

SNS OPERATIONS PROCEDURES MANUAL



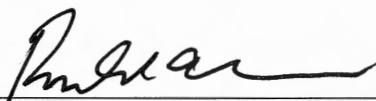
SNS-OPM 1.A-1 Authorization

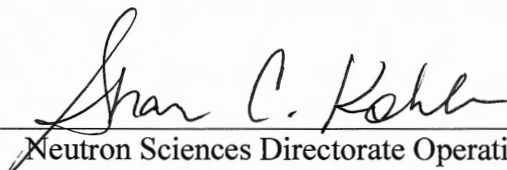
Before using a printed copy, check the *last modified date and revision number* against the **OFFICIAL COPY** on the SNS-OPM website.

Signed archival copies are maintained by the SNS Document Control Center.

Hand Processed Changes

<u>HPC No.</u>	<u>Date</u>	<u>Page Nos.</u>	<u>Initials</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Approved:  12/19/14
Associate Laboratory Director for Neutron Sciences Date

Approved:  12-19-14
Neutron Sciences Directorate Operations Manager Date

Approved:  12.19.2014
Research Accelerator Division Director and SNS Operations Manager Date

Contact: Glen D. Johns (Author)
SNS-OPM Editor

SNS-OPM 1.A-1 Authorization

1. General Responsibilities and Authorities

- 1.1 The Neutron Sciences Directorate (NScD) manages and operates the Spallation Neutron Source (SNS) and the High Flux Isotope Reactor (HFIR). NScD also operates, in conjunction with the University of Tennessee, the Joint Institute for Neutrons Sciences (JINS).
- 1.2 NScD is comprised of the **Research Accelerator Division (RAD)**, the **Research Reactors Division**, the **Instrument and Source Division (ISD)**, the **Scientific and Program Services Office**, the **Quantum Condensed Matter Division (QCMD)**, the **Biology and Soft Matter Division (BSMD)**, the **Chemical and Engineering Materials Division (CEMD)**, and the **Neutron Data Analysis and Visualization Division (NDAV)**. See the [Neutron Sciences Organization Charts](#).
- 1.3 RAD is responsible for operating, maintaining and improving the SNS accelerator complex. The SNS accelerator complex consists of a negative hydrogen-ion injector, a 1 GeV superconducting linear accelerator, a proton accumulator ring, and a liquid mercury target system in addition to numerous support buildings and R&D test facilities.
- 1.4 ISD is responsible for supporting the engineering and development of scientific instruments and new scientific capabilities at SNS. They also provide mercury target engineering development and analysis, neutronics and shielding analysis, fabrication services and support, and sample environment and instrument operations support.
- 1.5 The QCMD, BSMD, and CEMD Divisions execute the scientific research programs for neutron scattering for their respective disciplines. The NDAV Division provides support for the reduction and analysis of data taken on the instruments. The Scientific and Program Services Office provides User Program support, communications and outreach efforts, as well as Information Technology support.
- 1.6 SNS is a Department of Energy (DOE) Office of Science/Basic Energy Sciences (SC/BES) National User Facility that is operated for the DOE by Oak Ridge National Laboratory (ORNL). ORNL is managed by UT-Battelle for the DOE under contract DE-AC05-00OR22725.
- 1.7 The laboratory utilizes a Standards-Based Management System (SBMS) to communicate and codify external and internal requirements into laboratory-wide policies and procedures to assist workers in achieving the Laboratory's mission in a safe and compliant manner.

2. Authorization to Operate Systems

- 2.1 All aspects of work are governed by SBMS and are augmented by specific requirements in local implementing procedures. The SNS Operations Procedures Manual (SNS-OPM) governs the operation of the accelerator complex.
- 2.2 Specific Roles, Responsibilities, Accountabilities, and Authorities (R2A2) for line management positions in the NScD structure are outlined in SBMS. Each organization may have position descriptions that outline additional R2A2 for particular positions within their respective organizations.
- 2.3 All persons who manipulate systems that control SNS accelerator complex equipment must have authorization to operate the systems. SNS-OPM 6.A-1, Operations Organization and Administration, defines the responsibilities and authorizations for personnel who operate equipment in the accelerator complex. Overall responsibility for the safe and reliable operation of the accelerator complex resides with the on-duty Control Room Shift Supervisor (CRSS). The CRSS may operate systems typically operated by other operations personnel in emergency situations.
- 2.4 All operations personnel are authorized to shut down the SNS equipment whenever an unsafe condition arises, or whenever they think that continued operation is not clearly safe. They are also authorized to take any other corrective safety or environmental protection action as indicated in the SNS Operations Procedures Manual (SNS-OPM) and SBMS.

3. Production Operating Schedule

- 3.1 The SNS Scheduling Committee is comprised of representatives from each NScD Division and is chartered to make recommendations to the SNS Operations Manager regarding the structure of the SNS operating and maintenance schedule to optimize facility utilization and to meet programmatic objectives.
- 3.2 The Associate Laboratory Director for Neutron Sciences approves the operating schedule on a quarterly basis based on the recommendation from the SNS Operations Manager. The SNS Operations Manager bases his recommendation on the output from the SNS Scheduling Committee and discussions with the science organization leadership and the facility sponsor.

4. Machine Startup or Restart Authorization

- 4.1 Authorization for overall accelerator operations flows from DOE Order 420.2C, Safety of Accelerator Facilities, and the laboratory's associated contractual obligations. The DOE-approved SNS Accelerator Safety Envelope (ASE) is derived from these requirements and provides the framework for safe and compliant operation of the accelerator facility.
- 4.2 The on-duty Control Room Shift Supervisor (CRSS) is charged with implementing the approved operating schedule. Accelerator Operations Management authorizes the CRSS to begin beam operations via SN-OPM 6.F-1.1. The checklists ensure all systems have been turned over to operations and all areas are ready to accept beam up to pre-defined beam power limits.
- 4.3 RAD Management uses a Management Self-Assessment (MSA) process to allow beam operation to the target at powers greater than the limits mentioned above via SNS-OPM 6.F-1.2. The RAD Division Director has final approval for beam operations up to the limits outlined in the SNS Operations Envelope, SNS-OPM 2.B-1.
- 4.4 ISD Management uses a similar Management Self-Assessment process to allow instruments to operate with neutrons via SNS-OPM 6.F-2.1. The ISD Instrument Operations Manager has final approval for instrument operations.

5. References

- 5.1 ORNL UT-Battelle Contract.
(http://web.ornl.gov/adm/prime_contract)
- 5.2 DOE O 420.2C, Safety of Accelerator Facilities.
(<https://www.directives.doe.gov/directives-documents/400-series/0420.2-BOrder-c>)
- 5.3 ORNL Standards Based Management System (SBMS).
(<https://sbms.ornl.gov/>)
- 5.4 Roles, Responsibilities, Accountabilities, & Authorities (R2A2s).
(<https://sbms.ornl.gov/sbms/R2A2s/R2A2main.cfm>)
- 5.5 SNS Operations Procedures Manual (Table of Contents).
(http://ns-staff.ornl.gov/operations/SNS-OPM_Folder_Tree/)
- 5.6 SNS-OPM 2.B-1. "SNS Operations Envelope".
(<http://ns-staff.ornl.gov/operations/SNS-OPM/02-B-01.pdf>)

- 5.7 SNS-OPM 6.A-1. “SNS Operations Organization & Administration”.
(<http://ns-staff.ornl.gov/operations/SNS-OPM/06-A-01.pdf>)
- 5.8 SNS-OPM 6.F-1.1. “Checklist for Accelerator Startup After a Prolonged Down Period”.
(<http://ns-staff.ornl.gov/operations/SNS-OPM/06-F-01-01.pdf>)
- 5.9 SNS-OPM 6.F-1.2. “RAD Operational Readiness Management Self Assessment (MSA)”.
(<http://ns-staff.ornl.gov/operations/SNS-OPM/06-F-01-02.pdf>)
- 5.10 SNS-OPM 6.F-2.1. “ISD Management Self Assessment Checklist”.
(<http://ns-staff.ornl.gov/operations/SNS-OPM/06-F-02-01.pdf>)

6. **Attachments**

6.1 None.

7. **Revision History**

- Rev. 02 December 19, 2014 – Major rewrite of document. Updated signature page to reflect that authorizations reflected in the document are related to the accelerator complex. Added description of the current NScD organization. Described SBMS, R2A2s and OPM documents specifically related to accelerator operations. Described process for operating schedule approval. Added description of process used to authorize beam and instrument operations. Updated references to reflect appropriate documents and updated links. Added revision history section. Removed references to position delegations and position authorizations, OPM procedure reviews and approvals, work control, committee charters, training, QA, and ESH as these sections are covered by either SBMS or specific OPM documents.