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LANSCE Low Level RF Resonance Control Water System Upgrade

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The LANSCE accelerator at Los Alamos National Laboratory (LANL) has been in service for 50 years. Efforts to update and modernize crucial systems, many of which are original, are ongoing. This paper reports on refurbishment of the Low-Level Radio Frequency (LLRF) Resonance Control Water System (RCWS) for the half mile long Cavity-Coupled LINAC (CCL). RCWS controls resonance frequency of the cavities by controlling the temperature of the cooling water delivered to each of 44 accelerator modules. Of the 44 modules making up the CCL, 20 have had their RCWS upgraded. The old hardware was completely removed, and new components were installed, including water pumps, mix tanks, valves, thermistors, and plumbing. This paper describes the design of the new system, material selection, installation, technical challenges, and improved performance compared to original system.

Keyword

resonance control

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