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Abstract Details

Title: Hydro-Electric Power Dam Control System Using Fuzzy Logic

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Abstract: This research presents the construction design of Hydro-Electric Power Dam Control System using Fuzzy Logic. In this design two input parameters: water level and flow rate and three output parameters: release valve control, drain valve control and Penstock switching are used. This proposed system uses a simplified algorithmic design approach with wide range of input and output membership functions. The hardware of control system for fuzzifiers and defuzzifiers is designed according to the need of system. The proposed simplified algorithmic design is verified using MATLAB simulation and results are found in agreement to the calculated values according to the Mamdani Model of the Fuzzy Logic Control System. The construction of a dam is necessary for the electric power generation, flood control, irrigation system, metropolitan and industrial water supply. Different kind of methods have been introduced and implemented to control the hydroelectric power dam due to non-deterministic behavior of water parameters such as flow rate and release etc. The result of this dissertation work will definitely be very efficient for power dam control system by fuzzy logic.

Keywords: Hydro-Electric Power, Dam Control System, Fuzzy Logic.