

Design Strategies used to address Reliability Concerns with the SNS Machine Protection System

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The Machine Protection System (MPS) at the Spallation Neutron Source (SNS) is comprised of a large mix of directly coupled inputs from field components and software interlocks to determine the status of accelerator subsystems before, during and after the production of each beam pulse in order to correctly determine if the production of the next beam pulse is granted, terminated or delayed. The next generation platform, currently under development at SNS, incorporates different design techniques that are intended to increase the overall system reliability derived from lessons learned since operating the facility. This presentation will highlight problems and their corresponding mitigations used on the legacy system and outlines design strategies being adopted with the new hardware to ensure system reliability is increased.