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Review on Hydroelectricity Power Plant

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ABSTRACT: This article provides a comprehensive overview of hydropower modeling. First, a background was provided for all the components needed to develop a complete and comprehensive model for the hydropower plant, including the pen holder, controller, turbine, and generator. The review of the existing models started with simple analytical models followed by system modeling. The complexity of modeling the dynamic aspect of water flowing in a hydropower plant and the opening and closing of a passenger entrance led to the development of complex control systems for modeling hydropower plants. These complex models were depicted as a system rather than an analytical one. They are mostly equipped with a number of feedbacks as well as modern control systems such as fuzzy logic and PID control logic that improve their performance. However, these models are most often constructed and simulated with software based on MTLAB. In line with this, the dissertation examined the simulation of a hydropower plant, including a model of a hydraulic turbine, a controller and a synchronous machine, all simulated with MATLAB software. A three-phase earth fault was introduced in the model at t = 0.2 s and then eliminated after t = 0.4 s, indicating that the generated voltage quickly regained stability due to the high excitation voltage maintained by the built-in PID control system. up. the hydraulic turbine model. The engine speed also stabilized, but this case

KEYWORDS: Renewable energies, hydro etc

I. INTRODUCTION

Energy is one of the most basic elements of our lives. It is inevitable for survival and essential Development activities in the fields of education, health, Transport and infrastructure to achieve reasonable it is also a critical factor for living standards and the economy development and employment. In the last decade, problems related to the energy crisis, such as oil crisis, climate change, electricity demand and constraints the rise of wholesale markets has risen worldwide. These difficulties are constantly increasing, which suggests technological alternatives are needed to ensure their solution. One of these technological alternatives is generation electricity as close as possible to the place of consumption renewable energy sources that do not cause pollution such as wind, sun, tide and hydropower plants The hydropower plant a a form of renewable energy source that a running water. There must be water to generate electricity move. When water falls under the force of gravity, its the potential energy is converted into kinetic energy. This is the kinetics the energy of the flowing water rotates the vanes or vanes a hydraulic turbines, the form of energy changes mechanical energy. The turbine rotates the rotor of the generator which converts this mechanical energy into electricity energy.

II. LITERATURE REVIEW

1) S. N. Uddin and R. Taplin, “A sustainable energy future in Bangladesh: current situation and need for effective strategies,” in Proceedings of the 2nd Joint International Conference on Sustainable Energy and Environment (SEE '06), Bangkok, Thailand, November 2006 The need for effective mitigation strategies linked with sustainable energy development.

2) J. K. Kaldellis, “The contribution of small hydro power stations to the electricity generation in Greece: technical and economic considerations,” Energy Policy, vol. 35, no. 4, pp. 2187–2196, 2007
Hence, small hydro power stations remain one of the most attractive opportunities for further utilization of the available hydro potential.

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3) M. A. Wazed and S. Ahmed, "Micro hydro energy resources in Bangladesh: a review," Australian Journal of Basic and Applied Sciences, vol. 2, no. 4, pp. 1209–1222, 2008 A reliable, affordable and secure supply of energy is important for economic development. This has been true for the past and present and will remain valid for the future

4) S. Mishra, S. K. Singal, and D. K. Khatod, "Sustainable energy development by small hydropower with CDM benefits in India," International Journal of Ambient Energy, vol. 32, no. 2, pp. 103–110, 2011 Small hydropower (SHP) is an environmental friendly technology and qualifies for Clean Development Mechanism (CDM) benefits.

III.SYSTEM DEVELOPMENT

In order to boost economic growth and human development, one of the top priorities of the Indian government is to ensure reliable access to electricity for all its citizens by 2012. Ensuring that by 2012, undiscovered 40 per cent of Indian homes will receive electricity and cater to growing demand. Of those already served by the electricity grid, the government estimates that the country will need to install an additional 100,000 megawatts (MW) of generation capacity by 2012, expanding grid-based generation to about 225,000 MW. Given that India has expanded its capacity by about 23,000 MW in its most recent five-year plan for 2002-2007, this will be a huge leap. The Government of India has decided to source more and more of this surplus capacity from the country's untapped hydropower resources. So far, 23 precent of it has been exploited. India's energy portfolio today is highly dependent on coal-fired thermal energy, with hydropower accounting for only 26 per cent of total energy production. The Indian government has set a target that 40% of India's optimal energy supply mix will come from hydropower and 60% from other sources.

Block diagram

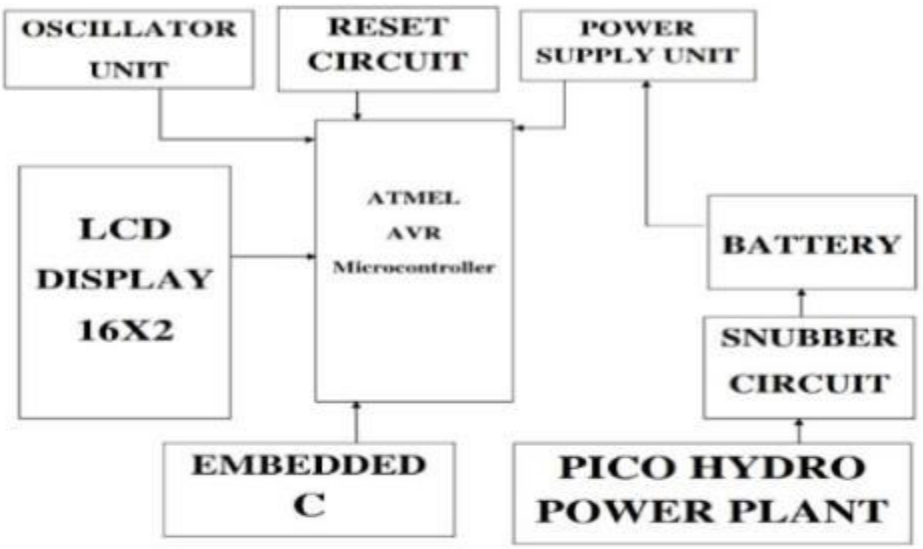

Fig1.1 Block diagram

IV. RESULT

Hydroelectric Power Plant are an indispensable source of energy for the world. Water is an efficient and reliable fuel the use creation and expansion of Power plant should continue to be pursued.

VI.CONCLUSION

A micro hydropower plant has been designed for the MGM campus in Aurangabad, Maharashtra. The site has huge potential and could be one of the best solutions available for power generation. The study involves the selection of

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suitable sites for micro-hydro power plants. The planned micro- hydropower plant is technically and economically feasible and will not only meet the energy needs, but the conversion of DG Back up to hydropower will not only stop the use of diesel (fossil fuels - a non-renewable resource). but it also reduces CO2 emissions.

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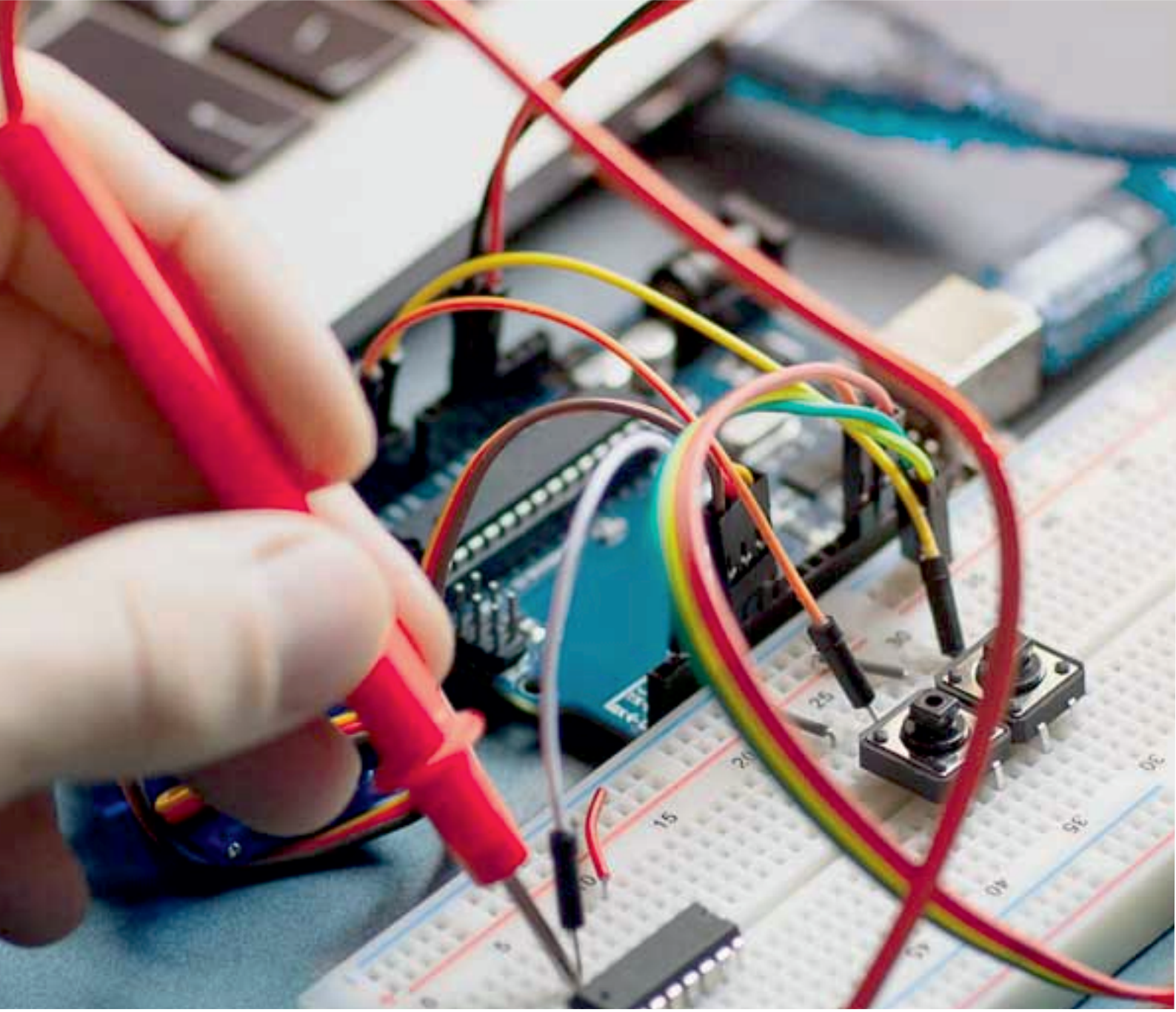

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