



A review on islanding operation and control for distribution network connected with small hydro power plant

Hasmaini Mohamad^{a,b,*}, Hazlie Mokhlis^a, Ab Halim Abu Bakar^a, Hew Wooi Ping^a

^a UM Power Energy Dedicated Advanced Centre (UMPEDAC), Department of Electrical Engineering, Faculty of Engineering, University of Malaya, 50603 Kuala Lumpur, Malaysia

^b Faculty of Electrical Engineering, University of Technology MARA (UiTM), 40450, Shah Alam, Selangor, Malaysia

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ABSTRACT

Hydro power generation is the oldest generation and provides the largest contribution among the renewable energy types of generation. In distribution system, most of the distributed generation (DG) is small scale hydro generation of which utilizes the natural flowing water of the river. This generation requires governor and excitation control unit to control and sustain the power generation when subjected to any changes of load behavior. More advanced control strategy is critically expected when considering the recent interest in distribution system to perform islanding operation of DG. Many of the literature have clearly highlighted this issue, but only a few have discussed on the islanding operation of small hydro generation. This paper therefore reviews this topic and relates the discussion with the controller designed for other type of turbines interfaced with synchronous generator. To strengthen the knowledge on islanding operation, the background of islanding is also presented in this paper.

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* Corresponding author at: UM Power Energy Dedicated Advanced Centre (UMPEDAC), Department of Electrical Engineering, Faculty of Engineering, University of Malaya, 50603 Kuala Lumpur, Malaysia. Tel.: +60 3 79675348; fax: +60 3 79675316.

E-mail address: hasmaini@hotmail.com (H. Mohamad).

Unintentional islanding is the state that one or more DG units unintentionally continue energizing a section of distribution network when the network loses supply. The system can be exposed to hazards and risks particularly when it is not being designed to

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