NEWS BRIEF

SDC 12

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The IMO Sub-Committee on Ship Design and Construction (SDC) convened its eleventh session from January 19 to 23, 2026. This Brief provides an overview of the more significant issues progressed at this session.

KEY DEVELOPMENTS

- Explanatory Notes for the Assessment of Passenger Ship Systems' Capabilities after a Fire or Flooding Casualty
- Escape Routes from Below the Bulkhead Deck and the Location of the Escape Trunk
- Guidelines for Use of Fiber-Reinforced Plastics (FRP) within Ship Structures
- Draft Guidelines on the use of Remote Inspection Techniques (RIT)

ABS RESOURCES

- ABS Regulatory News (link)
- ABS Class Notations Underwater Noise and External Airborne Noise (link)
- ABS Sustainability Services: Ship Radiated Noise (link)
- ABS Global Marine Services (link)
- ABS My Digital Fleet™ (link)
- ABS Rules and Guides (link)

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As part of the maritime industry's decarbonization efforts, MSC had been considering the safety aspects of the new fuels and technologies being developed and had initiated a work plan for a Safety Regulatory Framework for ships using new technologies and alternative fuels.

Revision/Development of the Code of Safety for Nuclear Merchant Ships

As part of the development of a safety regulatory framework to support the reduction of GHG emissions from ships using new technologies and alternative fuels, nuclear propulsion has been identified as a potential technology that could power zero-emission ships, and contribute to achieving the IMO's mid and long-term ambitions to decarbonize shipping.

Chapter VIII of SOLAS 1974 on Nuclear Ships provides basic requirements for nuclear-powered ships, with Assembly resolution A.491(XII) providing the Nuclear Code as a supplement to the SOLAS requirements. However, the Code has not been reviewed or amended since its adoption in 1981 and is in need of comprehensive revision and update to reflect and accommodate over four decades of progress in technology.

The SDC sub-committee was tasked to have a preliminary discussion on the proposals for approach, scope and structure for the revision of the Nuclear

SOLAS DEVELOPMENTS

Steering and Propulsion Requirements for Both Traditional and Non-Traditional Propulsion and Steering Systems

The current SOLAS regulations do not adequately address the use of modern propulsion systems that integrate both steering and propulsion functions. To address this gap, it was considered necessary to develop new rules that include sufficient technical standards and redundancy for these systems, along with mandatory requirements for ship maneuverability performance.

To that end, SDC 11 had developed draft amendments to the relevant sections of SOLAS, along with new draft SOLAS Regulation 28-1 Means of Going Astern and Stopping, Regulation 29-1 on Steering, and a new resolution on International Standards for Ship Maneuverability (ISSM). Furthermore, a roadmap had been agreed to establish mandatory amendments with a view to entry into force in 2032.

The development of the ISSM was intended as a new instrument for new SOLAS regulations II-1/28-1 and 29-1, while keeping resolution MSC.137(76) *Standards for Ship Maneuverability* for application to existing ships. However, in the discussions it was considered that more data was required on maneuvering characteristics and performance of vessels with non-traditional propulsion systems, such as stopping performance and zig-zag maneuvers.

The Sub-Committee considered and agreed, in principle, to the draft amendments to SOLAS and the new ISSM, but considering the detailed technical nature of the proposals, decided that further debate should be referred to the next session, while inviting Member States and international organizations to continue submitting relevant maneuvering trial data covering different types of propulsion systems.

Next steps: The documents agreed in principle are to be further considered at SDC 13 (2027).

Escape Routes from Below the Bulkhead Deck and the Location of the Escape Trunk

In the context of port state control (PSC) inspections, MSC 110 noted the existence and impact of divergent interpretations of SOLAS regulations II-2/13.4.1 and 13.4.2, regarding the term "lower part" used in connection with the means of escape from spaces below the bulkhead deck for passenger ships, and from category A machinery spaces for cargo ships. In previous discussions, SDC 11 had confirmed that the terms "lower part of the space" should be regarded as either the lowest deck level or a platform or passageway.

To progress resolution of the issue, the Committee had approved a new output for SDC 12 to review SOLAS regulations II-2/13.4.1.1 and 13.4.2.1, with a view to clarifying the requirements for escape arrangements from the lower part of machinery spaces.

During the discussions, the Sub-Committee noted the approach to approval of escape arrangements in accordance with SOLAS regulations II-2/13.4.1.1 and 13.4.2.1, their safe use over more than four decades, and that there was absence of clear evidence of any safety concerns.
Consequently, the Sub-Committee decided that no changes to the SOLAS regulations were necessary and considered that this agenda item was to be closed out.

Additionally, in light of the inconsistent interpretation of the term “lower part”, MSC 110 had approved circular MSC.1/Circ.1689 recalling the responsibility of flag States to approve the relevant arrangements in compliance with SOLAS regulations II-2/13.4.1 and 13.4.2, and that the PSC officer (PSCO) should in principle accept the design arrangement approved by the flag State and when appropriate consult with the flag Administrations in accordance with the Procedures for Port State control, 2023 (resolution A.1185(33)).

Next steps: Following the closing-out of this agenda item, the Sub-Committee recommended that MSC 111 revoke MSC.1/Circ.1689.

Guidelines for Use of Fiber-Reinforced Plastics (FRP) within Ship Structures

Fiber Reinforced Plastic (FRP) composite is a lightweight material composition with high strength to weight ratio and corrosion resistance compared to steel. However, a key issue when considering combustible FRP elements within ship structures is fire safety.

At the previous session, the Sub-Committee had progressed the revision of the FRP Interim Guidelines (MSC.1/Circ.1574), and work was continued by the Correspondence Group.
Taking the work of the CG, the Sub-Committee finalized the revision to the *Draft Revised Interim Guidelines for the Use of Fiber Reinforced Plastic (FRP) Elements Within Ship Structures: Fire Safety* in order to facilitate the safe use of FRP elements in shipbuilding. The Interim Guidelines should be used as a supplement to the Guidelines for the approval of alternatives and equivalents as provided for in various IMO instruments (MSC.1/Circ.1455) and the Guidelines on alternative design and arrangements for fire safety (MSC.1/Circ.1002, as amended by MSC.1/Circ.1552) when approving FRP elements within ship structures.

The Interim Guidelines address FRP elements for non-load-bearing elements, load-bearing elements not contributing to global strength, and load-bearing elements contributing to global strength. They are to be used to assess fire safety of FRP elements structures for fire hazards such as probability of ignition; fire growth potential; potential to generate smoke and toxic products; containment of fire; firefighting; and structural integrity. Additionally, they provide guidance on operational matters such as onboard training and drills, carriage of dangerous goods, casualty threshold and safe return to port.

Finally, further information and guidance is found in the appendices on:

- Appendix A: Issues other than Fire Safety
- Appendix B: FRP Composite Materials and Compositions used in Shipbuilding
- Appendix C: Recommendations Regarding the Assessment
- Appendix D: Fire Testing of FRP Composite
- Appendix E: Example of Assessment Procedure

Next Steps: The *Revised Interim Guidelines for the Use of FRP Elements Within Ship Structures* are to be submitted to MSC 111 (May 2026) for approval.

DEVELOPMENT OF A SAFETY REGULATORY FRAMEWORK TO SUPPORT THE REDUCTION OF GHG EMISSIONS FROM SHIPS

As part of the maritime industry's decarbonization efforts, MSC had been considering the safety aspects of the new fuels and technologies being developed and had initiated a work plan for a Safety Regulatory Framework for ships using new technologies and alternative fuels.

Revision/Development of the Code of Safety for Nuclear Merchant Ships

As part of the development of a safety regulatory framework to support the reduction of GHG emissions from ships using new technologies and alternative fuels, nuclear propulsion has been identified as a potential technology that could power zero-emission ships, and contribute to achieving the IMO's mid and long-term ambitions to decarbonize shipping.

Chapter VIII of SOLAS 1974 on Nuclear Ships provides basic requirements for nuclear-powered ships, with Assembly resolution A.491(XII) providing the Nuclear Code as a supplement to the SOLAS requirements.

However, the Code has not been reviewed or amended since its adoption in 1981 and is in need of comprehensive revision and update to reflect and accommodate over four decades of progress in technology.

The SDC sub-committee was tasked to have a preliminary discussion on the proposals for approach, scope and structure for the revision of the Nuclear Code. However, due to time constraints, the Group could not embark on a detailed consideration of this task.

> **Next Steps:** A correspondence group (CG) was established to collect information on relevant hazard identification exercises conducted previously or in the framework of IAEA activities, and to prepare an inventory of topics/challenges relating to the use of nuclear reactors for maritime applications.

Wind Propulsion and Lithium-Ion Batteries

Due to time constraints, the Sub-Committee was not able to advance the work on wind propulsion and lithium-ion batteries, but tasked the CG to progress these topics along with the work related to nuclear power.

> **Next steps:** The Correspondence Group's is to progress the work under the following Terms of Reference:
> - With regard to wind propulsion and wind-assisted power: review the Intact Stability Code, identify IMO instruments relevant to Interim Guidelines on Wind Propulsion and Wind-assisted power, and relevant hazard identification.
> - With regard to lithium-ion batteries and swappable traction lithium-ion battery containers: consider development of draft amendments to SOLAS regulation II-1/41 to allow for batteries to be used as the main source of electrical power and lighting systems.

Work plan for the development of a safety regulatory framework to support the reduction of GHG emissions from ships using new technologies and alternative fuels

At this session, the Sub-Committee progressed the revision of the work plan for the development of a safety regulatory framework to support further work on nuclear power, wind propulsion and wind assisted power, and lithium-ion batteries.

Figure 1- MSC Work Plan for the Development of a Safety Regulatory Framework to support the Reduction of GHG emissions from Ships Using New Technologies and Alternative Fuels.

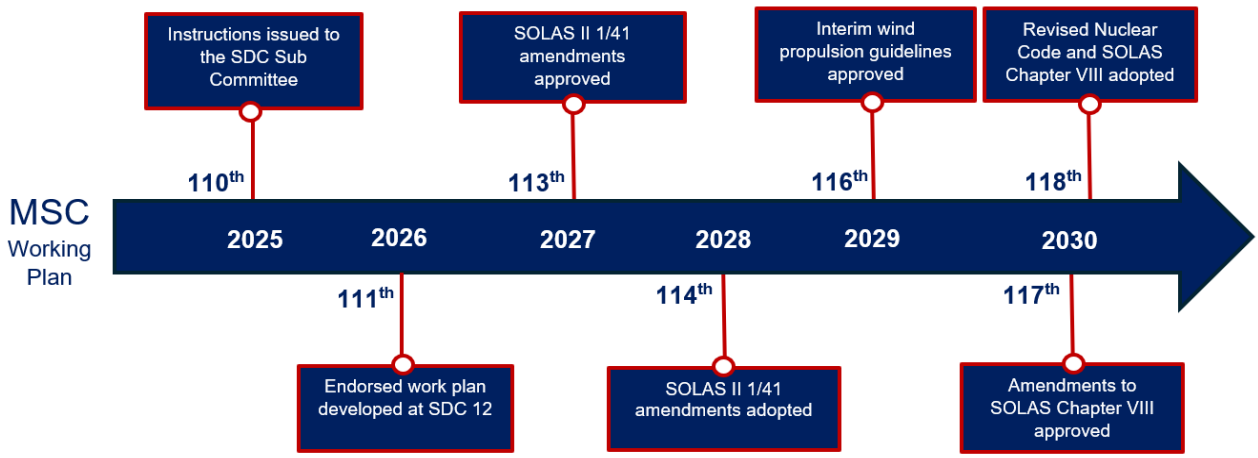


Table 1 - SDC Work Plan for the Development of a Safety Regulatory Framework to support the Reduction of GHG emissions from Ships Using New Technologies and Alternative Fuels.

Year	Session	
2026	**SDC 12**	• Work plan developed • Correspondence group established
2027	**SDC 13**	• Discussions on ISWG-SDCGHG 1 • Amendments to SOLAS II-1/41 finalized for batteries to be used as the main source of electrical power and lighting systems • Decision on whether battery containers should be included in the ship's enclosed space V (MSC 110/WP.9, annex 5: G-40)
2028	**SDC 14**	• Consideration of guidance/unified interpretations for lithium batteries in battery containers (MSC 110/WP.9, annex 5: G-41) • Develop reference for ISWG-SDCGHG 2
2029	**SDC 15**	• Interim guidelines for the safety of ships using wind propulsion and wind assisted power finalized (MSC 110/WP.9) • Develop reference for ISWG-SDCGHG 2
2030	**SDC 16**	Revision and finalization of the Code of Safety for Nuclear Ships (resolution A.491(XII) and SOLAS Chapter VIII

PASSENGER SHIP SYSTEMS' CAPABILITIES AFTER A FIRE OR FLOODING CASUALTY

Revision of the Interim Explanatory Notes for the Assessment of Passenger Ship Systems' Capabilities after a Fire or Flooding Casualty

MSC 102 had considered a proposal to revise the Interim Explanatory Notes (EN) for the Assessment of Passenger Ship Systems' Capabilities After a Fire or Flooding Casualty (MSC.1/Circ.1369) and the related circulars. The objective was to reflect technological developments, the uptake of alternative fuels, and experience gained since the entry into force of SOLAS Regulations II-2/21 and II-2/22 on Safe Return to Port (SRtP).

At this session, the Sub-Committee, noting the deliberations of the Correspondence Group, finalized the draft revised Explanatory Notes for SRtP and Orderly Evacuation and Abandonment (OEA) after a Fire or Flooding Casualty. The group also considered how to proceed with merging relevant circulars related to operational information for Masters (MSC.1/Circ.1400, MSC.1/Circ.1532/Rev.1 and MSC.1/Circ.1589).

The revised Explanatory Notes introduce substantive updates and clarifications compared to the latest circular (MSC.1/Circ.1369). The key areas of revision include:

- **Lifecycle approach:** The scope is expanded beyond initial design to cover the full ship lifecycle, from pre-contract phases through to operational procedures.
- **Return to port voyage parameters:** A minimum ship speed of 6 knots while heading up against wind and waves in adverse weather conditions should be reached and new provisions to define the duration of the dimensioning SRtP voyage are introduced.
- **Systems Categorization & Restoration:** To be ensured that the systems are designed and arranged so that they can be restored and remain operational during the voyage back to port. Category **1A** (Propulsion/Steering/ Elec. Power) requires immediate restoration with minimal manual action. Categories **1B** (Navigation/External Communication) and **2** (Fire Safety/Watertight Integrity/Internal Communication) must be restored within 1 hour. Category **3** (Safe Areas) must be restored within 3 hours. SRtP systems should be designed to minimize the need for manual intervention by the crew to restore them.
- **Technical system requirements:** (non-exhaustive list follows):
    - Communication: An extensive list of radio installations is provided. VHF Data Exchange System (VDES) will be considered at a future revision.

- Ballast System: The ballast system equipment and functions should remain operational only to the extent they are necessary to ensure bilge pumping functions.
- Oily Water Treatment System: The oily water treatment system need not remain operational after an SRtP or OEA casualty, as MARPOL Annex I allows for discharge under emergency conditions.
- Gaseous- and low-flashpoint fuels: Specific requirements needed to keep the fuel storage & supply and transfer systems safe for the duration of the return to port voyage are provided.

- **Documentation, verification and testing:** Comprehensive requirements for the documentation structure across project phases (early, detail, late design) and specific testing protocols, including sea trials for worst-case degraded propulsion.
- **Audit and Inspection:** At the first ISM audit and at each PSSC survey SRtP compliance, documentation and procedures should be confirmed and assessed, respectively.

Applicability: The revised Explanatory Notes are intended to apply to ships contracted on or after 1 January 2028, or in the absence of a building contract, the keel of which is laid on or after 1 July 2028 or delivered on or after 1 January 2032.

Next Steps: The draft Explanatory Notes will be submitted to MSC 111 (May 2026) for approval.

REDUCTION OF UNDERWATER NOISE FROM SHIPS

Experience-Building Phase for the Reduction of Underwater Radiated Noise from Shipping

In 2024, MEPC 82 approved the Revised *Guidelines for the Reduction of Underwater Radiated Noise (URN) from Shipping* (MEPC.1/Circ.906/Rev.1) to address its adverse impacts on marine life, as well as a URN Action Plan, and to the three-year Experience-Building Phase (EBP).

During this session, the Sub-Committee approved the report on the experience building phase (EBP) on the implementation of the revised guidelines for the reduction of underwater radiated noise (URN) from shipping, noting a number of barriers hindering the uptake and application of the Revised URN Guidelines (MEPC.1/Circ.906/Rev.1). These include the need for holistic early-stage design integration, more shared ship-specific measurement data, improved global access to cost-effective URN measurement, greater focus on sensitive areas and regional approaches and enhanced technical capacity in several countries.

The Sub-Committee further reviewed the conclusions of the second IMO expert workshop on the relationship between energy efficiency (EE) and URN, acknowledging that, although effective solutions for integrated EE and URN management exist, progress is hindered by the high cost and technical complexity of URN measurement and by trade-offs between maximizing propulsion efficiency and minimizing URN, that requires careful multi-objective design assessments.
Building on the work of the Correspondence Group on URN, the Sub-Committee drafted the circular *Technical Guidance on co-optimizing Energy Efficiency and Underwater Radiated Noise at the Design and Retrofit Stage*, to provide supplementary technical guidance to support the integration of URN reduction measures with EE considerations during vessel design and retrofitting. Specifically, it seeks to clarify potential trade-offs between URN mitigation and conventional propeller design, and to promote co-benefits between quiet ship technologies and clean energy performance objectives.

Finally, the Sub-Committee discussed and identified technical aspects relevant to future policy considerations of the Committee on reducing URN from shipping during the extended EBP period and finalized the draft terms of reference for a URN emissions study, including existing regulations, design considerations and standardized measurement methods.

Next Steps: The MEPC 84 (April 2026) is to approve the draft circular *Technical Guidelines on co-optimizing energy efficiency and URN*, as well as the two-year extension of the EBP, with a target completion year of 2028. Member States and interested organizations to provide further information to future sessions of SDC and MEPC to ensure the process remains up to date.

2011 ESP CODE

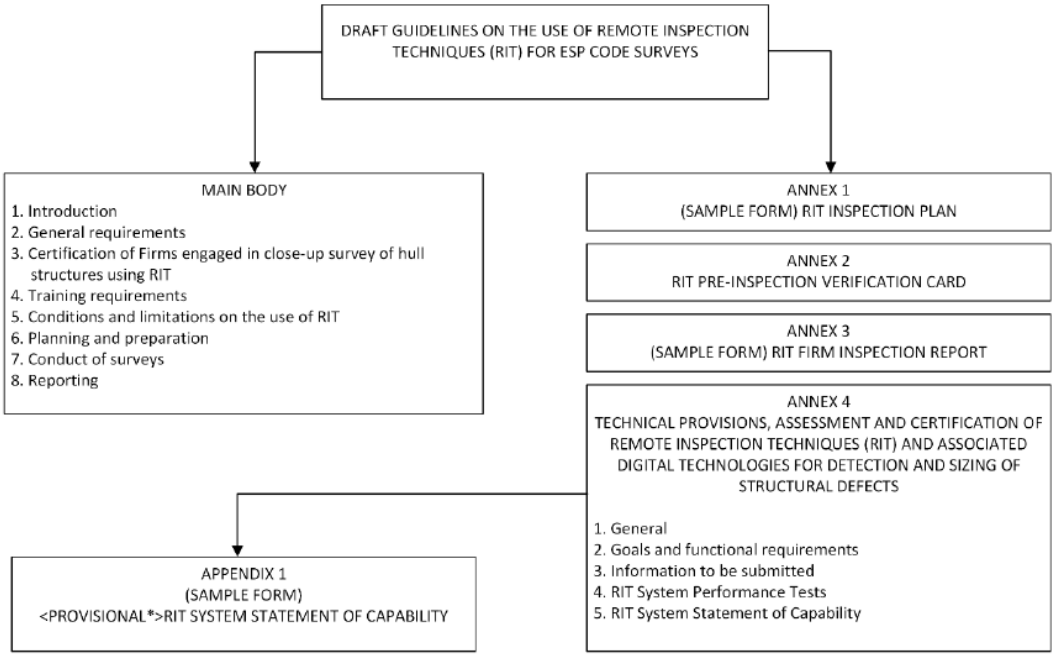
Draft guidelines on the use of remote inspection techniques (RIT)

The Sub-Committee, during SDC 11, tasked the Correspondence Group (CG) to continue the development of guidelines for the use of RIT for 2011 ESP Code surveys. These guidelines were to adopt a goal-based approach, and were to include, inter alia, RIT thickness measurement capabilities, guidance for the use of RIT for surveyors and RIT firms, validation and verification of RIT equipment, as well as guidance on certification of RIT equipment.

Taking the work from the CG, the Sub-Committee finalized the *Draft guidelines on the use of remote inspection techniques (RIT) for ESP Code surveys*. The new guidelines adopt a goal-based approach, providing comprehensive guidance in the main body of the text on the application of RIT in the ESP Code surveys including RIT thickness measurement capabilities, as well as guidance on the use of RIT for surveyors, ships' personnel, firms using RIT and for manufacturers of RIT, validation and verification of RIT equipment capability (ashore and on board ships), certification of RIT equipment, and training of personnel of RIT firms and surveyors.

The annexes and appendix to the guidelines provide:

- Annex 1: sample form of an RIT inspection plan outlining planning and executing an RIT survey
- Annex 2: RIT pre-inspection verification card to confirm equipment is pre-calibrated and meets minimum resolution requirements
- Annex 3: sample report form for RIT firm inspections
- Annex 4: technical provisions, assessment and certification of remote inspection techniques (RIT) systems and associated digital technologies for detection and sizing of structural defects
- Appendix: provisional sample form on RIT system statement of capability following the assessment by an Administration



While the *Draft guidelines on the use of remote inspection techniques (RIT) for ESP Code surveys* are to enter into force on 1 January 2028, the Sub-Committee recommended MSC 111 to invite early implementation by Administrations to facilitate consistent application of the draft guidelines on RIT.

> **Next steps:** The finalized draft guidelines are to be submission to the Committee for concurrent approval with the adoption of the associated draft amendments to the 2011 ESP Code at MSC 111 (May 2026).

Amendments to the 2011 ESP Code

The Sub-Committee considered the requirements for methods for testing the tightness of bulk carrier hatch covers, which specifies that the effectiveness of the sealing arrangements of all hatch covers shall be checked by means of a hose test or an equivalent method. In practice, the ultrasonic testing method has been increasingly applied to inspect the tightness of cargo ship hatch covers. However, the equivalence between ultrasonic testing and hose testing has not yet been formally recognized.

While paragraph 5.4.2 of parts A and B of annex B (for oil tankers) includes “other equivalent means” for fracture detection, paragraph 5.4.2 of parts A and B of annex A (for bulk carriers) lacks this option. Following discussions, the Sub-Committee finalized draft amendments to paragraph 5.4.2 of part A and part B of annex A (for bulk carriers) to read as follows:

> *One or more of the following fracture detection procedures may be required if deemed necessary by the surveyor:*
>
> *.1 radiographic equipment;*
> *.2 ultrasonic equipment;*
> *.3 magnetic particle equipment; ~~and/or~~*
> *.4 dye penetrant**.; and***
> ***.5 other equivalent means**.*

> **Next steps:** The amendments to the 2011 ESP are to be submitted for approval in principle by MSC 111 (May 2026), formal approval by MSC 113 and adoption by MSC 114 (2028).

Technical Provisions for Means of Access for Inspection (MSC.158(78))

Inconsistencies in the implementation of the *Technical Provisions for the Means of Access for Inspection*, resolution MSC.133(76) (as amended by MSC.158(78)) and the 2011 ESP Code (resolution A.1049(27), as amended) had been identified on the use of portable ladders as the means of access for close-up surveys to cargo hold side shell frames of single-side skin bulk carriers.

Consequently, in order to align the Technical Provisions with the 2011 ESP Code, amendments to resolution MSC.158(78) were drafted restricting portable ladders to *not more than 5m in length* as per paragraph 5.3, Part A of Annex A of 2011 ESP Code.

> **Next steps:** The amendments to MSC.158(78) are to be submitted to MSC 111 (May 2026) for approval and subsequent adoption at MSC 112 (December 2026).

OTHER DEVELOPMENTS

Development of Engine Control Room Alert Management (ECRAM) performance standards

At MSC 110, the need to address alert management in the engine control room (ECR) was highlighted to reduce operator fatigue and improve situational awareness, referencing the Viking Sky incident. Consequently, MSC 110

tasked the SDC Sub-Committee with developing Engine Control Room Alert Management (ECRAM) performance standards, targeting completion by 2028. The Sub-Committee further noted that any consequential amendments to the Code on Alerts and Indicators, 2025 (resolution A.1204(34)) should be considered at a later stage under the same output, following the conclusion of the ECRAM performance standards.

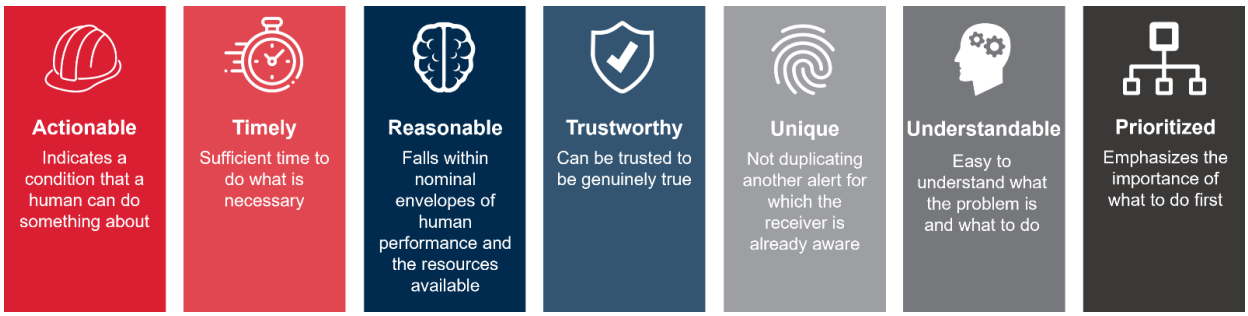
At this session, the Sub-Committee considered the structure of the new stand-alone goal-based performance standards and developed a roadmap for the work.

The Sub-Committee approved the following guiding principles for the standards:

- **Format:** Goal-based performance standards with prescriptive requirements, if considered necessary
- **Approach:** A life-cycle and top-down approach should be followed
- **Scope:** All ships should be covered
- **Stakeholders:** Relevant stakeholders should be identified, and existing experience utilized as far as practicable.
- **Terminology:** The term "alert" and its associated four priorities should be used, as defined in the Code on Alerts and Indicators, 2025.

Furthermore, the Group agreed on the following quality attributes for alerts to guide the development of the standards.

Quality attributes for alerts:



Next steps: The Sub-Committee agreed to establish a Correspondence Group (CG) to further develop the ECRAM performance standards based on the agreed principles and attributes. The work is expected to be finalized at SDC 14 (2028), with a view to adoption at MSC 114 (2028).

Amendments to chapter 6 of the 2009 MODU Code

Recognizing that the MODU Code does not address emergency shutdown (ESD) systems arranged with multiple levels of ESD, MSC 105 proposed a new output to revise paragraphs 6.5.1 and 6.5.5 of the 2009 MODU Code to clarify the application of requirements to electrical equipment that is capable of operation after shutdown. For ESD systems arranged with multiple levels of ESD, clarification was needed as to whether the term "after shutdown" in paragraph 6.5.5 of the 2009 MODU Code relates to any single ESD level or to the total shutdown level of the unit.

The sub-committee considered the draft amendments to chapter 6 of the 2009 MODU Code, and clarified that equipment that should be operable after any shutdown might be assessed in a risk assessment. Also, the term "after shutdown" should refer to any stage of emergency shutdown and not only total shutdown of the unit, and the amendments should only be applicable to new MODUs constructed on or after 1 January 2027.

The amendments to regulations provide that at least the following facilities should be operable after an emergency shutdown: 1. emergency lighting under paragraphs 5.4.6.1.1 to 5.4.6.1.4 for half an hour; 2. blow-out preventer control system; 3. general alarm system; 4. public address system; and 5. battery-supplied radiocommunication installations. Furthermore, the amendments contain provisions for selective disconnection to enable the isolation of ignition sources on the basis of shipboard location, system or function, and that equipment which continues to operate after each stage of ESD located in open areas or within spaces not protected should be suitable for installation in zone 2 locations, and in eclosed spaces, be arranged with appropriate mitigating measures.

Next steps: The draft amendments to chapter 6 of the 2009 MODU Code are to be submitted for adoption by MSC 111 (May 2026).

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