IMO

SUB COMMITTEE ON CARRIAGE OF CARGOES & CONTAINERS (CCC)

09th Session, 20 – 29 September 2023

Session Outcome

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CCC 9: Important Outcome

The 9th session of the IMO Sub-Committee on Carriage of Cargoes and Containers (CCC 9) was held from 20 September to 29 September 2023. A summary of important outcomes of CCC 9 is given in the following.

A concise **overview** of key developments from CCC 9:

Interim Guidelines for Ships Using Hydrogen as Fuel:
These guidelines have undergone significant refinement and follow a goal-oriented approach. They comprehensively cover machinery, equipment, and systems using hydrogen as fuel, emphasizing risk mitigation for ships, crews, and the environment. Ongoing intersessional work aims to report progress at CCC 10 in September 2024.

Interim Guidelines for Ships Using Low Flashpoint Oil Fuels:
Anticipated for finalization in 2024, these guidelines set an international standard for ships using oil-based fuels with flashpoints between 52°C and 60°C. A dedicated Correspondence Group will provide a report to CCC 10 in September 2024. This will be followed by an Intersessional Working Group scheduled to meet before CCC 10.

Interim Guidelines for Ships Using Ammonia:
These guidelines have evolved to establish international standards for ships using ammonia as fuel, also adopting a goal-oriented approach. Provisions cover the arrangement, installation, control, and monitoring of ammonia-based systems, prioritizing safety. Additional intersessional work will update progress at CCC 10 in September 2024. This will be followed by an Intersessional Working Group scheduled to meet before CCC 10.

Interim Guidelines for the Use of LPG Cargo as Fuel:
Due to industry urgency, CCC has developed goal-based guidelines for ships using liquefied petroleum gas (LPG) cargo as fuel. These guidelines have been finalized and are set for approval at MSC 108 in May 2024, providing tailored guidance. (Note that LPG as fuel interim guidelines are already approved vide MSC.1/Circ.1666. The present guidelines are specifically aimed at LPG carriers using their own cargo as fuel.)

Revision of Interim Recommendations for Carriage of Liquefied Hydrogen in Bulk:
As hydrogen containment systems grow to meet the demands of lengthier shipping routes, safety requirements for vacuum insulated pressurized/semi pressurized vessels become critical. To enable large-scale liquid hydrogen cargo carriage on ships, innovative containment system designs are essential. Despite technical and human challenges, the finalized Interim Recommendations for the Carriage of Liquefied Hydrogen in Bulk await approval at MSC 108, addressing this vital aspect of alternative fuel transport.

Amendments to IGF Code:
Draft amendments to the IGF Code were concluded, encompassing relief valve discharging lines, fuel tank inlets, insulation needs, hazardous area zoning, ventilation, and more, set for an anticipated 1 January 2028 entry-into-force date.

Amendments to IGC Code:
Progress was made on draft amendments to the IGC Code, aiming to finalize them at CCC 10, with an intended entry-into-force date of January 1, 2028. These amendments encompass clarifications of definitions, improvements to tank design standards, the introduction of safety requirements for various systems, and more.

High manganese austenitic steel:
The subcommittee approved high manganese austenitic steel for ammonia tanks, finalized revised MSC circular on steel guidelines (MSC.1/Circ.1599/Rev.2) for approval at MSC 108 as MSC.1/Circ.1599/Rev.3 and MSC circular on alternative materials (MSC.1/Circ.1622) for approval at MSC 108 as MSC.1/Circ.1622/Rev.1.

Enclosed Space Entry:
A comprehensive review of Resolution A.1050(27) was undertaken, targeting completion by 2024. The progress encompassed crucial areas, including introducing new definitions, emphasizing safety management, hazard identification, and risk assessment, setting clear entry authorization stipulations, and more. A correspondence group has been established to work on this intersessionally.

SUMMARY OF DISCUSSIONS OF RELEVANT TOPICS AT CCC 9

AMENDMENTS TO THE IGF CODE AND DEVELOPMENT OF GUIDELINES FOR ALTERNATIVE FUELS AND RELATED TECHNOLOGIES (AGENDA ITEM 3)

ALTERNATIVE FUELS

An informal meeting prior to CCC 9 had deliberated prioritizing the development of alternative fuels from hydrogen, ammonia and low flashpoint fuels (given that CCC 9 had been the anticipated session to finalize interim guidelines for hydrogen, ammonia and low flashpoint oil fuel (Flashpoint < 60 ^{o}C and > 52^{o}C).

Within the Working Group, there was more or less equal support for development of provisions for both hydrogen and ammonia. The Nordic Countries expressed their concern regarding development of interim guidelines for hydrogen, given that their safety concept needed to be further worked upon considering the permeation of hydrogen even through most metallic barriers. However, the group decided to proceed ahead with finalization of hydrogen guidelines. The group had detailed deliberations and recognized that finalization of interim guidelines for hydrogen at this session was not possible due to various safety concerns expressed; nevertheless, the group worked through the draft guidelines and finalized text until Chapter 9 of the interim guidelines.

The Group also worked upon the safety concepts for the interim guidelines of ammonia in an informal meeting. The prime focus was on toxicity concerns of ammonia when considering possible leakage of the fuel supply system.

The group did not have the time and opportunity to discuss and finalize the draft interim guidelines for use of low flashpoint fuels (Flashpoint < 60 ^{o}C and > 52^{o}C) and agreed to carry this discussion forward to the Correspondence Group (re-established by CCC 9)

Noting that CCC 10 would have only five working days which would possibly prove infructuous for finalizing three sets of interim guidelines, the Working Group agreed to request CCC 9 to establish an Intersessional Working Group on Alternative Fuels prior to CCC 10. This request was agreed to by CCC 9 which will subsequently issue a circular letter containing invitations to interested parties for the same.

Safety Provisions for Ships Using Low-Flashpoint Oil Fuels

The Working Group at CCC 9 due to paucity of time could not discuss the draft interim guidelines for low flashpoint oil fuels. However, it was proposed and agreed that discussion would be continued in the Correspondence Group.

Draft Interim Guidelines for Ships Using Hydrogen as Fuel

The Working Group established at CCC 9 had for its' consideration the draft interim guidelines developed by the Correspondence Group prior to CCC 9.

Alternative Design: It was agreed that the application of the interim guidelines would be considered as instances of alternative design as authorized by SOLAS II-1, Part G. (this would make possible of use of other types of hydrogen storage apart from liquefied and compressed hydrogen – e.g. hydrides stored in metals)

Holistic Risk Assessment: It was agreed that holistic risk assessment should be performed for Hydrogen and included a dedicated section for this purpose. To guide the application of the Group also laid down topics/issues which should be considered for the Risk Assessment.

Fuel Supply System Arrangements: It was agreed that in general, the gas safe machinery space arrangements should be used for Hydrogen. However, the Group chose to exclude completely preventing the use of ESD (Emergency Shut-Down) machinery spaces by leaving their assessment to the administration.

Safe Location of Tank: It was decided to have the Chapter 5 of the IGF Code applicable in general for the tank location. This implies that the safe location for LNG as fuel can be applied to Hydrogen as well.
Fuel Preparation Room: Discussion happened regarding the location of fuel preparation room below deck. In this regard, the Group preferred to recommend a fuel preparation room located on open deck; rooms located below open deck would be specially considered by the Administration (for which key topics to be considered were laid out)
Drip Trays: The Working Group started with the IGF Code requirements for LNG agreed that drip trays should be fitted wherever hydrogen leakage could occur. The Group also included oxygen condensation as one of the aspects to be considered keeping in view the leakage of liquefied hydrogen. The group also agreed to have a requirement as regards 'suitable volumetric and thermal capacity of the drip tray with view to contain possible impact of liquefied hydrogen leakage as well as oxygen condensation around the drip tray.
Airlocks: Keeping in view the IGF Code requirements for airlocks; also required the airlock to be of a suitable geometry so as to prevent accumulation of hydrogen gas pockets in the airlock.
Hydrogen Storage below deck: Preference to locate both compressed and liquefied hydrogen tanks on deck was drafted; but did not preclude methods of hydrogen storage below the deck considering risk assessment (minimum list of topics/issues to be considered by the administration provided)
Fuel Containment: It was agreed to refer the requirements of relevant sections of chapter 6 of Part A-1 of the IGF Code with a view so as to not discourage any innovations. The philosophy was to locate the fuel containment system on the open deck with risk assessment being performed to locate it otherwise.
Portable Liquefied and Portable Hydrogen Storage Tank: **P**rovisions for permitting Portable Liquefied and Compressed Hydrogen Storage Tanks were developed. These are to be preferred to be located on deck; however, location below deck may be specially considered by the administration.
Venting gaseous hydrogen during bunkering operation: This was discussed and support was found from some sections; however, the WG was in view of forbidding venting of hydrogen during bunkering.

The remainder of the requirements were adapted/inspired from the IGF Code, Part A-1. Provisions on portable compressed hydrogen will be developed further by the Correspondence Group.

Materials: Materials of Hydrogen Fuel Containment System are referred to the Part A-1 of the IGF Code considering the relevant requirements for LNG and how these could differ from Hydrogen.

The material should conform to a recognized standard which considers degradation of strength and fatigue properties due to exposure to both liquid and compressed hydrogen atmospheres.

Bunkering: Requirements of LNG were adapted considering the special properties of liquefied and compressed hydrogen. It is anticipated that this chapter and remainder of the interim guidelines will be further considered in the correspondence group.

Draft Interim Guidelines for Ships Using Ammonia as Fuel
It was noted that there were multiple drafts from the correspondence group. Japan had submitted one draft and Nordic Countries (Norway, Denmark and Finland) submitted another draft.

The following topics were discussed/agreed in the Correspondence Group informally:

The Group agreed on the principles of Alternative Design which were previously agreed upon for Hydrogen.

The Group agreed that a holistic risk assessment was necessary for Ammonia as fuel. The topics for the risk assessment were given in the guidelines.

The Group did not have adequate time to discuss the entire draft interim guidelines for Ammonia fuel and tasked the Correspondence Group for the same. The Group agreed the text in the draft interim guidelines till section 4.2 (holistic risk assessment).

The group discussed elaborately on the threshold ammonia non-toxic concentration in air as regards toxicity. There were two proposals 50 ppm and 300 ppm depending upon whether people would be able to evacuate given an alarm on detecting ammonia concentration above permissible in the space.

The Group was however not able to agree upon a threshold and left it to the Correspondence Group to discuss acceptable concentrations of ammonia in air to persons.

Interim Guidelines for Ships Using Fuel Cell Power Installations (MSC.1/Circ.1647)

The Sub-committee deemed that mandatory requirements for Fuel Cell Power Installations should be postponed till CCC 12 in 2026.

Transposing Interim Guidelines for Ships Using Methyl/Ethyl Alcohol as Fuel (MSC.1/Circ.1621) into Mandatory Instruments under the IGF Code

The Sub-committee deemed that mandatory requirements for Ships using Ethanol/Methanol should be postponed till CCC 12 in 2026.

AMENDMENTS TO THE IGF CODE

The Sub-committee discussed draft amendments to the IGF Code, aligning them with existing provisions and ensuring consistency. Additionally, the Sub-committee addressed issues related to suction wells in fuel tanks and hazardous area classification based on IEC criteria, agreeing to allow the use of dispersion analysis in lieu of prescriptive requirements. However, the Sub-committee stressed the need for a uniform approach, prompting further development of requirements and methodologies related to gas/vapour dispersion analysis. These amendments are outlined below aiming to enhance safety standards and align the IGF Code with contemporary maritime industry practices. These changes cover various aspects, including relief valve discharging lines, fuel tank inlets, insulation requirements, hazardous area zoning, ventilation, and potential use of finite element analysis. The Subcommittee finalized the draft amendments to the IGF Code with an expected entry-into-force date of 1 January 2028.

Amendments includes, but not limited to:

***Suction Well Protrusion (new 5.3.3.5.1)*:** The bottom of suction wells in fuel tanks may protrude into specified minimum distances, provided they are minimized in size and adhere to depth limits.

***Pressure Relief Valve Discharge (new 7.3.1.4)*:** Pressure relief valves in a piping system now requires to be designed to discharge into the fuel tanks when the pressure within the tank falls below the set point of the pressure relief valves, as specified in 9.4.2. This ensures the safety of the system. Moreover, these valves must be engineered to guarantee that they have the necessary capacity to handle the discharge requirements. Alternatively, if necessary precautions are in place to detect and manage any liquid that might enter the vent system, the pressure relief valves may discharge into the vent mast instead of the fuel tanks. This provision aims to maintain safety and operational efficiency in the context of pressure relief in fuel tank systems.

Fuel Tank Inlets (new 9.4.2): In respect of fuel tank systems, the inlets from safety relief valve discharge lines must have non-return valves installed instead of valves that automatically open when the safety system specified in section 15.2.2 is activated. These non-return valves ensure that backflow into the system is prevented, maintaining safety

and system integrity. Additionally, provisions for safely isolating the tank during maintenance, as outlined in section 18.3, should be in place without interfering with the proper functioning of the safety relief valves, ensuring that maintenance procedures can be carried out without compromising the safety of the system.

Heat Protection (11.3.2): Any boundary on the open deck that is adjacent to a fuel tank can be deemed acceptable if it is separated by a specific minimum distance, as determined through a heat analysis that satisfies the standards set by the Administration, providing protection equivalent to that of an A-60 class division. Additionally, intermediate structures that offer heat protection to these areas can also be considered acceptable. This provision aims to ensure that adequate fire protection measures are in place to safeguard fuel tanks from external heat sources, such as on an open deck, meeting the safety requirements outlined by the Administration.

A60 Insulation for Tankers (new 11.3.2.1): For new oil tankers and chemical tankers, A-60 insulation, as mandated by SOLAS regulation II-2/9.2.4.2.5, will be regarded as meeting the criteria outlined in section 11.3.2, provided that the fuel tank is situated in the cargo area ahead of accommodation spaces, service spaces, control stations, escape routes, and machinery spaces. In some cases, additional measures might be needed to protect the sides of the accommodation block. Essentially, this provision states that the A-60 insulation requirement, designed to withstand fire for a certain duration, can serve as sufficient fire protection for fuel tanks in these vessels if they are placed in specific locations within the ship, ensuring safety standards are met.

Fuel Tank Segregation (new 11.3.2.2): Fuel tanks must adhere to the segregation requirements stipulated in the IMDG Code when they are classified as bulk packaging. In terms of stowage and segregation criteria outlined in the IMDG Code, an open-deck fuel tank is treated as a class 2.1 package. This means that when handling and storing fuel tanks alongside other cargo, the regulations and precautions set forth in the IMDG Code must be followed, treating the fuel tank on the open deck as if it were a hazardous class 2.1 package to ensure the safe transport and handling of dangerous goods on board a vessel.

A-60 Class Shielding (new 11.3.2.3): Regardless of the stipulations in existing 11.3.2, if there is no possibility of gas release from the fuel containment system, such as in the case of a type C tank where tank connections are situated within a tank connection space, there is no requirement for A-60 class shielding. This means that if the design of the fuel containment system eliminates the risk of gas release, as in the mentioned type C tank configuration, the stringent A-60 class fire protection standards are not mandatory, simplifying the construction requirements for fuel containment systems in these specific cases, while still ensuring safety standards are met.

Minimum Distance for A-60 Boundary (11.3.3.1): In respect of requirements for a minimum distance from the insulation system of a type C tank or tank connection space to the A-60 boundary, it is clarified that it is to measured from “outer surface” in stead of “outer shell”. Further it is clarified that the term "outer surface of the insulation system" specifically refers to the outermost surface of the tank's outer shell, emphasizing the need for this crucial separation distance to enhance fire safety in these vessels.

Hazardous Area Zones (new 12.5.2.4): Hazardous Area Zone 1 now encompasses specific locations, including open deck areas and semi-enclosed spaces on the open deck, situated above and in proximity to the fuel tank vent mast outlet within a vertical cylinder with unlimited height and a 6-meter radius centered around the vent outlet, as well as a hemisphere with a 6-meter radius below the outlet. In cases where the ship's size and layout make it impossible to maintain these specified distances, a smaller zone can be accepted based on a dispersion analysis following the 50% Lower Explosive Limit (LEL) criteria. However, the zone dimensions must never be less than those outlined in section 12.5.2.3, and it should also include an adjacent Zone 2 hazardous area meeting the dimensions specified in 12.5.3.1, all of which ensures proper safety measures are applied in areas potentially prone to hazardous conditions.

Hazardous Area Zone 2 (new 12.5.3.3): Instead of following the criteria specified in section 12.5.3.1, for new ships, Zone 2 encompasses areas that extend 4 meters beyond both the vertical cylinder and the hemisphere defined in section 12.5.2.4. This adjustment effectively expands the hazardous area classification to a larger safety buffer, ensuring

that potentially dangerous conditions are adequately considered and addressed in these designated spaces on the ship.

Air Inlet Placement (13.3.5): For new ships, air inlets for hazardous enclosed spaces must be positioned in non-hazardous areas, ensuring a safe airflow.

Ventilation Ducts (new 13.3.8): For new ships, specific ventilation requirements apply. When ventilation ducts serving non-hazardous spaces pass through hazardous spaces, these ducts must be gas-tight and maintain overpressure compared to the hazardous space, preventing the ingress of hazardous gases. Conversely, when ventilation ducts serving hazardous spaces pass through less hazardous spaces, they should be gas-tight and maintain underpressure relative to the less hazardous or non-hazardous areas, preventing the escape of potentially dangerous gases into safer areas. However, ventilation pipes serving hazardous spaces that pass through non-hazardous spaces and are fully welded and designed according to chapter 7 are exempt from the under-pressure requirement, as their construction ensures the containment of hazardous substances within the designated hazardous spaces.

These amendments collectively aim to enhance the safety and compliance standards within the maritime industry by addressing various aspects of fuel handling and safety measures for ships using gases or low-flashpoint fuels.

Use of Finite Element Analysis (FE Analysis)

A correspondence group is tasked with considering amendments to the IGF Code regarding the potential use of finite element analysis to meet the requirements of the IGC Code for ultimate design conditions and plastic deformation.

REVIEW OF THE IGC CODE (AGENDA ITEM 4)

The Sub-committee considered draft amendments to the IGC Code, particularly those related to Type C independent tanks, ships carrying CO_2 as cargo, and the revision of Table 18.1(ESD cause and effect table). The group addressed the use of finite element analysis for Type C tanks and the classification of CO_2 as a toxic product, acknowledging the need for further discussion. The Sub-committee also discussed the desirability of amendments to the IGC Code for the use of LPG Cargo as fuel, agreeing to develop interim guidelines while considering future provisions. The sub-committee highlighted the importance of safety measures for gas carriers using LPG as fuel and carrying cargoes other than LPG, proposing further developments through a Correspondence Group.

LPG CARGO UTILIZATION AS FUEL

Recognizing the increasing number of LPG carriers currently under design and construction and the existing gap in requirements governing the use of LPG cargo as fuel, the following structured steps have been taken:

New Interim Guidelines: The development of New Interim Guidelines for the Use of LPG Cargo as Fuel has been successfully completed. These guidelines have been accompanied by a draft MSC circular, which is now under consideration for approval at MSC 108.

Integration with IGC Code: It is envisaged that these provisions will eventually become an integral part of the IGC Code, thereby ensuring a consistent and universally applicable framework for safety in this context.

Ongoing Preparations: A Correspondence Group has been established to further refine and prepare draft amendments to the IGC Code, specifically addressing safety provisions for gas carriers using LPG cargo as fuel. This group is diligently working to compile and analyze the necessary data and considerations. Discussion also happened on developing

these provisions to ensure the safe use of LPG as fuel for gas carriers carrying various cargoes.

HIGH MANGANESE AUSTENITIC STEEL SUITABILITY FOR AMMONIA SERVICE

The Sub-committee thoroughly examined the suitability of high manganese austenitic steel for ammonia service, taking into account detailed observations from the Republic of Korea. It was concluded that high manganese austenitic steel is resistant to ammonia stress corrosion cracking (SCC) and can be used for ammonia cargo and fuel tanks.

Regarding modifications to the Revised Guidelines for high manganese austenitic steel (MSC.1/Circ.1599/Rev.2) proposed by the Republic of Korea, decisions were as follows:

1. Agreement with the modifications, including waiving post-weld stress relief heat treatment for high-manganese austenitic steel when used with ammonia on IGC Code ships.

2. Acknowledgment of the need for further consideration under the IGF Code if ammonia is approved as a fuel.

3. Preparation of a draft MSC circular to revise the Revised Guidelines (MSC.1/Circ.1599/Rev.2) for approval by MSC 108 and subsequent circulation as MSC.1/Circ.1599/Rev.3.

The Sub-committee also considered proposed modifications to the Guidelines for alternative metallic materials in cryogenic service (MSC.1/Circ.1622). A draft MSC circular was prepared to revise the Guidelines (MSC.1/Circ.1622), aiming for approval by MSC 108 and circulation as MSC.1/Circ.1622/Rev.1.

SHIPS CARRYING CO_2 AS CARGO

The Sub-committee deliberated on safety provisions pertaining to ships transporting CO2 as cargo, considering proposals presented in documents by SIGTTO and Japan. Several key points emerged from the discussion:

Renaming CO2 Category: It was agreed that if the table for "Summary of minimum requirements" in chapter 19 of the IGC Code listed a single carbon dioxide product, it should be referred to as "Carbon Dioxide (high purity and reclaimed quality)."

Disapplication of Requirements: The Sub-committee acknowledged the complexity of selectively applying current requirements for electrical equipment and fire protection in chapters 10 and 11 to ships exclusively dedicated to carrying CO_2.

Consideration of CO_2 as a Toxic Product: There were extensive discussions on the classification of CO_2 as a toxic product and its potential implications on design requirements.

Anticipated Growth in CO_2 Transport: Recognizing the expected growth in the size of ships dedicated to transporting CO_2, particularly due to carbon capture initiatives, the Sub-committee deemed it necessary to establish a Correspondence Group for further examination.

Consequently, draft amendments to chapters 17 and 19 of the Code were placed within square brackets, for further consideration by a Correspondence Group.

CONSIDERATIONS REGARDING APPLICATION OF IGC CODE

The Sub-committee discussed proposals concerning the adoption of three distinct versions of the IGC Code, each applicable in different years (1983, 2014, and 2026). The consensus reached was that the current focus should be on amending the existing IGC Code rather

than replacing it entirely. The re-established Correspondence Group will play a crucial role in assessing the suitability of new amendments for various ship types. The outcomes of this assessment may influence whether multiple generations of the IGC Code are warranted. Additionally, the WG prepared a draft resolution for MSC's consideration, outlining the implementation dates for these amendments. MSC 108 will be invited to acknowledge these discussions, recognizing the potential need to reassess the output's scope based on the results of the investigation.

REVISION OF THE INTERIM RECOMMENDATIONS FOR CARRIAGE OF LIQUEFIED HYDROGEN IN BULK (MSC.420(97)) (AGENDA 7)

The Sub-committee tasked a drafting group for developing the draft revised interim guidelines considering the information submitted to CCC 9. The drafting group completed it's work and submitted the report to CCC 9.

The Sub-committee approved the amendments to the draft MSC.420(97) and agreed to submit to MSC 108 for approval an adoption by MSC 109. CCC 9 also noted that the work had been completed under this output.

REVISION OF THE REVISED RECOMMENDATIONS FOR ENTERING ENCLOSED SPACES ABOARD SHIPS (RESOLUTION A.1050(27))(AGENDA 8)

At CCC 9, a comprehensive review of Resolution A.1050(27) - Revised Recommendations for Entering Enclosed Spaces Aboard Ships was undertaken, with a target completion date set for 2024. The progress made during this session encompassed several critical areas:

New Definitions: The introduction of new definitions aimed at clarifying terminology, including Connected space, Adjacent space, Trapped Hazardous Atmosphere, Competent person and Enclosed space register.

Safety Management for Entry into Enclosed Spaces: Recommendations outlining best and safest practices for companies, emphasizing the need to allocate sufficient time for planned enclosed space activities and avoid undue time pressure, a significant contributing factor to enclosed space accidents. The WG discussed the frequency of updating an Enclosed Space Register, deciding not to specify a frequency but emphasizing the need to keep it updated as a dynamic document.

Identification of Hazards and Risk Assessment: Detailed guidance on identifying hazards and conducting comprehensive risk assessments.

Authorization of Entry: Clear stipulations that no individual should enter or open an enclosed space unless authorized by the Master or a designated responsible person, and only when the ship-specific safety procedures have been diligently followed.

General Precautions: Suggestions to safeguard shore personnel who frequently board the ship.

Testing the Atmosphere: Guidance on utilizing gas detection equipment and processes to assess the atmosphere's safety within enclosed spaces. The acceptable level of carbon dioxide for entering enclosed spaces was set at 0.5%, aligning with the workplace exposure limit (8 Hr TWA) in most countries.

Precautions During Entry: General recommendations covering the frequency of atmosphere testing, essential equipment for individuals entering enclosed spaces, ventilation, and responses to emergency events.

Additional Precautions for Entry into Unsafe Areas: Highlights the preparatory measures required before entering spaces where the atmosphere is known or suspected to be unsafe. EEBDs were not included in the list of equipment for entering enclosed spaces. Instead, the resolution clarified that EEBDs are not suitable for entry into enclosed spaces.

Hazards Related to Specific Ships or Cargo Types: A list of common cargoes (Dangerous goods in packaged form, Liquid bulk, Solid bulk) and their potential to create

hazardous atmospheres, along with measures to mitigate risks. The WG debated whether to retain or delete the list of oxygen-depleting solid bulk cargoes, as opinions varied. Further consideration of this issue was suggested if a correspondence group were to be established.
Emergency Response: A new section outlining advisable steps to follow in emergency situations, aimed at significantly reducing accidents related to enclosed space entry.
Examples: The draft revised Resolution A.1050(27) also includes practical examples, such as an enclosed space entry permit, warning signs, a simplified ship space diagram to be placed at access points, an enclosed space register, and an enclosed space contingency plan.

While substantial progress has been made, additional work remains. Consequently, a correspondence group has been established to further develop the Revision of Resolution A.1050(27), with specific focus on, Recommendations pertaining to oxygen depletion and gas emissions in enclosed spaces and considering the inclusion of a list of oxygen-depleting solid bulk cargoes.

UNIFIED INTERPRETATION OF PROVISIONS OF IMO SAFETY, SECURITY, AND ENVIRONMENT-RELATED CONVENTIONS (AGENDA 10)

UNIFIED INTERPRETATIONS FOR THE IGC CODE

During the recent discussions at CCC 9, various Unified Interpretations (UIs) for the IGC Code were examined, offering interpretations on specific provisions of the code. These proposed interpretations aimed to provide clarity and guidance on the key areas, such as:

Draft Interpretation of "any envisaged leakage of liquid cargo": In paragraph 4.6.2.1 of the IGC Code and paragraphs 4.7.1 and 4.7.4.1 of the 1983 IGC Code, the term was clarified to mean a leakage resulting from a failure of the primary barrier during normal operation, causing the inter-barrier space to fill until a static equilibrium state is reached between the tank space and the inter-barrier space.

Draft Interpretation of "capable of being periodically checked": Found in paragraph 4.6.2.4 of the IGC Code and paragraph 4.7.7 of the 1983 IGC Code, this was explained as the design arrangement of the containment system and the secondary barrier ensuring that the secondary barrier's effectiveness can be reliably confirmed during operation through a suitable test and/or inspection program specified in the approved "inspection and survey plan.

During the working group's discussions, draft Unified Interpretation (UI) proposals were scrutinized, raising concerns regarding specific language and the scope of amendments. Recognizing the need for further refinement, the WG called for revised proposals to be submitted. Based on the discussion and expressed viewpoints, the Sub-committee invited revised proposals to CCC 10, while carefully incorporating the feedback and considerations presented during the session.

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