Operational High-Power Superconducting Proton Linac Experience at SNS Relevant to ADS*

J. Galambos

Oak Ridge National Laboratory

Abstract

The Spallation Neutron Source (SNS) facility at Oak Ridge National Laboratory uses a MW superconducting linac proton accelerator as part of the neutron source. The linac has been operating since 2007, and experience relevant to ADS applications will be discussed. A superconducting RF cavity fault recovery capability will be discussed which allows rapid reconfiguration to work around problematic cavities. Beam loss levels for high power operation have not been an issue. The SNS operational trip rate experience and mitigation efforts will be described. Finally, the ongoing power upgrade project to increase the proton beam power capability from 1.4 MW to 2.8 MW will be described.

* ORNL is managed by UT-Battelle, LLC, under contract DE-AC05-00OR22725 for the U.S. Department of Energy. This research was supported by the DOE Office of Science, Basic Energy Science, Scientific User Facilities.