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Rules for Classification and Construction

Part 5 Offshore Technology

RULES FOR CLASSIFICATION AND SURVEYS

Volume I

2024 Consolidated Edition

Biro Klasifikasi Indonesia

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Rules for Classification and Construction

Part 5 Offshore Technology

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Volume I

2024 Consolidated Edition

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Foreword

This Rules is a consolidated edition 2024 of Rules for Classification and Survey Part. 5 – Offshore Technology, Volume I.

In this consolidated edition there are no new amendments added, only consolidate the 2022 edition, RCN No.1 and RCN No.2. The summary of previous edition and amendments including the implementation date are indicated in Table below:

	Edition/ Rule Change Notice (RCN)	Effective Date	Link
1	RCN No.2, October 2023	1st January 2024	🔗
2	RCN No.1, October 2022	1st January 2023	🔗
3	Consolidated Edition 2022	-	🔗
4	RCN No.1, November 2021	1st January 2022	🔗
5	Consolidated Edition 2021	-	🔗
6	RCN No.1, January 2020	1st February 2020	🔗
7	Edition 2019	1st July 2019	🔗

Note: *Full previous edition and amendments including its amendment notice is available through link above*

This rules is available to be downloaded at www.bki.co.id. Once downloaded, this Rules will be uncontrolled copy. Please check the latest version on the website.

Further queries or comments concerning this Rules are welcomed through communication to BKI Head Office.

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Section 1 Classification

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A. General

1. Prerequisites for Classification

1.1 The Rules for Classification and Surveys apply to the Classification of floating as well as fixed offshore structures as defined in B.1.1. and B.1.2.

1.2 The Rules published by BKI give the requirements for the assignment and the maintenance of Class for the Classification of floating as well as fixed offshore structures.

1.3 Class assigned to floating as well as fixed offshore structures, reflects the opinion of BKI that the floating or fixed offshore structures, for declared conditions of use and within the relevant time frame, complies with the Rules applicable at the time the service is rendered.

1.4 The general terms and conditions as defined in Rules for Classification and Surveys (Pt.1, Vol.I) Sec. 1 at the time of signing of the contract with the owner or prospective owner, the building yard or other subcontractors apply.

1.5 Classification essentially means the:

- review/approval of design documents, construction plans and material specifications in comparison with the applicable Rules according to (Pt.5, Vol. II) to (Pt.5, Vol. XII) of these Rules or other applicable Rules and Guidelines.
- supervision of new constructions or conversions.
- supervision of floating as well as fixed offshore structures in service by surveys required by Rules in order to ascertain that a condition is maintained, which complies with Class requirements.

2. Scope of Classification

2.1 New Constructions

2.1.1 Classification covers the floating or the fixed offshore structure's the hull and machinery including electrical installations as well as special equipment and installations as far as agreed in the building specification between the prospective owner and the building yard. Classification aims primarily at ensuring reliability of the hull/structure and machinery systems on board, resulting in an adequate level of safety of personnel and environmental protection. However, Classification is not intended to ensure the effectiveness of the intended use on purpose.

2.1.2 Hull/structures, machinery and equipment determining the type of floating or fixed offshore structures are subject to examination within the scope of classification, in accordance with the Class Notations.

Other systems and components may be included in the Classification and/or Certification procedure upon request of the prospective floating or the fixed offshore structure's owner, the building yard or other subcontractors.

2.1.3 Upon completion of construction and trials, the Class Certificate (s) will be issued and will be kept on board, unless another location is agreed. The Certificates have a defined period of validity (Class Period), and may be renewed after prescribed thorough surveys, see Sections 3 and 5.

2.2 Recognized existing floating or fixed offshore structures

Consent may be given for existing floating or fixed offshore structure, built whether under Classification Society or other recognized organization by BKI, to be classified and subjected to the corresponding inspection routine. In such a case, an initial investigation will be performed, a thorough onsite survey of the floating or fixed offshore structure, including investigation of the underwater hull/ structure and foundations, verifications by measurement where necessary, tests/trials of equipment and machinery as far as agreed and/or essential for safety, and where the previous class considered as valid, the examination of existing design documents may be dispensed with, see also G.2.

2.3 Conversion of Existing Vessels or Floating Offshore Structures

Modifications of existing vessels or floating offshore structure intended for classification as fixed location installation are to be converted under BKI design review and survey, see Guidelines for Floating Production Installation (Pt.5, Vol.3).

2.4 Clustering of offshore structures

The offshore structures to which these Rules apply may be clustered according to the following category (Fig. 1.1) :

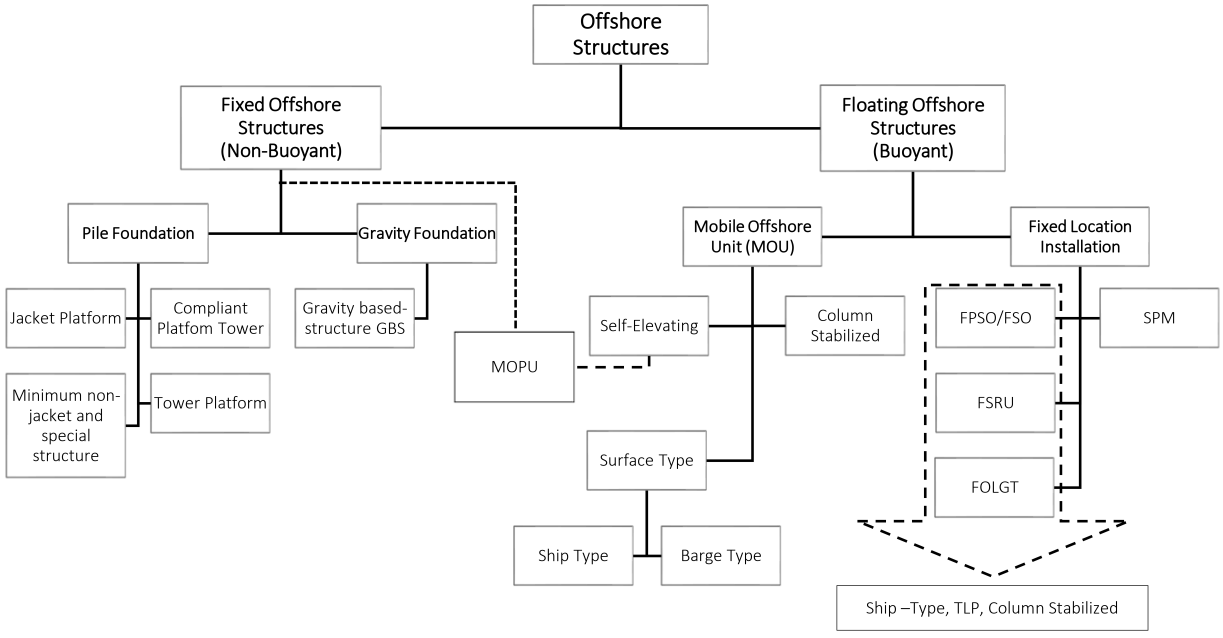

Figure 1.1: Clustering of Offshore Structures

3. Confidentiality

See Rules for Classification and Surveys (Pt.1, Vol.I) Sec.1, D.

4. Fee

See Rules for Classification and Surveys (Pt.1, Vol.I) Sec.1, E.

5. Payment of Invoice

See Rules for Classification and Surveys (Pt.1, Vol.I) Sec.1, F.

6. Liability and Jurisdiction

See Rules for Classification and Surveys (Pt.1, Vol.I) Sec.1, G.

7. Disagreement

See Rules for Classification and Surveys (Pt.1, Vol.I) Sec.1, H.

8. Anti-Bribery and Compliance

See Rules for Classification and Surveys (Pt.1, Vol.I) Sec.1, I.

B. Definitions and Abbreviation

1. Definition

No	Item	Definition
1	**Floating Offshore Structures (Bouyant)**	Floating offshore structures are structures that the payload is supported by its own buoyancy. Floating offshore structure consist of two categories: **1. Mobile Offshore Unit** Mobile offshore unit (hereafter referred to as "unit" in these Rules) means any floating offshore structure or vessels that designed for mobile operation afloat and intended for use in offshore operations and related activities include drilling service. It may not be designed remain at a specific location. Based on the hull type, mobile offshore unit may be varied as ship type/barge type (with or without propulsion), self-elevating, column-stabilized, and etc. For ship–shaped units the provisions of Rules for Classification and Survey (Pt. 1, Vol. I), as far as applicable, generally apply. Furthermore the specific requirement regarding to the various types of hull would be provided in the specific rules and guidelines, see E. The following types of construction may be distinguished for method of connection to the sea-bed: – units connected to the sea-bed by anchoring (mooring) – units kept on position by dynamic positioning / propelling system – units temporarily connected to sea bed by legs in jacked-up condition (self-elevating units). **2. Fixed Location Installation** Fixed location Installation means any floating offshore structure that designed for permanent operation installation afloat at one site specific and intended for oil/gas storage, production, offloading and related activities. Based on the hull type, fixed location installation may be ship-shaped or barge-shaped (with or without propulsion), column stabilized, tension leg platform (TLP) or any other configuration of purpose-built floating offshore structure. The following types of construction may be distinguished for method of connection to the sea-bed: – units connected to the sea-bed by anchoring (mooring) – units kept on position by dynamic positioning / propelling system – units with excess of buoyancy, connected to a base by tensioned anchoring elements (tension leg foundation)
2	**Fixed Offshore Structures** (Non-Buoyant)	Fixed offshore structures are structures that the payload is supported by a foundation bearing capacity. Fixed offshore structure known also as offshore installation consists of two categories: **1. Pile Foundation** Pile Foundation means any fixed offshore structures that designed and installed permanently by piling (pile foundation) at one site specific and intended for oil/gas storage, production, and related activities.

No	Item	Definition
		Based on the platform type, pile foundation structures may be jacket or template type, tower type, minimum non-jacket and special structure type, and compliant platform type. Detail information and definition of each platforms may refer to API RP 2A. **2. Gravity Foundation** Gravity Foundation means any fixed offshore structures that designed and installed resting on the sea bed by action gravity (gravity foundation) at one site specific and intended for oil/gas storage, production and related activities.
3	**Offshore Installation**	Offshore Installation (hereafter referred to as "installation" in these Rules) is a buoyant or non-buoyant structure supported by or attached to the sea floor, whose design is based on foundation and long term environmental condition at a particular installation site where it is intended to remain. Examples of structures covered by these Rules are the types of fixed structures characterized as pile foundation or gravity foundation, various forms of compliant structures, and other moored buoyant structures such as FPSO, FSO, FLNG, etc.
4	**Administration/Authorities**	Where mentioned in these Rules, "Administration" or "Authority" is meant to be the governmental or regional state body entitled to approve of the establishment and operation of an offshore installation within the respective territorial confines, and to authorize an expert institution such as a Classification Society – to carry through the design review, safety surveys and certification.
5	**Materials used for construction of the hull/ main structure**	The following materials may be used for the hull/ main structure: – steel – reinforced concrete – any other suitable material – combination of above materials
6	**Use or employment**	The following types of employment may be distinguished: – drilling/exploration – production, e.g. oil/gas – processing/treatment – storage or loading on/off – pipe and cable laying – well stimulation – accommodation – research, measurements – other types of employment
7	**Manning**	The following types of manning have to be distinguished: – continuously manned installations or units – temporarily or intermittently manned installations – normally unmanned installations Depending on the use and attendance arrangements, the provisions of the Rules may need to be subject to agreement.
8	**Modes of operation**	**1. General** A mode of operation is a condition or manner in which a unit or installation may operate or function while on location or in transit. Distinction is to be made between the different modes of operation in connection with safety factors and other safety relevant criteria. In so far the requirements of these Rules are concerned the approved modes of operation for a unit or installation shall include the following.

No	Item	Definition
		2. Transitional conditions – transportation from the construction site to the final operating location – installation/assembly at the site of operation – removal/recovery of the units or installation – all units or installation movements from one geographical location to another **3. Operating conditions** Operating conditions are conditions where a unit is on location for purposes of drilling or other operations, and combined environmental and operational loadings are within the appropriate design limits established for such operations. The units or installation may be either afloat or supported on the sea-bed, as applicable. For environmental conditions see Rules for Structure (Pt.5, Vol. II), Sec.1 and Guidelines for Floating Production Installation (Pt.5, Vol.3), Sec.2, B.4. **4. Severe storm conditions** These are conditions during which a unit or installation may be subjected to the most severe environmental loading for which the unit or installation is designed. Drilling or other operations may have to be discontinued due to the severity of the environmental loading. The unit or installation may be either afloat or supported on the sea-bed, as applicable.
9	**Further terms**	Further definitions of special terms are given in the relevant Volumes and Sections.
10	**Ballast Tank**	A tank which is used solely for salt water ballast, or, where applicable, a space which is used for both cargo and salt water ballast will be treated as a Ballast tank when substantial corrosion has been found in that space. A Double Side Tank is to be considered as a separate tank even if it is in connection to either the topside tank or the hopper side tank.
11	**Close Up Survey**	A survey where the details of structural components are within the close visual inspection range of the surveyor, i.e. normally within reach of hand.
12	**Coating Condition**	Coating condition is defined as follows: – **GOOD** condition with only minor spot rusting. – **FAIR** condition with local breakdown at edges of stiffeners and weld connections and/or light rusting over 20% or more of areas under consideration, but less than as defined for POOR condition. – **POOR** condition with general breakdown of coating over 20% or more of areas or hard scale at 10% or more of areas under consideration.
13	**Column stabilized drilling units**	Column stabilized drilling units depend upon the buoyancy of widely spaced columns for flotation and stability for all afloat modes of operation or in the raising or lowering of the unit, as may be applicable. The columns are connected at their top to an upper structure supporting the drilling equipment. Lower hulls or footings may be provided at the bottom of the columns for additional buoyancy or to provide sufficient area to support the unit on the sea bed. Bracing members of tubular or structural sections may be used to connect the columns, lower hulls or footings and to support the upper structure. Drilling operations may be carried out in the floating condition, in which condition the unit is described as a semisubmersible, or when the unit is supported by the sea bed, in which condition the unit is described as a submersible. A semisubmersible unit may be designed of operate either floating or supported by the sea bed, provided each type of operation has been found to be satisfactory.

No	Item	Definition
14	**Convention**	There are various different kinds of conversions but no commonly defined definition does exist. Repairs in accordance with approved drawings and documents are not considered to be a conversion in short a 'Conversion' does include but is not limited to: – any modifications on board of a BKI classed ship which deviates from the approved drawings, – increase of the maximum allowable draft, – changing the BKI ship type class notation for floating unit (e.g. from FSO to FPSO or vice versa) – changing or deleting of any other class notations (e.g. INERT, OT etc.), the range of trading area etc.
15	**Critical Structural Area**	Locations which have been identified from calculations to require monitoring of from the service history of the subject unit/installation or from similar units/installations or sister unit/installation, if applicable, to be sensitive to cracking, buckling or corrosion which would impair the structural integrity of the unit/installation.
16	**Hazardous Area**	Hazardous areas are all those areas where, due to the possible presence of a flammable atmosphere arising from the drilling operations, the use of machinery or electrical equipment without proper consideration may lead to fire hazard or explosion. Hazardous areas are subdivided into Zones 0,1 and 2, the definitions of each category being as follows: – **Zone 0** is an area in which an explosive gas-air mixture is continuously present or present for long periods. – **Zone 1** is an area in which an explosive gas-air mixture is likely to occur in normal operating conditions. – **Zone 2** is an area in which an explosive gas-air mixture is not likely to occur, and if it occurs, it will only exist for a short time.
17	**Modification units**	When it is intended to carry out any modifications to the hull/structure, process systems, machinery, piping, equipment, etc., which may affect classification, including substitutions of steel differing from that originally installed.
18	**Overall Examination**	A survey intended to report on the overall condition of the hull structure and determine the extent of additional Close-up Surveys.
19	**Self-elevating drilling units**	Self-elevating drilling units have hulls with sufficient buoyancy to safely transport the unit to the desired location, after which the hull is raised to a predetermined elevation above the sea surface on its legs, which are supported on the sea bed. Drilling equipment and supplies may be transported on the unit or may be added to the unit in its elevated position. The legs of such units may penetrate the sea bed, may be fitted with enlarged sections or footings to reduce penetration, or may be attached to a bottom pad or mat.
20	**Spaces**	Spaces are separate compartments including holds, tanks, cofferdams and void spaces bounding cargo holds, decks and the outer hull.
21	**Special Consideration**	Special Consideration or specially considered (in connection with close-up surveys and thickness measurements) means sufficient close-up inspection and thickness measurements are to be taken to confirm the actual average condition of the structure under the coating.
22	**Substantial Corrosion**	An extent of corrosion such that assessment of corrosion pattern indicates wastage in excess of 75% of allowable margins, but within acceptable limits. For vessels built under the IACS Common Structural Rules, substantial corrosion is an extent of corrosion such that the assessment of the corrosion pattern indicates a measured thickness between trend + 0,5mm and trend.

No	Item	Definition
23	**Suspect Area**	Locations showing Substantial Corrosion and/or are considered by the surveyor to be prone to rapid wastage.
24	**Surface type drilling units**	a) Ship type drilling units are seagoing ship-shaped units having a displacement type hull or hulls, of the single, catamaran or trimaran types, which have been designed or converted for drilling operations in the floating condition. Such types have propulsion machinery. b) Barge type drilling units are seagoing units having a displacement type hull or hulls, which have been designed or converted for drilling operations in the floating condition. These units have no propulsion machinery. c) Other types of drilling units: units which are designed as mobile offshore drilling units and which do not fall into the above mentioned categories will be treated on an individual basis and be assigned an appropriate classification designation.
25	**Remote Inspection Techniques (RIT)**	Remote Inspection Technique is a means of survey that enables examination of any part of the structure without the need for direct physical access of the surveyor (refer to Guidance for Marine Industry (Pt.1, Vol.AC) Sec.3,Rec.42)
26	**Splash zone**	The area of the structure that is intermittently wet and dry due to wave and tidal action.
27	**Single Point Mooring (SPM)**	A system which permits a vessel to weathervane while the vessel is moored to a fixed or floating structure anchored to the seabed by a rigid or an articulated structural system or by catenary spread mooring. Examples of such system are CALM, SALM, tower mooring, etc.
28	**Provisional Certificate of Class**	Provisional Certificate of Class is the certificate issued immediately upon completion of the survey of the unit/installation while the report of the classification surveys is processed by the BKI to issuing its full term Class Certificate.
29	**MOPU (Mobile Offshore Production Unit)**	Self-Elevating Units operating as Fixed Offshore Structures for Hydrocarbon Production and/or Processing service. It refers to Annex 2 of Rules for Mobile Offshore Units (Pt.5 Vol.VI)

2. Abbreviation

API	American Petroleum Institute
NDT	Non Destructive Testing
OCIMF	Oil Companies International Marine Forum
PLEM	Pipe Line End Manifold
ROV	Remotely Operated Vehicle
IW	In-Water Survey
IACS	International Association of Classification Society
BKI HO	Biro Klasifikasi Indonesia Head Office
SNI	Standartd Nasional Indonesia
ISO	International Standard Organization
IEC	International Electrotechnical Commission
EN	European Standards
DIN	Germany Institut of Standardization
JIS	Japanese Industrial Standards

C. Limits of Classification

The following shall apply unless otherwise specified:

1. Date of contract

The date of "contract for construction" of a unit or installation is the date on which the contract to build the units or installation is signed between the prospective owner and the building yard. This date is normally to be declared to BKI by the ordering client applying for the assignment of Class to new constructions, see G.2.1.

Special consideration may be given for applying new or modified rule requirements which entered into force subsequent to the date of the contract, at the discretion of BKI and in the following cases:

- when a justified written request is received from the party requesting for Classification
- when the keel is not yet laid and more than one year has elapsed since the contract was signed
- where it is intended to use existing previously approved plans for a new contract

Requests for activities by BKI, such as request for Classification, surveys during construction, surveys of units or installation in service, tests, etc., are in principle to be submitted in writing and signed by the prospective owner and the building yard or the other subcontractors. Such request implies that the ordering party will abide by all the relevant requirements of the Rules and the general conditions of BKI.

2. Sister units/structure

The date of "contract for construction" of a series of sister units or installations, including specified optional units or installations[1)] for which the option is ultimately exercised, is the date on which the contract to build the series is signed between the prospective owner and the building yard.

Sister units or installations are such built to the same approved plans for Classification purposes. The optional units or installations will be considered part of the same series of sister if the option is exercised not later than one year after the contract to build the series was signed.

3. If a contract for construction is later amended to include additional units or installations or additional options, the date of "contract for construction" for such units or installations is the date on which the amendment to the contract is signed between the prospective owner and the building yard. The amendment to the contract is to be considered as a "new contract" to which 1. and 2. apply.

4. The above procedures for application of the Rules are, in principle, also applicable to existing units as well as to installations in the event of major conversions or major alterations, to parts of the units or installations.

5. The Rules, surveys performed, reports, Certificates and other documents issued by BKI, are not intended to replace or alleviate the duties and responsibilities of parties such as Administrations, designers, building yards, manufacturers, repairers, suppliers, contractors or subcontractors, actual or prospective owners or operators, charterers, brokers, cargo-owners and underwriters. BKI cannot assume therefore the obligations arising from these functions, even when BKI is consulted to answer inquiries concerning matters not covered by its Rules, or other documents.

6. The activities of such parties which fall out-side the scope of the Classification as set out in the Rules, such as design, engineering, manufacturing, operating alternatives, choice of type and power of machinery and equipment, number and qualification of crew or operating personnel, lines of the units or installations, as applicable, trim, hull/structure vibrations, spare parts, location and fastening arrangements, life-saving appliances, maintenance equipment and landing operations, remain therefore the responsibility of those parties, even if these matters may be given consideration for Classification according to the type of unit or the installation or Class Notation assigned.

[1)] "Sister Units or Installations" may have minor design alterations provided such alterations do not affect matters related to Classification.

7. The Classification-related services and documents performed and issued by BKI do not relieve the parties concerned of their responsibilities or other contractual obligations expressed or implied or of any liability whatsoever, nor do they create any right or claim in relation to BKI with regard to such responsibilities, obligations and liabilities. In particular, BKI does not declare the acceptance or commissioning of a unit or installation or any part of it, this being the exclusive responsibility of the owner or other subcontractor.

8. Unless otherwise specified, the Rules do not deal with equipment such as pressure vessels, machinery and other equipment which is permanently installed and used solely for operational activities such as dredging, heavy load lifting or workshops, except for their effect on the Classification-related matters, such as the unit's or the installation's general strength.

9. During periods of construction, modification or repair, the units or installations is solely under the responsibility of the builder or the repair yard. As an example, the builder or repair yard is to ensure that the construction, modification or repair activities are compatible with the design strength of the units or installations and that no permanent deformations are sustained.

10. As regards to the owner's responsibility for maintenance and operation of the units or installations in relation to the maintenance of Class, see Sections 3 and 5

11. The year, month and date at which the new construction survey process is completed shall be specified as the "Date of Build". Where there is substantial delay between completion of construction survey process and the unit/installation commencing active service, the date of commissioning may be also specified.

12. For unit/installation underwent modification, after modifications are completed, the "Date of Build" shall remain assigned to the unit/installation.

D. Application

1. General requirements

1.1 Scope

These Rules apply to all units and installations intended for use in offshore operations and related activities that are designed to be operated continuously or for a defined period at an offshore location.

1.2 Effective Date of Rules Application

1.2.1 The effective date of entry into force of any amendments to the Rules and Guidelines is indicated on Rules and Guidelines Amendment Notice or in the relevant Section.

1.2.2 The application of the Technical Rules and Regulations for admission to new building units or installations are based on the contract date for construction between the shipbuilder and the prospective Owner. The term date of "contract for construction" shall be construed as per C.1 to C.3.

1.2.3 The amendment of rule requirements is made applicable to periodical surveys of units or installations in operation when the date of rule amendments become effective.

1.2.4 In the case of major conversions or alterations of units or installations shall in general comply with the rules applicable at the time of application is received by BKI.

1.2.5 Amendments to the rules may be made retroactive for certain units or installations in operation and under construction at a given date or an upcoming survey to comply with class or statutory requirements.

1.3 Equivalence

BKI reserve the right to consider designs for Classification which have similar configurations and modes of operation to those described in these Rules, if they are deemed to be equivalent and/or suited for the intended service, or alternatively, to impose more stringent requirements should these be deemed to be justified.

In addition, evaluation shall be made of possible loading conditions peculiar to the type of units or installations under consideration. Calculations sustaining the adequacy of the design are to be submitted to BKI. Machinery and electrical installations, etc. for other special purpose units or installations will be subject to approval by BKI, as found to be applicable.

1.4 Interpretation

BKI alone is qualified to decide upon the meaning, interpretation and application of the Rules and other Classification related documents. No reference to the Rules or other Classification related documents has any value unless it involves, accompanies or follows the intervention of BKI.

1.5 Appeal to Head Office

In case a client does not agree on a technical decision made by or on behalf of BKI, he may, as the case may be, send a written complaint to either Marketing & Customer Relation Division (E-mail: cs@bki.co.id) or Survey Division (E-mail: svy@bki.co.id)

1.6 Duties of the interested parties

1.6.1 International and National Regulations

The Classification of a unit or installation does not absolve the owner, building yard or other subcontractor from compliance with any requirements issued by Administrations.

In the event of disputes, the text of the International and National Rules and Regulations will prevail.

When authorized by the Administration concerned, BKI will act on its behalf within the limits of such authorization. In this respect, BKI will take into account the relevant requirements, will survey the units or installations, and will report and issue, or contribute to the issue, of the corresponding Certificates.

The above surveys do not fall within the scope of the Classification of units or installations, even though their scope may overlap in part and may be carried out concurrently with surveys for assignment or maintenance of Class.

For interpretation of international convention and code, Guidance for Code and Convention Interpretation (Pt.1, Vol. Y) is to be observed

In the case of discrepancies between the provisions of the applicable International and National Regulations and those of the Rules, the former normally take precedence. However, BKI reserve the right to call for the necessary adaptation to preserve the intention of the Rules or to apply the provisions of the scope of Classification.

1.6.2 Surveyor's intervention

Surveyors are to be given free access at all times to units or installations which are classed or being classed, as well as to building yards and manufacturer works, to carry out their interventions within the scope of assignment or maintenance of Class, or within the scope of interventions carried out on behalf of Administrations, when so delegated.

Free access is also to be given to experts or/and auditors accompanying the Surveyors to BKI within the scope of the audits as required in pursuance of BKI's Internal Quality System or as required by external organizations.

Owners, building yards or other subcontractors are to take the necessary measures for the Surveyors' inspections and testing to be carried out safely. Owners, building yards or other subcontractor, irrespective of the nature of the service provided by the Surveyors to BKI or others acting on BKI's behalf, assume with respect to such Surveyors all the responsibility of an employer for his workforce such as to meet the provisions of applicable legislation. As a rule, the Surveyor is to be constantly accompanied during surveys by personnel of the owner, building yard or other subcontractor.

The certificate of Classification and/or other documents issued by BKI remain the property of BKI. All Certificates and documents necessary to the Surveyor's interventions are to be made available by the owner, building yard or other subcontractor, to the Surveyor on request.

During the phases of design and construction of the units or structures, due consideration should be given to rule requirements in respect of all necessary arrangements for access to spaces and hull / structures with a view to carrying out Class surveys. Arrangements of a special nature are to be brought to the attention of BKI.

1.7 Transparency

The classification and statutory information which may be released to Owners, Flag State, Port state, Insurance company and Shipyards as relevant and the conditions for their release are indicated in Table 1.1.

Table 1.1: Transparency of Classification and Information

No	Information in Question	Information available to:				
		Owners	Flag State	Port State	Insurance Company*	Ship Yards
1	**Class Societies Standing Documents:**					
	— Rules and Guidelines (Class and statutory requirements)	1	1	1	1	1
	— Instructions to Surveyors		1			
	— Quality Manual	1	1	1	1	1
	— Register Book	1	1	1	1	1
2	**Unit/Installation Related Information:**					
	A. New buildings					
	— Approved Drawings	6	1			7
	— Formal Approval Letters	1				7
	— Certificates of Important Equipment	2				7
	B. Unit/Installation in Operation					
	I. Class Services					
	— Date (month and year) of all Class Surveys	7	1	1	1	
	— Expiry Date of Class Certificate	7	7**	1	1	
	— Certificates/Reports	7	1	6	5	
	— Overdue Surveys	7	7**	1	1	
	— Text of Recommendations	7	1	1	5	
	— Text of Overdue Recommendations	7	1	1	1	
	— Executive Hull Summary	7	3	3	3	
	II. Statutory Services					
	— Due Dates of Statutory Surveys	7	7**	1	1	
	— Expiry Date of Statutory Certificates	7	7**	1	1	
	— Registered Statutory Rec.	7	7**	1	5***	
	— Overdue Statutory Rec.	7	7**	1	1***	
3	**Other Information:**					
	— Correspondence File with Yard and/or Owner	6	6		5&6	
	— Audit of Class Societies QA System	4	4	4	4	
	— Class Transfer Reporting	7	7	7	7	
	— Class Withdrawal Information	7	7	7	7	

* Insurance Company means P&I Clubs and Hull Underwriters.
** If stated in Agreement.
*** Unless prevented by the agreement with the flag State.

Key:
1. Available upon request.
2. At delivery of the unit/installation by Shipyard.
3. Available under visit on board.
4. Result of audit available on request.
5. When accepted by Owners - or through special clause in insurance contract.
6. When accepted by Owner (Master) or Shipyard as applicable.
7. Automatically available.

2. Types of offshore constructions

2.1 Units and installations

These Rules as defined in E.1, E.2, and E.3 apply to units and to installations as defined in B.1.1, and B.1.2. The Rules apply to supporting structures made of steel, concrete or equivalent materials, to machinery, electrical installations, equipment, and essential systems with regard to safe operation.

2.2 Unclassified types

Types that are not included within the categories listed in A.2.4 may by special agreement be checked for general compliance with the principles expressed in these Rules.

2.3 Novel features

Units or installations which contain novel features of design, with respect to buoyancy, elevating arrangements, structural arrangements, machinery, equipment, etc. to which the requirements of these Rules are not directly applicable, may be classed, when approved by BKI on basis that the Rules, in so far as applicable, have been complied with and that special consideration has been given to the novel features based on the best information available at the time.

3. Subject of investigation

3.1 Constructional elements

The following items, where applicable, are covered by these Rules and are subject to approval by BKI:

- materials
- corrosion protection
- structural strength
- load-bearing structures
- foundations
- welding
- buoyancy
- stability, intact and damaged
- weathertight/watertight integrity
- temporary or positional mooring equipment
- jacking system
- propulsion machinery including shafts and propellers
- steering gears and rudders
- auxiliary machinery,
- safety systems and equipment as far as their operation involves any hazards
- pumping and piping systems, including valves
- boilers and pressure vessels
- electrical installations
- protection against fire and explosion

BKI reserve the right to extend the scope of Classification to all equipment and machinery used in the operation of the structure/unit, which by their classification symbol and/or arrangement may impair the safety of human life, of the units or installations and its operation or of the environment.

Structural systems and equipment determining the type of units or installations are subject to examination within the scope of Classification, if the type of units or installations is specified in the form of a Notation affixed to the classification symbol of Classification, compare Sections 2 and 4.

3.2 Industrial equipment

3.2.1 BKI will usually survey working gear and plants for industrial purposes, e.g. drilling equipment, in respect of their influence on the safety of the units or installations only. The Rules do not cover structural details of industrial equipment used exclusively in drilling or other industrial operations. Machinery, electrical and piping systems used exclusively for industrial purposes are not covered by these Rules, except in so far as their design or arrangement may affect the safety of the units or installations.

3.2.2 The safety and quality of working gear and other special installations can also be ascertained separately by special agreement. Existing regulations for the prevention of accidents are to be observe

3.3 Anchoring and positioning

Determination of the adequacy of sea-bed conditions, regarding bearing capacity, resistance to possible sliding and anchor holding capability, is not covered by these Rules.

The assessment of the required holding capacity, arrangement and operation of position mooring equipment and dynamic positioning equipment used for station keeping activities in connection with the operation is the responsibility of the owner and is not included in these Rules. But if anchoring and positioning is decisive for the safety of the units or installations, such as for pontoons equipped for pipe laying, this equipment is part of Classification or Certification.

3.4 Use of measuring equipment and of service suppliers

The use of measuring equipment and of service suppliers are dealt with the requirement stipulated by Rules for Approval Manufacturers and Service Suppliers (Pt.1, Vol.XI).

E. Rules and Guidelines, Regulations

1. Underlying Rules

The Classification of offshore units or installations as well as of any pertinent equipment is based on:

- the respective latest edition of these Rules and Rules for Classification and Surveys (Pt.1, Vol.I)
- the general requirements relating to the hull/structure construction, machinery, electrical, material and facilities installation which applicable for any type of offshore structures contained in the rules below:
  - Rules for Structure (Pt.5, Vol.II)
  - Rules for Machinery and Equipment (Pt.5, Vol.IV)
  - Rules for Electrical (Pt.5, Vol.V),
  - Rules for Facilities on Offshore Installation (Pt.5, Vol.XII)
  - Rules for Material (Pt.1, Vol.V)
- for the ship-shaped type of offshore unit or installation, the Rules for The Classification and Construction of Seagoing Ships (Pt. 1) may be applied where appropriate.

2. Specific Rules/Guidelines based on function

For particular requirements, elements, components or procedures based on the function of offshore structures are not specifically covered by these Rules, it may be followed the specific rules or guidelines based on the function, e.g.:

Table 1.2: Specific Rules/Guidelines based on function

Rules/Guidelines	Function
Rules for Mobile Offshore Unit (Pt.5, Vol. VI)	Mobile offshore unit
Rules for Fixed Offshore Installation (Pt. 5, Vol. VII)	Fixed offshore structure
Rules for Single Point Mooring (Pt. 5, Vol. IX)	Single Point Mooring
Guidelines for Floating Offshore Liquefied Gas Terminals/FLGT (Pt. 5, Vol. 2)	Floating offshore liquefied gas terminals (FLGT) e.g. FLNG, FSRU
Guidelines for Floating Offshore Production Installation/FPI (Pt. 5, Vol. 3)	Floating offshore production installation (FPI) e.g. FPSO, FSO, FPU.
Guidelines for Safe Ocean Towing (Pt.1 Vol. 12)	Ocean Towage Operation

3. Suplement/Guidance

To facilitate of applying the rules and guidelines, the suplement/guidance below may be followed. The suplement/guidance is not mandatory requirement, it may be followed as reference to apply the rules and guidelines, e.g.:

— Guidance for Survey using Risk Based Inspection for the Offshore Industry (Pt.5, Vol. A)

— Guidance for Fatigue Assessment of Offshore Structure (Pt. 5, Vol. B)

— Guidance for Buckling and Ultimate Strength Assessment of Offshore Structure (Pt. 5, Vol. C)

— Guidance for the Design, Construction and Testing of Pumps (Pt. 1, Vol. V)

4. Other than BKI Rules

4.1 The review and appraisal of design and construction particulars by BKI will be exclusively based on Rules and Guidelines, agreed upon in the specification of the Classification contract between the prospective owner, the building yard or other subcontractors, and BKI.

4.2 In addition, statutory construction rules for units or installations, may be applied upon agreement with the relevant Authority and if defined in the specification of the Classification contract between the prospective owner, the building yard or other subcontractor, and BKI.

4.3 The compliance of the units or installations to statutory regulations of the respective Flag State is left to the responsibility of the prospective owner, the building yard or any subcontractor.

4.4 International Conventions, Resolutions, Codes, etc., may be applicable in certain cases and/or for certain aspects, e. g. pollution prevention. Details shall be clarified and laid down in the Classification specification in the particular case.

5. Industry Codes, Standards

Internationally recognized Standards and Codes published by relevant organisations, national industry organisations or standardisation institutions may be used upon agreement in particular cases as a design and construction basis.

Examples for such standards are: API, SNI, ISO, IEC, EN, DIN, JIS, etc.

F. Period and Validity of Class

1. Period of Class

The hull/structure, the machinery as well as special equipment and installations classed have the same period of Class (duration of one Class period). The class continues to be valid, provided that the hull/structure, the machinery as well as special equipment and installations are subjected to all surveys

stipulated and that any repairs required are carried out to the satisfaction of BKI, see also Sections 3 and 5. The validity of the Class for units or installation is not exceeds 5 years.

2. The requirements for:

— Prerequisites for validity of Class

— Repairs, conversions

— Class suspend and withdrawn

are defined in the Rules for Classification and Surveys (Pt.1, Vol.I) Sec.2, B.2 to B.4. as far as applicable.

3. Laid-up units or installation out of operation

3.1 A unit or installation put out of commission may be subject to specific requirements for maintenance of Class, as specified in the following, provided that the owner notifies BKI of the situation. If the owner does not notify BKI of the laying-up of the unit, or the out of operation of the installation, or does not implement the lay-up maintenance program, the Class will be suspended and/or withdrawn when the due surveys are not carried out by their limit dates in accordance with the applicable requirements given in 2.

3.2 The lay-up/out of operation maintenance program provides for a “laying-up /out of operation” survey to be performed at the beginning of lay-up and subsequent “lay-up/out of operation” condition surveys which are required to be carried out as long as the units or installation remains laid-up/out of operation. The minimum content of the lay-up/out of operation maintenance program as well as the scope of these surveys is to be agreed with BKI. The other periodical surveys, which become overdue during the lay- up/out of operation period, may be postponed until the re-commissioning of the units or installation.

Additionally, the requirements of lay-up maintenance program as well as the scope of these surveys for all ship-type units are defined in the Rules for Classification and Surveys, (Pt.1, Vol. I), Sec.2, B.5; B.6; Annex A.4 and are to be observed as far as applicable.

3.3 Where the unit or installation has an approved lay-up/out of operation maintenance program and its period of Class expires, the period of Class is extended until it is re-commissioned, subject to the satisfactory completion of the lay-up/out of operation condition surveys as described in 3.2.

3.4 The periodical surveys carried out during the lay-up/out of operation period may be credited, either wholly or in part, at the discretion of BKI, having particular regard to their extent and dates. These surveys will be taken into account for the determination of the extent of surveys required for the re-commissioning of the units or installation, and/or the expiry dates of the next periodical surveys of the same type.

3.5 When a unit or installation is re-commissioned, the owner is to notify BKI and make provisions for the units or installation to be submitted to the following surveys:

— A survey prior to re-commissioning, the scope of which depends on the duration of the lay-up period. Depending on the duration of the laying- up period, a sea trial and/or re-commissioning trials of specific installations and/or components will be carried out.

— All periodical surveys which have been postponed in accordance with 3.1 taking into account the provisions of 3.7. BKI’s Surveyors with a view to completion prior to resuming trading or operation

The scope of the re-commissioning survey is more detailed can be seen in Rules for Classification and Surveys, (Pt.1, Vol.I), Sec.2, B.6.3.

3.6 Where the previous period of Class expired before the re-commissioning and was extended as stated in 3.3, in addition to the provisions of 3.5 a complete Class renewal survey is to be carried out prior to re-commissioning. Items which have been surveyed in compliance with the Class renewal survey requirements during the 15 months preceding the re-commissioning may be credited. A new period of Class is assigned from the completion of the Class renewal survey.

3.7 In cases where the units or installation has been laid up or has been out of operation for a considerable period because of a major repair or modification and the owner elects to carry out only the overdue surveys, the next period of class will start from the expiry date of the renewal survey. If the owner elects to carry out the next Class renewal survey due, the period of class will start from the survey completion date.

3.8 Units or installations laid-up in accordance with BKI Rules prior to surveys becoming overdue need not be suspended when surveys addressed above become overdue. However, Units/ installations which are laid-up after being suspended as a result of surveys going overdue, remain suspended until the overdue surveys are completed.

3.9 When a unit or installation is intended for a demolition voyage with any periodical survey overdue, the units or installations class suspension may be held in abeyance and consideration may be given to allow the vessel to proceed on a single direct ballast voyage from the lay up or final discharge port to the demolition yard. In such cases a short term Class Certificate with conditions for the voyage noted may be issued provided the attending surveyor finds the units or installations in satisfactory condition to proceed for the intended voyage.

3.10 When a unit or installation is intended for a single voyage from laid-up position to repair yard with any periodical survey overdue, the vessel's class suspension may be held in abeyance and consideration may be given to allow the units or installations to proceed o n a single direct ballast voyage from the site of lay up to the repair yard, upon agreement with the Flag Administration, provided the BKI finds the units or installations in satisfactory condition after surveys, the extent of which are to be based on surveys overdue and duration of lay-up. A short term Class Certificate with conditions for the intended voyage may be issued. This is not applicable to units or installations whose class was already suspended prior to being laid-up.

3.11 At the time of re-commissioning a thorough survey of the entire machinery will have to be per formed in addition to the outstanding periodical surveys.

3.12 Special consideration for installation, detail transit plan and condition shall be submitted to BKI for approval.

4. Change of ownership

4.1 In the case of change of ownership, the unit, or installation, retains its current Class with BKI provided that:

— BKI is informed of the change in due time and able to carry out any survey as deemed appropriate, and

— The new owner expressively requests to keep the current Class, involving acceptance of BKI's General Conditions and Rules. This request covers inter alia the condition of the unit, or installation, when changing ownership.

4.2 The Class is maintained without prejudice to those provisions in the Rules, which are to be enforced in cases likely to cause suspension or withdrawal of the Class, such as particular damages or repairs to the floating offshore installations, or fixed offshore installations, of which BKI has not been advised by the former or, as the case may be, new owner.

5. Suspension and withdrawal of Class

5.1 Discontinuity of Class

5.1.1 The Class may be discontinued either temporarily or permanently. In the former case it is referred to as "suspension" of Class, in the latter case as "withdrawal" of Class. In both these cases, the Class is invalidated in all respects. If for some reason the Class has been expired or suspended or withdrawn by BKI, this will be indicated in the Register.

5.1.2 If the owner is not interested in maintenance of Class of the units or installations or any of its special equipment and installations classed, or if conditions are to be expected under which it will be difficult to maintain Class, BKI will be informed accordingly. BKI will decide whether the Certificate will have to be returned and Class suspended or withdrawn. Where only special equipment and installations are concerned, the corresponding Notation will be withdrawn and the Certificate amended accordingly.

5.2 Suspension of Class

5.2.1 The Class may be suspended either automatically or following the decision of BKI. In any event, the units or installations will be considered as not retaining its Class from the date of suspension until the date when Class is reinstated.

5.2.2 The Class may be automatically suspended when one or more of the following circumstances occur:

- when a unit or installation is not operated in compliance with the rule requirements, such as in cases of services or conditions not covered by the service Notation.
- when a unit proceeds with less freeboard than that assigned, or has the freeboard marks placed on the sides in a position higher than that assigned, or in cases of units where freeboards are not assigned the draught is greater than that assigned
- when the owner fails to inform BKI in order to submit the units or installations to a survey after defects or damages affecting the Class have been detected
- when repairs, alterations or conversions affecting the Class are carried out either without requesting the attendance of BKI or not to the satisfaction of the Surveyor.

5.2.3 Suspension of Class with respect to the above cases will remain in effect until such time as the cause giving rise to suspension has been removed. Moreover, BKI may require any additional surveys deemed necessary, taking into account the condition of the floating offshore installations or fixed offshore installations and the cause of the suspension.

5.2.4 In addition, the Class is automatically suspended:

- when the Class Renewal Survey has not been completed by its limit date or within the time granted for the completion of the survey, unless the units or installations is under attendance by BKI's Surveyors with a view to completion prior to resuming trading or operation
- when Annual or Intermediate Survey has not been completed by the end of the corresponding survey time window

5.2.5 In addition to the circumstances for which automatic suspension may apply, the Class of a unit or installations may also be suspended following the decision of BKI:

- when a Condition of Class or recommendation is not dealt with within the time limit specified, unless it is postponed before the limit date by agreement with BKI
- when one or more surveys are not held by their limit dates, or the dates stipulated by BKI also taking into account any extensions granted in accordance with the requirements
- when due to reported defects, BKI consider that a floating offshore units or fixed offshore installations, is not entitled to retain its Class as well on a temporary basis (pending necessary repairs or renewals, etc.)
- in other circumstances which BKI will consider on their merits (e.g. in the event of non-payment of fees)

5.2.6 Suspension of Class decided by BKI takes effect from the date when the conditions for suspension of Class are met and will remain in effect until such time as the Class is reinstated once the due items and/or surveys have been dealt with.

5.2.7 For class reinstatement after suspended, shall be carried out in accordance with Rules for Classification and Surveys (Pt.1, Vol.I), Sec.2, B.2.6.

5.3 Withdrawal of Class

5.3.1 BKI will withdraw the Class of a unit or installation in the following cases:

- at the request of the owner
- when the causes that have given rise to a suspension currently in effect have not been removed within six months after due notification of suspension to the owner. A longer suspension period may be granted when the units or installations is not operation as in cases of lay-up, awaiting disposition in case of a casualty or attendance for reinstatement.
- when the units or installations is reported as a constructive total loss
- when the units or installations is lost
- when the units or installations is reported scrapped

5.3.2 Withdrawal of Class takes effect from the date on which the circumstances causing such withdrawal occur.

5.3.3 When the withdrawal of Class of a units or installations comes into effect, BKI will:

- forward written notice to the owner
- delete the floating offshore units or fixed offshore installations from the Register
- notify the flag Administration, if required
- make the information available to the Underwriters, on their request

5.3.4 For withdrawing Class of other Class Society from a Double or Dual Class Arrangement is more detailed can be seen in Rules for Classification and Surveys, (Pt.1, Vol.I), Sec.2, B.4.7-4.8.

5.4 Suspension/withdrawal of Class Notations

If the survey requirements related to maintenance of Class Notations are not complied with, the suspension or withdrawal may be limited to the Notations concerned.

5.5 Reinstatement/Re-Classification

5.5.1 Reinstatement

Classification of units or installations will be reinstated if the cause of such suspension are removed, or upon verification that the overdue surveys and recommendations has been satisfactorily dealt with. BKI will reinstate class of the unit or installation for the following cases:

- Upon satisfactory completion of the overdue surveys. Such surveys will be credited as of the original due date. However, the vessel is to be dis-classed from the date of suspension until the date class is reinstated.
- Upon satisfactory completion of the overdue recommendations. However, the vessel is removed from class from the date of suspension until a day before the date class is reinstated.

5.5.2 Re-Classification

.1 When Owners request for reclassification of a unit or installation for which the class previously assigned has been withdrawn, BKI will require a Re-classification Survey to be held by the Surveyors. The extent of the survey will depend upon the age of the unit or installation and the circumstances of each case.

.2 If the the unit or installation is found or placed in good and efficient condition in accordance with the requirements of the Rules and Regulations at the Re-classification Survey, BKI may decide to reinstate her original class or assign such other class as considered appropriate.

G. Classification Procedures

1. Classification of new constructions

The hull survey for Classification of new building units or installations is to be in accordance with Rules for Classification and Surveys (Pt.1, Vol.I) Annex A.2. as far as applicable.

1.1 Order for Classification

1.1.1 The application for Classification is to be submitted to BKI by the Shipbuilder or the Owner. The application has to be given by the client, who as a basis of the building contract has the duty to observe the Rules.

1.1.2 Where application for the production of components are placed with subcontractors, BKI should be advised and an indication of the scope of production provided. The client will be responsible for observance of Rules by the subcontractors.

1.1.3 Where the application considers particulars to be used for the Classification which have already been approved by BKI for previous new constructions, this shall be specifically stated in the application. Amendments to the Construction Rules having been introduced meanwhile shall be taken into account. See A.1.1.

1.2 Design review/approval

1.2.1 Particulars of the design are to be submitted to BKI for examination according to the details defined in the following rules in due time prior to commencement of construction:

- Rules for Fixed Offshore Installations (Pt.5, Vol. VII), Sec.1, C.
- Rules for Mobile Offshore Units (Pt. 5 Vol. VI), Sec.1, C.
- Rule for Facilities on Offshore Installation (Pt. 5, Vol XII), Sec.4 and 5, B.
- Guideline for Floating Offshore Liquefied Gas Terminal (Pt.5, Vol. 2), Sec.2, I
- Guidelines for Floating Production Installation (Pt.5, Vol.3), Sec.1, C.

1.2.2 Particulars for examination (such as construction plans, proofs by computation, details on materials, etc.) are to be submitted in electronic format for examination in due time prior to commencement of construction as detailed in the Construction Rules.

The particulars to be submitted in Bahasa Indonesia or English have to contain all details required for examination. BKI reserves the right to request additional information and particulars to be submitted.

1.2.3 The particulars and drawings to be submitted, of components subject to approval, will be examined by BKI. Where applicable, they will be provided with a mark of approval and returned in one copy.

1.2.4 Any deviations from approved drawings require to be approved by BKI prior to being realized.

1.3 Supervision of construction and installation

BKI will supervise the construction of installations or units and their installation at the site of operation, as defined in the following rules:

— Rules for Fixed Offshore Installations (Pt.5, Vol. VII), Sect.1, D.

— Rules for Mobile Offshore Units (Pt. 5 Vol. VI), Sec.1, D.

— Rule for Facilities on Offshore Installation (Pt. 5, Vol XII), Sec.5, A

— Guideline for Floating Offshore Liquefied Gas Terminal (Pt.5, Vol. 2), Sec.3, A

— Guidelines for Floating Production Installation (Pt.5, Vol.3), Sec.2, D.

1.3.1 BKI will assess the production facilities and procedures of the building yard, subcontractors and other manufacturers, to determine whether they meet the requirements of Rules and any additional requirements of the prospective owner as agreed in the building specification. This assessment may be connected with a quality assurance Certification.

1.3.2 Materials, components, appliances and installations subject to inspection are to comply with the relevant rule requirements and are to be presented for inspection to the BKI Surveyor, unless otherwise provided as a result of special arrangements agreed upon with BKI.

New installation of materials which contain asbestos, e.g. materials used for hull structure, machinery, electrical installations and equipment, is not permitted for all new and existing the units or installations.

For each inspection, an appointment is to be arranged in time with the BKI Branch Office

1.3.3 In order to enable the Surveyor to fulfil his duties, he is to be given free access to the workshops and to the unit or installation. For performance of the tests required, the building yard, subcontractors and other manufacturers are to give the Surveyor any assistance necessary by providing the staff and the equipment needed for such tests.

1.3.4 During the phase of construction of the units or installations, BKI will satisfy itself by surveys and inspections that:

— parts for hull/structure, machinery and electrical installations or special equipment subject to review/approval have been constructed in compliance with the approved drawing/ documents

— all tests and trials stipulated by the Rules for Classification and Construction are performed satisfactorily

— workmanship is in compliance with current engineering Standards and/or Rules requirements

— welded parts are produced by qualified welders in accordance with qualified procedures having passed the tests required by the applicable Rules

— for hull/structure sections or components requiring BKI's approval Certificates have been presented. The building yard, subcontractors or other manufacturers will have to ensure that any parts and materials requiring approval will only be delivered and installed, if the appropriate Certificates have been issued.

— type-tested or type approved appliances and equipment are used, in accordance with the Rule requirements, where individual Certificates are not required.

1.4 Testing and commissioning

1.4.1 BKI Surveyors will witness the necessary tests at the manufacturers, the yard and at sea, see also:

- Rules for Fixed Offshore Installations (Pt.5, Vol. VII), Sec.1, E.
- Rules for Mobile Offshore Units (Pt. 5 Vol. VI), Sec.1, E.
- Rule for Facilities on Offshore Installation (Pt. 5, Vol XII), Sec.5, A
- Guideline for Floating Offshore Liquefied Gas Terminal (Pt.5, Vol. 2), Sec.3, A
- Guidelines for Floating Production Installation (Pt.5, Vol.3), Sec.2, D.

1.4.2 As far as practicable, the machinery including electrical installations as well as special equipment and installations classed will be subjected to operational tests at the manufacturer's premises to the scope specified in the Construction Rules.

Where the machinery, electrical installation or special equipment and installations are of novel design or have not yet sufficiently proved their efficiency and reliability under actual service conditions on board, BKI may require performance of tests under specified severe conditions.

1.4.3 Upon completion of the construction, prior to commissioning, all hull/structures, machinery including electrical installations as well as special equipment and installations classed will be subjected to operational trials in the presence of the Surveyor prior to and during the trials. This will include, e.g.:

- tightness, operational and load tests of tanks, anchoring equipment, hatches and hatch covers shell ports, ramps, etc.
- operational and/or load tests of the machinery, installations and equipment of importance for the operational safety of the unit or installation

During a final survey, checks will be made to ensure that any deficiencies found, i.e. during the trials, have been eliminated.

1.5 Workmanship

1.5.1 General

.1 Requirements to be complied with by the manufacturer

1) The manufacturing plant shall be provided with suitable equipment and facilities to enable proper handling of the materials, manufacturing processes, structural components, etc. BKI reserve the right to inspect the plant accordingly or to restrict the scope of manufacture to the potential available at the plant.

2) The manufacturing plant shall have at its disposal qualified personnel. BKI is to be advised of the names and areas of responsibility of all supervisory and control personnel. BKI reserve the right to require proof of qualification.

.2 Quality control

1) As far as required and expedient, the manufacturer's personnel has to examine all structural components both during manufacture and on completion, to ensure that they are complete, that the dimensions are correct and that workmanship is satisfactory and meets the standard of good shipbuilding practice.

2) Upon inspection and corrections by the manufacturing plant, the structural components are to be shown to the BKI Surveyor for inspection, in suitable sections, normally in unpainted condition and enabling proper access for inspection.

3) The Surveyor may reject components that have not been adequately checked by the plant and may demand their re-submission upon successful completion of such checks and corrections by the plant.

1.6 Reports, Certificates

1.6.1 Testing of materials, components, machinery, etc. at the subcontractor's works will be certified by BKI.

1.6.2 Upon completion of the units or installations the Surveyors will prepare construction reports, on the basis of which BKI will issue the Class Certificate, see 1.7.

1.6.3 The Classification data of each units or installations will be included in BKI's data file. An extract of these data will be indicated in the Register.

1.6.4 Where BKI has been entrusted in addition and beyond the scope of the Rules with supervision of construction in accordance with the building specification a Certificate of Conformity (CoC) will be issued and a corresponding Notation added to the Class designation, see Sections 2 and 4.

1.7 Class Certificate, Classification Symbol

1.7.1 Assignment of Class, issuance of the Class Certificate, and assignment of the corresponding Classification Symbol and Notations thereto according to Sections 2 and 4 are conditional upon proof being furnished of compliance with the Construction Rules in force on the date of placing the order, see 1.1.

BKI Class can be granted only, if the initial, or if necessary the repeated, tests and trials show satisfactory results and all documents required by this rules has been submitted and examined.

1.7.2 BKI reserve the right to add special remarks in the Class Certificates, as well as information regarding operation of the installation or unit which is of relevance for the unit's or installation's Class.

1.7.3 The Certificates of Classification are issued by BKI Head Office and they are to be kept on board.

1.8 Register

The Classification data of each units or installations classified will be included in the BKI data file. An extract of these data will be entered in the Register. During the period of Class BKI will update these details on the basis of relevant reports submitted by the Surveyors.

2. Classification of unit or installation after construction (in service)

2.1 Application for Floating Offshore Structures

Application for the Classification of units or installations or special equipment not constructed under the supervision of BKI or for readmission to Class are to be formally addressed to BKI's Head Office, using the form provided by BKI.

The application for Classification will be processed differently depending on whether the unit/installation is:

— classed with a QSCS Class Society, or

— not classed with a QSCS Class Society

For detail the requirements of units or installations classed with a QSCS Class Society or not classed with a QSCS Class Society can be seen in Rules for Classification and Surveys (Pt.1, Vol.I), Sec.2, D, as far as applicable.

2.1.1 Application for Existing Single Point Mooring (SPM)

.1 Documentation to be submitted

The following particulars and/or drawings are to be submitted:

1) Main plans:

- General arrangement.
- An arrangement plan of watertight compartment, including the location, type and disposition of watertight and weather tight closures.
- Structural arrangement showing shell plating, framing, bulkheads, flats, main and bracing members, joint details as applicable.
- Corrosion control arrangements.
- Bilge, sounding and venting arrangements, (if applicable).
- Turntable structure arrangements.
- Electrical system one line diagrams.
- Location of fire safety equipment, (if applicable).
- Mooring arrangement.
- Mooring components including anchor legs, associated hardware, hawser(s), and hawser load deflection characteristics.
- Foundations for mooring components, industrial equipment, etc. showing attachments to hull structure.
- Anchoring system showing the size of anchor, holding capacity of piles, pile sizes, and capacity, etc.
- Pipe Line End Manifold (PLEM) as applicable.
- SPM main bearing.
- Cargo or product swivel including swivel driving mechanism, swivel bearings, and electrical swivel details.
- Product or cargo system piping schematic drawing, (if applicable).
- Floating and under buoy hoses/flexible risers, (if applicable).
- Navigation aids.
- Plans for conducting underwater inspections in lieu of dry docking
- Cargo or product swivel including swivel driving mechanism, swivel bearings, and electrical swivel details.
- Product or cargo system piping schematic drawing, (if applicable).
- Floating and under buoy hoses/flexible risers, (if applicable).
- Navigation aids.
- Plans for conducting underwater inspections in lieu of dry docking.

2) The required information as mentioned below are provided in documents submitted:

- Number of lines
- Type of line segments
- Dimensions
- Material specifications
- Weight in air and sea waters
- Line length form fairlead to anchor point of individual segments

- Characteristic strength
- Anchor pattern
- Anchor type
- Horizontal distance between fairleads and anchor point and/or initial pretensions
- Position of buoyancy elements, and net buoyancy
- Position of weight elements and weight in air and seawater
- Anchor design including ancho size weight and material specifications.
- Site Condition Data:
- Data on subjects including the following in accordance with Rules for Single Point Mooring (Pt.5, Vol.IX), Sec. 3, A.
  - Environmental conditions of wind, waves, current, marine growth, seiche, tide, visibility, temperature, and ice.
  - Water depth, at berth and throughout the manoeuvring area, bottom soil conditions, and sub-surface hazards.

3) Calculation:
In general, where applicable, the following calculations are to be submitted:

- Stability calculations in accordance with Rules for Single Point Mooring (Pt.5, Vol.IX), Sec.3, C.6
- Mooring and anchorage in accordance with Rules for Single Point Mooring (Pt.5, Vol.IX), Sec.3,D
  - Strength Analysis
  - Fatigue Analysis, if required

Calculations when submitted are to be footnoted indicating references.

4) Information Booklet and Maintenance

Alternative technical data may be accepted by BKI in lieu of specific items of the listed documentation not available at the time of the transfer of class. All document above are to be submitted in electronic format.

BKI reserves right to request additional information and particulars to be submitted.

.2 Class Entry Survey

.2.1 For SPM have Class with a QSCS Class Society.

A Class entry survey is to be carried out by BKI, the minimum extent of which is to be based on the age, type and the losing Society's class status of the installation.

.2.2 For SPM have not Class.

A Class entry survey is to be carried out by BKI, the minimum extent of which is to be based on the age and type of the installation. The scope of class entry survey is follows to the scope of Class Renewal Survey in accordance with Rules for Single Point Mooring (Pt.5, Vol. IX), Sec.5, B.4.

.2.2.1 For admission class, all items for dry docking survey in Rules for Single Point Mooring (Pt.5, Vol. IX), Sec.5, B.2 should be examined by attending the Surveyor. The examination method for dry docking survey can be used one of the items below:

1) Dry docking
For SPM hull or buoy should be removed from installation to shipyard for examination.

2) Bottom Survey
For SPM hull or buoy should be removed from installation to examination out of water. Examination on barge may be accepted or equivalent method.

3) Underwater Survey
Underwater survey may be accepted for examination in site, with provided the following requirements are satisfied:

— The underwater inspection procedures are to be submitted for review by Surveyor prior to execution of the underwater survey.

— The maintenance procedures[2)] are to be submitted for review by BKI HO prior to execution of the underwater survey.

— Divers carrying out the underwater inspection are to be suitably qualified.

— The condition of the SPM found during the underwater survey is to be acceptable.

If any item of SPM hull or buoy cannot be examined during underwater survey, the applicant should provide the local structure strength analysis in accordance with Rules for Single Point Mooring (Pt.5, Vol. IX), Sec. 3, C.4. The analysis should be submitted and approved by BKI HO.

Method 3) is applied only for extended the dry docking or bottom survey until one year in special circumstances where agreed to by BKI HO. Dry docking or bottom survey may be extended for more than one year but not exceed five years on an individual case basis, if the following documents[3)] can be provided:

— Class certificate of dry docking from previous class or

— Previous supervision reports of dry docking where the examinations items are according to Rules for Single Point Mooring (Pt.5, Vol.VI) Sec.5, B.2 and have been reviewed and accepted by BKI prior to performing underwater survey.

.2.2.2 Material grade for mooring chains should be in accordance with Rules for Materials (Pt.1, Vol. V), Sec. 13, C. If the material grade from the actual condition is different with requirement of the Rules, then the minimum material grade of KI-K3 can be considered to be accepted if the calculation of strength and fatigue mooring analysis required in 2.1.1.1.3) has been reviewed and with satisfying BKI for current operation condition[4)].

.2.3 BKI may request further examinations, tests and measurements, including but not limited to material testing, non-destructive testing, hydraulic and hydrostatic tests.

.2.4 If during admission to class survey discrepancies between the submitted documents and actual condition of the SPM are found, BKI will use actual conditions for reference. The documents are to be revised to reflect the actual conditions and resubmitted to BKI.

.3 Condition for the issuance of Provisional Certificate of Class

.3.1 BKI is not to issue a Provisional Certificate of Class, or other documents for the installation until:

1) all required surveys in 2.1.1.2 have been completed;

2) the appraisal of the plans listed in 2.1.1.1, as required by BKI to verify compliance with its applicable class Rules, has been carried out;

Where issues remain outstanding, BKI may impose a recommendation for a limited time period in accordance with Section 3, I.A.3.6.

.4 Certificate of Class

.4.1 Upon satisfactory review of the survey reports, BKI issues to the Owner the Certificate of Class valid for the whole period of class, provided that the conditions in 2.1.1.1 to 2.1.1.3 are met. The certificate indicates the class notations.

[2)] Maintenance Procedure should be including maintenance schedule of underwater part of SPM hull or buoy.
[3)] Documents is dated not more than five years prior to admission to class.
[4)] Only for SPM which operate in Indonesia Area

2.2 Application for Fixed Offshore Structures

This sub-section pertains to the classification or continuance of classification of an existing fixed offshore structure. However, if the structure is currently classed with the Society, the requirements are to be in accordance with Section 5.H.6.

2.2.1 General

.1 The approach for the classification of an existing fixed offshore structure is defined as follows:

1) Review original design documentation, plans, structural modification records and Survey Reports.

2) Survey structure to establish condition of structure.

3) Review the result of the structural analysis utilizing results of survey, original plans, specialist geotechnical and oceanographic reports and proposed modifications which affect the dead, live, environmental and earthquake loads, if applicable, on the structures.

4) Resurvey structure utilizing results from structural analysis. Make any alterations necessary for extending the service of the structure.

5) Review a program of continuing surveys to as-sure the continued adequacy of the structure.

.2 Items 1) and 2) are to assess, the structure to determine the possibility of continued use. If the conclusion is favorable from this assessment, structural analyses should be carried out.

.3 The in-place analysis is to follow .5 and is to be in accordance with Rules for Structures (Pt.5, Vol. II), Sec.3.

.4 The fatigue life can be calculated by means of analysis as described in Rules for Structures (Pt.5, Vol. II), Sec.3, H and the remaining fatigue lives of all the structural members and joints are not to be less than twice the extended service life. The fatigue analysis may not be needed provided all of the following conditions are satisfied.

1) The original fatigue analysis indicates that the fatigue lives of all joints are sufficient.

2) The fatigue environmental data used in the original fatigue analysis remain valid or deemed to be more conservative.

3) Cracks are not found during the condition survey or damaged joints and members are being repaired.

4) Marine growth and corrosion is found to be within the allowable design limits.

.5 Surveys on a periodic basis based on Section 5 should be undertaken to ascertain the satisfactory condition of the structure.

2.2.2 Review of structure design documents

.1 Structure design information is to be collected to allow an engineering assessment of a structure's overall structural integrity.

.2 The operator should ensure that any assumptions made are reasonable and information gathered is both accurate and representative of actual conditions at the time of the assessment. If the information cannot be provided, actual measurements or testing's should be carried out to establish a reasonable and conservative assumption.

2.2.3 Survey of structures

.1 Surveying an existing fixed offshore structure witnessed and monitored by a Surveyor is necessary to determine a base condition upon which justification of continued service can be made. Reports of previous surveys and maintenance will be reviewed, and a complete underwater survey required to an accurate assessment of the structure's condition is obtained.

.2 The corrosion protection system is to be re-evaluated to ensure that existing anodes are capable of serving the design life of the structure. If found necessary by the re-evaluation, replacement of the existing anodes or additional new anodes may have to be carried out. If the increase in hydrodynamic loads due to the addition of new anodes is significant, this additional load should be taken into account in the structural analysis.

.3 The condition of protective coatings in the splash zone shall be rectified and placed in satisfactory condition.

.4 The requirements for survey are to be in accordance with Section 5.H.6.

2.2.4 Structural analyses

.1 The structural analyses of an existing fixed offshore structure must incorporate the results of the structure survey. Specifically, deck loads, wastage, marine growth, scour, and any structure modifications and damages must be incorporated into the analysis model.

.2 The original fabrication materials and fit-up details must be established.

.3 The pile driving records should be made available so that the foundation can be accurately modelled.

.4 For areas where the design is controlled by earthquake or ice conditions, the analyses for such conditions should also be carried out.

.5 Possible alterations of structures to allow continued use are developed by altering the analysis model to evaluate the effect of the alterations.

.6 An analysis based on an ultimate strength method is also acceptable if the method and safety factors used are proven to be appropriate.

.7 Members and joints indicated overstressed or low in fatigue life may be improved by reducing deck load and removing unused structures such as conductors, conductor guides framing, and boat landing.

The results of these load reduction on the structure should be evaluated to determine whether the repairs/alterations is needed.

2.2.5 Repairs and re-inspection

.1 A second survey may be necessary to inspect areas where the analysis results indicate as being the more highly stressed regions of the structure.

.2 Members and joints found overstressed should be strengthened. Joints with low fatigue lives may be improved either by strengthening or grinding the welds. If grinding is used, the details of the grinding are to be submitted to BKI for review and approval.

.3 Interval of future Periodical Surveys should be determined based on the remaining fatigue lives of these joints.

2.2.6 Extension of Use and Reuse

.1 The classification of fixed offshore structure to be extension of used or reused requires special considerations with respect to the review, surveys, structural analyses, and the removal and reinstallation operation.

.2 The requirements described in 2.2.1 to 2.2.5, whenever applicable and survey requirements given in Section 5.H.6 to 5.H.7 for structure reuse or extension of use.

.3 Since the structure is to be reused at a new site, the environmental and geotechnical data used in the analysis should be in accordance with those for the new site.

.4 The structure reuse involves the structure removal and reinstallation process which requires special plans in order to achieve its intended services.

2.2.7 Removal and reinstallation operation

.1 The structure removal procedure shall be well planned and analysed to verify that the integrity of the structure has not been compromised.

.2 Structure removal plans, procedures, sea-fastening drawings, transportation, together with the analysis calculations should be submitted to BKI for review.

.3 In general, Rules for Structures (Pt.5, Vol. II), Sec.10 should be followed for the reinstallation of used structures.

Section 2 Class Designation for Floating Offshore Structures

A. General 2-1

A. General

The requirements for class designation for Floating Offshore Structures are contained in Guidance for Class Notation (Pt. 0, Vol. B) Sec.2.T.

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Section 3 Survey of Floating Offshore Structures

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I. Survey for Mobile Offshore Units

A. General

1. Surveys for maintenance of Class

1.1 For maintenance of Class, the regular periodical and occasional surveys of hull, machinery including electrical installation and any special equipment classed as defined in the following are to be performed.

Units of ship-shaped type will be generally inspected in accordance with the provisions of Rules for Classification and Surveys (Pt.1, Vol.I) and are to be observed as far as applicable.

The periodical surveys include:

— Annual Survey

— Intermediate Survey, (if requested)

— Class Renewal Survey

— Propeller Shaft Survey

— Bottom Survey/Underwater survey

as well as surveys for the maintenance of Class Notations, where applicable. The surveys are to be carried out in accordance with the intervals and conditions laid down in this Section.

When there are no specific survey requirements for Class Notations assigned to a unit, the equipment and/or arrangements related to these Class Notations are to be examined, as applicable, to the Surveyor's satisfaction at each Class Annual, Intermediate or Renewal Survey.

The surveys are to be carried out in accordance with the relevant requirements in order to confirm that the hull/structure, machinery including electrical installation, equipment and appliances comply with the applicable Rules and remain in satisfactory condition.

When the conditions for the maintenance of type and/or service Notations are not complied with, the type and/or service Notation will be suspended and/or withdrawn in accordance with the applicable Rules given in Section 1, F.5.

The requirements for surveys apply to those items that are required according to the Rules or, even if not required, are fitted on board.

Unless specified otherwise, any survey other than bottom survey/underwater inspection, propeller shaft, steam boiler/thermal oil plant and pressure vessels survey, may be effected by carrying out partial surveys or splitting of surveys at different times to be agreed upon with BKI, e.g. Continuous Class Surveys, provided that such a survey procedure is adequately extensive. The splitting of a survey is to be such as not to impair its effectiveness.

1.2 In addition to the above periodical surveys, the units are to be submitted to occasional surveys whenever the circumstances so require.

For example, occasional surveys will be carried out at the time of:

- updating of Classifications documents (e.g. change of the owner, name of the mobile offshore units, flag, etc)
- damages or suspected damage
- repairs or maintenance work
- conversions
- postponement of surveys or conditions of Class
- occasional surveys for change of anniversary date, postponement or advance of surveys
- remarks further to Port State Control inspections

BKI reserve the right, after due consideration, to change the periodicity, postpone or advance surveys, taking into account particular circumstances.

If applicable, when a survey becomes overdue during a voyage, the following applies:

- For avoiding loss of Class, in the case of a Class Renewal Survey, BKI may, in exceptional cases, grant an extension to allow completion of this survey, provided there is documented agreement to such an extension prior to the expiry date of the Class Certificate, and BKI is satisfied that there is sufficient technical justification for such an extension, see also D.2.1.3.
- In the case of Class Annual or Intermediate Surveys, no postponement is granted. Such surveys are to be completed within their pre-scribed time windows; see B.2. and C.
- In the case of all other periodical surveys and Conditions of Class, extension may be granted, provided there is sufficient technical justification for such an extension.

Other surveys performed by BKI partly in connection with Classification are listed in 4

1.3 Surveys required for maintenance of Class, e. g. in the case of repairs, or modifications to any parts subject to Classification, are to be agreed with the local BKI representation in due time, so that the measures envisaged may be assessed and supervised, as required.

1.4 The Surveyors are to be given access at any time to the units and/or to the workshops, so that they may perform their duties.

The owner is to provide the necessary facilities for the safe execution of the surveys.

For their internal examination, including close up surveys, tanks and spaces are to be safe for access

For survey of the mobile offshore units fixed to the sea-bed by internal structures, means are to be provided to enable the Surveyor to examine the structure in a safe and practical way.

Tanks and spaces are to be sufficiently illuminated, clean and free from water, scale, dirt, oil residues, etc. to reveal significant corrosion, deformation, fractures, damage or other structural deterioration.

Approved rescue and safety equipment is to be available.

In this connection all areas to be surveyed have to be cleared, cleaned and to be made free from gas, as deemed by Guidance for Marine Industry (Pt.1, Vol.AC) Sec.4, R-72.

The Class Certificates and other particulars relating to Classification are to be made available to the Surveyor on request.

1.5 Surveys conducted during a voyage may be agreed and credited to periodical surveys due. The prerequisites, procedures and specific conditions, e. g. weather, to be met will be fixed from case to case. The decision as to feasibility of the survey may only be taken in agreement with the Surveyor.

1.6 BKI will inform the owner or operator about the status of Class, indicating the last recognized surveys and the next due dates. However, even if not provided with such information, the owner or operator is obliged to have the surveys stipulated by the present Rules performed.

1.7 BKI may agree to testing and analysis procedures as a supplement to or equivalent substitute for conventional survey and inspection such as by uncovering/opening up of components.

1.8 BKI reserve the right for given reasons, e.g. in the light of special experience gained during operation to extend the scope of survey or to carry that out with two Surveyors, if needed.

1.9 BKI reserve the right to demand surveys to be held between the due dates of regular surveys, if this is necessary, see J.1.

1.10 If a unit has to be surveyed in a port beyond the reach of the BKI Surveyor, also in the events of force majeure or of armed conflicts, BKI Head Office will have to be notified. Following a review of the facts the process to be adopted will be decided by BKI.

2. Selection of Surveyors

In principle, the acting Surveyors will be chosen by BKI. However, the operator of a classed mobile offshore units is free to request that any findings of surveys or decisions which he deems to be doubtful are checked by other BKI Surveyors.

3. Documentation, confirmation of Class

3.1 The records of each survey, as well as any requirements upon which maintenance of the Class has been made conditional, will be entered into the respective Survey Statement. The Surveyor's signature on the Certificate and other documents only certifies what has been seen and checked during the particular survey.

3.2 The reports prepared by the Surveyor will be sent to BKI Head Office. If there are no objections, the results will be published in the BKI Register and the confirmation of Class effected by the Surveyor in the Certificate will acquire final validity.

3.3 A confirmation of Class effected by the Surveyor relates to the kind of survey referred to in the report and is valid under the reservation that examination will not give cause for any objections, see 3.2.

3.4 Upon request, Class may be confirmed in writing by a separate Certificate. However, such Certificates are valid only if issued by BKI Head Office or in exceptional cases, Head Office has expressly authorized the field service representatives to do so.

3.5 Where defects are repaired provisionally only, or where the Surveyor does not consider immediate repairs or replacements necessary, the unit's Class may be confirmed for a limited period by making an entry in the Survey Statement to the Certificate of Classification. Cancellation of such limitations will also have to be indicated in the Survey Statement, see also Section 1, F.2.

3.6 Imposing, clearing and controlling recommendations

3.6.1 Recommendations shall be imposed for the following:

1) Repairs and/or renewals related to damages that affect Classification (e.g. grounding, structural damages, machinery damages, wastage over the allowable limits, etc.)

2) Supplementary survey requirements

3) Temporary repairs

3.6.2 For repairs not completed at the time of survey, a Recommendation is to be imposed. In order to provide adequate information to the surveyor attending for survey of the repairs, the Recommendation is to be sufficiently detailed with identification of items to be repaired. For identification of extensive repairs, reference may be given to the survey report.

3.6.3 Recommendations may require imposing limitations related to navigation and operation that are deemed necessary for continued operation under Classification (e.g. loss of anchor and/or chain, etc).

3.6.4 Recommendations are given in writing with a time limit for completion to the owner's representatives/Ship's Master, and are clearly stated on the Certificate of Class or an attachment to the Certificate of Class and/or class survey status or report.

3.6.5 Owners will be notified of these dates and that the vessel's class will be subject to a suspension procedure if the item is not dealt with, or postponed, by the due date.

3.6.6 Clearance of Recommendations shall be supported by an Occasional survey.

4. Surveys in accordance with flag state regulations

4.1 Where surveys are required on account of international conventions and of corresponding laws/ official ordinances of a flag state, BKI will undertake them on application, or by official order, acting on behalf of the Authorities concerned, based on the respective provisions; this includes e.g. surveys according to:

— the International Convention on Load Lines (ICLL 66)

— the International Convention for the Safety of Life at Sea (SOLAS 74) for self-propelled units

— the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78)

— the related Conventions of the International Labour Organization (ILO)

— Code for the Construction and Equipment of Mobile Offshore Drilling Units (MODU)

Where possible, such surveys will be carried out simultaneously with the Class surveys.

4.2 BKI will also undertake on request other surveys and checks stipulated by additional regulations and requirements of the flag state. Such surveys are subject to agreements made in each individual case and/or to the regulations of the country concerned.

4.3 All activities as outlined in 4.1 and 4.2 and, where applicable, issuance of relevant Certificates are likewise subject to the general conditions of Section 1.

4.4 If for some reason a unit's Class has expired or has been withdrawn by BKI, all statutory Certificates issued by BKI, if any, will automatically become void. If subsequently the Class is renewed or re- assigned, the validity of these Certificates will be revived within the scope of their original period of validity, provided that all surveys meanwhile having fallen due have been carried out.

5. External service suppliers

Personnel or firms engaged in services affecting Classification and statutory work are subject to approval by BKI. The Rules for Approval Manufactures and Services Supliers (Pt.1, Vol.XI) shall be observed.

6. Preparation for Survey

6.1 Conditions for Survey

6.1.1 The Owner should provide the necessary facilities for a safe conduct of the survey. For confined space entry, the requirements of Guidance for Marine Industry (Pt.1, Vol.AC) Sec.4, R-72 should be followed.

6.1.2 In cases where the provisions of safety and required access are judged by the attending surveyor(s) not to be adequate, the survey of the spaces involved should not proceed.

6.1.3 In order to enable the attending surveyor(s) to carry out the survey, provisions for proper and safe access, should be agreed between Owner and BKI.

6.1.4 Details of the means of access are provided in the Survey Planning Questionnaire.

6.1.5 Tanks and spaces should be safe for access[1)]. Tanks and spaces should be gas free, ventilated and illuminated. Prior to entering a tank, void for enclosed spaces, it should be verified (hat the atmosphere in the tanks is free from hazardous gas and contains sufficient oxygen.

6.1.6 Tanks and spaces should be sufficiently clean and free from water, scale, dirt, oil residues, corrosion scale, sediment etc., to reveal significant corrosion, deformation, fractures, damages or other structural deterioration as well as the condition of the coating, in particular this applies to areas that are subject to thickness measurement.

6.1.7 Sufficient illumination should be provided to reveal significant corrosion, deformation, fractures, damages or other structural deterioration as well as the condition of the coating.

6.1.8 Where soft coatings have been applied, safe access should be provided for the attending surveyor(s) to verify the effectiveness of the coaling and to carry out an assessment of the conditions of internal structures, which may include spot removal of the coating. When safe access cannot be provided, the soft coating should be removed.

6.1.9 The attending surveyor(s) should always be accompanied by at least one responsible person assigned by Owner experienced in tank and enclosed spaces inspection. In addition, a backup team of at least two experienced persons should be stationed at the hatch opening of the tank or space that is being surveyed. The back-up team should continuously observe the work in the tank or space should keep lifesaving and evacuation equipment ready for use.

6.2 Access to structure

6.2.1 For overall survey, means should be provided to enable the attending surveyor(s) to examine the structure in a safe and practical way.

[1)] Reference is made to chapter 10 of the International Safety Guide for Oil Tankers and Terminals (ISGOTT)

6.2.2 For close-up survey, one or more of the following means for access, acceptable to the attending surveyor(s), should be provided:

— permanent staging and passages through structures

— temporary staging and passages through structures

— lifts and moveable platforms

— rafts or boats

— other equivalent means.

6.2.3 Surveys of tanks or spaces by means of rafts or boats may only be undertaken with the agreement of the attending surveyor(s), who should take into account the safety arrangements provided, including weather forecasting and unit/structure response in reasonable sea conditions.

6.2.4 When rafts or boats will be used for close up survey the following conditions should be observed:

1) Only rough duty, inflatable rafts or boats, having satisfactory residual buoyancy and stability even if one chamber is ruptured, should be used;

2) The boat or raft should be tethered to the access ladder and an additional person should be stationed down the access ladder with a clear view of the boat or raft;

3) Appropriate life jackets should be available for all participants;

4) The surface of water in the tank should be calm (under all foreseeable conditions the expected rise of water within the tank should not exceed 0,25 m) and the water level either stationary or falling. On no account should the level of the water be rising while the boat or raft is in use;

5) The tank or space must contain clean ballast water only. Even a thin sheen of oil on the water is not acceptable;

6) At no time should the water level be allowed to be within 1,0 m of the deepest under deck web face flat so that the survey team is not isolated from a direct escape route to the tank hatch. Filling to levels above the deck transverses should only be contemplated if a deck access manhole is fitted and open in the bay being examined, so that an escape route for the survey party is available at all times;

7) If the tanks or spaces are connected by a common venting system, or inert gas system, the tank in which the boat or raft is to be used should be isolated to prevent a transfer of gas from other tanks (or spaces).

6.2.5 In addition to the above rafts or boats alone may be allowed for inspection of the under-deck areas for tanks or spaces, if the depth of the webs are 1,5 m or less.

6.2.6 If the depth of the webs is more than 1,5 m, rafts or boats alone may be allowed only:

1) When the coating of the under-deck structure is in GOOD condition and there is no evidence of wastage; or

2) If a permanent means of access is provided in each bay to allow safe entry and exit. This means of access is to be direct from the deck via a vertical ladder and a small platform should be fitted approximately 2,0 m below the deck.

If neither of the above conditions are met, then staging should be provided for the survey of the underdeck area.

6.2.7 Remote Inspection Techniques (RIT)

.1 Remote Inspection Technique is a means of survey that enables examination of any part of the structure without the need for direct physical access of the surveyor.

.2 The RIT is to provide the information normally obtained from a close-up survey. RIT surveys are to be carried out in accordance with the requirements given here-in and the requirements of Guidance for Marine Industry (Pt.1, Vol.AC) Sec.3, R-42 'Guidelines for Use of Remote Inspection Techniques for Surveys'. These considerations are to be included in the proposals for use of a RIT which are to be submitted in advance of the survey so that satisfactory arrangements can be agreed with BKI.

.3 For Surveys conducted by use of a remote inspection technique, one or more of the following means for access, acceptable to the Surveyor, is to be provided:

— Unmanned robot arm

— Remote Operated Vehicles (ROV)

— Unmanned Aerial Vehicles / Drones

— Other means acceptable to BKI.

.4 The equipment and procedure for observing and reporting the survey using a RIT are to be discussed and agreed with the parties involved prior to the RIT survey, and suitable time is to be allowed to set-up, calibrate and test all equipment beforehand.

.5 When using a RIT as an alternative to close-up survey, if not carried out by BKI itself, it is to be conducted by a firm approved as a service supplier according to The Rules for Approval Manufactures and Services Supliers (Pt.1, Vol.XI) and is to be witnessed by an attending surveyor of BKI.

.6 The structure to be examined using a RIT is to be sufficiently clean to permit meaningful examination. Visibility is to be sufficient to allow for a meaningful examination. BKI is to be satisfied with the methods of orientation on the structure.

.7 The Surveyor is to be satisfied with the method of data presentation including pictorial representation, and a good two-way communication between the Surveyor and RIT operator is to be provided.

.8 If the RIT reveals damage or deterioration that requires attention, the Surveyor may require traditional survey to be undertaken without the use of a RIT.

6.3 Equipment for survey

6.3.1 Thickness measurements shall normally be carried out by means of ultrasonic test equipment. The accuracy of the equipment shall be proven to the attending surveyor(s) as required. Thickness measurements are to be carried out by a firm approved by the BKI in accordance with the Rules for Approval of Manufacturers and Service Suppliers (Pt.1, Vol.XI).

One or more of the following fracture detection procedures may be required if deemed necessary by the attending surveyor(s):

— radiographic equipment

— ultrasonic equipment

— magnetic particle equipment

— dye penetrant

— other equivalent means

6.3.2 Explosimeter, oxygen-meter, breathing apparatus, lifelines, riding belts with rope and hook and whistles together with instructions and guidance on their use should be made available during the survey. A safety check-list should be provided.

6.3.3 Adequate and safe lighting shall be provided for the safe and efficient conduct of the survey.

6.3.4 Adequate protective clothing shall be made available and used (e.g. safety helmet, gloves, safety shoes, etc) during the survey.

6.4 Survey Offshore or at Anchorage

6.4.1 Survey offshore or at anchorage may be accepted provided the Surveyor is given the necessary assistance from the personnel on-board.

6.4.2 A communication system is to be arranged between the survey party in the tank or space and the responsible officer on deck. This system must also include the personnel in charge of ballast pump handling if boats or rafts are used.

6.4.3 When boats or rafts are used, appropriate life jackets are to be available for all participants. Boats or rafts are to have satisfactory residual buoyancy and stability even if one chamber is ruptured. A safety checklist is to be provided.

6.4.4 Surveys of tanks by means of boats or rafts may only be undertaken at the sole discretion of the Surveyor, who is to take into account the safety arrangements provided, including weather forecasting and ship response in reasonable sea conditions.

See footnote[2)]

6.5 Meetings and Communication Arrangements

6.5.1 The establishment of proper preparation and the close co-operation between (he is attending surveyor(s) and the Company's representatives on board prior to and during the survey are an essential part in the safe and efficient conduct of the survey. During the survey on board safety meetings shall be held regularly.

6.5.2 Prior to commencement of the survey meeting shall be held between the attending surveyor(s), the Company's representative(s) in attendance, the Thickness Measurement Firm Operator (as applicable) and the Offshore Installation Manager (OIM) unit/installation for the purpose to ascertain that all the arrangements envisaged in the Survey Plan are in place, so as to ensure the safe and efficient conduct of the survey work to be carried out.

6.5.3 The following is an indicative list of items that shall be addressed in the meeting:

1) Operation of the unit/ installation;
2) Provisions and arrangements for thickness measurements (i.e. access, cleaning/descaling, illumination, ventilation, personal safety);
3) Extent of the thickness measurements;
4) Acceptance criteria (refer to the list of minimum thicknesses);
5) Extent of close-up survey and thickness measurements considering the coating condition and suspect areas/areas of substantial corrosion;
6) Execution of thickness measurements;
7) Taking representative readings in general and where uneven corrosion / pitting is found;
8) Mapping of areas of substantial corrosion;
9) Communication between attending surveyor(s) the TM operator(s) and Company representative(s) concerning findings.

[2)] Reference is made to Guidance for Marine Industry (Pt.1, Vol.AC) Sec.2, R-39

6.5.4 A communication system shall be arranged between the survey party in the tank or space being examined, the system shall also include the personnel in charge of handling the ballast pump(s) if rafts or boats are used. The communication arrangements shall maintain through the survey.

B. Periodical Surveys for Units

1. General

1.1 The periodical surveys listed in the following are to be conducted for the hull/structure, machinery including electrical installations as well as special equipment and installations included in the Classification of the units.

The conditions for the maintenance of type and/or service Notations are to be checked for compliance at each periodical survey; the type and/or service Notation will be suspended and/or withdrawn in accordance with the applicable Rules given in Section 1, F.5. if the relevant rules are not complied with.

If for some obvious reason, e.g. a temporary out-of- service condition of certain equipment, parts included in the Classification cannot be surveyed, this will be noted in the Survey Status.

1.2 Where statutory regulations are applicable which impose inspection intervals deviating from the Class related intervals, where possible, the intervals will be harmonized in the individual case to reduce the number of single surveys

1.3 In principle, elements covered by the Classification and submitted to a Class Renewal Survey on a date different from the date of the periodical Class Renewal Survey of the units, they are to be reexamined according to class period after the previous survey

1.4 An inspection schedule agreed upon between owner/operator and BKI will be set up for the units, in accordance with the following indications and adapted to the individual service conditions, see also 1.10.

1.5 When completed, the individual survey will be noted in the Class Certificate, including any necessary observations.

1.6 For units where dry-docking is not practicable at close intervals, special diving devices, vehicles or diver assist systems have to be used, which are suitable for the configuration and conditions of the individual structure. The suitability of such devices and systems and their deployment within the inspection scheme are subject to approval and will be re- viewed in the course of inspections carried out and experience gained.

1.7 The general procedure of survey consists in:

- an overall examination of the parts covered by the rule requirements
- checking of selected items covered by the rule requirements at random
- attending tests and trials, where applicable and deemed necessary by the Surveyor

1.8 When a survey results in the identification of significant corrosion, structural defects or damage to hull/structure, machinery and/or any piece of its equipment which, in the opinion of the Surveyor affect the Class of the units, remedial measures are to be implemented before the units continues in service.

1.9 BKI's survey requirements cannot be considered as a substitute for specification and acceptance of repairs and maintenance, which remain the responsibility of the owner.

1.10 Survey preplanning and record keeping

1.10.1 A specific Survey Program for Class Renewal Surveys is to be prepared out in advance of the Class Renewal Survey by the owner in cooperation with BKI. The Survey Program shall be in written format

1.10.2 For Bottom Surveys, Dry-docking or Underwater Inspection In lieu of Dry-docking, plans and procedures are to be submitted for review in advance of the survey and made available on board. These should include drawings or forms for identifying the areas to be surveyed, the extent of hull cleaning, nondestructive testing locations, including NDT methods, nomenclature, and for the recording of any damage or deterioration found. Submitted data, after review by BKI, will be subject to revision if found to be necessary in light of experience.

2. Annual Surveys

2.1 Schedule

Annual Surveys are to be held within 3 months before or after each anniversary date from the date of the initial Class survey or from the completion date credited for the last Class Renewal Survey.

2.2 Scope

2.2.1 General

The survey consists of an examination for the purpose of verifying, as far as practicable, that hull/structure, the machinery including electrical installations and equipment are maintained in a satisfactory condition in accordance with the applicable Rule Requirements.

The requirements for all ship-type units are defined in the B generally inspected in accordance with the provisions of Rules for Classification and Surveys (Pt.1, Vol.I) Sec. 3, C.1.1 are to be observed as far as applicable.

2.2.2 Hull, structure and equipment

.1 The Annual Survey will generally cover visual examination of all important structural elements readily accessible, with regard to deformations, cracks, corrosion, etc. Where a special inspection plan has been prepared, the corresponding indications have to be observed, e.g. critical areas with stress concentrations, locations with previous repairs, etc.

.2 The type, location and extent of corrosion control, e.g. coatings, cathodic protection systems, etc., as well its effectiveness and repairs or renewals shall be reported at each survey, see Rules for Hull (Pt.1, Vol. II), Sec. 38.

.3 The Surveyors are to be satisfied at each Annual Survey that no material alterations have been made to the units, its structural arrangements, subdivision, superstructure, fittings, and closing appliances upon which the stability calculations or the load line assignment is based, if applicable.

.4 Suspect Areas identified at previous surveys are to be examined. Thickness measurements are to be taken of the areas of substantial corrosion and the extent of thickness measurements is to be increased to determine areas of substantial corrosion. Table 3.4 may be used as guidance for these additional thickness measurements. These extended thickness measurements are to be carried out before the annual survey is credited as completed.

.5 All units

At each Annual Survey the exposed parts of the hull/structure, deck, deck houses, structures attached to the deck, derrick and cranes supporting structure, accessible internal spaces, and the applicable parts as listed below are to be generally examined and placed in satisfactory condition as found necessary:

- Accessible hatchways, manholes and other openings
- Machinery casings and covers, companion-ways and deck houses protecting openings
- Portlights together with deadcovers, cargo ports and similar openings in hull sides, ends, or in enclosed superstructures
- Ventilators, tank vent pipes together with flame screens and overboard discharges from enclosed spaces,
- Watertight bulkheads and outside walls of enclosed superstructures
- Closing appliances for all the above, including hatch covers, doors, check valves, together with their respective securing devices, dogs, sills, coamings and supports
- Freeing ports together with bars, shutters and hinges

— Windlass and attachments of anchor racks and anchor cables

— Protection of the crew, guard rails, life-lines, gangways, and deck houses accommodating crew

— Watertight cable transit seal systems register is to be reviewed to confirm it is being maintained and as far as practicable the transits are to be examined to confirm their satisfactory condition.

— Where there are records entered since the last annual survey of any disruption to the cable transits or installation of new cable transits, the satisfactory condition of those transits is to be confirmed by review of records and, if deemed necessary, by examination. The results are to be recorded in the Cable Transit Seal Systems Register against the specific cable transit

(IACS UR Z28 4.1)

.6 Surface type units

The hull and deck structure around the drilling well (moon-pool) and in vicinity of any other structural changes in section, slots, steps or openings in the deck or hull and the back-up structure in way of structural members or sponsons connecting to the hull are to be checked.

.7 Self-elevating units

The following parts are to be checked:

— Jack-house structures and attachment to upper hull or platform

— Self-elevating systems and leg-guides, externally

— Legs as accessible above the waterline

— Plating and supporting structure in way of leg wells

.8 Column-stabilized units

— Columns, diagonal and horizontal braces together with any other parts of the upper hull supporting structure as accessible above the waterline are to be checked.

— Mooring/positioning equipment

Note:
At the 1st Annual Survey after construction, column stabilized and self-elevating units may be subject to examination of major structural components including non-destructive testing, as deemed necessary by BKI. If BKI deems such survey to be necessary, the extent should be agreed to by BKI and the owner or operator prior to commencement of the survey.

.9 Thickness measurements

If the Surveyor has reason to suspect inadmissible corrosion, he may require the rust to be removed from parts of the structure and advanced thickness measurements to be carried out, see also 1.8 for inadmissible corrosion.

2.2.3 Machinery

.1 A visual examination is to be made of all spaces containing machinery, boilers, pressure vessels, electrical installations, etc. essential for operation of the units, especially with regard to fire and explosion hazards

Existing safety plans are to be checked and functioning of safety and alarm devices and of the ventilation system to be verified as far as practicable.

Special equipment such as cranes, life-saving and drilling equipment are to be surveyed according to instructions issued in each individual case, if included in the Classification procedure.

.2 All units

In addition, a general examination of hazardous areas, remote shutdown arrangements, self-elevating systems, piping systems and bilge systems is to be made.

.3 Self-elevating units

On self-elevating units, the jacking machinery is to be examined (general condition, damages) and tested where practicable and the existing protocols/diaries reviewed with regard to the prescribed controls and safety checks.

.4 Self-Propelled Units

A general examination of main and auxiliary engines, boilers, steering machinery, pumps, pipings, electrical installation including those in hazardous areas, and fire extinguishing systems is to be carried out.

.5 Non-Self Propelled Units

A general examination of items required for classification such as auxiliary machinery, pumps, piping, electrical installation in hazardous areas and fire extinguishing systems is to be carried out.

.6 Units with Propulsion-Assist or Dynamic Positioning

Propulsion-assist and dynamic positioning equipment should be surveyed on the basis of Annual SurveyMachinery in accordance with the requirements of the BKI.

2.2.4 Electrical Equipment

A general examination of electrical machinery, the emergency sources of electrical power, the switchgear, and other electrical equipment, including operation of same is to be carried out. The operation of the emergency sources of power, including their automatic operation, is to be confirmed as far as practicable.

2.2.5 Shipboard Automatic and Remote Control Systems

A general examination of the automatic and remote-control system is to be made to the Surveyor's satisfaction. The machinery-space fire-detection and bilge water-level alarms are to be tested to confirm satisfactory operation.

2.2.6 Special features for mobile offshore drilling units

Mobile offshore drilling units may have many special items of machinery and electrical equipment not found on conventional ships. The items mentioned in D.2.6 are to be examined in an analogous manner and reported at all Class Annual Surveys.

C. Intermediate Surveys

1. Schedule

An Intermediate Survey, if requested, is due at half the nominal time interval between two Class Renewal Surveys, i.e. every half of class period, and may be performed either at the second or third Annual Survey. Additional items to the Annual Survey may be performed either at or between the second or third Annual Survey.

2. Scope

2.1 General

Intermediate Surveys are generally to be performed to the extent of Annual Surveys including any additional items, such as related to a survey inspection programme, if any.

Additionally, the requirements for all ship-type units are defined in the Rules for Classification and Surveys (Pt.1, Vol.I), Sec. 3, B.1.2 are to be observed as far as applicable.

2.2 Special features for mobile offshore drilling units

Mobile offshore drilling units may have many special items of machinery and electrical equipment not found on conventional ships. The items mentioned in D.2.6 are to be specially examined in an analogous manner and reported upon at all Class Intermediate Surveys.

D. Class Renewal Surveys

1. Schedule

Class Renewal Surveys (Special Surveys) of hull, structure, equipment, and machinery are to be carried out at 5 years intervals to renew the Classification Certificate(s).

The Class Renewal Survey may be commenced at the 4^{th} Annual Survey and be progressed with a view to completion by the end of class period. When the Class Renewal is commenced prior to the 4textsuperscriptth Annual Survey, the entire survey is to be completed within 15 months if such work is to be credited to Class Renewal.

Regarding bottom survey, see E.

The new period of Class will commence:

- The day after the day the previous Class expires, provided that the Class Renewal Survey has been completed within the 3 months preceding that date. This applies also to a granted extension of the Class period by 3 moths at the most
- The day on which the Class Renewal Survey has been completed, provided that the Class Renewal Survey has been completed more than 3 months before expiry of the previous Class.
- In cases where the unit has been laid up or has been out of service for a considerable period because of a major repair or modification and the owner elects to only carry out the overdue surveys, the next period of class will start from the expiry date of the special survey. If the owner elects to carry out the next due special survey, the period of class will start from the survey completion date.

For further details see Rules for Classification and Surveys (Pt.1, Vol.I), Sec. 3, B.1.3.

1.2 Class renewals for hull are numbered in the sequence I, II, III, etc. regarding their scope, see 2.

1.3 The Class Renewal Surveys may be performed in various alternative survey modes, e.g.:

- Partial Class Renewal Survey System Continuous Class Renewal Survey System
- Planned Maintenance Survey System
- Condition Monitoring Survey System, etc

For further details see Rules for Classification and Surveys (Pt.1, Vol.I), Sec. 3, B.1.3.

2. Scope

2.1 General

2.1.1 In addition to the annual, intermediate and bottom survey requirements, the Class renewal surveys shall include tests and checks of sufficient extent to verify that the hull, structures, equipment and machinery are in satisfactory condition and that the offshore unit is in compliance with the applicable Rules requirements for new period of Class of 5 years to be assigned subject to proper maintenance and operation and the periodical surveys carried out at the assigned due dates

Additionally, the requirements for allship-type units are defined in the Rules for Classification and Surveys (Pt.1, Vol.I), Sec. 3, B.1.3 are to be observed as far as applicable.

2.1.2 Special requirements for Class Renewal of units of unusual design, in lay-up or in unusual circumstances will be determined on individual basis in a survey inspection program.

2.1.3 Class Extension Surveys

Upon request of the owner and in exceptional cases, extension of the Class period may be granted by BKI. Following surveys of hull and machinery afloat, BKI may extend the Class period by no more than 3 months in total, provided that the surveys show that hull and machinery including electrical installations are in acceptable condition, see also A.1.2.

In this case, the last survey in dry-dock, or equivalent, shall not date back more than 5 years, counting from the date of the respective Class Renewal Survey.

2.1.4 A survey planning meeting is to be held prior to the commencement of the survey (see A.6)

2.2 Hull, structures and equipment

2.2.1 Class Renewal I

Class Renewal I will have to be performed at the end of the first Class period.

.1 All units

One or more of the following crack detection test methods may be required if deemed necessary by the Surveyor:

- Radiography test (X or gamma rays)
- Ultrasonic test
- Magnetic particle test
- Dye penetrant test, etc.

If deemed necessary by the Surveyor, defective cement, asphalt covering or other coating isto be removed.

The steel work is to be examined before painting or before the cement or other coverings are renewed.

- The hull or platform structure including tanks, watertight bulkheads and deck, cofferdams, void spaces, sponsons, chain lockers, duct keels, helicopter deck and its supporting structure, machinery spaces, peak spaces, steering gear spaces, and all other internal spaces are to be examined externally and internally for damages, fractures, or excessive diminution. Thickness gauging of plating and framing may be required where wastage is evident or suspected.
- All tanks, compartments and free-flooding spaces throughout the units are to be examined externally and internally for excess wastage or damage.
- Internal examinations of spud cans and mats are to be specially considered.
- Watertight integrity of tanks, bulkheads, hull, decks and other compartments is to be verified by visual inspection.
- Suspect areas and critical structural areas should be examined and may be required to be tested for tightness, non-destructive tested or thickness gauged.
- All special and primary application structures (as defined in Guidance for Marine Industry (Pt.1, Vol.AC) Sec.2, R-11) and identified critical structural areas are to be subjected to close up survey.
- Tanks and other normally closed compartments are to be ventilated, gas freed and cleaned as necessary to expose damages and allow meaningful examination and thickness gauged in case of excessive wastage.

- Internal examination and testing of void spaces, compartments filled with foam or corrosion inhibitors, and tanks used only for lube oil, light fuel oil, diesel oil, or other non-corrosive products may be waived provided that upon a general examination the Surveyor considers their condition to be satisfactory. External thickness measurements may be required to confirm corrosion control.

- Structures such as derrick substructure and supporting structure, jack-houses, deck houses, superstructures, helicopter landing areas, raw water (sea water intake) towers and their respective attachments to the deck or hull.

- Windlass and attachments of anchor racks and anchor cable fairleads.

- Foundations and supporting headers, brackets, and stiffeners for drilling related apparatus, where attached to hull, deck, superstructure or deck house.

- Thickness gaugings are to be carried out where wastage is evident or suspect.

- Where provided, the condition of corrosion prevention system of ballast tanks is to be examined. Where a hard protective coating is found in POOR condition and it is not renewed, where soft or semi-hard coating has been applied, or where a hard protective coating was not applied from time of construction, the tanks in question are to be examined at a frequency determined by BKI. Thickness measurements are to be carried out as deemed necessary by the Surveyor.

- Thickness measurements are to be carried out in accordance with Tables 3.1, 3.2 or 3.3 as applicable. The Surveyor may extend the thickness measurements as deemed necessary. When thickness measurements indicate substantial corrosion, the extent of thickness measurements is to be increased to determine areas of substantial corrosion. Table 3.4 may be used as guidance for these additional thickness measurements. These extended thickness measurements are to be carried out before the survey is credited as completed.

- The requirements for Class Renewal Survey may be undertaken by the attending Surveyor or by a firm approved as a service supplier according to Rules for Approval Manufactures and Service Suppliers (Pt.1, Vol.XI).

- All transits are to be examined to confirm their satisfactory condition and the Cable Transit Seal System Register is to be reviewed to confirm it is being maintained. The Class Renewal Survey is to be recorded in the Cable Transit Seal System Register, in which a single record entry will be sufficient to record the survey of all transits.

- From review of the Cable Transit Seal System Register, where there are records entered since the last Class Renewal Survey of any disruption to the cable transits or installation of new cable transits (except which are reviewed and examined at previous annual surveys), the satisfactory condition of those transits is to be confirmed by the attending Surveyor by review of records and examination of the transits; the results are to be recorded in the Cable Transit Seal Systems Register against each of those cable transits.

- In case the cable transits have been examined by an approved service supplier, the attending surveyor is to review the Cable Transit Seal Systems Register in order to ascertain that it has been properly maintained by the owner and correctly endorsed by the service supplier.

(IACS UR Z28 4.2)

.2 Self-elevating units

The following parts have to be checked in addition to those defined in B.2.2.5:

- All legs, including chords, diagonal and horizontal braces, gussets, racks, joints, together with leg guides are to be examined.

— Tubular or similar type legs are to be examined externally and internally, together with internal stiffeners and pinholes as applicable.

— Structure in, around and under jack-house and leg wells; non-destructive testing of these areas may be required.

— Leg jacking or other self-elevating systems externally and internally.

— Leg connections to bottom mats or spud cans, including non-destructive testing of leg connections to mats or spud cans.

— Internal examinations of spud cans and mats are to be specially considered.

— Jetting piping systems or other external piping, particularly where penetrating mats or spud cans.

— Spud cans or mats; where the spud cans or mats are partly or entirely obscured below the mud line where the Class Renewal Survey is otherwise being completed, consideration may be given to postponement of the examinations until the next rig move.

.3 Column-stabilized units

The following parts have to be checked in addition to those defined in B.2.2.6:

— Connections of columns and diagonals to upper hull, structure or platform and lower hull, structure or pontoons

— Joints of supporting structure including diagonals, braces and horizontals, together with gussets and brackets

— Internal continuation or back-up structure for the above

— Non-destructive examination may be required of these areas

.4 Surface-type Units

The following parts have to be checked in addition to those defined in B.2.2.4:

— Structural appendages and ducts for positioning units

2.2.2 Class Renewal II and subsequent ones

The age of the unit is first class period to second class period for class renewal II and for the subsequent ones. The requirements for the second Class Renewal and the subsequent ones shall be as comprehensive and include at least those of Class Renewal I, with special attention being given to the condition and thickness of material in high corrosion areas. Representative thickness measurements will be required as per J.3. Special attention should be paid to splash zones on structure, legs or related structure, and in ballast tanks, pre-load tanks, free flooding spaces, spud cans and mats, as far as applicable.

Additionally, the requirements for all ship-shaped units are defined in the Rules for Classification and Surveys (Pt.1, Vol.I), Sec. 3,B.1.3 are to be observed as far as applicable.

2.3 Machinery including electrical installations

Except for individual machinery items contained in H. the scopes of all Class Renewal Surveys for the machinery installation including electrical installations are identical. If the Continuous Class Renewal system or other relevant survey mode is applied, 1.3 is to be observed.

2.3.1 Machinery and Equipment

.1 Non-Self-Propelled Units

In addition to the Annual and Intermediate Survey, an extended examination of machinery spaces and installations will generally include, as far as applicable:

- All openings to the sea, including sanitary and other overboard discharges, together with cocks and valves connected therewith are to be examined internally and externally while the Unit is in drydock, or at the time of underwater examination in lieu of dry-docking, and the fastenings to the shell plating are to be renewed when considered necessary by the Surveyor
- Pumps and pumping arrangements, including valves, cocks, pipes and strainers are to be examined. Non-metallic flexible expansion pieces in the main salt water circulating system are to be examined internally and externally. The Surveyor is to be satisfied with the operation of the bilge and ballast systems. Other systems are to be tested as considered necessary.
- The foundations of machinery are to be examined.
- Heat exchangers and other unfired pressure vessels within the scope of classification are to be examined, opened out or thickness gauged and pressure tested as considered necessary, and associated relief valves proved operable. Evaporators that operate with a vacuum on the shell need not be opened, but may be accepted on basis of satisfactory external examination and operational test or review of operating records.

.2 Self-Propelled Units

In addition to the requirements for non-propelled units, the main and auxiliary propulsion machinery, including associated pressure vessels should be surveyed. In addition, examination of the steering machinery is to be carried out, including an operational test and checking or relief-valve settings. The machinery may be required to be opened for further examination as considered necessary by the Surveyor.

.3 Unit with Propulsion – Assist or Dynamic Position

Propulsion-assist and dynamic positioning equipment should be surveyed on the basis of Special Periodical Survey-Machinery in accordance with the requirements of the BKI.

.4 Special Equipment

Regarding special equipment, see B.2.2.6.

Applicable regulations of the Administration are to be complied with.

2.3.2 Electrical installation

The electric equipment including the generators, the motors of the essential auxiliary machinery, all switch gear including their protective and interlocking devices, as well as the cable network are to be examined and tested.

Where electrical installations, particularly explosion protected machines and apparatus, are situated in spaces in which there is danger of inflammable gas or steam air mixtures, they are subject to examinations concerning their Ex-protection as well as IP protection.

In addition to the general indications given above, the following is to be observed:

- Fittings and connections on main switchboards and distribution panels are to be examined, and care is to be taken to see that no circuits are over fused.
- Cables are to be examined as far as practicable without undue disturbance of fixtures.
- All generators are to be run under load, either separately or in parallel. Switches and circuit breakers are to be tested.

- All equipment and circuits are to be inspected for possible development of physical changes or deterioration. The insulation resistance of the circuits is to be measured between conductors and between conductors and ground, and these values compared with those previously measured.
- Electrical auxiliaries installed for vital purposes, generators and motors are to be examined and their prime movers opened for inspection. The insulation resistance of each generator and motor is to be measured.
- Emergency power systems are to be examined and tested.
- The windings of main propulsion generators and motors are to be thoroughly examined and found or made dry and clean. Particular attention is to be paid to the ends of all windings of stators and rotors.

Additionally, the requirements for all units are defined in the Rules for Classification and Surveys (Pt.1, Vol.I), Sec. 3, B.1.3 are to be observed, as far as applicable.

2.4 All units, fire extinguishing and fire alarm systems

The requirements for all units are defined in the Rules for Classification and Surveys (Pt.1, Vol.I), Sec. 3, B.1.3 are to be observed, as far as applicable.

2.5 Automation and remote control system

In addition to the requirements of Annual Surveys the following parts are to be examined:

- Control actuators : All mechanical, hydraulic and pneumatic control actuators and their power systems are to be examined and tested as considered necessary
- Electrical equipment : The insulation resistance of the windings of electrical control motors or actuators is to be measured, with all circuits of different voltages above ground being tested separately to the Surveyor's satisfaction
- Unattended Plants : Control systems for unattended machinery spaces are subjected to dock trials at reduced power on the propulsion engine to verify the proper performance of all automatic functions, alarms and safety systems

Additionally, the requirements for all ship-type units are defined in the Rules for Classification and Surveys (Pt.1, Vol.I), Sec. 3, B.1.3 are to be observed, as far as applicable.

2.6 Special features for mobile offshore drilling units

Mobile offshore drilling units may have many special items of machinery and electrical equipment not found on conventional ships. Certain of these items are required for classification even if the unit is without propulsion machinery. The following items are to be specially examined and reported upon at each all Class Renewal Surveys:

2.6.1 Hazardous areas

- Enclosed hazardous areas such as those containing open active mud tanks, shale shakers, degassers and desanders are to be examined and doors and closures in boundary bulkheads verified as effective
- Electric lighting, electrical fixtures and instrumentation are to be examined, proven satisfactory and verified as explosion-proof or intrinsically safe
- Ventilating systems including ductwork, fans, and intake and exhaust locations for enclosed restricted areas are to be examined, tested and proven satisfactory

— Ventilating air alarm systems are to be proven satisfactory

— Electrical motors are to be examined including closed-loop ventilating systems for large DC motors

— Automatic power disconnect to motors in case of loss of ventilating air are to be proved satisfactory

2.6.2 Remote shutdown arrangements

— Remote shutdown for fuel-oil transfer service pumps and ventilating equipment, together with oil tank outlet valves where required to be capable of being remotely closed are to be proved satisfactory

— Emergency switches systems and lighting in essential areas such as escape routes and landing platforms, are to be proved satisfactory for all electrical equipment including main and emergency generators, except alarm and communication

2.6.3 Firefighting equipment and fire alarm systems

A general examination of the fire detection and extinguishing systems is to be made in order that the Surveyor may be satisfied with its efficient state. The following items are to be especially examined:

— Fire hoses, nozzles and spanners at each fire station

— Servicing of all portable extinguishers

— Weighing and re-charging as necessary of all dry chemical and CO2 extinguishers

— Fire pumps and piping including operation and capacity

— Alarm systems including fire and gas detection.

Additionally, the requirements for all units are defined in the Rules for Classification and Surveys (Pt.1, Vol.I), Sec. 3, B.1.3 are to be observed, as far as applicable.

2.6.4 Self elevating systems

— Elevating systems are to be examined and reported on.

— Pinions and gears of the climbing pinion gear train of rack and pinion systems are to be examined, as far as practicable, to the Surveyor's satisfaction by an effective crack detection method.

2.6.5 Piping systems

Piping systems used solely for drilling operations and complying either with the BKI requirements or a recognized standard are to be examined, as far as practicable, operationally or hydrostatically tested to working pressure, to the satisfaction of the Surveyor.

2.6.6 Miscellaneous

Bilge alarm systems, if fitted, to be tested.

2.7 Trials

Upon completion of the surveys for Class Renewal, the Surveyor shall be satisfied that the entire machinery installation, including the electrical machinery and equipment including the steering gear, if applicable, is operable without any restrictions. In case of doubt, this may have to be proved by trials and/or operational tests.

E. Periodical Bottom Survey

1. Survey period

1.1 Schedule

There is to be a minimum of two examinations of the outside of the unit's bottom and related items during each five-year special survey period. One such examination is to be carried out in conjunction with the special survey. In all cases the interval between any two such examinations is not to exceed 36 months. For unit operating in salt water for less than six months each year, the maximum interval is not to exceed three years. For units operating in fresh water the interval between drydocking surveys is not to be exceed five years.

Consideration may be given at the discretion of BKI to any special circumstances justifying an extension of the interval. In exceptional circumstances, an extension of examination of the mobile offshore unit's bottom/ structure of 3 months beyond the due date can be granted[3)]

1.2 Alternative means of examination

Proposals for alternative means of examining the unit's shell and related items while afloat may be considered, provided they are in general agreement with 3.

1.3 Planning of survey

Plans and procedures for bottom surveys see B.1.10.2.

Intermediate Survey performance in dry-dock has to be considered, if the mobile offshore unit's age exceeds 15 years

It is also expected that for each bottom survey performed in addition to the bottom surveys stipulated by the Classification requirements the BKI Surveyor will be called to attend.

Additionally, the requirements for all ship-type units are defined in the Rules for Classification and Surveys (Pt.1, Vol.I), Sec. 3, B.1.6 and B.1.7 are to be observed as far as applicable.

2. Dry-docking Surveys

2.1 General

For the survey the units is to be placed in the dock on sufficiently high and secure blocks, so that all necessary examinations can be carried out. It may be necessary to clean the bottom and outer shell and/or remove rust from some areas.

In exceptional circumstances an underwater inspection according to 3. may be carried out in lieu of drydocking, see also 1.1.

Additionally, the requirements for all ship-type units are defined in the Rules for Classification and Surveys (Pt.1, Vol.I), Sec. 3, B.1.6 are to be observed as far as applicable.

2.2 Ship-shaped or barge type units

— external surfaces of the hull, keel, stem, stern frame are to be selectively cleaned to the satisfaction of the attending Surveyor and examined.

— sea chests, sea and discharge valves, sea strainers and water drain pipes including their closures are to be cleaned, examined to be opened up and overhauled once within a period of Class.

[3)] Exceptional circumstances, e.g. means unavailability of dry-docking facilities, unavailability of repair facilities, unavailability of essential materials, equipment or spare parts, or delays incurred by action taken to avoid severe weather conditions.

2.3 Self-propelled units

In addition to the items defined in 2.2 the following elements have to be examined:

- rudder, nozzles and scuppers together with appendages are to be selectively cleaned to the satisfaction of the attending Surveyor
- the propeller(s), exposed parts of stern bearing assembly, rudder pintle and gudgeon securing arrangements.
- propeller shaft bearing, rudder bearing and steering nozzle clearances are to be ascertained and recorded; if considered necessary in view of the inspection results, the rudder or parts of the steering gear is to be dismounted.
- the steering gear is to be subjected to an operational trial.
- bow-thrusters are to be inspected externally.
- for propellers, propeller shaft(s), stern tube, see G.

2.4 Self-elevating units

In addition to the requirements of 2.2 and 2.3 the following items have to be considered as far as applicable:

- external surfaces of the upper hull or platform, spud cans, mat, underwater areas of legs, together with their connections as applicable, are to be selectively cleaned to the satisfaction of the attending Surveyor and examined.
- at each Dry-docking Survey after Class Renewal Survey II, the Surveyor is to be satisfied with the condition of the internal structure of the mat or spud cans.
- leg connections to mat and spud cans are to be examined at each Dry-dock Survey or equivalent.
- non-destructive testing may be required by BKI for areas considered to be critical or found to be suspect by the Surveyor.

2.5 Column-stabilized units

In addition to the requirements of 2.2 and 2.3 the following items have to be considered as far as applicable:

- external surfaces of the upper hull or platform, footings, pontoons or lower hulls, underwater areas of columns, bracings and their connections, sea chests and propulsion units as applicable, are to be selectively cleaned and examined to the satisfaction of the attending Surveyor.
- non-destructive testing may be required by BKI for areas considered to be critical or found to be suspect by the Surveyor.

3. Underwater Surveys

3.1 General

3.1 The procedures and conditions under which a properly conducted underwater inspection may be credited as equivalent to a dry-docking survey are defined in the following.

3.2 The diving firm assisting in under water surveys shall be approved by BKI for this purpose in accordance with The Rules for Approval Manufactures and Service Suppliers (Pt.1, Vol. XI). Validity of an approval granted will depend on the continued qualification for satisfactorily carrying out the work required. The approval will have to be renewed after a period not exceeding 3 years.

3.3 Additionally, the requirements for all ship- type units are defined in the Rules for Classification and Surveys (Pt.1, Vol.I), Sec. 3, B.1.7 are to be observed as far as applicable

3.2 Conditions for Underwater Surveys

3.2.1 Limitations

Underwater inspections in lieu of Dry-docking Survey may not be acceptable where there is a record of abnormal deterioration or damage to the underwater structure, or where damage affecting the fitness of the unit is found during the course of survey.

3.2.2 Thickness measurements and non- destructive testing

Underwater or internal thickness measurements of suspect areas may be required in conjunction with the underwater inspection. Means for underwater non- destructive testing may also be required for fracture detection. Plans and procedures for bottom surveys see B.1.10.2.

3.2.3 Underwater conditions

The in-water visibility and the cleanliness of the hull below the waterline is to be clear enough to permit a meaningful examination which allows the surveyor and diver and/or ROV pilot to determine the condition of the plating, appendages and the welding. BKI is to be satisfied with the methods of orientation of the divers/ROVs on the plating, which should make use where necessary of permanent markings on the plating at selected points. Overall or spot cleaning may be required.

3.3 Physical features

The following physical features are to be incorporated into the design in order to facilitate the underwater inspection. When verified they will be noted in the Classification Certificate for reference at subsequent surveys.

3.3.1 Stern bearing

For self-propelled units, means are to be provided for ascertaining that the seal assembly on oil-lubricated bearings is intact and for verifying that the clearance or wear-down of the stern bearing is not excessive. For use of the wear-down gauges, up-to-date records of the base depth are to be maintained on board. Whenever the stainless steel seal sleeve is renewed or machined, the base readings for the wear-down gauge are to be re-established and noted in the unit's records and in the survey report.

3.3.2 Rudder bearings

For self-propelled units with rudder, means and access are to be provided for determination of the condition and clearance of the rudder bearings, and for verifying that all parts of the pintle gudgeon assemblies are intact secure. This may require bolted access plates and a measuring arrangement.

3.3.3 Sea suction

Means are to be provided to enable the diver to conform that the sea suction openings are clear. Hinged sea suction grids would facilitate this operation.

3.3.4 Sea valves

For the underwater survey associated with the Class Renewal Survey, means shall be provided to examine any sea valve.

3.4 Procedures

3.4.1 Exposed areas

The unit should be in light ship condition. An examination of the outside of the structure above the waterline is to be carried out by the BKI Surveyor. Means and access are to be provided to enable the Surveyor to accomplish visual inspection and non-destructive testing as necessary.

3.4.2 Underwater areas

Underwater areas are to be surveyed and/or relevant maintenance work is to be carried out with assistance by a diver of an approved firm in accordance with the Rules for Approval Manufactures and Service Suppliers (Pt.1, Vol. XI) Sec.3.C whose performance is controlled by a Surveyor, using an underwater camera with monitor, communication and recording systems. The underwater pictures on the surface monitor screen shall offer reliable technical information such as to enable the Surveyor to judge the parts and/or the areas surveyed. If applicable, the effectiveness of the corrosion protection system (potential measurements, condition of anodes, etc.), the marine growth and the condition of foundations (changes in topography/ scouring, settlement) are to be inspected.

3.4.3 Damage areas

Damage areas are to be photographed. Internal examination, measurements, marking and thickness measurements of such locations may be necessary as determined by the attending Surveyor. Means are to be provided for location, orienting and identifying underwater surfaces in photographs or on video tapes. Documentation suited for reproduction (video tape with sound) is to be made available to BKI

If damages are found which can be reliably assessed only in dry-dock or require immediate repair, the unit is to be dry-docked. If the coating of the underwater body is in a condition which may cause corrosion damages affecting unit's Class to occur before the next dry-docking, the unit is to be drydocked.

Where, for instance, grounding is assumed to have taken place, the Surveyor may demand individual parts of the underwater body to be additionally inspected from inside.

F. Ballast Space

1. Schedule

1.1 In conjunction with Dry-docking Surveys, or equivalent, after first Class Renewal Survey and between subsequent Class Renewal Surveys, the following ballast spaces are to be internally examined, thickness gauged, placed in satisfactory condition as found necessary, and reported upon. If such examination reveals no visible structural defects, the examination may be limited to verification that the corrosion prevention arrangements remain effective.

1.2 Additionally, the requirements for all vessel-type units are defined in the Rules for Classification and Surveys (Pt.1, Vol.I), Sec. 3, B, are to be observed as far as applicable.

2. Scope

2.1 All units

Particular attention is to be given to corrosion prevention systems in ballast spaces, free-flooding areas and other locations subjected to seawater from both sides.

Additionally, the requirements for all ship-type units are defined in the Rules for Classification and Surveys (Pt.1, Vol.I), Sec. 3, B, are to be observed as far as applicable.

2.1.1 Surface type units

One peak tank and at least two other representative ballast tanks between the peak bulkheads used primarily for water ballast are to be internally examined, thickness gauged, placed in satisfactory condition as found necessary and reported upon.

2.1.2 Self elevating units

Representative ballast tanks or free-flooding compartments in mat or spud cans, if accessible, and at least two representative hull pre-load tanks are to be internally examined, thickness gauged, placed in satisfactory condition as found necessary and reported upon.

2.1.3 Column stabilized units

Representative ballast tanks in footings, lower hulls or free-flooding compartments as accessible, and at least two ballast tanks in columns or upper hull, if applicable are to be internally examined, thickness gauged, placed in satisfactory condition as found necessary and reported upon.

G. Propeller and Tube Shaft Surveys

1. Survey period

1.1 Propeller shafts and tube shafts

For maintenance of the Class, periodical surveys and tests of propeller shafts and tube shafts, propellers and vane wheels and other systems are to be carried out. The requirements regarding the schedule are defined in the Rules for Classification and Surveys (Pt.1, Vol. I), Sec. 3, B.1.4 and are to be observed as far as applicable.

1.2 Propeller Shaft surveys and extension of survey intervals

Surveys are to be carried out in accordance with the Rules of BKI, except that in the case of Mobile Offshore Drilling unit, due to low running hours on tails hafts, extended intervals between propeller shafts surveys may be considered based on:

- Satisfactory diver's external examination of stern bearing and outboard seal area including wear down check as far as is possible.
- Internal examination of the shaft area (inboard seals) in propulsion room(s).
- Confirmation of satisfactory lubricating oil records (oil loss rate, contamination).
- Shaft seal elements are examined/replaced in accordance with seal manufacturer's recommendations.

1.3 Other systems

Other systems for main propulsion purposes, such as rudder and steering propellers, pod propulsion systems, pump jet units, etc. are subject to the same survey intervals as the propeller shafts and tube shafts.

2. Performance and Scope

2.1 Propeller shafts and tube shafts

The requirements regarding the performance are defined in the Rules for Classification and Surveys (Pt.1, Vol.I), Sec. 3, B.1.4 and are to be observed as far as applicable.

2.2 Propellers

Propellers are to be examined visually on the occasion of each propeller shaft or tube shaft survey.

Damages, such as cracks, deformation, cavitation effects, etc. are to be reported and repaired at the Surveyor's discretion.

Controllable pitch propellers are to be checked for oil leakage. The function of controllable pitch propellers has to be tested. The maintenance according to fabricator's instructions has to be checked.

2.3 Other systems

As far as practicable, the gearing and control elements of rudder and steering propellers are to be examined through inspection openings. For other systems such as pod propulsion systems, pump jet units, etc. the scope of survey is to be agreed with BKI Head Office. The maintenance according to fabricator's instructions is to be checked. A function test is to be carried out.

H. Periodical Surveys of Individual Machinery Items

1. Schedule

The periodical surveys of individual machinery items or installations listed in the following are to be carried out in addition to those prescribed for the Class Renewal Surveys for maintenance of Class.

The requirements regarding the schedule are defined in the Rules for Classification and Surveys (Pt.1, Vol.I), Sec. 3, B.1.5, and are to be observed as far as applicable

2. Scope

The following machinery items are to be surveyed:

- Steam boilers
- Thermal oil plants
- Steam pipes / heating coils
- Pressure vessels
- Automation equipment
- Inert gas system

The requirements regarding the scope are defined in the Rules for Classification and Surveys (Pt.1, Vol.I), Sec. 3, B.1.5 and are to be observed as far as applicable.

I. Thickness Measurements and Corrosion Tolerances

1. General

1.1 The thickness of structural elements is checked by measurements, in order to assess whether or not the values stipulated in BKI Rules are observed, taking into account the admissible tolerances. Unless severe corrosion has occurred owing to particular service conditions, thickness measurements will not be required until Class Renewal II, see D.2.2.2.

1.2 Thickness measurements are to be carried out in accordance with recognized methods, by authorized companies, see 2. Rust and contamination are to be removed from the components to be examined. The Surveyor is entitled to require check measurements or more detailed measurements to be performed in his presence. The thickness measurements on board are to be witnessed by the Surveyor. This requires the Surveyor to be on board while measurements are taken, to the extent necessary to control the process.

The scope of thickness measurement as well as the reporting shall be fixed in a survey planning meeting between the Surveyor(s), representatives of the owner and the approved thickness measurement operator/firm well in advance of measurements and prior to commencing the survey.

Thickness measurements of structures in areas where close-up surveys are required shall be carried out simultaneously with the close-up surveys.

1.3 The requirements for monitoring of the thickness measurement process onboard including review and verification of its process should be in accordance with Guidance for Marine Industry (Pt.1, Vol.AC), Sec.4, R-77

2. Authorization

2.1 The company entrusted with thickness measurements, as well as the procedure for documentation shall be approved by BKI for this purpose in accordance with Rules for Approval Manufactures and Service Suppliers (Pt.1, Vol. XI) Sec. 3.B.

2.2 Validity of an approval granted will depend on the continued qualification. The approval will have to be renewed after a period not exceeding 3 years.

3. Scope of measurements

For units which are not ship-shaped, the scope of thickness measurement as well as the reporting depends upon the particular unit in accordance with Table 3.1 to Table 3.4, and shall be determined by BKI in advance of measurements and prior to commencing the survey.

The requirements for ship-shaped units are defined in the Rules for Classification and Surveys (Pt.1, Vol. I), Sec. 3, B, are to be observed as far as applicable.

Table 3.1: Minimum Requirements for Thickness Measurements for Surface-Type Unit at Class Renewal Survey

Class Renewal Survey [No.] and unit's age [years]			
I. age ≤ 5	**II. 5 < age ≤ 10**	**III. 10 < age ≤ 15**	**IV. and subsequent, age > 15**
1. Suspect areas throughout the unit.	1. Suspect areas throughout the unit.	1. Suspect areas throughout the unit.	1. Suspect areas throughout the unit.
	2. One transverse section of deck plating abreast the moon pool opening within the amidships 0.6L, together with internals in way as deemed necessary. Where unit is configured with side ballast tanks, the plating and internals of the tanks are also to be gauged in way of the section chosen.	2. Two Transverse Sections (Girth Belts) of deck, bottom and side plating abreast the moon pool and one hatch opening within the amidships 0.6L together with internals in way as deemed necessary. Where unit is configured with side ballast tanks, the plating and internals of the tanks to be gauged in way of the required belts, Remaining internals in ballast tanks to be gauged as deemed necessary.	2. A minimum of three Transverse Sections (Girth Belts) of deck, bottom, side, and longitudinal bulkhead plating in way of the moon pool and other areas within the amidships 0.6L, together with internals in way (including in perimeter ballast tanks, where fitted in way of belts).
	3. Moon pool boundary bulkhead plating.	3. Moon pool boundary bulkhead plating.	3. Moon pool boundary bulkhead plating.
		4. Internals in forepeak tank and aft peak tank as deemed necessary.	4. Internals in forepeak tank and aft peak tank as deemed necessary.
			5. Lowest strake of all transverse bulkheads in hold spaces. Remaining bulkhead plating to be gauged as deemed necessary.
			6. All plates in two wind and water strakes, port and starboard, full length.
			7. All exposed main deck plating full length and all exposed first-tier super-structure deck plating (poop, bridge and forecastle decks).

Table 3.1: Minimum Requirements for Thickness Measurements for Surface-Type Unit at Class Renewal Survey (continued)

Class Renewal Survey [No.] and unit's age [years]			
I. age ≤ 5	**II. 5 < age ≤ 10**	**III. 10 < age ≤ 15**	**IV. and subsequent, age > 15**
			8. All keel plates full length plus additional bottom plating as deemed necessary by the Surveyor, particularly in way of cofferdams and machinery spaces.
			9. Duct keel or pipe tunnel plating or pipe tunnel plating and internals as deemed necessary.
			10. Plating of sea chests. Shell plating in way of overboard discharges as considered necessary by the attending surveyor.

Notes :

1) Thickness measurement locations are to be selected to provide the best representative sampling of areas likely to be most exposed to corrosion, considering ballast history and arrangement and condition of protective coatings.
2) Thickness measurements of internals may be specially considered by the Surveyor if the hard protective coating is in GOOD condition.
3) For units less than 100 meters in length, the number of transverse sections required at Special Survey No. 3 may be reduced to one (1), and the number of transverse sections required at subsequent Special Surveys may be reduced to two (2).
4) For units more than 100 meters in length, at Special Survey No. 3, thickness measurements of exposed deck plating within amidship 0.5 L may be required.

Table 3.2: Minimum Requirements for Thickness Measurements for Self-Elevating Units at Class Renewal Survey

Class Renewal Survey [No.] and unit's age [years]			
I. age ≤ 5	**II. 5 < age ≤ 10**	**III. 10 < age ≤ 15**	**IV. and subsequent, age > 15**
1. Suspect areas throughout the unit (particular attention to be paid to the legs in way of the Splash Zone).	1. Suspect areas throughout the unit	1. Suspect areas throughout the unit	1. Suspect areas throughout the unit
	2. Legs in way of Splash Zone.	2. Legs in way of Splash Zone.	2. Legs in way of Splash Zone.
	3.Primary application structures where wastage is evident.	3.Representative gaugings, throughout, of special and primary application structures.	3. Comprehensive gaugings, throughout, of special and primary application structures.
	4. Representative gaugings of upper hull deck and bottom plating and internals of one preload (ballast) tank.	4. Leg well structure.	4. Leg well structure.
		5. Representative gaugings of deck, bottom, and side shell plating of hull and mat.	5. Representative gaugings of deck, bottom, and side shell plating of hull and mat.
		6. Representative gaugings of upper hull deck and bottom plating and internals of at least two preload (ballast) tanks.	6. Substructure of derrick as deemed necessary.
			7. Representative gaugings of internals of all preload (ballast) tanks.

Notes:

1) Structural application designation (Special, Primary, Secondary) are defined in Guidance for Marine Industry (Pt.1, Vol.AC) Sec.1, R-11.

2) Splash zone is to be considered as the structural area that has been periodically in and out of the water when the unit was at its operating depth, most of the time during the past five-year period. Based on operational record of the unit, additional zones may also be gauged.

Table 3.3: Minimum Requirements for Thickness Measurements for Column-Stabilized Units at Class Renewal Survey

Class Renewal Survey [No.] and unit's age [years]			
I. age ≤ 5	**II. 5 < age ≤ 10**	**III. 10 < age ≤ 15**	**IV. and subsequent, age > 15**
1. Suspect areas throughout the unit	1. Suspect areas throughout the unit	1. Suspect areas throughout the unit	1. Suspect areas throughout the unit
2. Columns and bracings where wastage is evident in Splash Zone.	2. Representative gaugings of columns and bracings in Splash Zone together with internals in way as deemed necessary.	2. Representative gaugings, throughout, of special and primary application structures.	2. Comprehensive gaugings, throughout, of special and primary application structures.
	3. Special and primary application structure where wastage is evident.	3. One Transverse Section (Girth Belt) of each of 2 columns and 2 bracings in Splash Zone together with internals in way as deemed necessary.	3. One Transverse Section (Girth Belt) of each of one-half of the columns and bracings in Splash Zone and internals in way as deemed necessary (i.e., gauge half of the unit's columns and bracings in Splash Zone).
		4. Lower hulls in way of mooring lines where wastage is evident.	4. Lower hulls in way of mooring lines where wastage is evident.
		5. One Transverse Section (Girth Belt) of each lower hull between one set of columns.	5. One Transverse Section (Girth Belt) of each lower hull between one set of columns.
			6. Representative gaugings of substructure of drilling derrick.

Notes:

1) Structural application designation (Special, Primary, Secondary) are defined in Guidance for Marine Industry (Pt.1, Vol.AC) Sec.1, R-11.

2) Splash zone is to be considered as the structural area that has been periodically in and out of the water when the unit was at its operating depth, most of the time during the past five-year period. Based on operational record of the unit, additional zones may also be gauged.

Table 3.4: Guidance for Additional Thickness Measurements in way of Substantial Corrosion

Structural Member	Extent of Measurement	Pattern of Measurement
Plating	Suspect area and adjancent plates	5 point pattern over 1 square meter
Stiffeners	Suspect area	3 measurements each in line across web and flange

J. Occasional Surveys

1. Damage Survey

It is the responsibility of the owner/operator of the unit to report to BKI without delay any suffered damage, defect or breakdown, which could invalidate the conditions for which a Classification has been assigned, or if damage may be assumed to have occurred as a consequence of an average or other unusual event, so that it may be examined at the earliest opportunity by the BKI Surveyors. All repairs found necessary by the Surveyor shall be carried out to his satisfaction.

2. Repairs

2.1 Where repairs to hull, legs, columns, jacks or other structures, machinery or equipment, which affect or may affect Classification, are planned in advance to be carried out, a complete repair procedure including the extent of the proposed repair and the need of the Surveyors attendance shall be submitted to and agreed upon by BKI reasonably in advance. Failure to notify to BKI, in advance of the repairs, may result in suspension of the Classification until such time as the repair is redone or evidence submitted to satisfy the Surveyor that the repair was properly carried out. This applies also to repairs during voyage or on site.

2.2 The requirements of 2.1 are not intended to include maintenance and overhaul to hull, other structures, machinery and equipment in accordance with recommended manufacturers procedures and established marine practice and which do not require BKI approval. However, any repair as a result of such maintenance and overhauls which affects or may affect Classification is to be noted in the log of the unit and submitted to the Surveyor.

2.3 Surveys conducted in the course of repairs are to be based on the latest experience and instructions by BKI. In exceptional cases advice is to be obtained from the concerned Head Office, in particular where doubts exist as to the cause of damage

2.4 For older units, in the case of repairs and/or replacement of parts subject to Classification, as a matter of principle, the Construction Rules in force during their period of construction continue to be applicable.

This does not apply in the case of modifications required to the structure in the light of new knowledge gained from damage analyses, with a view to avoiding recurrence of similar damages.

2.5 Regarding the materials employed and Certificates required, the requirements for new constructions are applicable, see 6.2.

2.6 Regarding damages or excessive wastage beyond allowable limits that affect the unit's Class, see D.2.2.1.1.

3. Reactivation surveys or re-commissioning

In the case of units which have been laid up and are returning to active service, regardless of whether BKI has been previously informed that the unit has been in lay-up, a Reactivation Survey is required. The requirements for reactivation surveys or re-commissioning will be specially considered in each case with due regard given to the status of surveys at the time of commencement of the lay-up period, the length of period and conditions under which the unit has been maintained during that period.

4. Alteration surveys

No alterations which may affect Classification shall be made to hull and machinery of a classed unit unless plans of proposed alterations are submitted and approved by BKI before the work of alterations is commenced. Such work shall be carried out in accordance with approved plans and tested on completion as required by the Rules and to the satisfaction of the Surveyor. A new or amended Class designation will be assigned, where necessary.

5. Survey for towage or voyage over sea

In compliance with the provisions of the General Conditions, a Certificate of towage or voyage of a unit over sea may be issued upon satisfactory survey, the scope of which is fixed in each particular case by BKI according to the towing or voyage over sea.

6. Welding and replacement of materials

6.1 Welding of steels, including higher strength hull structural steel, shall be to the satisfaction of BKI.

6.2 Welding or other fabrication performed on steels of special characteristics or repairs or renewals of such steel or in areas adjacent to such steel shall be accomplished with procedures approved by BKI considering the special materials involved. Substitution of steels differing from those originally installed shall not be made without approval by BKI.

6.3 BKI may reference Guidance for Marine Industry (Pt.1, Vol.AC) Sec.1, R-11 when considering suitable replacement materials.

7. Occasional surveys for ship-shaped units

The requirements for occasional surveys for ship-shaped units are defined in the Rules for Classification and Surveys (Pt.1, Vol.I), Sec. 3, B.2, and are to be observed as far as applicable.

K. Surveys of Watertight Cable Transits

1. General

1.1 Application

1.1.1 The requirements of this Sub-Section apply to all unit contracted for construction on or after 1st January 2022 and are in addition to the requirements of A.1, B.2.2.2, D.2.2 and Section 1, G.1.

1.1.2 Watertight cable transits are to be installed and maintained in accordance with the manufacturer's requirements and in accordance with the requirements of the relevant Type Approval certification.

1.1.3 Watertight cable transit seal systems should be inspected in accordance with Rules for Classification and Survey (Pt.1, Vol.I), Table A-2.1 item 8.6.

(IACS UR Z28.1)

2. Cable Transit Seal System Register

2.1 New construction

2.1.1 A Cable Transit Seal Systems Register is to be provided by the shipbuilder for all watertight cable transits fitted to the units. For an example of a Cable Transit Seal Systems Register see Table 3.5. The Cable Transit Seal Systems Register can be in either a hard copy or digitized media. It is to include a marking/ identification system, documentation referencing manufacturer manual(s) for each type of cable transit installed, the Type Approval certification for each type of transit system, applicable installation drawings,and a recording of each installed transit documenting the as built condition after final inspection in the shipyard. It is to include sections to record any inspection, modification, repair and maintenance.

Table 3.5: Recommended format for Cable Transit Seal System Register

Name of Ship :	Sample
IMO No. :	12345
Place :	Hamburg
Date :	XX/XX/2017
Inspected by :	Smith

Transits 4
Total Openings 4

TRANSIT			Inspected side		BRAND	FRAME		Type Approved	CONDITION (G.F.P)	INSPECTED	REPAIRED	MODIFIED	MAINTAINED	NOTES :	Checked by	DATE
Drawing number	ID	Location	F	B		Type	Opening number							C = Compound (not known brand) R = Smith Blocks B = MCT Williams H = Heavy corrosion N = Nelson, Terasaki MB = Mixed brands MM = Mixed module sizes NVD = No Visible Defects CPA = Checkpoints rectangular frames CPB = Checkpoints round frames		
GIA-07-1047-000-883	TT-MCT-011				C	x								NVD	PTO	26/02/2015
GIA-07-1047-000-883	TT-MCT-012				C	x								NVD	PTO	26/02/2015
GIA-07-1047-000-883	TT-MCT-013				C	x								NVD	PTO	26/02/2015
GIA-07-1047-000-883	TT-MCT-014				C	x								Open, drilled hole not closed	PTO	26/02/2015

2.1.2 The Cable Transit Seal Systems Register is to be reviewed by the attending Surveyor to confirm it contains a list of the watertight cable transits, applicable cable transit information and sections to maintain in-service maintenance and survey records.

2.1.3 For manned units, the Cable Transit Seal Systems Register is to be held onboard of the units. For unmanned units, if a suitable storage location does not exist onboard, the Register may be held ashore. The Cable Transit Seal Systems Register is to be readily available for the attending surveyor.

(IACS UR Z28 2.1)

2.2 Units in service

2.2.1 The owner is to maintain the Cable Transit Seal Systems Register to record any disruption (repair, modification or opening out and closing) to a cable transit or to record the installation of a new cable transit.

(IACS UR Z28 2.2)

3. Installation and maintenance of Watertight Cable transits

3.1 At new construction and periodic surveys it is to be confirmed that:

— cable transits have been installed, and where disrupted have been reinstated, in accordance with the manufacturer's requirements and in accordance with the requirements of Type Approval

— where specified, appropriate specialized tools have been used.

(IACS UR Z28 3)

II. Survey for Fixed Location Installations

A. General

Requirement for surveys for maintenance of class, selection surveyors, documentation and confirmation of class, surveys in accordance with flag state regulation, external service suppliers and preparation for survey are in accordance with I.A.

B. Survey item

The entire survey of floating offshore structures for fixed location installations are define as following items:

— Survey during construction/installation, commissioning and after construction/installation (survey for maintenance of class) for classification of a Floating Production Installation (FPI) includes hull, equipment, mooring systems, marine machinery and electrical systems, boiler, tail shaft, fire and safety systems, inert gas, liquefied gas installations, dynamic position mooring systems, automatic and remote-control system, production facilities, import and export system, subject to the requirements of the Guidelines for Floating Production Installation (Pt.5, Vol.3) Sec. 3.

— Survey during construction/installation, commissioning and after construction/installation (survey for maintenance of class) for hydrocarbon production and/or processing facility (topside) is installed on an offshore installation, subject to the requirements of the Rules for Facilities Offshore Installation (Pt.5, Vol. XII), Sec. 5.

— Survey during construction/installation, commissioning and after construction/installation (survey for maintenance of class) for classification of new build Floating Offshore Liquefied Gas Terminals includes hull, equipment and machinery, electrical, instrument, control system, containment system, mooring systems, safety systems, boiler, tail shaft, import and export system, subject to the requirements of the Guidelines for Floating Offshore Liquefied Gas Terminal (Pt.5, Vol.2) Sec. 3.

Section 4 Class Designation for Fixed Offshore Structures

A. General 4-1

A. General

The requirements for class designation for Fixed Offshore Structures are contained in Guidance for Class Notation (Pt. 0, Vol. B) Sec.2.T.

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Section 5 Survey of Fixed Offshore Structures

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H. Occasional Survey . . . 5-14

A. General

1. Surveys for maintenance of Class

1.1 For maintenance of Class, the regular periodical and occasional surveys of structure, machinery including electrical installation and any special equipment classed as defined in the following, are to be performed.

The periodical surveys include:

— Annual Survey

— Intermediate Survey, if requested

— Class Renewal Survey

— Underwater survey

as well as surveys for the maintenance of Class Notations, where applicable. The surveys are to be carried out in accordance with the intervals and conditions laid down in this Section.

When there are no specific survey requirements for Class Notations assigned to an installations, the equipment and/or arrangements related to these Class Notations are to be examined, as applicable, to the Surveyor's satisfaction at each Class Annual, Intermediate or Renewal Survey.

The surveys are to be carried out in accordance with the relevant requirements in order to confirm that the structures, machinery including electrical installation, equipment and appliances comply with the applicable Rules and remain in satisfactory condition.

When the conditions for the maintenance of type and/or service Notations are not complied with, the type and/or service Notation will be suspended and/or withdrawn in accordance with the applicable Rules given in Section 1, F.5.

The requirements for surveys apply to those items that are required according to the Rules or, even if not required, are fitted on the installations.

Unless specified otherwise, any survey other than steam boiler or thermal oil plants and individual pressure vessels survey may be effected by carrying out partial surveys or splitting of surveys at different times to be agreed upon with BKI, e.g. Continuous Class Surveys, provided that such a survey procedure is adequately extensive. The splitting of a survey is to be such as not to impair its effectiveness.

1.2 In addition to the above periodical surveys, the installations are to be submitted to occasional surveys whenever the circumstances so require.

For example, occasional surveys will be carried out at the time of:

- updating of Classification documents (e.g. change of the owner, name of fixed offshore structure , etc.)
- damages or suspected damage
- repairs or maintenance work
- conversions
- postponement of surveys or conditions of Class
- occasional surveys for change of anniversary date, postponement or advance of surveys

BKI reserve the right, after due consideration, to change the periodicity, postpone or advance surveys, taking into account particular circumstances.

If applicable, when a survey becomes overdue, the following applies:

- For avoiding loss of Class, in the case of a Class Renewal Survey, BKI may, in exceptional cases, grant an extension to allow completion of this survey, provided there is documented agreement to such an extension prior to the expiry date of the Classification Certificate, and BKI is satisfied that there is sufficient technical justification for such an extension, see D.
- In the case of Class Annual or Intermediate Surveys, no postponement is granted. Such surveys are to be completed within their prescribed time windows; see B.2 and C.
- In the case of all other periodical surveys and conditions of Class, extension may be granted, provided there is sufficient technical justification for such an extension.

Other surveys performed by BKI partly in connection with Classification are listed in 4.

1.3 Surveys required for maintenance of Class, e.g. in the case of repairs, or modifications to any parts subject to Classification, are to be agreed with the BKI in due time, so that the measures envisaged may be assessed and supervised, as required.

1.4 The Surveyors are to be given access at any time to the installations and/or to the workshops, so that they may perform their duties.

The owner is to provide the necessary facilities for the safe execution of the surveys.

For their internal examination, including close up surveys, tanks and spaces are to be safe for access.

For survey of the installations fixed to sea bed by internal structures, means are to be provided to enable the Surveyor to examine the structures in a safe and practical way. Tanks and spaces are to be sufficiently illuminated, clean and free from water, scale, dirt, oil residues, etc. to reveal significant corrosion, deformation, fractures, damage or other structural deterioration.

Approved rescue and safety equipment is to be available.

In this connection all areas to be surveyed have to be cleared, cleaned and to be made free from gas, as deemed necessary by Guidance for Marine Industry (Pt.1, Vol.AC) Sec.4, R-72.

The Classification Certificates and other particulars relating to Classification are to be made available to the Surveyor on request.

1.5 BKI will inform the owner or operator about the status of Class, indicating the last recognized surveys and the next due dates. However, even if not provided with such information, the owner or operator is obliged to have the surveys stipulated by the present Rules performed.

1.6 BKI may agree to testing and analysis procedures as a supplement to or equivalent substitute for conventional survey and inspection such as by uncovering/opening up of components.

1.7 BKI reserve the right for given reasons, e.g. in the light of special experience gained during operation to extend the scope of survey or to carry that out with two Surveyors, if needed.

1.8 BKI reserve the right to demand surveys to be held between the due dates of regular surveys, if this is necessary, see H.

1.9 If an installations has to be surveyed in a location beyond the reach of a BKI Surveyor, also in the events of force majeure or of armed conflicts, BKI will have to be notified. Following a review of the facts the process to be adapted will be decided by BKI.

2. Selection of Surveyors

In principle, the acting Surveyors will be chosen by BKI. However, the operator of a classed structure is free to request that any findings of surveys or decisions which he deems to be doubtful are checked by other BKI Surveyors.

3. Documentation, confirmation of Class

3.1 The records of each survey, as well as any requirements upon which maintenance of the Class has been made conditional, will be entered into the respective Survey Statement. The Surveyor's signature on the Certificate and other documents only certifies what has been seen and checked during the particular survey.

3.2 The reports prepared by the Surveyor will be sent to BKI. If there are no objections, the results will be published in the Register and the confirmation of Class effected by the Surveyor in the Certificate will acquire full validity.

3.3 A confirmation of Class effected by the Surveyor relates to the kind of survey referred to in the report and is valid under the reservation that examination will not give cause for any objections, see 3.2.

3.4 Upon request, Class may be confirmed in writing by a separate Certificate. However, such Certificates are valid only if issued by BKI Head Office or in exceptional cases, Head Office has expressly authorized the field service representatives to do so.

3.5 Where defects are repaired provisionally only, or where the Surveyor does not consider immediate repairs or replacements necessary, the installation's Class may be confirmed for a limited period by making an entry in the Survey Statement to the Certificate of Classification. Cancellation of such limitations will also have to be indicated in the Survey Statement, see also Section 1, F.2.

4. Surveys in accordance with coastal state regulations

4.1 Where surveys are required on account of international conventions and of corresponding laws/official ordinances of a coastal state, BKI will undertake them on application, or by official order, acting on behalf of the Authorities concerned, based on the respective provisions; this includes surveys according to:

— the related Conventions of the International Labour Organization (ILO)

Where possible, such surveys will be carried out simultaneously with the Class surveys.

4.2 BKI will also undertake on request other surveys and checks stipulated by additional regulations and requirements of the coastal state. Such surveys are subject to agreements made in each individual case and/or to the regulations of the country concerned.

4.3 All activities as outlined in 4.1 and 4.2 and, where applicable, issuance of relevant Certificates are likewise subject to the general conditions of Section 1.

4.4 If for some reason the Class of an installations has expired or has been withdrawn by BKI, all statutory Certificates issued by BKI, if any, will automatically become void. If subsequently the Class is renewed or re-assigned, the validity of these Certificates will be revived within the scope of their original period of validity, provided that all surveys meanwhile having fallen due have been carried out.

5. External service suppliers

Personnel or firms engaged in services affecting Classification and statutory work are subject to approval by BKI. The Rules for Approval Manufactures and Services Suppliers (Pt.1, Vol.XI) shall be observed.

6. Preparation for Survey

Regarding preparation for survey, requirements given in Section 3, I.A.6 shall be applied as far as applicable.

B. Periodical Surveys for Installations

1. General

1.1 The periodical surveys listed in the following are to be conducted for the structures, machinery including electrical installations as well as special equipment and installations included in the Classification of the installations.

The conditions for the maintenance of type and/or service Notations are to be checked for compliance at each periodical survey; the type and/or service Notation will be suspended and/or withdrawn in accordance with the applicable Rules given in Section 1, F.5, if the relevant rules are not complied with.

If for some obvious reason, e.g. a temporary out-of- service condition of certain equipment, parts included in the Classification cannot be surveyed, this will be noted in the Survey Status.

1.2 Where statutory regulations are applicable which impose inspection intervals deviating from the Class related intervals, where possible, the intervals will be harmonized in the individual case to reduce the number of single surveys.

1.3 In principle, elements covered by the Classification and submitted to a Class Renewal Survey on a date different from the date of the periodical Class Renewal Survey of the installations, they are to be re-examined according to class period after the previous survey.

1.4 An inspection schedule agreed upon between owner/operator and BKI will be set up for the installations, in accordance with the indications described in this Section and adapted to the individual service conditions, see also Section 4.

1.5 When completed, the individual survey will be noted in the Classification Certificate, including any necessary observations.

1.6 For installations special diving devices, vehicles or diver assist systems have to be used, which may be specially adapted to the configuration and conditions of the individual structures. The suitability of such devices and systems and their deployment within the inspection scheme are subject to approval and will be reviewed in the course of inspections carried out and experience gained.

1.7 The general procedure of survey consists in: – an overall examination of the parts covered by the rule requirements – checking of selected items covered by the rule requirements at random – attending tests and trials, where applicable and deemed necessary by the Surveyor

1.8 When a survey results in the identification of significant corrosion, structural defects or damage to structures, machinery and/or any piece of its equipment which, in the opinion of the Surveyor affect the Class of the installations, remedial measures are to be implemented before the installations continues in service.

1.9 BKI's survey requirements cannot be considered as a substitute for specification and acceptance of repairs and maintenance, which remain the responsibility of the owner.

1.10 Survey planning and record keeping

1.10.1 A specific Survey Program for Class Renewal Surveys is to be prepared in advance of the Class Renewal Survey by the owner in cooperation with BKI. The Survey Program shall be in written format.

1.10.2 For underwater survey, plans and procedures are to be submitted for review in advance of the survey and made available on board. These should include drawings or forms for identifying the areas to be surveyed, the extent of structures cleaning, non-destructive testing locations, including NDT methods, nomenclature, and for the recording of any damage or deterioration found. Submitted data, after review by BKI, will be subject to revision if found to be necessary in light of experience.

2. Annual Surveys

2.1 Schedule

Annual Surveys are to be held within 3 months before or after each anniversary date from the date of the Initial Class Survey or from the date credited for the last Class Renewal Survey. More extensive regulations of the country, where the fixed offshore structures is registered, are to be observed.

2.2 Scope

2.2.1 General

The survey consists of an examination for the purpose of ensuring, as far as practicable, that the structures, the machinery including electrical installations and equipment are maintained in a satisfactory condition.

2.2.2 Structure and equipment

.1 The Annual Survey will generally cover visual examination of all important structural elements readily accessible, with regard to deformations, cracks, corrosion, etc. Where a special inspection plan has been prepared, the corresponding indications have to be observed, e.g. for critical areas with stress concentrations, locations with previous repairs, etc.

.2 The type, location and extent of corrosion control, including coatings, cathodic protection systems, etc., as well its effectiveness and repairs or renewals shall be reported at each survey, see also Rules for Structure (Pt.5, Vol.II) Sec.6.

2.2.3 Steel structures

.1 The structure within the splash zone shall be inspected visually with regard to corrosion, marine growth and damages, e.g. from collisions. Where damages are found which could extend further downwards, diver inspections may be called for.

.2 In areas where scour is supposed to occur, adequate control may be required on a yearly basis or at closer intervals, especially for gravity type structures.

.3 The exposed parts of the main structure, deck, deck house and structures attached to the deck, derrick substructure including supporting structure, accessible internal spaces and the applicable parts described in this Section are to be generally examined and placed in satisfactory condition as found necessary.

.4 Jackets, diagonal and horizontal braces together with any other parts of the upper supporting structure as accessible above the waterline are to be checked.

Note:
At the 1st Annual Survey after construction, the structures may be subject to examination of major structural components including non-destructive testing, as deemed necessary by BKI. If BKI deems such survey to be necessary, the extent should be agreed to by BKI and the owner or operator prior to commencement of the survey and incorporated in the survey schedule.

.5 The BKI Surveyor is to be satisfied that no material alterations have been made to the structures, its structural arrangements, superstructure, fittings and closing appliances.

.6 The scope for thickness measurements is to be defined in the survey schedule/special inspection plan, compare G.1. For inadmissible corrosion, see 1.8.

2.2.4 Concrete structures

The concrete surfaces shall be inspected for cracks, abrasion, spalling and any signs of corrosion of the steel reinforcement and embedment, particularly in the splash zone, in ice conditions and where repairs have been carried out previously. Surface has to be cleaned where necessary. Regarding foundations/scouring, see 2.2.3.2.

Note:
See 2.2.3.4.

2.2.5 Drilling installations

The main deck structure around the drilling well (moon-pool) and in vicinity of any other structural changes in section, slots, steps or openings in the deck and the back-up structure in way of structural connecting members has to be checked.

2.2.6 Machinery

.1 A visual examination is to be made of all spaces containing machinery, boilers, pressure vessels, electrical installations, etc. essential for operation of the installation, especially with regard to fire and explosion hazards. Existing safety plans are to be checked and functioning of safety and alarm devices and of the ventilation system to be verified as far as practicable.

Special equipment such as cranes, life-saving and drilling equipment are to be surveyed according to instructions issued in each individual case, if included in the Classification procedure.

.2 All structures In addition a general examination of hazardous areas, remote shutdown arrangements, piping systems, etc. is to be made.

.3 Special features for offshore drilling installations Offshore drilling installations may have special items of machinery and electrical equipment not found on conventional ships. The items mentioned in D.2.6 shall be examined in an analogous manner and reported at all Class Annual Surveys.

C. Intermediate Surveys

1. Survey period

1.1 Schedule

An Intermediate Survey, if requested, is due at half the nominal time interval between two Class Renewal Surveys and may be performed either at the second or third Annual Survey. Additional items to the Annual Survey may be performed either at or between the second or third Annual Survey.

2. Scope

2.1 General

Intermediate surveys are generally to be performed to the extent of Annual Surveys including any additional items, such as related to a survey inspection programme, if any.

2.2 Special features for offshore drilling installations

Offshore drilling installations may have special items of machinery and electrical equipment not found on conventional ships. The items mentioned in D.2.6 are to be examined in an analogous manner and reported upon at all Class Intermediate Surveys.

D. Class Renewal Surveys

1. Survey period

1.1 Schedule

Class Renewal Surveys, also called Special Surveys are to be carried out at the intervals of class period.

The Class Renewal Survey may be commenced at the 4th Annual Survey and be progressed with a view to completion by the end of class period. When the Class Renewal is commenced prior to the 4th Annual Survey, the entire survey is to be completed within 15 months if such work is to be credited to Class Renewal.

Regarding Underwater Survey, see E.

The new period of Class will commence:

- The day after the day the previous Class expires, provided that the Class Renewal Survey has been completed within the 3 months preceding that date. This applies also to a granted extension of Class.
- The day on which the Class Renewal Survey has been completed, provided that the Class Renewal Survey has been completed more than 3 months before expiry of the previous Class.
- In cases where the installations has been out of service for a considerable period because of a major repair or modification and the owner elects to only carry out the overdue surveys, the next period of class will start from the expiry date of the special survey. If the owner elects to carry out the next due special survey, the period of class will start from the survey completion date.

1.2 Class renewals for installations are numbered in the sequence I, II, III, etc. Regarding their scope, see 2.

1.3 The Class Renewal Surveys may be performed in various alternative survey modes, e.g.:

- Partial Class Renewal Survey System
- Continuous Class Renewal Survey System
- Planned Maintenance Survey System
- Condition Monitoring Survey System

For details, see Rules for Classification and Surveys (Pt.1, Vol.I) Sec.3.B.1.3.

2. Scope

2.1 General

2.1.1 The Class Renewal Surveys shall include, in addition to the Annual Survey, Intermediate Survey and the underwater survey, the following examinations, tests and checks of sufficient extent to ensure that structures, equipment and machinery are in satisfactory condition and that the structures is fit for its intended purpose for the period of Class to be assigned subject to proper maintenance and operation and the periodical surveys carried out at the assigned due dates.

2.1.2 Special requirements for Class Renewal of installations of unusual design, in out of operation status or in unusual circumstances will be determined on individual basis in a survey inspection programme.

2.1.3 Class extension surveys

Upon request of the owner and in exceptional cases, extension of the Class period may be granted by BKI. Following surveys of structure and machinery afloat, BKI may extend the Class period by no more than 3 months in total, provided that the surveys show that structure and machinery including electrical installations are in acceptable condition. See also A.1.2.

2.2 Structure and equipment

2.2.1 Class Renewal I

Class Renewal I will have to be performed at the end of the first Class period.

.1 All structures

One or more of the following crack detection test methods may be required if deemed necessary by the Surveyor:

- radiography test (X or gamma rays)
- ultrasonic test
- magnetic particle test
- dye penetrant test, etc.

If deemed necessary by the Surveyor, defective cement, asphalt covering or other coating, is to be removed. The steel work is to be examined before painting or before the cement or other coverings are renewed.

.2 Structures

In addition to the Annual Survey and Intermediate Survey, a comprehensive survey of the underwater and above water structure is to be carried out covering the following aspects

- Overall condition and integrity
- The structure including tanks, void spaces, helicopter deck and its supporting structure, machinery spaces, and all other internal spaces are to be examined externally and internally for damage, fractures, or excessive wastage. Thickness measurements of plating and framing may be required where wastage is evident or suspected.
- Suspect areas may be required to be tested for tightness, non-destructive tested or thickness gauged.
- Tanks and other normally closed compartments are to be ventilated, gas freed and cleaned as necessary to expose damages and allow meaningful examination and thickness gauged in case of excessive wastage.
- All tanks, compartments and free-flooding spaces throughout the structures are to be examined externally and internally for excess wastage or damage.
- Internal examination and testing of void spaces, compartments filled with foam or corrosion inhibitors, and tanks used only for lube oil, light fuel oil, diesel oil, or other non-corrosive products may be waived provided that upon a general examination the Surveyor considers their condition to be satisfactory. External thickness measurements may be required to confirm corrosion control.
- Structures such as derrick substructure and supporting, jack-houses, deck houses, superstructures, helicopter landing areas, raw water (sea water intake) towers and their respective attachments to the deck.
- Structure/plate thickness measurements and non-destructive testing according to an approved inspection plan and/or on-the-spot decision where damages are suspected.
- Foundations and supporting headers, brackets, and stiffeners for drilling related apparatus, where attached to structure, deck, superstructure or deck house.
- Effectiveness of the corrosion protection system (potential measurements, condition of anodes etc.)
- Marine growth.

— Condition of foundations. (changes in topography/ scouring, settlement)

Account may be taken of data recorded by instruments installed to monitor structural and foundation behaviour. Special attention shall be given to areas of stress concentration and of suspected or proven damage, and to areas where repairs have been carried out previously.

Cleaning and/or uncovering of areas selected for close-up inspection and non-destructive testing may be necessary.

2.2.2 Class Renewal II and subsequent ones

The age of the structures is first class period to second class period for Class renewal II and for the subsequent ones. The requirements for the second Class Renewal and the subsequent ones shall be as comprehensive and include at least those of Class Renewal I, with special attention being given to the condition and thickness of material in high corrosion areas. Representative thickness measurements shall be required and are to be specified in advance by BKI. Special attention should be paid to splash zones on structure, legs or related structure, and in ballast tanks, pre-load tanks, free flooding spaces, etc., as far as applicable.

2.3 Machinery including electrical installations

Except for individual machinery items contained in F. the scopes of all Class Renewal Surveys for the machinery installation including electrical installations are identical. If the Continuous Class Renewal System or other relevant survey mode is applied, 1.3 is to be observed.

2.3.1 Machinery and equipment

In addition to the Annual and Intermediate Survey, an extended examination of machinery spaces and installations will generally include, as far as applicable:

— close inspection of machinery foundations

— opening/internal inspection of pressure vessels and heat exchangers according to an approved inspection plan

— pressure and operability testing of pipe systems according to an approved inspection plan

— inspection and testing of fire protection installations and firefighting equipment

Regarding special equipment, see B.2.2.6.1.

Applicable regulations of the Administration are to be complied with.

2.3.2 Electrical installation

The electric equipment including the generators, the motors of the essential auxiliary machinery, all switch gear including their protective and interlocking devices, as well as the cable network are to be examined and tested.

Electrical installations, particularly explosion protected machines and apparatus, which are situated in spaces in which there is danger of inflammable gas or steam air mixtures have to be examined concerning their ex-protection as well as IP-protection.

In addition to the general indications given above, the following is to be observed:

— Fittings and connections on main switchboards and distribution panels are to be examined, and care is to be taken to see that no circuits are over fused.

— Cables are to be examined as far as practicable without undue disturbance of fixtures.

— All generators are to be run under load, either separately or in parallel; switches and circuit breakers are to be tested.

— All equipment and circuits are to be inspected for possible development of physical changes or deterioration. The insulation resistance of the circuits is to be measured between conductors and between conductors and ground, and these values compared with those previously measured.

— Electrical auxiliaries installed for vital purposes, generators and motors are to be examined and their prime movers opened for inspection. The insulation resistance of each generator and motor is to be measured.

— The emergency remote switch-off devices of ventilators, fuel pumps, oil fired equipment and similar equipment are to be tested.

2.4 Fire extinguishing and fire alarm systems

The requirements for all structures are defined in the Rules for Classification and Surveys (Pt.1, Vol.I) Sec.3.B.1.3 are to be observed, as far as applicable.

2.5 Automation and remote control system

In addition to the requirements of Annual Surveys the following parts are to be examined:

— Control actuators All mechanical, hydraulic and pneumatic control actuators and their power systems are to be examined and tested as considered necessary to ensure the proper performance of all automatic functions, alarms and safety systems.

— Electrical equipment The insulation resistance of the windings of electrical control motors or actuators is to be measured, with all circuits of different voltages above ground being tested separately to the Surveyor's satisfaction.

— Unattended installations Control systems for unattended machinery spaces, if any, are subjected to trials to ensure the proper performance of all automatic functions, alarms and safety systems.

2.6 Special features for offshore drilling installations

Offshore drilling installations may have many special features of machinery and electrical equipment. The following items are to be specially examined and reported upon at all Class Renewal Surveys:

2.6.1 Hazardous areas

— Enclosed hazardous areas such as those containing open active mud tanks, shale shakers, degassers and desanders are to be examined and doors and closures in boundary bulkheads verified as effective.

— Electric lighting, electrical fixtures and instrumentation are to be examined, proven satisfactory and verified as explosion-proof or intrinsically safe.

— Ventilating systems including ductwork, fans, intake and exhaust locations for enclosed restricted areas are to be examined, tested and proven satisfactory.

— Ventilating alarm systems to be proven satisfactory.

— Electrical motors are to be examined including closed-loop ventilating systems for large DC motors.

— Automatic power disconnect to motors in case of loss of ventilating air is to be proved satisfactory.

2.6.2 Remote shutdown arrangements

— Remote shutdown for fuel-oil transfer service pumps and ventilating equipment, together with oil tank outlet valves where required to be capable of being remotely closed are to be proved satisfactory.

— Emergency switches for all electrical equipment including main and emergency generators, except alarm and communication systems and lighting in essential areas such as escape routes and landing platforms, are to be proved satisfactory.

2.6.3 Firefighting equipment and fire alarm systems

A general examination of the fire detection and extinguishing apparatus, is to be made in order that the Surveyor may be satisfied with its efficient state. The following items are to be especially examined:

— fire hoses, nozzles and spanners at each fire station

— servicing of all portable soda-acid and foam extinguishers

— weighing and re-charging as necessary of all dry chemical and CO_2 extinguishers

— fire pumps and piping including operation and capacity

— alarm systems

2.6.4 Piping systems

Piping systems used solely for drilling operations and complying either with the BKI requirements or a recognized standard are to be examined, as far as practicable, operationally or hydrostatically tested to working pressure, to the satisfaction of the Surveyor.

2.7 Trials

Upon completion of the surveys for Class Renewal, the Surveyor shall be satisfied that the entire machinery installation, including the electrical machinery and equipment, is operable without any restrictions. In case of doubt, this may have to be proved by trials and/or operational tests.

E. Underwater Surveys

1. Survey period

1.1 Schedule

The outside structure and related items of installations are to be examined two times in any class period between two Class Renewal Surveys, with an interval not exceeding three years between examinations.

Consideration may be given at the discretion of BKI, to any special circumstances justifying an extension of the interval. In such circumstances an extension of examination of the fixed offshore structure of 3 months can be granted by BKI.

1.2 Planning of survey

For plans and procedures for underwater surveys see B.1.10.2.

2. Underwater Surveys

2.1 General

2.1.1 The procedures and conditions under which a properly conducted underwater inspection is to be executed are defined in the following.

2.1.2 The diving firm assisting in Underwater Surveys shall be approved by BKI for this purpose. Validity of an approval granted shall depend on the continued qualification for satisfactorily carrying out the work required. The approval shall be renewed after a period not exceeding 3 years.

2.2 Conditions for Underwater Surveys

2.2.1 Thickness measurements and non-destructive testing

Underwater internal thickness measurements of suspect areas may be required in conjunction with the underwater inspection. Means for underwater non-destructive testing may also be required for fracture detection. Plans and procedures for underwater surveys see B.1.10.2.

2.2.2 Underwater conditions

The areas to be surveyed shall be sufficiently clean and the seawater clear and calm enough to permit meaningful examination and photography, if necessary, by the diver. The structures below the waterline shall be free from fouling and overall or spot cleaning may be required.

2.2.3 Physical features

The following physical features shall be incorporated into the design in order to facilitate the underwater inspection. When verified they shall be noted in the Classification Certificate for reference at subsequent surveys.

.1 Sea suction

Means shall be provided to enable the diver to conform that the sea suction openings are clear. Hinged sea suction grids would facilitate this operation.

.2 Sea valves

For the underwater survey associated with the Class Renewal Survey, means shall be provided to examine any sea valve.

2.3 Procedures

2.3.1 Exposed areas

An examination of the outside of the structure above the waterline shall be carried out by the BKI Surveyor. Means and access shall be provided to enable the Surveyor to accomplish visual inspection and non-destructive testing as necessary.

2.3.2 Underwater areas

Underwater areas are to be surveyed and/or relevant maintenance work is to be carried out with assistance by a diver of an approved firm whose performance is controlled by a Surveyor, using an underwater camera with monitor, communication and recording systems. The underwater pictures on the surface monitor screen shall offer reliable technical information such as to enable the Surveyor to judge the parts and/or the areas surveyed. If applicable, the effectiveness of the corrosion protection system (potential measurements, conditions of anodes, etc.), the marine growth and the condition of foundations (changes in topography/ scouring, settlement) are to be inspected.

2.3.3 Damage areas

Damage areas shall be photographed. Internal examination, measurements, marking and thickness measurements of such locations may be necessary as determined by the attending Surveyor. Means shall be provided for location, orienting and identifying underwater surfaces in photographs or on video tapes. Documentation suited for reproduction (video tape with sound) shall be made available to BKI.

3. Seawater gravity spaces

A special survey program has to be agreed with BKI, if applicable, depending on size, configuration and accessibility of the internal structure.

F. Periodical Surveys of Individual Machinery Items

1. Schedule

The periodical surveys of individual machinery items or installations listed in the following are to be carried out in addition to those prescribed for the Class Renewal Surveys for maintenance of Class.

The requirements regarding the schedule are defined in the Rules for Classification and Surveys, (Pt.1, Vol.I), Sec. 3, B.1.5, and are to be observed as far as applicable.

2. Scope

The following machinery items are to be surveyed:

- steam boilers
- thermal oil plants
- steam pipes / heating coils
- pressure vessels

The requirements regarding the scope are defined in the Rules for Classification and Surveys (Pt.1, Vol. I), Sec. 3, B.1.5 and are to be observed as far as applicable.

G. Thickness Measurements and Corrosion Tolerances

1. General

1.1 The thickness of structural elements is checked by measurements, in order to assess whether or not the values stipulated in BKI Rules are observed, taking into account the admissible tolerances. Unless severe corrosion has occurred owing to particular service conditions, thickness measurements will not be required until Class Renewal II, see D.2.2.2.

1.2 Thickness measurements shall be carried out in accordance with recognized methods, by authorized personnel or companies, see 2. Rust and contamination are to be removed from the components to be examined. The Surveyor is entitled to require check measurements or more detailed measurements to be performed in his presence. The thickness measurements on board shall be witnessed by the Surveyor. This requires the Surveyor to be on board while measurements are taken, to the extent necessary to control the process.

The scope of thickness measurement as well as the reporting shall be fixed in a survey planning meeting between the Surveyor(s), representatives of the owner and the approved thickness measurement operator/firm well in advance of measurements and prior to commencing the survey.

Thickness measurements of structures in areas where close-up surveys are required shall be carried out simultaneously with the close-up surveys.

2. Authorization

2.1 The company entrusted with thickness measurements, as well as the procedure for documentation shall be approved by BKI for this purpose in accordance with Rules for Approval Manufactures and Service Suppliers (Pt.1, Vol. XI).

2.2 Validity of an approval granted will depend on the continued qualification. The approval will have to be renewed after a period not exceeding 3 years.

3. Scope of measurements

The scope of thickness measurements as well as the reporting depends upon the particular structure and shall be determined by BKI in advance of measurements and prior to commencing the survey.

H. Occasional Survey

1. Damage survey

It is the responsibility of the owner/operator of the structures to report to BKI without delay any suffered damage, defect or breakdown, which could invalidate the conditions for which a Classification has been assigned, or if damage may be assumed to have occurred as a consequence of an average or other unusual event, so that it may be examined at the earliest opportunity by the BKI Surveyors. All repairs found necessary by the Surveyor shall be carried out to his satisfaction.

2. Repairs

2.1 Where repairs to main structure, legs, columns or other structures, machinery or equipment, which affect or may affect Classification, are planned in advance, a complete repair procedure including the extent of the proposed repair and the need of the Surveyors attendance shall be submitted to and agreed upon by BKI reasonably in advance. Failure to notify to BKI, in advance of the repairs, may result in suspension of the Classification until such time as the repair is redone or evidence submitted to satisfy the Surveyor that the repair was properly carried out. This applies also to repairs on site.

2.2 The requirements of 2.1 are not intended to include maintenance and overhaul to structures, machinery and equipment in accordance with recommended manufacturers procedures and established marine practice and which do not require BKI approval. However, any repair as a result of such maintenance and overhauls which affects or may affect Classification is to be noted in the log of the structures and submitted to the Surveyor.

2.3 Surveys conducted in the course of repairs are to be based on the latest experience and instructions by BKI. In exceptional cases advice is to be obtained from the concerned Head Office departments, in particular where doubts exist as to the cause of damage.

2.4 For older structures, in the case of repairs and/or replacement of parts subject to Classification, as a matter of principle, the Construction Rules in force during their period of construction continue to be applicable.

This does not apply in the case of modifications required to the structures in the light of new knowledge gained from damage analyses, with a view to avoiding recurrence of similar damages.

2.5 Regarding the materials employed and Certificates required, the requirements for new constructions are applicable, see 8.2.

2.6 Regarding damages or excessive wastage beyond allowable limits that affect the Class of the structures, see D.2.2.1.1.

3. Reactivation surveys

In the case of installations which have been out of service for an extended period, the requirements for reactivation surveys will be specially considered in each case with due regard given to the status of surveys at the time of commencement of the out of operation period, the length of period and conditions under which the structures have been maintained during that period.

4. Conversion or alteration surveys

4.1 No conversions or alterations which may affect Classification shall be made to structure and machinery of a classed installation unless plans of proposed alterations are submitted and approved by BKI before the work of alterations is commenced. Such work shall be carried out in accordance with approved plans and tested on completion as required by the Rules and to the satisfaction of the Surveyor. A new or amended Class designation will be assigned, where necessary.

4.2 Self-elevating Units Deployed as Fixed Offshore Structure

1) Self-elevating Mobile Offshore Units which have been converted to site dependent platform structures will be subjected to surveys as applicable in these sections in addition to the applicable structural examinations required by Rules for Mobile Offshore Units (Pt. 5, Vol. VI).

2) Surveys are to include Annual and Class Renewal Surveys with an underwater survey in lieu of dry-docking of the above mud line sections of the legs, mats, spud cans and platform twice in each five year Class Renewal Survey period in accordance with applicable sections of Rules for Mobile Offshore Units (Pt. 5, Vol. VI).

3) Spud cans and mats which will be located below the mud line will be considered inaccessible and fatigue, structural and corrosion analyses shall be provided to justify the integrity of these inaccessible areas for the design life of the structure.

5. Survey for towage

In compliance with the provisions of the General Conditions, a Certificate of towage over sea may be issued upon satisfactory survey, the scope of which is fixed in each particular case by BKI according to the towing over sea.

6. Survey of Existing Fixed Offshore Structure

6.1 Existing Fixed Offshore Structures to be used at the same location for class admission or extended time period beyond their original design life are subject to additional surveys to determine the actual condition of the Fixed Offshore Structure.

6.2 The extent of the survey will depend on the completeness of the existing survey documents. BKI will review and verify maintenance manual, logs and records. Any alterations, repairs or installation of equipment since installation should be included in the records.

6.3 Those survey requirements in D for the Class Renewal Survey have to be included in the survey for extension of use.

1) Splash zone

2) Inspection of above water and under water structural members and welds for damages and deteriorations

3) Examination of corrosion protection systems

4) Measurements of marine growth

5) Sea floor condition survey

6) Examination of secondary structural attachments, risers and riser clamps

7)

6.4 Special attention should be given to the following critical areas.

1) Areas of high stress
2) Areas of low fatigue
3) Damage incurred during installation or while in service
4) Repairs or modifications made while in service
5) Abnormalities found during previous surveys

6.5 Survey report of the findings is to be submitted to BKI for review and evaluation of the condition of the Fixed Offshore Structure.

6.6 The need for more frequent future Periodical Surveys will be determined based on the calculated remaining fatigue life and passed inspection results.

7. Relocation of existing Fixed Offshore Structure

7.1 Existing Fixed Offshore Structure that are classed at a specified location require special consideration when relocation to a new site is proposed.

7.2 The Owner is to advise BKI of the proposal to change locations addressing removal, transportation and re-installation aspects of the change.

7.3 Survey requirements described in 6 and Section 1, G.2.2. wherever applicable, are to be complied with in addition to an engineering analyses required to justify the integrity of the structure for the design life at the new location.

8. Welding and replacement of materials

8.1 Welding of steels, including higher strength hull structural steel, is to be to the satisfaction of BKI.

8.2 Welding or other fabrication performed on steels of special characteristics or repairs or renewals of such steel or in areas adjacent to such steel shall be accomplished with procedures approved by BKI considering the special materials involved. Substitution of steels differing from those originally installed shall not be made without approval by BKI.