عنوان مقاله:

Design and Strength Analysis of Turn-Down Tool for Stator Core of ۳۷۷MW HydrogencooledGenerator

محل انتشار:

سی و یکمین همایش سالانه بین المللی مهندسی مکانیک ایران و نهمین همایش صنعت نیروگاهی ایران (سال: 1402)

تعداد صفحات اصل مقاله: 5

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خلاصه مقاله:

The stator core of high-power generators (> ۳۰۰ MW) isvertically stacked due to the multi segmentedlaminations. After the completion of the stacking and thepressing and curing process, they are rotated fromvertical to horizontal. Usually in generators up to ۳۰۰MW, the inner diameter is used to rotate the core fromvertical to horizontal situation. However, in heavy andhigh-power generators, the long length of the core causesto high stresses (especially the bending stress) in core,which leads to the possibility of core delamination. Forthis reason, it must use the outer diameter of core to liftand rotate it. In this article, the process of design andstress analysis of the tool for lifting and rotating thestacked stator of the hydrogen-cooled generator۳۷۷MW-Class F are described.First, the three-dimensional model of the componentsof equipment was designed in five separate parts in themodeling software (CATIA), and then, in order to ensurethe structural integrity of the components, some stressanalysis of the tool was conducted. The results of thenumerical analyses demonstrated that the maximumstress occurred in the upper parts of the main beams ofthe equipment, in the position where the tool and stackedcore were completely horizontal. To be assured that thecomponents of equipment were able to complete theprocess of lifting and rotating the stator core withoutfailure and .plastic deformation, the St.۵۲ raw materialswere selected to manufacture this tool

کلمات کلیدی:

.hydrogen-cooled generator, numericalanalysis, lifting and rotating equipment

لینک ثابت مقاله در پایگاه سیویلیکا: