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SAF INSTRUCTIONS FOR THE NSLS-II USER GUIDE

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The text below is intended for the NSLS-II User guide to provide instructions for completing SAFs.

INTRODUCTION

All experimental work is required to have an approved and posted Safety Approval Form (SAF). The form should be submitted by the user group as early as possible, but not later than 2 weeks prior to the scheduled experiment start. Experiments involving highly reactive, radioactive, or biological materials should be discussed with the Experiment Review Coordinators at least 4 weeks prior to beamtime.

It is the responsibility of the Lead Experimenter to assure that the SAF accurately describes the experimental plan, all hazards associated with the planned work, and identifies all equipment and samples to be brought to NSLS-II. It is also the responsibility of the Lead Experimenter to assure that all hazard controls and hold-points are honored, and that all required training is completed. The SAF must be associated only with the proposal that was allocated beamtime.

The SAF is a tool to collect sufficient information to support ESH risk analysis for each experiment. That assessment requires knowledge of the proposed operations and of the facilities available at NSLS-II. Decisions about appropriate work practices include consideration of the nature of the materials to be used, the proposed process, the availability of engineering controls such as exhaust ventilation systems and storage facilities, specific experiment needs, and the unique concerns associated with working in an open facility.

Instructions for completion of specific fields in the SAF follow.

INPUT FIELDS

Materials

This section is for reporting the materials, including gases, that will be used at NSLS-II, whether they are being brought in or are resident at the beamline, and should include identification of samples and support materials. Input is collected in a 'pop-up' box. All fields must be completed. 'Disposition Method' pertains to where the materials will be at the end of the experiment. Note that storage at NSLS-II is not an option.

Equipment

This section is for reporting the equipment that will be brought to NSLS-II and the resident equipment that will be used. Input is collected in a 'pop-up' box. All fields must be completed.

Task & Hazard Analysis

This section provides four text fields for input about the tasks and User hazard analysis for work planned at the beamline and the support laboratory (if applicable).

For the Task Description fields, report the work to be completed at NSLS-II. Describe the steps needed to prepare and collect data. Describe what will be done with the materials and equipment listed on the SAF. For example, at the beamline, describe sample placement, any gas use, temperature changes, wet chemistry, etc. For work at the set-up laboratories, describe sample preparation/manipulation, gas use, temperature changes, wet chemistry, etc. Provide sufficient information to assess the processes and

the ESH risks presented. DO NOT report the scientific justification or the requirements for photon beam characteristics or number of scans or scattering angles, etc.

For the Hazard Analysis fields, the User is asked to analyze the materials, equipment, and tasks reported and determine potential ESH risks and controls. This section is intended to show the NSLS-II Experiment Review Coordinators (ERCs) and the Resource (beamline and set-up laboratory) Reviewers the prudent and required measures needed to control ESH risks. If Users have any questions about the controls, they should contact the ERCs to initiate discussion. Users are asked to think about their work processes, associated hazards and controls needed to safely complete the work.

Attachments

The Task & Hazard Analysis fields are limited to 4,000 characters. Often more detail is needed. Users may attach pdf files up to 10 MB each to provide more text and figures. Attachments may also be used to provide needed work instructions or procedures for tasks that present unusual complexity or ESH risk.

SAF CHANGES

Changes to SAFs are expected as experiments progress. Often Users want to add a material or equipment, change a process or add an experimenter. The approved, posted SAF represents an agreement between NSLS-II and User group for the conduct of experiments at the facility. Any change that introduces a new ESH risk or results in modification of an approved process or control must be submitted for review before proceeding. This can be done by contacting one of the ERCs. That will initiate a discussion to determine what level of review and documentation is required.

Anyone listed on the SAF may add an experimenter. Any added experimenter must meet the User training and qualification requirements. The designated Lead Experimenter must be at the facility. That designation may be changed by anyone listed on the SAF.

Contact the ERC if additional materials need to be added. Often, adding materials within the same hazard class is not needed if the hazard mitigation controls are included on the existing SAF. For certain material classes (e.g. pyrophoric, biological), or radioactive materials, the SAF Materials list acts as a required inventory. For that circumstance, any new material, even with the same properties, must be added to the SAF.

STANDARD EXPERIMENT BOUNDING CONDITIONS

Standard laboratory precautions are adequate to control the ESH risks presented by use of:

- Common, non-hazardous samples and materials.
- Milligram quantity of samples (greater than nanoscale materials) that are prepared at the experimenter's home institution with varied chemical composition where:
 - Samples are be sealed in capillary tubes, cuvettes, holder assemblies, frozen, or taped or affixed to glass slides.
 - There is little or no direct manipulation of the sample material.
 - The preassembled samples are placed in the synchrotron beam for data collection and then returned to the experimenter's home institution.