

SUB-COMMITTEE ON SHIP SYSTEMS AND  
EQUIPMENT  
7th session  
Agenda item 11

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**DEVELOPMENT OF GUIDELINES FOR COLD IRONING OF SHIPS AND  
CONSIDERATION OF AMENDMENTS TO SOLAS CHAPTERS II-1 AND II-2**

**Comments on the report of the Correspondence Group (SSE 7/11)**

**Submitted by ICS and IAPH**

**SUMMARY**

*Executive summary:* This document comments on the report of the Correspondence Group on the Development of Guidelines on Safe Operation of Onshore Power Supply (OPS) Service in Port for Ships Engaged on International Voyages (SSE 7/11)

*Strategic direction, if applicable:* 2

*Output:* 2.8

*Action to be taken:* Paragraph 14

*Related documents:* SSE 6/18 and SSE 7/11

**Introduction**

1 This document is submitted in accordance with the provisions of paragraph 6.12.5 of the *Organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.5/Rev.1) and provides comments on the report of the Correspondence Group on the Development of Guidelines on Safe Operation of Onshore Power Supply (OPS) Service in Port for Ships Engaged on International Voyages (SSE 7/11), which was tasked by SSE 6 to further develop the draft Guidelines, limited to operational requirements (SSE 6/18, paragraph 11.11).

**Discussion**

2 The co-sponsors welcomed the decision of the Sub-Committee to develop the draft Guidelines and thank the members of the Correspondence Group, in particular the Coordinator. Cold ironing/onshore power supply (OPS) can reduce the emissions of NO<sub>x</sub>, SO<sub>x</sub> and particulate matter (PM) in port areas, and may contribute to lowering the GHG emissions

in ports where electricity is supplied from low carbon sources. Some countries and ports are promoting the use of OPS, including mandatory measures in some areas. The co-sponsors recognize the value of OPS in improving local air quality in ports and lowering GHG emissions, however, the successful implementation of OPS globally has faced a number of challenges arising from an absence of global standards and guidelines for the safe operation of OPS. Therefore, the draft Guidelines are necessary to promote the safe use of OPS and to facilitate its greater use.

3 The Correspondence Group was unable to reach agreement on several important issues, inter alia, whether to:

- .1 include references to standard IEC/IEEE 80005-1:2019;
- .2 retain "Section 2-Verification and testing";
- .3 retain paragraphs 3.2.1.3 to 3.3.8 in "Section 3-Operation"; and
- .4 retain the "Operation flow chart for OPS connection" in annex 3 to the draft Guidelines.

In this context, this document provides recommendations to assist the Sub-Committee in resolving these outstanding issues, with a view to facilitating the finalization of the draft Guidelines.

4 These outstanding issues arose in part because of the terms of reference agreed by SSE 6, which were to focus only "on operational matters for consideration by the Sub-Committee" (SSE 6/18, paragraph 11.9). The co-sponsors support the decision of SSE 6 to develop operational guidelines only in the first place, however, this should not preclude the inclusion of references to technical standards or matters which are essential for the safe operation of OPS. The draft Guidelines for the safe operation of electrical systems, especially high voltage (HV) electrical systems, need to reference applicable technical standards and aspects, which are an inherent and indivisible element of the safe operation in order to be fit for their intended purpose.

5 The draft Guidelines are intended to facilitate the safe use of OPS at a global level. Technical compatibility is critical to the safe operation of such electrical systems and apparatus. As such, the co-sponsors consider that standard IEC/IEEE 80005-1:2019 needs to be referenced in the draft Guidelines, since it provides necessary technical requirements to facilitate compatibility between the equipment provided to ships and ports/terminals.

6 Section 2 of the draft Guidelines includes essential tests and checks which should be completed when making the first connection between ship and shore OPS equipment, and at subsequent port calls, including a general requirement that "There should be a suitable cross boundary safety system that is jointly controlled by the ship-side and shore-side PIC. This should include appropriate procedures for ensuring the integrity of any isolations, such as a "lock out/tag out" system". This section also provides essential requirements for the safe operation of OPS and, therefore, should be retained. The provision of equivalent requirements in standard IEC/IEEE 80005-1:2019 was used to support the argument that this section be deleted, however, it was proposed that references to this standard be removed from the draft Guidelines. It is contradictory to call for the removal of references to standard IEC/IEEE 80005-1:2019, at the same time, to call for the removal of safety critical checks from the draft Guidelines, on the basis that they are addressed in standard IEC/IEEE 80005-1:2019. It might be acceptable to include a general reference to standard IEC/IEEE 80005-1:2019 in the introductory paragraphs, followed by references to specific sections of that standard

for essential tests and checks in the appropriate sections of the document, however, the co-sponsors would prefer to retain both the reference to standard IEC/IEEE 80005-1:2019 and the draft section 2.

- 7 Sections 3.2.1.3 to 3.3.8 include guidance on the following matters, *inter alia*:
- .1 cable management and the clarification of responsibilities according to whether the OPS connection uses a cable provided by the ship or by the shore facility;
  - .2 transfer of load from ships' generators to OPS and subsequent disconnection from OPS; and
  - .3 requirements for low voltage (LV) systems.

These elements are essential components of the safe operation of OPS.

8 The flow charts for OPS connection provided in annex 3 to the draft Guidelines provide a good visual summary, which some readers may find as a helpful aid when using the Guidelines. Although not essential, they are, nevertheless, a useful aid and it is recommended that they be retained.

### **Analysis**

9 The draft Guidelines are intended to promote consistency and the safe use of OPS at a global level. One of the principal barriers to the greater use of OPS globally has been inconsistent technical and operational standards. If it is intended to further promote the use of OPS, and in some cases mandate, then it is essential to agree on a set of global guidelines for the safe operation of OPS systems.

10 The nature of OPS means that systems are subject to two safety management systems, i.e. that of the ship and the port/terminal. In any risk management system, cross boundary interfaces of this nature present a heightened risk and require careful management. This is recognized in land-based electricity regulations where there are additional safety requirements for cross boundary interfaces. The cross boundary interface between ship and shore, when using OPS, necessitates a common, global and regulatory framework.

11 As highlighted in paragraphs 4 to 8 above, the references and sections of the draft Guidelines which some members of the Correspondence Group have proposed to delete include, *inter alia*:

- .1 compatibility between ship and shore OPS systems;
- .2 essential checks when making the first connection between ship and a shore connection to which the ship has not previously connected;
- .3 transfer of load and disconnection;
- .4 cable management; and
- .5 cross boundary safety management.

Deleting these references and sections would negate the value of the draft Guidelines. It should be noted that standard IEC/IEEE 80005-1:2019 is not a regulatory document and is insufficient to ensure the global safe operation of OPS.

12 The decision of SSE 6 to develop operational guidelines for OPS does not preclude references to technical standards where this is necessary to ensure the safe operation of OPS. If the draft Guidelines are intended to ensure the safe operation of OPS, then the references and sections considered in paragraphs 4 to 8 above should be retained.

### **Proposal**

13 In view of the above discussion and analysis, the Sub-Committee should agree to retain the following references and sections in the draft Guidelines:

- .1 references to IEC/IEEE 80005-1:2019;
- .2 section 2 - Verification and testing;
- .3 paragraphs 3.2.1.3 to 3.3.8; and
- .4 the operation flow chart for OPS connection.

### **Action request of the Sub-Committee**

14 The Sub-Committee is invited to consider the discussion and analysis, and the proposal in paragraph 13 above, and take action, as appropriate.

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