

## عنوان مقاله:

Numerical Investigation on Using of the Guide Vanes in the Air-Cooled Condenser's Main Steam Manifold

## محل انتشار:

بیست و نهمین همایش سالانه بین المللی انجمن مهندسان مکانیک ایران و هشتمین همایش صنعت نیروگاه های حرارتی (سال: 1400)

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## خلاصه مقاله:

The power plant cooling system is considered as one of the effective components of the efficiency in thermal power plants. In this study, a numerical analysis is carried out on the existing main steam manifold of an aircooled condenser, with unequal distribution of steam flow rate into seven branches. The purpose of this study is to decrease the local pressure drop at the Tee-junctions, in order to modify the flow field and equally distribute the steam flow between all branches. Doing so, a configuration of guide vanes is proposed to be installed in each Tee-junction. Results showed that the new design (with guide vanes) can effectively restrain the flow separation at the entrance of the Tee-junction, lowering the steam pressure drop. By careful design of the geometry of the guide vanes, mass flow rates of the steam leaving each branch are almost equal. One can also take advantage of reduced turbulent kinetic energy of the flow which is important in terms of lowering fluid-born vibra

## کلمات کلیدی:

.Air cooled condenser, Steam manifold, Guide vanes

## لینک ثابت مقاله در پایگاه سیویلیکا:

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