Subject

Corrosion of distance pieces associated with SOx scrubber discharge waterlines (Part 2)

ClassNK

Technical Information

No. TEC-1214
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To whom it may concern

As previously noted in ClassNK Technical Information (TEC-1205), ClassNK received several reports of cases of sea water leakage being detected in damaged distance pieces (due to corrosion) of SOx scrubber discharge waterlines fitted to hull structures (see 3 in Figure 1). Since similar incidents are still being reported, ClassNK has decided to publish this Technical Information not only to remind our clients that this remains an ongoing concern, but also to provide the following related information.

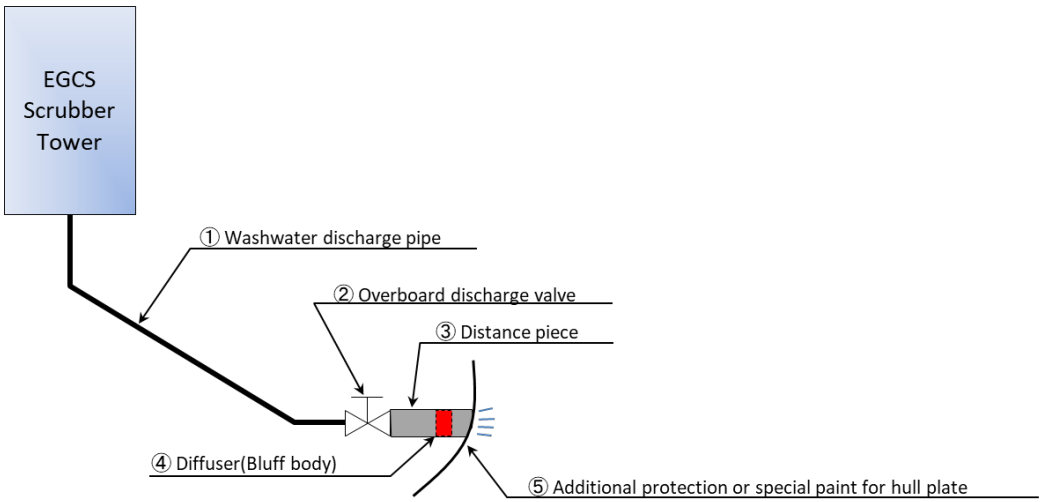
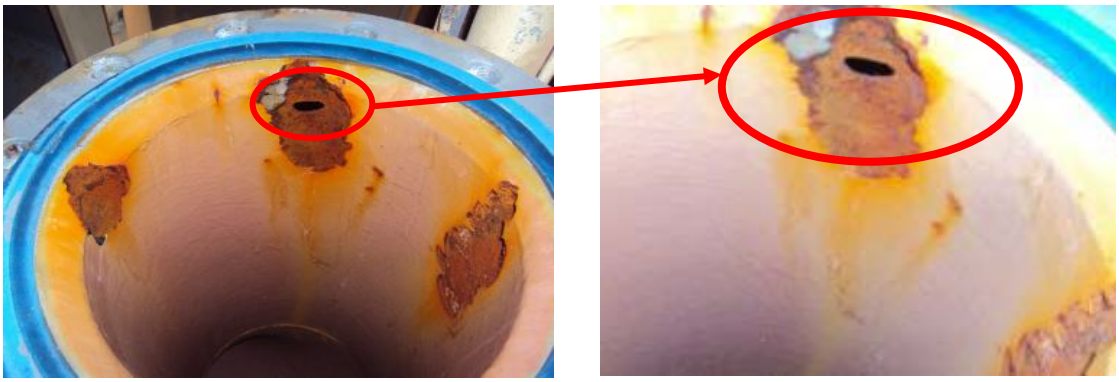


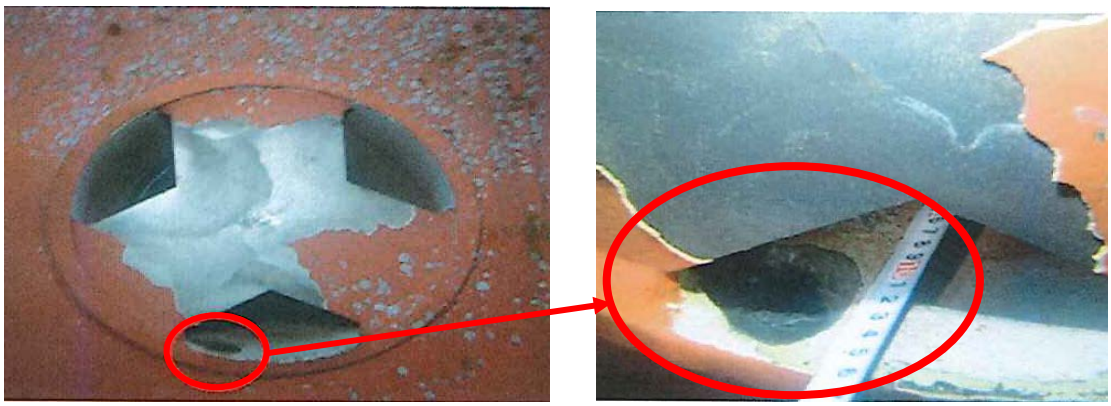
Figure 1 SOx scrubber discharge water line

According to damage reports received to date, sea water leakage has been observed either on or adjacent to welded parts between distance pieces and their associated flanges (see Picture 1) as well as between distance pieces and bluff bodies (see Picture 2). The reports indicate that the corrosion apparently initiates at the welded parts and then continues to progress until it finally leads to sea water leakage into engine rooms. A peeling of the painted surfaces of the butt-welded parts of distance pieces (see Picture 3) has also been observed.

(To be continued)



Picture 1 Damage on/around welded parts between distance pieces and flanges



Picture 2 Corrosion on/around welded parts between distance pieces and bluff bodies

Picture 3 Paint peeled off at butt-welded parts of distance pieces

Based on the circumstances of the situation, the damage is assumed to begin at locations on welded parts where the paint has been peeled off. The underlying surface is thus directly exposed to discharge water, and it causes corrosion that then spreads over the distance pieces over time.

ClassNK believes that one of the effective ways to prevent this type of incident is to apply pre-treatment prior to the painting of welded parts in order to ensure proper paint performance, and some specific pre-treatments are introduced below as examples. In addition, please be sure to comply with the pre-treatment procedures specified by paint manufacturers, if any.

(To be continued)

For the purpose of preventing insufficient local paint thickness and non-uniform paint thickness
- Grind edges
- Grind welded surfaces
- Remove welding spatter

For the purpose of removing dust and any remaining welding material components
- Clean and remove any surface dirt from the welded parts

In addition, the use of corrosion-resistance material such as stainless steel for distance pieces is another effective measure to be considered. Please note that welding procedure specification (WPS) approval is, however, required for stainless steel materials prior to any welding work.

ClassNK considers the reported incidents to be serious, and feels that the information contained in this Technical Information will be a useful reference for shipowners and ship management companies, etc. and allows them to take preventive actions as needed. In this regard, please let us note that the above-mentioned measures are for reference purposes only, and their effectiveness is not guaranteed in all cases. You are, therefore, kindly requested to independently investigate their effectiveness on a case-by-case carefully with concerned parties when such measures are applied.

As previously covered in TEC-1205, ClassNK recommends that shipowners and ship management companies do the followings:
- Share the above-mentioned information with the masters of your vessels on which SOx scrubbers are installed, and instruct them to pay more attention to their external inspections of discharge waterlines, especially those around distance pieces from engine room, and carry out said periodical inspections more frequently.
- Arrange to inspect internals of distance pieces when the opportunity presents itself, e.g. arranging divers for hull cleaning.

If leakages are detected, temporary countermeasures (e.g. covering the affected distance pieces with cement boxes) to stop the leakage should be taken immediately, and an Occasional Survey by a Society surveyor should be arranged as the soonest opportunity.

For any questions about the above, please contact:

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