

عنوان مقاله:

An Experimental and Theoretical Investigation of Corrosion Mechanism in a Metallic Stack

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Mohammad Reza Sarmasti emami - Iran University of Science and Technology

خلاصه مقاله:

This paper presents an experimental and theoretical investigation of the causes of corrosion of stack in a cement plant. In this paper, information related to metallic stack failures are given in the form of a case study in Neka Cement Plant, Mazandaran, Iran. Heavy corrosion attacks were observed on the samples of stack. The failure can be caused by one or more modes such as overheating, stress corrosion cracking (SCC), hydrogen embrittlement, creep, flame impingement, sulfide attack, weld attack, dew point corrosion, etc. Theoretical calculations and experimental observations revealed that, the corrosion had taken place due to the condensation of acidic flue gases in the interior of stack. Also, the chemical analysis of the corrosion deposits and condensates confirmed the presence of highly acidic environment consisting of mostly sulfate ions.

کلمات کلیدی:

Acid Solutions, Corrosion, Stack, Dew point, Low alloy steel

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