

Revised List 9/24/09

CESR & LEPP General Operations high level WBS					All activities related to providing reliable beams for the relevant programs, including CLEO, CHES, CesrTA.	
WBS	Task Code	Proj/duo	C a p	Description	Approvals	Description of work
GEN_1				Gun & Linac	S. Greenwald	
	GEN_1.1		n	Gun & Linac Labor		Maintenance, repair, administrative work such as spares tracking, ordering parts, rfp's for the gun, injector, linac and transport lines up to but not including the inflector magnets. If significant time is spent tuning these elements it should be included here also.
	GEN_1.2		n	RF systems		
	GEN_1.3		n	Vacuum systems		
	GEN_1.4		n	Power conversion & Magnets		
	GEN_1.5		n	Instrumentation		
	GEN_1.6		n	Controls		
	GEN_1.7		n	Feedback		
	GEN_1.8		n	Utility Systems & Supports		
	GEN_1.9		n	Safety & Shielding		
GEN_2				Synchrotron	D. Rice	
	GEN_2.1		n	Synchrotron Labor		Maintenance, repair, administrative work such as spares tracking, ordering parts, rfp's for the synchrotron from the injection inflector magnets to the exit port to the transfer lines, including magnets, RF, vacuum, instrumentation subsystems. If significant time is spent tuning these elements it should be included here also.
	GEN_2.2		n	RF systems		
	GEN_2.3		n	Vacuum systems		
	GEN_2.4		n	Power conversion & Magnets		
	GEN_2.5		n	Instrumentation		
	GEN_2.6		n	Controls		
	GEN_2.7		n	Feedback		
	GEN_2.8		n	Utility Systems & Supports		
	GEN_2.9		n	Safety & Shielding		
GEN_3				Storage Ring	M. Billing	
	GEN_3.1		n	Storage Ring Labor		Maintenance, repair, administrative work such as spares tracking, ordering parts, rfp's for the storage ring including magnets, RF, vacuum, instrumentation subsystems. Tuning on the storage ring to restore satisfactory operation should be assigned here. Minor tuning of injector systems may also be included here.
	GEN_3.2		n	RF systems		
	GEN_3.3		n	Vacuum systems		
	GEN_3.4		n	Power conversion & Magnets		
	GEN_3.5		n	Instrumentation		
	GEN_3.6		n	Controls		
	GEN_3.7		n	Feedback		
	GEN_3.8		n	Utility Systems & Supports		
	GEN_3.9		n	Safety & Shielding		
	GEN_3.10		n	Separators		
GEN_4				Transfer Lines	M. Billing	
	GEN_4.1		n	Transfer Lines Labor		Maintenance, repair, administrative work such as spares tracking, ordering parts, rfp's for the Synchrotron-to-CESR transport lines from the synchrotron exit port to the entrance flange into CESR, including magnets, vacuum, instrumentation subsystems. NOTE: Time spent tuning in the transfer line should be assigned to Storage Ring.
	GEN_4.2			Inactive		
	GEN_4.3		n	Vacuum systems		
	GEN_4.4		n	Power conversion & Magnets		
	GEN_4.5		n	Instrumentation		
	GEN_4.6		n	Controls		
	GEN_4.7			Inactive		
	GEN_4.8		n	Utility Systems & Supports		
	GEN_4.9		n	Safety & Shielding		
GEN_5				X-ray Lines	Y. Li	
	GEN_5.1		n	X-ray Lines Labor		Maintenance, repair, administrative work such as spares tracking, ordering parts, rfp's for the X-ray transport lines from the CESR exit flange to Cave generally including vacuum systems, instrumentation, and supports.
	GEN_5.2		n	Utility Systems & Supports		
	GEN_5.3		n	Vacuum systems		
	GEN_5.4		n	Instrumentation		
GEN_6				Utilities	R. Gallagher	
	GEN_6.1		n	Utilities Labor		Repairs, maintenance, coordination with CU Facilities for water, electric, air, steam and other general utility systems for Wilson Lab. Includes cooling towers, pumps, water treatment, drainage systems, fire detection systems.
	GEN_6.2		n	Water piping systems		
	GEN_6.3		n	Water pumps & heat exchangers		
	GEN_6.4		n	Electrical systems		
	GEN_6.5		n	Air systems		
	GEN_6.6		n	Controls		

GEN_7				Building & Shop	R. Gallagher	
	GEN_7.1		n	Building & Shop Labor		Maintenance, repairs, organization, coordination with CU Facilities of general building and shop areas. Includes rigging, crane work, materials handling.
	GEN_7.2		n	Vehicle maintenance & fuel		
	GEN_7.3		n	Cranes		
	GEN_7.4		n	Laundry & Storage		
	GEN_7.5		n	Machine shop M&S		
	GEN_7.6		n	Electronics shop M&S		
GEN_8				Genl Oprns & Safety	R. Gallagher	
	GEN_8.1		n	Genl Oprns & Safety Labor		Includes safety programs, training, accelerator scheduling, operations, operators, work unit meetings, radiation badges, monitors, 24V interlocks, etc. Routine tuning of CESR and injectors while delivering beam in normal operations should be captured here.
	GEN_8.2		n	General operations M&S		
	GEN_8.3		n	Control room equipment		
	GEN_8.4		n	Instrumentation		
	GEN_8.5		n	Radiation Shielding		
	GEN_8.6		n	Radiation Monitors		
	GEN_8.7		n	Radiation Badges		
	GEN_8.8		n	PPS Infrastructure		
GEN_9				Computing	R. Helmke	General computing support services, including server, desktop/laptop, network setup & maintenance and consulting. Accelerator and HEP Group project effort to be separately tracked.
50/50 CTA, ERL	GEN_9.1		c	LEPP Capital Labor		Includes all capitalized effort on LEPP general-purpose computing and network hardware. Capital effort on project-driven systems to be separately tracked.
50/50 CTA, ERL	GEN_9.2		n	LEPP Maint Labor		Includes all non-capital maintenance of general LEPP computers and networks
	GEN_9.3		n	CESR Maint Labor		Includes all non-capital maintenance of CESR computers and networks
	GEN_9.4		n	ERL Maint Labor		Includes all non-capital maintenance of ERL computers and networks
	GEN_9.5		n	HEP Grp Maint Labor		Includes all non-capital maintenance of HEP Group computers and networks
GEN_10				Cryogenics	R. Gallagher	Includes LHe refrigerators and distribution equipment and LN storage and distribution equipment. Also includes boil-off equipment but not GN distribution (Utilities).
1/3 CTA, CHES, and ERL	GEN_10.1		n	General Cryo System Labor		General cryo system work on equipment, services common to CESR, ERL, and any other project
	GEN_10.2		n	CESR Cryo Components Labor		Cryo system work on equipment serving CESR for general operations.
1/3 CTA, CHES, and ERL	GEN_10.3		n	General Cryogenics M&S		General cryo system M&S common to CESR, ERL, and other projects
	GEN_10.4		n	CESR Cryogenics M&S		Cryo system M&S serving CESR for general operations.
1/3 CTA, CHES, and ERL	GEN_10.5		n	LN2 purchases		Liquid Nitrogen purchases
1/3 CTA, CHES, and ERL	GEN_10.6		n	LHe purchases		Liquid Helium purchases
GEN_11				Admin/Management	D. Rice	
50/50 CTA, ERL	GEN_11.1		n	Admin/Management Labor		Record keeping, lab management, administrative meetings, annual performance reviews, proportioned external activities (reviews, referee, talks, etc.) Explain in COMMENTS box.
	GEN_11.2		n	Drafting		
	GEN_11.3		n	Newman copying		
	GEN_11.4		n	Wilson copying		
	GEN_11.5		n	Journal Club		
	GEN_11.6		n	Recruitment		
	GEN_11.7		n	Travel		
	GEN_11.8		n	Admin. Office Supplies		
GEN_12				CESR Capital Upgrades	D. Rice	
	GEN_12.1		c	CESR Capital Upgrades Labor		Any capital upgrades to the CESR accelerator complex that are not part of the CesrTA or other programs. Should be rarely if ever used. Explain in comments box.
	GEN_12.2		c	CESR capital equipment		Capital equipment for the CESR accelerator complex
GEN_13				CESR Chess Operations	D. Rice	
	GEN_13.1		c	Cap Labor CESR Chess Opr		
	GEN_13.2		c	Equipment CESR Chess Opr		
	GEN_13.3		c	FAB Accel Upgrade CESR Chess Opr		
	GEN_13.4		n	Mat & Sup CESR Chess Opr		