



# Accelerator Science Experiment Safety Assessment Document (ESAD)

(See [ES&H Manual Chapter 3130 Appendix T1 Accelerator Science Experiment Safety Assessment Document -Instructions](#))

Click For Word Doc

**Accelerator Science Experiment ID:**

(Assigned by appropriate leadership)

This form documents your experiment. The Experiment Lead Scientist completes ALL numbered questions (write "not applicable" or "none" where appropriate). If your experiment changes before the form expires, you must notify the accelerator Experiment Facility Leader. Most changes are easily accommodated and should not result in significant delay.

**1. Location:**

**2. Expected Start Date:**

(Once approved, this form is valid for two years.)

**3. Experiment Title:**

**4. Document Owner(s)  
(Lead Scientist):**

**4a. Contact Information:**

## 5. List all Experimenters who will be working at the facility:

First & Last Name (Print)	Affiliation:	Phone:	E-Mail:
_____	_____	_____	_____
_____	_____	_____	_____

## 6. Name of People who completed this form:

First & Last Name (Print)	Affiliation:	Phone:	E-Mail:
_____	_____	_____	_____
_____	_____	_____	_____

## Document History:

Revision:	Reason for revision or update:	Serial number of superseded document

**Distribution: Original:** MCC Control Room, **Copies:** Lead Scientist, author(s), LERF Control room or UITF Control room, Division Safety Officer, ESH&Q Document Control, ESH&Q Liaison, Area Safety Warden

**After expiration:** Forward original and log sheet of trained personnel to ESH&Q Document Control.

## 7. Experiment Overview

Provide a brief description of your planned activities. Include the approximate duration of the program.

[Start Typing Here]

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<b>Does this experiment involve modification to the installed beam delivery system?</b>	<input type="checkbox"/>	<b>YES</b>	<input type="checkbox"/>	<b>NO</b>
<b>If YES describe the Modifications.</b>				
[Start Typing Here]				

## 8. Task Hazard Analysis

<b>Instructions: Answer the following questions. When answers indicate a hazard may exist – document the resolution(s) and hazard mitigation techniques.</b>				
General Conditions	Keywords	Yes	No	Mitigation
Will chemicals be used? Note: such use must meet the appropriate SDS requirements including Personal Protective Equipment (PPE).	acids, flammable gases and solvents, heavy metals (lead, etc.), respirator, gloves, aprons, face shield, safety glasses, working with flammables			
Will you create dust, welding arcs, heat, excessive noise, ionizing or non-ionizing radiation, radioactive materials?	welding, grinding, painting, x-rays, respirator, gloves, RF, lasers, chemicals, epoxies			
Are there any fire or explosive hazards associated with the work?	painting, welding, grinding, brazing, mixing chemicals, battery charging			
Could the work create headaches, breathing problems, or dizziness from odors, etc.?	Motor exhaust, painting, ozone, solvents, acids, bases, chemicals, portable heaters			
Will compressed or liquefied gasses be used?	cryogenics, nitrogen, helium, argon, carbon monoxide			
Does the task require work in areas or with materials subject to temperature extremes?	welding, soldering, brazing, cryogenics, resistive heating			
Does the work involve the use of hoists or robotics?	manlifts, subcontractors, rentals, slings, rigging			
Will powered hand tools be used?	drills, saws, PPE, GFCI, power activated tools			
Does the work involve the risk of electrical shock or other forms of hazardous energy?	LOTO, compressed gases, power supplies, pressure, cryogenics			
Does the task involve lifting, pulling, pushing, or carrying heavy objects, or repetitive motion?	posture, back injury, twisting			
Does the task involve work with pressurized or vacuum vessels?	resistive heaters, GFCI, pressure relief, tanks, containers			
Does the task require any permits?	welding, grinding, open flame soldering			

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(Assigned by Experiment Facility Leader)

<b>Instructions: Answer the following questions. When answers indicate a hazard may exist – document the resolution(s) and hazard mitigation techniques.</b>				
General Conditions	Keywords	Yes	No	Mitigation
Does the task require specialized training?	Respirator			
Will waste products require special handling or disposal requirements?	chemicals, by products, discharges to sanitary sewer or air			
Any other hazards we may have overlooked with this list?				

## 9. Experimental Details

**List all materials (and quantities) to be used in your experiment. List Target Material first and include all chemicals, gases, sample materials, etc.**

[Start Typing Here]

**Describe any airborne contaminants that may be produced. Include the expected composition/decomposition; the method of exhaust; fixture description; and expected interaction with the optical beam.**

[Start Typing Here]

**Describe the beam stop construction and its ability to handle power.**

[Start Typing Here]

**List Personal Protective Equipment Required.**

[Start Typing Here]

**Additional Precautions (e.g. posting requirements, process restrictions, equipment limitations, laser beam containment, interlocks)**

[Start Typing Here]

## 10. Additional Laser Usage

**Describe any additional lasers to be used in the experiment. (Use of additional Class 3b and above lasers will require a separate, additional Laser Operational Safety Procedure (LOSP).)**

[Start Typing Here]

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(Assigned by Experiment Facility Leader)

## 11. Outline Experiment Procedure

**Layout of equipment and room** (e.g. a brief description of any special requirements, overhead floor plan.)

[Start Typing Here]

**General Experiment Procedures** (Please be concise. Provide sufficient information to illustrate what will be done, who will do it, and where procedures will occur. You may refer to the LOSP for the particular lab, its hardware, and procedures. However a specific Test Plan will be filed on a separate form after technical and safety approval and scheduling have been assigned.)

[Start Typing Here]

**Residual Hazards (Contaminants, Disposal, Safe Disassembly, ...)**

[Start Typing Here]

**Any Other Safety Considerations**

[Start Typing Here]

## 12. Regulatory Requirements

### Regulatory Requirements

- |                          |            |                          |           |   |
|--------------------------|------------|--------------------------|-----------|---|
| <input type="checkbox"/> | <b>Yes</b> | <input type="checkbox"/> | <b>No</b> | Does the proposed experiment utilize viruses, viable bacteria, or material presenting a biological hazard at the lab facility? Certain biological hazards require notification to agencies outside Jefferson Lab. |
| <input type="checkbox"/> | <b>Yes</b> | <input type="checkbox"/> | <b>No</b> | Does the proposed experiment require any radioactive materials or radiation producing equipment?  |
| <input type="checkbox"/> | <b>Yes</b> | <input type="checkbox"/> | <b>No</b> | Does the proposed experiment require any industrial chemicals to be brought or shipped to Jefferson Lab? All chemicals must include a SDS for each material shipped.  |
| <input type="checkbox"/> | <b>Yes</b> | <input type="checkbox"/> | <b>No</b> | Does the proposed experiment create any chemical hazards?   |

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(Assigned by Experiment Facility Leader)

**13. Environmental Management Information**

(See [EMP-04 Project/Activity/Experiment Environmental Review](#))

<b>Is this a Water-Based Project?</b>	<input type="checkbox"/>	<b>YES</b>	<input type="checkbox"/>	<b>NO</b>
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**If YES provide details:**

Source of the Water and estimated quantity.	
How is water to be discharged or disposed of:	
Sanitary Sewer	
Special Sanitary Sewer Discharge	
Surface Water	

<b>Will the Experiment Generate Waste?</b>	<input type="checkbox"/>	<b>YES</b>	<input type="checkbox"/>	<b>NO</b>
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**If YES list all wastes including anticipated quantities and disposal approach for each type.**

Anticipated Air Emissions	
Other Waste Water	
Hazardous Waste	
Solid Waste (landfill or recycling)	
Power/Natural Resource Consumption Expected	

**14. Decommissioning/Shutdown Procedure (if necessary):**

How will you ensure the lab is left in a safe and clean state after the experiment? Provide guidelines or process steps which outline closeout actions. Think about what needs to be done and plan enough time to do it:

Hazardous material to be removed from the lab.     
  User provided equipment to be removed.     
  Lab to be left in a clean and orderly state.

[Start Typing Here]

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(Assigned by Experiment Facility Leader)

(When form is complete submit it DSO for review and approvals)

This part to be completed by Jefferson Lab

## SUPPLEMENTAL TECHNICAL VALIDATIONS

### Subject Matter Expert Review and Acceptance

Hazard Reviewed (per <a href="#">ES&amp;H Manual 2410-TD</a> ):	Print	Signature	Date:
[Enter Hazards]	_____	_____	_____
[Enter Hazards]	_____	_____	_____
[Enter Hazards]	_____	_____	_____

## APPROVALS

	Print	Signature	Date:
<b>Division Safety Officer</b>	_____	_____	_____
<b>Accelerator Experiment Facility Leader:</b>	_____	_____	_____
<b>Laser System Supervisor:</b>	_____	_____	_____

## 15. Revision Summary

**Revision 2.0 – M/D/19** – Formerly titled FEL Experiment Safety Approval Form Instructions; rewritten to reflect current laboratory operations

**Revision 1.0 – 11/23/10** – Updated to reflect current laboratory operations

ISSUING AUTHORITY	TECHNICAL POINT-OF-CONTACT	APPROVAL DATE	REVIEW DATE	REV.	
ESH&Q Division	<a href="#">Harry Fanning</a>	M/DD/19	M/DD/22	2.0	

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