Jefferson Lab
Thomas Jefferson National Accelerator Facility

Task Hazard Analysis (THA) Worksheet

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

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Author:	Valery Kubarovsky	Date:	June 8, 2016	Task #: If applicable	

Complete all information. Use as many sheets as necessary

Task Title:	Operation of RICH			Task Location:	Hall-B	
Division:	Physics	Department:	Hall-B	Frequency of use:	Daily	
Lead Worker:	Valery Kubarovsky					
Mitigation already in place: Standard Protecting Measures Work Control Documents	Standard Hall-B protective measures and appropriate personal training including but not limited to RICH ESAD and RICH manual.					

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	• Electrical shock from touching exposed wires or damage to MAPMTs if the enclosure is opened with HV on	L	L	1	• Hardware enclosure door interlock • Personal training, setting boundaries around equipment. • Use Lock/Tag/try procedures	• All maintenance and repair work inside RICH enclosure is done by trained personal with HV off, power supplies power cords unplugged and LTT devices applied. • Interlock disables HV when enclosure is open. • Interlock prevents energizing the detector if the door is open.	Negligible

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2	• Heat buildup inside the RICH enclosure if cooling system is not running. This may cause damage to the experimental equipment	H	L	3	• Air cooling system was chosen to remove heat from the detector • Hardware cooling system interlock will turn off HV and LV systems and will prevents to switch ON HV and LV if the cooling system is OFF. • Temperature interlock will switch off HV and LV systems	• The air cooling system will monitor key detector parameters. • If the monitored signals are out of pre-programmed limits, the air cooling shuts off HV and LV. • Interlock prevents energizing the detector if the cooling system is off. The signals monitored for air cooling include: 1. Air flow 2. Pressure inside the air tank 3. Air compressor power status 4. Temperature inside the detector enclosure	

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3	• The degradation of aerogel properties due to the uncontrolled humidity in the experimental hall	L	L	1	• The nitrogen purge gas system is developed to flow dry gas and preserve aerogel optical performance	• The nitrogen flow and detector internal humidity will be constantly monitored. • The nitrogen purge system sets off an alarm in case the key parameters (nitrogen flow and detector internal humidity) is outside pf pre-programmed limits.	

Highest Risk Code before Mitigation:	3	**Highest Risk Code after Mitigation:**	1

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

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.
ESH&Q Division	Harry Fanning	08/13/15	08/13/18	0.1

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