

8th High Power Targetry Workshop (HPTW2023)



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Upgrades and Progress in Increasing Beam Power Above 1.4 MW at the SNS

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The Spallation Neutron Source (SNS) at the Oak Ridge National Laboratory is currently the world's highest power pulsed neutron spallation source. The SNS first reached its design power of 1.4 MW in 2013 and began operating steadily at 1.4 MW in 2018. Part of the delay in reaching steady, reliable 1.4 MW operation was due to the capabilities of the target systems. We are pleased to report that the SNS is now operating at 1.7 MW and will ramp over time to 2.0 MW. This presentation will provide an update on the recent history of the SNS target systems as they transitioned to steady 1.4 MW operations. It will also provide information about the ongoing Proton Power Upgrade project, which is nearing completion. This project will increase the available accelerator power to 2.8 MW, double the original 1.4 MW design. This beam power will allow for 2 MW operation of the SNS's first target station and provide additional capabilities for a future second target station. Several upgrades will be made to the first target station to ensure reliable operation at 2 MW. This presentation will also describe these upgrades and their current status, including operational unknowns, risks, and risk mitigation strategies.

Themes for the contribution

7 Operation of targets and beam dumps:

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