

## **Spallation Neutron Source Cryogenic System Installation**

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The Spallation Neutron Source, located at Oak Ridge, TN, is a state-of-the-art neutron-scattering facility presently under construction as a collaborative effort of six national laboratories. The ion beam generated in the high-power particle-accelerator system is accelerated to 1 GeV in the superconducting portion of the linac. This acceleration is accomplished by niobium superconducting radiofrequency (SRF) cavities operated at 2.1K. Liquid helium supplied by a refrigerator system with a 2400 watt capacity at 2.1K and a 8300 watt shield load at 38/50K provides cooling to the niobium cavities. This paper details the fabrication, installation, and testing of the cryogenic system and serves to provide the current status of the installation effort. The cryogenic system consists of the following subsystems: purifier, storage tanks, process piping, compressors, 4.5K cold box, 2.1K cold box, utilities, tunnel supply/return transfer lines, and tunnel warm piping. This design is similar, with some key improvements, to that being used on the accelerator at Jefferson Laboratory.

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