

Operational Safety Procedure Form

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

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For Word Doc

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OSP

TOSP

TOSP

This document is written to mitigate **hazard issues** that are (check all that apply):

- Unable to comply with ESH&Q Manual requirements as written.
- New/anticipated/previously unrecognized.
- Determined to have an unmitigated [Risk Code](#) of 3 or 4.

Issue Date: 06/26/2012

Expiration Date: _____

(No more than three years from Issue Date except TOSP which is three months from Issue Date)

Title: **Heavy Photon Search Silicon Vertex Tracker for the Engineering Run**

Location: Hall-B

Risk classification
 (See [ESH&Q Manual Chapter 3210 Appendix T3 Risk Code Assignment.](#))

Without mitigation measures (3 or 4): 2

With mitigation measures in place (0, 1, or 2): 1

Document Owner(s): Stepan Stepanyan

Date: 06/26/2014

Supplemental Technical Validations:

Hazard Reviewed (per ESH&Q Manual 2410-T1):	Subject Matter Experts Signature:	Date:
Safety	Bert Manzlak	_____
Electrical	Todd Kujawa	_____
Cooling inside the vacuum	Tim Michaleski	_____
Mechanical	Bob Miller	_____
Interlocks	Krister Bruhwel	_____

Approval Signatures:	Print	Signature	Date:
Division Safety Officer:	Patrizia Rossi	_____	_____
Department or Group Head:	Volker Burkert	_____	_____
Safety Warden of Area:	Doug Tilles	_____	_____
Other Approval(s):	Bert Manzlak	_____	_____

Document History:

Revision:	Reason for revision or update:	Serial number of superseded document

Distribution: Copies to: affected area, authors, Division Safety Officer, ESH&Q Document Control
After expiration: Forward original and log sheet of trained personnel to ESH&Q Document Control.

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1. Purpose of the Procedure

To install and operate Si-tracker (SVT) from SLAC inside the Hall-B pair spectrometer magnet (18D36 dipole) vacuum chamber.

2. Scope – include operations, people, and/or areas where procedure applies

Si-tracker (see attached document) will be installed inside the Hall-B pair spectrometer vacuum chamber for the Heavy Photon Search experiment engineering. Work scope will include installation and alignment of the SVT, connection of the power lines, signal cables and cooling system. Hall-B engineering group will perform installation, JLAB survey group will perform alignment, and HPS collaborators will make connections and tests before closing and pumping vacuum. All the elements of the SVT are tested for magnet and vacuum compatibility. Data taking will use standard Hall-B DAQ system.

3. Description of the Facility: (include floor plans and layout of a typical experiment or operation)

Installation and operation of the HPS SVT system will be done in Hall-B using the Hall-B pair spectrometer and PS vacuum chamber.

4. Authority and Responsibility:

4.1 Who has authority to implement/terminate

John Jaros
Tim Nelson
Stepan Stepanyan
Doug Tilles

4.2 Who is responsible for key tasks

Doug Tilles
Tim Nelson
Stepan Stepanyan

5. Who analyzes the special or unusual hazards (See [ES&H Manual Chapter 3210 Appendix T1 Work Planning, Control, and Authorization Procedure](#))

[Start Typing Here]

6. Personal and environmental hazard controls including:

6.1 Shielding

NA

6.2 Interlocks

Chiller will shutdown in an event of flow drop or loss of vacuum.
The beam excursion or temperature changes, loss of vacuum or chiller shutdown will initiate SVT

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HV/LV shutdown through EPICS

6.3 Other

NA

7. Monitoring systems

Temperature monitoring through EPICS
 HV/LV monitoring through EPICS

8. Ventilation

NA

9. List of safety equipment (i.e: personal protective equipment or special tools)

NA

10. Associated administrative procedures

NA

11. Operating guidelines

See attachment document or SVT operations manual

12. Notification of Affected Personnel (How and Who)

NA

13. List of steps required to execute the procedure from start to finish.

1. Bleed vacuum in PS vacuum chamber
 2. Install and align SVT
 3. Connect cooling, HV/LV and signal lines
 4. Pressure and leak test of cooling pipes
 5. Turn on cooling system
 6. Turn on HV/LV system
 7. Collect data
 8. Install flanges and beam pipes
 9. Slowly pump down PS vacuum chamber and beam line
- (See also attached document)

14. Back out procedures, i.e., steps necessary to restore the equipment/area to a safe level.

1. Turn OFF HV/LV system
2. Turn OFF cooling system

15. Special environmental control requirements:

NA

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

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None
17. Abatement Steps – Secondary Containment, or Special Packaging requirements
NA
18. Training requirements
Standard training, no special training is needed
19. Unusual/Emergency procedures e.g., Injury, Fire, Loss of power
NA
20. Instrument calibration requirements, e.g., safety system/device recertification, RF probe calibration
No
21. Inspection schedules
NA
22. References/Associated Documentation
Attached
23. List of Records Generated (Include Location / Review and Approved procedure)

Authorized/Trained Individuals:

Print Name/Signature	Date
Tim Nelson	
Takashi Maruyama	
Ryan Herbst	
Sho Uemura	
John Jaros	
Stepan Stepanyan	
Krister Bruhwel	
Per Hansson	
Omar Moreno	

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Form Revision Summary

Revision 1 – 12/01/11 - Added reasoning for OSP to aid in appropriate review determination.

Revision 0 - 10/05/09 – Updated to reflect current laboratory operations

ISSUING AUTHORITY	FORM TECHNICAL POINT-OF-CONTACT	APPROVAL DATE	EXPIRATION DATE	REV.
ESH&Q Division	Harry Fanning	12/01/11	12/01/14	1

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