عنوان مقاله:

Life span prediction for the last row blade of steam turbine

محل انتشار:

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خلاصه مقاله:

The steam turbine of Ramin Ahvaz power plant is a k۳۰۰-۲۴۰ model manufactured by the Russian power machine company, which has six units of ۳۰۰ MW. The above turbine has a rotational speed of ۳۰۰۰ rpm; its final blade weight is ۹.۲ kg. Its centrifugal force causes one of the most important and effective stresses in the blade. In this research, the first step, the forces acting on the blades such as centrifugal force are investigated, and then the stresses of these forces are calculated. By using these calculations and the properties of the blades, estimation of the blade life is made by applying stress-life correction coefficients. In the following, by using an engineering software named ABAQUS, a sample of the last row of fins is simulated. This simulated specimen after meshing is stress analyzed. By this method, the results of manual computations are compared by using different life criteria such as Goodman's and Gerber's life criteria results obtained by Abacus (finite element software). Finally, we evaluate the validity of the previous steps .through the manufacturer's documentation

کلمات کلیدی:

turbine blade, Life prediction, Tension, Centrifugal Force