Muon Collider-Neutrino Factory Collaboration Target Design Meeting

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High-Power Mercury Jet Target

System Program Schedule

September 1, 2004

Oak Ridge National Laboratory



Schedule for Target System Development and Testing

Hg TARGET SYST DESIGN-CERN TEST	Date	Date	Jul	Aug	Sont	0-4	NI														2006						
olenoid/Cryostat Milestones				·	Jepi	UCI	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	J
																Mov	ed Fro	m Aug	-Sent								
Fabricate	5/31/04	10/28/04															(3 mon				B-Field Hg Tes						⊢
Deliver/Install at MIT	11/1/04	11/19/04																\mathbf{N}		1	ng res I	жэ_ 					1
System Test	11/22/04	12/17/04					Δ-													-/							
Intergrated Test at MIT	10/31/05	12/28/05																	Ľ,	¥,			Schedu	la Mak	a 11a 21	,	t
Ship To CERN	1/2/06	1/31/06			schedul														r –	i		, i	Schedu		eupri		t
Install	2/1/06	2/28/06			I. Kirk o																	4	7				
Commission Test Equipment at CERN	3/1/06	3/31/06			until NovDec. 2005 because of design, fabrication, and testing for the Hg target at CERN																						
eam On Experiment	4/3/06	4/21/06		Jyst			onango								1							- 4		-	-		-
Decommission	4/24/06	4/28/06																							,		-
	4/24/00	4/20/00																									
lg Target System																											F
1. System Design												-			-	-											⊢
1a. Engineering Coordination	7/1/04	2/28/06	<u> </u>										-		-								<u>↓</u>				⊢
5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	8/18/04						•																				
1b. Establish Interfaces & Obtain	8/2/04	8/31/04		<u> </u>	<u>,</u>					onds Inc																	
Requirements	8/2/04	8/31/04) (by B	NI			Estim	ated Tra	avei				<u> </u>												-
1c. Neutronics Calcs (BNL)					(рув	INL)																					_
1d. Develop Interface Dwgs	8/2/04	8/31/04		\	¢					Final	1																
1e. Design Hg Flow Loop System								eptual		Desig	n																H
					Title	el.	Desig	n I		/																	
Title I Design	9/1/04	11/12/04			<u> </u>	Ľ	~		1		Desigr																
The UD color	2/23/05	0/10/05						Title	<u> </u>	Ĭ	Review	v															
Title II Design	11/22/04	2/18/05					Ý																				
1f. Develop Procurement Specification	1/17/05	2/18/05				Desig																					-
	11/17/04					Revie	w 🦿			-9													1 1				
1g. Design Optical Diagnostics (BNL)		11/12/04																									
1h. Design Target Windows (BNL)	11/22/04	2/18/05 11/12/04						— (by	BNL) -																		_
Th. Design Target Windows (BNL)	9/1/04	11/12/04			(by	BNL)						Sche	dule N	lake U	p??												
1i. Design Hg Nozzle (Princeton)	9/1/04	11/12/04			(Jy							/		т	l Two Mo	nths ?	2										\vdash
1j. Procurement (Bid & Award)	3/1/05	5/31/05			(hy Pr	inceton								\vdash													-
1k. Fabrication	6/1/05	6/30/05			(0) 11	1	/			<				(K	<u> </u>	Scl	nedule	Make	Up ??								-
11. Assembly and Systems Test	7/1/05	9/30/05													Ĭ	4			<u> </u>								+
															`	1		>									-
1m. Ship to MIT; assemble target compon.		10/31/05									∣)&D PI≄	∣ an Sigr	l ned —					<u>~ ~</u>									1
Assist w/ Integrated Test at MIT		12/28/05									By All P			Hg-onl	y Tests			<	2 ()	_ ••	<u> </u>						
. Coordinate Design Effort with CERN	9/1/04	1/31/05			¢				· · · · · ·	>	-						se ORI										
. Develop Decommissioning and	2/1/05	5/31/05								<u> </u>		<u>کر</u>		ļ			ranspo	rtation						BNL, N			
Visposition Plan . Develop Shipping & Installation Plan for	6/1/05	9/30/05							<u> </u>	-					-		iroup								, and P		-
IIT and CERN	5, 1, 00	2,00,00												<u> </u>	L			>						at CEF			
. Provide Engineering Support for the	2/27/06	4/26/06	/5		June 30,	2004)	-											-									
ligh-Power Tests at CERN	3/13/06		(Г	UGV. 4, U	June 30,	2004)																					
	4/17/06														<u> </u>												-
			Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	



MIT Integrated System Testing Delayed 3 Mos.

- These tests demonstrate all of the operating conditions except, for the proton beam
- Original schedule was Aug.-Sept. '05 (Nov-Dec '05)
- Change in schedule caused by target system development
 - design 5.5 mos. beginning Sept. 1
 - procurement 3 mos.
 - fabrication 1 to 2 mos.
 - testing 3 mos.

The overall schedule that meets the April '06 experiment is tight!



Possible Areas To Make Up Schedule Time

- Schedule shows 1 month for shipping to CERN and 1 month for equipment set up *reduce to 5* or 6 weeks ???
- 3 months for target procurement *expedite to 2 months*???
- 3 months for target equipment assembly and testing *with luck, 2 months !!!*
- Shorten schedule by 2 ½ months if everything goes better than planned for!

Maybe... with some luck, 2 months can be made up if everything goes well!

