

☐ Detailed Relevant Regulations and Standards for CASE 04

© **Standards for Shipboard Safety, Health, and Accident Prevention,**
Article 44 (Safe Work Management Standards)

- Paragraph 1

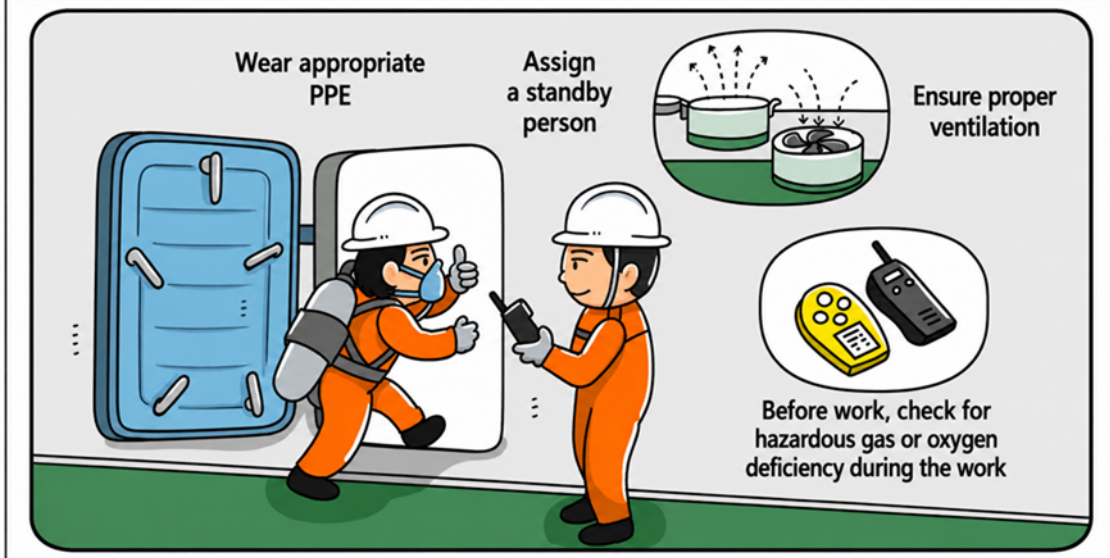
Shipowners shall establish and implement shipboard safe work management standards, including accident prevention measures, seafarer protection measures, and post-accident management procedures, in order to prevent occupational accidents arising from onboard operations.

- Paragraph 3

The shipboard safe work management standards shall include, as applicable to the vessel concerned, the following operations prescribed in the following items.

5. Operations in locations where hazardous gases or other harmful substances are likely to be present.

5. Safety Work Management Standards for Work in Locations Where Hazardous Gases or Other Substances May Be Present



- When performing work in locations where there is a risk of hazardous gases or oxygen deficiency, or in locations where oxygen or other gases may be enclosed or depleted, take the following measures.
 - Before starting the work and at least once every 30 minutes during the work, check the concentration of hazardous gases or oxygen at the workplace. If it is determined that the concentration of hazardous gases or oxygen could be harmful to the human body, ensure proper ventilation.
 - During the work, provide seafarers with appropriate ventilation and the necessary personal protective equipment, including respiratory protective equipment, protective clothing, and protective gloves.
 - If a seafarer working in the area shows any signs of physical abnormality, such as dizziness, fainting, or collapse, stop the work immediately and verify safety before resuming the work.
 - Seafarers showing physical abnormalities shall promptly receive medical treatment or appropriate first aid.
 - Assign a person to monitor the seafarers working and maintain communication so that assistance can be provided immediately when needed.

☐ Detailed Relevant Regulations and Standards for CASE 05

◎ **Ship Safety Act,**

Article 41 (Safety Arrangements for Deck Openings, etc.)

- Paragraph 5

Hinged covers for hatchways, manholes, and other openings shall comply with the following requirements:

1. They shall be fitted with devices to prevent accidental closing.
2. Covers at locations frequently accessed by seafarers shall be designed so that they can be opened from both sides.
3. Heavy hinged escape covers installed overhead shall be fitted with counterweight balances.

☐ Detailed Relevant Regulations and Standards for CASE 06

◎ **Standards for Ship Machinery Article 112(Materials for Piping System)**

- Paragraph 1, Item ‘다’

Article 112 (Materials for Piping Systems)

① The materials used for piping systems shall comply with the requirements specified in the following items.

1. The materials used for lubricating oil piping systems and hydraulic piping systems shall comply with the following requirements:

(a) Pipes, pipe flanges, and tanks used in lubricating oil and hydraulic piping systems on oceangoing ships shall be made of steel.

(b) Valves and cocks fitted to pipes connected to the suction side of lubricating oil tanks (excluding double-bottom tanks) shall be made of steel. However, this requirement does not apply to:

bronze cocks with a nominal diameter of 40 mm or less, or
bronze or cast-iron cocks installed inside the tank.

(c) Hydraulic piping shall consist of steel pipes or copper pipes having sufficient

strength and an adequate cross-sectional area to prevent pump cavitation, excessive pressure loss, or an increase in oil temperature during operation.

However, flexible hoses may be used where flexibility is required for the proper operation of equipment, provided that they are kept as short as practicable. In such cases, the burst pressure of the hose shall be not less than four times the set pressure of the relief valve.

© **KR Rules for the Classification of Steel Ships**

- **Pt.5 Ch.6 103. Valves and fitting**

Pt 5 Machinery Installations — Ch 6 Auxiliaries and Piping Arrangement
103. Valves and fitting

1. Materials

Materials for valves and pipe fittings are to be suitable for the medium and service for which the pipes are intended and are to be of the materials complying with the following requirements.

5. Construction of valves and pipe fittings

Valves, pipe fittings, gaskets and packings are to be suitable for the condition of use and to have a construction specified in Korean Industrial Standards or equivalent construction thereto. The dimensions of flanges and relative bolts are to be chosen in accordance with Korean Industrial Standards or equivalent.

☐ Detailed Relevant Regulations and Standards for CASE 07

© **Standards for Ship Electrical Installations**

- **Article 2, Item 7**

7. "Waterproof" means the type of electrical machinery and electrical equipment having an enclosed construction that prevents water ingress when subjected to water sprayed from any direction for 15 minutes through a hose with an inside diameter of 12.5 mm, at a distance of 3 meters from the test specimen, using water supplied under a 10-meter water head.

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- Pt.5 Ch.8 (Windlasses) Section 4-5.

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Pt 5 Machinery Installations — Ch 8 Windlasses and Mooring Winches

Section 2 — 4. Hydraulic systems / 5. Electrical systems

5. Electrical systems

(1) Electric motor to meet the requirements in Pt 6, Ch 1, 103. and Ch 1, Sec 3, and are to be certified by Society. Motors exposed to weather are to have enclosures suitable for their location as provided for in the requirements in Pt 6, Ch 1, 201.1 (2) of the Guidance.

☐ Detailed Relevant Regulations and Standards for CASE 08

© **Standards for Ship Machinery**

- **Article 129, Paragraph 1**

Article 129 (Lubricating Oil Pumps)

- ① A forced-lubrication propulsion engine, together with the power transmission equipment required for propulsion and major auxiliary machinery (limited to those driving generators and first-class auxiliary machinery), shall be fitted with a main lubricating oil pump and a standby lubricating oil pump of sufficient capacity to continuously supply lubricating oil at the engine's maximum continuous output.

However, a standby lubricating oil pump is not required where any of the following conditions is met:

1. Where two or more main propulsion engines, propulsion shaft power transmission units, or major auxiliary machinery of the same type are installed, and they are arranged so that they can immediately replace one another. In such cases, one standby lubricating oil pump having sufficient capacity to be shared by the main propulsion engines or major auxiliary machinery may be provided.

◎ **KR Rules for the Classification of Steel Ships**

- Pt 5(machinery Installations) — Ch 6 (Auxiliaries and Piping Arrangement)
— Section 8 (Lubricating Oil System) — 802. Lubricating oil pumps

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Pt 5 Machinery Installations — Ch 6 Auxiliaries and Piping Arrangement
Section 8 Lubricating Oil System — 802. Lubricating oil pumps

1. Main engines, propulsion shaftings and their power transmission systems, and auxiliary machinery essential for the propulsion and their prime movers are to be provided with main lubricating oil pumps of sufficient capacity to maintain the supply of oil at the maximum continuous output and stand-by lubricating oil pumps of sufficient capacity to supply oil under normal service condition.

☐ Detailed Relevant Regulations and Standards for CASE 09

◎ **Enforcement Rule of the Ship Officers Act, Appendix 5**

- Guidelines for Preparing Standards for Navigational Watch-keeping, Paragraph 2

(Cha) Whenever circumstances permit, the officer in charge of the navigational watch shall carry out frequent operational tests of the ship's navigational equipment and maintain records of those tests.

◎ **STCW Code**

- Section A VIII/2

"Operational tests of shipboard navigational equipment shall be carried out at sea as frequently as practicable and as circumstances permit, in particular immediately prior to entering areas where navigation demands special caution. Whenever appropriate, these tests shall be recorded. Such tests shall also be carried out prior to port arrival and departure."