

Job Risk Analysis

Name(s) of Risk Team Members: R. Karol, P. Ingrassia, W. Anderson, C. Watts, A. Warkentien, J. Scott	Point Value → Parameter ↓	1	2	3	4	5
Job Title: MCR Watches, CAS Watch, Tandem Watch, Cryogenics Watch, Siemens Watch	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/shift	>once/shift
Job Number or Job Identifier: JRA 13a-08						
Job Description: Routine and non-routine tours, inspections, alarm responses, of C-AD facility on a 24 hour shift rotation.	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
Training and Procedures List (optional): C-A Access, RW-1, RW-300, Electrical (safety, LOTO, working on or near, breaker/disconnect operations, electrical PPE), Confined Spaces, Hazard Communication, OJT equipment training, C-AD OPM	Likelihood (D)	Very Unlikely	Unlikely	Possible	Probable	Multiple
Approved by: <i>E. Lessard</i> Date:4-3-08 Rev. #: 0						

Stressors (if applicable, please list all): Heat, poor lighting, moisture, snow, extended work hours, working alone, time pressure	Reason for Revision (if applicable):	Comments:
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Job Step / Task	Hazard	Control(s)	Stressors Y/N	Before Additional Controls					Control(s) Added to Reduce Risk	Stressors Y/N	After Additional Controls					% Risk Reduction
				# of People A	Frequency B	Severity C	Likelihood D	Risk* AxBxCxD			# of People A	Frequency B	Severity C	Likelihood D	Risk* AxBxCxD	
Sweeps in buildings	Ionizing radiation exposure	RWP, training, surveys, PPE, TLD, EPD, entry log sheets, procedures, postings, access control systems, chipmunks, RCT support	Y	2	3	1	1	6								
Sweeps in buildings	Electrical	LOTO, work planning, training, procedures, postings, guarding, lighting, awareness of surroundings, Tier 1 inspections	Y	2	3	3	1	18								
Sweeps in buildings	Being struck by an object due to improperly secured material or loss of control of objects in magnetic fields	LOTO, training, procedures, postings, magnetic field measurements, lighting, awareness of surroundings, Tier 1 inspections, housekeeping, flashlights	Y	2	3	1	2	12								
Sweeps in buildings	Being struck by an object due to a pressure release in nearby pressurized systems	LOTO, work planning, procedures, postings, caution tags, awareness of surroundings, Tier 1 inspections	Y	2	3	2	2	24								

Incidental cleanup	Overexertion – injuries caused by excessive lifting, pushing, pulling, holding, carrying or throwing of an object	Work planning, back safety training as appropriate, dollies, hand trucks, limits on single person lifting weight, work breaks	Y	2	3	2	3	36								
Incidental cleanup	Falls on same level	Work planning, proper shoes, snow removal, work surface maintenance, roof maintenance, postings, Tier 1 inspections	Y	2	3	3	2	36								
Incidental cleanup	Bodily reaction – injuries resulting from bending, climbing, loss of balance and slipping without falling	Work planning, back safety training as appropriate, dollies, hand trucks, snow removal	Y	2	3	2	3	36								
Incidental cleanup	Falls to lower level, such as falling from a ladder or over a railing	Postings, railings, awareness of surroundings, work planning, ladder training	Y	2	3	3	3	54								
Incidental cleanup	Being struck by an object, such as a tool falling on a worker from above	PPE, work planning, awareness of surroundings, postings, barriers, Tier 1 inspections	Y	2	3	3	2	36								
Incidental cleanup	Being struck against an object, such as a carpenter walking into a door frame	PPE, work planning, awareness of surroundings	Y	2	3	2	2	24								
Incidental cleanup	Becoming caught in or compressed by equipment	Guarding, work planning, postings, awareness of surroundings	Y	2	3	4	2	48								
Incidental cleanup	Contact with temperature – extremes that result in such injuries as heat exhaustion, frost bite or burns	Guarding, postings, awareness of surroundings, work planning	Y	2	3	3	2	36								
Working on Electrical Equipment & Power Supplies BNL Class A & B <250 VAC; <1000Vdc	Shock or electrocution	All equipment is listed or reviewed by CEE; Tier 1 inspections; ASSRC or ESRC Committee reviews, disconnected cable policy; installations comply with applicable codes; procedures; training; distribution drawings; LOTO; Kirk keys; energized electrical work permits; qualified electricians and technicians; cabinet interlocks; postings; locked areas; guarding; work planning; GFCI; grounding standards; emergency procedures, Fire/rescue group emergency response, NFPA 70E+ PPE	Y	2	3	3	1	18								

Working with Electrical Equipment & Power Supplies BNL Class C <600 VAC; <6000 VDC	Arc blast; burn	Procedures, training, NFPA 70E+ PPE	Y	2	2	3	1	12								
Operating Electrical Disconnects And Switches	Arc blast; burn	Procedures, training, NFPA 70E+ PPE	Y	1	3	3	1	9								
Working Inside Accelerator Enclosures	Entrapment	Procedure, training, flashlights, escape hatches	Y	1	3	5	1	15								
Operating Electrical Disconnects And Switches	Shock or electrocution	All equipment is listed or reviewed by CEE; Tier 1 inspections; disconnected cable policy; installations comply with applicable codes; procedures; training; distribution drawings; LOTO; Kirk keys; energized electrical work permits; qualified electricians and technicians; cabinet interlocks; postings; locked areas; guarding; work planning; GFCI; grounding standards; emergency procedures; two-person rule for working on or near, NFPA 70E+ PPE	Y	1	3	3	1	9								
Operating Motor Control Centers; Panels And Wall Sockets	Shock or electrocution	All equipment is listed or reviewed by CEE; Tier 1 inspections; disconnected cable policy; installations comply with applicable codes; procedures; training; distribution drawings; LOTO; Kirk keys; energized electrical work permits; ASSRC/ESRC reviews; qualified electricians and technicians; cabinet interlocks; postings; locked areas; guarding; work planning; grounding standards, NFPA 70E+ PPE	Y	1	3	3	1	9								
Operating Motor Control Centers; Panels And Wall Sockets	Arc blast; burn	NFPA 70E+ PPE; training; procedures	Y	1	3	3	1	9								
Using Electrical Powered Hand Tools	Shock or electrocution	All equipment is listed or reviewed by CEE; Tier 1 inspections; procedures; training; labeling; work planning; GFCI; grounding standards; double insulation	Y	2	3	3	2	36								
Using Extension Chords; Temporary Wiring And Power Strips	Shock or electrocution	All equipment is listed or reviewed by CEE; Tier 1 inspections; disconnected cable policy; installations comply with applicable codes; procedures; training; distribution drawings; qualified electricians and technicians; GFCI; grounding standards	Y	2	3	3	2	36								
Chemical Handling	Eye exposure	Procedures; compliance with regulations; training; CMS inventory; MSDS; volume controls; PPE as required; locked or controlled areas; postings; labeling; proper containers; segregation; proper spill cleanup equipment available; Tier 1 inspections	Y	2	2	2	3	24								

Conducting pressure testing with gas	Being struck by an object due to a pressure release	LOTO, relief valve testing, procedures, training, work planning, barriers and postings, ASME code or equivalent pressure safety compliance	Y	2	2	3	2	24								
Fork truck use	See JRA 20															
Source replacement work at Linac and Tandem	Ionizing radiation exposure	Training, experts prepare sources, MSDS, CMS, procedures, RWP, RCT support if required, two people for work, fume hoods, emergency response, PPE, work planning.	Y	2	2	1	2	8								
Source replacement work at Linac and Tandem - electrical, mechanical	Becoming caught in or compressed by equipment	Procedures, LOTO, disconnects, proper grounding procedures and equipment, two man rule, expert help, work planning.	Y	2	2	4	2	32								
Further Description of Controls Added to Reduce Risk:																
C-AD started Human Performance training in FY06 for C-AD staff. This training should be fully completed by the end of FY08. IN FY07 BNL embarked on this same path for all of BNL. Courses are at the levels of worker, supervisor and manager. This training helps reduce events caused by human error, surroundings, and organizational processes. This should help reduce safety issues by making all staff think in a structured manner as they perform operations and maintenance.																
*Risk:	0 to 20	21 to 40	41-60				61 to 80				81 or greater					
	Negligible	Acceptable	Moderate				Substantial				Intolerable					