

Collider Accelerator Department / SNS Ring Systems  
BROOKHAVEN NATIONAL LABORATORY  
Brookhaven Science Associates  
Upton, New York 11973



5000000SOW-01  
Revision A  
July 27, 2001

**Statement of Work**  
**For**  
**Spallation Neutron Source**  
**Vacuum Systems Ion Pump Controllers**

Prepared by: \_\_\_\_\_  
Loralie A. Smart, Engineer

Approved by: \_\_\_\_\_  
H.C. Hseuh, Vacuum Systems

Approved by: \_\_\_\_\_  
Jonathan Sandberg, Chief E.E.

Approved by: \_\_\_\_\_  
Melvin Van Essendelft, Quality Assurance

This document consists of 6 pages, including this cover sheet.

Collider Accelerator Department / SNS Ring Systems  
BROOKHAVEN NATIONAL LABORATORY  
Brookhaven Science Associates  
Upton, New York 11973

5000000SOW-01  
Revision A  
July 27, 2001

STATEMENT OF WORK  
FOR  
SNS VACUUM SYSTEMS ION PUMP CONTROLLERS

1.0 SCOPE

The Spallation Neutron Source (SNS), designed and constructed by a partnership of several Department of Energy (DOE) National Labs, will be the most powerful spallation source in the world for neutron scattering research. Brookhaven National Laboratory (BNL) will team with Los Alamos National Laboratory (LANL) to specify and purchase controllers for ion pumps in the SNS vacuum systems at Oak Ridge National Laboratory (ORNL). Ion pump controllers as defined in the accompanying technical specification will be purchased by BNL for installation in the High Energy Beam Transport, Accumulator Ring, and Ring to Target Beam Transport vacuum systems of the SNS. Additional controllers will be purchased for installation in the Drift Tube and Coupled-Cavity Linear Accelerator vacuum systems. These controllers will be specified and purchased under one agreement. This Statement of Work and relevant Technical Specification(s) will be the controlling documents for these purchases. It is the intent of BNL that the controller offered by a potential vendor be based on a production controller currently being manufactured by that vendor.

For the purposes of evaluating controller performance, and establishing the qualifications of a vendor, a request for quotation will be issued for the purchase of two (2) first-article controllers, with follow-on options to purchase production lot controllers sufficient for operating one hundred thirty-six (136) ion pumps. Total controller quantities, which depend upon single or dual controller output availability and controller location breakdown, are shown in the table in section 10.0 Production Lot Options. Options exercised and total number of production controllers will be contingent on price and SNS present and future budget constraints.

First article controllers may be ordered from more than one (1) vendor. After the first-articles have been tested and evaluated, the follow-on options will be exercised with a single vendor. Final selection of the vendor with whom the production option is exercised shall depend on: technical compliance; unit cost; reliability of design; quality of workmanship; and, the vendor meeting all of the requirements herein. Meeting all requirements includes, but is not limited to the first-article controller passing all acceptance tests at BNL and delivery according to the schedule requirements.

Delivery of the production articles prior to the “Delivery complete” date is encouraged but not mandatory. The RFQ response shall include a schedule for delivering the production articles, based on exercising the production lots on the dates specified in the Program Schedule herein.

## 2.0 DEFINITIONS

The following terms and abbreviations are used throughout this Statement of Work and the Technical Specification(s):

### DEFINED TERMS

Brookhaven National Laboratory  
Los Alamos National Laboratory  
Oak Ridge National Laboratory  
Spallation Neutron Source  
Request for Quote  
Purchase Order or Contract  
Company or Vendor Awarded a PO  
Statement of Work  
Ion Pump Controller  
High Voltage  
Production Lot Option

### ABBREVIATIONS

BNL/Buyer  
LANL/Buyer  
ORNL  
SNS  
RFQ  
PO  
Seller  
SOW  
Controller  
HV  
PLO

## 3.0 PURPOSE

The purpose of this SOW is to define the Technical, Quality Assurance and Schedule requirements applicable to the accompanying RFQ, and in the execution of the subsequent PO.

This SOW is not intended to impose unreasonable constraints on the seller. Rather, it is intended to protect the interests of both the seller and the buyer in the execution of the PO. This SOW is also intended to assure the buyer that the controllers will be supplied to the buyer with the form, fit and function intended in the accompanying Technical Specification(s), and in a cost effective and timely manner.

No in-process seller methods, procedures or operations require the approval of the buyer once the PO is awarded. It is BNL’s intention that the buyer liaison with the seller occurs on a noninterference basis.

Prior to awarding the PO for the first-article controller, all inquires regarding the RFQ shall be directed to the BNL Procurement and Property Management Division (Procurement, hereafter). After the award of the PO, all technical questions shall be addressed to the cognizant engineer specified by the BNL Procurement. Questions regarding Contract Terms & Conditions, and Price & Delivery shall be addressed to Procurement.

#### 4.0 ORDER OF PRECEDENCE

In the execution of an awarded PO, the order of precedence is the following: 1) the PO with given Terms and Conditions; 2) this SOW; 3) the Technical Specification(s).

#### 5.0 CAPABILITY OF PERFORMANCE

BNL will solicit, as a minimum, sellers capable of complying with this procurement's technical specifications. BNL reserves the right to perform source inspections on mutually agreed terms of any offeror considered responsive to the RFQ, to verify capabilities of potential sellers.

#### 6.0 TECHNICAL SPECIFICATIONS

The following Technical Specification(s) apply in responding to the RFQ, and in the execution of the subsequently awarded PO: SPEC. SNS-0023, Revision A, Specification for Spallation Neutron Source Vacuum Systems Ion Pump Controllers.

#### 7.0 QUALITY ASSURANCE REQUIREMENTS

Offerors shall have an existing, implemented Quality Assurance (QA) system. QA requirements applicable to this contract are specified in BNL-QA-101 and the appropriate QA Sections of the required Technical Specification(s). All QA systems necessary to comply with the requirements of this SOW, shall be in place by the bid response due date specified in the Program Schedule herein.

The seller is responsible for providing equipment to the buyer that is in total compliance with the requirements of this contract. A certificate of compliance shall be provided with each controller. Implicit in this certification is that the seller has performed all tests as may be necessary to assure total compliance.

#### 8.0 SPARE PARTS

Spare connector sets as defined in the technical specification shall be provided with the Production Lot deliveries as defined in the table in section 10.0 herein.

**9.0 DOCUMENTATION**

The seller shall furnish the following documentation: with first-articles, two (2) Operation/Maintenance Manuals; with each PLO, eight (8) Operation/Maintenance Manuals. A Certificate of Conformance and Voltage and Current Calibration data shall be shipped with each controller.

**10.0 PRODUCTION LOT OPTIONS**

After receipt and testing of the first-articles, Production Lot Options (PLOs) will be issued for the procurement of the controllers. Additional controllers may be purchased contingent upon price and available funds.

BNL PLO: This option will be for the purchase of thirty-eight (38) dual-output, or seventy-eight (78) single-output, controllers with spare connectors. It will be exercised as soon as possible, but not before the evaluation of the first-article. However, the quantities purchased will depend on the seller’s price (i.e., SNS available funds).

LANL PLO: This option will be for the purchase of thirty-two (32) dual-output, or fifty-eight (58) single-output, controllers with spare connectors. The LANL PLO will be exercised by the on-or-before date by LANL or other SNS partner Labs.

The following table summarizes this procurement:

<b>Procurement Item</b>	<b>First Articles*</b>	<b>BNL PLO Dual</b>	<b>LANL PLO Dual</b>	<b>Total Dual</b>	<b>BNL PLO Single</b>	<b>LANL PLO Single</b>	<b>Total Single</b>
Controllers with connector set	2	38	32	72	78	58	138
Operation/Maintenance Manuals	2	8	8	18	8	8	18
Spare Connector sets		8	6	14	16	12	28

\* Single or dual output controller.

**11.0 DELIVERY LOCATIONS**

First article controllers shall be delivered to BNL. Production lot controllers and spare connector sets for all PLOs shall be delivered to ORNL.

**12.0 PROGRAM SCHEDULE**

The below program schedule defines major events and their elapsed times for the issuance of the initial RFQ to prospective sellers through delivery of the controllers by the selected seller.

Statement of Work for SNS Vacuum Systems Ion Pump Controllers

Elapsed days given are goals, and are approximate values. If exception to these dates is not taken when responding to the RFQ, they will be contractually firm. Specific delivery schedules shall be negotiated as options are exercised. All delivery dates and quoted prices are FOB (freight on board) BNL/ORNL.

<b>Major Event</b>	<b>Week</b>	<b>Elapsed Days</b>	<b>On or Before</b>
Issue RFQ	0	0	13-Aug-01
Bid Response Due	4	28	10-Sep-01
PO Awarded for First Articles	6	42	24-Sep-01
First Articles Delivered	10	70	22-Oct-01
BNL PLO Exercised	13	91	12-Nov-01
LANL PLO Exercised	15	105	26-Nov-01
PLO Deliveries Commence	18	126	17-Dec-01
PLO Deliveries Complete	40	280	23-Sep-02