



Removal and packaging for disposal of beam pipe from split magnet assembly	Contamination	Work planning, procedures, training, PPE, permits, RCT coverage, use of appropriate cleanup equipment.	N	4	1	1	3	12									
Replace beam pipe in split magnet assembly	Contamination	Work planning, procedures, training, PPE, permits, RCT coverage.	N	3	1	1	1	3									
Prepare mating flanges	Contamination	Work planning, procedures, training, PPE, permits, RCT coverage.	N	3	1	1	2	6									
Protect flange surfaces during replacement of magnet package	Cuts, abrasions pinches and bumps	Work planning, proper tools, training	N	3	1	2	3	18									
Compress beam pipe bellows	Cuts, abrasions pinches and bumps	Work planning, proper tools, training	N	3	1	2	3	18									
Install new seals	Pinches	Work planning, proper tools, training	N	2	1	2	3	12									
Replace vacuum manifold and hookup pump station and leak detector	Cuts, abrasions pinches and bumps	Work planning, proper tools, training	N	2	1	2	3	12									
Turbo Vacuum Pump operation	Pressurized System (Vacuum)	Training, procedures, instrumentation, ventilated or open areas for exhaust, leak checks as you draw vacuum, PPE, venting paths if required	N	2	1	2	2	8									
Leak check joints	Pressurized System (Vacuum)	Training, procedures, instrumentation, ventilated or open areas for exhaust, leak checks as you draw vacuum, PPE, venting paths if required	N	2	1	2	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				