Analysis of The Causes the Degradation of Part Steam Generator by Using Microscopy Methods

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Degradation of technical objects is a natural phenomenon, but for users of these objects brings many problems. These problems are manifested by shortening lifetime, lowering safety and increasing costs for the technical operation of technical objects. This article analyzes the causes of degradation of parts steam generator using methods of microscopy. Degradation processes that occur most frequently in parts of steam generators are creep, corrosion and wear. The degradation occurred on the tube of convection superheater from steel CSN 41 5128. It was found that the inner surface was covered with corrosion products and was disrupted its cohesion. For search of the causes of degradation were used spectral analysis, microscopic analysis and determination of the weight of oxide layers according to CSN ISO 8407. Based on the results of analyzes, it was found that the occurrence of degradation is related both microstructure of pipes which did not comply with the required state and also with non-standard environment, which was exposed the inner pipe surface.

Keywords: microscopy, degradation, technical object, steam generator

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