

Operational Safety Procedure Form
(See [ES&H Manual Chapter 3310 Appendix T1 Operational Safety Procedure \(OSP\) and Temporary OSP Procedure](#) for instructions.)

Click
For Word Doc

Title:	Installation of the RICH Detector Mirrors and Electronics		
Location:	EEL 124/125	Type:	<input checked="" type="checkbox"/> OSP <input type="checkbox"/> TOSP
Risk Classification (per Task Hazard Analysis attached) (See ESH&Q Manual Chapter 3210 Appendix T3 Risk Code Assignment.)	Highest Risk Code Before Mitigation		3
	Highest Risk Code after Mitigation (N, 1, or 2):		2
Owning Organization:	Physics DSG	Date:	07/24/2017
Document Owner(s):	Marc McMullen		

DEFINE THE SCOPE OF WORK

1. Purpose of the Procedure – Describe in detail the reason for the procedure (what is being done and why).
The procedure details the installation of detector components, including mirrors, electronics, and services. This will provide the guidelines for installation steps to be used on the construction of this detector, and future sectors which should be built in using these instructions.
2. Scope – include all operations, people, and/or areas that the procedure will affect.
The scope will include all Jlab technical staff of the Physics Detector Support Group and the INFN collaborators. This work will be done in the EEL 124 cleanroom, with services from room 125.
3. Description of the Facility – include building, floor plans and layout of the experiment or operation.
EEL 124 is a class 10000 cleanroom. Protocols are posted in the gowning area.

ANALYZE THE HAZARDS and IMPLEMENT CONTROLS

4. Hazards identified on written Task Hazard Analysis
Hazards Listed on the THA: Working above 4'. Damage to equipment, heavy equipment falling, and electric shock. See THA for details.
5. Authority and Responsibility:
5.1 Who has authority to implement/terminate
Patrizia Rossi, Amrit Yegneswaran
5.2 Who is responsible for key tasks
Tyler Lemon, George Jacobs (lift plans), Marc McMullen (Safety)
5.3 Who analyzes the special or unusual hazards including elevated work, chemicals, gases, fire or sparks (See ES&H Manual Chapter 3210 Appendix T1 Work Planning, Control, and Authorization Procedure)

5.4 What are the Training Requirements (See http://www.jlab.org/div_dept/train/poc.pdf)

Rigging, Pressure Systems Awareness, Man lift

6. Personal and Environmental Hazard Controls Including:

6.1 Shielding

n/a

6.2 Barriers (magnetic, hearing, elevated or crane work, etc.)

n/a

6.3 Interlocks

n/a

6.4 Monitoring systems

n/a

6.5 Ventilation

n/a

6.6 Other (Electrical, ODH, Trip, Ladder) (Attach related Temporary Work Permits or Safety Reviews as appropriate.)

Lift plans will be written and approved for critical lifts.

7. List of Safety Equipment:

7.1 List of Safety Equipment:

Proper clean room attire will be worn at all times. At times additional PPE will be necessary due to the step in the procedure (Hard hats during lifts, gloves during handling of mirrors or Aerogel)

7.2 Special Tools:

n/a

8. Associated Administrative Controls

Lift plans will be written and approved for critical lifts.

DEVELOP THE PROCEDURE

9. Operating Guidelines

A detailed overall procedure is attached to this OSP (RICH Instrumentation Installation Procedure). Several tasks in the procedure are detailed in attached sub-procedures.

10. Notification of Affected Personnel (who, how, and when include building manager, safety warden, and area coordinator)

The EEL safety warden will notify affected personnel, in his absence the DSG Group Leader or is designee will provide notification.

11. List the Steps Required to Execute the Procedure: from start to finish.

1. Removing the exit panel.
2. Installation of internal gas distribution lines.

3. Installation of spherical mirror support.
4. Installation of mirrors.
5. Rotation of RICH to vertical position.
6. Mirror Alignment and Survey
7. Assembly of Front Panel Tooling Frame and Installation into RICH Detector.
8. Assembly of the electronics panel and testing.
9. Light tightness testing, testing gas service.
10. Removal of the front panels.
11. Installation of the bottom mirror.
12. Aerogel installation
13. Re-installing front panels.
14. Installation of the electronics panel and testing.

12. Back Out Procedure(s) i.e. steps necessary to restore the equipment/area to a safe level.

If at any point in any step of the procedure an unforeseen issue (safety or otherwise), the workers will make any elements safe (lower lifted objects, release pressurized gas, shutdown power) and regroup with DSG management to discuss and resolve the issue before continuing.

13. Special environmental control requirements:

13.1 List materials, chemicals, gasses that could impact the environment (ensure these are considered when choosing Subject Mater Experts) and explore [EMP-04 Project/Activity/Experiment Environmental Review](#) below

Silicon or another sealant may be used to seal the electronics panel.

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

n/a

13.3 Abatement steps (secondary containment or special packaging requirements)

n/a

14. Unusual/Emergency Procedures (e.g., loss of power, spills, fire, etc.)

15. Instrument Calibration Requirements (e.g., safety system/device recertification, RF probe calibration)

All rigging equipment will be checked prior to lifts.

16. Inspection Schedules

Rigging equipment will follow the Jlab inspection schedules.

17. References/Associated/Relevant Documentation

Rich Instrumentation Installation Procedure
 2017-07-07-SPH and PLANAR Mirrors
 EPanel Cooling System_Details
 EPanelBoardsAssemblyProcedure
 EPanelInstallationProcedure
 FrontalPanelsProcedures
 Installation of RICH Mirrors, Aerogel, and Panels_THA
 Nitrogen Inlet Assy-3
 PurgeSystemsOperatorsManual-10-25-2016 ma

18. List of Records Generated (Include Location / Review and Approved procedure)

[Click](#)
 To Submit OSP
 for Electronic Signatures

Distribution: Copies to Affected Area, Authors, Division Safety Officer

Expiration: Forward to ESH&Q Document Control

Form Revision Summary

- Revision 1.4 – 06/20/16** – Repositioned “Scope of Work” to clarify processes
- Qualifying Periodic Review – 02/19/14** – No substantive changes required
- Revision 1.3 – 11/27/13** – Added “Owning Organization” to more accurately reflect laboratory operations.
- Revision 1.2 – 09/15/12** – Update form to conform to electronic review.
- Revision 1.1 – 04/03/12** – Risk Code 0 switched to N to be consistent with [3210 T3 Risk Code Assignment](#).
- Revision 1.0 – 12/01/11** – Added reasoning for OSP to aid in appropriate review determination.
- Revision 0.0 – 10/05/09** – Updated to reflect current laboratory operations

ISSUING AUTHORITY	FORM TECHNICAL POINT-OF-CONTACT	APPROVAL DATE	REVIEW DATE	REV.
ESH&Q Division	Harry Fanning	06/20/16	06/20/19	1.4

This document is controlled as an on line file. It may be printed but the print copy is not a controlled document. It is the user's responsibility to ensure that the document is the same revision as the current on line file. This copy was printed on 7/26/2017.