Guidance for Prevention Systems of Pollution from Ships

2025.9.

Machinery Rule Development Team

- Main Amendments -

Effective from 1 January 2026 (based on the shipbuilding contract date)

(1) Incorporation of IACS UR M86 (Nov. 2024)

◉ Revision of monitoring and safety requirements related to EGCS (Exhaust Gas Cleaning System)

(2) Amendment request for paragraph 303, section 3 of chapter 3 of the Guidance for Prevention Systems of Pollution from Ships

◉ Identified an incorrect reference

(3) Amendment request for paragraph 205.3.(2), section 2 of chapter 2 of the Guidance for Prevention Systems of Pollution from Ships

◉ Identified discrepancies between the Korean and English texts

Present	Amendment	Reason
CHAPTER 3 Sulphur oxide Emission Abatement Systems **Section 2 Exhaust Gas Cleaning(EGC) system** (...) **205. EGC System Configuration** (...) **3. Redundancy (Applicable when only the "CEmS-EGC(R)" class notation)** (1) Redundancy of equipment is to be provided for those rotating and reciprocating components that form part of the EGC essential supplementary systems, such as pumps, fans, blowers, etc. (...) (6) If the Society considers that the redundancy of the pump and blower (including the exhaust fan) required above is acceptable to the Society, the provision of spare parts made up of rotating parts, including motors and bearings may be permitted. **4. Exhaust gas by-pass/dry operation** EGC units that incorporate a wet washwater scrubbing process are to be capable of being operated without the washwater system in operation or are to be installed with an exhaust bypass arrangement or changeover system to enable continued operation of the fuel oil combustion machinery in the event the exhaust emission abatement system is not in operation, either through operational selection or equipment failure. As applicable, evidence of material suitability is to be submitted for dry running of SOx scrubbers. Such a device may not be required if the flow of unrestricted exhaust gas is ensured and there is no risk of a failure that results in the stop of the oil burning machinery.	**CHAPTER 3 Sulphur oxide Emission Abatement Systems** **Section 2 Exhaust Gas Cleaning(EGC) system** (...) **205. EGC System Configuration** (...) **3. Redundancy (Applicable when only the "CEmS-EGC(R)" class notation)** (1) Redundancy of equipment is to be provided for those rotating and reciprocating components that form part of the EGC essential supplementary systems, such as pumps, fans, blowers, etc. (...) (6) If the Society considers that the redundancy of the pump and blower (including the exhaust fan) required above is acceptable to the Society, the provision of spare parts made up of rotating parts, including motors and bearings may be permitted. **4. Exhaust gas by-pass/dry operation** EGC units that incorporate a wet washwater scrubbing process are to be capable of being operated without the washwater system in operation or are to be installed with an exhaust bypass arrangement or changeover system to enable continued operation of the fuel oil combustion machinery in the event the exhaust emission abatement system is not in operation, either through operational selection or equipment failure. As applicable, evidence of material suitability is to be submitted for dry running of SOx scrubbers. Such a device may not be required if the EGCS is designed for dry operation, the flow of unrestricted exhaust gas is ensured, and there is no risk of a failure that results in the stop of the oil burning machinery.	〈2026.01.01.〉 IACS UR M86(Nov. 2024)

Present	Amendment	Reason
207. EGC System Piping **1. Exhaust Gas Piping Systems** (1) Exhaust Gas Piping/Scrubber Materials (...) (2) Exhaust Gas Piping Valves (A) Valves used in the EGC system are to comply with the relevant requirements specified in Pt 5, Ch 6 of the Rules for the Classification of Steel Ships. The valves are to be constructed of corrosion resistant materials and the valves located at the front of the SOx scrubber may be the same material as the valve of the the oil burning machinery. (B) Isolation and bypass valves used in EGC system exhaust piping systems are to prevent the passage of exhaust gases to other fuel oil combustion machinery or machinery spaces. Where bypass arrangements for the SOx scrubber unit are provided, the isolation and bypass valves are to be arranged in an interlocked, fail safe manner, such that free flow of exhaust gases to the atmosphere at all times is possible, either through the scrubber unit or through the bypass. Bypass valves are to be provided with a local position indicator. (C) Valves are to be installed in accessible locations, clear of or protected from obstructions, moving equipment, and hot surfaces, in order to permit regular inspection and periodic servicing.	**207. EGC System Piping** **1. Exhaust Gas Piping Systems** (1) Exhaust Gas Piping/Scrubber Materials (...) (2) Exhaust Gas Piping Valves (A) Valves/dampers used in the EGC system are to comply with the relevant requirements specified in Pt 5, Ch 6 of the Rules for the Classification of Steel Ships. The valves are to be constructed of corrosion resistant materials and the valves located at the front of the SOx scrubber may be the same material as the valve of the the oil burning machinery. (B) Isolation and bypass valves/dampers used in EGC system exhaust piping systems are to prevent the passage of exhaust gases to other fuel oil combustion machinery or machinery spaces. Where bypass arrangements for the SOx scrubber unit are provided, the isolation valves/dampers and bypass valves/dampers are to be arranged in an interlocked, fail safe manner, such that free flow of exhaust gases to the atmosphere at all times is possible, either through the scrubber unit or through the bypass. Bypass valves are to be provided with a local position indicator. (C) In installations with individually controlled bypass and uptake dampers, an interlock is required to prevent both dampers from being closed at the same time. The interlock can comprise a pressure sensor upstream of the dampers, interfaced to the EGCS safety system, opening the bypass damper in case of high back pressure. (~~C~~D) Valves are to be installed in accessible locations, clear of or protected from obstructions, moving equipment, and hot surfaces, in order to permit regular inspection and periodic servicing.	〈2026.01.01.〉 IACS UR M86(Nov. 2024)

Present	Amendment	Reason
208. System Design **1. General** (1) The EGC control system is to be integrated with, or in direct communication with, the engine control system. (2) The system is to be designed such that a single fault of a component will not lead to a potentially dangerous situation for human safety and the vessel. Data describing the identification of hazards associated with the design and operation of the exhaust gas cleaning system and the means of safeguard or control is to be submitted.	**208. System Design** **1. General** (1) The EGC control system is to be integrated with, or in direct communication with, the engine control system. (2) The system is to be designed such that a single fault of a component will not lead to a potentially dangerous situation for human safety and the vessel. ~~Data describing the identification of hazards associated with the design and operation of the exhaust gas cleaning system and the means of safeguard or control is to be submitted.~~ An FMEA, or equivalent, demonstrating the safety system design basis is to be submitted to the Society, when the control system is connected to an integrated control system of a vessel. (3) For vessels with unmanned propulsion machinery space, the alarm and monitoring systems of the EGCS can be integrated in the vessel's centralized monitoring systems.	〈2026.01.01.〉 IACS UR M86(Nov. 2024)

Present	Amendment	Reason
3. Safety Shutdown System (1) An independent shutdown system is to be provided. The automatic safety shutdown system is to be based on the following: (A) Means are to be provided to indicate the parameters causing shutdown. (B) Upon activation of the safety shutdown system, alarms are to be given at the normal control position and at the local control position. (C) In the event where shutdown by the safety shutdown system is activated, the restart should not occur automatically, unless after the system is reset manually. (2) Monitoring and safety shutdowns are to be in accordance with **Table 3.2.3** of this Section.	3. Safety Shutdown System (1) An independent shutdown system is to be provided to ensure that failures or malfunctions in the control and alarm systems do not impair the operation of the safety system.. The automatic safety shutdown system is to be based on the following: ~~(A) Means are to be provided to indicate the parameters causing shutdown.~~ ~~(B) Upon activation of the safety shutdown system, alarms are to be given at the normal control position and at the local control position.~~ (A) Upon activation of the safety shutdown system, visual and audible alarms are to be indicated at both the local and remote control positions. Visual alarms are to include a means of indicating the parameters causing shutdown. (B) In addition to the automatic shutdown system, manual emergency shutdown arrangements are to be provided at both the local and remote the control positions. (C) In the event where shutdown by the safety shutdown system is activated, the restart should not occur automatically, unless after the system is manually reset ~~manually.~~ (2) Monitoring and safety shutdowns are to be in accordance with **Table 3.2.3** of this Section, and the safety shutdown is to be automatically activated under the conditions specified therein.	

Present

Table 3.2.3 Monitoring and Safety System Functions for EGC Systems *(2020)*

Parameters	Display	Alarm activated	Automatic Shutdown
EGC exhaust fan/blower motors	Run	Stop	
EGC exhaust bypass, isolation, mixing valves, where provided	Position		
Exhaust gas temperature after EGC unit(except if dry running can be used)	●	H	
Differential pressure across EGC scrubber unit or EGC circuit or pressure before EGC unit(except if dry running can be used)	●	H	HH
EGC washwater pumps, alkali system pumps or dry system supply device	Run	Stop	
EGC washwater and alkali system supply pressure	●	L	
EGC washwater system supply temperature(Closed/Hybrid type)	●	H	
EGC alkali system supply temperature	●	L/H	
Water level in EGC scrubber	●	H	HH
Alkali storage tank temperature		L/H	
Alkali storage tank level	●	L/H	
Alkali system drip tray level		H	
EGC residue tank level	●	H	
Power supply fail of control, alarm, monitoring or safety device		Fail	

Amendment

Table 3.2.3 Monitoring and Safety System Functions for EGC Systems *(2020)*

	Group 1		Group 2
Parameters	Display	Alarm activated	Automatic Shutdown and EGC bypass(1)
EGC exhaust fan/blower motors(3)	Run	Stop	
EGC exhaust bypass, isolation, mixing valves, where provided	Position(4)		
Exhaust gas temperature after EGC unit(except if dry running can be used)	●	H	●(HH)
Differential pressure across EGC scrubber unit or EGC circuit or pressure before EGC unit(2)(except if dry running can be used)	●	H	HH
EGC washwater pumps, Chemical treatment fluid (Alkali) system pumps or dry system supply device	Run	Stop	
EGC washwater and chemical treatment fluid (Alkali) system supply pressure	●	L	
EGC washwater system supply temperature(Closed/Hybrid type)	●	H	
EGC Chemical treatment fluid (Alkali) system supply temperature	●	L/H	
Water level in EGC scrubber	●	H	HH
Chemical treatment fluid (Alkali) storage tank temperature		L/H(5)	
Chemical treatment fluid (Alkali) storage tank level	●	L/H(5)	
~~Alkali system drip tray level~~ Chemical treatment fluid leakage detection in system drip tray or drain / residue tank		H(6)	
~~EGC residue tank level~~	~~●~~	~~H~~	
Power supply fail of control, alarm, monitoring or safety device		Fail	

Group 1 Common sensor for indication and alarm , Group 2 Sensor for shut down and bypass Notes: 1. Automatic stopping of all EGCS pumps. Automatic bypass of the EGC unit is required when the EGC unit is not suitable for operation in the dry condition. 2. As applicable in accordance with the specific EGC system design and installation. 3. If applied. 4. See 207.1.(2) of Sec 2. 5. 207.1.(2) 6 of Sec 3. 6. If necessary, 207.3(4) of Sec 3.

Reason

〈2026.01.01.〉
IACS UR M86(Nov. 2024)

Present	Amendment	Reason
CHAPTER 7 Onboard Carbon Capture and Storage system **Section 1 General** **104. Plans and Documents** (...) **2. Plans and Documents for approval** (1) General arrangement of OCCS system (2) Specification of OCCS system (3) Analysis for compatibility with fuel consumers (incl. **404. 3** (2))	**CHAPTER 7 Onboard Carbon Capture and Storage system** **Section 1 General** **104. Plans and Documents** (...) **2. Plans and Documents for approval** (1) General arrangement of OCCS system (2) Specification of OCCS system (3) Analysis for compatibility with fuel consumers (incl. 304 ~~**404. 3** (2)~~)	Incorrect reference

Present	Amendment	Reason
CHAPTER 2 Nitrogen oxide Emission Abatement Systems **Section 2 Selective Catalytic Reduction(SCR) system** **205. Handling urea solution as reductant agent** **3. Piping system and venting system of urea solution storage tank** (1) The reductant piping and venting systems are to be independent of other ship service piping and/or systems. Reductant piping systems are not to be located in accommodation, service spaces, or control stations. The vent pipes of the storage tank are to terminate in a safe location on the weather deck and the tank venting system is to be arranged to prevent entrance of water into the urea tank. (2) Reductant tanks are to be of steel or other equivalent material with a melting point above 925℃. Pipes/piping systems are to be of steel or other equivalent material with melting point above 925℃, except downstream of the tank valve, provided this valve is metal seated and arranged as fail-to-closed or with quick closing from a safe position outside the space in the event of fire; in such case, type approved plastic piping may be accepted even if it has not passed a fire endurance test. Reductant tanks and pipes/piping systems are to be made with a material compatible with reductant or coated with appropriate anti-corrosion coating. (2020) (3) Material requirement “to be of steel or other equivalent material” in (2) with a melting point	**CHAPTER 2 Nitrogen oxide Emission Abatement Systems** **Section 2 Selective Catalytic Reduction(SCR) system** **205. Handling urea solution as reductant agent** **3. Piping system and venting system of urea solution storage tank** (1) The reductant piping and venting systems are to be independent of other ship service piping and/or systems. Reductant piping systems are not to be located in accommodation, service spaces, or control stations. The vent pipes of the storage tank are to terminate in a safe location on the weather deck and the tank venting system is to be arranged to prevent entrance of water into the urea tank. (2) Reductant tanks and pipes/piping systems are to be of steel or other equivalent material with a melting point above 925℃. ~~Pipes/piping systems are to be of steel or other equivalent material with melting point above 925℃, except downstream of the tank valve, provided this valve.~~If the tank valve is metal seated and arranged as fail-to-closed or with quick closing from a safe position outside the space in the event of fire~~; in such case, type approved plastic piping may be accepted~~ this requirement does not apply to the downstream of the tank valve. In such cases, type-approved plastic piping located downstream of the tank valve may be exceptionally accepted even if it has not passed a fire endurance test. Reductant tanks and pipes/piping systems are to be made with a material compatible with reductant or coated with appropriate anti-corrosion coating. (2026) (3) Material requirement “to be of steel or other equivalent material” in (2) with a melting point	Revision of the English text to align with the clarified meaning of the Korean text