

Name(s) of Risk Team Members: Ray Karol, John DeBoer, Robert Edwards, Mark Peragine				Point Value → Parameter ↓	1	2	3	4	5							
Job Title: Switching RHIC Injection Magnet Cooling Water Pumps at Building 1000P				Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/shift	>once/shift							
Job Number or Job Identifier: JRA 09-05				Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability							
Job Description: Switching from pump I to pump II in preparation for mechanical seal repair on pump I				Likelihood (D)	Extremely Unlikely	Unlikely	Possible	Probable	Multiple							
Training and Procedures List (optional): Electrical Safe Work Practices				Approved by: <i>E. Lessard</i> Date: 5/5/05 Rev. #: 0												
Stressors (if applicable, please list all): None					Reason for Revision (if applicable):			Comments: While starting pump II, the motor had an internal winding short causing sparking during this JRA. The Technicians immediately turned the pump off and took appropriate actions by informing MCR, venting the smoke from the building by turning on an exhaust fan, LOTO'd the pump motor power supply and communicating with BNL Fire/Rescue when they arrived at the scene responding to a building smoke alarm.								
				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
Stop pump I by pushing Stop pushbutton at remote panel	Shock	Listed electrical equipment, NFPA 70E PPE, training, no exposed equipment	N	2	2	1	1	4								
Switch the pump power transfer switch located between the pumps from pump I to pump II	Shock	Listed electrical equipment, NFPA 70E PPE, training, no exposed equipment	N	2	2	2	2	16								
Switch the pump power transfer switch located between the pumps from pump I to pump II	Arc blast	Listed electrical equipment, NFPA 70E PPE, stand to side of switch while operating, training, no exposed equipment	N	2	2	3	2	24								

Check to see if pump to be started has freely rotating shaft and no loose parts are in the area that could become a missile when pump starts	Pinch hand	Training, use care and rotate slowly	N	2	2	1	1	4								
Check to verify valve lineup is ready for pump to be started	None	Training, if valves need to be operated use care	N	2	2	1	1	4								
Start pump II by pushing Start pushbutton at remote panel	Shock	Listed electrical equipment, NFPA 70E PPE, training, no exposed equipment	N	2	2	1	1	4								
Start pump II by pushing Start pushbutton at remote panel	Arc blast from motor if shorted, loose parts act as missiles	Keep as far from motor as possible when starting, listed motor	N	2	2	2	3	24								
Verify pump switching operation is successful, no shaft seal leakage and system pressure and flow are as expected	Overpressure or flying missiles	Training, checks before pump start, proper valve lineup checked before pump start	N	2	2	2	2	16								
Further Description of Controls Added to Reduce Risk: The Critique generated for the sparking motor will be sent to all of C-AD/SMD staff to inform them of the potential problems and safety issues with starting motors.																
*Risk:	0 to 20	21 to 40	41-60	61 to 80	81 or greater											
	Negligible	Acceptable	Moderate	Substantial	Intolerable											