

ANM 15 Input paper

Agenda item 9.6

Task Number 12

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Review of IALA Recommendation O-139 on the Marking of Man-made Offshore Structures

Marking of Offshore Windfarms

1. SUMMARY

This input is meant to be set the focus by Committee members to the relationship between the lighting for the safety of ships traffic and the minimizing of light emission for environmental reasons (prevention of light pollution, attraction effect for birds) in connection with the building of large offshore windfarms.

This paper shows three different samples for the lighting of the peripheral structures of an offshore wind farm. Two of them are alternatives to the IALA Recommendation O-139.

The first sample shows the illumination acc. IALA Recommendation, the second sample shows a marking with sector lights on all structures and the third shows a mixture of sector lights and 360° lights on the corners and SPS.

The purpose of the paper is to increase the safety of navigation and bring also the environmental factors into account as an important acceptance criteria today.

1.1 Action arising from the input of the document

Committee/ WG should include these examples in the considerations of the reviewing the O-139.

1.2 Related documents

IALA Recommendation O-139 on the Marking of Man-Made Offshore Structures (Dec. 2008)

1 BACKGROUND

Large offshore windfarms with up to hundreds of turbines are being to build in the open sea and close to the shipping routes.

The side length is sometimes 20 and more nautical miles. The influence of the ships traffic is immense.

For reasons to maintain the safety of ship traffic, the marking of those large wind farms have to be reviewed in respect of this development and also in terms of minimizing the light emission.

New technologies (f.e. AIS) should be considered as important matter for the principle marking.

2 DISCUSSION

The present O-139 recommends for the lighting of peripheral structures of a wind farm the possibility of unlit turbines if the distance between two turbines is closer than two nautical miles. To prevent "visuals gaps", which vessels could lead to passage, all structures in the periphery should be marked in a way to enhance the safety of ships traffic and minimize the light emission.

The three figures below show an example with the present situation (O-139) and two alternatives.

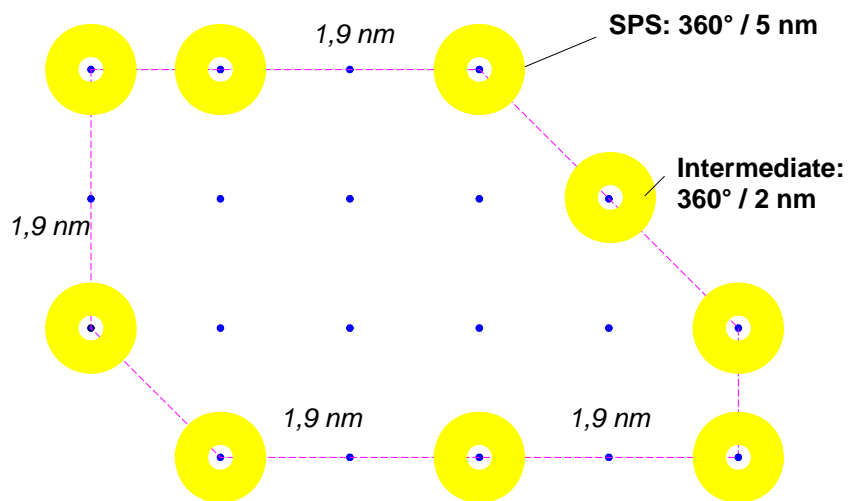


Figure 1 All lights 360° horizontal angel

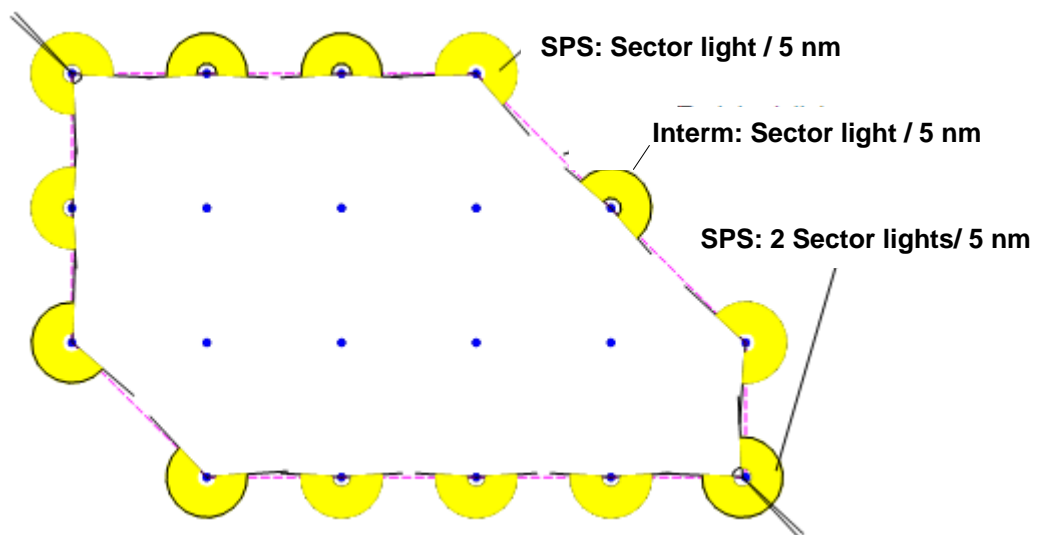


Figure 2 All lights sector lights

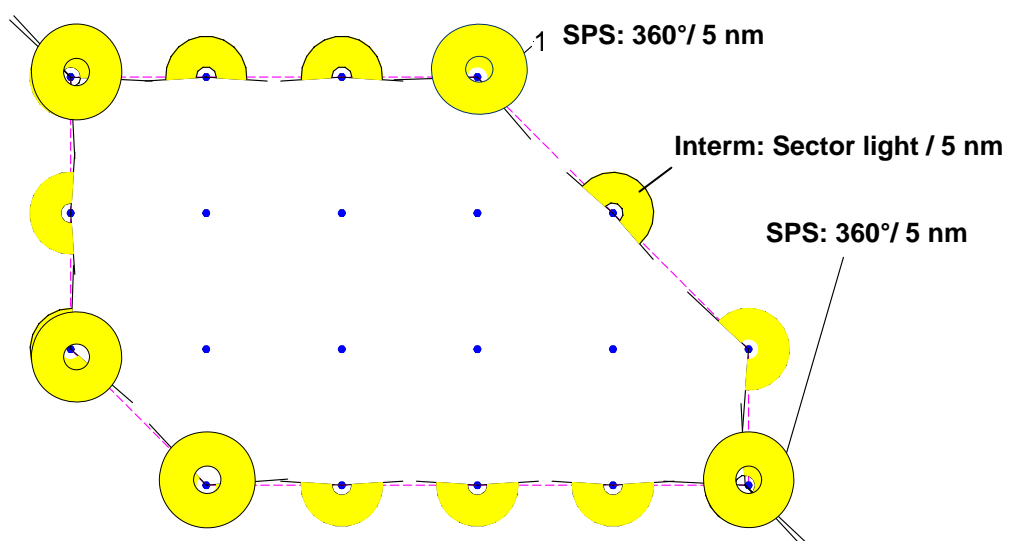


Figure 3 SPS 360°, other sector lights

3 ACTION REQUESTED OF THE COMMITTEE

The Committee is kindly asked to include these examples in the considerations of the reviewing of O-139 and discuss them in the working group.

3.1 4.1 Further Request

Additional to that, the committee is also asked to include in the considerations:

- the marking of the corners or other SPS by using sythetic AIS,
- to discuss the different range of SPS and intermediate structures to set both on the same distance,
- the use of inverse illumination for short range marking,
- the use of “occulting” light characters for the corner structures instead of “flash”,
- the marking of gaps between wind farms wich are usable for the ship traffic,
- the use of Racon for marking corners or other SPS and the
- unified numbering of the structures to facilitate search and rescue operations inside a windfarm area.
