

Modeling of Vacuum Reed Failure by Using Finite Element Method

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Abstract

The phenomenon, so called “volcano”, a kind of vacuum reed failure was found and its possible mechanism of this failure was discussed before. For further verification of the conclusions and improvement of the design, the failure simulation model of finite element analysis is established. The calculating result based on the simulation model is satisfactory consistent with the investigation. It is also found that the over heating at contact area leads to plastic extension, where the residual tensile stress is produced resulting cracks on the surface. The parameters and their influences, which effect the failure, are discussed.

Key words: Vacuum reed, failure, finite element analysis