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RF Amplifier System Reconfiguration Plans for New DTL and RFQ for LANSCE

Wednesday 13 August 2025 16:00 (2 hours)

The first 100 MeV of acceleration for protons and H- ions at the Los Alamos Neutron Science Center (LANSCE) is presently accomplished with a Cockroft-Walton generator (750 keV), followed by four Alvarez drift tube linac (DTL) cavities commissioned in 1970. The RF duty factor is 12 %, leading to significant thermal loading in the room temperature copper structures. Increasing obsolescence and structural reliability problems have created the need for replacements to these systems. The LANSCE Modernization Project (LAMP) developed a conceptual design for the Medium Energy Beam Transport (MEBT) and the Drift Tube Linac (DTL) using new accelerator components. This approach utilizes a Radio Frequency Quadrupole (RFQ) and six replacement DTL cavities. The current 201.25 MHz radio-frequency power amplifier system was replaced 10 years ago and has demonstrated high reliability with Diacrode tube lifetimes over 60,000 hours. We propose an RF amplifier topology that leverages this RF system to provide the required power for LAMP through innovative reconfiguration of the amplifiers.

Please consider my poster for contributed oral presentation

No

Would you like to submit this poster in student poster session on Sunday (August 10th)

No

Footnotes

Funding Agency

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I have read and accept the Privacy Policy Statement

Yes

Author: SANCHEZ BARRUETA, Maria (Los Alamos National Laboratory)

Co-authors: Mr BRATTON, Ray (Los Alamos National Laboratory); LYLES, John (Los Alamos National Laboratory); HALL, Wesley (Los Alamos National Laboratory)

Presenter: SANCHEZ BARRUETA, Maria (Los Alamos National Laboratory)

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