



GUIDE FOR

MOBILE OFFSHORE UNITS OPERATING ON **THE
NORWEGIAN CONTINENTAL SHELF, N-NOTATION**

NOVEMBER 2013

**American Bureau of Shipping
Incorporated by Act of Legislature of
the State of New York 1862**

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Foreword (1 November 2013)

This Guide documents the classification related technical requirements for compliance with the verification obligations associated with the operation of mobile offshore units on the Norwegian Continental Shelf (NCS). It also provides information related to an application for an Acknowledgement of Compliance (AoC) which is mandatory for units intended for operation on the Norwegian Continental Shelf (NCS).

ABS has been appointed as a Recognized Organization (RO) for Mobile Offshore Units by the Norwegian Maritime Authority (NMA) and thereby authorized to perform on its behalf technical verification, inspection and surveys for the delegated items concerning Mobile Offshore Units which are or will be registered in a Norwegian Ship Register.

Irrespective of flag, for the purpose of this Guide, Appendix 1 (as applicable) and the relevant parts of the delegated items (see Appendix 2) will form part of the technical verification permitted by Chapter 1 Section 3 of the Framework Regulations to contribute towards the application for an AoC. It is to be noted that the NMA references in this Guide do not imply full compliance with Norwegian Flag regulatory requirements.

The Guide describes NCS-related services provided by ABS for the following types of mobile offshore units and systems:

- Drilling Units
- Floating Production Storage and Offloading Units
- Hydrocarbon Production and Process Facilities
- Drilling Systems
- Accommodation Units
- Well Intervention Units
- Helicopter Decks
- Cranes and Lifting Appliances

The Guide contains the following three Chapters:

- Conditions of Classification
- Verification Methodology
- N-Notations

This Guide becomes effective on the first day of the month of publication.

Users are advised to check periodically on the ABS website www.eagle.org to verify that this version of this Guide is the most current.

We welcome your feedback. Comments or suggestions can be sent electronically by email to rsd@eagle.org.

GUIDE FOR

MOBILE OFFSHORE UNITS OPERATING ON **THE** NORWEGIAN CONTINENTAL SHELF, N-NOTATION

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CHAPTER 1 Conditions of Classification

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CHAPTER 1 Conditions of Classification

SECTION 1 Scope and Conditions of Classification

1 Classification

The term classification, as used herein, indicates that a mobile offshore unit, operating on the Norwegian Continental Shelf (NCS), has been designed, constructed, installed and surveyed in compliance with this Guide, applicable existing ABS Rules and Guides or other acceptable standards.

General principles and procedures related to classification covered in this Guide are stated in the applicable ABS Rules. The continuance of classification is dependent on the fulfillment of requirements for surveys after construction.

According to the Norwegian Petroleum Act, the Owner is fully responsible for verification activities to ensure that operation of units and systems are in compliance with the applicable regulatory requirements. Therefore, the ultimate responsibility for shutting down operations beyond the limit specified in unit and system design basis does not rest upon the ABS Classification Committee.

3 Class Notation

3.1 ABS N-Notation (1 February 2012)

Classification requirements given in this Guide are supplementary to the latest edition of the ABS Rules and Guides referenced in 1-1/5.1.

For the unit to receive the **(N)** notation, the design is to be verified as being in accordance with the applicable ABS Rules and/or Guides and the additional requirements outlined in this Guide. Additionally, mobile offshore units awarded the N-notation are to maintain compliance with the applicable standards contained in the latest edition of the PSA Regulations, their associated guidelines and the standards referenced in the AoC Handbook.

The design verification undertaken by ABS will determine the unit's compliance with the technical requirements contained in the relevant Rules, standards and regulations as applicable.

The Class requirements contained herein are to apply to all systems covered by the N-Notation. Additionally, Table 3 and Appendix 1 must be applied. Unless the Owner requests additional compliance, drilling or production facilities will be subject to NORSOK standards. However, in order to verify that safety of the unit is not impaired, ABS is to review the effect of these systems on the surrounding structures, equipment and hazardous area designation. It is recommended that the drilling or production system is classed to avoid any difficulties that the interfaces between plant and vessel may create.

Mobile offshore units for operation on the Norwegian Continental Shelf, that have been built to the satisfaction of the ABS Surveyors to the applicable requirements of this Guide, where approved by the ABS Classification Committee for service for the specified design environmental conditions, may be classed and distinguished in the ABS *Record* by the symbols **✕ A1**, followed by the appropriate notation and the **(N)** notation, for example, **✕ A1 Column-Stabilized Drilling Unit (N)**. The N-Notations for mobile offshore units and systems are referenced in subsequent Chapters of this Guide.

3.3 Systems Not Built Under Survey

Mobile offshore units which have not been built under survey to ABS, but which are submitted for classification, will be subjected to a special classification survey. Where found satisfactory and thereafter approved by the Committee, they will be classed and distinguished in the *Record* by the symbols and special notations as described in this Guide, but the mark **✕** signifying survey during construction will be omitted.

5 Rules for Classification

5.1 Application (1 November 2013)

This Guide is intended for use in conjunction with the ABS:

- *Rules for Building and Classing Mobile Offshore Drilling Units (MODU Rules),*
- *Rules for Building and Classing Floating Production Installations (FPI Rules),*
- *Rules for Building and Classing Facilities on Offshore Installations (Facilities Rules),*
- *Rules for Building and Classing Offshore Support Vessels (OSV Rules)*
- *Guide for the Classification of Drilling Systems (CDS Guide),*
- *Guide for Certification of Lifting Appliances,*
- *Guide for Building and Classing Mobile Offshore Units*
- *Guide for the Class Notation Helicopter Decks and Facilities (HELIDK and HELIDK(SRF)) or*
- Other applicable ABS Rules and Guides.

The application of this Guide is, in general, based on the contract date for construction between the builder and the prospective Owner. **For existing Units, Appendix 3 should be applied.**

5.3 Scope (1 November 2013)

This Guide covers the safety aspects of the mobile offshore unit operating on NCS, and provides assistance to the Owner for AoC application or for a “Request for Consent to Operate” for the following types of mobile offshore units:

- Accommodation Units
- Drilling Units
- Production Storage/Offloading Units (FPSO and FPDSO) Units
- Storage Offloading Units (for Consent to Operate)
- **Well Intervention Units**

and the following types of industrial systems, facilities **or equipment**:

- Drilling Systems
- Production Facilities
- **Helidecks**
- **Cranes and Lifting Appliances**

Note: The AoC scheme is mandatory for all types of mobile units except for the floating storage offloading units, which may be subject to a “Request for Consent to Operate”.

Other types of mobile offshore units not included in the above categories are to be treated on an individual basis and be assigned an appropriate classification designation similar to the above format. It is to be noted that the drilling systems and the production facilities are to go through the process of verification for the N-Notation.

5.5 Effective Date of Change of Requirement

5.5.1 Effective Date

This Guide and subsequent changes to this Guide are to become effective on the date specified by ABS. In general, the effective date is not less than six months from the date on which the Guide is published and released for its use. However, ABS may bring into force the Guide or individual changes before that date, if necessary or appropriate.

5.5.2 Implementation of Rule Changes

In general, until the effective date, plan approval for designs will follow prior practice unless review under the latest Rules is specifically requested by the party signatory to the application for classification.

The date of “contract for construction” of a mobile offshore unit is the date on which the contract to build the unit is signed between the prospective Owner and the shipbuilder. The date and the construction numbers (i.e., hull numbers) of all the units included in the contract are required to be indicated on the form, “Application of Request for Classification”. If the signed contract for construction is amended to change the unit type, the date of “contract for construction” of this modified unit, or units, is the date on which the revised contract or a new contract is signed between the Owner, or Owners, and the shipbuilder.

7 Norwegian Regulations and Other Standards

While this Guide covers the requirements for the classification of mobile offshore units operating on NCS, the attention of Owners, designers and builders is directed to the requirements of the Norwegian regulations and other standards that are over and above the classification requirements.

9 Submission of Plans

Subsequent Chapters in this Guide identify requirements for typical mobile offshore units and industrial systems that will be part of the classification and verification process for respective N-Notation.

Upon satisfactory completion of all of the required engineering and survey processes, ABS will issue the Classification Certificate to the operating mobile offshore unit, including the N-Notation.

9.1 Hull Plans (1 November 2013)

Hull plans showing the scantlings, arrangements, and details of the principal parts of the hull structure of each mobile offshore unit to be built under survey are to be submitted and approved before construction is commenced. These plans are to clearly indicate the scantlings and details of welding, and they are to include such particulars as the design draft and design speed. Where provision is to be made for any special type of cargo or for any exceptional conditions of loading, whether in ballast or with cargo, particulars of the weights to be carried and of their distribution are also to be given.

9.3 Machinery Plans

Machinery plans showing the boilers, main engines, reduction gears, etc., also machinery general arrangement, installation and equipment plans as referenced in the applicable Rules, are to be submitted and approved before proceeding with the work.

9.5 System Plans

In most cases, manufacturer’s component and system related drawings, calculations and documentation would be required for submittal to substantiate the design of the systems and their equipment. In these cases, upon satisfactory completion of ABS review of the manufacturer’s submittal, ABS Engineers will issue a review letter. This letter, in conjunction with the submitted package, will be used and referenced during surveys and subsequently issued reports by attending ABS Surveyors.

11 Abbreviations and Definitions

11.1 Abbreviations (1 November 2013)

Abbreviations used in this Guide are as follows:

ABS	American Bureau of Shipping
AoC	Acknowledgement of Compliance
EEA	European Economic Area

EU	European Union
HES	Health Environment and Safety
IACS	International Association of Classification Societies
MOU	Mobile Offshore Unit
MODU	Mobile Offshore Drilling Unit
MOPU	Mobile Offshore Production Unit
NBH	Norwegian Board of Health
NCS	Norwegian Continental Shelf
NMA	Norwegian Maritime Authority
NPD	Norwegian Petroleum Directorate
NSA	Norwegian Shipowners' Association
NOGA	Norwegian Oil and Gas Association
PSA	Petroleum Safety Authority
SFT	Norwegian Pollution Control Authority
SoC	Statement of Compliance

11.3 Definitions (1 November 2013)

Definitions used in this Guide are as follows:

Acknowledgements of Compliance (AoC) – An *Acknowledgement of Compliance* is a decision made by the Petroleum Safety Authority (PSA) that the technical condition of a Mobile Offshore Unit (MOU) and the applicant's organization and management systems are considered to be in compliance with relevant requirements in Norwegian Shelf legislation.

Applicant – The *Applicant* is the responsible body for operation of a MOU who applies for an AoC.

CE Mark – CE denotes “Communauté Européenne” and confirms that equipment complies with European Union Directives.

Client – The *Client* is the party having requested classification or having assumed ownership of a classed offshore unit or installation. In cases where Owners have requested another party to operate the unit or installation on their behalf, such party is regarded as the client.

Contract – The *Contract* is an agreement between ABS and the client where the extent of services requested by the client is defined.

Mobile Offshore Unit (MOU) – A *Mobile Offshore Unit (MOU)* is a buoyant structure engaged in offshore operations including drilling, production, storage or support functions, not intended for services on one particular offshore site and which can be relocated without dismantling or modification.

MOU Classification Society (NMA Construction Regulation) – An *MOU Classification Society (NMA Construction Regulation)* is a recognized classification society with which there is an additional agreement with the NMA on ABS carrying out inspection and surveys, etc., on mobile offshore units. Also referred to as “Recognized Organization”.

Notified Body – A *Notified Body* is an independent organization appointed by European Economic Area (EEA) national authorities to undertake conformity assessment before a product is CE marked according to an European Union (EU) Directive.

Owner – For the purpose of this Guide, the *Owner* is the party responsible for the offshore unit, including its operation and safety.

Recognized Classification Society [NMA Construction Regulation (Red Book Section VI-3)] – A *Recognized Classification Society [NMA Construction Regulation (Red Book Section VI-3)]* is any Classification Society with which the Ministry has entered into an agreement pursuant to §9 of the Seaworthiness Act.

Statutory Certificates – *Statutory Certificates* are IMO convention certificates issued on behalf of, or by, national authorities.

Supplier or Manufacturer – The *Supplier* or *Manufacturer* supplies materials, components, equipment and systems to new and existing offshore units or industrial systems, whose product is subject to design approval, surveys and testing in accordance with the Rules.

CHAPTER 2 Verification Methodology

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CHAPTER 2 Verification Methodology

SECTION 1 Basis and Procedures

1 General

1.1 Acknowledgement of Compliance (AoC) (1 November 2013)

An AoC is a decision made by the Petroleum Safety Authority (PSA) that the technical condition of a MOU and the applicant's organization and management systems are considered to be in compliance with relevant requirements of Norwegian Shelf Legislation.

The AoC is mandatory and is applicable to all types of mobile facilities except storage units operating on the NCS. MOUs, in this context, are units, registered by a flag Administration and which follow a maritime operational concept.

Note: In some cases (production storage/offloading) it may be a matter of judgment if the unit can be categorized as a maritime practice "offshore unit" according to PSA regulations. It is recommended that the PSA be contacted at an early stage of such projects for their clarification.

ABS services described in this document may be used by Owners to document partial compliance with the PSA requirements for an AoC. To assist with the application for an AoC, a MOU is to meet the requirements for the N-Notation as described in the appropriate sections of Chapter 3. The N-Notation is obtained by the unit holding class certificates, being flagged and meeting supplementary requirements of PSA and **NMA**.

Details of the AoC scheme are given in "Handbook for Application for Acknowledgement of Compliance (AoC)" issued by **the Norwegian Oil and Gas Association**. For further information and references, see 2-1/Tables 1 and 2 of this Guide.

1.3 Technical Norms and Standards (1 March 2009)

This Guide includes reference to other ABS documents, regulations, codes and standards which shall be used in conjunction with the requirements of this Guide for assignment of the N-Notation. Unless otherwise agreed, latest issues of the references shall be used.

2-1/Table 1 provides ABS Rules/Guides to be used in performing the required design verification.

2-1/Table 2 provides additional regulations/standards, other than class, to be used in performing the required design verification for N-Notations.

TABLE 1
ABS Applicable Rules/Guides (1 November 2013)

<i>ABS Rules/Guides</i>
<i>Rules for Building and Classing Mobile Offshore Drilling Units</i>
<i>Rules for Building and Classing Floating Production Installations</i>
<i>Rules for Materials and Welding (Part 2)</i>
<i>Guide for the Classification of Drilling Systems</i>
<i>Rules for Building and Classing Facilities on Offshore Installations</i>
<i>Guide for Certification of Lifting Appliances</i>
<i>Rules for Building and Classing Offshore Support Vessels</i>
<i>Guide for Building and Classing Mobile Offshore Units</i>
<i>Guide for the Class Notation Helicopter Decks and Facilities (HELIDK and HELIDK(SRF))</i>

TABLE 2
Regulations/Standards other than Class (1 November 2013)

<i>Reference</i>	<i>Title</i>
PSA	Regulations relating to health, environment and safety in the petroleum activities (Framework Regulations)
PSA	Regulations relating to design and outfitting of facilities etc., in the petroleum activities
PSA	Regulations relating to conduct of activities in the petroleum activities
IMO MODU Code	Code for the construction and equipment of Mobile Offshore Drilling Units
NMA	Norwegian Maritime Authority's Regulations for Mobile Offshore Units (NMA Red Book)
NMA No. 123	Regulations for Mobile Offshore Units with production plants and equipment
NMA No. 227	Regulations concerning precautionary measures against fire and explosion on Mobile Offshore Units
NMA No. 853	Regulations concerning evacuation and lifesaving appliances on Mobile Offshore Units
NMA No. 865	Regulations concerning the construction of Mobile Offshore Units
NMA No. 09	Regulations concerning anchoring/positioning systems on Mobile Offshore Units
NMA No. 878	Regulations concerning stability, watertight subdivision and watertight/weathertight closing means on Mobile Offshore Units
NMA No. 879	Regulations concerning ballast systems on Mobile Offshore Units
NMA No. 1200	Regulations concerning the installations and use of radio equipment on Mobile Offshore Units
NMA No. 1239	Regulations concerning risk analyses for Mobile Offshore Units
NMA No. 72	Regulations concerning helicopter decks on Mobile Offshore Units
NMA No. 2318	Regulations concerning the construction and equipment of living quarters on Mobile Offshore Units
NMA Operation 858	Regulations concerning operation of Mobile Offshore Units
NMA No. 859	Regulations concerning protective, environmental and safety measures on Mobile Offshore Units
NMA No. 854	Regulations concerning deck cranes, etc., on Mobile Offshore Units
NMA No. 860	Regulations concerning potable water systems potable water supply on Mobile Offshore Units
NMA No. 1331	Regulations concerning the prevention of pollution from the maritime operations of Mobile Offshore Units
Norwegian Ministry of Local Government and Labour	Regulations relating to asbestos
API RP 14C	Analysis, design, installation and testing of basic surface safety systems for Offshore Production Platforms
ISO-13628	Design and operation of subsea production systems
ISO-10418	Analysis, design, installation and testing of basic surface safety systems
ISO 13702 Chapter 9 and Appendix C.1	Electrical Systems General Parts

TABLE 2 (continued)
Regulations/Standards other than Class (1 February 2012)

<i>Reference</i>	<i>Title</i>
IEC61892	Mobile and Fixed Offshore Units – Electrical Installations
IEC60092	Electrical Installations on Ships
EN 13852-1	Cranes – Offshore Cranes – Part 1: General-purpose offshore cranes
NORSOK D-001	Drilling Facilities
NORSOK L-001	Piping and valves
NORSOK L-002	Piping design, layout and stress analysis
NORSOK P-001	Process design
NORSOK P-100	Process systems
NORSOK S-001	Technical safety
NORSOK U-001	Subsea production systems
AoC Handbook	Handbook for Application for Acknowledgement of Compliance (AoC) http://www.norskoljeoggass.no/en/Publica/Guidelines/Drilling/065-Handbook-for-application-for-Acknowledgement-of-Compliance-AoC/
IMO MSC Circular 645	Guidelines for vessels with dynamic positioning systems

3 Regulatory Basis (1 November 2013)

Petroleum Safety Authority (PSA) may issue the Acknowledgement of Compliance (AoC) when the unit is complete and when the technical conditions and the applicant's organization and management systems are considered to be in compliance with the legal requirements of the Norwegian Continental Shelf. Applicable regulations are given in 2-1/Table 3 and are available at: <http://www.ptil.no/regulations/category216.html>

TABLE 3
Regulations and Guidelines (1 February 2012)

<i>Formal Regulations Title</i>	<i>General Title</i>
Regulations Relating to Health, Safety and the Environment in the Petroleum Activities and at Certain Onshore Facilities	The Framework Regulations
Guidelines Regarding the Framework Regulations	The Framework guidelines
Regulations Relating to Management and the Duty to Provide Information in the Petroleum Activities and at Certain Onshore Facilities	The Management Regulations
Guidelines Regarding the Management Regulations	The Management guidelines
Regulations Relating to Technical and Operational Matters at Onshore Facilities in the Petroleum Activities, etc.	The Technical and Operational Regulations
Guidelines Regarding the Technical and Operational Regulations	The Technical and Operational guidelines
Regulations Relating to Design and Outfitting of Facilities etc., in the Petroleum Activities	The Facilities Regulations
Guidelines Regarding the Facilities Regulations	The Facilities guidelines
Regulations Relating to Conducting Petroleum Activities	The Activities Regulations
Guidelines Regarding the Activities Regulations	The Activities guidelines

5 Regulatory Considerations (1 November 2013)

According to Chapter 1, Section 3 of the Framework Regulations, relevant technical requirements contained in the Rules and Regulations, etc., which have been issued by the Norwegian Maritime Authority together with supplementary classification Rules and State Flag regulations, may be used as a basis for documentation of compliance. Refer to Enclosure C of the “Handbook for Application for Acknowledgement of Compliance (AoC)”. This handbook is available at:

<http://www.norskoljeoggass.no/en/Publica/Guidelines/Drilling/065-Handbook-for-application-for-Acknowledgement-of-Compliance-AoC/>

7 Verification Basis (1 November 2013)

MOUs are to comply with the latest edition of the PSA Regulations, the referred to standards therein and associated guidelines.

MOUs may be accepted for operation on the NCS by applying Chapter 1 Section 3 of the Framework Regulations for marine aspects as an alternative to direct compliance with the PSA Facility Regulations. The unit must be registered and comply with classification procedures with five yearly renewal surveys.

The maritime regulations and applicable classification Rules are to have a safety level at least equivalent to that corresponding to the latest edition of the NMA Regulations for Mobile Offshore Units (NMA Red Book) and Supplementary Offshore Classification Rules.

Drilling and production systems shall comply directly with the provisions of the PSA Facilities Regulations, as shall working environmental issues. It is recommended that the PSA be contacted at an early stage of the project to clarify the verification process.

NMA Regulations are available at: <http://www.sjofartsdir.no/en/vessels/vessel-types/mobile-offshore-units/>

9 Verification Procedures (1 November 2013)

In accordance with the Norwegian Petroleum Act, it is the responsibility of the Owner to ensure that ongoing operations onboard the MOU comply with the applicable Rules and regulations.

The Applicant may choose to use internal as well as external verification activities work to demonstrate partial or full compliance with their verification obligations. Documents issued for this purpose may include, but are not limited to, the following:

- Classification Certificates
- Maritime certificates issued by flag state administration and associated Rules and regulations to which certificates are issued.
- Evidence of compliance with Norwegian Maritime Authority Regulations
- Verification reports or Statement of Compliance (SoC) issued by consultants/technical specialists for the Owner/Operator.

11 Classification Principles and Procedures

Classification principles and procedures addressed in this Guide are stated in the applicable ABS Rules/Guides.

The N-Notation will be issued and maintained based on satisfactory completion of the following activities:

- Design verification
- Certification of supplier-provided materials and equipment
- Surveys during construction
- Surveys after construction

CHAPTER 3 N-Notations

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CHAPTER 3 N-Notations

SECTION 1 Mobile Offshore Drilling Units

1 Introduction (1 November 2013)

The verification described herein may be applied to Mobile Offshore Drilling Units (MODUs), provided they satisfy the following requirements:

- Classification requirements
- **NMA Regulations**
- PSA requirements
- **For Drilling System Requirements, see Section 3**

To assist with the application for an AoC, a MODU is to meet the requirements for the N-Notation as described in this Guide. N-Notations are assigned to MODUs holding class certificates, being flagged and meeting supplementary requirements of PSA and **NMA**.

3 ABS N-Notation (1 November 2013)

Classification requirements given in this Guide are supplementary to the latest edition of ABS Rules. In order to obtain the **(N)** notation, a design verification to ABS Rules additional requirements given in Appendix 1 is to be performed. Additionally, mobile offshore units are to comply with the latest edition of the **NMA** and PSA Regulations, the associated guidelines and referenced standards.

Generally, class requirements are to be applied to all systems for which the **(N)** notation has been requested.

N-Notations for types of MODUs and systems are referenced below.

Type of MODU

Notation

MODU (Self Elevating)

✘ **A1 Self Elevating Drilling Unit (N)**

MODU (Column Stabilized)

✘ **A1 Column-Stabilized Drilling Unit (N)**

MODU (Ship)

✘ **A1 Drilling Unit (N)**

MODU (Barge)

✘ **A1 Barge Drilling Unit (N)**

Other types of units designed as mobile offshore units which do not fall into the above categories may be treated on an individual basis and assigned an appropriate classification notation similar to the notations above.

5 Design Verification (1 November 2013)

5.1 Classification

The following tables are based on Enclosure D of the “Handbook for Application for Acknowledgement of Compliance (AoC)” which gives the applicable PSA Facility Regulations and alternatives to the Facility Regulations for each SFI area. Additionally, technical verification is required for the supplementary items given in Appendix 1 of this Guide, and with respect to the **NMA**’s Regulations, the delegated items from the **NMA**’s Regulations given in Appendix 2 of this Guide.

Upon completion of the technical verification, noted comments are to be satisfactorily addressed by the applicant.

TABLE 1
MODU Verification (1 November 2013)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>	<i>Comments</i>
1	Stability, Watertight and Weathertight Integrity	NMA Stability Regulations Sec 8 to 51	Not applicable for SEDU
11	Arrangement	NMA Construction Regulations NMA Living Quarters Regulations NMA Fire Regulations NMA Operation Regulations Sec 13 AoC Handbook Enclosure A3	AoC Handbook Enclosure A3: NPD Letter of 26-06-2003
11	Escape ways	NMA Construction Regulations NMA Living Quarter Regulations AoC Handbook Enclosure A3	AoC Handbook Enclosure A3: NPD Letter of 26-06-2003
11	Hazardous Area	NMA Fire Regulations	Refers to Regulations concerning maritime electrical installations
2	Hull and Structure	NMA Construction Regulations Sec 6,7 and 10	WSD Method Acceptable as per Sec 3 HES Implications of the NMA Stability Regulations Sec 22 and 30 to be assessed.
20 27 28	Hull materials, general hull work Material protection external Material protection internal		PSA requires that ALL steel used for structural applications shall have documented impact toughness properties.
408	Dynamic positioning plant	NMA Anchoring Regulations IMO MSC Circular 645	
41	Navigation and searching equipment	NMA Construction Regulations	
421	Radio plant	NMA Radio Equipment Regulations	
422	Lifeboat radio transmitters, emergency radio and direction finder	NMA Lifesaving Appliances Regulations	
425	Calling systems, command telephone, telephone plants, walkie-talkies, etc.	NMA Fire Regulations NMA Deck Cranes Regulations NMA Helicopter decks Regulations NMA Anchoring Regulations	Specific requirement for alarms systems, see NSFI 811
427	Light and signal equipment	NMA Construction Regulations NMA Helicopter Decks Regulations	
43	Anchoring, Mooring and Towing equipment	NMA Anchoring Regulations	Not applicable for SEDU
488	Jacking system, spud tank jetting system for Jack-ups	NMA Construction Regulations	
501	Lifeboats with equipment	Facilities Regulations Sec 44 and 41	For New Construction and Major Modification projects, free-fall lifeboats are required.
502	Liferafts with Equipment	NMA Lifesaving Appliances Regulations	
503	Lifesaving, safety and emergency equipment	NMA Lifesaving Appliances Regulations	
505	Loose firefighting apparatuses and equipment, firemen's suit	NMA Fire Regulations	

TABLE 1 (continued)
MODU Verification (1 November 2013)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>	<i>Comments</i>
51	Insulation, panels, bulkheads, doors, side scuttles, windows, skylight	NMA Construction Regulations NMA Living Quarter Regulations NMA Fire Regulations	
52	Internal deck covering, ladders, steps, railings etc.	NMA Construction Regulations NMA Living Quarter Regulations	
53	External deck covering, steps, ladders, gangways, etc.	NMA Construction Regulations	
564	Walkway between units		Only applicable for Accommodation units Owner may apply ABS Class Rules as a contribution towards an AoC
57	Ventilation, air conditioning and heating system	NMA Fire Regulations	
66	Other aggregates and generators for main and emergency power production	NMA Construction Regulations	
74	Exhaust systems and air intakes	NMA Fire Regulations	
76	Distilled and made-up water systems	NMA Potable water	Excludes requirements for water quality
79	Automation systems for machinery	NMA Ballast Regulations NMA Stability Regulations NMA Fire Regulations	NMA Risk Analyses Sec 22 is excluded from the N-Notation
80	Ballast and bilge systems, gutter pipes outside accommodation	NMA Ballast Regulations NMA Pollution Regulations	Not applicable for SEDU
810, 811	Fire Detection, Fire and Lifeboat alarm systems	NMA Fire Regulations	Except specific requirements to sound and light alarms
812	Emergency shutdown system	NMA Fire Regulations	Well testing facilities shall be treated as process systems (See table 3)
813 - 819	Fire/wash down systems, emergency fire pumps, general service pumps, fire fighting systems for external fires, fire fighting systems with CO ₂ and Halon gases	NMA Fire Regulations NMA Helicopter Deck Regulations	
82	Air and sounding systems from tank to deck	NMA Ballast Regulations	
85	Electrical systems general	NMA Construction Regulations (and reference to 89/336/EEC and 92/31/EEC) Regulations concerning maritime electrical installations	
86	Electrical power supply	Regulations concerning maritime electrical installations	
87	Electrical distribution common systems	Regulations concerning maritime electrical installations	Refer to SFI 408 for dynamically positioned Units
88	Electrical cable installation	Regulations concerning maritime electrical installations	Refer to SFI 408 for dynamically positioned Units
89	Electrical consumers (lighting etc.)	NMA Construction Regulations Regulations concerning maritime electrical installations	

TABLE 2
Items outside the Scope of the N-Notation (1 November 2013)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>	<i>Comments</i>
11	Winterization	NMA Construction Regulations	See also, N-Notation Limitations
11	Working Environment	AoC Handbook Enclosure A3	See also, N-Notation Limitations
441-447	Machine tools, cutting and welding equipment	NMA Welding equipment	See also, N-Notation Limitations
448	Name plates(marking) on machinery, equipment, pipes, cables	NMA Protective, Environmental Regulations	See also, N-Notation Limitations
45	Lifting and transport equipment for machinery components	NMA Protective, Environmental Regulations	See also, N-Notation Limitations
504	Medical and dental equipment, medicines and first aid equipment	NMA Living Quarter Regulations	See also, N-Notation Limitations
54	Furniture, inventory and entertainment equipment	NMA Living quarters	
55	Galley & pantry equipment, arrangement for provisions, ironing/drying equipment	NMA Living quarters	
561	Personnel lifts, escalators	NMA Protective, Environmental Regulations Lifts: NMA Construction Sec 23	For lifting equipment other than drill floor
563	Deck cranes	NMA Deck Cranes NORSOK S-002 Working Environment (for crane cabin)	Certification of Deck Cranes can be requested as part of the ABS CRC Notation but excludes Working Environment aspects.
566	Helicopter Platform with equipment	NMA Helicopter Decks Regulations	Helideck can be classed under the Helideck N-Notations

5.3 PSA Requirements

Emergency shutdown indicated in 3-1/Table 3 is **as presented** in Enclosure D of the “Handbook for Application for Acknowledgement of Compliance (AoC)”.

TABLE 3
Emergency Shutdown (1 March 2009)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>
812	Emergency Shut Down	
	FR Sec. 32 (Well Testing Facilities as process for Drilling Unit)	ISO 13702 Ch.6 and 7 and App B.2 and B.3
	FR Sec. 33 (Well Testing)	ISO 10418 or API 14C
	FR Sec. 34 (Well Testing)	ISO 13702 Ch.6 and App B.2 S-001 Ch.6.9 and App E

7 Certification of Materials and Equipment

In addition to the ABS classification surveys per applicable ABS Rules and Guides, surveys carried out at the supplier’s facility are also to meet the design verification requirements of Chapter 3, Section 1 of this Guide.

9 Surveys During Construction

In addition to the ABS classification surveys per applicable ABS Rules and Guides, surveys carried out during construction of the MODU are also to meet the design verification requirements of Chapter 3, Section 1 of this Guide.

11 Surveys After Construction (1 February 2012)

Surveys after construction over the life of the unit are to be carried out at intervals defined in the ABS Rules and in accordance with applicable ABS Rules and Guides.

Gap analyses are to be carried out at intervals not exceeding five years, and preferably before completion of the Special Periodical Survey. This is to demonstrate that the applicant is fully aware of, and has control over the effect of changes to references or standards that are contained in, or referenced by this Guide.

13 Procedures for Classification

To avoid duplication of work, activities related to issuance and maintenance of N-Notations are to be carried out as an integral part of activities related to the class requirements of MODUs. Class procedures are to be followed for issuance of applicable class notations.

15 Limitations (1 November 2013)

The following items subject to PSA requirements for the AoC application are outside of the scope for N-Notation:

- Emergency preparedness
- Owner's management systems onboard and onshore.
- Development of risk analysis.
- Prevention of harmful effects of tobacco.
- Working protection and working environmental issues.
- European Union (EU) Directives
- Regularity and Reliability Issues
- Protection against pollution
- Cranes and lifting appliances (for Deck Cranes, see CRC (N))
- Helideck (Helideck (N) Notation can be requested)
- Welding Central
- Water quality
- Operational requirements
- Drilling plant (N-Notation is optional)
- Winterization and Arctic operational issues

CHAPTER 3 N-Notations

SECTION 2 Mobile Offshore Production Units

1 Introduction (1 November 2013)

The verification described herein may be applied to Mobile Offshore Production Units (MOPUs), provided they satisfy the following requirements:

- Classification requirements
- **NMA Regulations**
- PSA requirements
- Production Facility requirements

In the application for an AoC, a MOPU is to meet the requirements for the N-Notation described in this Guide. N-Notations are assigned to MOPUs holding class certificates, being flagged and meeting supplementary requirements of PSA and **NMA Regulations**.

Chapter 1, Section 3 of the Framework Regulations is not applicable to the production facilities and therefore items are to comply with NORSOK and other standards as indicated in 3-2/Table 4.

Special consideration may be given for the classification of the production facilities where the facility has been determined to be in full compliance with NORSOK requirements.

Production systems and equipment for use in the Norwegian Continental Shelf are to comply directly with the provisions given in the PSA Regulations.

3 ABS N-Notation (1 November 2013)

Classification requirements given in this Guide are supplementary to the latest edition of ABS Rules. In order to obtain the **(N)** notation, a design verification to the ABS Rules is to be performed. Additionally, mobile offshore units are to comply with the latest edition of the **NMA** and PSA Regulations, the associated guidelines and referenced standards.

Generally, class requirements are to be applied to all systems for which the **(N)** notation has been requested. Unless the Owner requests additional compliance, production facilities will be subject to NORSOK standards. In order to verify that safety is not impaired, ABS is to review the effect (area classification, loading, etc.) of these systems on the unit. However it is recommended that the production facility be classed so that the N-Notation may be assigned and to avoid any difficulties that the interfaces between plant and vessel may create.

N-Notations for types of MOPUs and systems are referenced below.

Type of MOPU

Notation

FPS

☒ **A1 Floating Production (and Offloading) System (N)**

FPSO***

☒ **A1 Floating Production, Storage and Offloading System (N)**

FOI*

☒ **A1 Floating Offshore Installations (N)**

FSO**

☒ **A1 Floating Storage and Offloading System (N)**

Notes:

- * **FOI** Notation means that although the offshore unit is fitted with production facilities, the Owner did not desire classification of the production facilities.
- ** The AoC scheme is mandatory for all types of mobile units except floating storage offloading units, which may be subject to a “Request for Consent to Operate”.
- *** "Self-operated" FPSOs (i.e., operated by the oil company) are also not subject to AoC, but are operated under a Consent instead. For FPSOs operated by a separate entity from the oil company, the AoC is required.

Other types of mobile offshore units not included in the above categories may be treated on an individual basis and assigned an appropriate classification notation similar to the notations above.

At this time, ABS does not offer any specific class notation for production facilities. However, the “P” in above FPS or FPSO type units designate that the offshore installation is fitted with production facilities and classification of the production facilities was desired by the Owner.

Note: Production systems are to be classed in accordance with the ABS *Facilities Rules* in association with the process of verification for the N-Notation.

5 Design Verification (1 November 2013)

5.1 Classification Requirements

The following tables are based on Enclosure D of the “Handbook for Application for Acknowledgement of Compliance (AoC)” which gives the applicable PSA Facility Regulations and alternatives to the Facility Regulations for each SFI area. Additionally, technical verification is required for the supplementary items given in Appendix 1 of this Guide, and with respect to the NMA’s Regulations, the delegated items from the NMA’s Regulations given in Appendix 2 of this Guide.

Upon completion of the technical verification, noted comments are to be satisfactorily addressed by the applicant.

TABLE 1
MOPU Verification (1 November 2013)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>	<i>Comments</i>
1	Stability, Watertight and Weathertight Integrity	NMA Stability Regulations Sec 8 to 51	Not applicable for SEDU
11	Arrangement	NMA Construction Regulations NMA Living Quarters Regulations NMA Fire Regulations NMA Operation Regulations Sec 13 AoC Handbook Enclosure A3	AoC Handbook Enclosure A3: NPD Letter of 26-06-2003
11	Escape ways	NMA Construction Regulations NMA Living Quarter Regulations AoC Handbook Enclosure A3	AoC Handbook Enclosure A3: NPD Letter of 26-06-2003
11	Hazardous Area	NMA Fire Regulations	Refers to Regulations concerning maritime electrical installations
2	Hull and Structure	NMA Construction Regulations Sec 6,7 and 10	WSD Method Acceptable as per Sec 3 HES Implications of the NMA Stability Regulations Sec 22 and 30 to be assessed.
20 27 28	Hull materials, general hull work Material protection external Material protection internal		PSA requires that ALL steel used for structural applications shall have documented impact toughness properties.

TABLE 1 (continued)
MOPU Verification (1 November 2013)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>	<i>Comments</i>
26	Turret	NMA Production Sec 15, 1-4	
408	Dynamic positioning plant	NMA Anchoring Regulations IMO MSC Circular 645	
41	Navigation and searching equipment	NMA Construction Regulations	
421	Radio plant	NMA Radio Equipment Regulations	
422	Lifeboat radio transmitters, emergency radio and direction finder	NMA Lifesaving Appliances Regulations	
425	Calling systems, command telephone, telephone plants, walkie-talkies, etc.	NMA Fire Regulations NMA Deck Cranes Regulations NMA Helicopter decks Regulations NMA Anchoring Regulations	Specific requirement for alarms systems, see NSFI 811
427	Light and signal equipment	NMA Construction Regulations NMA Helicopter Decks Regulations	
43	Anchoring, Mooring and Towing equipment	NMA Anchoring Regulations	Not applicable for SEDU
46	VOC/blanket gas system	NMA Production Regulations	
488	Jacking system, spud tank jetting system for Jack-ups	NMA Construction Regulations	
501	Lifeboats with equipment	Facilities Regulations Sec 44 and 41	For New Construction and Major Modification projects, free-fall lifeboats are required.
502	Liferafts with Equipment	NMA Lifesaving Appliances Regulations	
503	Lifesaving, safety and emergency equipment	NMA Lifesaving Appliances Regulations	
505	Loose firefighting 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	
52	Internal deck covering, ladders, steps, railings etc.	NMA Construction Regulations NMA Living Quarter Regulations	
53	External deck covering, steps, ladders, gangways, etc.	NMA Construction Regulations	
564	Walkway between units		Only applicable for Accommodation units Owner may apply ABS Class Rules as a contribution towards an AoC
57	Ventilation, air conditioning and heating system	NMA Fire Regulations	
66	Other aggregates and generators for main and emergency power production	NMA Construction Regulations NMA Production Regulations	
74	Exhaust systems and air intakes	NMA Fire Regulations	
76	Distilled and made-up water systems	NMA Potable water	Excludes requirements for water quality

TABLE 1 (continued)
MOPU Verification (1 November 2013)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>	<i>Comments</i>
79	Automation systems for machinery	NMA Ballast Regulations NMA Stability Regulations NMA Fire Regulations	NMA Risk Analyses Sec 22 is excluded from the N-Notation
80	Ballast and bilge systems, gutter pipes outside accommodation	NMA Ballast Regulations NMA Pollution Regulations	Not applicable for SEDU
810, 811	Fire Detection, Fire and Lifeboat alarm systems	NMA Fire Regulations	Except specific requirements to sound and light alarms
812	Emergency shutdown system	NMA Fire Regulations	Well testing facilities shall be treated as process systems (See table 3)
813 - 819	Fire/wash down systems, emergency fire pumps, general service pumps, fire fighting systems for external fires, fire fighting systems with CO ₂ and Halon gases	NMA Fire Regulations NMA Helicopter Deck Regulations	
82	Air and sounding systems from tank to deck	NMA Ballast Regulations	
85	Electrical systems general	NMA Construction Regulations (and reference to 89/336/EEC and 92/31/EEC) Regulations concerning maritime electrical installations	
86	Electrical power supply	Regulations concerning maritime electrical installations	
87	Electrical distribution common systems	Regulations concerning maritime electrical installations	Refer to SFI 408 for dynamically positioned Units
88	Electrical cable installation	Regulations concerning maritime electrical installations	Refer to SFI 408 for dynamically positioned Units
89	Electrical consumers (lighting etc.)	NMA Construction Regulations Regulations concerning maritime electrical installations	

TABLE 2
Items outside the Scope of the N-Notation (1 November 2013)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>	<i>Comments</i>
11	Winterization	NMA Construction Regulations	See also, N-Notation Limitations
11	Working Environment	AoC Handbook Enclosure A3	See also, N-Notation Limitations
441-447	Machine tools, cutting and welding equipment	NMA Welding equipment	See also, N-Notation Limitations
448	Name plates(marking) on machinery, equipment, pipes, cables	NMA Protective, Environmental Regulations	See also, N-Notation Limitations
45	Lifting and transport equipment for machinery components	NMA Protective, Environmental Regulations	See also, N-Notation Limitations
504	Medical and dental equipment, medicines and first aid equipment	NMA Living Quarter Regulations	See also, N-Notation Limitations

TABLE 2 (continued)
Items outside the Scope of the N-Notation (1 November 2013)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>	<i>Comments</i>
54	Furniture, inventory and entertainment equipment	NMA Living quarters	See also, N-Notation Limitations
55	Galley & pantry equipment, arrangement for provisions, ironing/drying equipment	NMA Living quarters	See also, N-Notation Limitations
561	Personnel lifts, escalators	NMA Protective, Environmental Regulations Lifts: NMA Construction Sec 23	For lifting equipment other than drill floor
563	Deck cranes	NMA Deck Cranes NORSOK S-002 Working Environment (for crane cabin)	Certification of Deck Cranes can be requested as part of the ABS CRC Notation but excludes Working Environment aspects.
566	Helicopter Platform with equipment	NMA Helicopter Decks Regulations	Helideck can be classed under the Helideck N-Notations

5.3 PSA Requirements

Emergency shutdown indicated in 3-1/Table 3 is **as presented** in Enclosure D of the “Handbook for Application for Acknowledgement of Compliance (AoC)”.

TABLE 3
Emergency Shutdown (1 March 2009)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>
812	Emergency Shut Down	
	FR Sec. 32 (Well Testing Facilities as process for Drilling Unit)	ISO 13702 Ch.6 and 7 and App B.2 and B.3
	FR Sec. 33 (Well Testing)	ISO 10418 or API 14C
	FR Sec. 34 (Well Testing)	ISO 13702 Ch.6 and App B.2 S-001 Ch.6.9 and App E

5.5 Production Facilities

PSA design verification requirements for items indicated in 3-2/Table 4 are referenced in Enclosure D of the “Handbook for Application for Acknowledgement of Compliance (AoC)”.

It is recommended that the production system be classed in accordance with the ABS *Facilities Rules* to avoid any difficulties that the interfaces between plant and vessel may create.

TABLE 4
Production Systems (1 November 2013)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>	<i>Comments</i>
---	Production Plants General	PSA Facilities Regulations Chapter IV-II Including guidelines	
301B	Inlet from risers, manifold, swivels etc.	NORSOK: S-001, S-002N, L-001, L-002, P-001, P-100, R-004, M-001, M-601 ISO: 13702	
302B	Separation Equipment (including water treatment)	As in 301B and R-001, R-100, S-005	

TABLE 4 (continued)
Production Systems (1 November 2013)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>	<i>Comments</i>
303B	Compression Equipment	As in 301B and R-001, R-100, S-005 NS: 4931	
304B	Water injection Equipment	As in 301B	
31B	Auxiliary Equipment, Dedicated Process Equipment	As in 301B	
32B	Chemical Equipment	As in 301B	
331B	Process Shut Down (PSD)	NORSOK: I-002, P-001, P-002, S-001, S-002 ISO: 10418 API RP 520 / ISO 4126 API 521 / ISO 23251 NS-EN: 614 and 894 Norwegian Oil and Gas Association Guideline 70 NPD: YA-710	
332B	Emergency Shutdown (ESD)	As in 301B	
333B	De-pressurization, Safety Valves, corresponding Flare Systems	As in 301B	
334B	Open Drains for Process Facility	NORSOK: S-001, L-001, P-001, P-100 ISO: 13702	
34B	Load Bearing Structure for Process Equipment	NMA Production	
36B	Offloading Equipment	L-001, L-002	
37B	Metering for Oil and Gas export, Injection, Combustion of Gas, Flaring Gas	Facilities Regulations Sec 10, Sec 17 Management Reg Sec 19	

Note: (1 November 2013) The NORSOK standards are available at <http://www.standard.no/en/sectors/Petroleum/>

7 Certification of Materials and Equipment

In addition to the ABS classification surveys per applicable ABS Rules and Guides, surveys carried out at the supplier's facility are also to meet the design verification requirements of Chapter 3, Section 2 of this Guide.

9 Surveys During Construction

In addition to the ABS classification surveys per applicable ABS Rules and Guides, surveys carried out during construction of the MOPU are also to meet the design verification requirements of Chapter 3, Section 2 of this Guide.

11 Surveys After Construction (1 February 2012)

Surveys after construction over the life of the unit are to be carried out at intervals defined in the ABS Rules and in accordance with applicable ABS Rules and Guides.

Gap analyses are to be carried out at intervals not exceeding five years, and preferably before completion of the Special Periodical Survey. This is to demonstrate that the applicant is fully aware of, and has control over the effect of changes to references or standards that are contained in, or referenced by this Guide.

13 Procedures for Classification

To avoid duplication of work, activities related to the issuance and maintenance of the N-Notation are to be carried out as an integral part of the activities related to the class requirements of MOPUs. Class procedures are to be followed for the issuance of applicable class notations.

15 Limitations (1 November 2013)

The following items subject to PSA requirements for the AoC application are outside the scope of the N-Notation:

- Emergency preparedness
- Owner's management systems onboard and onshore.
- Development of risk analysis.
- Prevention of harmful effects of tobacco.
- Working protection and working environmental issues.
- European Union (EU) Directives
- Regularity and Reliability Issues
- Protection against pollution
- Cranes and lifting appliances (for Deck Cranes, see CRC (N))
- Helideck (Helideck (N) Notation can be requested)
- Welding central
- Water Quality
- Operational Requirements
- Production Plant (N-Notation optional)
- Winterization and Arctic operation issues

CHAPTER 3 N-Notations

SECTION 3 Drilling Systems (1 November 2013)

1 Introduction

The verification described herein may be applied to Drilling Systems, provided they satisfy the following requirements:

- Classification requirements
- PSA requirements

In the application for an AoC, the Drilling Systems are to meet the requirements for the N-Notation described in this Guide. The CDS N-Notation is assigned to Drilling Systems in accordance with the *ABS Guide for the Classification of Drilling Systems* and meeting supplementary requirements of PSA.

3 ABS N-Notation

Classification requirements given in this Section are supplementary to the latest edition of *ABS Guide for the Classification of Drilling Systems*. In order to obtain the **(N)** notation, a design verification to the ABS Rules is to be performed. Additionally, mobile offshore units are to comply with the latest edition of the NMA and PSA Regulations, the associated guidelines and referenced standards.

Type of System

Notation

Drilling System

✕ CDS (N)

5 Design Verification

5.1 Classification Requirements

The following tables are based on Enclosure D of the “Handbook for Application for Acknowledgement of Compliance (AoC)” which gives the applicable PSA Facility Regulations and alternatives to the Facility Regulations for each SFI area. Additionally, technical verification is required for the supplementary items given in Appendix 1 of this Guide, and with respect to the NMA’s Regulations, the delegated items from the NMA’s Regulations given in Appendix 2 of this Guide.

Upon completion of the technical verification, noted comments are to be satisfactorily addressed by the applicant.

7 Drilling Systems

At the request of the client, design verification is to be carried out to the *ABS Guide for the Classification of Drilling Systems* and the applicable Standards as indicated in the PSA Facilities Regulations with guidelines for SFI 30A to 39A for items indicated in 3-3/Table 1 and referenced in Enclosure D of the “Handbook for Application for Acknowledgement of Compliance (AoC)”.

Upon completion of the technical verification, the noted comments are to be satisfactorily addressed by the applicant. It is recommended that the Drilling System be classed so that the N-Notation may be assigned and to avoid any difficulties that interfaces between plant and vessel may create.

TABLE 1
Drilling Systems (1 November 2013)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>	<i>Comments</i>
30A	Derrick with components	NORSOK: D-001 and D-002	
31A	Drill floor equipment and systems	NORSOK: D-001, D-002 and D-010	
32A	Bulk and mud systems	NORSOK: D-001 and D-002	
33A	Well control equipment and systems	NORSOK: D-001, D-002 and D-010	
34A	Pipe handling equipment and systems	NORSOK: D-001 and D-002	
35A	Drill string and downhole equipment and systems	NORSOK: D-001, D-002 and D-010	
36A	Material handling equipment and systems	NORSOK: D-001 and D-002	Equipment must also comply with EN-13852-1 but is outside of the scope of CDS (N). Compliance can be achieved if CRC (N) is requested.
37A	Service equipment and systems	NORSOK: D-001, D-002 and D-010	
38A	Miscellaneous equipment, systems and services	NORSOK: D-001, D-002 and D-010	
39A	Marine riser, Riser Compensator and Drillstring	NORSOK: D-001, D-002 and D-010	

Note: The NORSOK standards are available at <http://www.standard.no/en/sectors/Petroleum/>

In addition to complying with the above, further compliance is required with PSA Facilities Regulations with Guidelines. Chapter IV-I is available at <http://www.ptil.no/pdf-version-printouts/category474.html>, and contains the following applicable sections:

- Section 47 Well Barriers
- Section 48 Well Control Equipment
- Section 49 Compensator and Disconnection Systems
- Section 50 Drilling Fluid Systems
- Section 51 Cementing Unit
- Section 52 Casings and Anchoring of Wells
- Section 53 Equipment for Completion and Controlled Well Floor
- Section 54 Christmas Tree
- Section 55 Remote Operation of Pipes and Work Strings

9 Certification of Materials and Equipment

In addition to the ABS classification surveys per applicable ABS Rules and Guides, surveys carried out at the supplier's facility are also to meet the design verification requirements of Chapter 3, Section 3 of this Guide.

11 Surveys During Construction

In addition to the ABS classification surveys per applicable ABS Rules and Guides, surveys carried out during construction of the Drilling Systems are also to meet the design verification requirements of Chapter 3, Section 3 of this Guide.

13 Surveys After Construction

Surveys after construction over the life of the unit are to be carried out at intervals defined in the ABS Rules and in accordance with applicable ABS Rules and Guides.

Gap analyses are to be carried out at intervals not exceeding five years, and preferably before completion of the Special Periodical Survey. This is to demonstrate that the applicant is fully aware of, and has control over the effect of changes to references or standards that are contained in, or referenced by this Guide.

15 Procedures for Classification

To avoid duplication of work, activities related to the issuance and maintenance of the N-Notation are to be carried out as an integral part of the activities related to the class requirements of Drilling Systems. Class procedures are to be followed for the issuance of applicable class notations.

17 Limitations

The following items subject to PSA requirements for the AoC application are outside the scope of the N-Notation:

- Emergency preparedness
- Owner's management systems onboard and onshore.
- Development of risk analysis.
- Prevention of harmful effects of tobacco.
- Working protection and working environmental issues.
- European Union (EU) Directives
- Regularity and Reliability Issues
- Protection against pollution
- Cranes and lifting appliances (for Deck Cranes, see CRC (N))
- Helideck (Helideck (N) Notation can be requested)
- Welding central
- Water Quality
- Operational Requirements
- Winterization and Arctic operation issues

CHAPTER 3 N-Notations

SECTION 4 Accommodation Units (1 November 2013)

1 Introduction

The verification described herein may be applied to Accommodation Service Units, provided they satisfy the following requirements:

- Classification requirements
- NMA Regulations
- PSA requirements

To assist with the application for an AoC, an Accommodation Unit is to meet the requirements for the N-Notation as described in this Guide. N-Notations are assigned to MOUs holding class certificates, being flagged and meeting supplementary requirements of PSA and NMA Regulations.

3 ABS N-Notation

Classification requirements given in this Guide are supplementary to the latest edition of ABS Rules. In order to obtain the **(N)** notation, a design verification to ABS Rules additional requirements given in Appendix 1 is to be performed. Additionally, mobile offshore units are to comply with the latest edition of the NMA and PSA Regulations, the associated guidelines and referenced standards.

Generally, class requirements are to be applied to all systems for which the **(N)** notation has been requested.

N-Notations for types of MODUs and systems are referenced below.

Type of Unit

Notation

Accommodation Unit

Accommodation Service (N)

5 Design Verification

5.1 Classification

The following tables are based on Enclosure D of the “Handbook for Application for Acknowledgement of Compliance (AoC)” which gives the applicable PSA Facility Regulations and alternatives to the Facility Regulations for each SFI area. Additionally, technical verification is required for the supplementary items given in Appendix 1 of this Guide, and with respect to the NMA’s Regulations, the delegated items from the NMA’s Regulations given in Appendix 2 of this Guide.

Upon completion of the technical verification, noted comments are to be satisfactorily addressed by the applicant.

TABLE 1
Accommodation Verification (1 November 2013)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>	<i>Comments</i>
1	Stability, Watertight and Weathertight Integrity	NMA Stability Regulations Sec 8 to 51	Not applicable for SEDU
11	Arrangement	NMA Construction Regulations NMA Living Quarters Regulations NMA Fire Regulations NMA Operation Regulations Sec 13 AoC Handbook Enclosure A3	AoC Handbook Enclosure A3: NPD Letter of 26-06-2003
11	Escape ways	NMA Construction Regulations NMA Living Quarter Regulations AoC Handbook Enclosure A3	AoC Handbook Enclosure A3: NPD Letter of 26-06-2003
11	Hazardous Area	NMA Fire Regulations	Refers to Regulations concerning maritime electrical installations
2	Hull and Structure	NMA Construction Regulations Sec 6,7 and 10	WSD Method Acceptable as per Sec 3 HES Implications of the NMA Stability Regulations Sec 22 and 30 to be assessed.
20 27 28	Hull materials, general hull work Material protection external Material protection internal		PSA requires that ALL steel used for structural applications shall have documented impact toughness properties.
408	Dynamic positioning plant	NMA Anchoring Regulations IMO MSC Circular 645	
41	Navigation and searching equipment	NMA Construction Regulations	
421	Radio plant	NMA Radio Equipment Regulations	
422	Lifeboat radio transmitters, emergency radio and direction finder	NMA Lifesaving Appliances Regulations	
425	Calling systems, command telephone, telephone plants, walkie-talkies, etc.	NMA Fire Regulations NMA Deck Cranes Regulations NMA Helicopter decks Regulations NMA Anchoring Regulations	Specific requirement for alarms systems, see NSFI 811
427	Light and signal equipment	NMA Construction Regulations NMA Helicopter Decks Regulations	
43	Anchoring, Mooring and Towing equipment	NMA Anchoring Regulations	Not applicable for SEDU
488	Jacking system, spud tank jetting system for Jack-ups	NMA Construction Regulations	
501	Lifeboats with equipment	Facilities Regulations Sec 44 and 41	For New Construction and Major Modification projects, free-fall lifeboats are required.
502	Liferafts with Equipment	NMA Lifesaving Appliances Regulations	
503	Lifesaving, safety and emergency equipment	NMA Lifesaving Appliances Regulations	
505	Loose firefighting apparatuses and equipment, firemen's suit	NMA Fire Regulations	

TABLE 1 (continued)
Accommodation Verification (1 November 2013)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>	<i>Comments</i>
51	Insulation, panels, bulkheads, doors, side scuttles, windows, skylight	NMA Construction Regulations NMA Living Quarter Regulations NMA Fire Regulations	
52	Internal deck covering, ladders, steps, railings etc.	NMA Construction Regulations NMA Living Quarter Regulations	
53	External deck covering, steps, ladders, gangways, etc.	NMA Construction Regulations	
564	Walkway between units		Only applicable for Accommodation units Owner may apply ABS Class Rules as a contribution towards an AoC
57	Ventilation, air conditioning and heating system	NMA Fire Regulations	
66	Other aggregates and generators for main and emergency power production	NMA Construction Regulations	
74	Exhaust systems and air intakes	NMA Fire Regulations	
76	Distilled and made-up water systems	NMA Potable water	Excludes requirements for water quality
79	Automation systems for machinery	NMA Ballast Regulations NMA Stability Regulations NMA Fire Regulations	NMA Risk Analyses Sec 22 is excluded from the N-Notation
80	Ballast and bilge systems, gutter pipes outside accommodation	NMA Ballast Regulations NMA Pollution Regulations	Not applicable for SEDU
810, 811	Fire Detection, Fire and Lifeboat alarm systems	NMA Fire Regulations	Except specific requirements to sound and light alarms
812	Emergency shutdown system	NMA Fire Regulations	Well testing facilities shall be treated as process systems (See table 3)
813 - 819	Fire/wash down systems, emergency fire pumps, general service pumps, fire fighting systems for external fires, fire fighting systems with CO ₂ and Halon gases	NMA Fire Regulations NMA Helicopter Deck Regulations	
82	Air and sounding systems from tank to deck	NMA Ballast Regulations	
85	Electrical systems general	NMA Construction Regulations (and reference to 89/336/EEC and 92/31/EEC) Regulations concerning maritime electrical installations	
86	Electrical power supply	Regulations concerning maritime electrical installations	
87	Electrical distribution common systems	Regulations concerning maritime electrical installations	Refer to SFI 408 for dynamically positioned Units
88	Electrical cable installation	Regulations concerning maritime electrical installations	Refer to SFI 408 for dynamically positioned Units
89	Electrical consumers (lighting etc.)	NMA Construction Regulations Regulations concerning maritime electrical installations	

TABLE 2
Items outside the Scope of the N-Notation (1 November 2013)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>	<i>Comments</i>
11	Winterization	NMA Construction Regulations	See also, N-Notation Limitations
11	Working Environment	AoC Handbook Enclosure A3	See also, N-Notation Limitations
441-447	Machine tools, cutting and welding equipment	NMA Welding equipment	See also, N-Notation Limitations
448	Name plates(marking) on machinery, equipment, pipes, cables	NMA Protective, Environmental Regulations	
45	Lifting and transport equipment for machinery components	NMA Protective, Environmental Regulations	
504	Medical and dental equipment, medicines and first aid equipment	NMA Living Quarter Regulations	
54	Furniture, inventory and entertainment equipment	NMA Living quarters	
55	Galley & pantry equipment, arrangement for provisions, ironing/drying equipment	NMA Living quarters	
561	Personnel lifts, escalators	NMA Protective, Environmental Regulations Lifts: NMA Construction Sec 23	For lifting equipment other than drill floor
563	Deck cranes	NMA Deck Cranes NORSOK S-002 Working Environment (for crane cabin)	Certification of Deck Cranes can be requested as part of the ABS CRC Notation but excludes Working Environment aspects.
566	Helicopter Platform with equipment	NMA Helicopter Decks Regulations	Helideck can be classed under the Helideck N-Notations

7. Certification of Materials and Equipment

In addition to the ABS classification surveys per applicable ABS Rules and Guides, surveys carried out at the supplier's facility are also to meet the design verification requirements of Chapter 3, Section 4 of this Guide.

9 Surveys During Construction

In addition to the ABS classification surveys per applicable ABS Rules and Guides, surveys carried out during construction of the MOU are also to meet the design verification requirements of Chapter 3, Section 4 of this Guide.

11 Surveys After Construction

Surveys after construction over the life of the unit are to be carried out at intervals defined in the ABS Rules and in accordance with applicable ABS Rules and Guides.

Gap analyses are to be carried out at intervals not exceeding five years, and preferably before completion of the Special Periodical Survey. This is to demonstrate that the applicant is fully aware of, and has control over the effect of changes to references or standards that are contained in, or referenced by this Guide.

13 Procedures for Classification

To avoid duplication of work, activities related to issuance and maintenance of N-Notations are to be carried out as an integral part of activities related to the class requirements of MOUs. Class procedures are to be followed for issuance of applicable class notations.

15 Limitations

The following items subject to PSA requirements for the AoC application are outside the scope of the N-Notation:

- Emergency preparedness
- Owner's management systems onboard and onshore.
- Development of risk analysis.
- Prevention of harmful effects of tobacco.
- Working protection and working environmental issues.
- European Union (EU) Directives
- Regularity and Reliability Issues
- Protection against pollution
- Cranes and lifting appliances (for Deck Cranes, see CRC (N))
- Helideck (Helideck (N) Notation can be requested)
- Welding Central
- Water quality
- Operational requirements
- Winterization and Arctic operational issues

CHAPTER 3 N-Notations

SECTION 5 Well Intervention Units (1 November 2013)

1 Introduction

The verification described herein may be applied to Offshore Support Vessels involved in Well Intervention, provided they satisfy the following requirements:

- Classification requirements
- NMA Regulations
- PSA requirements

To assist with the application for an AoC, an Offshore Support Vessel involved in Well Intervention is to meet the requirements for the N-Notation as described in this Guide. N-Notations are assigned to OSVs holding class certificates, being flagged and meeting supplementary requirements of PSA and NMA Regulations.

3 ABS N-Notation

Classification requirements given in this Guide are supplementary to the latest edition of *ABS Rules for Building and Classing Offshore Support Vessels*. In order to obtain the **(N)** notation, a design verification to ABS Rules and additional requirements given in Appendix 1 is to be performed. Additionally, mobile offshore units are to comply with the latest edition of the NMA Regulations, PSA Requirements and their associated guidelines and referenced standards.

Generally, class requirements are to be applied to all systems for which the **(N)** notation has been requested.

N-Notations for types of OSVs and systems are referenced below.

Type of Unit

OSVs fitted with permanent well intervention systems

OSVs designed to be “well intervention ready”

Notation

Offshore Support Vessel (WI)(N)

Offshore Support Vessel (WI-READY)(N)

Other types of notations which do not fall into the above categories will be specially considered based on additional ABS Rules as applicable depending on vessel configuration or operating environment.

5 Design Verification

5.1 Classification

The following tables are based on Enclosure D of the “Handbook for Application for Acknowledgement of Compliance (AoC)” which gives the applicable PSA Facility Regulations and alternatives to the Facility Regulations for each SFI area. Additionally, technical verification is required for the supplementary items given in Appendix 1 of this Guide, and with respect to the NMA’s Regulations, the delegated items from the NMA’s Regulations given in Appendix 2 of this Guide.

Upon completion of the technical verification, noted comments are to be satisfactorily addressed by the applicant.

TABLE 1
Well Intervention Unit Verification (1 November 2013)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>	<i>Comments</i>
1	Stability, Watertight and Weathertight Integrity	NMA Stability Regulations Sec 8 to 51	Not applicable for SEDU
11	Arrangement	NMA Construction Regulations NMA Living Quarters Regulations NMA Fire Regulations NMA Operation Regulations Sec 13 AoC Handbook Enclosure A3	AoC Handbook Enclosure A3: NPD Letter of 26-06-2003
11	Escape ways	NMA Construction Regulations NMA Living Quarter Regulations AoC Handbook Enclosure A3	AoC Handbook Enclosure A3: NPD Letter of 26-06-2003
11	Hazardous Area	NMA Fire Regulations	Refers to Regulations concerning maritime electrical installations
2	Hull and Structure	NMA Construction Regulations Sec 6,7 and 10	WSD Method Acceptable as per Sec 3 HES Implications of the NMA Stability Regulations Sec 22 and 30 to be assessed.
20 27 28	Hull materials, general hull work Material protection external Material protection internal		PSA requires that ALL steel used for structural applications shall have documented impact toughness properties.
408	Dynamic positioning plant	NMA Anchoring Regulations IMO MSC Circular 645	
41	Navigation and searching equipment	NMA Construction Regulations	
421	Radio plant	NMA Radio Equipment Regulations	
422	Lifeboat radio transmitters, emergency radio and direction finder	NMA Lifesaving Appliances Regulations	
425	Calling systems, command telephone, telephone plants, walkie-talkies, etc.	NMA Fire Regulations NMA Deck Cranes Regulations NMA Helicopter decks Regulations NMA Anchoring Regulations	Specific requirement for alarms systems, see NSFI 811
427	Light and signal equipment	NMA Construction Regulations NMA Helicopter Decks Regulations	
43	Anchoring, Mooring and Towing equipment	NMA Anchoring Regulations	Not applicable for SEDU
488	Jacking system, spud tank jetting system for Jack-ups	NMA Construction Regulations	
501	Lifeboats with equipment	Facilities Regulations Sec 44 and 41	For New Construction and Major Modification projects, free-fall lifeboats are required.
502	Liferafts with Equipment	NMA Lifesaving Appliances Regulations	
503	Lifesaving, safety and emergency equipment	NMA Lifesaving Appliances Regulations	
505	Loose firefighting apparatuses and equipment, firemen's suit	NMA Fire Regulations	

TABLE 1 (continued)
Well Intervention Unit Verification (1 November 2013)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>	<i>Comments</i>
51	Insulation, panels, bulkheads, doors, side scuttles, windows, skylight	NMA Construction Regulations NMA Living Quarter Regulations NMA Fire Regulations	
52	Internal deck covering, ladders, steps, railings etc.	NMA Construction Regulations NMA Living Quarter Regulations	
53	External deck covering, steps, ladders, gangways, etc.	NMA Construction Regulations	
564	Walkway between units		Only applicable for Accommodation units Owner may apply ABS Class Rules as a contribution towards an AoC
57	Ventilation, air conditioning and heating system	NMA Fire Regulations	
66	Other aggregates and generators for main and emergency power production	NMA Construction Regulations	
74	Exhaust systems and air intakes	NMA Fire Regulations	
76	Distilled and made-up water systems	NMA Potable water	Excludes requirements for water quality
79	Automation systems for machinery	NMA Ballast Regulations NMA Stability Regulations NMA Fire Regulations	NMA Risk Analyses Sec 22 is excluded from the N-Notation
80	Ballast and bilge systems, gutter pipes outside accommodation	NMA Ballast Regulations NMA Pollution Regulations	Not applicable for SEDU
810, 811	Fire Detection, Fire and Lifeboat alarm systems	NMA Fire Regulations	Except specific requirements to sound and light alarms
812	Emergency shutdown system	NMA Fire Regulations	Well testing facilities shall be treated as process systems (See table 3)
813 - 819	Fire/wash down systems, emergency fire pumps, general service pumps, fire fighting systems for external fires, fire fighting systems with CO ₂ and Halon gases	NMA Fire Regulations NMA Helicopter Deck Regulations	
82	Air and sounding systems from tank to deck	NMA Ballast Regulations	
85	Electrical systems general	NMA Construction Regulations (and reference to 89/336/EEC and 92/31/EEC) Regulations concerning maritime electrical installations	
86	Electrical power supply	Regulations concerning maritime electrical installations	
87	Electrical distribution common systems	Regulations concerning maritime electrical installations	Refer to SFI 408 for dynamically positioned Units
88	Electrical cable installation	Regulations concerning maritime electrical installations	Refer to SFI 408 for dynamically positioned Units
89	Electrical consumers (lighting etc.)	NMA Construction Regulations Regulations concerning maritime electrical installations	

TABLE 2
Items outside the Scope of the N-Notation (1 November 2013)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>	<i>Comments</i>
11	Winterization	NMA Construction Regulations	See also, N-Notation Limitations
11	Working Environment	AoC Handbook Enclosure A3	See also, N-Notation Limitations
441-447	Machine tools, cutting and welding equipment	NMA Welding equipment	See also, N-Notation Limitations
448	Name plates(marking) on machinery, equipment, pipes, cables	NMA Protective, Environmental Regulations	See also, N-Notation Limitations
45	Lifting and transport equipment for machinery components	NMA Protective, Environmental Regulations	See also, N-Notation Limitations
504	Medical and dental equipment, medicines and first aid equipment	NMA Living Quarter Regulations	See also, N-Notation Limitations
54	Furniture, inventory and entertainment equipment	NMA Living quarters	
55	Galley & pantry equipment, arrangement for provisions, ironing/drying equipment	NMA Living quarters	
561	Personnel lifts, escalators	NMA Protective, Environmental Regulations Lifts: NMA Construction Sec 23	For lifting equipment other than drill floor
563	Deck cranes	NMA Deck Cranes NORSOK S-002 Working Environment (for crane cabin)	Certification of Deck Cranes can be requested as part of the ABS CRC Notation but excludes Working Environment aspects.
566	Helicopter Platform with equipment	NMA Helicopter Decks Regulations	Helideck can be classed under the Helideck N-Notations

TABLE 3
Well Intervention Unit (WI)(N) (1 November 2013)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>	<i>Comments</i>
30C	Drilling derrick with components	NORSOK: D-001 and N-001	
31C	Work floor equipment and systems	NORSOK: D-001 and D-002	
32C	Bulk and drill fluid systems	NORSOK: D-001 and D-002	
33C	Well control equipment and systems	NORSOK: D-001, D-002 and D-010	
36C	Material handling equipment and systems	NORSOK: D-001	
38C	Miscellaneous systems and service	NORSOK: D-001, D-002 and D-010	

7 Certification of Materials and Equipment

In addition to the ABS classification surveys per applicable ABS Rules and Guides, surveys carried out at the supplier's facility are also to meet the design verification requirements of Chapter 3, Section 5 of this Guide.

9 Surveys During Construction

In addition to the ABS classification surveys per applicable ABS Rules and Guides, surveys carried out during construction of the OSV are also to meet the design verification requirements of Chapter 3, Section 5 of this Guide.

11 Surveys After Construction

Surveys after construction over the life of the unit are to be carried out at intervals defined in the ABS Rules and in accordance with applicable ABS Rules and Guides.

Gap analyses are to be carried out at intervals not exceeding five years, and preferably before completion of the Special Periodical Survey. This is to demonstrate that the applicant is fully aware of, and has control over the effect of changes to references or standards that are contained in, or referenced by this Guide.

13 Procedures for Classification

To avoid duplication of work, activities related to issuance and maintenance of N-Notations are to be carried out as an integral part of activities related to the class requirements of OSVs. Class procedures are to be followed for issuance of applicable class notations.

15 Limitations

The following items subject to PSA requirements for the AoC application are outside the scope of the N-Notation:

- Emergency preparedness
- Owner's management systems onboard and onshore.
- Development of risk analysis.
- Prevention of harmful effects of tobacco.
- Working protection and working environmental issues.
- European Union (EU) Directives
- Regularity and Reliability Issues
- Protection against pollution
- Cranes and lifting appliances (for Deck Cranes, see CRC (N))
- Helideck (Helideck (N) Notation can be requested)
- Welding Central
- Water quality
- Operational requirements
- Winterization and Arctic operational issues

CHAPTER 3 N-Notations

SECTION 6 Helicopter Decks (1 November 2013)

1 Introduction

The verification described herein may be applied to Helicopter Decks, provided they satisfy the following requirements:

- Classification requirements
- NMA Regulations
- PSA requirements

To assist with the application for an AoC, a Unit's Helideck is to meet the requirements for the N-Notation as described in this Guide. N-Notations are assigned to Units holding class certificates, being flagged and meeting supplementary requirements of PSA and NMA.

3 ABS N-Notation

Classification requirements given in this Guide are supplementary to the latest edition of ABS Rules. In order to obtain the **(N)** notation, a design verification to ABS Rules additional requirements given in Appendix 1 is to be performed. Additionally, mobile offshore units are to comply with the latest edition of the NMA and PSA Regulations, the associated guidelines and referenced standards.

Generally, class requirements are to be applied to all systems for which the **(N)** notation has been requested.

N-Notations for types of Helidecks are referenced below.

Type of Helicopter Decks

Notation

Helicopter Decks

HELIDK (N)

Helicopter Decks with Storage and Refueling Facilities

HELIDK (SRF) (N)

5 Design Verification

5.1 Classification

The following table is based on Enclosure D of the "Handbook for Application for Acknowledgement of Compliance (AoC)" which gives the applicable PSA Facility Regulations and alternatives to the Facility Regulations for each SFI area. Additionally, technical verification is required for the supplementary items given in Appendix 1 of this Guide, and with respect to the NMA's Regulations, the delegated items from the NMA's Regulations given in Appendix 2 of this Guide.

Upon completion of the technical verification, noted comments are to be satisfactorily addressed by the applicant.

TABLE 1
Helideck Verification (1 November 2013)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>	<i>Comments</i>
566	Helicopter Platform with equipment	NMA Helicopter Decks Regulations	

7 Certification of Materials and Equipment

In addition to the ABS classification surveys per applicable ABS Rules and Guides, surveys carried out at the supplier's facility are also to meet the design verification requirements of Chapter 3, Section 6 of this Guide.

9 Surveys During Construction

In addition to the ABS classification surveys per applicable ABS Rules and Guides, surveys carried out during construction of the Helideck are also to meet the design verification requirements of Chapter 3, Section 6 of this Guide.

11 Surveys After Construction

Surveys after construction over the life of the unit are to be carried out at intervals defined in the ABS Rules and in accordance with applicable ABS Rules and Guides.

Gap analyses are to be carried out at intervals not exceeding five years, and preferably before completion of the Special Periodical Survey. This is to demonstrate that the applicant is fully aware of, and has control over the effect of changes to references or standards that are contained in, or referenced by this Guide.

13 Procedures for Classification

To avoid duplication of work, activities related to issuance and maintenance of N-Notations are to be carried out as an integral part of activities related to the class requirements of Helidecks. Class procedures are to be followed for issuance of applicable class notations.

CHAPTER 3 N-Notations

SECTION 7 Cranes and Lifting Appliances (1 November 2013)

1 Introduction

The verification described herein may be applied to Cranes and Lifting Appliances, provided they satisfy the following requirements:

- Classification requirements
- NMA Regulations
- PSA requirements

To assist with the application for an AoC, a Unit's Cranes and Lifting Appliances are to meet the requirements for the N-Notation as described in this Guide. N-Notations are assigned to Units holding class certificates, being flagged and meeting supplementary requirements of PSA and NMA.

3 ABS N-Notation

Classification requirements given in this Guide are supplementary to the latest edition of ABS Rules. In order to obtain the **(N)** notation, a design verification to ABS Rules additional requirements given in Appendix 1 is to be performed. Additionally, Deck Cranes are to comply with the latest edition of the NMA and PSA Regulations, the associated guidelines and referenced standards.

Generally, class requirements are to be applied to all systems for which the **(N)** notation has been requested.

N-Notations for types of Cranes and Lifting Appliances are referenced below.

<u>Type of Cranes and Lifting Appliances</u>	<u>Notation</u>
Crane Register Certificate	CRC (N)

5 Design Verification

5.1 Classification

The following table is based on Enclosure D of the "Handbook for Application for Acknowledgement of Compliance (AoC)" which gives the applicable PSA Facility Regulations and alternatives to the Facility Regulations for each SFI area. Additionally, technical verification is required for the supplementary items given in Appendix 1 of this Guide, and with respect to the NMA's Regulations, the delegated items from the NMA's Regulations given in Appendix 2 of this Guide.

Upon completion of the technical verification, noted comments are to be satisfactorily addressed by the applicant.

TABLE 1
Deck Cranes Verification (1 November 2013)

<i>NSFI Number</i>	<i>NSFI Item</i>	<i>Regulations and Standards</i>	<i>Comments</i>
563	Deck cranes	NMA Deck Cranes NORSOK S-002 Working Environment (for crane cabin)	Deck Cranes must be certified to EN-13852-1 CRC(N) excludes Working Environment aspects.

7 Certification of Materials and Equipment

In addition to the ABS classification surveys per applicable ABS Rules and Guides, surveys carried out at the supplier's facility are also to meet the design verification requirements of Chapter 3, Section 7 of this Guide.

9 Surveys During Construction

In addition to the ABS classification surveys per applicable ABS Rules and Guides, surveys carried out during construction of the Deck Cranes are also to meet the design verification requirements of Chapter 3, Section 7 of this Guide.

11 Surveys After Construction

Surveys after construction over the life of the unit are to be carried out at intervals defined in the ABS Rules and in accordance with applicable ABS Rules and Guides.

Gap analyses are to be carried out at intervals not exceeding five years, and preferably before completion of the Special Periodical Survey. This is to demonstrate that the applicant is fully aware of, and has control over the effect of changes to references or standards that are contained in, or referenced by this Guide.

13 Procedures for Classification

To avoid duplication of work, activities related to issuance and maintenance of N-Notations are to be carried out as an integral part of activities related to the class requirements of Cranes and Lifting Appliances. Class procedures are to be followed for issuance of applicable class notations.

APPENDIX 1 Additional **PSA** Requirements (1 November 2013)

1 Additional **PSA** Requirements Included in N-Notation

For units intending to operate in the Norwegian Continental Shelf, ABS will carry out additional reviews as required by the **PSA** for the following:

Item		Additional PSA Requirements Included in N-Notation
1	Bilge System	A graphic panel, showing all components of bilge and drainage systems shall be suitably positioned at the bilge pumping station.
2	Platform Piping	Pipe tunnels to be fitted with an air pipe not less than 75 mm internal diameter.
3	Platform Piping	Sounding rods are to be spark proof for liquids having flash point below 60°C.
4	Machinery Piping	Strums shall be fitted to all sea chest openings in the shell plating. The total area of the strum holes shall be at least twice the total floor area in the sea water inlet valves.
5	Machinery Piping	Remote stop of hydraulic oil pumps from a central place outside the engine and boiler rooms is to be provided.
6	Steam Systems	If two or more boilers are connected to a common header or steam manifold the steam connection to each boiler shall be provided with two shut off valves with a free blowing drain in between. This requirement does not apply to exhaust gas economizers with forced circulations.
7	Hydraulic Cylinders	Piston rods with diameter less than 5% of the length between the mountings in the fully extracted position, buckling calculations shall be documented.
8	Ventilation	Engine room supply and exhaust fans are to be arranged with redundancy.
9	Gas Turbines	Gas turbines are to be shut down on loss of control power failure.
10	Thrusters	It should be possible to lock the thrusters in the neutral position to allow it to produce thrust in case its steering gear is inoperative.
11	Thrusters	<ol style="list-style-type: none"> Lubricating oil tanks are to be provided with a low level alarm. Torsional vibrations – calculations for the first and second order natural frequency shall be submitted. Natural frequencies are not permitted in the range 0.8 - 1.2 blade order frequency at MCR unless the vibratory torque is documented to be within approved limits.
12	Compressors	Design of crankshafts are to be provided for air compressors rated above 200 kW.
13	Boilers	Boilers and steam heated generators are to be provided with two safety valves for heating surface of 10 m ² and greater
14	Steering Gear	<p>Overbalanced rudders and rudders of unconventional design:</p> <ol style="list-style-type: none"> The influence of increased friction due to age and wear of bearings on steering gear torque capacity shall be duly considered. Unless such friction losses are accounted for and specified in submitted approval documentation, the friction coefficient for the bearing in worn condition shall be taken at least twice as when new. Steering gear shall be capable of bringing the rudder from any rudder angle back to neutral position. This is to be verified by testing on sea trial

<i>Item</i>		<i>Additional PSA Requirements Included in N-Notation</i>
15	Jacking Systems	An interlock is to be provided between electrical motor and fixation rack system (if any) in order to prevent power supply to the motors when the fixation rack is engaged.
16	Jacking Systems	A permanent remote indication of loads during jacking and retrieval is to be provided. For lattice leg unit the load per chord is to be presented. Alarm is to be given when maximum load is exceeded.
17	CSDU SEDU	Additional analysis to demonstrate adequacy of unit's for installation and retrieval. Loads to be considered are: <ol style="list-style-type: none"> functional loads maximum environmental loads and associated functional loads accidental loads and associated functional loads environmental loads corresponding to a return period of one year and associated functional loads after credible or accidental events environmental loads corresponding to a return period of one year and associated functional loads in a heeled condition corresponding to accidental flooding The applied loads are to be at least 80% of the loads associated with the severe storm condition that was used for the design of the unit. The maximum calculated stresses in the structure after the loss of a slender bracing member are to be less than the specified minimum yield strength of the material.
18	Unit's Condition (1 February 2012)	Strength analysis to verify unit's adequacy for the damaged condition.
19	Design Load Condition (1 February 2012)	Additional analysis for accidental loads and one year return period for the loading requirements as per Item 17 above.
		For Column Stabilized Drilling Units, sufficient structural redundancy is required so that the unit's structure is to be able to withstand the loss of a slender bracing member without causing a collapse of the unit's structure.
		For Jack-Ups assumed damaged condition such as loss of one main carrying brace or loss of one main load carrying deck girder may not be required due to high redundancy but damage condition in transit due to accidental flooding causing heeling of the unit is required For Jack-Ups, since lattice legs have a high degree of structural redundancy, analysis to verify structural redundancy is not required.
20	Site Specific Assessments (1 February 2012)	Design to account for site specific environmental conditions.
		For Jack-Ups, analyses are to be submitted to verify adequacy of foundation (soils).
21	Ship Type (1 February 2012)	For ship shape units: <ol style="list-style-type: none"> Adequacy of the unit is to be assessed for the following loads: <ol style="list-style-type: none"> Maximum gravity and functional loads Design environmental loads and associated gravity and functional loads Accidental loads and associated gravity and functional loads Design environmental loads and associated gravity and functional loads after credible failures or accidents Maximum gravity and functional loads in a heeled condition after accidental flooding Design to account for site specific environmental conditions
22	Tandem offloading area and equipment onboard FPSOs and FSOs (1 November 2013)	<ol style="list-style-type: none"> The shape of the stern of FPSOs and FSUs should be rounded or partly rounded to minimize consequences in case of collision between vessel and shuttle tankers. The flare tower should be located in the centerline of the vessel, with a necessary distance from the stern to prevent contact between the flare tower and a "worst case" colliding shuttle tanker. Only equipment to be used for offloading operation should be located at the stern. No lifeboat(s) shall be located at the stern. The hawser, hawser winch and fairlead should be located in the centerline of the vessel.

<i>Item</i>		<i>Additional PSA Requirements Included in N-Notation</i>
		<p>e) The speed of the hawser winch should be adjustable up to 50m/min.</p> <p>f) The offloading hose should be stored on a drum, not in a chute. The storage drum shall be located next to the hawser winch.</p> <p>g) Only void space or ballast tank(s) 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.</p> <p>h) 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.</p> <p>i) Gutter bar(s) should be located around the offloading area. The height of the gutter bar(s) shall be sufficient to prevent overboard spillage of oil when the vessel is rolling and not less than 400m.</p> <p>j) Rupture disk(s) including return pipe to cargo tank, should be arranged from the offloading pipe to prevent damages due to a surge in pressure.</p> <p>k) The control station(s) 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.</p> <p>l) Adequate capacity of the nitrogen or inert gas should be available to displace the offloading hose in a maximum of 15 minutes.</p>
23	Materials (1 November 2013)	<p>The PSA requires that all steel for structural application shall have documented impact toughness properties.</p> <p>This requirement is based on the PSA's interpretation of the Framework Regulation Sec. 23 on general requirements for material and information.</p>
24	FPSOs / FSOs (surface units of ship or barge type hull intended for oil storage including column-stabilized units intended for oil storage.) (1 November 2013)	FPSOs / FSOs should have a double hull arrangement as specified in MARPOL, covering the entire storage tank length including fuel tanks. Reference is given to MARPOL, Consolidated edition of 2006, Annex I, Reg. 19.3.1 and 19.3.2 MEPC. 139(53), Guidelines for the application of the revised MARPOL Annex I, Requirements to floating production, storage and offloading facilities (FPSOs) and floating storage units (FSOs). 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. The distance between oil tight boundaries and external boundaries(e.g. side shell and bottom shell) should be larger than two meter, to facilitate acceptable conditions for inspection and repair and protection against collision.
25	Facilities used continuously offshore for more than five years (1 November 2013)	The action coefficient for slender members should be at least 1.3
26	Accidental limit state (1 November 2013)	A control should be made in the accidental limit state with environmental and accidental actions with an annual probability of exceedence of 10^{-4}
27	Possible causes of damage (1 November 2013)	<p>Additional possible causes of damage to those indicated in the Norwegian Maritime Directorate's Stability Regulations and Classification Rules shall be taken into account. An analysis of possible damage cases shall be made. The likelihood and consequences shall be reduced.</p> <p>This requirement is based on the PSA's interpretation of the Management Regulation Sec. 17 on risk analyses and emergency preparedness assessments.</p>
28	Openings below water line (1 November 2013)	Under the water line, floating facilities should have as few openings to the sea as possible.
29	Fire water pumps (1 November 2013)	Fire water pumps with maximum flow of fire water should not lead to weight or stability problems.

<i>Item</i>		<i>Additional PSA Requirements Included in N-Notation</i>
30	Collision loading (1 November 2013)	<p>a) All facilities should resist collision energies of at least 35 MJ.</p> <p>b) FPSOs and FSOs using tandem loading shall resist collision energies of at least 60 MJ in the stern.</p>
31	Fatigue life (1 November 2013)	All structures should have a minimum fatigue life of 20 years
32	Facilities ages 19 years or more since first certificate issue (1 November 2013)	<p>These facilities are required to document the following:</p> <p>a) 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, ballasting and loading and unloading operations. The fatigue calculations should take into account the actual environmental exposure the unit has been exposed to, in the form of relevant environmental scatter diagrams for respective locations or actual environmental measurements if available.</p> <p>b) 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 and Fatigue life.</p> <p>c) 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. Additionally, this is so that local weld-ons or scallops do not change their integrity.</p>

3 Additional PSA Requirements Excluded from the N-Notation

<i>Item</i>		<i>Additional PSA Requirements Excluded from the N-Notation</i>
1	Facilities ages 19 years or more since first certificate issue (1 November 2013)	<p>a) The owner shall evaluate the need for further requirements with respect to inspection and maintenance as a result of extended life, with regards to:</p> <ul style="list-style-type: none"> i) Watertight and weatherproof closing appliances, ii) Ballasting and stability, including seawater intake iii) Jacking equipment, including machinery, gears and brakes. iv) Safety systems which depend on emergency power or hydraulics v) Load-bearing structures with regards to corrosion, erosion and thickness measurement <p>Critical areas in addition to those required by ABS</p> <p>b) The owner shall verify that the manufacturers' specifications for maintenance of marine systems are complied with.</p> <p>c) Review information about past performance and relevant equipment usage, including results from similar facilities and a systematic review of the relevancy of major accidents worldwide over the last decade.</p> <p>d) Make plans for replacement and repairs of load bearing structures and marine systems.</p> <p>e) Identify possible chain of events, review of the robustness, availability and reliability of these barriers. Identification of special criteria in case several barriers are impaired at the same time. Furthermore, consider preventative measures that are possible to implement using the ALARP principles.</p> <p>f) 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, degradation of protective coatings.</p>

APPENDIX 2 Extract – Applicable **NMA** Technical Delegated Items (1 March 2009)

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APPENDIX 2 Extract – Applicable **NMA** Technical Delegated Items (1 March 2009)

1 With Respect to the **NMA**'s Regulations for Mobile Offshore Units (Red Book)

1.1 Regulations of 4 September 1987 no. 856 Concerning Construction of Mobile Offshore Units (1 November 2013)

The RO shall verify that specific requirements in the following paragraphs are met:

§ 6.1 and § 6.2

- Hull construction and strength, including selection of materials, for operation in the anticipated environmental conditions of the areas in which the unit will operate.
- Strength calculations of the unit and parts thereof, in accordance with applicable design criteria and calculation systematics as set forth in the RO's classification rules. The term 'main structural members' (ref. § 6.2.1) includes, where applicable, items like derrick and derrick foundations, flare boom and flare boom foundation, stringer and stringer foundation and foundations of winches and of launching arrangements for lifeboats, rescue boats and life rafts.
- That the calculations take into consideration the effect of accidental loads as identified in the risk analysis and duly consider residual hull strength. Ref. Regulations of 22 December 1993 no. 1239 concerning risk analysis for mobile offshore units and regulations of 20 December 1991 no. 878 concerning stability, watertight subdivision and watertight/weathertight closing means on mobile offshore units.

§ 6.2.1, 6.2.9 and 6.5

Elevating system of jack-up units

§ 6.4

Construction, performance and control, including NDE (nondestructive examination).

§ 6.7.1

Securing of superstructures, heavy equipment and deck load with regard to withstanding the determined angles of heel. *Note 1*

§ 6b

Machinery system as listed in the regulations in accordance with RO rules. Machinery in hazardous areas in accordance with Chapter 6.7 of the MODU Code.

§ 7.3.2.1 and § 7.3.2.4

Minimum design temperatures used in the design and construction of the unit and in particular the structural strength consequence evaluation of ice load on components and equipment. Include hull, helicopter deck, deck cranes, and davits for lifeboats, rescue boats and life rafts, etc.

Note 1 Refer to Regulations of 20th December 1991 no. 878 concerning stability, watertight subdivision and watertight/weathertight closing means on mobile offshore units

1.3 Regulations of 31 January 1984 no. 227 Concerning Precautionary Measure Against Fire and Explosion on Mobile Offshore Units

The RO shall verify that specific requirements in the following paragraphs are met:

§ 6 and § 7 (1 November 2013)

Dimensioning, strength, function, and workmanship of the components of the fire extinguishing system in accordance with the RO's Rules with respect to levels of pressure, capacity, load and the like, as specified in the NMA regulations.

3 Regulations of the 17 December 1986 no. 2319 Concerning Field Moves and Towing Of Mobile Offshore Units and Concerning Towing System and Mooring of Supply Ships at Such Units

The RO shall verify that specific requirements in the following paragraphs are met:

§ 7.10.2 and § 8.1

Construction and strength of towing fastening devices, their supporting structure and the fender systems.

5 Regulations of 10 July 2009 no. 998 Concerning Anchoring/ Positioning Systems on Mobile Offshore Units (1 November 2013)

The RO shall verify that specific requirements in the following paragraphs are met:

§ 9 cf. § 6

Strength, function, and workmanship of fairleads, in accordance with the RO's Rules with respect to levels of design, tension, capacity and the like, as specified in the NMA regulations.

§ 10 cf. § 6

Strength, function, and workmanship of the components in the systems for thrusters-assisted and dynamic positioning, in accordance with the RO's Rules with respect to levels of design, tension, capacity and the like, as specified in the NMA regulations.

7 Regulations of 20 December 1991 no. 878 Concerning Stability, Watertight Subdivision and Watertight/ Weathertight Closing Means on Mobile Offshore Units

The RO shall verify that specific requirements in the following paragraphs are met:

§ 30

Strength of watertight bulkheads.

§ 39 (1 November 2013)

Strength, function, and workmanship of hydraulic system for watertight closing means, in accordance with the RO's Rules with respect to levels of pressure, capacity, load and the like, as specified in the NMA regulations.

9 Regulations of 20 December 1991 no. 879 Concerning Ballast Systems on Mobile Offshore Units

The RO shall verify that specific requirements in the following paragraph are met:

§ 9 (1 November 2013)

Strength, function and workmanship of the components in accordance with the RO's Rules with respect to levels of pressure, capacity, load and the like, as specified in the NMA regulations.

11 Regulations of 10 February 1994 no. 123 for Mobile Offshore Units with Production Plants and Equipment

The RO shall verify that specific requirements in the following paragraphs are met:

§ 12

Strength of hull structure.

§ 13.2, 13.3 and 13.4 (1 November 2013)

Strength, function, and workmanship of the components of machinery and piping system to be in accordance with the RO's Rules with respect to levels of pressure, capacity, load and the like, as specified by the NMA regulations.

§ 15

Turret systems and its bearings.

§ 17.2

Capability and strength to withstand a collision as specified.

§ 35.3

Capabilities of the loading and mooring systems.

13 Regulations of 15 January 2008 no. 72 Concerning Helicopter Decks on Mobile Offshore Units *Note 3* (1 November 2013)

The RO shall verify that specific requirements in the following paragraphs are met:

§ 7 and § 9

Material quality and strength of helicopter deck.

Note 3 For Norwegian flagged MOUs, Regulation 15. January 2008 no.72 shall be in force and applied in conjunction with the first renewal of certificates after 15. January 2008.

15 Regulation of 22. December 1993 no. 1240 Concerning Helicopter Decks on Mobile Offshore Units *Note 4* (1 November 2013)

The RO shall verify that specific requirements in the following paragraphs are met:

§ 8 and § 11

Material quality and strength of the helicopter deck.

Note 4 Regulation 22. December 1993 no. 1240 is repealed on 15. January 2013.

APPENDIX **3** **Existing Units, N-Notation Compliance** (1 February 2012)

Owner (applicant) requesting the N-Notation for existing units built to ABS Classification Rules are to undergo a verification of compliance to the latest ABS Rules in addition to the verification requirements of the ABS N-Guide. Units built to the Classification Rules from another IACS Classification Society will be given special consideration.

When a unit is contracted to operate on the Norwegian Continental Shelf it is recommended that the Owner (applicant) establishes contact as early as possible with the PSA to facilitate the identification of, and properly address, major issues that may arise with respect to the acceptance of the unit.

Gap analyses are to be carried out by the applicant at intervals not exceeding five years and before completion of the Special Periodic Survey. This is to demonstrate that the Owner (applicant) is fully aware of, and has control over the effect of changes to references or standards that are contained in, or referenced by this Guide. For the issuance or continuation of the N-Notation, a List identifying Accepted Deviations by the PSA relevant to the N-Notation are to be submitted by the Owner (applicant) to ABS.

Identified deviations, as a result of the above verification process will be listed for further actions and where modifications are considered necessary, these will be dealt with in the first instance between the Owner (applicant) and ABS. It is to be noted, however, that the Owner (applicant) must document all deviations including those that have been satisfactorily resolved in his application to the PSA for an Acknowledgement of Compliance (AoC).

Alternatively, Owners (applicants) may elect to apply for the issuance of a Statement of Fact. The Statement of Fact shall indicate any deviations from those items required by PSA for an Acknowledgement of Compliance (AoC). This may be more appropriate, especially when in the future it is intended for a unit to operate on the Norwegian Continental Shelf but does not yet have a contract.