NSLS OHSAS Job Risk Assessment

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Name(s) of Risk Team Members: M. Buckley, M. Caruso, W. DeBoer, P. DeToll, C. Lanni	**Point Value → Parameter ↓**	**1**	**2**	**3**	**4**	**5**
Job Title: **Work With Vacuum Systems** **Job Number or Job Identifier:** **PS-JRA-0008**	**Frequency (B)**	**≤once/year**	**≤once/month**	**≤once/week**	**≤once/shift**	**>once/shift**
Job Description: Work with systems subject to vacuum pumps and pressures less than atmospheric	**Severity (C)**	**First Aid Only**	**Medical Treatment**	**Lost Time**	**Partial Disability**	**Death or Permanent Disability**
Training and Procedure List (Optional):	**Likelihood (D)**	**Extremely Unlikely** <<1x/20yrs	**Unlikely** 1x/10-20yrs	**Possible** >1x/10-20yrs	**Probable** 1x/yr	**Multiple** >1x/yr
Approved by: A. Ackerman Date: 5/27/2011 Rev. # 1 **Revision Log**						
Stressors (if applicable, please list all):		**Reason for Revision (if applicable):**			**Comments:**	

		Before Controls							After Initial Controls						After Additional Controls					
Job Step / Task	**Hazard**	**Stressors Y/N**	**# of People A**	**Frequency B**	**Severity C**	**Likelihood D**	**Risk* AxBxCxD**	**Initial Controls**	**# of People A**	**Frequency B**	**Severity C**	**Likelihood D**	**Risk* AxBxCxD**	**Control(s) Added to Reduce Risk**	**# of People A**	**Frequency B**	**Severity C**	**Likelihood D**	**Risk* AxBxCxD**	**% Risk Reduction**
Operation of vacuum systems	Electrical shock	N	1	4	5	3	60	Proper grounding, feed-through protectors, strain relief, power cord condition, inspect equipment, Tier 1	1	4	5	1	20							

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	Release of toxic materials due to vacuum failure e.g., Beryllium window	N	1	4	2	4	32	NSLS Beryllium Mgmt. PRM, work permit, window inspections, vacuum interlocks	1	4	1	3	12							
	Inhalation of oil mists	N	1	4	2	4	32	Mist eliminators, venting to hoods or outdoors	1	4	1	3	12	Replace oil pumps with oil-free pumps	1	4	1	1	4	67%
Assembly or disassembly of vacuum system components	See **LS-JRA-0014** for Hand Tool Use																			
	Bending, twisting, overexertion, dead-lifting, repetitive motion, working in areas with restricted access resulting in bumps and abrasions	N	1	3	3	4	36	Proper lifting techniques, back safety training (if applicable), coordination with co-workers, work planning, gloves	1	3	2	3	18							
Leak checking vacuum system	See **LS-JRA-0009** for Work with Compressed Gas Cylinders or Systems																			
Maintenance of vacuum pumps	See **LS-JRA-0014** for Hand Tool Use																			
	Bending, twisting, overexertion, dead-lifting, repetitive motion	N	1	3	3	3	27	Proper lifting techniques, back safety training (if applicable), coordination with co-workers, work planning, gloves	1	3	2	2	12							

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	See **LS-JRA-0021** for Routine Chemical Use – Common industrial and Household Chemical Products & Exposure to oils																			
Bleeding up vacuum systems	Use of liquid nitrogen boil-off from dewars	N	1	2	2	3	12	Insulated gloves, eye/face protection, appropriate clothing, knowledge of dewar use, Cryogen Safety CBT	1	2	1	2	4							
Baking out	See **LS-JRA-0007** for Resistive Heating Using Heating Tapes or Cal Rods																			
Transporting dewars in trucks	Dewar tips over and releases cryogen and/or injures worker	Y	1	2	3	4	24	Properly secure dewar to truck bed/frame, follow BNL SBMS Cryogenics Safety	1	2	2	2	8							

Further Description of Controls Added to Reduce Risk:

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

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PHOTON SCIENCES DIRECTORATE REVISION LOG		
Document Number:	PS-JRA-0008	**Review Frequency**
Subject:	**Work With Vacuum Systems**	**3** Years
Review signatures on file with master copy of controlled document		

Rev	Description	Date
1	This is an initial version for document number PS-JRA-0008. The original document number was LS-JRA-0008.	5/27/2011