Project No.: **T14**

B.Tech Project Report
on

Development of Pico-Hydel Power Technology using Pump as Turbine

Submitted By:

Saurabh Suman (2010ME10725)

Vikas Kumar (2010ME10740)

Supervised by

Prof. P.M.V. Subbarao

Department of Mechanical Engineering

Indian Institute of Technology Delhi

Examiner

Prof. S.V. Veeravalli

Department of Applied Mechanics

Indian Institute of Technology Delhi

Mechanical Engineering Department
Indian Institute of Technology Delhi
May 2014

CERTIFICATE

The work presented in this report has been carried out by us for the course Major Project Part 1 & Part 2. The report accurately reflects the work done by us. All the material taken from other sources has been fully acknowledged.

Saurabh Suman

Saurabh Suman

2010ME10725

Vikas

Vikas Kumar

2010ME10740

Saurabh Suman and Vikas Kumar have worked under my supervision. I have read this report. It accurately reflects the work done by the students.

Prof. P.M.V. Subbarao

Department of Mechanical Engineering

Indian Institute of Technology-Delhi

New Delhi

ABSTRACT

There are vast Nano and Pico scale hydro resources available in India and worldwide. These resources go unharnessed because of complexities involved in setting up of a normal turbine driven hydro power plant. In these situations pump as turbine (PAT) can be a suitable alternative because of simple technology, less complexity and availability. The technology involves a centrifugal volute pump with its impeller blades running in reverse direction which works similar to that of a Francis turbine. This technology can be of great use to the society but because of lack of adequate research in this field, this alternative still remains unexplored. The purpose of this project is to find characteristic curves for a given PAT, analyze the experimental results, design guide vanes to increase its efficiency and look for other options of improvement in efficiency.

Keywords: PAT (Pump as Turbine), Centrifugal Pump, Impellers, Dynamometer, RPM, Head, efficiency, Flow rate

ACKNOWLEDGEMENTS

We would specially like to thank our supervisor, Prof. P.M.V. Subbarao for giving us an opportunity to work in such an interesting and socially significant project which can transform the lives of people in rural India. This project encompassed great learning and we are grateful to him for his useful suggestions and other supports to overcome our difficulties.

We would also like to thank our examiner Prof. S.V. Veeravalli for his invaluable suggestions which made us think more critically and analyze situations in a more realistic manner. His response to our project was very encouraging and that kept us motivated throughout.

Also, this project would not have been possible without help of Mr. Raj Verma, who is a project assistant in Dept. of Mechanical Engineering. His presence and support has always given us an optimistic view to our project for which we are thankful to him whole heartedly.

At last, we would like to take this opportunity to thank our parents for what we are today and also for playing a pivotal role in shaping our future.

Saurabh Suman

Vikas Kumar

Date: 29/04/2014

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