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CSNS Pulse Klystron High Voltage Power Supply System Overview and Performance Test

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The China Spallation Neutron Source (CSNS) accelerator is designed to accelerate proton beam pulses to 1.6 GeV at 25 Hz repetition rate, striking a solid metal target to produce spallation neutrons. The accelerator provides a beam power of 100 kW on the target in the first phase [1]. The linac is designed with beam energy of 81 MeV and a peak current of 15mA. It consists of RFQ, two bunchers of medium energy beam transmission (MEBT) line, four DTL tanks, and one debuncher of linac-to-ring beam transmission (LRBT) line. So far, rf power source mass production and equipment installation have been completed. Equipment commissioning are still under way. In this paper, a description of overview of the klystron high voltage power supply system and the key equipments' performance test, such as 400 Hz ac series resonance high voltage power supply, modulator and crowbar, will be briefly presented.

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