

Job #	Cost	Task	Priority	Start Date	Duration (days unless noted)	Engineering	Electrical Engineering	Designers	Cryo	Spectrometer Support	Hall C Techs	Contractor labor
1	\$2,000	SHMS Cosine theta magnet dump resistor test	2		10	2	1		yes	1		
2	\$50,000	Power supply maintenance and tuning	1		10	1			yes			Danfysik techs x2
3		Spectrometer Rotation - Welding Noise Interference test	3		1	1					1	
4	\$10,000	Spectrometer Rotation - Electric brakes	1		15	1	1	1			2	
5		Spectrometer Rotation - re-calibrate angle encoders	2		3	1					3	
6		SHMS Transfer Line blockage	1		5	2			no		3	
7		SAD- Prep work	1		summer	2			yes		2	
8	\$50,000	SHMS Stray Field Mapping	3		10	2		1	yes		1	
9		HMS & SHMS Dipole Field regulation	3		60	2		1	yes	1	1	
10	\$40,000	SHMS Liquid Level meters	3		15	1		1	yes	1		
11	\$3,000	Fike Rupture Disc	2		3	1						Brindza
12		HMS Q1 alignment to beam line	1		3	2		1			3	Survey Group
13	\$5,000	SHMS Warm return valve mods	2		15	1		1		2		
14	\$3,000	PLC - Alarm notification to on-call staff	2		4	1		1				
15	\$10,000	PLC - Data Logging upgrade, install and make operational	2		20	1						
16		PLC - End of life for Windows 7 upgrade to windows 10	4		10	1						
17		PLC - develop "on loop" current regulation routine.	2		10	1			yes			
18		PLC - Add HMS Spectrometer Vacuum to controls	2		2	1	1	1			1	
19		PLC - modify SHMS shutter not in place status	3		1	1	1					
20		PLC - wire UPS status to controls	2		2	1				1		
21		PLC - Tune valve responses	2		5	1			yes			
22		PLC - Change SHMS LVDT I/O module to single ended	3		4	1				1		
23		PLC - New NMR communication with PLC	3		5	1				1		
24		PLC - Add HMS quadrupoles hall probe readouts to PLC	3		3	1				1		
25		PLC - Add HMS shutter controls and status	3		1	1						Rockwell support
26		Change out HMS JT motors	2		5					1		
27		Re-calibrate JT LVDTs	2		5	1			yes		1	
28		Locate, label and store HMS Dipole long JT stems.	2		3					1	1	
29		Recover from SAD, cool down magnets	1		10	1			yes	1		
30		Remount SHMS Detector Hut door	1		1			1			3	
31		Detectors - Patch Panel work	2							1		
32		Detectors - HMS Cherenkov PMTs refurbished	1		60						3	
33		Detectors - SHMS Cherenkov PMTs access	1		3						3	
34		Moller Quad power distribution	1		3		1			2		
35												
36												
37		Remount SHMS Detector Hut door	1		1			1			3	
38		Solid	2		yr.	2		2				Brindza
39		Moller	2		yr.							Magnet Engineering Grp
40		He3 A1n & D2n	1		yr.	1		1				
41		NPS	3		yr.	1		2				
42		SBS layout	3									

43		Documentation of magnets/systems	2		6 months	1		1				
44		Update Cad drawings to as built	2		yr.	1		1				
		SAD 5/14/2018 to 6/19/2018										