

Name(s) of Risk Team Members: A. Etkin, M. Van Essendelft, Andreas Warkentien				Point Value → Parameter ↓	1	2	3	4	5							
Job Title: Preparing for a Non-Permitted Confined Space Entry of RHIC Helium Refrigerator Vacuum Tanks at Bldg. 1005S and the Valve Box Vacuum Tanks in Bldg. 1002B, 1004B, 1006B, 1008B, 1010A AND 1012A				Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/shift	>once/shift							
Job Number or Job Identifier: JRA 23				Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability							
Job Description: The job consists of preparing and opening the listed cold boxes and valve boxes for entry and work.				Likelihood (D)	Impossible	Unlikely	Possible	Probable	Multiple							
Training and Procedures List (optional): C-A OPM 7.1.65, Confined Spaces – Subject Area, ES&H Standard 4.3.0, Cutting and Welding, Confined Space Entry Training, Confined Space Atmosphere OJT				Approved by: <i>E. Lessard</i> Date: 8/18/04 Rev. #: 0												
Stressors (if applicable, please list all):				Reason for Revision (if applicable):				Comments: The shutdown of all major electrical sources is done using an OPM [OPM 8.7], remotely actuated switches or breakers and an automated control system and does not represent a significant hazard to the operator. Access to cabinets controlled by Kirk keys.								
				Before Additional Controls					After Additional Controls							
Job Step / Task	Hazard	Control(s)	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Risk* AxBxCxD	Control(s) Added to Reduce Risk	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Risk* AxBxCxD	% Risk Reduction
Prepare the valve box system for entry	Potential for hazardous energy sources after entry	Physical barrier preventing entry under vacuum, shutdown insulating vacuum pumping system prior to entry and fill the space with room air, procedures for entry, hard hats, Lockout Tagout hazardous energy sources where applicable, safety glasses, training	N	1	1	1	2	2								
Prepare the cold box system for entry	Potential for hazardous energy sources after entry	Physical barrier preventing entry under vacuum, shutdown insulating vacuum pumping system prior to entry and fill the space with room air, procedures for entry, hard hats, Lockout Tagout hazardous energy sources where applicable, safety glasses, training	N	1	1	1	2	2								
Open the manhole(s) for entry into box	Struck against an object if hand tools slip	Gloves, training, proper tools for the job	N	1	1	1	2	2								
Open the manhole(s) for entry into valve box	Struck by an object if cover falls	Cover support frame, safety shoes	N	1	1	1	2	2								

Mount vent fan or exhaust fan with hosing of sufficient length to reach top far end of tank (valve box or cold box)	Fall from height	OSHA approved platforms or man lift, training	N	1	1	5	2	10								
Enter the tank	ODH	Gas sampling probe inserted prior to entry, appropriate atmosphere testing performed with functionally-tested monitor with a valid calibration date, procedures, hard hats if required for task, safety glasses if required for task, training to assure oxygen range is above 19.5%, personal oxygen monitor	N	1	1	4	2	8								
Enter the tank	Hazardous Energy Sources	Physical barrier preventing entry under vacuum, shutdown insulating vacuum pumping system prior to entry and fill the space with room air, procedures for entry, hard hats, Lockout Tagout hazardous energy sources where applicable, safety glasses, training	N	1	1	4	2	8								
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											