

Experiment Planning Statement

The Experiment Planning Statement is part of the process for the implementation of experiments at SURF. Below is a template to follow when completing the Experiment Planning Statement. Include figures and tables as appropriate.

1. Project Summary

- 1.1 **Title:** Provide a name for the project
- 1.2 **Purpose and Scope:** Describe the project, including relevant citations or references as appropriate (especially based on work performed at the Laboratory).
- 1.3 **Personnel:** List of collaborators (including postdocs and students) and institutions.
- 1.4 **Funding Sources:** List funding sources, including relevant pending proposals.

2. Equipment

- 2.1 **General Description:** Provide description of processes and systems that will be used during the project.
- 2.2 **Equipment Description:** List all items to be used onsite, including dimensions and masses.
 - 2.2.1 **Electrical Equipment and Cables:** Pay special attention to listing electrical equipment and cables as well as associated certifications (eg., UL, CSA, etc). Note that all electrical equipment must be inspected prior to use. Plenum-rated cables are preferred (low smoke, no halogen). An inventory of electrical equipment will need to be maintained.

3. Experiment Area and Infrastructure Needs

- 3.1 **Location:** Preferred level and location if known, minimum depth overburden.
- 3.2 **Space:** Footprint of setup, including any height considerations.
- 3.3 **Power:** Voltage requirements, kW, peak and steady-state power; number of outlets and separate circuits required; requirements for conditioned power or UPS backup to be provided by the experiment.
- 3.4 **Environment:** Dust, heating/cooling and humidity requirements (special precautions may be necessary when bringing equipment to certain levels), and sensitivity to radioactive backgrounds including radon. Sensitivity to pressure fluctuations should also be noted.
- 3.5 **Equipment Movement:** Describe how materials will arrive at the Laboratory (delivery by self/courier, packaging, pallets/loose, etc). List mass and dimensions of irreducible items, transportation needs (eg., dolly, cart, rail, etc), any hoisting requirements. Note: Large items must be transported by

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Laboratory personnel via rail. A high-value handling form can be used to ensure a higher level of coordination for certain items. There may be restrictions on the numbers of loads that can be moved underground on a given day.

- 3.6 **Services:** List service requirements as a function of time (eg., water, compressed air, etc) as well as other delivered consumables such as compressed gases and cryogenes. Include a description of any other facility support requested. The cost of providing some services may be passed on to the Experiment.
- 3.7 **Site Preparation:** Include any special requirements (eg., concrete flooring, holes drilled, concrete pillars, etc). Some of these costs may be passed on to the Experiment. Note: In some less-developed areas, the Experiment may need to construct an enclosure to protect equipment from small falling rocks.
- 3.8 **Vibration Control:** May dictate distance from main shafts and main ventilation as well as sensitivity to drilling and blasting associated with future infrastructure developments.
- 3.9 **Computing Resources/Network:** Provide number of network ports/wall jacks, bandwidth requirements and any specific hardware needs (computer server, timing signals, etc).
- 3.10 **Surface Space:** Provide requirements for staging and storage of equipment on surface (specify cold or heated storage) as well as any office needs.

4. Hazards and Integrated Safety Management (ISM)

All activities performed at SURF must be conducted in a manner that ensures protection of the workers, the public and the environment. Project goals will be accomplished safely by following a process of integrated safety management.

- 4.1 **Hazards:** List Experiment-related hazards. In some cases a separate Hazard Assessment document (including a risk assessment worksheet) may be required to fully account for all hazards and any controls or mitigation.
- 4.2 **Procedures:** List any Job Hazard Analysis (JHA) or procedure documents that will be developed to ensure safe conduct of the experiment at SURF. Note that most activities require a formal hazard analysis and that different phases of a project can have different hazards.
- 4.3 **Training:** List training that is required by Experiment personnel. Consider hazards such as high voltage, chemicals, radiation, fall arrest and confined spaces.
- 4.4 **Chemical Inventory:** Provide an inventory chemicals and expected waste streams (types and quantities, may require ventilation). MSDS/SDS documents must be provided to the Laboratory prior to bringing chemicals onsite.

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- 4.5 **Electrical Inventory:** Provide an inventory of electrical equipment as noted above (Section 2.2.1).
- 4.6 **Radiation Inventory:** Provide a proposed inventory of radioactive materials (isotopes, activities, description). Sources may need to be added to the SURF NRC license. Movement of all sources onsite needs to be coordinated with the SURF Radiation Safety Officer (RSO).

5. Personnel Access Requirements

- 5.1 **Personnel Schedule:** List expected onsite experiment personnel as function of time; maximum and minimum numbers would also be useful. Note: There are restrictions on underground access.
- 5.2 **Personnel Access:** List number of onsite work hours expected per day and per week (steady-state and maximum). Note: There are restrictions on work hours.

6. Experiment Schedule

Provide a schedule of experiment activities, including different phases of the project such as installation, commissioning, operation and decommissioning.

7. Decommissioning Plan

Provide details regarding how the experiment will be decommissioned.

Once the details are finalized, a formal receipt will be issued by the Science Director indicating that the Experiment Planning Statement is acceptable.