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An overview of the LAMP front-end upgrade at LANSCE

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The Los Alamos Neutron Science Center (LANSCE) is one of the oldest operating high-average-power accelerators in the United States, having recently celebrated its 50th anniversary of operation. LANSCE is comprised of an 800-MeV linac capable of concurrently accelerating both H⁺ and H⁻ ions, and can presently provide beam to six separate user stations. The LANSCE accelerator operates with much of its original equipment, including the Cockcroft-Walton injectors and drift-tube linac.

As part of the proposed LANSCE Modernization Project (LAMP), a refurbishment and upgrade effort would replace the initial portion of the LANSCE accelerator, from ion sources to the end of the 100-MeV drift-tube linac. This paper describes the overall approach taken to establish performance goals, downselect a preferred technology approach, and identify viable pathways towards implementation.

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