

Name(s) of Risk Team Members: P. Ciriigliaro, 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 Department Area/Facility # (if applicable): Facility Wide FRA 3-04	Occupancy or Use	≤once/year	≤once/month	≤once/week	≤once/shift	>once/shift
Area/Facility Description: General Facility-Wide Ionizing Radiation	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: 7/8/04 Rev.#: 1						

Reason for Revision (if applicable):
FRA number added.

Comments:

Physical Item or Activity	Hazard(s)	Control(s)	Before Additional Controls				Control(s) Added to Reduce Risk	After Additional Controls				% Risk Reduction
			Occupancy A	Severity B	Likelihood C	Risk* AxBxC		Occupancy A	Severity B	Likelihood C	Risk* AxBxC	
Primary beam	Unshielded proton, electron or ion beam, external radiation	ACS, PASS, postings, crash buttons and chords, C-AD area classification, shielding, dosimetry, training, RSC reviews	1	5	1	5						
Secondary beam	Unshielded beams, external radiation	ACS, PASS, postings, crash buttons and chords, C-AD area classification, shielding, dosimetry, training, locked gates, fenced in areas, RCD surveys, RWPs, work planning, RSC reviews, RCD oversight	1	4	2	8						
Target Areas	Unshielded beam, residual radiation, external radiation	ACS, PASS, postings, crash buttons and chords, C-AD area classification, shielding, dosimetry, training, locked gates, fenced in areas, RCD surveys, RWPs, work planning, RSC reviews, RCD oversight, extra shielding around targets, special keys to target areas	1	5	1	5						
General area radiation	Residual radiation, external radiation	Postings, training, shielding, RCD surveys, RCD oversight, RWP, work planning	5	1	4	20						
Contamination	Residual radiation, activated fluids, external or internal radiation	Postings, training, RCD surveys, RCD oversight, RWP, work planning, PPE, friskers, keeping contamination areas minimized, response to spills	2	1	4	8						
Internal radiation	Internal radiation	RWP, work planning, PPE, WB counting, sealed tunnel/cave gates to reduce exposure to activated air, delay before entering primary areas to allow decay of isotopes, HEPA vacuums, air sampling, RCD oversight	2	1	3	6						
Storage of Radioactive Materials	Residual radiation, external radiation	Fenced and posted areas, dosimetry, RWPs, work planning, RCD oversight, inspections, RMA inventories, some areas locked, shielding	5	1	4	20						
Radioactive Sources	Internal or external radiation	Training, BNL and C-AD source custodians, source inventory, shielding, locked boxes, leak checks, posting, dosimetry, Chipmunk calibration procedures, locked cage for Chipmunk source	5	2	2	20						
RF Cavities	X-rays	ACS, PASS, shielding, training, RCD surveys, postings, locked areas, procedures for test areas, RWP, work planning	1	5	1	5						
Tours	Internal or external radiation	Postings, trained escorts, RCD concurrence to enter radiation areas, RWP, work planning, training waiver, red TLD, BNL minors policy	3	1	2	6						

Further Description of Controls Added to Reduce Risk:

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