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CHINA CLASSIFICATION SOCIETY

GUIDELINES FOR LAY-UP SURVEYS OF MOBILE OFFSHORE UNITS

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Chapter 1 General

Section 1 General Requirements

1.1.1 When CCS is notified by the owner that a unit has been laid-up, the classification service status of the mobile unit shall be marked as "laid up". Additionally, any unfinished surveys due to lay-up may be held in abeyance until reactivation of the unit. Upon reactivation, any unfinished surveys shall be carried out in accordance with applicable regulations, conventions and rules.

1.1.2 A laid-up unit may maintain its class provided that:

- (1) A scheme for maintenance of the unit during its lay-up period is developed by the owner and agreed by CCS;
- (2) An initial lay-up survey is requested at the beginning of the lay-up period and agreed by CCS;
- (3) An annual lay-up condition survey is carried out during the lay-up period and agreed by CCS.

1.1.3 Where a maintenance scheme agreed by CCS is available for a unit being laid up for a period beyond due date of the special classification survey, all surveys after construction which fail due during lay-up will then be held in abeyance until it is reactivated, subject to the satisfactory completion of the annual lay-up condition survey stated in 1.1.2 (3) above.

1.1.4 At the request of the owner and as determined by CCS, part or all of surveys after construction may be carried out for a laid-up unit, with particular attention being given to the extent and date of the surveys. Such surveys may be taken into account for determining the extent of a reactivation survey and/or determining the due date of next survey of the same type after construction.

1.1.5 The lay-up survey requirements for other classed offshore installations (e.g., floating installations) shall be implemented in accordance with the Guidelines.

Section 2 Introduction to the Guidelines

1.2.1 As referred to in the Guidelines, a "laid-up mobile unit" refers to a mobile unit which, notified by the owner, will cease to be engaged in any operation activities and will have reduced manning. See Section 4 of this Chapter for a specific lay-up condition.

1.2.2 The aim of the Guidelines is to provide a systematic, safe and cost effective approach for preparing mobile units for lay-up and maintaining it in a safe and cost effective condition during lay-up.

1.2.3 The Guidelines are of a general nature. Appropriate modification may be made to suit a specific unit type or the environmental feature of lay-up area when applying the Guidelines. Meanwhile, it is to be noted that the specific requirements of original equipment manufacturers may take precedence over the Guidelines, and the regulations or requirements for lay-up of mobile units as stipulated by Administrations or related bodies are not to be replaced by the Guidelines.

1.2.4 It is also to be noted, when applying the Guidelines, that the flag State Administration and/or

maritime and port authorities of the lay-up location, as well as insurance companies may have individual lay-up requirements not covered by the Guidelines. Therefore, care shall be taken to ensure that all such requirements are considered when applying the Guidelines.

1.2.5 The general procedures for lay-up of mobile units are as follows:

- (1) The general requirements of all parties involved in the lay-up of mobile units shall be documented to assist the owner in formulating the lay-up schemes;
- (2) The operator or the owner's technical shore staff shall lay up the mobile unit under the guidance of the CCS surveyor;
- (3) After a satisfactory examination on board, CCS will issue a lay-up report stating that the mobile unit has been laid up in accordance with the recommendations detailed in Chapters 2 and 3 of the Guidelines and endorse the classification certificate accordingly;
- (4) The class of the mobile unit during the lay-up period shall be maintained in accordance with the requirements for annual lay-up condition survey in Chapter 4 of the Guidelines. Upon completion of the survey, the classification certificate shall be duly endorsed;
- (5) The owner shall consider the time needed to make preparations for reactivation of mobile units in different lay-up conditions and inform CCS in advance. The preparations for reactivation, and all reactivation classification and statutory surveys shall be carried out in accordance with the requirements specified in Chapters 4 and 5 of the Guidelines under the guidance of a CCS surveyor.

Section 3 Scope of Services

1.3.1 Lay-up surveys and services for mobile units shall include one or more of the following items (if requested by the Owner):

- (1) general advisory services with regard to lay-up programmes;
- (2) preparation or review of detailed lay-up schemes;
- (3) supervision during lay-up;
- (4) periodical inspections of laid-up mobile units;
- (5) supervision during reactivation;
- (6) Lay-up Declaration as requested by the parties involved such as insurance companies and port authorities where lay-up surveys have been carried out.

1.3.2 Periodical inspections as referred to in (4) of 1.3.1 above shall have a particular emphasis on safety and fire extinguishing arrangements, emergency equipment (including machinery, pumps and generators), jacking and fixation devices (when applicable), anchoring and mooring equipment. The inspection report shall clarify the effectiveness of the implementation of the mobile unit lay-up scheme and, if necessary, proposes items that require further attention. Such inspections may be part of lay-up surveys required for maintaining the class, where both of them are undertaken simultaneously.

Section 4 Lay-up Condition

1.4.1 Considerations

(1) The choice of lay-up condition will generally be determined by a consideration of technical and reactivation factors, mainly including:

- ① estimated lay-up period of the mobile unit;
- ② preparation time required to restore a mobile unit to operational readiness;
- ③ operational cost savings of the mobile unit;
- ④ next intended operation area after reactivation;
- ⑤ age of the unit and recycling value.

(2) A summary of lay-up considerations for each condition is given in Appendix to the Guidelines.

1.4.2 Hot lay-up

When a mobile unit is in hot lay-up condition, the machinery is kept in operation for the sake of fast reactivation, but necessary measures may be taken to reduce various operational costs. Depending on the preparation time for restoring the towing condition before the operation, the hot lay-up period can last up to 12 months.

(1) Hot lay-up for up to 12 months is suitable for 1 week reactivation time. Where the mobile unit is planned to be in this lay-up condition, the owner shall inform the flag State and/or CCS. During this period, the mobile unit shall meet the following requirements:

- ① The watch-keeping personnel for the unit can be assigned based on the actual needs of the unit lay-up, but they need to meet the requirements of the flag State, underwriter (if any) and other local authorities.
- ② Local requirements and restrictions on operations of laid-up mobile units of port authorities are to be complied with, such as restrictions on the discharge of oily bilge water and wreck removal.

1.4.3 Cold lay-up

(1) When a mobile unit is in cold lay-up condition, the machinery is taken out of service, and the mobile unit is kept electrically dead with the exception of the emergency power supply. This condition usually implies three weeks or more preparation time for restoring the towing condition before the mobile unit is put into operation, depending on the level of protection and maintenance during the lay-up period. The level of protection depends on the age and value of the mobile unit, as well as its intended destination after reactivation, including whether it will be towed to the next well location for drilling operations prior to resuming normal operation, sent to a repair yard, or transported to a scrap yard.

(2) Cold lay-up condition is suitable for up to five years out of service. During this period, the mobile unit shall meet the following requirements:

- ① The watch-keeping personnel assigned shall be at least in line with emergency and/or routine operation requirements to deal with fire, flooding, mooring and security watch on the unit.
- ② Before reactivation, it shall be determined whether the unit shall proceed directly to dry-dock, depending on the extent of marine growth at the bottom outside the unit.
- ③ Considering that the unit personnel may be changed frequently, during the cold lay-up period, a logbook regarding the unit shall be maintained throughout this period. All maintenance and test activities carried out during the lay-up period and the corresponding dates shall be recorded. The nature and frequency of maintenance, inspection and test shall also be clearly stated in the logbook during the lay-up period. Relevant documents and records need to be kept intact on the unit.

1.4.4 Long-term lay-up

- (1) Long-term lay-up of a mobile unit is a condition that the lay-up period is over five years and the preparation time for reactivation of a mobile unit is unpredictable.
- (2) The preparation time for mobile unit in long-term lay-up restoring the towing condition before put into operation may exceed three months, depending on the maintenance and preservation applied. The preparations will be comprehensive to the extent that original equipment manufacturers are to be consulted for critical equipment of the mobile unit.

Section 5 Disclaimer of Liability

1.5.1 Based on the relevant instructions in Section 2 of this Chapter, notwithstanding every effort has been made by CCS to provide accurate and complete information in relation to lay-up of mobile units contained in the Guidelines, CCS does not warrant their absolute accuracy, completeness, or adequacy. Therefore, CCS assumes no liability for any foreseeable or unforeseeable legal risk caused by the use of information in relation to lay-up of mobile units contained in the Guidelines and shall not be liable for any loss, damage or expense caused by reliance on the information or advice in the Guidelines.

Chapter 2 Safety during Lay-up

Section 1 Location Considerations

2.1.1 Typically, the local requirements applicable to lay-up locations and mooring arrangements of mobile units are established by the relevant port authorities and appropriate salvage agencies. The owner is advised to consider the following factors when choosing a lay-up location for the mobile unit:

- (1) the extent of shelter from open seas, strong winds, swell, surge and strong currents;
- (2) the proximity to the intended towing route or open roadstead anchorages;
- (3) the proximity to known tropical cyclone or hurricane areas, floating ice, etc.;
- (4) the proximity to wrecks, underwater pipelines, cables, other offshore installations and sea floor projections;
- (5) the proximity to corrosive waste or effluent discharges;
- (6) clearance between the unit and the seabed at the highest or lowest tide, as well as the matching of pile legs, chain cable length and water depth (if applicable);
- (7) the characteristics of the seabed with regard to anchor-holding capability, which may require confirmation by diving inspection (if applicable);
- (8) the availability of local tug and fireboat assistance;
- (9) the characteristics of the windward area of the unit structure (if applicable) in relation to changes in wind, tide and wave conditions;
- (10) the weaknesses and limitations of the specific unit type, design and condition of anchoring equipment, as well as access to and the readiness of additional anchoring equipment, if required;
- (11) the suitability of the mooring pattern with respect to the number, lengths and angles of the steel mooring rope/mooring cable and the ability to maintain even tension on the mooring rope;
- (12) the response capabilities of unit personnel under normal and adverse weather conditions, etc.;
- (13) the frequency and reliability of local weather forecasts and warnings;
- (14) the proximity to other ships and mobile units and related traffic hazards in the vicinity;
- (15) the scope of local emergency plans and services for potential fires, flooding, security incidents, mooring failures and medical emergencies.

Section 2 Requirements for Pile Legs, Mooring and Anti-slip Pile Equipment

2.2.1 It is necessary to consider the lay-up attitude of the unit, focusing primarily on three conditions: elevated (for self-elevating units), sitting-on-bottom and anchored/moored (for all units, if applicable)

2.2.2 Requirements for units in an elevated condition during lay-up. The lay-up of self-elevating mobile units mainly relies on their pile legs, making the condition of these legs critical to the safety of laid-up units.

The following requirements shall be considered for monitoring the pile leg condition of self-elevating mobile units:

- (1) Locations with suitable geological conditions shall be selected for pile penetration. It is essential to ensure the accuracy of geological data, and the approval of the pile penetration location shall be obtained from the relevant authority (if applicable).
- (2) The pile penetration location shall be selected to avoid areas subject to strong winds, waves, or significant tidal fluctuations. Additionally, the pile leg length shall be sufficient to accommodate the required operating water depth.
- (3) The necessary shapes and signal lights shall be in good conditions. If a mobile unit is laid up near a waterway, deck lighting devices, aviation obstruction lights and navigational lighting aids, and audible signals shall be kept in a readily available condition.

2.2.3 Requirements for units in a sitting-on-bottom condition during lay-up (only for submersible units).

For units in a sitting-on-bottom condition, the following requirements are mainly considered:

- (1) The selected sea area for the units shall be suitable for sitting-on-bottom, with the accuracy of geological data for the area ensured, and approval for the sitting-on-bottom location obtained from the relevant authority.
- (2) Care shall be taken to avoid locations with strong winds, large waves, or significant tidal changes.
- (3) Units in long-term lay-up shall be protected against scouring beneath the mat.
- (4) The sea floor in the designated sea area for sitting-on-bottom shall meet flatness requirements. If not, it shall be leveled in advance before sitting-on-bottom.
- (5) After sitting-on-bottom, anti-slip piles shall be installed (when necessary), and their effectiveness in resisting slippage shall be monitored to prevent the unit from sliding.
- (6) Knowing weather forecasts during the lay-up period is required to ensure the safety of the unit.

2.2.4 The safety of laying up a mobile unit in an anchored condition depends mainly on the choice of lay-up location, the mooring arrangement, and the timely availability of essential machinery and personnel. The mooring arrangement shall include the unit's own anchoring equipment (including stern anchors) and anchoring or mooring facilities, such as buoys and/or shore bollards.

The following requirements shall be considered in the selection of mooring arrangement for mobile units:

- (1) If the unit is moored to a buoyancy tank or in an anchored lay-up condition, care shall be taken to avoid excessive sway caused by wind, waves, or tidal changes;
- (2) When the unit is in an anchored condition, the chain cable shall be arranged to prevent entanglement or crossing and to avoid anchor dragging;
- (3) The area where the chain cable comes into contact with the unit shall be adequately protected to prevent friction with the hull;
- (4) When the laid-up unit is subjected to wave impact, the contact point between the chain cable and the unit shall be changed regularly;
- (5) The anchored and laid-up unit shall be equipped with a chain cable of sufficient length, typically about seven times the water depth. The owner shall promptly contact the local port authorities to know the water conditions;
- (6) The shapes and lights shall be in good conditions. If the unit is laid up near a waterway, the deck lighting devices shall be kept in a readily available condition;
- (7) The ballast provided for the unit to reduce the impact of wind, sway and swell shall take into account its impact on the stress of the unit. The final draft mark in the ballast state can be marked at the bow and stern. This mark may be set slightly above the waterline to monitor the watertight integrity of the unit;
- (8) All anchoring equipment shall have a quick-release capability in any emergency, and towing arrangements shall be readily available if the propulsion machinery (where applicable) fails to start;
- (9) All anchors are equipped with indicator buoys;
- (10) If the windlass and mooring winch are electrically driven, adequate power and emergency power shall be provided;
- (11) The position displayed by the positioning device shall be checked regularly during the day and at night (if applicable) to monitor the anchor position of the unit and avoid anchor dragging;
- (12) For laid-up units moored at docks subject to severe tidal fluctuations, attention shall be paid to the changes in their trim and heel. In particular, a watch-keeping system shall be implemented for the units lacking constant tension devices on mooring winches;
- (13) When a unit is moored to buoys or docks using multiple cables in the same direction, care shall be taken to ensure that the load is distributed evenly across all cables, especially under severe sea states or climatic conditions, to prevent uneven force from causing breakage of individual cables and resulting in the unit drifting;
- (14) During the mooring lay-up period, the strength of all proposed bollards and fairlead holes shall also be considered and checked regularly.

Section 3 Record Keeping

2.3.1 Unit personnel shall be provided with and complete a mobile unit lay-up logbook, in order to achieve traceability of reactivation in future.

2.3.2 An inventory of the unit's equipment that is moved ashore shall be prepared and kept.

Section 4 Navigational Safety

2.4.1 An updated nautical chart of the lay-up area shall be readily available onboard the laid-up mobile unit, whereas all remaining chart folios may be landed ashore. (If applicable, not applicable to non-motorized mobile units)

2.4.2 The correct navigation shapes and lights for the lay-up condition of the mobile unit shall be provided.

Section 5 Safety Conditions

2.5.1 Power supply

2.5.1.1 The mobile unit shall maintain a sufficient and readily available power supply, either from independent means on board the unit or from shore.

2.5.2 Manning

2.5.2.1 Watch-keeping personnel are to be provided. The number of watch-keeping personnel depends on the type and size of the mobile unit, its lay-up location and mooring equipment, the shore assistance available in case of emergencies such as fire, leakage, collision and flooding, and the maintenance required to provide adequate preservation.

2.5.2.2 Generally, the owner shall also determine the appropriate number of watch-keeping personnel based on an assessment of possible emergencies, in order to minimize the degree of risk within the unit.

2.5.2.3 The daily maintenance personnel of the mobile unit shall at least meet the minimum manning requirements for maintaining and servicing relevant equipment during lay-up. (It depends on factors such as unit type and lay-up condition, which shall be reflected in the approved lay-up plan.)

2.5.2.4 Unit personnel shall be able to operate basic equipment related to lay-up, such as generator sets, pumps and fire-fighting installations, and operate emergency communication equipment in an emergency and respond according to the emergency response plan.

2.5.3 Fire protection and fire fighting

2.5.3.1 The mobile unit shall meet the following requirements:

- (1) The automatic fire alarm system shall be maintained fully operational and readily available;
- (2) Fire-fighting installations shall be checked regularly and readily available. The fixed foam or CO₂ system, if installed, shall be tested or weighed regularly and maintained in a readily available condition;

- (3) To prevent freezing, the fire main shall be emptied through a drain valve and its discharge valve shall be kept dry;
- (4) Ventilators, air inlets and watertight doors in normally unmanned spaces shall be kept closed;
- (5) All fire dampers shall be inspected to be freely operable and regularly greased whereas dampers that are not required for essential ventilation may be closed;
- (6) Emergency fire pumps shall be regularly checked and maintained in a readily available condition;
- (7) An international shore connection shall be retained in an accessible position on the unit;
- (8) Emergency communication equipment shall be provided and maintained in a readily available condition for use during emergencies.

2.5.4 Protection against explosion

2.5.4.1 Warning notices shall be placed in conspicuous places advising unit personnel of the dangers of entering enclosed spaces. Entry is strictly prohibited unless these spaces are ventilated, gas-freed, and confirmed safe with a gas detector, and the normal safety precautions have been taken.

2.5.4.2 Prior to the lay-up of a mobile unit, all flammable materials, sludge, etc., shall be removed from spaces to be enclosed and taken out of service during lay-up, such as the bilge well, inner bottom, double bottom tank, engine room, pump room and similar spaces.

2.5.4.3 No hot work shall be carried out during lay-up, unless special preventative measures have been taken.

2.5.4.4 For mobile units with oil storage capabilities, cargo tanks and piping systems shall be thoroughly cleaned and ventilated to prevent gas from forming any pockets. An inert gas system is recommended for protection.

2.5.5 Safety equipment

2.5.5.1 All equipment necessary for the routine operation shall be provided, e.g., oxygen and explosion meters where the type of mobile units requires such safety equipment;

2.5.5.2 The usual life-saving appliances such as regularly inspected and maintained liferafts, life jackets, breathing apparatus, oxygen masks and distress signals, shall be provided and made accessible;

2.5.5.3 A sufficient number of approved safety torches shall be available onboard;

2.5.5.4 The transfer arrangement shall be kept in a satisfactory condition.

2.5.6 Emergency power supply

2.5.6.1 The emergency power supply, emergency generator and/or emergency air compressor shall be kept in a readily available condition and tested weekly.

2.5.7 Safety precautions

2.5.7.1 A system of registration of embarkation during the lay-up period shall be established to prevent embarkation of unauthorized personnel.

Chapter 3 Service and Maintenance during Lay-up

Section 1 General Requirements

3.1.1 For the mobile unit, all maintenance and test activities carried out during the lay-up period and the corresponding dates shall be recorded in a lay-up logbook. The nature and frequency of maintenance, inspection and test shall also be defined in the lay-up logbook.

3.1.2 The owner shall take appropriate service and maintenance measures based on the specific conditions of the mobile unit, including its type, equipment, machinery installations and lay-up condition.

Section 2 Unit Structure

3.2.1 The unit structure, weather decks and doors or covers thereon serving as entrances and exits, and hatch covers shall be properly maintained.

3.2.2 All entrances and exits to infrequently used internal spaces shall be closed, while those to frequently used compartments shall be regularly inspected and maintained.

3.2.3 Ventilation mains for all unused compartments shall be closed, while those for used compartments shall be regularly inspected and maintained.

3.2.4 For non-self-elevating mobile units, it is recommended that the impressed current cathodic protection system (if fitted) be continuously operated to protect structures below the waterline. The impressed current cathodic protection system shall be regularly inspected, maintained and monitored (especially, output currents and hull potentials). Sacrificial anodes (e.g., zinc blocks) installed on the structure shall be renewed where necessary before lay-up and inspected regularly.

Section 3 Internal Spaces

3.3.1 Each compartment shall be emptied, cleaned and kept dry as much as possible.

3.3.2 Except for ballast necessary for safety, ballast tanks shall be emptied.

3.3.3 Chain lockers shall be drained, cleaned, properly coated and kept dry. (if applicable)

3.3.4 Fuel oil and lubricating oil tanks shall be drained regularly. Flame screens on fuel tank air pipes shall be in good condition.

3.3.5 Lubricating oil shall be analyzed regularly and replaced when necessary. The tank shall be cleaned before refilling (if applicable).

3.3.6 Empty lubricating oil tanks shall be cleaned and kept dry.

3.3.7 Fresh water or distilled water tanks shall be kept full or empty. Empty tanks shall be cleaned and kept dry.

3.3.8 The bilge and tank top in engine rooms shall be cleaned and kept dry.

3.3.9 Seawater inlet and outlet valves not in use shall be kept closed and secured.

Section 4 Deck Fittings

- 3.4.1 Windlasses, capstans and winches shall be greased regularly.
- 3.4.2 All wire cables shall be kept greased. Visible parts of the chain cable shall be checked regularly.
- 3.4.3 Fairleads and hawse pipes shall be coated if deemed necessary.
- 3.4.4 Oil and water piping on all weather decks not in use during the lay-up period shall be drained, blown through if deemed necessary and kept dry by opening up drains.
- 3.4.5 Electrical equipment and navigational equipment shall be protected by watertight covers.
- 3.4.6 Any mooring ropes or UV-sensitive soft fiber materials shall be stored in a light-proof storage area.
- 3.4.7 Cargo and other lifting gear wires and blocks not retained in use shall be dismantled, greased and stored and gear which is not dismantled shall be protected with grease and covered. Hooks and other objects hanging in air shall be secured.

Section 5 Accommodation Areas and Outfitting

- 3.5.1 Accommodation areas
 - 3.5.1.1 Personnel on a laid-up mobile unit shall be accommodated in a designated area, allowing the remaining areas to be dehumidified or, at a minimum, provided with heaters to reduce humidity to an acceptable level.
 - 3.5.1.2 If personnel use the galley on a laid-up mobile unit, the galley exhaust fan and grease trap shall be checked and cleaned regularly. If the galley facilities on the unit are not used, the arrangements of gas for domestic purpose used by personnel on the unit shall comply with the relevant regulations applicable to sea-going ships.
 - 3.5.1.3 For all unoccupied accommodation areas, dehumidifiers shall be used to reduce humidity and maintain relative humidity at 45% to 55%. Humidity control is particularly important for spaces such as the radio room, central control room and other spaces housing electrical equipment or electronic control equipment.
 - 3.5.1.4 The doors of all material rooms and compartments shall be secured in the open position.
 - 3.5.1.5 The water supply system in unmanned areas shall be turned off.
 - 3.5.1.6 All combustible materials, including bedding (except those essential for daily living), shall be removed from the accommodation house.
- 3.5.2 Outfitting
 - 3.5.2.1 Electrical equipment, communication equipment, etc. on the deck shall be covered and sealed with desiccant placed inside.
 - 3.5.2.2 All loose navigational equipment and other equipment not required during the lay-up period shall be placed in locked storage.
 - 3.5.2.3 Tools and loose equipment in the engine room workshop, electrician workshop and deck

workshop and not required during the lay-up period shall be cleaned, greased and placed in locked storage.

3.5.2.4 If necessary, all loose gear, lifeboat gear, rescue boats and similar equipment shall be removed, protectively coated and placed in locked storage, except for retained safety equipment.

3.5.2.5 On the premise of meeting the use requirements of the watch-keeping personnel, medical and lifeboat perishables shall be moved to the shore base (or to another ship, as required).

3.5.2.6 Any food stuffs, pyrotechnics (especially expired), cotton waste, matches and other items not required during the lay-up period shall be moved to the shore base.

3.5.2.7 Broached drums of chemicals shall be transferred to the shore base.

Section 6 Machinery

3.6.1 Under normal conditions, appropriate anti-freezing measures shall be taken for the equipment and pipelines in use and to be used in the engine room.

3.6.2 Exposed mechanical parts of machinery shall be greased. All rotating machinery, such as diesel engines, reciprocating engines, pumps, turbines, motors and generators, shall be turned over periodically (the lubricating oil system shall be put in operation or proper priming applied). Units shall not be stopped in the same position as the previous one.

3.6.3 The bearing housing shall be emptied, cleaned and then filled with new oil.

3.6.4 For large reduction gearboxes, a fan activating the circulation of hot air in closed circuit with air hoses is to be fitted (intake at the lower part of the housing and discharge at the upper part).

3.6.5 Condensers and heat exchangers shall be drained and kept dry. Desiccant shall be placed in steam spaces. The water chamber shall be flushed with fresh water. The condition of the zinc anodes shall be periodically checked.

3.6.6 Auxiliary machinery

3.6.6.1 Air cylinders shall be drained, opened up and cleaned and applied with protective coating as necessary. Safety valves shall be cleaned and lubricated.

3.6.6.2 Air compressor crankcases shall be drained, cleaned and refilled with clean lubricating oil. Air cylinders and valves shall be lubricated, and coolers shall be drained and dried.

3.6.6.3 Air start lines, air separators, feed water pumps and extraction pumps, air injection pumps, main circulation pumps, and evaporators shall be drained and dried.

3.6.7 Pipes not in use shall be drained and dried.

3.6.8 Diesel engines

3.6.8.1 Daily tank fuel oil outlet pipes and all injection equipment shall be filled with filtered diesel oil.

3.6.8.2 The freshwater system shall be filled with water containing preservatives, and the pH value of the freshwater shall be checked monthly.

3.6.8.3 Oil of hydraulic regulators shall be replaced.

3.6.8.4 Seawater cooling pipes shall be drained.

- 3.6.8.5 Crankcases shall be provided with desiccant (if not used in long-time lay-up).
- 3.6.8.6 Starting valves shall be lubricated (internally and externally).
- 3.6.8.7 The air cylinders and corrosion-prone external parts shall be sprayed with lubricating oil, and the air cylinders and cams shall be sprayed with lubricating oil each month.
- 3.6.8.8 Turbo-compressor/charger ball bearings shall be oil sprayed and rotated regularly for an integer number of revolutions plus one quarter of a revolution.
- 3.6.8.9 Engine intake and exhaust pipes shall be sealed.
- 3.6.8.10 Scavenge spaces shall be cleaned.
- 3.6.8.11 Periodic operational checks of the engine shall be performed.

Section 7 Electrical Equipment

- 3.7.1 Main and emergency switchboards, distribution boards, fuse boards and starters and junction boxes shall be watertight and placed with desiccant.
- 3.7.2 Contacts of relays, circuit breakers and switch circuit breakers shall be coated with neutral grease and set in the open position.
- 3.7.3 Bearings of generators shall be cleaned of old grease and protected with new oil or grease.
- 3.7.4 Carbon brushes shall be lifted off their commutations.
- 3.7.5 For each individual item of electrical equipment rated at 400 V or below, the electrical insulation resistance shall be kept at a minimum of 200,000 Ω , and general insulation shall not be less than 50,000 Ω .
- 3.7.6 For transformers, frequency converters, UPS, battery packs (including self-contained battery-powered equipment), motors and other equipment that are susceptible to damage in long-term lay-up, they shall be maintained and serviced in accordance with the supplier's recommendations.
- 3.7.7 If the battery is still charged, the battery room shall be ventilated.
- 3.7.8 Circuit switching devices that are not frequently operated shall remain in a closed or open state.

Section 8 Boilers (if out of service)

- 3.8.1 Smoke sides of boilers shall be swept, washed clean with hot water and hot air dried.
- 3.8.2 Boiler inlet and outlet pipelines are best closed. Water and steam sides are preferably to be preserved using the dry method, keeping the moisture at the lowest possible level, generally between 30% and 35%.
- 3.8.3 Air heaters shall be cleaned and kept dry.
- 3.8.4 It is recommended to check the internal condition of boilers every three months.

Section 9 Automation Equipment

- 3.9.1 Maintenance for electronic components is the same as Section 7 of this Chapter.

3.9.2 For pneumatic/hydraulic parts, the manufacturer's recommendations shall be followed, and the system shall be checked regularly.

Section 10 Software System

3.10.1 The computer software on the unit shall be backed up.

Section 11 Spares

3.11.1 The removal of spares from a laid-up unit shall be strictly recorded and controlled to determine spares purchases at the time of reactivation.

3.11.2 The obvious absence of machinery components of a laid-up mobile unit may affect any valuation of the unit.

3.11.3 If spare shafts for turbochargers, pumps, or similar equipment are retained on a mobile unit, they shall be securely bolted and suspended from the bulkhead.

3.11.4 All spares shall be protected in line with the requirements of this Chapter.

Chapter 4 Surveys during Lay-up

Section 1 General Requirements

4.1.1 The owner shall inform CCS of a ship laid up with CCS class in writing.

4.1.2 To maintain the class, the laid-up mobile unit shall meet the following requirements:

- (1) An initial lay-up survey is requested at the beginning of the lay-up period;
- (2) An annual lay-up condition survey is carried out during the lay-up period;
- (3) A reactivation survey is requested at the termination of the lay-up period.

Section 2 Initial Lay-up Surveys

4.2.1 The purpose of the survey at the beginning of the lay-up period is to confirm compliance of safety condition, maintenance measures, location and mooring arrangement of the unit with the lay-up maintenance scheme agreed by CCS.

4.2.2 Initial lay-up surveys of mobile units are as follows:

- (1) General inspection of the lay-up condition of mobile units;
- (2) Confirmation of lay-up procedures and lay-up schemes;
- (3) On-site confirmation that all maintenance schemes have been implemented;
- (4) Hull parts, including representative compartments;
- (5) For the electromechanical part of the mobile unit in hot lay-up condition, refer to Chapter 3 of the Guidelines, including all working mechanical and electrical equipment.

4.2.3 Upon satisfactory completion of the initial lay-up survey, a lay-up commencement report of the mobile unit is to be issued, the classification certificate is to be endorsed to the effect that the ship is laid up, and a classification memorandum is to be issued concurrently.

Section 3 Annual Lay-up Condition Surveys

4.3.1 An annual lay-up survey is to be carried out during the lay-up period to determine whether the mobile unit remains in compliance with the lay-up maintenance scheme. The extent of the survey shall include checking whether the lay-up arrangement has been changed, and whether the maintenance and test of mobile units have been carried out in accordance with the maintenance requirements and recorded in the lay-up log.

4.3.2 Surveys during lay-up of mobile units are as follows:

4.3.2.1 General inspection of the lay-up condition of mobile units.

4.3.2.2 On-site confirmation that all maintenance schemes have been implemented according to the lay-up scheme; if maintenance is inadequate, the surveyor shall conduct more intensive surveys and recommend that the owner take necessary measures to ensure the integrity of the equipment.

4.3.2.3 Annual lay-up condition survey, the hull part, including all accessible spaces.

4.3.2.4 For the electromechanical part of the mobile unit in hot lay-up condition, refer to Chapter 3 of the Guidelines, including all working mechanical and electrical equipment, also including inspection of safety valves for equipment.

4.3.3 Mobile units with watch-keeping personnel during lay-up shall meet lifesaving and firefighting requirements.

4.3.4 Upon satisfactory completion of the survey, the classification certificate shall be endorsed.

Section 4 Preparations for Reactivation

4.4.1 General requirements

4.4.1.1 The owner shall inform the Administration in the lay-up area and apply to CCS for the classification and reactivation surveys.

4.4.1.2 Sufficient operators are assigned according to the reactivation requirements.

4.4.2 Preparations

4.4.2.1 All temporary installations installed for maintenance purposes shall be removed. Protective materials and coatings (oil, grease, rust inhibitor, desiccant) applied during the lay-up period shall be removed or proved to be harmless if remaining in the systems.

4.4.2.2 Unit structure

(1) The pile legs/underwater housing (non-self-elevating units) and sea chests are either confirmed free from excessive marine growth, or such growth (if any) has been removed;

(2) Anchoring equipment is to be checked and operated.

4.4.2.3 Safety equipment

All safety equipment is to be checked, with special attention being given to emergency equipment and fire fighting systems.

4.4.2.4 Machinery and jacking system

(1) Samples of lubricating oil are to be submitted for full analysis (when applicable);

(2) All systems are to be checked for completeness and sufficient operation.

4.4.2.5 Boiler (if any)

(1) All burners are to be dismantled and cleaned (if applicable), and the burner oil supply system is to be checked for oil return.

(2) All safety measures and emergency shut-off are to be tested.

4.4.2.6 Diesel engine (depending on the equipment manufacturer's requirements or lay-up time and period)

(1) If anti-rust oil has been used, this is to be removed in accordance with the manufacturer's recommendations. Cooling water for pistons and jackets is to be circulated and checked for leakage.

(2) A complete survey of one cylinder unit with gear as well as two main bearings is to be carried out to check condition of contact surfaces.

(3) Injector nozzles are to be cleaned and adjusted and the fuel system checked for leakage.

(4) Checking of crankshaft deflection is to be considered.

4.4.2.7 Electrical equipment

- (1) All circuits are to be checked insulation resistance to earth;
- (2) All electrical cables and equipment are to be checked;
- (3) Overload trips of all generator breakers are to be checked for satisfactory operation;
- (4) All automated systems, communication lines and interfaces are to be checked for normal operation.

4.4.2.8 Navigational equipment (when applicable)

All navigational equipment is to be verified to be in good order. All required nautical charts and publications shall be up to date.

4.4.2.9 Spares

Spares removed during the lay-up period are to be replenished.

4.4.2.10 Testing

At least the following equipment shall be tested:

- (1) Safety alarms of main generator;
- (2) Automated systems;
- (3) Jacking systems, all pumps and hydraulic systems, alarm systems for all machinery;
- (4) Remote operation of fuel oil, lubricating oil, pumps and valves;
- (5) Bilge pumping systems;
- (6) All fire prevention, explosion prevention and emergency shutdown systems;
- (7) All communication systems;
- (8) All deck machinery and equipment;
- (9) All navigation lights and signal lights.

4.4.2.11 Pile leg system

- (1) All mobile units will experience fouling during the lay-up period. The extent of the fouling depends on the time, location and duration among other factors. Hence the pile legs shall be cleaned and protected against corrosion prior to reactivation of the mobile unit;
- (2) It is recommended to contact the coating supplier for the best cleaning procedure.

4.4.2.12 Anti-fouling system

For mobile units that have met the AFS Convention prior to lay-up:

- (1) All ships will experience fouling during the lay-up period. The extent of the fouling depends on the time, location and duration among other factors. Hence the hull shall be cleaned prior to reactivation of the ship;
- (2) It is recommended to contact the coating supplier for the best cleaning procedure;
- (3) The most common in-water cleaning methods are rotating brushes or flushing. Brushing is mainly used on conventional anti-fouling coatings and hard coatings. Rotating brushes can damage and remove some of the anti-fouling coatings. Depending on the local environmental legislation, one may be required to get a permit to carry out this kind of work as coating fragments

are released to the environment;

(4) It is not unlikely that during the cleaning operation, the anti-fouling system is damaged to such an extent that reapplication of anti-fouling coating in dry dock will be necessary.

Section 5 Reactivation Surveys

4.5.1 General requirements

4.5.1.1 The owner shall inform CCS of termination of the lay-up period and apply for the following surveys prior to the reactivation the mobile unit:

- (1) an occasional survey, the extent of which depends on the duration of the lay-up period and the surveys carried out during the lay-up period;
- (2) all other surveys after construction that are being held in abeyance according to 1.1.3, taking into account the requirements in 1.1.4.

4.5.1.2 Where the reactivation date is beyond the original due date of the special survey which is held in abeyance according to 1.1.3, and where surveys have been carried out according to 1.1.4, a complete special survey shall be carried out prior to the reactivation of the mobile unit. Those items which have been surveyed in compliance with the special classification survey requirements within 15 months preceding the reactivation may be credited.

4.5.2 Scope of survey

4.5.2.1 General requirements

- (1) a general inspection of the unit structure, deck fittings, safety equipment and machinery installations (including boilers and pressure vessels the surveys of which are not due);
- (2) all surveys due at the reactivation date or which became overdue or due during the lay-up period.

4.5.2.2 Surveys of the outside of the unit's bottom and related items

Surveys of the outside of the unit's bottom and related items shall be carried out if the lay-up period exceeds the normal window period for them.

If the surveyor suspects damage to the underwater structure or obstruction of the sea floor suction port, surveys of the outside of the unit's bottom and related items shall also be carried out even if the lay-up period does not exceed the normal window period for them.

4.5.2.3 Survey items of unit structure

- (1) inspection of shell plating, deck plating, hatch covers and coamings;
- (2) inspection of load line items;
- (3) thorough inspection of all compartments;
- (4) thorough inspection of representative ballast tanks when the lay-up period does not exceed two years;
- (5) thorough inspection of all ballast tanks when the lay-up period exceeds two years;
- (6) function test of bilge and ballast systems.

4.5.2.4 Survey items of fire prevention and explosion prevention systems and deck fittings

- (1) inspection and test of fire prevention, explosion prevention, detection and emergency shutdown systems;
- (2) inspection of the fire main and jetting piping system under working pressure;
- (3) where possible, inspection of the deck piping system under working pressure;
- (4) function tests of class items.

4.5.2.5 Survey items of machinery installations (depending on the requirements of the equipment manufacturer or the lay-up time and period)

- (1) inspection of diesel engine, depending on the lay-up time, period and equipment manufacturer's requirements;
- (2) condition inspection of condensers, heat exchangers and expansion arrangements;
- (3) operation test of safety valves of boilers and air cylinders;
- (4) test of bilge level alarms, if fitted;
- (5) operation test of all other auxiliary machinery and equipment, and verification of protection devices;
- (6) pressure test of all piping systems for leakage detection and survey of overpressure release; inspection of the connections on the pipeline, their respective valves and non-metallic expansion arrangements.
- (7) inspection of the fire fighting system, including fire pumps and emergency fire pumps, and operational tests.
- (8) security inspection of fire doors and airlocks in hazardous areas.

4.5.2.6 The main and emergency electrical installations shall be tested. The parallel shedding of main generators and main switchboard safety devices shall be checked. The grounding system of each equipment and line shall be inspected.

4.5.2.7 Tests of lifting mechanism, safety and alarm devices of self-elevating units.

4.5.2.8 Other survey items required by the Administration.

4.5.2.9 For cold or long-term lay-up, it shall also include:

- (1) verification of the satisfactory performance of deck fittings and essential auxiliaries, including a test of the safety devices;
- (2) an anchoring test;
- (3) tests of automated machinery system, where applicable.

4.5.3 Upon satisfactory completion of the surveys, the classification certificate will be reissued, and the unit condition is changed from lay-up to operational.

Chapter 5 Statutory Documents and Certificates

Section 1 Statutory Certificates during Lay-up

5.1.1 The statutory certificates and related documents for which the corresponding surveys are not conducted during the lay-up period shall be sealed up. Those for which surveys are still required during lay-up shall be implemented in accordance with normal survey requirements (such as lifting appliance and radio equipment for rescue).

Section 2 Statutory Certificates for Reactivation Surveys

5.2.1 All due and overdue statutory surveys shall be carried out.

5.2.2 If the reactivation survey time is within the validity period of the statutory certificate, the required statutory survey items shall be carried out to ensure the certificate remains valid.

5.2.3 Statutory certificates typically require a renewal survey at intervals not exceeding five years. If the reactivation date of the mobile unit exceeds the renewal window of the statutory certificate, it is necessary to complete all overdue statutory renewal surveys, and the validity period of the classification certificate shall be harmonized with that of the statutory certificate.

5.2.4 Any changes or revisions to international conventions, e.g., since the time when international conventions were formulated, or any new requirements imposed by the flag State Administration on the unit, shall be surveyed.

Appendix: Summary of Lay-up Considerations for Each Condition

	Mobile unit in hot lay-up	Mobile unit in cold lay-up	Mobile unit in long-term lay-up
Laid-up status reported by owner	X	X	X
Inspection of lay-up procedures	X	X	X
Anchoring surveys	*	*	X
Initial lay-up surveys	X	X	X
Manning	The requirements specified for minimum watch-keeping personnel of the unit to be complied with	Only requirements related to fire, flooding, mooring and security watch to be complied with	Only requirements related to fire, flooding, mooring and security watch to be complied with
Control of spares for mobile units	Crew onboard to control spares removal	Strict procedures to be in place to control spares removal	Strict procedures to be in place to control spares removal
Generator for use during lay-up	As required	Deck generator	Deck generator
Dehumidification equipment for use during lay-up	As required	Required	Required
Annual lay-up condition surveys	X	X	X
Reactivation surveys	X	X	X
Inspection of reactivation survey procedures	X	X	X
X - Required; * - Based on the owner's requirements.			