Guidelines for the Operation of the User Program at the SNS Fundamental Neutron Physics Beamline

1. Introduction

As a part of the national user facility at the Spallation Neutron Source (SNS), the Fundamental Neutron Physics Beamline (FNPB) will select experiments and allocate beam time based upon a proposal driven, peer review process. The responsibility for the overall SNS science program resides with SNS management. Because the character and scale of fundamental neutron physics experiments, as well as the scientific issues that they address, are substantially different from those anticipated at other SNS beamlines, the general SNS experimental review process for neutron scattering experiments may not be optimal for the FNPB. However, the character of the anticipated experiments at the Fundamental Neutron Physics Beamline is similar in character to the nuclear physics experiments at user facilities which are or have been operated by the ORNL Physics Division. As a result, the SNS Experimental Facilities Division and the ORNL Physics Division have signed a Memorandum of Understanding (MOU) that calls for the ORNL Physics Division to assist the SNS in the management of this aspect of the SNS user program.

The guidelines presented here describe the process by which the user program will be managed by the ORNL Physics Division on behalf of the SNS.

Unless otherwise noted, for the purposes of the FNPB User program, the Director of the ORNL Physics Division shall represent the ORNL Physics Division and the Director of the SNS Experimental Facilities Division shall represent SNS management.

2. Initiation of FNPB User Program

The MOU between the SNS and the Physics Division defines the formal start of the FNPB fundamental physics program based upon the completion of FNPB construction and SNS authorization of beamline operation. However, because of the long lead time associated with many fundamental neutron experiments, it is appropriate to initiate the FNPB proposal process in advance of the anticipated start up.

3. Proposal Review and Advisory Committee

The Physics Division Director will empanel a "Fundamental Neutron Physics Proposal Review and Advisory Committee" (PRAC). Members of the PRAC will be appointed by the ORNL Physics Division Director in consultation with the FNPB Scientific Director and the Chairman of the FNPB Instrument Development Team Executive Committee. It will be the responsibility of the PRAC to review proposals for the use of the FNPB and to provide the Physics Division Director with written assessments of their scientific importance and their technical feasibility. The PRAC may be asked to provide assessments of the technical capability of the proposing group, the feasibility of proposed schedules, budgets, manpower estimates, and material requirements. Proposal reviews may be carried out by committee meeting with presentations by the proposing group, by conference call, or by mail review. The FNPB Scientific Director, in

consultation with the chairman of the PRAC, will recommend the format for the review of a particular experiment.

Membership in the FNPB PRAC will be for a term fixed at the time of appointment. The number of members in the FNPB PRAC will be determined by the Physics Division Director.

4. Overview of Proposal, Allocation, Scheduling and Operations

It is anticipated that the process by which an experiment proceeds from proposal to installation and operation shall consist of the following steps:

a) Proposal and Review

Proposals will be accepted at any time and should be submitted to the FNPB Scientific Director. Proposals should include a short summary of the proposed work as well as any additional information that will allow an expert reviewer to assess the scientific merit of the proposal and the feasibility of the proposed experiment. The proposal should include a list of members of the experimental group as well as description of the responsibilities of each member. Proposals will be reviewed by the PRAC as well as by other subject matter experts where appropriate. The PRAC will provide a written review to the ORNL Physics Division director who will in turn provide a written recommendation to SNS management concerning action on the proposal. If appropriate, SNS management will provide the proposers with written notice that the experiment is approved by the SNS. Approval also indicates that it is the wish and intention of the SNS management that the experiment be installed and operated at the SNS. Experiment approval may be valid for a defined period of time; that is, the approval may expire at some future date in the absence of appropriate progress. In such an instance, the experimental group may reapply for experimental approval. Experiment approval may be given contingent upon receipt of addition information or further clarification of experimental details and plans.

b) Beam Allocation

Beam time is allocated to an experiment based upon approval by the SNS and a demonstration by the proposers that they have the resources (financial, material, personnel, etc.) to successfully install, operate, and analyze the data from the proposed experiment. It also indicates that any contingencies included in the approval process have been adequately addressed. Beamtime allocation will normally identity a fixed duration (e.g. the number of "beam-months") which may include experimental installation, commissioning, data collection, and disassembly. Proposers may request an allocation of beamtime by written submission to the FNPB Scientific Director. Such submission should include sufficient details concerning the status of the experiment as well as detailed justification for the amount of beamtime required. Beamtime will be allocated by the Physics Division Director with the advice of the FNPB Scientific Director, the PRAC chairman and others as appropriate. An allocation of beamtime may be contingent on resolution of operational or other issues. The allocation of beamtime may itself be valid for a defined duration; that is the allocation may expire at some future date if appropriate progress in the development of the experiment is not met. In such an instance, the experimental group may reapply for allocation of beamtime.

c) Scheduling of Beamtime

As an approved experiment with an allocation of beamtime experiment matures, it will be scheduled for beamtime. Scheduling of an experiment represents a commitment on the part of the SNS to provide beam to the experiment for a specific period of time beginning at specific date, as well as a commitment on the part of the experimental team to have an experiment ready for installation and productive use of the beam by that date. Proposers with an approved experiment that has been allocated beamtime may request that their experiment be scheduled when it has reached sufficient maturity that a credible construction, testing, installation, and operation plan has been prepared. A request for scheduling of beamtime should be submitted in writing to the FNPB Scientific Director. Such a request should include sufficient detail to allow an assessment of the status of the experiment and the proposed construction, testing, installation, and operation plan. Scheduling of beamtime will, in general, follow a review of project status by ORNL Physics Division.

d) Installation Readiness Review(s)

At an appropriate time, in advance of the scheduled beamtime start, an installation readiness review will be carried out by the Physics Division to ascertain the status of the experiment and to establish that it will be ready to usefully accept beam on the scheduled start date. Based on the results of this review, the scheduled start for beamtime for the experiment may remain as originally planned, may be modified, or may be set aside pending further review. No experiment will be allowed to proceed toward installation without an installation readiness review.

Note: The reviews identified herein are for the purposes of programmatic planning and schedule preparation. It is explicitly understood that they will not replace any operational readiness, safety, or other review require by the SNS, or ORNL Nonetheless, it is not excluded that, when appropriate, such reviews could be held as joint reviews with the approval of the SNS and Physics Division.

5. Operations

It is anticipated that all expenses associated with the base operation of the SNS facility will be borne by the SNS. This includes, but is not limited to accelerator and target operations, electrical power, normal maintenance of building and grounds, etc. It is also anticipated that the Physics Division will be responsible for the marginal cost of operating the Fundamental Neutron Physics Beamline above and beyond the overall SNS facility. While it is expected that Physics Division will provide support for SNS staff for their assistance in the operation of the Fundamental Neutron Physics Beamline, it is anticipated that, like other beamlines and instruments, the Fundamental Neutron Physics Beamline will not be charged for routine oversight and incidental support activities.

6. Overall Scheduling Authority

While it is expected that all FNPB beamtime will be authorized and scheduled as per the process described above, it is explicitly understood that, under extraordinary circumstances, the Director of the SNS has the authority to alter experimental schedules in support of critical programmatic goals. It is expected that this authority will not be invoked without consultation with all affected parties including experimenters, the Physics Division, and DOE program offices.

7. Changes to this Memorandum of Understanding

These guidelines will remain in effect for the duration of the allocation by the SNS of FP13 for the FNPB, or until modified by the ORNL Physics Division Director.

Approval

Glenn Young
Director, Physics Division
Oak Ridge National Laboratory

Nov 1, 2004
Date

Concurrences

Ian Anderson
Experimental Facilities Division Director, SNS
Oak Ridge National Laboratory

29th October 2004
Date

William Snow

Digitally signed by William Snow
DN: CN = William Snow, C = US
Date: 2004.10.18 10:20:24 -04'00'

W. Michael Snow,
Chairman, Fundamental Neutron Physics IDT

Date

20 October 2004
Date

~~Geoffrey L Greene~~,
Fundamental Neutron Physics Beamline
Scientific Director