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Org: PHALLA

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Operational Safety Procedure Review and Approval Form # 120530
(See [ES&H Manual Chapter 3310 Appendix T1 Operational Safety Procedure \(OSP\) and Temporary OSP Procedure](#) for Instructions)

Type:	OSP Click for OSP/TOSP Procedure Form Click for LOSP Procedure Form Click for LOTO-COMPLEX Information Click for LOTO-GROUP Information		
Serial Number:	ENP-21-120530-OSP		
Issue Date:	9/15/2021		
Expiration Date:	9/15/2024		
Title:	Moving / Positioning HCAL		
Location: (where work is being performed) Building Floor Plans	101 - Experimental Hall A	Location Detail: (specifies about where in the selected location(s) the work is being performed)	Main floor downstream of pivot.
Risk Classification: (See ES&H Manual Chapter 3210 Appendix T3 Risk Code Assignment)	Without mitigation measures (3 or 4):		2
	With mitigation measures in place (N, 1, or 2):		1
Reason:	This document is written to mitigate hazard issues that are : Not Applicable		
Owning Organization:	PHALLA		
Document Owner(s):	Butler, Jessie (jbutler@jlab.org) Primary		
Supplemental Technical Validations <input type="checkbox"/>			
Solvents (< 1 Gallon, Non-Flammable) (Imani Burton, Jennifer Williams) Cranes & Hoists - Ordinary or Pre-Engineered (Bob Sperlazza, Mark Loewus) ODH 0 and 1 (Imani Burton, Jennifer Williams) Pinch Points (Bert Manzlak, Paul Collins) Controlled Area (Adam Hartberger, David Hamlette, Keith Welch) Stored Energy: Mechanical, Hydraulic, Pneumatic (Bert Manzlak, Paul Collins) ESH&Q Liasion (Bert Manzlak)			
Document History <input type="checkbox"/>			
Revision <input type="checkbox"/>	Reason for revision or update <input type="checkbox"/>	Serial number of superseded document <input type="checkbox"/>	

Lessons Learned	Lessons Learned relating to the hazard issues noted above have been reviewed.
Comments for reviewers/approvers: <input type="checkbox"/>	<i>OSP is written for new equipment install per Physics division requirements.</i>
Attachments <input type="checkbox"/>	
Procedure: <i>OSP_Moving_HCAL_Detector.pdf</i> THA: <i>THA_Moving_HCAL_Detector.pdf</i> Additional Files: <i>Procedure_Positioning_HCAL_Detector.pdf</i>	
Review Signatures	
Subject Matter Expert : Chemicals->Solvents (< 1 Gallon-> Non-Flammable)	Signed on 9/15/2021 11:21:09 AM by Jennifer Williams (jennifer@jlab.org)
Subject Matter Expert : Material Handling Equipment->Cranes & Hoists - Ordinary or Pre-Engineered	Signed on 9/14/2021 3:26:42 PM by Mark Loewus (loewus@jlab.org)
Subject Matter Expert : Oxygen Deficiency Hazards (ODH)->ODH 0 and 1	Signed on 9/15/2021 11:21:09 AM by Jennifer Williams (jennifer@jlab.org)
Subject Matter Expert : Pinch Points	Signed on 9/4/2021 2:06:47 PM by Bert Manzlak (manzlak@jlab.org)
Subject Matter Expert : Radiation - Ionizing->Controlled Area	Signed on 9/14/2021 1:40:43 PM by David Hamlette (hamlette@jlab.org)
Subject Matter Expert : Stored Energy: Mechanical->Hydraulic-> Pneumatic	Signed on 9/4/2021 2:06:55 PM by Bert Manzlak (manzlak@jlab.org)
Approval Signatures	
Division Safety Officer : PHALLA	Signed on 9/15/2021 11:23:36 AM by Ed Folts (folts@jlab.org)
ESH&Q Division Liasion : PHALLA	Signed on 9/15/2021 12:06:45 PM by Bert Manzlak (manzlak@jlab.org)
Org Manager : PHALLA	Signed on 9/15/2021 1:43:45 PM by Cynthia (Thia) Keppel (keppel@jlab.org)
Safety Warden : Experimental Hall A	Signed on 9/15/2021 4:21:11 PM by Jessie Butler (jbutler@jlab.org)

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Operational Safety Procedure Form

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

Click
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Title:	Moving / Positioning HCAL Detector		
Location:	Experimental Hall A – Downstream of Pivot	Type:	<input checked="" type="checkbox"/> OSP <input type="checkbox"/> TOSP
Risk Classification (per Task Hazard Analysis attached) (See ES&H Manual Chapter 3210 Appendix T3 Risk Code Assignment.)	Highest Risk Code Before Mitigation		2
	Highest Risk Code after Mitigation (N, 1, or 2):		1
Owning Organization:	Physics / Hall A	Date:	3 September 2021
Document Owner(s):	Jessie Butler		

DEFINE THE SCOPE OF WORK

1. Purpose of the Procedure – Describe in detail the reason for the procedure (what is being done and why).
Moving HCAL detectors and support structure.
2. Scope – include all operations, people, and/or areas that the procedure will affect.
When moving the HCAL detector, it will affect anyone working on the associated equipment platform and in the detector’s vicinity.
3. Description of the Facility – include building, floor plans and layout of the experiment or operation.
Experimental Hall A – Downstream of the pivot area

ANALYZE THE HAZARDS and IMPLEMENT CONTROLS

4. Hazards identified on written Task Hazard Analysis
<ul style="list-style-type: none"> • Pinch Point • Stored Energy • Radiation Hazard • ODH
5. Authority and Responsibility:
5.1 Who has authority to implement/terminate
Hall A Work Coordinator
5.2 Who is responsible for key tasks
Members of the Hall A Tech Staff
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)

Hall A Work Coordinator or designee

6. Personal and Environmental Hazard Controls Including:

6.1 Shielding

N/A

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

Keep out zones will be identified using cones and flashing lights

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.)

Trip – Multiple hoses, cables, and cords will be used and strung along the floor during procedure.
 Chemicals – Hydraulic oil is used in the jacks and reservoirs

7. List of Safety Equipment:

7.1 List of Safety Equipment:

Safety Shoes – Required
 Work Gloves – Recommended
 Safety Glasses – Recommended
 Hearing Protection - Recommended

7.2 Special Tools:

5 Ton Chainfall
 Swivel Hoist Ring (sized appropriately)
 Sling (identified and mark to only use for this task)

8. Associated Administrative Controls

This OSP and associated THA

9. Training

9.1 What are the Training Requirements (See [List of Training Skills](#))

Hall A Awareness Training (SAF110)
 Radiation Worker I Training (SAF801C, SAF801T, & SAF801P)
 ODH Training (SAF103)
 Read and sign Hall A's Conduct of Operations (COO)
 Read and sign this OSP
 Equipment specific training from work coordinator or designee

DEVELOP THE PROCEDURE

10. Operating Guidelines

Conduct pre-job walk-down to identify potential areas of interferences.
 A minimum of three people are required to perform this procedure.
 Ensure all steps listed under line 12 on this procedure are performed.

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

Contact the Hall A Work Coordinator prior to starting work.

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

Please see attachment – Positioning HCAL Detector

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

1. Lower detector onto Hillman Rollers.
2. Install stop wedges on all side of Hillman rollers
3. (If any) Relieve tension on chainfall
4. Contact Hall A Work Coordinator
5. Re-assess the job and hazards

14. Special environmental control requirements:

14.1 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

Hydraulic oil

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

If a large amount of hydraulic oil spill, it could adversely affect the environment

14.3 Abatement steps (secondary containment or special packaging requirements)

N/A

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

In the event of injury, or an immediate emergency exists, call **911** and also notify:

- Guards (x5822)
- Occupational Medicine (x7539)
- Crew Chief (x7045) (if inside the fence)

In case of an injury follow standard JLAB procedures. Initial response cards are located with each phone for appropriate emergency phone numbers. Additional information can be found at https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-24400/*.pdf.

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

N/A

17. Inspection Schedules

- Ensure chainfall annual inspection is current.
- All Hydraulic hoses must be inspected before each use.

18. References/Associated/Relevant Documentation

This OSP and associated THA

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

N/A

Submit Procedure for Review and Approval (See [ES&H Manual Chapter 3310 Appendix T1 OSP & TOSP Instructions – Section 4.2 Submit Draft Procedure for Initial Review](#)):

- Convert this document to .pdf
- Open electronic cover sheet:
<https://jlabdoc.jlab.org/docushare/dsweb/Get/Document-24048/3310T1Form.doc>
- Complete the form
- Upload the pdf document and associated Task Hazard Analysis (also in .pdf format)

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

Expiration: Forward to ES&H Document Control

Form Revision Summary

- Revision 1.7 – 02/25/2021** – Corrected link to Word doc; updated ‘ESH&Q’ to “ES&H”; other minor edits. No approval required.
- Revision 1.6 – 06/23/2020** – Update section 15 to reflect guard number, what to do in an emergency, crew chief numbers, etc. approved by H. Fanning
- Revision 1.5 – 04/11/18** – Training section moved from section 5 Authority and Responsibility to section 9 Training
- 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.
ES&H Division	Harry Fanning	04/11/18	02/25/24	1.6

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Task Hazard Analysis (THA) Worksheet

(See [ES&H Manual Chapter 3210 Appendix T1](#)
[Work Planning, Control, and Authorization Procedure](#))

Click
For Word

Author:	Jessie Butler	Date:	3 September 2021	Task #: If applicable	N/A
Complete all information. Use as many sheets as necessary					
Task Title:	Moving / Positioning HCAL Detector	Task Location:	Experimental Hall A		
Division:	Physics	Department:	Hall A	Frequency of use:	As Needed
Lead Worker:	Jessie Butler or Designee				
Mitigation already in place: Standard Protecting Measures Work Control Documents	Associated OSP and Hall A's Conduct of Operations (COO)				

Sequence of Task Steps	Task Steps/Potential Hazards	Consequence Level	Probability Level	Risk Code (before mitigation)	Proposed Mitigation (Required for Risk Code >2)	Safety Procedures/ Practices/Controls/Training	Risk Code (after mitigation)
1	Pinch Points	M	L	2	Pre-job walk-down to identify potential pinch points.	Associated OSP	1
2	Radiation Hazard	L	L	1	Ensure radiation hazards are understood before entering the area	Radiation worker I training	1
3	ODH	L	L	1	Be mindful of ODH levels before entering the Hall	ODH training	1
4	Stored Energy	L	L	1	Conduct pre-use inspections on hydraulic hoses and jack.	Equipment specific training on how to connect, disconnect, and how to properly use hydraulic jacks	N

Highest Risk Code before Mitigation:	2	Highest Risk Code after Mitigation:	1
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Task Hazard Analysis (THA) Worksheet

(See [ES&H Manual Chapter 3210 Appendix T1 Work Planning, Control, and Authorization Procedure](#))

When completed, if the analysis indicates that the [Risk Code](#) before mitigation for any steps is “medium” or higher (RC≥3), then a formal [Work Control Document](#) (WCD) is developed for the task. Attach this completed Task Hazard Analysis Worksheet. Have the package reviewed and approved prior to beginning work. (See [ES&H Manual Chapter 3310 Operational Safety Procedure Program](#).)

Form Revision Summary

Revision 0.2 – 07/26/21 – Periodic Review; updated header and footer

Periodic Review – 08/29/18 – No changes per TPOC

Periodic Review – 08/13/15 – No changes per TPOC

Revision 0.1 – 06/19/12 - Triennial Review. Update to format.

Revision 0.0 – 10/05/09 – Written to document current laboratory operational procedure.

ISSUING AUTHORITY	TECHNICAL POINT-OF-CONTACT	APPROVAL DATE	REVIEW DATE	REV.
ES&H Division	Harry Fanning	08/29/18	07/26/24	0.2

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For questions or comments regarding this form contact the Technical Point-of-Contact [Harry Fanning](#)

Steps for Moving/Positioning HCAL Detector

***** WARNING: CONTACT RADCON FOR AUTHORIZATION TO WORK IN THE AREA BEFORE PROCEEDING*****

1. Identify the current and new location for HCAL detector.
2. Clear necessary floor space needed to move HCAL from current to new location
3. Verify all cables are secured and clear of the detector's travel path.

*****WARNING: INSTALL STOP WEDGES IN THE FRONT AND BACK OF ALL FOUR HILLMAN ROLLERS TO PREVENT INADVERTENTLY MOVEMENT*****

*****PLEASE NOTE: ONLY ONE SIDE OF THE DETECTOR SHOULD BE RAISED AT A TIME AND JACKS SHOULD BE PLACED NO FARTHER THAN 12 INCHES FROM HILLMAN ROLLERS *****

4. Using two (20T) hydraulic jacks, raise one side of detector slightly (approx. 1/8") until Hillman roller can spin freely in any direction. **Warning: Possible stored energy.**
5. Point both Hillman rollers in the direction of the new location. Laser and tape measures can be used to help verify pointing.
6. Lower detector back down on Hillman roller and reinstall stop wedges.
7. Move hydraulic jacks to the other side of detector and repeat steps 4-6.
8. Once all Hillman rollers are pointing in the right direction, connect 5T chainfall and swivel hoist ring to appropriate spot on the floor or floor plate.
9. Using a sling, connect other end of the chainfall to the main support beam of the detector and take up excessive slack. **Warning: Sling and swivel hoist ring must be appropriately sized for using a 5T chainfall.**
10. Verify all Hillman roller are pointing in the same direction as the chainfall will be pulling.
11. Remove stop wedges from around Hillman rollers.

***** IF BINDING OR HIGH TENSION OCCURS ON CHAINFALL DURING MOVE, STOP, RELIEVE PRESSURE BY REVERSING CHAINFALL, AND REASSESS. *****

12. Using chainfall, pull detector to new location.
13. Once at desired location, raise one side of the detector and rotate Hillman roller to point in different direction than the ones on the opposite side of frame. This will prevent the detector from easily rolling in one direction.
14. Lower detector back down on Hillman Rollers.
15. Install stop wedges on all sides of Hillman Rollers.
16. Disconnect and store hydraulic jacks. **Warning: Possible stored energy.**

17. Disconnect and store chainfall, sling, and swivel hoist ring.
18. Conduct final review of the job and make sure all tools and equipment are properly stored.
19. Make a log entry in the HALOG book describing the work performed.

