Title (en)

PREVENTION OF ENCRUSTATION OF A STEAM TURBINE BLADE BY INJECTION OF PURE STEAM

Title (de)

VERMEIDUNG VON VERKRUSTUNG EINER DAMPFTURBINENSCHAUFEL DURCH REINDAMPFEINSPRITZUNG

Title (fr)

EVITER L'ENCRASSEMENT D'UNE AUBE DE TURBINE A VAPEUR PAR INJECTION DE VAPEUR PURIFIEE

Publication

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Application

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Abstract (en)

[origin: WO9734075A1] The invention concerns a steam turbine (14) with a turbine blade (1) aligned along a principal axis (2) and provided with a curved flow surface (3) for steam. A fluid feed duct (5) is provided in the interior (4) of the turbine blade (1) and connected fluidically to a plurality of fluid outlets (6), each fluid outlet (6) opening out at the flow surface (3) to deliver pure steam. Feeding pure steam creates a protective fluid film, in particular of steam, over the flow surface and if necessary other areas of the turbine blade surface. The steam film forms a boundary layer around the turbine blade which to a large extent keeps the steam flowing through the steam turbine away from the blade surface. It is therefore possible to operate the steam turbine with a corrosive steam produced, for example, from drying brown coal or other combustible material. The steam film prevents impurities from becoming encrusted. The invention also relates to a use of the steam turbine (14) in a facility (17) for drying brown coal, in which the steam released in the drying process is fed into the steam turbine (14).

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