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1		Design	619 days
2		Define Stands, ETC to be removed	10 days
3		Evaluate Test Configuration	10 days
4		Design/Engineering of New End Cans	60 days
5		Design Wave Guides	21 days
6		Waveguide design review	1 day
7		Egress evaluation for LERF Gallery space	14 days
8		Modify Design of Clean room for CM work in tunnel	5 days
9		Conduct Final Design Review of New Hardware	1 day
10		COMP: LERF New Hardware FDR	1 day
11		Evaluate Vault Operational Envelope to include Safety	21 days
12		Conduct Testing Readiness Review	2 days
13		COMP: Testing Readiness Review	1 day
14		Computer Architecture Design	21 days
15		Specification for and creation of screens	60 days
16		Project Oversight	619 days
17		Procurements	160 days
18		RQN: Wave Guide Connections	30 days
19		Prepare Award Documents	5 days
20		AWARD: Wave Guide Connections	1 day
21		Vendor Effort Fabricate Wave Guide Connections	140 days
22		ACCEPT: Wave Guide Connections	42 days
23		RQN: Managed Network Switch	1 day
24		ACCEPT: Network switch	1 day
25		RQN: Workstations	1 day
26		ACCEPT: Workstations	1 day
27		RQN: Two Sets Cryomodule End Caps	21 days
28		Prepare Award Documents	5 days
29		AWARD: Two Sets Cryomodule End Caps	1 day
30		Vendor Effort Fabricate Two Sets of Cryomodule End Caps	70 days
31		ACCEPT: Two Sets Cryomodule End Caps	1 day
32		RQN: Clean room for CM work in tunnel	1 day
33		ACCEPT: Clean room for CM work in tunnel	1 day
34		RQN: Four Sets of Cryomodule Stands	7 days

ID		Task Mode	Task Name	Duration
35			Prepare Award Documents	5 days
36			AWARD: Four Sets of Cryomodule Stands	1 day
37			Vendor Effort Fabricate Four Sets of Cryomodule Stands	40 days
38			ACCEPT: Four Sets of Cryomodule Stands	1 day
39			RQN: AC Power Upgrade	5 days
40			Prepare Award Documents	1 day
41			AWARD: AC Power Panel Procurement	1 day
42			Vendor Effort Perform AC Power Panel procurement	10 days
43			ACCEPT: AC Power Panel Procurement	1 day
44			RQN: Additional sets of Bayonet Boxes and End Cans to Support additional testing	1 day
45			Prepare Award Documents	10 days
46			AWARD: Additional sets of Bayonet Boxes and End Cans	1 day
47			Vendor Effort Additional sets of Bayonet Boxes and End Cans	40 days
48			ACCEPT: Additional sets of Bayonet Boxes and End Cans	1 day
49			SLAC Loaner Hardware	103 days
50			Oversight of SLAC Loaner Hardware	89 days
51			SLAC Ship SSAs to Jlab	0 days
52			RCV: 16 SSAs from SLAC	0 days
53			SLAC Ship Isolators to JLab	0 days
54			RCV: 16 Isolators from SLAC	0 days
55			SLAC Ship Couplers to JLab	0 days
56			RCV: 16 Dual Directional Couplers from SLAC	0 days
57			SLAC Ship LLRF Racks to JLab	0 days
58			RCV: Four Complete LLRF Racks (fully dressed with chassis and internal cables) from SLAC	0 days
59			SLAC Ship Cryo Controls to Jlab	0 days
60			RCV: Two Complete Cryo Controls Racks (fully dressed with equipment) from SLAC	0 days
61			SLAC Ship Vacuum Controls to JLab	0 days
62			RCV: Beam line, Coupler and Insulating Vacuum Control Racks (fully dressed with equipment) from SLAC	0 days
63			LERF Set-up	174 days
64			Vault Work	114 days
65			Remove 20' of back leg of existing machine to install/position Cryopmodules	5 days
66			Remove Shielding Blocks	1 day
67			Remove U-Tubes from FL02 & FL03 Cryomodules in LERF Vault	1 day
68			Remove U-tubes from FL04 & warm up	3 days

ID	 Task Mode	Task Name	Duration
69		Remove waveguide and cabling from CM FLO4	5 days
70		FL02 & 03 Removal Prep	21 days
71		Move Clean room set up to LERF Vault	1 day
72		Vent Up beam lines, disconnect girders	15 days
73		Split girders & remove beam pipes	2 days
74		Remove girders & clean up debris	1 day
75		Move CM FL02 & FL03 to CEBAF linac	2 days
76		Move CM FL04 to FL02 position	1 day
77		Reconnect cryomodule in FL02 position	6 days
78		LCLSII CM Mounting Plates	5 days
79	 	Lay Out Plate Achors	1 day
80		Install plates	4 days
81	 	Align CM mounting plates	1 day
82	  	Grout Plates	2 days
83		Cryo Can & Lines Installation	30 days
84		Fabricate Cryo End Can & Lines	15 days
85	 	Lay Out Cryo Can Support Anchor Locations	1 day
86		Install Anchors & set can & lines	1 day
87	 	Align U-Tube connection ends & secure.	1 day
88	 	Complete Connections, Weld & Leak Check	5 days
89		Install First set of Cryomodules	24 days
90		Transport LCLSII CM to LERF Vault	2 days
91	 	Set Up crane	1 day
92	 	Transport CM to LERF Vault	1 day
93	 	Set CM's on base plates	1 day
94		Align CM's	1 day
95	 	Connect mid-point connections on CMs	4 days
96	 	Connect to Cryo Can & Install End Caps	17 days
97		Pump Down Vacuum systems & leak check	1 day
98	 	Connect waveguide and Instrumentation cables to cryomodules	4 days
99		Install "U" Tubes, Cooldown CM's	4 days
100		RF Gallery Work	169 days
101	 	Install 480v Distribution Panels	10 days
102	  	Install Racks	10 days

ID	 Task Mode	Task Name	Duration
103		Install power to racks & equipment in racks	5 days
104	  	Installation of LLRF	43 days
105		Crane SSAs to LERF gallery	1 day
106	 	Installation of High Power SSAs in gallery	31 days
107	  	Install waveguide in gallery	66 days
108		Controls & Instrumentation Installation/Commission	100 days
109		Setup network & VLAN	21 days
110		Setup EPICS Base per SLAC	21 days
111		Configuring archiver and alarm handler	10 days
112		Controls software development for the Faraday cups and decarads	21 days
113		Install and Check out Cabling	100 days
114		BPM Checkout with Vector Network Analyzer	16 days
115		Install Waveguides and Components	45 days
116		Install and Set-up Cryogenic Controls	10 days
117		Safety System Tie in to PPS	25 days
118		Commission RF System into Shorts	21 days
119		Commission Cryo System	25 days
120		Decarad and Faraday cups for Radiation monitoring	5 days
121		Superconducting Magnet Test	8 days
122	 ?	ReInstall Shielding	
123		CEBAF Operations	303 days
124		CEBAF Ops Starts 27/7 Op's Fall 17 Run	49 days
125		CEBAF Winter SAD/Break	12 days
126		CEBAF Winter Op's	47 days
127		CEBAF Low Energy Summer Run	42 days
128		CEBAF Down	61 days
129		CEBAF FY19 10 Week Run	60 days
130		CEBAF Down	30 days
131		CEBAF FY19 6 Week Run	41 days
132		CEBAF Down	27 days
133		CEBAF FY19 Low Energy Summer Run	42 days
134		Cryomodule Testing	337 days
135		Two Cryomodule Testing	43 days
136		ESS Testing Support	43 days

ID	 Task Mode	Task Name	Duration
137		LERF Testing Support and Training	43 days
138		LERF Operating Costs	43 days
139		De-Installation	10 days
140		Train Second Testing Crew	20 days
141		Install Second set of Cryomodules	25 days
142		Two Cryomodule Testing	45 days
143		LERF Testing Support	45 days
144		LERF Operating Costs	45 days
145		De-Installation	15 days
146		Install Third set of Cryomodules	25 days
147		Two Cryomodule Testing	38 days
148		LERF Testing Support	38 days
149		LERF Operating Costs	38 days
150		De-Installation	15 days
151		Install Fourth set of Cryomodules	25 days
152		Two Cryomodule Testing	38 days
153		LERF Testing Support	38 days
154		LERF Operating Costs	38 days
155		De-Installation	15 days
156		Misc Tooling to Support Repeated Tests	322 days
157		Project Closeout and Restoration of LERF	61 days?
158		Remove and Return LCLS II Equipment	60 days
159		Restore LERF RF and SS to Pre LCLS II Configuration	40 days
160		Restore LERF Linac and Vacuum Systems	40 days
161		LERF LCLS II Testing Complete	1 day?
162			1 day?

Start	Finish	Predecessors	Resource Names
Fri 9/1/17	Wed 1/15/20		
Fri 9/1/17	Thu 9/14/17		
Fri 9/1/17	Thu 9/14/17	2SS	
Wed 9/13/17	Tue 12/5/17	3SS	
Wed 9/27/17	Wed 10/25/17		
Wed 10/11/17	Wed 10/11/17		
Wed 9/20/17	Mon 10/9/17		
Thu 11/16/17	Wed 11/22/17		
Wed 12/6/17	Wed 12/6/17	5,4	
Wed 11/15/17	Wed 11/15/17		
Fri 2/2/18	Fri 3/2/18	9,120	
Wed 3/14/18	Thu 3/15/18	11	
Fri 3/16/18	Fri 3/16/18	12	
Wed 10/11/17	Wed 11/8/17		
Wed 12/6/17	Tue 2/27/18		
Fri 9/1/17	Wed 1/15/20	2SS	
Tue 10/3/17	Mon 5/14/18		
Tue 10/3/17	Mon 11/13/17		
Mon 11/13/17	Fri 11/17/17		
Thu 10/26/17	Thu 10/26/17		
Mon 10/23/17	Fri 5/4/18		
Mon 1/15/18	Tue 3/13/18		
Wed 10/11/17	Wed 10/11/17		
Wed 10/25/17	Wed 10/25/17		
Wed 11/8/17	Wed 11/8/17		
Wed 11/29/17	Wed 11/29/17		
Wed 10/4/17	Wed 11/1/17		
Fri 11/3/17	Thu 11/9/17	27	
Wed 11/15/17	Wed 11/15/17	28	
Tue 11/28/17	Mon 3/5/18	29	
Tue 3/6/18	Tue 3/6/18	30	
Fri 12/1/17	Fri 12/1/17	8	
Wed 2/14/18	Wed 2/14/18	32FS+15 days	
Wed 11/29/17	Thu 12/7/17		

Start	Finish	Predecessors	Resource Names
Fri 12/8/17	Thu 12/14/17	34	
Mon 12/18/17	Mon 12/18/17	35	
Tue 12/19/17	Mon 2/12/18	36	
Mon 2/19/18	Mon 2/19/18	37	
Tue 10/3/17	Mon 10/9/17	3	
Wed 10/11/17	Wed 10/11/17	39	
Fri 10/13/17	Fri 10/13/17	40	
Mon 10/16/17	Fri 10/27/17	41	
Mon 10/30/17	Mon 10/30/17	42	
Fri 12/1/17	Fri 12/1/17	3	
Mon 12/4/17	Fri 12/15/17	44	
Mon 12/18/17	Mon 12/18/17	45	
Tue 12/19/17	Mon 2/12/18	46	
Tue 2/13/18	Tue 2/13/18	47	
Wed 9/13/17	Fri 2/2/18		
Wed 9/13/17	Mon 1/15/18		
Wed 12/13/17	Wed 12/13/17		
Tue 12/19/17	Tue 12/19/17	51FS+5 days	
Wed 12/13/17	Wed 12/13/17	51	
Tue 12/19/17	Tue 12/19/17	53FS+5 days	
Wed 12/13/17	Wed 12/13/17	51	
Tue 12/19/17	Tue 12/19/17	55FS+5 days	
Wed 12/13/17	Wed 12/13/17	51	
Tue 12/19/17	Tue 12/19/17	57FS+5 days	
Wed 12/13/17	Wed 12/13/17	51	
Tue 12/19/17	Tue 12/19/17	59FS+5 days	
Wed 12/13/17	Wed 12/13/17	51	
Tue 12/19/17	Tue 12/19/17	61FS+5 days	
Fri 9/1/17	Wed 5/2/18		
Fri 9/1/17	Wed 2/7/18		
Fri 9/8/17	Thu 9/14/17	3	Inst./Vac
Mon 9/11/17	Mon 9/11/17	65	Inst
Fri 9/1/17	Fri 9/1/17	66	Cryo
Fri 10/6/17	Tue 10/10/17	67	Cryo

Start	Finish	Predecessors	Resource Names
Tue 10/24/17	Mon 10/30/17	68	EESRF
Mon 10/16/17	Mon 11/13/17		
Mon 10/16/17	Mon 10/16/17	124SS	Vac/SRF
Tue 10/17/17	Mon 11/6/17	71	Vac/SRF
Tue 11/7/17	Wed 11/8/17	72	Vac
Thu 11/9/17	Thu 11/9/17	73	Inst
Fri 11/10/17	Mon 11/13/17	74	Inst
Tue 11/14/17	Tue 11/14/17	75	Inst
Wed 11/15/17	Wed 11/22/17	76	EESRF
Wed 12/6/17	Tue 12/12/17		
Wed 12/6/17	Wed 12/6/17	77	Align
Thu 12/7/17	Tue 12/12/17	79	Inst
Wed 12/20/17	Wed 12/20/17		Align
Wed 1/3/18	Thu 1/4/18		Inst
Wed 12/6/17	Tue 1/16/18	76	
Wed 12/6/17	Tue 12/26/17	4	SRF
Wed 12/6/17	Wed 12/6/17		Align
Wed 12/6/17	Wed 12/6/17		Inst
Wed 1/24/18	Wed 1/24/18		Cryo
Thu 1/25/18	Wed 1/31/18	87	SRF
Fri 1/5/18	Wed 2/7/18	82	
Fri 1/5/18	Mon 1/8/18	82	
Fri 1/5/18	Fri 1/5/18	78	Inst
Fri 1/5/18	Fri 1/5/18	91SS	Inst,SRF
Fri 1/5/18	Fri 1/5/18	92SS	Inst,SRF
Mon 1/8/18	Mon 1/8/18	93	SRF
Tue 1/9/18	Fri 1/12/18	90	SRF
Tue 1/9/18	Wed 1/31/18	90	SRF
Thu 2/1/18	Thu 2/1/18	96	Vac/SRF
Thu 2/1/18	Tue 2/6/18	96	EESRF
Fri 2/2/18	Wed 2/7/18	97	Cryo
Mon 10/2/17	Thu 5/24/18		
Mon 10/23/17	Fri 11/3/17		Elec.
Wed 1/3/18	Tue 1/16/18		Inst

Start	Finish	Predecessors	Resource Names
Wed 1/17/18	Tue 1/23/18	102	Elec.
Wed 1/10/18	Fri 3/9/18		EESRF
Wed 12/20/17	Wed 12/20/17	52	Inst
Wed 3/14/18	Wed 4/25/18	22	EESRF
Wed 2/14/18	Wed 5/16/18		EESRF
Wed 11/8/17	Tue 3/27/18		
Wed 11/8/17	Wed 12/6/17		
Thu 12/7/17	Thu 1/4/18		
Wed 1/10/18	Tue 1/23/18		
Tue 2/6/18	Tue 3/6/18		
Tue 12/12/17	Mon 4/30/18		
Wed 4/11/18	Wed 5/2/18	3	EESRF
Wed 2/7/18	Tue 4/10/18	22	EESRF
Tue 2/27/18	Mon 3/12/18	60,96	
Fri 12/22/17	Thu 1/25/18	43	
Wed 3/21/18	Wed 4/18/18	58,104,106,113,115	
Tue 3/13/18	Mon 4/16/18	113,89,116	
Fri 1/26/18	Thu 2/1/18	117	
Mon 4/2/18	Wed 4/11/18	3	SRF
Wed 5/9/18	Fri 7/5/19		
Mon 10/16/17	Thu 12/21/17		
Fri 12/22/17	Mon 1/8/18	124	
Tue 1/9/18	Wed 3/14/18	125	
Thu 3/15/18	Fri 5/11/18	126	
Fri 7/6/18	Fri 9/28/18	127	
Mon 10/1/18	Fri 12/21/18	128	
Mon 12/24/18	Fri 2/1/19	129	
Mon 2/4/19	Mon 4/1/19	130	
Tue 4/2/19	Wed 5/8/19	131	
Thu 5/9/19	Fri 7/5/19	132	
Fri 7/6/18	Mon 10/21/19		
Fri 7/6/18	Tue 9/4/18	13,54,56,62,67,113,	
Fri 7/6/18	Tue 9/4/18	135SS	

Start	Finish	Predecessors	Resource Names
Fri 7/6/18	Tue 9/4/18	136SS	
Fri 7/6/18	Tue 9/4/18	137SS	
Wed 9/5/18	Tue 9/18/18	138	
Wed 9/19/18	Tue 10/16/18	139	
Wed 9/19/18	Tue 10/23/18	140SS	
Mon 12/24/18	Fri 2/22/19	141,129	
Mon 12/24/18	Fri 2/22/19	142SS	
Mon 12/24/18	Fri 2/22/19	143SS	
Mon 2/25/19	Fri 3/15/19	144	
Mon 3/18/19	Fri 4/19/19	145	
Mon 4/22/19	Wed 6/12/19	146,131	
Mon 4/22/19	Wed 6/12/19	147SS	
Mon 4/22/19	Wed 6/12/19	148SS	
Thu 6/13/19	Wed 7/3/19	149	
Thu 7/4/19	Wed 8/7/19	150	
Thu 8/8/19	Mon 9/30/19	151,133	
Thu 8/8/19	Mon 9/30/19	152SS	
Thu 8/8/19	Mon 9/30/19	153SS	
Tue 10/1/19	Mon 10/21/19	154	
Fri 7/6/18	Mon 9/30/19	135SS	
Tue 10/22/19	Tue 1/14/20		
Tue 10/22/19	Mon 1/13/20	155	
Tue 10/22/19	Mon 12/16/19	155	
Tue 10/22/19	Mon 12/16/19	155	
Tue 1/14/20	Tue 1/14/20	158,159,160	
Tue 10/22/19	Tue 10/22/19		