

LANSCE 805 MHz klystron design and performance

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The 805 MHz RF power plant at Los Alamos Neutron Science Center (LANSCE) is powered by 44 86kV 1.25 MW klystrons which generate the required RF to produce 800MeV proton beam. These 805 MHz klystrons are of the modulated-anode type and are specially engineered for a long pulse duration of 1.475 ms pulse and 120 Hz repetition rate with a 15% duty factor. In this paper we will talk about the original design of these klystrons, provide calculations and simulation results for the original design parameters, and then talk about the changes that need to be incorporated in this style of tubes to convert them into the newer style hard pulsed diode type of design. The proposed gun design will be discussed and how the design change pertains to the 805 MHz system performance improvement for the LANSCE SCCL.

Footnotes

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