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LANSCCE accelerator machine protection/timing system interaction opportunities

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The Los Alamos Neutron Science Center (LANSCCE) timing system leverages a commercial event-driven system from Micro Research Finland (MRF) which is in use at various (16+) accelerators facilities around the world. Recent upgrades to the LANSCCE accelerator machine protection [Fast Protect] system utilizing MRF event receivers will address some long-standing issues that require non-intuitive work arounds to allow beam delivery. The complexity of the system stems from the fact that LANSCCE is a multi-user facility which delivers uniquely time-structured pulsed beams of varying power levels “simultaneously” to up to 5 different user facilities. One of the remaining issues with the Fast Protect system is that a fault related to one user facility can, in some circumstances, prevent beam delivery to another user facility. This is caused by allowing unscheduled but permitted changes to the beam delivery destination. The paper will discuss all relevant aspects including the timing system, current fast protect implementation, observed operational issues, and proposed changes to the fast protect system which will take advantage of the existing capabilities of the timing system.

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Footnotes

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I have read and accept the Privacy Policy Statement

Yes

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