

Effect of Acetic Acid on the Pitting Corrosion of 2Cr12MoV Turbine Steel in Early Condensates Containing Chloride Ions

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The effect of acetic acid on the pitting corrosion of 2Cr12MoV turbine steel in early condensates containing chloride ions was investigated by potentiodynamic and potentiostatic polarization, scanning electron microscopy, energy dispersive X-ray spectroscopy and electrochemical impedance spectroscopy. The potentiodynamic polarization tests results illustrate acetic acid decreased the metastable pitting and pitting potentials. The potentiostatic polarization tests and scanning electron microscopy, energy dispersive X-ray spectroscopy results revealed acetic acid promoted the pits initiation and propagation. The electrochemical impedance spectroscopy indicated acetic acid increased corrosion rate and decreased the pitting corrosion resistance.

Keywords: Blade steel, pitting corrosion, Acetic acid, Early condensate

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