

## Corrosion mitigation and heat transfer improvement in refineries cooling systems

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**Abstract** The paper presents a case study on a cooling system of a fluid catalytic cracking (FCC) unit from a typical refinery. The performance of the cooling system is analyzed in two operational alternatives: using untreated cooling water and respectively using cooling water treated with a complex scale, corrosion and microbiological control program. Short time after treatment program is started, positive effects appear: improvement of heat transfer, reduction of corrosion, reduction of energy and fresh water consumption. The operating problems that may appear due to improper equipment design or due to the disregarding operation, maintenance or repairing regulations are also highlighted.

*Keywords:* Cooling water treatment, corrosion, scale, heat exchangers, fluid catalytic cracking, oil refining.

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