

수계별 소수력자원의 특성

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Characteristics of Small Hydro Power Resources for River System

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Small hydropower resources for five major river systems have been studied. The model, which can predict flow duration characteristic of stream, was developed to analyze the variation of inflow caused from rainfall condition. And another model to predict hydrologic performance for small hydropower(SHP) plants is established. Monthly inflow data measured at Andong dam were analyzed. The predicted results from the developed models in this study showed that the data were in good agreement with measured results of long term inflow at Andong dam. It was found that the models developed in this study can be used to predict the available potential and technical potential of SHP sites effectively. Based on the models developed in this study, the hydrologic performance for small hydropower sites located in river systems have been analyzed. The results show that the hydrologic performance characteristics of SHP sites have some difference between the river systems. Especially, the specific design flowrate and specific output of SHP sites located on North Han river and Nakdong river systems have large difference compared with other river systems.

Key words : Small hydro power resources(소수력자원), Specific hydropower potential(비가용량), Specific design flowrate(비설계유량), Specific output(비출력량), Load factor(가동율)

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소수력 발전설비 성능평가 시스템 구축

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Construction of small hydropower facilities performance evaluation system

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Domestic hydroelectric power plants has been manufactured as the design condition by the demand. Hydraulic turbine power plants operating at appointed load shall be operate stable in terms of pressure, discharge, rotational speed and torque. A performance guarantees for hydro turbines shall be contain, as a minimum, guarantees covering power, discharge and specific hydraulic energy, efficiency, maximum momentary overspeed and maximum momentary pressure and maximum steady-state runaway speed, as well as guarantees related to cavitation. But, present in Korea, the absence of testing laboratories and technical criteria for the performance test of small hydropower degrades the efficiency of the domestic hydropower machines, and makes it difficult to objectively evaluate the performance of hydro turbine. Therefore We planned making a basis of performance test of small hydropower turbine by using our flowmeter calibration system the largest one in Korea. We planned the maximum measurable power of hydro turbine will be 200 kW in our system.

Key words : small hydropower(소수력 발전), turbine(수차), performance evaluation(성능평가), dynamometer(동력계)

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