

Name(s) of Risk Team Members: Ray Karol, Peter Cirnigliaro, Steve Gill, Joel Scott, Asher Etkin	Point Value → Parameter ↓	1	2	3	4	5
Job Title: Work with Hazardous Materials Job Number or Job Identifier: JRA 16-05	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/shift	>once/shift
Job Description: Working with PCBs, beryllium, lead, asbestos and mercury. This addresses only the IH aspects of this work.	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
Training and Procedures List (optional): OPM 1.7, OPM 1.8, OPM 1.10, OPM 8.20, OPM 8.20.2, OPM 8.24, OPM 9.2.1, OPM 9.3.1, OPM 9.5.9, BTMS Training, SBMS	Likelihood (D)	Extremely Unlikely	Unlikely	Possible	Probable	Multiple
Approved by: <i>E. Lessard</i> Date: 5/24/05 Rev. #: 1						

Stressors (if applicable, please list all): Working with Be could cause stress to workers since a worker was recently found to be sensitized to Be.	Reason for Revision (if applicable): Annual Review	Comments: A retiring worker from the C-AD Vacuum Group tested positive for beryllium sensitization in April 2005. This may have been caused by past dermal contact at work or elsewhere. Be sensitization is a potential indicator of eventually getting chronic beryllium disease after a latent period of up to 30 years. Sensitization is a response of the body's immune system to a Be exposure and is dependant upon the particular individual who is exposed, similar to the different reactions people have to poison ivy exposure. Once the immune system creates this immunological response specific to Be, the immune system develops a permanent memory to Be particles that allows the immune system to attack any Be already in the body or any future inhaled, ingested or absorbed Be. Up to 16% ¹ of exposed individuals may become Be sensitized and the sensitization does not mean development of chronic beryllium disease is assured.
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Job Step / Task	Hazard	Control(s)	Stressors Y/N	Before Additional Controls					Risk* AxBxCxD	Control(s) Added to Reduce Risk	Stressors Y/N	After Additional Controls					% Risk Reduction
				# of People A	Frequency B	Severity C	Likelihood D	# of People A				Frequency B	Severity C	Likelihood D	Risk* AxBxCxD		
Handling and working with lead	Ingestion, inhalation	Lead awareness training; hazardous, mixed and radioactive waste training, procedures, area monitoring, personnel monitoring, CMS, encapsulation of lead objects, PPE, prohibition of cutting/shaping lead unless SME review process, medical surveillance as required, ventilation, HEPA vacuums, water spray bottles, housekeeping, work planning, minimization of lead usage, disposal of hundreds of thousands of pounds of lead in the last few years, warning signs, Tier 1 inspections, hazardous and radioactive waste controls, ASSRC, ESRC and IH reviews	N	2	2	3	2	24									

¹ William R. Pioli, *Be Aware of Beryllium – Understanding the Risks to Protect Employees*, ASSE Professional Safety Journal, September 2202, ASSE. Pages 31 to 40.

Handling and working with beryllium	Inhalation, ingestion, absorption through skin causing sensitization and/or Chronic Beryllium Disease	Beryllium inventory controls, BURFs, work planning, procedures, PPE including impermeable gloves, respirators and protective clothes; machining, grinding, turning, cutting, sanding, buffing, polishing with abrasives, filing, welding, drilling, tapping, brazing, burning, or any other modification of the physical shape of a Be article is prohibited at BNL, coating of Be objects to prevent oxidation, keeping areas clean of Be contamination, proper storage of Be objects, medical surveillance, blood testing (BeLPT), CMS, labeling, HEPA vacuums, ventilation, area monitoring both airborne and surface swipes, personnel monitoring, DOE Be-worker program, minimization of usage, glove bags, hoods, housekeeping, Be use training, hazardous and radioactive waste controls, ASSRC, ESRC and IH reviews	Y	2	2	5	3	60	Controls for personnel potentially exposed to Be are to be improved by placing these workers on the medical surveillance program for Be, surveying areas at C-AD that may have Be contamination, improving PPE for workers who handle Be objects, conducting more frequent air sampling of Be work processes and communicating Be hazards to all of C-AD staff and reviewing the need for use of Be to minimize its usage even further.	N	2	2	4	2	32	47%
Handling PCBs	Ingestion, absorption through skin	PCB inventory controls, periodic inspection of PCB components, spill response, PPE, training, work planning, equipment labeling, area postings, use of secondary containment, active replacement efforts, area monitoring, Tier 1 inspections, personnel monitoring, hazardous waste controls, prohibition of purchasing new equipment containing PCBs	N	2	2	1	2	8								
Handling and working with mercury	Inhalation, absorption through skin, ingestion	Training, PPE, procedures, work planning, mercury vacuums, CMS, area monitoring, personnel monitoring, minimization of usage, secondary containment, spill response, ventilation, hazardous and radioactive waste controls, ESRC and IH reviews	N	2	1	4	2	16								
Handling and working with asbestos	Inhalation	BNL inventory, work planning, Plant Engineering qualified asbestos workers, training, procedures, labeling, ventilation, spray bottles, housekeeping, PPE, area monitoring, personnel monitoring, hazardous waste controls	N	2	1	4	2	16								
Handling and working with chemicals	Inhalation, absorption through skin, ingestion	CMS, work planning, procedures, PPE, area monitoring, personnel monitoring, use of small volumes, ventilation, secondary containment for liquids, spill response, hazardous and radioactive waste controls, use of safer substitutes, Tier 1 inspections, ASSRC, ESRC and IH reviews, PO reviews by ESH Coordinator	N	2	4	2	2	32								
Handling and working with chemicals	Eye irritation	CMS, work planning, procedures, PPE, ventilation, use of safer substitutes, PO reviews by ESH Coordinator	N	2	4	2	3	48								

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													