



CHINA CLASSIFICATION SOCIETY

RULES FOR CLASSIFICATION OF MOBILE OFFSHORE UNITS

PART SIX AUTOMATED SYSTEM

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CHAPTER 1 GENERAL

Section 1 GENERAL PROVISIONS

1.1.1 General requirements

1.1.1.1 This PART applies to the units which are provided with automated systems for machinery and electrical installations.

1.1.1.2 Although the requirements contained in this part include those of IMO's Code for the Construction and Equipment of Mobile Offshore Drilling Units, particular attention is to be given to any relevant statutory provisions of the Administration of the State in which the unit is registered and of the Administration of the State in whose waters the unit is to operate.

1.1.1.3 The automated system covers control, safety and alarm systems (including displays).

1.1.1.4 Units with different levels of automation complying with the requirements of this part may be assigned the following class notations:

(1) AUT-0 — to be assigned to the units with propelling plant or main machinery installations remotely controlled from the bridge or the main control station, and with machinery space including centralized control station (room) in machinery space periodically unattended.

(2) MCC — to be assigned to the units with centralized control of machinery and electrical installations from machinery space.

(3) BRC — indicating that the ship's propulsion plant can be remotely controlled from the bridge control station with the engine room attended by watch-keepers.

1.1.1.5 The safety of the units with the automated systems as specified in this part is to be same as that of the units with machinery spaces being attended. Means are to be provided to ensure that the machinery and electrical equipment can be manually and effectively operated from a local position in case of failure of the automated systems.

1.1.1.6 This PART specifies only requirements for the design and installation of essential control devices related to propulsion and safety of the unit. The performance, manufacture and test of related electrical equipment are to comply with the relevant requirements of PART FIVE of the Rules and Chapters 1 and 3, PART FOUR of CCS Rules for Classification of Sea-Going Steel Ships. However, the environmental conditions are to comply with Section 2 of this Chapter.

1.1.2 Definitions

1.1.2.1 For the purpose of this part:

(1) Automatic control means self-regulating control carrying out predetermined orders to operate the machinery without action by an operator.

(2) Remote control means control of a device by an operator from a distance through mechanical, electrical, electronic, pneumatic, hydraulic, electromagnetic (radio) or optical means or combination thereof.

(3) Local control means direct manual control by an operator of machinery through a device located on or adjacent to the controlled machinery.

(4) Control station (room) means spaces fitted with monitoring means capable of controlling the safety equipment, production and process equipment, and general machinery and electrical installations. They are mainly divided into three categories as follows in this Chapter:

- ① Main control station (centralized control station/room) means the space in which monitoring means for all automated installations are concentrated and operations of such installations are monitored under normal conditions;
- ② Local control station means the control station where machinery and electrical installations are locally controlled on or adjacent to them;

- ③ Auxiliary control station means control stations other than the above-mentioned two ones.
- (5) Safety systems mean systems which will operate automatically for safeguarding the machinery or electrical equipment in question in the following three modes of operation in case of serious faults endangering the main propulsion plant, generating station, production facilities and other essential machinery or electrical equipment:
- Mode a: Immediate shutdown, e.g., emergency cutoff of boiler fuel oil and emergency cutoff of electric power supply to consumers. And such machinery or equipment is not to be put into operation again if without the manual resetting;
- Mode b: The operation of the machinery is temporarily adjusted to the prevailing conditions, e.g., by reducing the output or speed of the propulsion plant;
- Mode c: The normal operating conditions are restored by starting of standby machinery.
- (6) Alarm means an audible and/or visual signal of a predetermined out-of-limits parameter for the monitored machinery or system, which could identify the specific fault conditions and positions within machinery spaces.
- (7) Group alarm means a common alarm activated by any abnormal conditions of the monitored machinery or system.
- (8) Safety communication means one-way audible and visual alarm, voice broadcast, and two-way audible, visual and voice communication provided for ensuring the safety of the complete installation and the personnel.
- (9) Fail-safe principle means that upon failure or malfunction of a component or system, the output automatically reverts to a predetermined design state of least critical consequence.
- (10) Override means the special control measures for the skipping of a certain procedure or a certain safeguard action so as to effect compulsory operation to the machinery or electrical equipment for a short period to ensure the safety of the unit or to minimize damage.
- (11) Emergency shutdown device means device independent of control system and intended for manual activation in an emergency to stop the operation of machinery and electrical installations.
- (12) Network means a communication net for data transfer and exchange between computers.
- (13) Redundancy design means standby technical means to be used in case of system or equipment fault, by which a corresponding function can be taken over to continue an action or an original function is restored to continue the operation condition.
- (14) Node means a point of interconnection to a data communication link.
- (15) Major modification means one of the following cases or a combination thereof which will cause a substantial change to functions or safety features of an onboard computer system (excluding peripherals):
- ① change of hardware configuration;
 - ② update of software;
 - ③ alteration of network (including topology structure).

1.1.3 Plans and information

1.1.3.1 When it is intended to build a unit to be classed with CCS, the following plans and information are to be submitted in quadruplicate to CCS for approval before commencement of construction. Additional plans and information for machinery and production and process equipment may be required for approval if considered necessary by CCS.

1.1.3.2 The following plans and information, if applicable, are to be submitted to CCS for approval:

- (1) List of monitored and display points;

(2) List of alarm points (including display position and mode of alarms in the control station/room);

(3) Items of safety systems;

(4) Schematic diagrams of (electric, pneumatic, hydraulic) power supply to automated systems.

(5) The plans of computer systems submitted are to comply with the relevant requirements specified in Chapter 1, PART SEVEN of CCS Rules for Construction and Classification of Sea-Going Steel Ships.

1.1.3.3 The following plans and information are to be submitted for information:

(1) Specifications of automated systems, including:

- ① schematic diagrams and function instructions of automatic and remote control systems;
- ② details of monitoring functions in control station (room) (including the control changeover between control stations/rooms);
- ③ setting of alarm points, specifications of test method and self-monitoring function for alarm systems.

(2) List of the relevant equipment associated with automatic/remote control.

1.1.3.4 Additional plans and information are to be submitted for approval as deemed necessary by CCS.

1.1.4 Fail-safe

1.1.4.1 The automated systems are to be designed according to the “fail-safe” principle. The characteristics of the “fail-safe” operation are to be evaluated on the basis not only the systems and their associated machinery, but also the whole installation including personnel safety.

1.1.4.2 The automated systems are to be so designed that a failure in the operation will not cause other failures and will, so far as possible, lead to the least dangerous condition of the controlled process.

1.1.4.3 The automatic control and remote control systems are to be ensured in continuous, effective and reliable operation conditions.

1.1.5 Independence

1.1.5.1 The automated systems are to be designed or rendered to function independently of each other so that a failure or malfunction in one or two of these systems will not prevent the other system(s) from operating.

1.1.5.2 In any case, a safety system of mode a is to function independently of control and alarm systems so that a failure or malfunction in these systems will not prevent the safety system from operating. For the safety systems of modes b and c, complete independence of other control and alarm systems is not required.

1.1.5.3 Safety systems of different units of the machinery plant are to be independent. Failure in the safety system of one part of the plant is not to interfere with the operation of the safety system in another part of the plant.

1.1.6 Examination and lock-in

1.1.6.1 The automated systems are to be capable of being examined for their functions. Where the settings of sensitivity, limiting, etc. of the controls, alarms and safety equipment may be regulated, these settings are to be easily examined, identified and locked-in.

1.1.7 Safe communication

1.1.7.1 The sound of signals and alarms used for different purposes are to be readily identifiable by means of different tones and loudness.

1.1.7.2 In spaces where noises are high, audible signals are to be sufficiently loud and supplemented by lighting.

1.1.7.3 All combined automatic audible and visual alarms are to be provided with means to cut off the audible signal, but without cutting off the visual signal.

1.1.7.4 Suitable communication means are to be provided between the main control station, auxiliary control stations, office of the unit's manager, office of suppliers and accommodation spaces of operating personnel.

1.1.8 Power supply

1.1.8.1 The control, alarm and safety systems are to be served by feeders from the main switchboard or the emergency switchboard, if fitted. The safety and alarm systems as well as those control systems requiring continuous supply of power (e.g. the automated system of an electric generating plant and the computer system of a centralized control station) are to be capable of being automatically changed over to a separate standby battery or UPS in the event of failure of the main power supply. The capacity of the battery or UPS is at least to be sufficient for a period of supply of 30 min.

Where such systems could be adversely affected by an interruption in power supply, change-over to the standby power supply is to be achieved without a break.

1.1.8.2 Audible and visual alarms are to be given for the safety, alarm and control systems in the event of a failure of the normal power supply.

1.1.8.3 The control, safety and alarm systems are to be supplied by final separate sub-circuits and protected against short circuit and overload.

1.1.9 Miscellaneous

1.1.9.1 A system of alarm displays and controls is to be provided which readily ensures identification of faults in the machinery and satisfactory supervision of related equipment. This may be provided at a main control station (e.g. bridge control station, engine room centralized control station (room)), or alternatively, at subsidiary control stations (e.g. local control stations, other control stations). In the latter case, a master alarm display is to be provided at the main control station showing which of the subsidiary control stations is indicating a fault condition.

1.1.9.2 Communications of alarms from machinery spaces to the bridge area and accommodation for engineering personnel are to be such that this watch-keeper is made aware when:

- (1) a machinery fault has occurred;
- (2) the machinery fault is being attended to (e.g. acknowledging, silencing);
- (3) the machinery fault has been rectified.

Alternative means of communication between the bridge area, the accommodation for engineering personnel and the machinery spaces (CCS or local control stations) may be used for this function.

1.1.9.3 If a main control station or several subsidiary control stations are provided, transfer of control is to comply with the requirements of 2.5.2 of this Chapter.

Section 2 ENVIRONMENTAL AND OPERATING CONDITIONS

1.2.1 Environmental conditions

1.2.1.1 The control devices and safety communication systems are to operate satisfactorily at an ambient air temperature range as specified in Table 1.2.1.1.

Location of installation	Temperature (°C)
Open decks, uninsulated deckhouses	-25 ~ +55

Other spaces	+5 ~ +55
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1.2.1.2 The automated systems are to operate satisfactorily under the following conditions of relative humidity:

95% ± 3% at temperatures up to +45°C;
70% ± 3% at temperatures higher than +45°C.

1.2.1.3 The automated systems are to operate satisfactorily under the vibration conditions listed in Table 1.2.1.3. Where resonance occurs in the following frequency ranges and exceeds the values specified below, suitable means are to be provided for vibration damping.

Vibration **Table 1.2.1.3**

Location of installation	Parameter of vibration	
General spaces	2.0Hz ~ 13.2Hz Amplitude ± 1 mm	13.2Hz ~ 100Hz Acceleration ± 0.7 g
On reciprocating engines (e.g. diesel engines, air compressors) and other similar spaces	2.0Hz ~ 25Hz Amplitude ± 1.6 mm	25Hz ~ 100Hz Acceleration ± 0.7 g
Other special locations (e.g. exhaust pipes of diesel engines, particularly medium or high speed engines)	40Hz ~ 2000 Hz Acceleration ± 10.0g (temperature 600°C)	

1.2.1.4 The automated systems are to be suitable for the normal conditions encountered on board the unit, e.g. salt air, oil-laden atmosphere, mould and dust.

1.2.1.5 The automated systems are to comply with the requirements of inclination and swing specified in Table 1.2.1.1(2) of PART FIVE.

1.2.2 Other operating conditions

1.2.2.1 The automated systems are to operate satisfactorily under the conditions stipulated in 1.2.2 and 1.2.3 of Section 2 of Chapter 1 of PART FIVE of the Rules.

1.2.2.2 The automated systems are to have necessary electromagnetic compatibility.

1.2.2.3 The hydraulic and pneumatic equipment of automated systems is to operate satisfactorily under pressure variations in them by ±20% of the rated values and is not to be damaged by transient pressure-rise up to 1.5 times the rated pressure.

CHAPTER 2 BASIC REQUIREMENTS

Section 1 GENERAL PROVISIONS

2.1.1 General requirements

2.1.1.1 This Chapter applies to the design and installation of control devices.

2.1.1.2 The main components comprising the control, alarm and safety systems are to hold the marine product certificates issued by CCS.

2.1.1.3 Where the equipment is required to operate in a controlled environment condition, an alternative means is to be provided to maintain the required environment in the event of a failure of the normal air-conditioning system.

Section 2 CONTROL SYSTEMS

2.2.1 General requirements

2.2.1.1 The control system consists of automatic and remote control systems.

2.2.1.2 Control systems are to have sound control properties. Control systems and the controlled machinery and electrical equipment are to be operated in a stable condition within their working ranges so that the operation of the controls will not induce detrimental mechanical or thermal loads. Control systems are also to have necessary accuracy of control.

2.2.1.3 The design of the control system is to be such that a failure in the control system will lead to the least dangerous condition of the controlled process and furthermore, such failure is not to render any reserved automatic and/or manual control, or both, inoperative.

2.2.1.4 Remote or automatic controls are to be provided with sufficient instrumentation at the relevant control stations to ensure effective control and indicate that the system is functioning correctly.

2.2.1.5 In the case of failure in any part of the automatic or remote control system, the system is to be capable of:

- (1) giving alarm signals; or
- (2) replacing immediately faulty component(s) or putting the back-up arrangements into service in time for recovering normal operation; or
- (3) transferring smoothly to local manual control.

2.2.1.6 Local manual control stations are to be provided with instrumentation to ensure effective control of machinery, production and process equipment.

2.2.1.7 When control systems are provided with means to adjust their sensitivity or set point, the arrangements are to be such that the final settings can be readily identified.

2.2.1.8 Control systems for the main propulsion plant (including main engine and controllable pitch propeller), boilers and generating station are to be independent of each other unless necessary for operation. The control system for each independent propulsion engine is to be provided separately.

2.2.1.9 For a self-propelled unit, where the propulsion machinery is remotely controlled from the navigation bridge, regardless of machinery spaces being attended or not, automation systems are to be designed in a manner such that a threshold warning of impending or imminent slowdown or shutdown of the propulsion system is explicitly given to the officer in charge of the navigational watch in time to assess navigational circumstances in an emergency. In particular, the systems are to control, monitor, report, alert and take safety action to slow down or stop propulsion while providing the officer in charge of the navigational watch an opportunity to manually intervene (override), except for those cases where manual intervention will result in total failure of the

engine and/or propulsion equipment within a short time, for example in the case of overspeed.

2.2.2 Hydraulic and pneumatic power sources

2.2.2.1 The hydraulic power source and piping system of control systems are to comply with the relevant provisions in Chapter 2 and Section 12 of Chapter 3 of PART FOUR of the Rules. The standby hydraulic pump is to start and operate automatically when the discharge pressure from the working pumps falls below a predetermined value and an alarm is to be given; where the hydraulic pressure is lower than the required normal working pressure, an alarm is to be given.

2.2.2.2 The pneumatic power source of control systems are to comply with the relevant provisions in Chapter 2 of PART FOUR of the Rules and the following requirements:

- (1) Air vessels for pneumatic controls may be supplied from the aerodynamical manifold or from exclusive air compressors;
- (2) Where air vessels are supplied from the exclusive air compressors, at least two compressors are to be provided, one of which is standby. The standby air compressor is to start and operate automatically when the air pressure falls below a predetermined value;
- (3) Relief valves are to be fitted in the pneumatic control piping, which are to be set to open at a pressure equal to 1.1 times the normal working pressure;
- (4) Reducing valves, filters, driers and oil separators of the compressed air in the pneumatic control piping are to be provided so as to ensure dry, clean and oil-free air to the pneumatic controls. The reducing valves, filters and driers are to be, in general, fitted each in duplicate and in parallel. The provision of a single filter and a single drier may be permitted, provided that means are provided to ensure quick maintenance and renewal of the above-mentioned devices without interrupting the normal operation of the pneumatic control system.

Section 3 SAFETY SYSTEMS

2.3.1 General requirements

2.3.1.1 In case of serious faults endangering the main propulsion plant, generating station, production facilities and other essential equipment, the safety systems are to operate automatically for safeguarding the machinery or electrical equipment in question in the three modes of operation required in 1.1.2.1 (5) of this Chapter and alarms are to be given in the relevant control stations.

2.3.1.2 Where the machinery and electrical equipment is stopped due to the action of safety system, such equipment is not to be restarted automatically before a manual reset has been made.

2.3.1.3 The safety systems are to be designed to operate independently of the control and alarm systems, such that a failure or malfunction in the control and alarm systems will not prevent the safety system from operating.

2.3.1.4 Safety systems for different items of the machinery plant are to be arranged so that failure of the safety system of one part of the plant will not interfere with the operation of the safety system in another part of the plant.

2.3.1.5 When a safety system is activated, an audible and visual alarm is to be provided in the control station to indicate the cause of the safety action.

2.3.1.6 When safety systems are provided with means to adjust their set point, the arrangements are to be such that the final settings can be readily identified.

2.3.1.7 In order to avoid undesirable interruption in the operation of machinery, the system is to intervene sequentially after the operation of alarm system by the following means so as to reduce the hazards as far as possible:

- (1) starting and use of standby units;
- (2) load reduction or shutdown.

2.3.2 Means of overriding

2.3.2.1 For the purpose of ensuring the safety of units, main propulsion machinery systems, such as main diesel engines, steam turbines, gas turbines and electric propulsion plant, are in general to be provided with arrangements for overriding.

2.3.2.2 An indication is to be given and a suitable alarm is to be activated when an overriding action is operated.

2.3.2.3 The arrangement and configuration of overriding push buttons is to be such that inadvertent operation is precluded.

2.3.3 Pneumatic power source and piping system

2.3.3.1 The pneumatic power source and piping system of safety systems are to be in compliance with the provisions of 2.2.3 of this Chapter, and the pneumatic pipe system is to be as far as practicable separated from the control systems.

Section 4 ALARM SYSTEMS (INCLUDING DISPLAYS)

2.4.1 General requirements

2.4.1.1 An alarm system, which will provide warning of faults in the machinery, production and process equipment, and the safety and control systems is to be installed.

2.4.1.2 All faults of the controlled and monitored machinery or electrical equipment and their control and monitoring systems are to be indicated with alarm signals at the relevant control stations (rooms) to advise duty personnel of a fault condition.

2.4.1.3 All alarms are to be both audible and visual. Visual signals are to be clearly visible. The color used for visual signals is to be, in general, red for vital faults and yellow for general ones. Audible signal is to be of an adequate sound level. Alarms associated with machinery faults are to be clearly distinguishable from other alarms (e.g. fire alarm, telephone signal) in light color and sound tone.

2.4.1.4 The alarm system is to be capable of indicating all faults occurred at the same time, and the operation and/or acknowledgement of any alarm is not to inhibit the operation and/or acknowledgement of other alarms occurred at the same time.

2.4.1.5 When alarms are acknowledged, the audible alarms are to be silenced and at the same time the visual alarms are to be altered, for example, from flashing to a steady light, but the visual alarms are to be retained until faults are being rectified and the alarm system is automatically reset to its normal operating condition. The silencing push button for the audible alarms in machinery spaces is permitted to be arranged only in the machinery space or at the engine room centralized control station.

2.4.1.6 Where a single alarm has been shown in the centralized control station/room or main control station of engine room, the alarm signal is also to be shown in other relevant auxiliary control stations and may be displayed by means of group alarm.

2.4.1.7 The alarm system is to be designed as far as practicable to function independently of control and safety systems such that a failure or malfunction in these systems will not prevent the alarm system from operating.

2.4.1.8 When alarm systems are provided with means to adjust their set point, the arrangements are to be such that the final settings can be readily identified.

2.4.2 Self-monitoring, inspection and lock-in of alarm systems

2.4.2.1 The alarm system is to be designed with self-monitoring properties, i.e., any fault in the alarm system itself will cause it to detect automatically and fall into the alarm (or indication) condition. The extent and depth of self-monitoring is to be determined in connection with the measures taken for maintenance and renewal. In so far as practicable, any fault in the alarm system will cause it to fail to the alarm condition.

2.4.2.2 The alarm system is to be capable of blockading meaningless signals during certain processes. Manual blockading is to be indicated.

2.4.3 Displays

2.4.3.1 Instruments and displays can be used to display parameters. Parameters can be displayed separately or selectively; parameters can be displayed by text or graphics; but the display shall be clear. The light color of indicator light signal is generally green or white. [The display and display requirements for computers shall meet the International Electrotechnical Commission \(IEC\) *Electrical Installations in Ships - Part 504: Special Features - Automation, Control Devices and Instrumentation* \(IEC 60092-504\).](#)

2.4.3.2 Alarms displayed on display units are to be displayed in the order in which they occur. Alarms requiring shutdown or slowdown action are to be given visual prominence.

Section 5 CONTROL STATIONS (ROOMS)

2.5.1 Arrangement of control stations (rooms)

2.5.1.1 The engine room centralized control station (room) is generally to be located within the machinery spaces.

2.5.1.2 The centralized control station is to be located as far as possible in a position of least vibrations and of low noise level.

2.5.1.3 The centralized control station within the machinery spaces is to be of the sound-proof construction, with the window glass of the shatter-resistant type. The centralized control station is to have two means of access located as far remote from each other as practicable, and one of which is to be as far as possible situated near the escape trunk of the machinery spaces or the special purpose escape trunk.

2.5.1.4 The control and monitoring equipment, signal displays, control levers, switches and push buttons within the control stations (rooms) are to be arranged with due attention to thorough ergonomics for the convenience of operation, surveillance, maintenance and the safety of the operators.

2.5.1.5 The local control stations are to comply with the relevant requirements of 1.1.1.5 and 2.5.2 of this part. It is to be possible for the main propulsion machinery to be controlled from a local position even in the case of failure or malfunction in any part of the automatic or remote control systems of any other control station or the propulsion machinery.

2.5.2 Transfer of control

2.5.2.1 Transfer of control between control stations is to be possible to the machinery and electrical equipment under common control from such stations, either when these machinery and electrical equipment are in normal operation or in case of their failures. Such changeover is not to seriously affect the operating conditions of the machinery and electrical equipment.

2.5.2.2 Control of machinery and associated equipment is to be possible only from one station at a time.

2.5.2.3 Provision is to be made at the main control station and any other auxiliary control station from which the main propulsion and auxiliary machinery or associated equipment may be controlled to indicate which station is in control. The system is to be provided with interlocks or other suitable means to ensure effective transfer of control.

2.5.2.4 Changeover between control stations is to be so arranged that it may be effected only with the acceptance of the station taking control.

2.5.2.5 Provision is to be made at all control stations (rooms) to indicate which station is in control.

2.5.2.6 Where machinery and electrical equipment may be controlled from two or more control stations (rooms), control is to be possible only from one control station at one time. At all control

stations, interconnected control positions for the controllers for main propulsion machinery are permitted.

2.5.2.7 For a self-propelled unit, propulsion plant orders from the navigating bridge are to be indicated at all control positions for the machinery.

2.5.2.8 Where the manual control gear of the main propulsion plant or other machinery and electrical equipment is extended directly to the centralized control station by means of mechanical linkage, the provision of corresponding LCS may be exempted.

2.5.2.9 Provision is to be made at the main control station, or auxiliary control stations as appropriate, for the operation of an engineers' alarm which is to be clearly audible in the engineers' accommodation, mess room, meeting room, etc.

Section 6 COMPUTER SYSTEMS

2.6.1 General requirements

2.6.1.1 This Section applies to the computer systems, including programmable electronic systems, installed onboard classed units, which provide control, alarm, monitor or safety functions compliance with classification requirements; however, this Section does not apply to loading computers and radio communication, navigation aids, etc. that already have specific performance standards from IMO.

2.6.1.2 The computer systems are to comply with the relevant requirements of Chapter 2, PART SEVEN of CCS Rules for Classification of Sea-Going Steel Ships.

Section 7 SENSORS

2.7.1 General requirements

2.7.1.1 The sensors are to give stable and normal operational performance over a long period of time. The measuring range and frequency characteristics (if applicable) of sensors are to be consistent with the expected maximum variation range and variation of velocity of the parameters being detected. The sensors are to have appropriate accuracy and sensitivity.

2.7.1.2 The sensors are to have sound compatibility with the environmental conditions at their positions. The sensors are to be mechanically robust and durable, having good mechanical protection, reliable electrical connections and good insulated property.

2.7.1.3 The sensors are to be so positioned that they can properly reflect the monitored parameters and are readily accessible for testing and renewal. In order to carry out the maintenance and renewal conveniently, a protective cover is to be fitted for sensors. Where the sensors are located in the positions inaccessible for renewal, a standby sensor is to be fitted.

2.7.1.4 An independent sensor is to be provided for Mode a protective action (1.1.2.1(5) of this Chapter); if not specially required, for Mode b protective action, a common sensor with display and alarm is permitted to use; for Mode c protective action, a common sensor with its own alarm is permitted to use.

CHAPTER 3 REQUIREMENTS FOR CLASS NOTATION AUT-0 OF PERIODICALLY UNATTENDED MACHINERY SPACES

Units applying for a class notation of AUT-0 are to comply with the applicable requirements of Chapter 3, PART SEVEN of CCS Rules for Classification of Sea-Going Steel Ships.

CHAPTER 4 REQUIREMENTS FOR CLASS NOTATION MCC OF CONSTANTLY ATTENDED MACHINERY SPACES

4.1.1 Units applying for a class notation of MCC are to comply with the applicable requirements of Chapter 4, PART SEVEN of CCS Rules for the Classification of Sea-Going Steel Ships.

4.1.2 Units applying for a class notation of BRC are to comply with the applicable requirements of Chapter 4, PART SEVEN of CCS Rules for the Classification of Sea-Going Steel Ships.