

High Temperature Corrosion in a Waste-Fired Combustion Boiler

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Solid waste fuel is a source of the power generation, industrial processing or other uses and the conversion of solid waste fuel into energy (Waste to Energy) is considered to be the promising technology with high economic and social benefits. In order to reliably operate waste-fired combustion boiler, it is essential to solve the various problems such as de-fluidization of bed materials, fuel-feed failure, and degradation of equipment (erosion and corrosion) caused by deposit of salt and ash. Among them, the high temperature corrosion of the heat exchange tube is the most important factor that affects the economic deterioration of a waste-fired combustion boiler, due to decrease of operating time and the periodic shutdown during plant operation. The purpose of this study was to examine the high temperature corrosion characteristics of boiler superheater tubes. To investigate the effects of temperature and tube specification on the tube degradation, the high temperature corrosion test apparatus was developed and the degree of tube corrosion was examined by using weight loss method.

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