



TR0700289

PRODUCTION METHOD OF HYDROGEN BY JET PLASMA PROCESS IN HYDRO MACHINERY

Farzan Amini

Department of Mechanical Engineering, Farab Company, No.30, Mirhadi St. Vali-Asr Ave.Tehran – Iran

E-mail: *farzanamini@yahoo.com*

ABSTRACT

The purpose of present paper is to the process of plasma formation in hydro machinery when a hydro turbine operates at various conditions and load rejection. By investigation the power, shock pressure , and impact effects of hydro machinery, it is revealed that energy and hydrogen are generated by the plasma process. The investigation on several turbines of various hydro power plants reveals that cold fusion process in hydro machinery generates hydrogen. The hypothesis concerning the participation of alkaline metals in river water and the atomic nuclei of the runner blade material in the formation of hydrogen are considered. It is possible to assume hydrogen, deuterium, helium, and tritium atoms (based on Dr. Mizuno and Dr. Kanarev theories) that are formed, diffuse into cavitation bubbles. The plasma is generated during the collapse of the bubble; thus, the quantity of burnt hydrogen determine the volume of generating hydrogen and the impact force caused by hydrogen explosion (noise). There are five main notions, which can determine hydrogen and plasma process: (1) turbine power effect, (2) high shock pressure, (3) crack on turbine parts, (4) impacts effects and (4) the lift of rotating parts. The frequency of the excitation lies in a range from 0.786 to 1.095 Hz. In future, it may be possible to design hydro turbines based on the plasma process that generates hydrogen; or there may exist turbines that rotate with a mixture of hydrogen explosion and water energies.

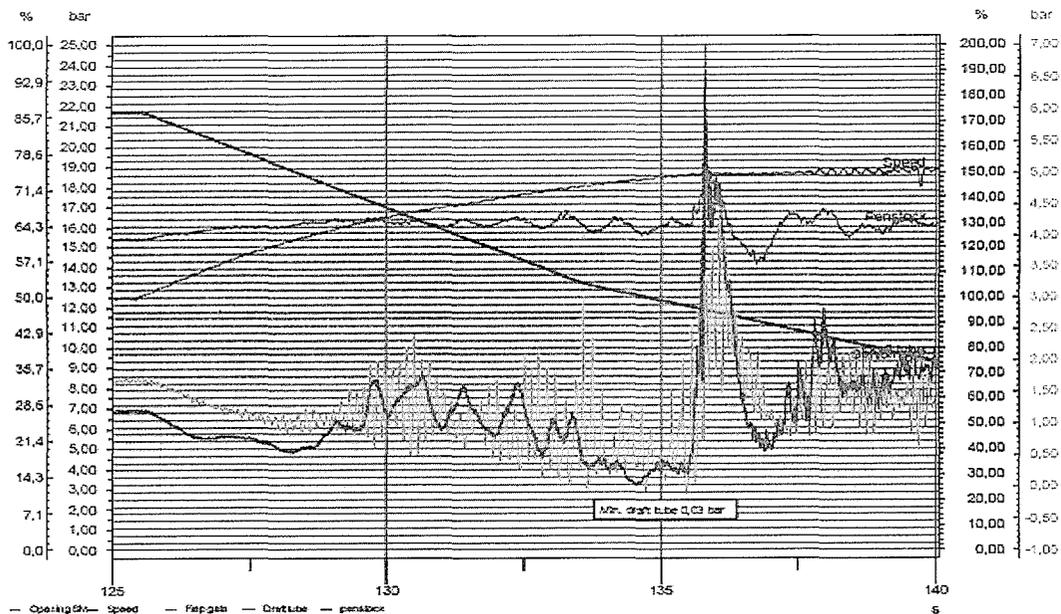


Fig . 1 - Pressure wave on unit no.2 of the second hydro power plant