

LCLS Undulator Week 3 04/08 - Commissioning and Production Issues

WBS area	Issue	Action	Assigned to	Date required by & Resolution
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Management and Integration

	How long does LTT stay at ANL? GP Does 1 SLAC rebuild it? DCS Set up ANL visit during cable 2 installation(SLAC Request)	Re-evaluate P3 schedule and discuss with SLAC (Move as LTT or spares to SLAC - DCS?) Liase with Ponce during next Lehman visit	GP to DCS to Mgmt \$/plan? GP to Ponce	REQ 5/14/08 Mid May 08
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Controls

	Setting potentiometers & zeroing 1 translation stages 2 Controls & Diagnostics checkout 3 Calibration of linear pots & encoders	Linear pots need to be mechanically set to avoid interference with stops We need to develop a checkout plan How can they be re-established if lost	Arturo / Stein / Rago JS / AA / EC J. Stein	REQ 5/7/08 In progress 5/1/2008 Complete
	EIA & rack/intra Undulator cables 4 Installation	Determine - Is it Davis /Bacon? Add result to SM plan. Write contract if needed Change plan - Ship separately to BP asap. Send shipping conf email to BP,CR, MZ and Arturo	AA/EC/SM JS to BP	REQ 5/7/08 REQ 5/10/08 Done
	5 Rack Anchor bolts required at SLAC 6 Who is Fuller now?(Detail guy)	Enzo and Arturo field all requests Need detailed handover plan reviewed in weekly controls VC.	JS to EC and Ernest JS	REQ 5/7/08 see schedule
	7 ANL Handover Plans 8 Shipping UIR Racks to SLAC	Add Shock Logs to shipments Define paperwork guy and get QA approvals and paper work as far as possible by the end of May	/TBJs to GP JS (JX) to EC and Ernest CR to HD for clarification AA/EC/EW	REQ 5/30/08 REQ 5/14/08 REQ 5/7/08 May, 2008
	9 Prep QA docs for racks			
	10 Update Motion Controls ESD	Include "flat wedge block info" Details on where the sensors are placed and how they are anchored		
	11 RTD Locations need to be solidified 12 SLAC Controls visit to ANL/LTT Motion about quad and BFW center to be added to UC software	Verify equations	JS	5/31/2008

14	Check extents of girder motion in X and Y	Verify equations	JS + MW		5/31/2008
15	Grounding for the UIR	Is grounding necessary for the in-tunnel UCM racks Get realistic delivery dates for UCMI and UMPI which affect delivery date of racks to SLAC	CR + EC		5/31/2008
16	Delivery schedule	SLAC	JS		5/7/2008

Magnets and Supports

	A number of undulators require tuning	ANL need to retrieve tuning tools from BP and show MMF how to use them. List repair scenario	MW/ET to Uri or ZW	REQ 5/14/08	
1	rework				
2	Some undulators have "Big Bow"	Documentation + explanation required	EL to MW	REQ 5/7/08	
3	What is the maximum variation (in microns) of Magnetic vs. Mechanical center	SLAC Provide serial number specific data to ANL	URI/ZW to MW	REQ 5/7/08	
4	To grout or not to grout. Does Thermal stability effect the undulator?	see Girder Assembly and Installation ANL to provide "setting box" What modifications are required? Provide step by step procedure and more info on side shims, unulator and vacuum chamber tolerance stack up problems.	MW (ET/JS) to EL	REQ 5/7/08	
5	Setting X translation over travel to 6mm or 2.5mm?				
6	Setting X translation over travel to 6mm or 2.5mm?	SLAC to independantly look at Tuning shim modification and tolerance stack-up	JK/JC	?	
7	Shims for Support Stands	Re-evaluate shim quantity for complete installation. Purchase more shims?	MW to MZ		5/7/2008
8	Quad Magnet Q740 Mech Center/Bore not good	Eric to write NCR (if required). MW to provide corrective action Carl to show Ponce and Kristi agreed ground point for installation	EL to MW CR to Antonio	REQ 5/14/08	
9	Quad Grounding Point		Delira, KL	REQ 5/7/08	
	Need PSU spec updated in				
10	Quad/Corrector ESD	Add MCOR 6 and 1 regualtion specs	KL + HD	REQ 5/15/2008	
11	Girder grounding	How to ground the girder	CR + Antonio	REQ 6/7/2008	

Vacuum Systems

2	Need more info on Chamber surface finish results	Z&X axis polishing results of production chambers need to be put on a plot for HD review	GW/ET to HD		Results provided but HD still may improve presentation
3	X bow appears very close top spec on first chamber - flange very delicate	Keep close eye on X tolerance and inform ANL and HD if problem comes up	EL to DRW/ET		If and when

Suggestion: re-machining first six (spare) 4 chambers to match all others Look at flange locations after final 5 alignment on CMM	re-evaluate (cost and need) after production installations Review tolerances	JC/DCS CER to ET/DRW	FY09	5/15/2008
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Diagnostics

Need more info of the ANL requirements 1 for air feed pipe from wall to BFW	ANL to define pipe material and connection type	DRW/CR	Flow requirement not forthcoming. Cutino will likely accept wall to device connection.	
Co-ax back up to BPM waveguide window 2 is viable	What does it take to do a coax conversion to the BPM + schedule estimate Need to assess the effect of failure on operation and reliability & uptime requirements	JC(RL)		FY09
3 Reliability of Beam diagnostics		UW		In Process
Check stroke end points of BLM linear translation stage for full range of undulator 4 motion. Final identification of specific girders to include mps function BLM detectors (qty 5 5).	Meet with ANL designer to verify no interference points. Document and report findings during weekly BLM meeting	BB		5/14/2008
	Document in ESD	HD / BB to CR		5/14/2008
BPM and BFW support stands difficult to 6 adjust and appear to have warped bases 7 Review BLM Integrated schedule	Dean Walters and Jim Morgan to provide engineering solution plan Match to SM schedule	DRW to EL CR + BB		5/7/2008 5/14/2008

Girder Assembly & Installataion

Storage temperature and transportation of 1 Undulators and girders	Investigate the thermal and vibration effects on both fully aligned girder and tuned Undulator	DS/JC DS/CR	In progress 2/29/2008	Complete by 5/15/08 Done
2 Are the assembly areas clean enough?				
3 Temperature gradient along the Undulator Mitigation of effect of potential leaks in the LCW pipes above the Undulator/cable	Need to assess how much gradient is tolerable	Nuhn		On hold
4 trays	INvestigate protective measures	Zurawel		On hold

5	Temperature in B750 girder assembly area	Need to assess what temperature swing will occur & how much is tolerable	Nuhn/Poling	Complete Present decision is to hold off on any major crate/pallet changes until we have determined the girder rigidity after assembling and rough aligning the vacuum beam pipe and strongback. Ben Poling has ordered taller crate sides which will cover the girder assembly. DONE
6	Girder palettes (cradles) not strong enough?	Determine need & design/build new ones if required	Lundahl/??	
7	What is the requirement and plan for storage of Undulators and girders for installation	Detail plan , run vibration/transportation tests	JC	Complete - determine long-term solution In progress - Continuous ESA 7000 sq ft storage per agreement with C. Hast. Bldg 033 storage for 13 undulators per agreement with J. Tice, E. Ortize & D. Rich. Have requested temperature controlled space in NEH for girder and undulator storage. Requested 2000 sq ft storage space each IR-4 & IR-6
8	Coordinate storage areas and custodians for all ANL shipments	Detail plans	Jim K.	
9	Power dissipation in the tunnel	Update Jim W's power budget spreadsheet	JimW, Josh S.,	Leave for reminder if any changes occur In Progress - Continuous
10	What is the assembly/alignment/installation schedule for Girders?	Revise schedule to match component deliveries	Ben P./J. Chan	Installation schedule is revised when delivery updates are received
11	What equipment is required for assembly/alignment/installation of Girders?	modify girder boxes, assess their usability,	Ben P.	Complete Slide fiducialization to be two step process. Initial alignment to Girder will be done utilizing permanent alignment pins on girder and hard stop tooling supplied by ANL. This step will be performed in Ben Poling's area. Second step is to do the final electronic slide motor zeroing on CMM. This is accomplished by loading an undulator onto slides and moving undulator into proper alignment with the beam pipe. Once these locations are aligned, the translation slide motors will be "zeroed". Equipment required will be a station in bldg#81, on the CMM, which can move and electronically zero the translation slide motors.
12	Fiducializing slides on the CMM	Determine how this is done, and what equipment is needed	Eric L.	
13	Undulator Gap Installation Assembly Tolerance Drawing	Take copy of ANL sketch and create official drg in pertinent PRD	GP to HD	REQ 5/1/08
14	To Grout or not to grout	Perform heat transfer calcs Take some of Controls extra 64	DCS to JW	REQ 5/15/08
15	Add Thermal Monitoring to Tunnel walls and floor	thermocouples and dedicate them to CF thermal monitoring	DCS to JW to EC/AA	REQ 6/1/08

<p>Lifting and Handling Fixtures still in flux. SLAC assumption is no special handling is required. Present complete handling plan to management? Suggestion: In tunnel Cameras to view roll out would be good. Verify and agree on cable tray to girder</p>	<p>Analyze position/vibration of components during MMF to 750 and return trip with a view to settle types of fixtures required for shipping and handling</p>	JC/CR +EL	REQ 6/1/08
<p>18 cable drop locations in z Temperature needs to be alarmed in</p>	<p>Info required for ANL LTT Off hours warning required from Facilities to LCLS Custodian</p>	JC/Ponce to BB	REQ 5/15/2008
<p>19 Undulator storage areas Unulator Storage Plan - When to fiducialize?</p>	<p>Decide how many Undulators need to be fiducialized and when</p>	JC	REQ 5/7/2008
<p>20 Verify current girder Installation Plan Is the RFBPM electronics installation defined? Add checkout procedure.</p>	<p>Get into Stuart Metcalf's Plan Check Installation schedule in SM</p>	JC/ZW to DCS JC to DCS/SM	REQ 5/15/2008 REQ 5/7/2008
<p>21 HLS leak Mitigation</p>	<p>Is cover for BPM(bump and water?) and Electronis required?</p>	JC + DRW/BL	REQ 5/7/2008
<p>22 Setting of hard stops in-situ</p>	<p>Procedure needs to be written</p>	JC/BB CR/JS/MW	Answer required 5/7/2008 with plan complete by October 08 REQ 5/15/08
<p>23 Preventative maint. Procedures</p>	<p>A list of items for PM needs to be created and procedures written</p>	MZ	Start ~6/1/08