

## Corrosion failure 90/10 cupronickel tubes in a desalination plant

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Received 12 March 2009; Accepted 25 February 2010

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### ABSTRACT

This paper presents finding of a failure investigation on a heat exchanger tubes in a desalination plant. Fabricated from Type 90-10 copper–nickel alloy, the tubes experienced sever corrosion after one year of operation. Leaks were observed due to pitting attack requiring repairs and eventual replacement of the cupronickel tubes. The cause of the failure was determined by conducting a physical inspection, and performing macro and micro examinations. The failure of the tubes was mainly attributed to the high iron content (up to 6%). The results of the failure investigation are discussed along with corrosion issues that were identified in the associated heat exchanger tubes.

*Keywords:* 90-10 cupronickel; Seawater; Pitting corrosion

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