

Development and Installation of TPRI Electric Power System Simulation Center

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Abstract

This paper describes the development and installation of an Electric Power System Simulation Center including a large scale, digital real-time power system simulator and close-loop testing facility for Taiwan Power Research Institute (TPRI) of Taiwan Power Company. The center is located in metropolitan Taipei and has been started fully operating in June 2005. Functions of the center include power system study and simulation tools (PSS/E, ETAP, PSAPAC and FLUX3D) and a real-time simulator (Hypersim with parallel computer of SGI Origin 350 20CPU) with close-loop testing facility (a mimic CB panel, I/O interface and 18 channels of voltage /current amplifiers). The center serves the power industry for testing and investigating the performance and correct operation of protection systems, regulators, stability controller and various advanced systems, as well as a training and education site for the power industry and universities. Examples of current and future applications or tasks by the center are depicted in this paper.