

RF control system for Vertical Superconducting Cavity Test Area at the Spallation Neutron Source

A vertical test area (VTA) for testing and qualification of superconducting radio frequency cavities has been built at the Spallation Neutron Source (SNS) radio frequency test facility (RFTF). This VTA is a part of a larger project to develop in-house capability of prototyping, designing, testing and troubleshooting of the superconducting cavities and cryomodules for the SNS superconducting linac (SCL). The SNS VTA RF control system, consisting of custom built hardware chassis along with commercial test equipment, is used to qualify SRF cavities prior to installation in a cryomodule. Control and data acquisition is accomplished utilizing LabVIEW software operating on the National Instruments PXIe hardware platform. The system is based on the successful testing programs developed at both Jefferson Lab and Fermilab.

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