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:	G. Cheng	**Date:**	23 Oct 2018	**Task #:** If applicable	

Complete all information. Use as many sheets as necessary

Task Title:	Demagnetize Cryomodule			**Task Location:**	Building 18 (LERF) vault
Division:	Engineering	**Department:**	MEG	**Frequency of use:**	Once per week
Lead Worker:	John Fischer				
Mitigation already in place: Standard Protecting Measures Work Control Documents	Use of industry standard insulated wire and assembly practices for coil. IEEE approved AC connectors for equipment. Emergency response procedures in place for SRF workers.				

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	Test coil electrical insulation for shorts with Megger or Leakage current Tester (done once) Shock hazard.	M	EL	1	Training in use of Megger.	SAF603A Electrical safety awareness	1
2	Plug power supply into AC. Short circuit/arc	M	EL	1	Use of NEMA rated plug and outlet	SAF603A Electrical safety awareness	1
3	Turn on 80 V, 75 amp, DC power supply. Electrical short	M	EL	1	Inspect coil and leads prior to energizing power supply.	SAF603A Electrical safety awareness	1

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	Turn on 80 V, 75 amp DC power supply. Inadvertent exposure of non-test worker to current.	M	EL	1	The use of the power supply will be administratively controlled. It will not be turned on unless a system expert is present at the point of use.	Red beacon to alert bystanders SAF603A Electrical safety awareness	1
4	Use of Power supply Exposure to uninsulated leads.	M	EL	1	All conductors are insulated to 600 V. There are safety covers preventing unintentional contact with excited conductors.	Inspect coil and leads prior to energization of power supply.	1
5	Magnetic field exposure to fields greater than 5 Gauss	M	M	3	1. All ferromagnetic material within 1 meter from the vacuum vessel must either be removed prior to excitation of the coils, or firmly fastened to the floor and/or building. 2. Cordon off area so that no fields greater than 5 Gauss are present outside the perimeter. No one is allowed inside the cordon when power supply is activated. Demagnetization power supply will only be used for short amounts of time and only when expert operators are present. People with medical implants are not allowed to operate.	Red Beacon to alert people in area. Stanchions, ropes and signs to alert people of hazard. Guards to prevent personnel from entering roped off area. SAF603A Electrical safety awareness	1

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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
6	DeEnergize coil and DC power supply Shock Hazard	L	EL	N	Guards prevent personnel contact with the wiring		N
7	Turn off AC to DC power supply Shock hazard	M	EL	1	Switch on equipment has no exposed voltage.	SAF603A Electrical safety awareness	N
8	Unplug DC power supply. Shock hazard.	M	EL	1	Use NEMA rated plug and socket for AC power	SAF603A Electrical safety awareness	N

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.)

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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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