



GUIDE FOR

AUTOMATIC OR REMOTE CONTROL AND MONITORING FOR MACHINERY AND SYSTEMS (OTHER THAN PROPULSION) ON OFFSHORE INSTALLATIONS

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Foreword

This Guide has been prepared to assist the industry to obtain the optional classification notations relative to the automatic or remote control and monitoring systems for the machinery and systems on offshore installations. This Guide is intended to apply to the automatic or remote control and monitoring systems for non propulsion related machinery and systems on offshore floating installations or fixed installations.

In association with ABS's current **ACC** and **ACCU** notations applicable to the automatic or remote control and monitoring systems for propulsion machinery and propulsion associated auxiliary machinery on a vessel, this Guide with **AMCC** and **AMCCU** notations will cover the automatic or remote control and monitoring of the machinery and systems not associated with propulsion. This Guide is applicable to the controls and monitoring systems of the machinery and systems, other than propulsion related machinery, as listed in Subsection 1/1 of this Guide, when the optional Class notation **AMCC** or **AMCCU** is requested.

Where, in lieu of manning the machinery space(s) locally, it is intended to control and monitor the machinery under continuous supervision from a local centralized control and monitoring station(s) located within or adjacent to the machinery space(s), a class notation **AMCC** will be assigned. Where it is intended that the machinery space(s) and the local centralized control and monitoring station(s) (if provided) be periodically unmanned and that the machinery be controlled and monitored from a remote control and monitoring center located outside the machinery space(s), a Class notation **AMCCU** will be assigned.

This Guide becomes effective immediately upon publication.

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SECTION 1 General

1 Application and Scope

This Guide is intended to be used exclusively for the automatic and remote controls and monitoring of machinery and systems not related to propulsion installed on fixed or floating offshore vessels. The optional classification notations **AMCC** and **AMCCU** do not cover the instrumentation and control systems for the hydrocarbon production and process system or the automatic or remote control of the propulsion machinery/systems. They are specified in Chapter 3, Section 7 of the ABS *Rules for Building and Classing Facilities on Offshore Installations (Facilities Rules)* and Part 4, Section 9 of the ABS *Rules for Building and Classing Steel Vessels (Steel Vessel Rules)*, respectively.

This Guide applies to controls and monitoring of the following machinery/systems (not related to propulsion), as applicable, where the optional Class notation **AMCC** or **AMCCU** is requested:

- Diesel engines
- Steam turbines
- Gas turbines
- Oil fired boilers
- Crude oil or slops or methane gas burning boilers
- Electric power generating plants
- Exhaust gas thermal oil heaters
- Fired thermal oil heaters
- Gas fired internal combustion engines
- Hazardous liquid handling machinery/systems
- Incinerators
- Inert gas generators
- Nitrogen generators
- Waste heat boilers
- Fuel oil systems

3 Optional Classification Notations

3.1 AMCC

Where, in lieu of manning the machinery space(s) locally, it is intended to control and monitor the machinery/systems, as listed in Subsection 1/1, under continuous supervision from a local centralized control and monitoring station(s), the provisions of Subsection 1/9 and Section 2 are to be complied with. The Class notation **AMCC** will be assigned upon verification of compliance and upon satisfactory tests carried out in accordance with the provision of 1/9.17.

3.3 AMCCU

Where it is intended that the machinery space(s) and the local centralized control and monitoring station(s) (if provided) be periodically unmanned, and that the machinery/systems, as listed in Subsection 1/1, be controlled and monitored from a remote control and monitoring center located outside the machinery space(s), the provisions of Subsection 1/9, Section 2 and Section 3 are to be complied with. The Class notation **AMCCU** will be assigned upon verification of compliance and upon satisfactory tests carried out in accordance with the provision of 1/9.17.

3.5 Periodical Survey

The continuance of validity of these notations is subject to periodical survey of the Automatic or Remote Control and Monitoring for Machinery/Systems as specified in 7-2-4/17 of the *ABS Rules for Building and Classing Floating Production Installations (FPI Rules)*.

5 Definitions

5.1 Alarm

Visual and audible signals indicating an abnormal condition of a monitored parameter.

5.3 Control

The process of conveying a command or order to enable the desired action to be effected.

5.5 Control System

An assembly of devices interconnected or otherwise coordinated to convey the command or order.

5.7 Automatic Control

A means of control that conveys predetermined orders without action by an operator.

5.9 Instrumentation

A system designed to measure and to display the state of a monitored parameter and which may include one or more of sensors, read-outs, displays, alarms and means of signal transmission.

5.11 Local Control

A device or array of devices located on or adjacent to a machine to enable it to be operated within sight of the operator.

5.13 Remote Control

A device or array of devices connected to a machine by mechanical, electrical, pneumatic, hydraulic or other means by which the machine may be operated remote from, and not necessarily within sight of the operator.

5.15 Monitoring System

A system designed to supervise the operational status of machinery or systems by means of instrumentation, which provides displays of operational parameters and alarms indicating abnormal operating conditions.

5.17 Safety System

To protect an operating machine in the event of a detected fault, the automatic control system may be designed to automatically shutdown the machine.

5.19 Fail-safe

A designed failure state which has the least critical consequence. A system or a machine is fail-safe when, upon the failure of a component or subsystem or its functions, the system or the machine automatically reverts to a designed state of least critical consequence.

5.21 Systems Independence

Systems are considered independent where they do not share components, except common sensors for non-shutdown related systems, such that a single failure in any one component in a system will not render the other systems inoperative.

5.23 Unmanned Machinery Space

Machinery space(s) which can be operated without continuous attendance by the crew locally in the machinery space(s) and in the local centralized control and monitoring station(s) (if provided).

5.25 Local Centralized Control and Monitoring Station

A control station fitted with instrumentation, control systems and actuators to enable machinery to be controlled and monitored without the need of regular local attendance in the machinery space(s).

5.27 Remote Control and Monitoring Center

A location outside the machinery space(s) fitted with means of remote control and monitoring for the machinery and the state of the machinery space(s).

7 Plans and Data

The following plans and data are to be submitted for review, as applicable.

7.1 Specifications

A general description of the operation of the automatic or remote control systems is to be given. This is to include a list of monitoring points, their alarm settings and their normal ranges.

7.3 System Design Plans

7.3.1 Machinery Control Systems

Schematic diagrams and operational descriptions for the following items:

- Control from the local centralized control and monitoring station(s) in or adjacent to the machinery space(s) and remote control and monitoring center outside the machinery space(s), as applicable.
- Independent local control
- Starting of machinery
- Manual Emergency shutdown

7.3.2 Machinery Safety Systems

Operational descriptions for the automatic shutdowns

7.3.3 Machinery Monitoring Systems

Description of the monitoring systems with a list of alarms and displays including preset parameters for the following items, as applicable:

- Local centralized control and monitoring station(s) in or adjacent to the machinery space(s)
- Monitoring station in the engineers' accommodations
- Remote control and monitoring center outside the machinery space(s)

7.3.4 Fire Safety Arrangements

Schematic diagrams and descriptions of the fire detection and alarm systems, fire precautions, fire extinguishing, and fire fighting station arrangements.