

6b) BIOLOGICALS: List all animals, cell lines (and note if they are primary or not), blood or body fluids, viruses, viable bacteria, or toxins of biological origin. Please list detailed description of organisms below. You may need Institutional Animal Care and Use Committee (IACUC), Institutional Biosafety Committee (IBC) and/or Institutional Review Board (IRB) Approval:

Name of Biological	Description	Disposal method at BNL or note return to Home Institution	Special Handling/Approval (IRB, IBC)
None.			

6c) RADIOACTIVE MATERIALS: List any radioactive materials, include any handling of activated materials:

Name	Quantity	Storage Location (Medical, NSRL, Biology)	Location of use (Medical, NSRL, Biology)	Disposal method at BNL or note return to Home Institution	Special Handling Requirements
None.					

If you are required to handle materials shortly after beam exposure (activated materials) indicate time frame required:

Time Required	Description
Not applicable.	Will wait until instrument activation is sufficiently low before transporting home.

7. EQUIPMENT: List any equipment you will bring to BNL. Please list where you will use it (NSRL, Medical, Biology). Listing of Potentially Hazardous Equipment Must Include: electric equipment not UL approved or certified to meet National Electrical Code, electronic equipment, detectors with flammable gases and flammable gas targets, flammable-combustible (e.g. plastic detector materials), samples, reactive metals etc, lasers, ovens, pumps, cryostats, pressure devices or pressure vessels, vacuum windows or vacuum vessels, liquid or gas mixing or containment systems, UV lamps, high-temperature devices, material handling devices, solenoids, spectrometer magnets, structures supporting heavy loads, compressed air or gas systems, RF or microwave devices, sound systems or noise greater than 85 dBA, items that emit liquids, gases, or vapors from the experiment, welding or burning tools, or any equipment or activities that require special written procedures by the User.

Description:

- EM and FM CRaTER instruments comprised of aluminum, A-150 tissue equivalent plastic, solid-state detectors, printed circuit boards, and electronic components (entire unit will be in or near beam – analog and digital electronics are in box to which particle telescope is mounted);
- Cabling (BNC, 1553 interface, etc.) to provide electrical connection (power and signal) between experiment in cave and data acquisition in control room;
- Low voltage power supply (control room);
- Personal computer for data acquisition and instrument commanding (control room);
- Dry nitrogen purge bottle (still TBD if necessary - would likely be removed from experiment before going in cave);
- Typical UL-approved support and diagnostic electronics (oscilloscopes, NIM rack and modules, power supplies, voltmeters, etc.)

8. WASTES: (including clean waste, hazardous waste, radioactive waste, medical/biohazard waste.)

Name of Waste	Description	Anticipated quantity	Disposal Method
None			

9. USER COMMENTS:

10. TRAINING: *Training requirements for each experiment will be posted on the NASA website. Listed below are the specific training requirements based on the work to be performed.*

For return users, you may check your training status on-line at <http://training.bnl.gov> to see which courses you need to complete again.

All NSRL Users must complete the following 4 courses:

1. C-A Radiobiology Users Training

- Initial training - Classroom training necessary - contact userscenter@bnl.gov for schedule.
- Renewals- every 24 months, complete Challenge exam at <http://training.bnl.gov> (study guide is available), or repeat classroom training.

2. Radiological Worker 1

- Part 1 can be done on-line at <http://training.bnl.gov>
- Part 2 consists of a challenge exam to be taken at BNL. Study guide is at <http://training.bnl.gov>

(Note: If you are from another DOE facility you can apply for DOE Radiation Worker Reciprocity by completing [exemption form](#)).

3. Cyber Security online at <http://training.bnl.gov>. Initial training only (no requalification required)

4. Guest Site Orientation online at <http://training.bnl.gov>. Initial training only (no requalification required)

In addition, ALL participants using laboratory facilities in the Medical or Biology Departments must complete the following.

If you are using chemicals, as noted in this experimental safety review, you must complete the following on-line courses

- Laboratory Standard (required every two years)
- Hazardous Waste Generator (required annually)
- Regulated Medical Waste Generator Training (initial training only)

If you are using Human blood, tissues, or primary human cells:

- Bloodborne Pathogens Training (required annually)

If you are using cryogenics (liquid nitrogen or helium), you must complete the following on-line course:

- Cryogen Safety Awareness (initial training only)

If you are using compressed gases, you must complete the following on-line course:

- Compressed Gas Safety (initial training only)

If you are using dispersible Radioactive Materials such as tagged cells, or will handle your samples while activated from beam exposure, you must complete the following:

- Radioactive Waste Generator (HP-RADIGEN) available on-line
- Benchtop Dispersibles Training (required every two years) - contact Ann Emrick, emrick@bnl.gov, to arrange for course)

If you are using Animals:

- Laboratory Animal Training (LAT I): will be administered upon arrival. (Initial training only, no requalification)

If you are using Controlled Substances:

- Controlled Substance Awareness
- DEA Background Check: Contact Medical Chairman's Office at (631)344-3715

ALL USERS MUST READ AND SIGN THE LOW HAZARD-SKILL OF THE CRAFT WORK PLAN SPECIFIC FOR THE EXPERIMENTAL RUN THEY ARE ATTENDING

Life Sciences Experimental Review Committee

Designee Approval:

C-A Experimental Safety Review Committee

Designee Approval:

*Environmental Safety & Health Staff Comments
and Requirements:*

Approval Date