Safety notice 02/2023

Sjøfartsdirektoratet
Norwegian Maritime Authority

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Protecting battery systems against humid, salty air and seawater intrusion

This safety notice replaces SM 5–2022

In response to the *Brim* accident on 11 March 2021 and a preliminary report from the Norwegian Safety Investigation Authority, the Norwegian Maritime Authority (NMA) carried out surveys on board vessels with battery installations with a low IP rating (less than IP-44). The surveyors detected salt in several battery rooms, as a result of humid air or water intrusion.

A final report was released in August 2022. The NMA is continuing to follow up safety recommendations from the Norwegian Safety Investigation Authority.

The cleaning of decks and external bulkheads have in a number of cases resulted in water intrusion in the battery room. Moreover, the Norwegian Maritime Authority has received a report from a battery supplier pointing out that there is a significant risk of incidents involving systems with a low IP rating and where the design of the battery room does not have adequate barriers to prevent the ingress of moisture, salt, and seawater into the battery room. Water intrusion in dedicated exhaust ducts belonging to systems with a higher IP rating may lead to short circuits and thermal events.

It is not possible to determine when consequences of any salt build-up or moisture will occur. For vessels with this type of battery system, the company must, as soon as possible, establish routines for:

- verification that the battery room is protected against the ingress of seawater through openings, including ventilation inlets and outlets. This includes the risk of water intrusion when cleaning decks and external bulkheads;
- consideration of possible flaws, including ventilation openings, and the introduction of measures where there is a risk of ingress of water from the sea or from cleaning;
- any pipe penetrations in the battery room must be evaluated so that they do not pose a danger in the event of a leak. Potential leakage points in pipes containing seawater must be secured if they are likely to affect the battery system;

- assessing the environment where the batteries are located (such as temperature, level of salt and moisture) in order to avoid damage to the battery system;
- contacting the battery supplier if you detect any traces of salt or moisture in the battery room. A physical supervision of the battery supplier must be conducted to check the condition of the batteries. The report from this supervision needs to be submitted to the Norwegian Maritime Authority.

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This document has been electronically approved, and therefore does not contain handwritten signatures.