**Experiment Review Form**

Please fill this in as completely as you can. The main aim is to identify hazards and their mitigations. We also aim to understand how best to integrate your experiment into the FACET infrastructure.

Sections that are not applicable can be left blank. Figures can be approximate if they do not impact safety. Please return this form as soon as possible to your Test Facilities contact.

This form will be the basis for follow-up discussions and a Safety Review of your experiment.

Attach further pages as required.

**Part One: Information**

**Experiment Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Contact Name for Further Information:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Telephone: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Email:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Description of Experiment:** Please aim this at someone not in your field but with reasonable scientific knowledge. Keep this brief- “abstract-length”

**Description of Experimental Procedure:**

**Part Two: Apparatus**

***You must provide us with drawings and computer models.***

**Dimensions of apparatus:** Include any support equipment such as vacuum pumps, electronics, etc.

**Weight:**

**Lead Shielding Requirements:**

**Description of mechanical controls:**

**Description of electronic controls:**

**Cabling requirements:**

**Part Three: Computing**

**Description of controls software:**

**Description of data acquisition systems or computers:**

**Networked resources or software you need access to:**

**Part Four: Radiation**

**List All materials and devices that will be in the accelerator tunnel during beam operation:**

**List all samples or other materials that are directly in the beam or could feasibly be in the beam from a beam mis-steer or misalignment of samples.** (Include diagnostic screens and devices, sample materials including any supporting substrate, brackets or carriers. State material and length):

**Please complete the checklist and comment on any “yes” below or on a separate sheet:**

|  |  |  |
| --- | --- | --- |
| Yes | No | **Experiment contains:** |
|  |  | Radiologically active materials that will need to be taken off site (e.g.: samples exposed to the beam) |
|  |  | *Potentially* activated materials will need to be taken off site, including cameras and other instrumentation that has been in the beam tunnel during beam operation. |
|  |  | Non-Ionizing Radiation (RF) – State frequency and the maximum possible peak and average power. Do not list radiation from normal instrumentation and logic (e.g.: TTL) sources*.* |

**Comments:**

**Part Five: Hazard and Mitigation Analysis**

**Please complete the checklist and comment on any “yes” below:**

|  |  |  |
| --- | --- | --- |
| Yes | No | **Experiment contains:** |
|  |  | Hazardous Materials. List any material considered hazardous by the State of California |
|  |  | Specialized Chemicals. List any chemicals used in the experiment or support equipment. Include pump oils, vacuum greases used on o-rings, etc. |
|  |  | Flammable materials. (Materials that can ignite and burn easily at room temperature.) |
|  |  | Compressed Gases |
|  |  | Potentially pressurized system (Greater than 15 psig.) |
|  |  | Cryogens |
|  |  | Nano-scale Materials |
|  |  | Biological Materials |
|  |  | Radiological sources |
|  |  | Equipment has been exposed to a particle beam or may be radiologically activated. |
|  |  | Lasers (state class) |

**Comments:**

**List Electrical Equipment that will need to be EEIP tested on arrival at SLAC:**

## **Please complete the following tables (examples are given to help you):**

**Potential Electrical Hazards (e.g.: heater leads, high voltage vacuum feedthroughs)**

|  |  |  |
| --- | --- | --- |
| **Item** | **Hazard** | **Mitigation** |
| *Heater Leads* | *Shock hazard - Heaters operate at 150 Volts* | *Heater leads are covered when in use. Heater plugs into a nearby connector – avoiding lockout requirement.* |
| *Vacuum feedthrough* | *Bias voltage for detector – 100 volts* | *Bias current is limited by a resistor to 1 mA* |
|  |  |  |
|  |  |  |

**Pinch Hazards (for example from moving parts):**

|  |  |  |
| --- | --- | --- |
| **Item** | **Hazard** | **Mitigation** |
| *OTR screen* | *Vacuum actuator can pinch personnel* | *Actuator is covered* |
|  |  |  |
|  |  |  |

**Identify all potential failure modes of experimental equipment. Include failure modes that are mitigated by engineering or administrative controls.**

|  |  |  |
| --- | --- | --- |
| **Item** | **Hazard** | **Mitigation** |
| *Helium pressure regulator failure* | *High pressure helium can pressurize vacuum chamber* | *Pressure relief valve installed on low pressure line limits pressure to less than 15 psi* |
| *OTR screen holder can be hit by beam* | *Damage to cameras by beam shower* | *Screen mover interlocked to machine protection system to turn off beam during screen motion* |
|  |  |  |
|  |  |  |

**In your Experimental Procedure, what mistakes can be made?** (i.e. what are the failure modes and consequences)

|  |  |  |
| --- | --- | --- |
| **Item** | **Hazard** | **Mitigation** |
| *Dielectric wakefield device can be moved into beam* | *Beam shower, destruction of experiment* | *Procedure requires experimenter to monitor secondary electron detector when inserting device* |
|  |  |  |
|  |  |  |

The information above is a truthful account of the experimental apparatus and procedures. I agree to provide further information as needed for the experimental safety review. Any changes to the experimental program will be conveyed to the Test Facilities staff.

Signed:

Name:

Date: