Modeling of a variable-blade hydroturbine for the tasks of electromechanical transients analysis.

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A mathematical model of a variable-blade hydroturbine has been developed. Model reproduces the static and dynamic characteristics of full-scale hydroturbines in a wide range of rotation speed, water flow, pressure and position of the control elements. Model allows studying of the electromechanical transients in power system associated with a significant change in frequency, including the separation of hydro power plant for isolated operation.