

EENS Job Risk Assessment

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Name(s) of Risk Team Members: P. Vanier, J. Johnson, P. Carr & A. Piper	Point Value → Parameter ↓	1	2	3	4	5
Job Title: Working with Cryogenics	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/shift	>once/shift
Job Number or Job Identifier: EENS-JRA-004						
Rev. #: 1 Date: 3/22/07	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
Job Description: General work with non-combustible cryogenic fluids and systems. Does not include liquid hydrogen or liquid oxygen.						
Training and Procedure List (Optional):	Likelihood (D)	Extremely Unlikely	Unlikely	Possible	Probable	Multiple
Approved by: Date: 3/26/07 Patrick Sullivan						
Stressors (if applicable, please list all): N/A		Reason for Revision (if applicable): N/A			Comments: N/A	

Job Step / Task	Hazard	Control(s)	Stressors Y/N	Before Additional Controls					Control(s) Added to Reduce Risk	After Additional Controls					% Risk Reduction
				# of People A	Frequency B	Severity C	Likelihood D	Risk* AxBxCxD		Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	
General use of [cryogenic] Dewar's	Explosion from overpressure due to freeze-up of Dewar fittings/pressure relief valves	Training, cylinder warehouse support, equipment maintenance, Tier 1	N	1	3	3	2	18							
Moving storage vessel (dewar) to/from location	Tipping	Plate/ramp, training, facility maintenance, Tier 1, assistance with movement over floor breaks, proper Dewar base designs	N	1	2	2	2	8							
	Overexertion injuries caused by excessive lifting, pushing, pulling, holding or carrying an object	Wheeled dewars, training, assistance with movement	N	1	2	3	2	12							
	Being struck by object due to pressure release	Vessel design/certification, equipment inspection, training, Tier 1	N	1	2	2	2	8							

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			Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Risk* AxBxCxD		Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Risk* AxBxCxD	
Moving storage vessel (dewar) in elevator	Oxygen deficiency	Training, no persons in elevator, assistance with movement	N	1	2	2	2	8								
Connecting or disconnecting storage Dewar to cryostat OR Transferring cryogenic liquid from storage dewar to cryostat	Being struck by object due to pressure release	Vessel design/certification, equipment inspection, training, Tier 1	N	1	3	3	2	18								
	Contact with temperature extremes	Training, appropriate PPE	N	1	3	2	3	18								
	Oxygen deficiency	Training, posting, safety reviews	N	1	3	5	1	15								
Transferring cryogenic fluid to portable glass Dewar	Contact with temperature extremes	Training, appropriate PPE	N	1	3	2	3	18								
	Oxygen deficiency	Training, posting, safety reviews	N	1	3	5	1	15								
Hand transfer of cryogenic fluid from portable dewar to system	Contact with temperature extremes	Training, procedures, appropriate PPE	N	1	3	2	2	12								
	Oxygen deficiency	Training, posting, safety reviews	N	1	3	5	1	15								
	Laceration due to breakage of glass thermos dewar	Training, appropriate PPE, wrapping Dewar with tape	N	1	3	1	3	9								
Operation of auto fill system	Oxygen deficiency due to system failure	Training, posting, safety reviews	N	1	4	5	2	40	ODH evaluation	N	1	4	2	2	16	60%
General use of [cryogenic] Dewar's	Oxygen deficiency from system failure	ODH evaluation, posting, training	N	1	3	2	1	6								
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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Changes, Rev 1 (Review Team: P. Sullivan, P. Carr, A. Rogers, K. Hayes, L. Bowerman, D. Elling)

Editorial changes; Risks reduced: 1. "Oxygen deficiency Hazard - when moving storage vessel..." - clarification changed severity based on actual hazards.

2. "Contact with temperature extremes hazard - when performing hand transfer of cryogenic fluid..." clarification changes severity based on actual hazards

3. "ODH due to system failure" Hazard - operation of auto fill system - ODH evaluation reduced likelihood