>
</tbody>
</table>
### Verification for compliance with Norwegian shelf regulations

<table>
<thead>
<tr>
<th><strong>SFI Code</strong></th>
<th><strong>Area</strong></th>
<th><strong>Verification reference for additional requirements</strong></th>
<th><strong>Notes / Comments</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Where an asterix is used this denominates a deviation from the AOC handbook revision 4.

**Notes:**
- The table is based on the “Handbook for Application for Acknowledgement of Compliance (AOC)”, enclosure D.
- The verification references in this table apply in addition to the class requirements for the class notation Accommodation unit.
- All references to NMA relates to the technical requirements in these regulations to satisfy PSA requirements, and not a full compliance for achieving Norwegian flag.

The following items covered by AOC are not included in this (N)-notation:
- dynamic positioning plant (SFI 408)
- machine tools, cutting and welding equipment (SFI 441 to 447)
- lifting and transport equipment for machinery components (SFI 45)
- life saving equipment (SFI 422, 501 to 503)
- medical and dental equipment, medicines and first aid equipment (SFI 504)
- furniture, inventory and entertainment equipment (SFI 54)
- galley and pantry equipment, arrangement for provisions, ironing/drying equipment (SFI 55)
- personnel lifts, escalators (SFI 561)
- deck cranes (SFI 563)
- helicopter decks (SFI 566)
- winterisation and arctic operation issues
- working environment issues
- compliance with EU-directives and European law
- owner’s management systems.

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### 2.2 Additional technical requirements stipulated by Norwegian Petroleum Safety Authority

**2.2.1** The technical requirements given in [2.2] have been stipulated by PSA in letter to classification societies with N-notation, dated 2012-06-26, as applicable for mobile facilities following the Framework Regulations Sec.3. These requirements are to be considered as part of the scope of N-notation.

**2.2.2** Special and primary steel for structural applications shall have documented impact toughness properties. This applies to both new and existing structures. Tests shall be made for each batch of materials. The test scope may be reduced for existing structures provided:
- The unit has a documented good service record from similar conditions as the NCS
- The quality system at the steel supplier is certified by the classification society and can demonstrate a historic record of satisfactory results from their Charpy-testing of similar steels produced.

**2.2.3** Offshore structures shall be designed with a fatigue life of minimum 20 years.

**2.2.4** A control shall be made in the accidental limit state (ALS) with environmental and accidental loads with an annual probability of exceedence of $10^{-4}$.

**2.2.5** Units shall resist collision energies of at least 35 MJ.
2.2.6 Other possible causes of damage than those indicated in NMA Stability Regulations and DNV GL rules shall also be taken into account.

An analysis of possible damage cases shall be made. The likelihood and consequences shall be reduced. (Ref. PSA Management Regulation section 17 on risk analyses and emergency preparedness assessments).

2.2.7 Units should be designed with as few openings to sea as possible under the waterline.

2.2.8 Maximum flow of fire water from fire water pumps (internal or external) shall not lead to weight or stability problems for the unit.

2.3 Limitations

2.3.1 The following aspects subject to PSA requirements are not included in the (N)-notation in addition to the limitations to the AOC handbook as given in Table 1:

- emergency preparedness
- owner's management system for activities onboard as well as ashore
- development of risk analyses
- prevention of harmful effects of tobacco
- worker protection and working environment issues (including noise, room acoustics, vibration, lighting, indoor climate, radiation, ergonomic aspects)
- protection against pollution
- cranes and lifting appliances
- radioactive sources
- potable water (regarding water quality)
- operational requirements
- regularity and reliability issues.

Guidance note:
NCS regulatory items not included in the (N)-notations as listed in [2.3.1] may be covered through separate verification services by DNV GL. A "Statement of Compliance" will be issued following completion of such services.

DNV GL is Notified Body for all relevant EU-directives, and may offer CE-marking services on a world-wide basis.

---e-n-d---o-f---g-u-i-d-a-n-c-e---n-o-t-e---

2.3.2 The verification is limited to safety aspects of the applicable standards, rules and regulations.

3 Procedures for verification

3.1 Design verification and certification of materials and components

Extent of documentation and certification of materials and components shall be according to rules for drilling and support units and referred offshore standards for the specific disciplines.

3.2 Survey during construction, installation and commissioning

Survey during construction, installation and commissioning shall be carried out according to rules for drilling and support units and referred offshore standards for the specific disciplines.
SECTION 7 DRILL(N)

1 Introduction

1.1 Application

The verification methodology described in this section may be applied to drilling plants on mobile offshore units being classed with DNV GL with minimum class notations Drilling unit and DRILL.

Guidance note:

DNV GL recommend that the unit has Drilling unit(N)-notation in order to minimize challenges on interfaces between drilling plant and vessel.

1.2 Class notations

1.2.1 Units equipped with drilling plants which have been designed, constructed and installed in accordance with the requirements of this section under the supervision of DNV GL will be entitled to the class notation DRILL(N).

1.2.2 DNV GL may accept decisions by PSA as basis for assigning class notation (N).

2 Technical requirements

2.1 General

2.1.1 Drilling systems and equipment for use on the Norwegian continental shelf shall comply with the provisions given in the PSA regulations and referred standards in the corresponding PSA guidelines.

2.1.2 DNVGL-OS-E101 (the technical basis for class notation DRILL) is listed in PSA regulations as an acceptable reference standard for drilling plants on mobile facilities registered in a national ship register.

2.2 Supplementary verification for DRILL(N)

In addition to complying with DNVGL-OS-E101 requirements given in Table 1 shall be complied with for DRILL(N)-notation:

Table 1 Verification basis for DRILL(N) (continued)

<table>
<thead>
<tr>
<th>SFI Code</th>
<th>Area</th>
<th>Verification reference for additional requirements</th>
<th>Notes / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>30A</td>
<td>Derrick with components</td>
<td>PSA Facilities Regulations Sec.10 and Sec.11, including guidelines DNV GL Offshore Standard DNVGL-OS-E101</td>
<td></td>
</tr>
<tr>
<td>31A</td>
<td>Drill floor equipment and systems</td>
<td>PSA Facilities Regulations Sec.10 and Sec.53, including guidelines The Activities Regulations Sec.89 including guidelines DNV GL Offshore Standard DNVGL-OS-E101</td>
<td></td>
</tr>
<tr>
<td>32A</td>
<td>Bulk and mud systems</td>
<td>PSA Facilities Regulations Sec.10 Sec.51 Sec.52, including guidelines DNV GL Offshore Standard DNVGL-OS-E101</td>
<td></td>
</tr>
<tr>
<td><strong>SFI Code</strong></td>
<td><strong>Area</strong></td>
<td><strong>Verification reference for additional requirements</strong></td>
<td><strong>Notes / Comments</strong></td>
</tr>
<tr>
<td>-------------</td>
<td>----------</td>
<td>-------------------------------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>33A</td>
<td>Well control equipment and systems</td>
<td>PSA Facilities Regulations Sec.10 Sec.48 Sec.49 Sec.50, including guidelines DNV GL Offshore Standard <a href="https://www.dnv.com">DNVGL-OS-E101</a></td>
<td></td>
</tr>
<tr>
<td>34A</td>
<td>Pipe handling equipment and systems</td>
<td>PSA Facilities Regulations Sec.10 Sec.69, including guidelines The Activities Regulations Sec.89, including guidelines DNV GL Offshore Standard <a href="https://www.dnv.com">DNVGL-OS-E101</a></td>
<td></td>
</tr>
<tr>
<td>36A</td>
<td>Material handling equipment and systems</td>
<td>The Facilities Regulations Sec.10, Sec.69, including guidelines The Activities Regulations Sec.89, including guidelines DNV GL Offshore Standard <a href="https://www.dnv.com">DNVGL-OS-E101</a></td>
<td></td>
</tr>
<tr>
<td>37A</td>
<td>Service equipment and systems</td>
<td>PSA Facilities Regulations Sec.10, 27 and 53, including guidelines DNV GL Offshore Standard <a href="https://www.dnv.com">DNVGL-OS-E101</a></td>
<td></td>
</tr>
<tr>
<td>38A</td>
<td>Miscellaneous equipment, systems and services</td>
<td>PSA Facilities Regulations Sec.10, 27 and 53, including guidelines DNV GL Offshore Standard <a href="https://www.dnv.com">DNVGL-OS-E101</a></td>
<td></td>
</tr>
<tr>
<td>39A</td>
<td>Marine riser, Riser Compensator and Drillstring</td>
<td>PSA Facilities Regulations Sec.10 Sec.50 including guidelines DNV GL Offshore Standard <a href="https://www.dnv.com">DNVGL-OS-E101</a></td>
<td></td>
</tr>
<tr>
<td>561</td>
<td>Personnel transport equipment</td>
<td>PSA Facility Regulations Sec.27, including guidelines</td>
<td>Limited to installation inside drilling facilities</td>
</tr>
</tbody>
</table>

**Notes:**

— The table is based on the “Handbook for Application for Acknowledgement of Compliance (AOC)”, enclosure D
— The verification references in this table apply in addition to the class requirements for the class notation **DRILL**

The following items covered by AOC are not included in (N)-notation:

— winterisation and arctic operation issues
— working environment issues
— compliance with EU-directives and European law
— owner’s management systems.
2.3 Limitations

2.3.1 The following aspects subject to PSA requirements are not included in the DRILL(N)-notation in addition to the limitations to the AOC handbook as given in Table 1:

- regularity and reliability issues
- development of risk analyses
- worker protection and working environment issues (including noise, vibration, radiation, ergonomic aspects)
- protection against pollution
- operational requirements.

Guidance note:
NCS regulatory items not included in the (N)-notations as listed in [2.3.1] may be covered through separate verification services by DNV GL. A statement of compliance will be issued following completion of such services.

DNV GL is Notified Body for all relevant EU-directives, and may offer CE-marking services on a world-wide basis.

---e-n-d---o-f---g-u-i-d-a-n-c-e---n-o-t-e---

2.3.2 The verification is limited to safety aspects of the applicable standards, rules and regulations.

3 Procedures for verification

3.1 Design verification and certification of materials and components
Extent of documentation and certification of materials and components shall be according to DNVGL-OS-E101.

3.2 Survey during construction, installation and commissioning
Survey during construction, installation and commissioning shall be carried out according to DNVGL-OS-E101.
SECTION 8 PROD(N)

1 Introduction

1.1 Application
The verification methodology described in this section may be applied to production plants on mobile offshore units being classed with DNV GL with service notation Production unit.

Guidance note:
DNV GL recommend that the unit has Production unit(N)-notation in order to minimize challenges on interfaces between production plant and vessel.

1.2 Class notations

1.2.1 Units equipped with production plants complying with the requirements of this section may, after completion of design reviews and surveys be assigned the class notation: PROD(N).

1.2.2 DNV GL may accept decisions by PSA as basis for assigning class notation (N).

2 Technical requirements

2.1 General
Production systems and equipment for use on the Norwegian continental shelf shall comply directly with the provisions given in the PSA regulations and referred standards in the corresponding PSA guidelines.

2.2 Supplementary verification for PROD(N)
The following SFI areas will be subject to additional design verification and survey as basis for assignment of the (N)-notation.

Table 1 Verification basis for PROD(N) (continued)

<table>
<thead>
<tr>
<th>SFI Code</th>
<th>Area</th>
<th>Verification reference for additional requirements</th>
<th>Notes / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>301B</td>
<td>Inlet from risers, manifolds, swivel etc. (field specific conditions)</td>
<td>PSA Facilities Regulations including guidelines Sec.10 Sec.11 Sec.12 Sec.55 NORSOK: S-001, L-001, L-002, P-001, P-100, R-004, M-001, M-601, R-001 NS-EN ISO: 13702</td>
<td></td>
</tr>
<tr>
<td>302B</td>
<td>Separation Equipment (including water treatment)</td>
<td>PSA Facilities Regulations including guidelines Sec.10 Sec.11 Sec.12 Sec.55 NORSOK: S-001, L-001, L-002, P-001, P-100, R-004, M-001, M-601, R-001, R-100, S-005 NS-EN ISO: 13702</td>
<td></td>
</tr>
<tr>
<td>SFI Code</td>
<td>Area</td>
<td>Verification reference for additional requirements</td>
<td>Notes / Comments</td>
</tr>
<tr>
<td>----------</td>
<td>------</td>
<td>----------------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>303B</td>
<td>Compression Equipment</td>
<td>PSA Facilities Regulations including guidelines Sec.10 Sec.11 Sec.12 Sec.24 Sec.55 NORSOK: S-001, L-001, L-002, P-001, P-100, R-004, M-001, M-601, R-001, R-100, S-005 NS-4931 NS-EN ISO: 13702</td>
<td></td>
</tr>
<tr>
<td>304B</td>
<td>Water Injection equipment</td>
<td>PSA Facilities Regulations including guidelines Sec.10 Sec.11 Sec.12 Sec.55 NORSOK: S-001, L-001, L-002, P-001, P-100, R-004, M-001, M-601, R-001 NS-EN ISO: 13702</td>
<td></td>
</tr>
<tr>
<td>31B</td>
<td>Auxiliary Equipment, Dedicated Process Equipment</td>
<td>PSA Facilities Regulations including guidelines Sec.10 Sec.11 Sec.12 Sec.55 NORSOK: S-001, L-001, L-002, P-001, P-100, R-004, M-001, M-601, R-001 NS-EN ISO: 13702</td>
<td></td>
</tr>
<tr>
<td>32B</td>
<td>Chemicals Equipment</td>
<td>PSA Facilities Regulations including guidelines Sec.10 Sec.11 Sec.12 Sec.15 Sec.55 NORSOK: S-001, L-001, L-002, P-001, P-100, R-004, M-001, M-601, R-001 NS-EN ISO: 13702</td>
<td></td>
</tr>
<tr>
<td>331B</td>
<td>Process Shut Down (PSD)</td>
<td>The Facilities Regulations including guidelines Sec.8 Sec.21 Sec.34 Sec.35 NORSOK: I-002, P-001, P-002. S-001 ISO, 10418 (API RP 14C) ISO 4126 (API RP 520) ISO 23251 (API 521). IEC: 61508, NOROG(ex.OLF): Guideline 70 PSA: YA-710 NS-EN; 614 and 894</td>
<td></td>
</tr>
<tr>
<td>332B</td>
<td>Emergency Shut Down (ESD)</td>
<td>The Facilities Regulations including guidelines Sec.8 Sec.21 Sec.33 NORSOK: S-001, L-001, L-002, P-001, P-100, R-004, M-001, M-601, R-001 NS-EN ISO: 13702</td>
<td></td>
</tr>
<tr>
<td>333B</td>
<td>De-pressurisation, Safety Valves, Corresponding Flare System</td>
<td>The Facilities Regulations including guidelines Sec.8 Sec.21 Sec.33 NORSOK: S-001, L-001, L-002, P-001, P-100, R-004, M-001, M-601, R-001 NS-EN ISO: 13702</td>
<td></td>
</tr>
<tr>
<td>334B</td>
<td>Open drain for process facility</td>
<td>The Facilities Regulations including guidelines Sec.8 Sec.10 Sec.40 NORSOK: S-001, L-001, L-002, P-001, P-100, NS-EN ISO 13702</td>
<td></td>
</tr>
<tr>
<td>SFI Code</td>
<td>Area</td>
<td>Verification reference for additional requirements</td>
<td>Notes / Comments</td>
</tr>
<tr>
<td>----------</td>
<td>------</td>
<td>-----------------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>34B</td>
<td>Load bearing structure for process equipment</td>
<td>The Facilities Regulations including guidelines Sec.5 Sec.11 Sec.12 Sec.56 NORSOK N-001, N-003, N-004, M-101, S-001 NS-EN ISO 13702</td>
<td></td>
</tr>
<tr>
<td>36B</td>
<td>Offloading equipment</td>
<td>The Facilities Regulations including guidelines Sec.10 Sec.66 NORSOK L-001 and L-002 DNVGL-OS-E201 (Ch.2 Sec.12) NMA Production Regulations</td>
<td></td>
</tr>
<tr>
<td>37B</td>
<td>Metering for oil &amp; gas export/-injection, combustion gas, flaring of gas etc.</td>
<td>The Facilities Regulations including guidelines Sec.10 Sec.17 The Management Regulation including guidelines Sec.19</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- The table is based on the “Handbook for Application for Acknowledgement of Compliance (AOC)”, enclosure D.
- The following items covered by AOC are not included in (N)-notation:
  - winterisation and arctic operation issues
  - working environment issues
  - compliance with EU-directives and European law
  - owner’s management systems.

### 2.3 Limitations

2.3.1 The following aspects subject to PSA requirements are not included in the (N)-notation in addition to the limitations to the AOC handbook as given in Table 1:
- regularity and reliability issues
- development of risk analyses
- worker protection and working environment issues (including noise, vibration, radiation, ergonomic aspects)
- protection against pollution
- operational requirements.

**Guidance note:**
NCS regulatory items not included in the (N)-notations as listed in [2.3.1] may be covered through separate verification services by DNV GL. A statement of compliance will be issued following completion of such services.
DNV GL is Notified Body for all relevant EU-directives, and may offer CE-marking services on a world-wide basis.

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2.3.2 The verification is limited to safety aspects of the applicable standards, rules and regulations.
3 Procedures for verification

3.1 Design verification and certification of materials and components
Extent of documentation and certification of materials and components shall be according to DNVGL-OS-E201.

3.2 Survey during construction, installation and commissioning
Survey during construction, installation and commissioning shall be carried out according to DNVGL-OS-E201.
SECTION 9 WELL(N)

1 Introduction

1.1 Application

The verification methodology described in this section may be applied to well intervention equipment on mobile offshore units being classed with DNV GL with service notation Well intervention unit and WELL.

Guidance note:
DNV GL recommend that the unit has Well intervention unit(N)-notation in order to minimize challenges on interfaces between well intervention equipment and vessel.

---e-n-d---o-f---g-u-i-d-a-n-c-e---n-o-t-e---

1.2 Class notations

1.2.1 Units equipped with well intervention equipment complying with the requirements of this section may, after completion of design reviews and surveys be assigned the class notation: WELL(N).

1.2.2 DNV GL may accept decisions by PSA as basis for assigning class notation (N).

2 Technical requirements

2.1 General

2.1.1 Well intervention equipment and systems for use on the Norwegian continental shelf shall comply with the provisions given in the PSA regulations and referred standards in the corresponding PSA guidelines.

2.1.2 DNVGL-OS-E101 (the technical basis for class notation DRILL) is listed in PSA regulations as an acceptable reference standard for drilling and well intervention plants on mobile facilities registered in a national ship register.

2.2 Supplementary verification for WELL(N)

2.2.1 The following regulations and standards shall be complied with for WELL(N)-notation:

Table 1 Verification basis for WELL(N) (continued)

<table>
<thead>
<tr>
<th>SFI Code</th>
<th>Area</th>
<th>Verification reference</th>
<th>Notes / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>30C</td>
<td>Drilling derrick w/ components</td>
<td>PSA Facilities Regulations including guidelines Sec.10 DNVGL-OS-E101</td>
<td></td>
</tr>
<tr>
<td>31C</td>
<td>Work floor, equipment and systems</td>
<td>The Facilities Regulations including guidelines Sec.10 Sec.69 The Activities Regulations including guidelines Sec.86 DNVGL-OS-E101</td>
<td></td>
</tr>
<tr>
<td>32C</td>
<td>Bulk- and drill fluid systems</td>
<td>The Facilities Regulations including guidelines Sec.10, Sec 51 DNVGL-OS-E101</td>
<td></td>
</tr>
<tr>
<td>SFI Code</td>
<td>Area</td>
<td>Verification reference</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>33C</td>
<td>Well control, equipment and systems</td>
<td>The Facilities Regulations including guidelines Secs.10, 40, 48, 49 DNVGL-OS-E101</td>
<td></td>
</tr>
<tr>
<td>36C</td>
<td>Material handling, equipment and systems</td>
<td>The Facilities Regulations including guidelines Secs.10 Sec.13 Sec.54 DNVGL-OS-A101 DNVGL-OS-E101</td>
<td></td>
</tr>
<tr>
<td>38C</td>
<td>Miscellaneous, systems and service</td>
<td>The Facilities Regulations including guidelines Secs.10 Sec.54 DNVGL-OS-E101</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
The table is based on the "Handbook for Application for Acknowledgement of Compliance (AOC)", enclosure D.
The following items covered by AOC are not included in (N)-notation:
— winterisation and arctic operation issues
— working environment issues
— compliance with EU-directives and European law
— owner’s management systems.

2.2.2 Typically, the following equipment shall be subject to verification as applicable.
— wireline unit including power pack
— subsea wireline lubricator assembly
— BOP wireline shear-ram
— grease injection skid for braided line and stuffing box for slick line
— line pressure control head
— wireline winch
— skids/carriers for handling of equipment
— umbilicals for subsea controls
— subsea coiled tubing lubricator
— BOP coiled tubing shear-ram
— coiled tubing reel
— lifting equipment
— high pressure pumping facilities (cement, well stimulation fluids, nitrogen)
— Emergency Disconnect Package (EDP)
— Lower Riser Package (LRP)
— umbilicals for subsea controls.
2.3 Limitations

2.3.1 The following aspects subject to PSA requirements are not included in the (N)-notation in addition to the limitations to the AOC handbook as given in Table 1:
— regularity and reliability issues
— development of risk analyses
— worker protection and working environment issues (including noise, vibration, radiation, ergonomic aspects)
— protection against pollution
— operational requirements.

Guidance note:
NCS regulatory items not included in the (N)-notations as listed in [2.3.1] may be covered through separate verification services by DNV GL. A statement of compliance will be issued following completion of such services.

---e n d ---o f ---g u i d a n c e ---n o t e ---

2.3.2 The verification is limited to safety aspects of the applicable standards, rules and regulations.

3 Procedures for verification

3.1 Design verification and certification of materials and components
Extent of documentation and certification of materials and components shall be according to DNVGL-OS-E201.

3.2 Survey during construction, installation and commissioning
Survey during construction, installation and commissioning shall be carried out according to DNVGL-OS-E201.
SECTION 10 HELDK-SH(N) / HELDK-SHF(N)

1 Introduction

1.1 Application
The requirements in this section may be applied to helicopter decks on mobile offshore units classed with DNV GL to a minimum of HELDK-SH, respectively HELDK-SHF.

1.2 Class notations
Mobile offshore units with helicopter decks which have been designed, constructed and installed in accordance with the requirements of this section may be given the class notation HELDK-SH(N), respectively HELDK-SHF(N).

2 Technical requirements

2.1 General
Helicopter decks on mobile offshore units on the Norwegian continental shelf shall comply with the provisions given in NMA No. 72 of 2008-01-15.

2.2 Supplementary verification for (N)
In addition to DNVGL-OS-E401 Ch.2 Sec.1 to Sec.6 (for units with HELDK-SH) and Sec.1 to 7 (for units with HELDK-SHF), the Helicopter deck regulations of NMA No.72 of 2008-01-15 shall be complied with.

Guidance note:
It is noted that the regulations of Norwegian Civil Aviation Authorities, in “CAA-N BSL D 5-1, Regulation 26 October, no.1181” governing commercial air traffic to and from helicopter decks on units operating on the Norwegian continental shelf, is covered by the above regulations.

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SECTION 11 CRANE-OFFSHORE(N)

1 Introduction

1.1 Application

The verification methodology described in this section may be applied to cranes on mobile offshore units being classed with DNV GL with class notation **Crane-offshore**.

1.2 Class notations

Units equipped with cranes complying with the requirements of this section may, after completion of design reviews and surveys be assigned the class notation: **Crane-offshore(N)**.

In order to obtain this notation at least one of the cranes onboard must have been verified in accordance with this section.

2 Technical requirements

2.1 General

Cranes for use on the Norwegian continental shelf shall comply with the provisions given in the PSA regulations and referred standards in the corresponding PSA guidelines.

Guidance note:

Pedestal and connection to deck shall be checked according to EN 13852-1.

---e-n-d---o-f---g-u-i-d-a-n-c-e---n-o-t-e---

2.2 Supplementary requirements for **Crane-offshore(N)**

In addition to complying with **DNVGL-ST-0378, Standard for offshore & platform lifting appliances**, the following regulations and standards shall be complied with for **Crane-offshore(N)** notation:

— PSA Facility Regulations with Guidelines Sec. 69 *Lifting appliances and lifting gear*
— NORSOK-R002 Lifting Equipment
— EN 13135 Cranes-Safety- Design-Requirements for equipment
— EN 13849-1 Safety of machinery – Safety-related parts of control systems Part 1: General principles for design.
— NEK EN 60204-32 Safety of machines Part 32: Requirements for hoisting machines

For the application of these, see Ch. 1 Sec. 1 [3.1.3].

Guidance note:

Alternatively, upon owners request, **Crane-offshore(N)** may be issued based on maritime regulations from the Norwegian Maritime Authority (NMA) accordant to PSA framework regulations, section 3 “Application of maritime regulations in the offshore petroleum activities”. It is recommended that such approach is specifically agreed with PSA by the owner.

---e-n-d---o-f---g-u-i-d-a-n-c-e---n-o-t-e---

2.3 Overview of technical areas

The areas as listed in **Table 1** and **Table 2** will be subject to additional design verification and survey as basis for assignment of the class notation **Crane-offshore(N)**.
Table 1 Areas to be verified and surveyed with reference to NORSOK R-002 and EN 13135 as marked

<table>
<thead>
<tr>
<th>Number</th>
<th>Area</th>
<th>Verification Reference</th>
<th>Notes/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Principle of safety integration</td>
<td>Part 4.4</td>
<td>NORSOK R-002</td>
</tr>
<tr>
<td>2)</td>
<td>Safeguarding and complementary protective measurement</td>
<td>Part 4.6</td>
<td>NORSOK R-002</td>
</tr>
<tr>
<td>3)</td>
<td>Information for use</td>
<td>Part 4.7</td>
<td>NORSOK R-002</td>
</tr>
<tr>
<td>4)</td>
<td>Strength proportion</td>
<td>Part 4.8</td>
<td>NORSOK R-002</td>
</tr>
<tr>
<td>5)</td>
<td>Maintenance</td>
<td>Part 4.9</td>
<td>NORSOK R-002</td>
</tr>
<tr>
<td>6)</td>
<td>Quality management system</td>
<td>Part 4.10</td>
<td>NORSOK R-002</td>
</tr>
<tr>
<td>7)</td>
<td>Risk assessment</td>
<td>Part 4.11 all</td>
<td>NORSOK R-002</td>
</tr>
<tr>
<td>8)</td>
<td>Risks reduction</td>
<td>Part 4.12</td>
<td>NORSOK R-002</td>
</tr>
<tr>
<td>9)</td>
<td>Documentation of risk assessment</td>
<td>Part 4.13</td>
<td>NORSOK R-002</td>
</tr>
<tr>
<td>10)</td>
<td>Electro technical equipment</td>
<td>Part 5.11</td>
<td>NORSOK R-002</td>
</tr>
<tr>
<td>11)</td>
<td>Non-electro technical equipment</td>
<td>Part 5.12</td>
<td>NORSOK R-002</td>
</tr>
<tr>
<td>12)</td>
<td>Controls, control stations and control systems</td>
<td>Part 5.13</td>
<td>NORSOK R-002</td>
</tr>
<tr>
<td>13)</td>
<td>Cranes with emergency operation system (EOS)</td>
<td>Annex G4</td>
<td>NORSOK R-002</td>
</tr>
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<td>14)</td>
<td>Size and capacity</td>
<td>Annex G11.1</td>
<td>NORSOK R-002</td>
</tr>
<tr>
<td>15)</td>
<td>Access</td>
<td>Annex G11.3</td>
<td>NORSOK R-002</td>
</tr>
<tr>
<td>16)</td>
<td>View from the control station</td>
<td>Annex G11.4</td>
<td>NORSOK R-002</td>
</tr>
<tr>
<td>17)</td>
<td>Control station outfitting</td>
<td>Annex G11.5</td>
<td>NORSOK R-002</td>
</tr>
<tr>
<td>18)</td>
<td>Data recorder</td>
<td>Annex G11.7</td>
<td>NORSOK R-002</td>
</tr>
<tr>
<td>19)</td>
<td>Data remote access</td>
<td>Annex G11.8</td>
<td>NORSOK R-002</td>
</tr>
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<td>20)</td>
<td>Hook and block protection device</td>
<td>Annex G11.11</td>
<td>NORSOK R-002</td>
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<tr>
<td>21)</td>
<td>Rigging detection system</td>
<td>Annex G11.12</td>
<td>NORSOK R-002</td>
</tr>
<tr>
<td>22)</td>
<td>Location of emergency stop</td>
<td>Annex G11.13</td>
<td>NORSOK R-002</td>
</tr>
<tr>
<td>23)</td>
<td>Location of MOPs manual control</td>
<td>Annex G11.14</td>
<td>NORSOK R-002</td>
</tr>
<tr>
<td>24)</td>
<td>AOPS simulation and testing</td>
<td>Annex G11.15</td>
<td>NORSOK R-002</td>
</tr>
<tr>
<td>25)</td>
<td>Hook Velocities</td>
<td>Annex G11.16</td>
<td>NORSOK R-002</td>
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<tr>
<td></td>
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<td>The velocity shall be considered for Load chart derating.</td>
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<tr>
<td>26)</td>
<td>Rescue boat lifting operations</td>
<td>Annex G11.19</td>
<td>NORSOK R-002</td>
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<tr>
<td></td>
<td></td>
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<td>Shall only be considered if accepted by Flag.</td>
</tr>
<tr>
<td>27)</td>
<td>Emergency operation system (EOS)</td>
<td>Annex G11.21</td>
<td>NORSOK R-002</td>
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<td>28)</td>
<td>Service brakes</td>
<td>Part 5.3.3.2</td>
<td>Ref: EN13135</td>
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<td>Number</td>
<td>Area</td>
<td>Verification Reference</td>
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<tr>
<td>--------</td>
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<td>------------------------</td>
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</tr>
<tr>
<td>29)</td>
<td>Brakes for vertical movements</td>
<td>Part 5.3.3</td>
<td>Ref: EN13135</td>
</tr>
<tr>
<td>30)</td>
<td>Rope sheaves</td>
<td>Part 5.3.6.4</td>
<td>Ref: EN13135</td>
</tr>
<tr>
<td>31)</td>
<td>Motors and Brakes</td>
<td>Part 5.5.4.3.2</td>
<td>Ref: EN13135</td>
</tr>
</tbody>
</table>

**Notes:**
See Table 2.

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### Table 2 Areas to be verified and surveyed with reference to EN-13852-1; 2013

<table>
<thead>
<tr>
<th>Number</th>
<th>Area</th>
<th>Verification Reference</th>
<th>Notes/Comments</th>
</tr>
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<tbody>
<tr>
<td>1)</td>
<td>Out of service loads</td>
<td>Part. 5.2.3</td>
<td>annex C.2.1b) and C.2.2</td>
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<tr>
<td>2)</td>
<td>Failure mode analysis</td>
<td>Part. 5.2.4</td>
<td>Annex D</td>
</tr>
<tr>
<td>3)</td>
<td>Non electrical equipment</td>
<td>Part 5.3.2</td>
<td>Ref Number 27, 28, 29 and 30 in Table 1</td>
</tr>
<tr>
<td>4)</td>
<td>Power requirements</td>
<td>Part 5.3.3</td>
<td></td>
</tr>
<tr>
<td>5)</td>
<td>Slewling drives</td>
<td>Part. 5.3.4</td>
<td>Paragraph 2.</td>
</tr>
<tr>
<td>6)</td>
<td>Mode and rigging selector</td>
<td>Part 5.3.14</td>
<td></td>
</tr>
<tr>
<td>7)</td>
<td>Control station, machinery house etc.</td>
<td>Part 5.5</td>
<td></td>
</tr>
<tr>
<td>8)</td>
<td>Noise reduction</td>
<td>Part 5.6</td>
<td></td>
</tr>
<tr>
<td>9)</td>
<td>Access, guards etc.</td>
<td>Part 5.7</td>
<td></td>
</tr>
<tr>
<td>10)</td>
<td>Controls</td>
<td>Part. 5.8.2</td>
<td>Response time!</td>
</tr>
<tr>
<td>11)</td>
<td>Indicators General</td>
<td>Part 5.8.3.1</td>
<td>Annex F</td>
</tr>
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<td>12)</td>
<td>Slack rope indicator</td>
<td>Part 5.8.3.3</td>
<td></td>
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<tr>
<td>13)</td>
<td>Drum motion Indicator</td>
<td>Part 5.8.3.4</td>
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<tr>
<td>14)</td>
<td>Indicator for failures in the power system</td>
<td>Part 5.8.3.5 Annex F</td>
<td></td>
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<tr>
<td>15)</td>
<td>Wind speed indicator</td>
<td>Part. 5.8.3.6</td>
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<tr>
<td>16)</td>
<td>Crane inclometer</td>
<td>Part 5.8.3.7</td>
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<tr>
<td>17)</td>
<td>Slewling torque indicator</td>
<td>Part. 5.8.3.8</td>
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<td>18)</td>
<td>Data recorder</td>
<td>Part 5.8.3.10</td>
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<td>19)</td>
<td>Slack wire rope preventer</td>
<td>Part 5.8.4.3</td>
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<td>20)</td>
<td>Slewling limiter</td>
<td>Part 5.8.4.4</td>
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<td>21)</td>
<td>Emergency operation system</td>
<td>Part 5.9.2</td>
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<td>22)</td>
<td>Secondary motion limiters</td>
<td>Part 5.10.6</td>
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<td>23)</td>
<td>Documentation</td>
<td>Part. 7.1</td>
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<td>24)</td>
<td>Operation</td>
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<td>26)</td>
<td>Incoming supply conductor terminations and devices for disconnecting and switching off</td>
<td>Part 5</td>
<td>Ref: EN 60204-32</td>
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<tr>
<td>27)</td>
<td>Equipotential bonding</td>
<td>Part 8</td>
<td>Ref: EN 60204-32</td>
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<td>28)</td>
<td>Control limitation</td>
<td>Part 9.2.7.2</td>
<td>Ref: EN 60204-32</td>
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<td>Annex B</td>
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<td>Environmental influences</td>
<td>Annex C.1</td>
<td>Minimum wave height</td>
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<td>Boom stalling</td>
<td>Annex C.2.2</td>
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<td>Floating units</td>
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<td>33)</td>
<td>Ice</td>
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<td>Control station Instrumentation</td>
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<td>35)</td>
<td>Required performance levels</td>
<td>Annex K</td>
<td>Ref: EN 13849-1</td>
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<td>36)</td>
<td>Noise test</td>
<td>Annex N</td>
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</table>

**Notes:**
- The verification references in these tables apply in addition to the class requirements for the class notation **Crane-offshore**.

The following items covered by AoC are not included in **(N)**-notation:
- working environment issues are not fully covered
- compliance with EU-directives and European law
- owner’s management system

### 2.4 Limitations

**2.4.1** In addition to the limitations stated in Table 2, the following aspects subject to PSA requirements are not included in the **(N)**-notation:
- NORSOK R-002 Annex B, Material handling principles
- worker protection and working environment issues (including noise, room acoustics, vibration, lighting,
- indoor climate, radiation, ergonomic aspects

**Guidance note:**
NCS regulatory items not included in the **(N)**-notations as listed in [2.4.1] may be covered through separate verification services by DNV GL. A "Statement of Compliance" will be issued following completion of such services. DNV GL is Notified Body for all relevant EU-directives, and may offer CE-marking services on a world-wide basis.

---end---of---guidance---note---

**2.4.2** The verification will only be related to safety aspects of the applicable standards, rules and regulations.

### 3 Design verification and certification of materials and components

The extent of documentation and certification of materials and components shall be in compliance with the **DNVGL-ST-0378**, *Standard for offshore & platform lifting appliances.*
4 Survey during construction, installation and commissioning

Survey during construction, installation and commissioning shall be carried out according to DNVGL-ST-0378, Standard for offshore & platform lifting appliances.

In addition, initial control by an Enterprise of Competence (EoC) as described in App.B [4.2] shall be carried out.

**Guidance note:**
For a clarification of the Enterprise of competence role is referred to Ch.3 Sec.8. A complete overview of the activities under EoC is listed in App.B.

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SECTION 12 COMF-MOU(N)

1 Introduction

1.1 Application
The requirements in this section may be applied to mobile offshore units classed with DNV GL.

1.2 Class notation
Mobile offshore units that comply with the requirements of this section may be given the class notation Comf-MOU(N).

1.2.1 The notation documents partial compliance with NORSOK S-002 Working environment.

2 Technical requirements

2.1 General
Mobile offshore units operating on the Norwegian continental shelf shall comply to the NORSOK S-002 Working Environment, which among other things cover noise, vibration, illumination and indoor climate.

2.2 Supplementary verification
Units with the qualifier (N) shall comply of the crn level 1 and additional requirements related to NORSOK S-002 as described in DNVGL-OS-A301 Ch.2.
CHAPTER 3 CLASSIFICATION IN OPERATION

SECTION 1 GENERAL PROVISIONS FOR PERIODICAL SURVEYS

1 General

1.1 Principles and procedures

Periodical surveys for (N)-notations shall follow systematics applied for offshore class surveys in general. For details on principles, procedures, survey intervals etc. see:

— DNVGL-RU-OU-0101 Ch.3 for drilling units, well intervention units, accommodation units and drilling plants
— DNVGL-RU-OU-0102 Ch.3 for production units, storage units and production plants.

2 Class renewal for (N)-notation

2.1 General

2.1.1 At certificate renewals (5-yearly intervals) it shall be demonstrated that the owner/manager has control over the effect of the changes between original and latest edition of the applicable technical references. This may be verified by a gap-analysis. Any deviations identified shall be closed out by the owner in order for the (N)-notation to be renewed.

Guidance note:
The AOC Handbook Sec.6.4 provides guidance on evaluation of possible consequences for the unit resulting from changes to the rules and regulations. Such evaluations are a required part of the verification systematics for maintaining AOC.

2.1.2 All changes in technical references identified in [2.1.1] shall be included in the basis for the periodic survey related to the (N)-notation.
SECTION 2 PERIODIC SURVEY EXTENT FOR (N)-NOTATIONS

1 Drilling unit(N)

1.1 Annual and complete periodical surveys

1.1.1 Extent of annual survey shall be as given for class notation Drilling unit in DNVGL-RU-OU-0101 Ch.3 Sec.5 [2].

1.1.2 Extent of complete periodical survey shall be as given for class notation Drilling unit in DNVGL-RU-OU-0101 Ch.3 Sec.5 [2], supplemented by items given in Ch.2 Sec.2 Table 1 and Ch.3 Sec.1 [2].

2 Production and/or Storage unit(N)

2.1 Annual and complete periodical surveys

2.1.1 Extent of annual survey shall be as given for class notation Production and/or Storage unit in DNVGL-RU-OU-0102 Ch.3 Sec.5 [2].

2.1.2 Extent of complete periodical survey shall be as given for class notation Production and/or Storage unit in DNVGL-RU-OU-0101 Ch.3 Sec.5 [2], supplemented by items given in Ch.2 Sec.3 Table 1 and Ch.3 Sec.1 [2].

3 Well intervention unit(N)

3.1 Annual and complete periodical surveys

3.1.1 Extent of annual survey shall be as given for class notation Well intervention unit in DNVGL-RU-OU-0101 Ch.3 Sec.5 [3].

3.1.2 Extent of complete periodical survey shall be as given for class notation Well intervention unit in DNVGL-RU-OU-0101 Ch.3 Sec.5 [3], supplemented by Ch.2 Sec.4 Table 1 and Ch.3 Sec.1 [2].

4 Accommodation unit(N)

4.1 Annual and complete periodical surveys

4.1.1 Extent of annual survey shall be as given for class notation Accommodation unit in DNVGL-RU-OU-0101 Ch.3 Sec.5 [4].

4.1.2 Extent of complete periodical survey shall be as given for class notation Accommodation unit in DNVGL-RU-OU-0101 Ch.3 Sec.5 [4], supplemented by items given in Ch.2 Sec.3 Table 1 and Ch.3 Sec.1 [2].
5 DRILL(N)

5.1 Annual and complete periodical surveys

5.1.1 Extent of surveys shall be as given for class notation DRILL in DNVGL-RU-OU-0101 Ch.3 Sec.6 [5], supplemented by items given in Ch.2 Sec.7 Table 1 and Ch.3 Sec.1 [2].

Guidance note:
Note there are instances where the performance standard required in Norway is higher than generally specified in the international Codes, e.g BOP control system accumulator capacity. When tests are carried out on a unit with DRILL(N) then the Norwegian performance standards are to be used.

---e-n-d---o-f---g-u-i-d-a-n-c-e---n-o-t-e---

5.1.2 Survey, testing and overhaul of the blow out preventer (BOP) with associated valves and other pressure control equipment (well control equipment) at complete periodical survey shall be performed according the requirements for DRILL which is in line with the principles given in DNV-RP-E101.

6 PROD(N)

6.1 Annual and complete periodical surveys

6.1.1 Extent of annual survey shall be as given for class notation PROD in DNVGL-RU-OU-0102 Ch.3 Sec.6 [6].

6.1.2 Extent of complete periodical survey shall be as given for class notation PROD in DNVGL-RU-OU-0102 Ch.3 Sec.6 [6], supplemented by items given in Ch.2 Sec.8 Table 1 and Ch.3 Sec.1 [2].

7 WELL(N)

7.1 Application
The requirements in this sub-section apply for units with class notation: WELL(N).

7.2 Annual and complete periodical surveys

7.2.1 Extent of annual survey shall be as given for class notation WELL in DNVGL-RU-OU-0101 Ch.3 Sec.6 [14].

7.2.2 Extent of complete periodical survey shall be as given for class notation WELL in DNVGL-RU-OU-0101 Ch.3 Sec.6 [14], supplemented by items given in Ch.2 Sec.9 Table 1 and in Ch.3 Sec.1 [2].
8 Crane-offshore(N)

8.1 Introduction

8.1.1 The periodical survey for Crane-offshore(N) covers both the assurance requirements for class and the requirements for enterprise of competence inspection from the Petroleum Safety Authority Norway (PSA).

Guidance note:
Enterprise of Competence is an entity in the operator companies’ organization, or in other companies or institutions, that together have sufficient theoretical knowledge and practical experience to understand calculations for lifting equipment, its design and function, and to carry out necessary examinations and tests in order to issue certificates
Enterprise of Competence services is performed in accordance with NORSOK Standard R-003 as a means of complying with the Norwegian Petroleum Safety Authority (PSA) Regulations relating to conduct of activities in the petroleum activities (the Activities Regulations), Sections 16 and 47.

8.1.2 The normative reference documents given in Table 1 have been used as basis for the services described in this chapter.

Table 1 References other than DNV given in this service specification

<table>
<thead>
<tr>
<th>Reference</th>
<th>Title</th>
<th>Notes/Comments</th>
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<tr>
<td>NORSOK R-003 Annex H</td>
<td>Safe use of lifting equipment. Enterprise of Competence</td>
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</tr>
</tbody>
</table>

8.2 Annual and complete periodical surveys

8.2.1 Annual
Extent of annual survey shall be as given for class notation Crane-offshore(N) in DNVGL-RU-OU-0101 Ch.3 Sec.6 [9] supplemented by the Enterprise of Competence (EoC) elements as described in App.B.

8.2.2 Complete
Extent of complete periodical survey shall be as given for class notation Crane-offshore(N) in DNVGL-RU-OU-0101 Ch.3 Sec.6 [9] supplemented by the Enterprise of Competence (EoC) elements as described in App.B.

Guidance note:
DNV GL follows NORSOK R-003 Table H.1 “Grading of faults and defects” for the survey reporting of the Crane-offshore(N) services.

8.3 Safety assessments and extraordinary control

8.3.1 Safety assessment
A safety assessment shall be executed in case of increasing frequency of failure, causing serious incidents, danger for risk fatigue or where there is other reasonable doubt about safety through continued operation.
The interval of safety assessments shall exceed 10 years if it was new, or at least when there are more than 10 years since the previous safety assessment (see also App.B [4.4]).
A safety assessment shall include a lifetime analysis (ISO 12482), gap analysis, classification and establishment of barriers, operational risk analysis, consideration of change of operation (e.g. person lift), working study etc.
8.3.2 Extraordinary control
An extraordinary control shall be executed in case the crane operation has encountered an unexpected event or situation and after modifications to the crane.

Guidance note:
It is the owner’s responsibility to initiate the safety assessment and extraordinary controls. The assessment may be performed by DNV GL.

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9 COMF-MOU(N)

9.1 Application
The requirements in this sub-section apply for units with class notation COMF-MOU(N).

9.2 Complete periodical surveys
Extent of complete periodical survey shall be as given for class notation COMF-MOU in DNVGL-RU-OU-0101 Ch.3 Sec.6 [16].
APPENDIX A SPECIAL CONSIDERATIONS FOR AGEING OFFSHORE UNITS (INFORMATIVE)

1 General

1.1 Introduction

1.1.1 This appendix is not part of the scope for (N)-notation and is provided for information purposes only.

1.1.2 PSA require owners of facilities aged 19 years or more since first certificate issue, in operation or intended for operation on the Norwegian shelf, to provide special documentation of subjects as listed below.

1.2 Special documentation requirements for units aged 19 years or more

1.2.1 Fatigue life shall be calculated according to current rules and regulations and corrected for changes in assumed weights and weight distribution caused by modifications or changes in assumed usage, such as use of derrick, ballast and loading and unloading operations. The fatigue calculations should take into account the actual environmental exposure the unit has been exposed to, in form of relevant environmental scatter diagrams for respective locations or actual environmental measurements if available.

1.2.2 Redundancy in the event of substantial damage to hull, braces or jacking system, and substantial internal damage to hull shall be calculated:
— check for overload in connection with environmental loads with return period of one year,
— fatigue life.

1.2.3 An updated verification of physical match between the facility and as-built documentation shall be done, so that
— later modifications or changed usage are taken into account in analyses and calculations,
— local weld-ons or scallops do not change the integrity.

1.2.4 The rig owner shall evaluate of the needs for further requirements with respect to inspection and maintenance as a result of extended life such as
— watertight and weatherproof closing appliances,
— ballasting and stability, included seawater intake,
— jacking equipment with related machinery, gears and brakes
— and for related safety systems which depend on emergency power or hydraulics. The rig owner shall verify that the manufacturers' specifications for maintenance of marine systems are complied with.

1.2.5 Rig owners shall evaluate the needs for further requirements with respect to inspection and a result of extended life for
— load-carrying structures with respect to fatigue, corrosion, erosion and thickness measurement,
— critical areas, in addition to those required by the classification societies.

1.2.6 Review information about past performance and relevant equipment usage, including results from similar facilities – and a systematic review of the relevancy of major accidents/incidents worldwide the last decade.

1.2.7 Make plans for replacement and need for repairs offload carrying structures and marine systems.
1.2.8 Identify possible chain of events related to maritime and structural systems, identification of barriers in these chains of events, review of the robustness, availability and reliability of these barriers. Identification of criteria for how long these barriers are to be considered satisfactory and identification of special criteria in case several barriers are impaired at the same time. Furthermore, consider preventive measures that are possible to do using the ALARP principles.

1.2.9 Assess the assumed future service life in terms of safe operation of the facility. Identify circumstances that will limit the service life and specify criteria for safe operation to the extent it is possible to do so (e.g. permissible lengths of cracks, maximum permissible corrosion or remaining thickness, remaining anodes, degrading of paint protection).
APPENDIX B DNV GL ENTERPRISE OF COMPETENCE (EOC) FOR LIFTING EQUIPMENT

1 General
This appendix describes the control carried out by an Enterprise of Competence in order to verify that lifting equipment satisfies relevant requirements and is designed, embedded, installed, set up, tested, documented and maintained in such a way that use of the lifting equipment is fully justified.

2 Supplementary survey for Enterprise of Competence.
Lifting equipment on offshore units operating on the NCS shall be controlled by an Enterprise of Competence (EoC) according to NORSOK R-003 as a means of complying with the Norwegian Petroleum Safety Authority (PSA) Regulations relating to conduct of activities in the petroleum activities (the Activities Regulations), Sections 16 and 47.

3 Execution by DNV GL
The initial and periodical controls on offshore units' lifting equipment by EoC is performed by DNV GL as part of commissioning, annual and complete classification surveys.

Guidance note:
DNV GL as classification society assumes the role as EoC in accordance with NORSOK R-003, Annex H, clause H1:
“On mobile installations, requirements in the Norwegian Maritime Directorate’s regulations can be followed if the technical specification of the equipment was based on these requirements. Reference is made to relevant Petroleum Safety Authority Norway regulations that describe when maritime regulations can form the basis. In such circumstances, a competent person authorized by the Norwegian Maritime Directorate shall be used.
Classification societies that are recognized by the Norwegian Maritime Directorate and that inspect lifting equipment as part of the class notation "DRILL N" and "Crane" on an installation can carry out control as enterprise of competence, provided that the control is implemented and reported in accordance with requirements in this NORSOK standard.”
After publication of the 2004 edition of NORSOK R-003, the Norwegian Maritime Directorate (NMD) has changed name to Norwegian Maritime Authority, hereafter referred to as NMA.

---end---of---guide---note---

4 Control of lifting equipment performed by Enterprise of Competence

4.1 Introduction
DNV GL performs three types of competent control of lifting equipment in the role as EoC:
— Initial control in the form of certification when installed
— Periodic control (annual or complete (5-yearly) survey)
— Safety assessment and extraordinary control.

4.2 Initial control
Initial control is normally done when the lifting equipment is placed on its final location and the extent of approval/verification and inspections are followed according to different notations for cranes. Upon initial inspection, DNV GL issues certificate CG2 or product certificate OLA101 and cargo gear book CG1 or similar as defined in DNVGL-ST-0378.
4.3 Periodical control

4.3.1 General
Periodical control shall follow internal procedures for EoC on DNV GL vessels with notation Crane-offshore or Crane-offshore(N) for annual and complete (5-yearly) survey.
The control is an independent risk-based condition monitoring according to DNV GL internal governing documentation for such control. The aim is to verify the technical safety of the lifting equipment in relation to the requirements applied during initial control, enabling the owner and user to decide on the further operation of the lifting equipment, and if necessary, implement monitoring, compensating measures or repairs.
DNV GL assumes that the lifting equipment has been designed and built for the operation and the environment it is exposed to, and has been, and continues to be used and maintained according to the manufacturer’s requirements and the requirements owner and user given in authorities regulations, as well as the conditions for initial control is fulfilled.
Test procedures shall be available from the owner and accepted by DNV GL including examination of all relevant parts.

4.3.2 Elements included
The periodical control consists of the following elements:
1) Control of existing certificate (CG2), cargo gear book (CG1), maintenance and operation procedure.
2) Review of previous reports from Enterprise of Competence, as well as records of maintenance and crane use history from last control period.
3) Survey of lifting equipment as determined by well-established inspection programmes
4) Witness of testing of the control- and safety functions for all movements and limits.
   It is the owner and user which are responsible for the implementation of function testing. In cases where the function testing involves an increased safety risk, DNV GL will recommend that measures are implemented to increase the safety of the test. This can i.e. involve "safe job analysis", restrict/close off work and warning.
5) Signing of cargo gear book, issuance of certificate if applicable.
6) For lifting gear without unique marking, the periodical control shall be documented with the years color.

Periodic inspection of work equipment does not include:
1) A general operating permit for the lifting equipment. Owner and operator are responsible at any time to consider technical and operational safety and if necessary suspend the operation of the lifting equipment, partially or completely.
2) Verification of organizational or operational requirements towards the user are met, such as requirements for the implementation of risk analysis, training, use of protective equipment, etc.
3) Assessment of any deviations approved by the authorities.
4) Establishing specific inspection/test programme.
4.4 Extraordinary control

An extraordinary control shall be executed in case the lifting equipment operation has encountered an unexpected event or situation. Such an event indicates that the manufacturer preconditions for safe operation and maintenance as specified in the user manual may no longer be valid.

In addition the control shall be done after modifications to the lifting equipment. The modifications may affect the validity of the certificate and/or may include a change of responsibilities from manufacturer to other parties.

The extraordinary control evaluates the safety of lifting equipment without reference to declarations of conformity, etc. from the equipment manufacturer with the following conditions:

— The owner and user of the crane always has a responsibility that lifting equipment is suitable and can be used safely, even after changes, rebuilds and repairs. Owner and user must ensure access to all relevant information need to assess the safety of lifting equipment.

— Liability is limited in accordance with the assignment of work scope.

— Assessment of lifting equipment condition after extraordinary control does not always present a complementary equipment status and must be read in conjunction with the report of the last periodic inspection.

It is assumed that the client facilitates a scope of work that is proportionate to what is the reason for extraordinary control. As a minimum, extraordinary control should include the following activities performed in the given order.

1) Review of the documentation for the equipment
2) Review of the documentation for the reason for extraordinary control, including verification of documentation for the work performed
3) Inspection
4) Function testing
5) Testing with overload if deemed necessary

Guidance note:
For a recommended procedure for establishing a control scope reference is made to DNV-0SS-308, Verification of Lifting Appliances for the Oil and Gas Industry.

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CHANGES - HISTORIC

July 2015 edition

Main changes July 2015

• General structure
The revision of this document is part of the DNV GL merger, updating the previous DNV recommended practice into a DNV GL format including updated nomenclature and document reference numbering, e.g.:
— DNV replaced by DNV GL
— DNV-OSS-201 to DNVGL-SI-0166 etc.
A complete listing with updated reference numbers can be found on DNV GL's homepage on internet.
To complete your understanding, observe that the entire DNV GL update process will be implemented sequentially. Hence, for some of the references, still the legacy DNV documents apply and are explicitly indicated as such, e.g.: Rules for Ships has become DNV Rules for Ships.
Driven by our purpose of safeguarding life, property and the environment, DNV GL enables organizations to advance the safety and sustainability of their business. We provide classification and technical assurance along with software and independent expert advisory services to the maritime, oil and gas, and energy industries. We also provide certification services to customers across a wide range of industries. Operating in more than 100 countries, our 16,000 professionals are dedicated to helping our customers make the world safer, smarter and greener.