

## NSLS OHSAS Job Risk Assessment

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<b>Name(s) of Risk Team Members:</b> J. Aloï, M. Caruso, W. DeBoer, C. Lanni	<b>Point Value → Parameter ↓</b>	1	2	3	4	5
<b>Job Title:</b> <b>Work With Vacuum Systems</b>	<b>Frequency (B)</b>	≤once/year	≤once/month	≤once/week	≤once/shift	>once/shift
<b>Job Number or Job Identifier:</b> <b>LS-JRA-0008</b>	<b>Severity (C)</b>	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
<b>Job Description:</b> Work with systems subject to vacuum pumps and pressures less than atmospheric	<b>Likelihood (D)</b>	Extremely Unlikely <<1x/20yrs	Unlikely 1x/10-20yrs	Possible >1x/10-20yrs	Probable 1x/yr	Multiple >1x/yr
Training and Procedure List (Optional):						
Approved by: A. Ackerman      Date: 07/02/08 Rev. # 2 <a href="#">Revision Log</a>	<b>Stressors (if applicable, please list all):</b>		<b>Reason for Revision (if applicable):</b>		<b>Comments:</b>	

Job Step / Task	Hazard	Before Controls						Initial Controls	After Initial Controls					Control(s) Added to Reduce Risk	After Additional Controls					
		Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Risk* AxBxCxD		# of People A	Frequency B	Severity C	Likelihood D	Risk* AxBxCxD		# 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 <b>LS-JRA-0014</b> 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 <b>LS-JRA-0009</b> for Work with Compressed Gas Cylinders or Systems																			
Maintenance of vacuum pumps	See <b>LS-JRA-0014</b> 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 <b>LS-JRA-0021</b> for Use of Commercial 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 <b>LS-JRA-0007</b> 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							
<b>Further Description of Controls Added to Reduce Risk:</b>																				
<b>*Risk:</b>	<b>0 to 20 Negligible</b>	<b>21 to 40 Acceptable</b>					<b>41 to 60 Moderate</b>					<b>61 to 80 Substantial</b>					<b>81 or greater Intolerable</b>			