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LANSCE's instrumentation and controls system modernization

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The Los Alamos Neutron Science Center (LANSCE) continues to invest into the future of its facility. In 2022 and after a 11-year effort the original and reliable RICE (Remote Instrumentation and Control Equipment) system was decommissioned. It was replaced with a modern customized control system in small stages during each annual 4-month outage. Since 1972 when the first proton beam was delivered through the near mile long accelerator, the control system was in a continuous state of modification. Thus, an extensive amount of non-RICE equipment was added over the years to expand the capabilities of the facility. Some of that equipment is now up to ˜40 years old. Hence, the effort to replace the lingering obsolete and end-of-life equipment must continue to ensure reliable beam operations enabling scientific success in LANSCE's five experimental areas. This paper discusses the scope of the designated Instrumentation and Controls Modernization project. We describe our technologies of choice and remaining challenges we face before we can implement them. The boundary condition for the whole project, as usual, is that we must implement these changes on a running accelerator.

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