

Name(s) of Risk Team Members: P. Cirnigliaro, A. Etkin, R. Karol, E. Lessard, J. Maraviglia, D. Passarello, A. Piper, R. Savage, J. Scott, M. Van Essendelft		Point Value → Parameter ↓	1	2	3	4	5					
Area/Facility Description Title: Collider-Accelerator Area/Facility # (if applicable): Equipment Testing Areas FRA 19		Occupancy or Use	≤once/year	≤once/month	≤once/week	≤once/shift	>once/shift					
Area/Facility Description: Equipment Testing Area-Wide		Severity	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability					
		Likelihood	Impossible	Unlikely	Possible	Probable	Multiple					
Approved by: <i>E. Lessard</i> Date: 7/20/04 Rev.#: 1		Reason for Revision (if applicable): N/A					Comments:					
FRA number added. Uniform hazard nomenclature added.												
			Before Additional Controls				After Additional Controls					
Physical Item or Activity	Hazard(s)	Control(s)	Occupancy A	Severity B	Likelihood C	Risk* AxBxC	Control(s) Added to Reduce Risk	Occupancy A	Severity B	Likelihood C	Risk* AxBxC	% Risk Reduction
Radiation	See Facility-Wide Radiation Evaluation	See Facility-Wide Radiation Evaluation										
Electrical	See Facility-Wide Electrical Evaluation	See Facility-Wide Electrical Evaluation										
High voltage electrical	See Facility-Wide Electrical Evaluation	See Facility-Wide Electrical Evaluation										
Housekeeping	See Facility-Wide Housekeeping Evaluation	See Facility-Wide Housekeeping Evaluation										
Fire	See Facility-Wide Fire Evaluation	See Facility-Wide Fire Evaluation										
Chemicals	Exposure	Postings, barriers, PPE, maintenance, training, work planning, procedures, Tier 1 inspections, CMS, MSDS, volume controls, locked/controlled areas	4	2	2	16						
Chemicals	Fire/explosion	Postings, barriers, PPE, maintenance, training, work planning, procedures, Tier 1 inspections, CMS, MSDS, volume controls, locked/controlled areas	4	2	2	16						
Water	Being struck by an object due to a pressure release	Postings, maintenance, PPE, training, work planning, ASSRC review, procedures, Tier 1 inspections, PLC monitoring and interlocks	4	3	2	24						
Water	Contact with temperature – extremes that result in such injuries frost bite or burns	Postings, maintenance, PPE, training, work planning, ASSRC review, procedures, Tier 1 inspections	4	3	2	24						

Pressurized Gas Systems	Being struck by an object due to a pressure release	Postings, PPE, maintenance, training, work planning, Cryogenic Safety Committee /ASSRC reviews, procedures, interlock systems, Certification/testing of pressure related equipment, Tier 1 inspections, LOTO, C-AD Chief ME reviews, codes and standards usage	4	3	2	24					
Vacuum	Ear damage	Postings, PPE, maintenance, training, work planning, ASSRC reviews, procedures, Tier 1 inspections, Chief ME reviews, vacuum windows covered during handling, use of industry standards, design reviews	4	4	2	24					
Vacuum	Being struck by an object due to a vacuum failure	Postings, PPE, maintenance, training, work planning, ASSRC reviews, procedures, Tier 1 inspections, Chief ME reviews, vacuum windows covered during handling, , use of industry standards, design reviews	4	4	2	32					
Work at heights	Falls to lower level, such as falling from a ladder or over a railing	Postings, barriers, fall protection, maintenance, training, work planning, procedures, Tier 1 inspections, PPE, approved scaffolding and platforms, approved ladders, anti-slip surfaces	4	4	3	48					
Thermal Extremes	Contact with temperature – extremes that result in such injuries as heat exhaustion, frost bite or burns	Postings, barriers, maintenance, training, work planning, PPE, procedures, Tier 1 inspections, design reviews, ASSRC reviews, LOTO	4	2	2	16					
RF	Radiation heating	Postings, maintenance, training, work planning, ASSRC reviews, procedures, interlock systems, Tier 1 inspections, RF gaskets, LOTO	4	3	2	24					
Magnetic Field	Adverse mechanical force exerted on ferromagnetic objects and or to electronic/medical implants.	Barriers, warning systems, postings, training, ASSRC review, work planning, procedures, Tier 1 inspections, magnetic safety reviews, medical exams	4	4	2	32					
Use of hand tools	Being struck by an object such as flying chips or debris	PPE, training, maintenance, Tier 1 inspections, UL listed equipment, pre-inspections	4	4	2	32					
Use of hand tools	Electrical shock	GFCI, grounding cases or insulated cases	4	3	2	24					
Use of hand tools	Being struck against an object such as a sharp surface	PPE, training, guards	4	3	3	36					
Use of hand tools	Becoming caught in or compressed by equipment	Equipment specific training, guarding, PPE, postings	4	3	3	36					
Crane use/Rigging	Being struck by an object, such as a tool falling on a worker from above	Training, procedures, PPE, postings, work planning, Tier 1 inspections, barriers	3	4	3	36					
Forklift use	Being struck by an object due to improperly secured material or loss of control	Training, procedures, PPE, postings, work planning, Tier 1 inspections	3	4	3	36					

Welding and brazing	UV exposure	PPE, work planning, procedures, welding permits, designated welding areas reviewed by Fire/Rescue Group	2	3	3	24					
Welding and brazing	Electric shock	Maintenance of equipment, training, UL approved equipment	2	5	2	20					
Welding and brazing	Contact with temperature – extremes that result in burns	PPE, work planning, procedures, training, designated welding areas reviewed by F/R Group	2	2	3	12					
Welding and brazing	Toxic fumes	PPE, work planning, ventilation, designated welding areas reviewed by F/R Group	2	3	3	18					
Welding and brazing	Noise	Ear protection, work planning, medicals	2	4	2	16					
Material Handling	Overexertion – injuries caused by excessive lifting, pushing, pulling, holding, carrying or throwing of an object	Training, work planning	3	4	3	36					
Material Handling	Being struck by an object due to improperly secured material or loss of control	Training, work planning	3	4	3	36					
Material Handling	Being struck against an object such as a sharp surface	Training, work planning	3	4	3	36					

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*Risk:	0 to 20	21 to 40	41-60	61 to 80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable