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GOAL-BASED NEW SHIP CONSTRUCTION STANDARDS

Comments on Report of the Pilot Panel on the trial application of the Tier III verification process using IACS Common Structural Rules (CSR)

Submitted by IACS

SUMMARY

Executive summary: This document proposes a definition of “net scantlings” referred to in Tier II.3 based on the Pilot Project for “GBS Bulk Carriers and Oil Tankers” and comments on the new proposal for in service monitoring made by the Pilot Panel (MSC 83/5/1).

Action to be taken: Paragraph 14

Related documents: MSC 83/5/1 and MSC 83/INF.5

Introduction

1 This document provides comments on the Report of the Pilot Panel on the trial application of the Tier III verification process using IACS Common Structural Rules (CSR), document MSC 83/5/1, annex 3, paragraphs 16, 17 and 20 to 23, and it is submitted in accordance with the provisions of paragraph 4.10.5 of the Guidelines on the organization and method of work (MSC-MEPC.1/Circ.1).

2 As mentioned in the Report of the Pilot Panel, IACS participated in the Pilot Project by providing documentation, attending early meetings, making an overview presentation, answering questions raised by the Pilot Panel and supplying additional information requested by the Pilot Panel. The documents provided by IACS to assist the Pilot Panel are included in MSC 83/INF.5.

3 The Pilot Panel is to be commended for their work in refining and developing further the GBS Tier III and IACS looks forward to further discussions of the details included in the report during the upcoming MSC 83 Working Group meeting in order to further progress the development of GBS. While IACS will make some detailed comments on aspects of the work of the Pilot Panel during the session, there are two general topics included in the report, namely the net scantlings definition and the proposal for a new in-service structural performance monitoring requirement, which are significant. IACS' views on these issues are outlined in this document.

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Net scantlings

4 The Report of the Pilot Panel, document MSC 83/5/1, paragraph 20, indicates that the Panel could not come to an agreement as to how to apply the definition of the net scantlings contained in the footnote ** of Tier II.3. IACS addressed similar issues in document MSC 82/5/11, observing that there was no common understanding of the detailed meaning of this footnote and that this could lead to different applications in practice.

5 IACS fully supports the majority view of the Pilot Panel members (MSC 83/5/1, paragraph 21), wherein it is stated that the application of a 'single' or 'pure' net scantling for all calculations is too simplistic and that the method should be determined based on a methodology that takes into account the permissible diminution of structural elements over the service life.

6 In order to have a Tier II.3 footnote text which is clear and straightforward to interpret, and takes into account the views of the majority of the Pilot Panel, IACS proposes that the footnote should be amended to read:

“The net scantlings should provide the structural strength required to sustain the design loads, assuming the structure is in intact condition and accounting for the steel diminution that could be reasonably expected to occur during the life of the vessel due to corrosion and wastage.”

7 The minority view reported by the Pilot Panel seemed to imply that there is an absence of any justification and benchmarking of different approaches other than a 'pure' net scantling methodology. This is simply not correct. The rules of all IACS members for the last 30 years, as well as SOLAS, have been using an approach consistent with the definition offered in paragraph 6, above. The figure included in document MSC 83/INF.5, annex 2, page 39, illustrates that the hull girder properties of over 2,000 vessel cross sections are well covered by the current classification rules and SOLAS requirements. These apply a 10 percent margin for hull girder corrosion consistent with paragraph 6.

8 It is IACS' view that if new or stricter requirements are to be implemented, they should be properly justified, and should undergo the same process as new IMO requirements before they can be adopted. The proposed 'pure' net scantling definition would impose a margin in great excess of the current practice for longitudinal strength, and IACS can not see how such an increased margin has been justified.

In service structural monitoring

9 The Report of the Pilot Panel (MSC 83/5/1, paragraph 16), proposes the development of continuous performance monitoring which would require that recognized organizations complying with GBS perform a continuous self-assessment of the effectiveness of their Rules; in effect, to establish a formalized feedback loop for the confirmation of Rule performance. The results of this self assessment would then have to be reported back to the IMO on a regular basis.

10 IACS strongly believes that there are many issues that must be well thought out and planned before proceeding with the inclusion of this type of requirement in Tier II.

11 For example the Pilot Panel noted in their report that this issue spans (or is dependent upon) many issues such as: construction, survey, and maintenance, which are outside of the current scope of the Goal-based new ship construction standards (GBS) for tankers and bulk carriers. IACS notes that structural performance strongly depends on vessel operations, routing,

loading/unloading, maintenance, etc. Factors outside the newbuilding Rules that would affect the performance metrics include:

- .1 the original workmanship applied during construction and any repairs;
- .2 any “owner’s extras” that are built into the vessel;
- .3 the general maintenance scheme followed for the vessel;
- .4 the maintenance of protective coatings;
- .5 the actual operation of the vessel (seamanship);
- .6 the actual weather encountered by the vessel (seamanship);
- .7 the typical trading route of the vessel; and
- .8 etc.

Most of the items mentioned and included in the proposed performance metrics are not solely controlled by the newbuilding structural requirements and are greatly influenced by many factors beyond the newbuilding structural Rules. Therefore they are not appropriate or meaningful “metrics” for the performance of the structural Rules.

12 For example, it is clear that any metric associated with corrosion and steel renewal will be directly and significantly influenced by the specific operations and maintenance of each ship. Since there is no requirement that coatings, where applied, be maintained, an owner may choose to allow, or may not be able to prevent, coating breakdown, for a variety of possible reasons, which will lead to earlier and more extensive steel renewal than would be the case if the coating was always in good condition or promptly and thoroughly repaired whenever local deterioration was found. The extent of steel renewal in these two cases would be dramatically different – but does not provide any information regarding the adequacy of the structural Rule requirements without the associated data on the coating maintenance. Similarly, the carriage of highly corrosive or abrasive cargoes vs. the carriage of benign cargoes will have a significant effect on the extents and rates of wastage and subsequent steel renewal. These are matters which are not governed by the structural Rule requirements but rather by choices made with respect to each ship’s operation and maintenance throughout its operational life. Thus, any metric related to corrosion and steel renewal must also take precise account of the effects of these operational decisions on the corrosion and steel renewal. To develop this metric, and to document and analyze it over the life of each ship and over the population of all ships built, would require data to be collected not only on the structural performance but also on the maintenance and operation of the vessel.

13 IACS understands the motivation for having in-service structural monitoring requirements and notes that all classification societies routinely monitor the feedback which they collect from surveys during operation. It is a part of the continuous improvement and feedback processes laid down in well established schemes such as the IACS QSCS, EU Directive 94/57/EC and ISO 9001. The analysis of feedback from service for the systematic maintenance of Rules is also required by IMO resolution A.739(18). However, the requirement that includes reporting and publication of the results of the data collection, presumably covering the entire rule set irrespective of the incidence of evidence of deficiencies, has to be well thought out before placing this type of requirement in the GBS.

Action requested of the Committee

14 The Committee is invited to note the above discussions, consider the term “net scantlings” as proposed in paragraph 6 above, and carefully consider the points raised in paragraphs 8 to 13 in the further development of goal-based new ship construction standards for bulk carriers and oil tankers.