



NOvA Project Status

May 1, 2007

John Cooper

Ron Ray

Nancy Grossman



Status of CD-1

- ESAAB scheduled for May 2.



EA Status

- Got comments on “final” draft back from Sally Arnold on April 18
 - 265 comments (8 “general”, 166 “specific”, 91 “editorial”)
 - Not clear when another draft can be ready
- Update on progress regarding U of Minnesota’s 3 stipulations before going to Regents
 - 1. St. Louis County OK on RGU.
 - They asked for UM to draft letter they could send to UM. -- Not done
 - 2. Minnesota elected to go to a 3rd party review instead of asking S E H for a letter of reliance -- No update on status.
 - 3. Recall U of Minn needs some official action on CA.
 - Email from Mike to Marvin. Marvin was going to ask for it on letterhead, but he’s not sure it will suffice within UM
 - Not clear when documentation of 3 points needed relative to May 10 meeting
- I asked Steve Dixon to get S E H to update the EAW before May 1.
 - Methyl Methacrylate now included but incorrectly
 - Has Steve’s latest building drawings
 - Asked them to look at my geology summary for any errors. No response yet
 - S E H suggests adding the EA as an appendix to the EAW would not be a good idea



Task 425:

Trying to settle budget for 2nd half of FY07

- Updated spreadsheet
 - CD part not official yet. Missing one piece and no word from Division
 - Proposing to adjust SWF parts again on August 1

NOvA Project R&D - March 2007 (\$\$ in Thousands) Personnel Costs (cost of Scientific effort removed)	YTD Obligations thru 31-Mar-2007		NOvA est for 2nd half of FY07	
	Direct/SWF	Fully Burdened	Direct/SWF	Fully Burdened
PPD	548.8	847.4	700.0	1,080.8
AD	469.7	812.7	1,060.0	1,836.0
TD			160.0	281.0
CD	228.4	395.2	458.7	793.7
Total Personnel costs	1,246.9	2,055.3	2,378.7	3,991.5
Materials & Services				
PPD	1,378.3	1,719.2	3,126.7	3,829.9
PPD - project 480 RIPs not in system @ 3/31	273.0	273.0	(273.0)	(273.0)
AD	142.9	169.4	700.0	829.9
Total M&S costs	1,794.2	2,161.6	3,553.7	4,386.8
Grand Total	3,041.1	4,216.9	5,932.4	8,378.3

Target 8,300.0



TPC must include all costs of the CDR

- Estimate below
 - Will insert a task in the C&S with the estimated cost so it gets included.

NOvA Project CDR costs	FTE Months	Direct/ SWF	Fully Loaded (\$)
Scientific Effort:			
J Cooper: ~6 mo @ 90%	6.0	0.0	0.0
R Ray: ~2 mo @ 50%	2.0	0.0	0.0
G Feldman: several weeks ~50%	0.8	0.0	0.0
M Messier: several days	0.2	0.0	0.0
L Mualem: several days - figures & plots	0.2	0.0	0.0
P Litchfield: several hours - plots	0.0	0.0	0.0
N Grossman	0.2	0.0	0.0
Marchionni	0.1	0.0	0.0
Hu	0.2	0.0	0.0
Hylen	0.2	0.0	0.0
Korbanis	0.1	0.0	0.0
Martens	0.2	0.0	0.0
ANU: Engineering (mechanical, RF & engineering physicist)	2.8	10,502.0	18,171.0
Site & Building: Architectural, Engineering, Drafting	1.3	18,690.0	24,310.1
Project Engineer & Project ES&H: ~1 day each	0.1	1,113.2	1,447.9
Project Engineer & Designer: figures ~ 5 days each	0.5	4,982.1	6,480.2
Copies onsite (April 06) includes OT & VMS chargeback		6,454.7	7,188.3
Additional copies (September 06)		2,667.4	3,040.8
	14.5	44,409.4	60,638.3



CD-2 Worklist, Cooperative Agreement

NOvA Work List for CD-2 <i>(red means new since last version)</i>				Original Estimated Finish Date	Current Estimate of Finish Date	Actual Finish Date	comments
Cooperative Agreement							
				30-Sep-06	6-Oct-06	30-Oct-06	
				15-Oct-06	17-Nov-06	20-Nov-06	
				31-Oct-06	1-Dec-06	1-Dec-06	RGU not stipulated
					31-Jan-07	31-Jan-07	
				1-Nov-06	15-Mar-07	16-Apr-07	DNFA signed.
							Statement of Work draft iterations.....
				16-Mar-07			need letter for Regents action by ~ May 1
				15-Jan-07	1-Jul-07		want to fund \$1M starting July 1
							(not needed for CD-2 review)
							(but do need for CD-2 sign-off)



CD-2 Worklist, NEPA and EA

NOVA Work List for CD-2 <small>(red means new since last version)</small>		Original Estimated Finish Date	Current Estimate of Finish Date	Actual Finish Date	comments
NEPA					
	Scoping Meeting	22-Jun-06		22-Jun-06	
	Environmental Impacts Analysis Plan and 5 point timeline	29-Jun-06		20-Jul-06	
	NEPA timeline in Envir. Impacts Analysis Plan				
	Determine EA (vs EIS or Categorical Exclusion)	22-Jun-07		22-Jun-06	Siebach to Livengood
	Notify Illinois, Wisconsin, Minnesota of EA intent	15-Jul-06		1-Aug-06	letters from Livengood
	1st draft EA completed	1-Nov-06	4-Jan-07	6-Jan-07	DOE review asks for revision
	2nd draft EA completed		3-Apr-07	3-Apr-07	still depends on EAW / RGU
	2nd draft comments back from DOE team			19-Apr-07	only 272 comments
	3rd draft EA completed		?????		
	final EA ready	1-Dec-06	14-Jun-07		
	end State / Public Comment period	1-Jan-07	1-Aug-07		not required for CD-2 REVIEW
	FONSI drafted	1-Apr-07	15-Aug-07		not required for CD-2 REVIEW
	FONSI issued	1-Jun-07	17-Sep-07		not required for CD-2 REVIEW
					but do need for CD-3a sign-off
	Minnesota Part				
	Minnesota EAW for Ash River ready for EA	2-Jan-07		21-Dec-06	
	U of Minn to check with St.Louis County that OK with UM as RGU				UM talked to St.L Cnty Head of Planning 4/16, agreed letter would be drafted by UM lawyer, not yet done
	U of Minn to get letter of reliance from S E H				decided to go with 3rd party review
	Alternate to letter of reliance is third party hire to review EAW	1-May-07			Expected by May 1, but have no update
	Some official CA notification in place before consulting Bd of Regents	1-May-07			will not propose to Regents without this.
	First meeting of Bd of Regents on RGU question, no decision	11-May-07	11-May-07		An email exists, may not be sufficient.
	RGU (Responsible Government Unit) in place (2nd Regents mtg)	15-Jan-07	11-Jun-07		Assumes CA notification sent before this
	Send EAW to EQB	1-Apr-07	14-Jun-07		EQB submission deadline is June 25 for July 2 publication, need this action for CD-2 review
	EQB Monitor publish date	26-Mar-07	2-Jul-07		EQB follows preset deadlines for pub.
	End 30 day comment period on EAW	15-Jan-07	1-Aug-07		
	RGU response to comments	1-Mar-07	8-Aug-07		not needed for CD-2 review
	End 30 day judicial appeal period	1-Apr-07	7-Sep-07		not needed for CD-2 review
	RGU notice of decision published in the EQB Monitor	21-Apr-07	17-Sep-07		not needed for CD-2 review
					Would need for -3a.
	Wetland Permit Processing by USACE	1-Apr-07	1-Oct-07		Need for construction, not for CD-2 review
	Fermilab NOVA Part				
	First Draft of Ch 3 - Proposed Actions	1-Nov-06	20-Dec-06	21-Dec-06	
	Water Task Force report	21-Sep-06	15-Dec-06	19-Dec-06	now thought to be a Technical Reference
	Second draft: revised Ch 3, 4, 5	8-Mar-07	14-Mar-07	18-Mar-07	
	Ch 6: highest impact credible accidents	14-Mar-07	21-Mar-07	26-Mar-07	



CD-2 Worklist, ANU

NOvA Work List for CD-2 (red means new since last version)			Original Estimated Finish Date	Current Estimate of Finish Date	Actual Finish Date	comments
Accelerator & NuMI Upgrades						
Morph Campaign into Project						
		GPP moved off project	17-Jan-07		24-Jan-07	justification letter done and agreed to
		R&D + Ops / MIE split done	17-Jan-07		30-Jan-07	complete
		ON/Off project split done	17-Jan-07		30-Jan-07	complete
		CDR done	31-Jan-07		31-Jan-07	will stand alone next to NOvA CDR
		CD-1 Cost and Schedule RANGE complete	31-Jan-07		31-Jan-07	
		Hazard Analysis done	31-Jan-07		7-Feb-07	
Move to Open Plan						
			16-Mar-07		23-Mar-07	minor glitches, mostly went fine
Move to NOvA Docdb						
			15-Mar-07		18-Mar-07	~ 280 documents moved over
Technical						
		Beamline design near final			15-Apr-07	
		Kicker designs completed enough to define ceramic beam tubes needed			30-Mar-07	
		Determine preliminary cooling needs for ANU			20-Feb-07	
		Determine best dates for the shutdowns (Accelerator Upgrades & NuMI)	4-May-07			This may be hard to meet, but a good goal.
Scope of TDR Defined (on/off project and IL/EL designs to cost defined)						
			31-Jan-07		31-Jan-07	
TDR						
		Draft Update NOvA TDR "Overview" sections to include ANU	1-Mar-07		19-Feb-07	
		Final Update NOvA TDR "Overview" sections to include ANU	30-Mar-07	3-May-07		
		draft TDR ANU chapter done	15-Mar-07		21-Mar-07	~75 pages (needs overview sections)
		"final" version back to Project Office control	30-Mar-07	3-May-07		Final version by L3's completed 4/13
Cost & Schedule R&D part done (all but resource leveling)						
			30-Mar-07		13-Apr-07	done except resource leveling and reviewing
Cost & Schedule Construction part done (all but resource leveling)						
			16-Apr-07		13-Apr-07	done except resource leveling and reviewing
Cost & Schedule Resource Leveling Done						
			4-May-07			This may be hard to meet, but a good goal.
Risk assessment done						
			13-Apr-07	3-May-07		
BOEs done						
			15-Mar-07	20-Apr-07	30-Apr-07	complete



CD-2 Worklist, Site and Building

NOVA Work List for CD-2 <small>(red means new since last version)</small>		Original Estimated Finish Date	Current Estimate of Finish Date	Actual Finish Date	comments
Site and Building					
Ash River Site					
	EAW update, draft from SEH	1-Nov-06	1-Dec-06	4-Dec-06	received SEH consultant draft, will iterate
	final EAW	2-Jan-07		21-Dec-06	
	updated EAW	1-May-07		30-Apr-07	but it has errors
	Wetland Permit Application prepared	1-Dec-06	7-Apr-07	19-Apr-07	Have first draft, 21 pages. Still need wetlands purchase justification details. And RGU.
	Site Prep 100% design package ready	1-Dec-06	1-May-07	19-Apr-07	41 drawings of the road
Other Sites					
	EAW	1-Jul-07	30-Sep-07		no longer matters with unsolicited proposal
Building					
	Independent Cost & Schedule Review	15-Sep-06	1-Sep-06	14-Sep-06	
	Decide overburden construction method	15-Oct-06		31-Oct-06	related to overburden thickness
	Final conceptual design ready for 30% design effort	15-Oct-06		31-Oct-06	
	Second pass, updated conceptual design ready	16-Apr-07		19-Apr-07	60 drawings, just enough to get to estimators
	Second pass, Three Outside Independent Cost & Schedule Reviews	31-May-07	NOTE late date		One=9/06 firm, 2nd & 3rd will be Minn. firms
	30% Drawings	15-Dec-06	15-May-07	19-Apr-07	60 drawings, in house + outside drafting
TDR					
	Second draft based on Project Office first draft of Oct 17	9-Nov-06		7-Nov-06	
	"final" version back to Project Office control	9-Mar-07		6-Mar-07	34 pgs, need update to final building design
Cost & Schedule R&D part done		30-Mar-07		8-Mar-07	
Cost & Schedule Construction part done		16-Apr-07			first pass to Bill
Risk assessment done		15-Apr-07		1-Mar-07	
BOEs done		15-May-07			started these



CD-2 Worklist, Liquid Scintillator

NOVA Work List for CD-2 <small>(red means new since last version)</small>		Original Estimated Finish Date	Current Estimate of Finish Date	Actual Finish Date	comments
Liquid Scintillator					
	Tests of commercial Tintometer	21-Jul-06		16-Aug-06	tagged, sent on to Indiana for tests, 7/17
	Fermilab blending model description & cost	15-Aug-06	15-Nov-06	29-Nov-06	have "Fermilab response" to blending RFI
	issue RFI for off-site blending	1-Aug-06	31-Oct-06	10-Nov-06	following 11/3 consultant advice on bid list
	RFI responses for off-site blending	1-Sep-06	30-Nov-06	30-Nov-06	8 responses, meeting tomorrow to sort it out
	Decide on TDR and C&S blending model	14-Dec-06		7-Dec-06	TDR will have toll blending in Chicago area with Fermilab on-site blending as a backup.
	evaluate waveshifter concentration	15-Aug-06		16-Aug-06	light output vs. concentration
	evaluate pseudocumene concentration	15-Aug-06		1-Apr-06	CDR info good, additional meas in progress
	decide waveshifter/pseudocumene to match fiber diameter	9-Aug-06	13-Oct-06	26-Oct-06	No scintillator change, only fiber & PVC
	Consultant measurement of aerosol flamability	15-Jan-07		1-Feb-07	Can't ignite over wide range of droplet sizes with 10J spark
	Consultant measurement of flash point	15-May-07			requested by Steve Dixon
	TDR				
	Second draft based on Project Office first draft of Oct 17	9-Nov-06		23-Jan-07	
	"final" version back to Project Office control	9-Mar-07		23-Mar-07	31 pages, updated version 4/27 following discussions
	Cost & Schedule R&D part done	30-Mar-07		27-Apr-07	
	Cost & Schedule Construction part done	16-Apr-07			
	Risk assessment done	15-Apr-07			
	BOEs done	15-May-07			



CD-2 Worklist, Fiber

NOVA Work List for CD-2 <small>(red means new since last version)</small>		Original Estimated Finish Date	Current Estimate of Finish Date	Actual Finish Date	comments
Wavelength Shifting Fiber					
Updated Kuraray quote		1-Jun-06	1-Jul-06	6-Jul-06	
evaluate fiber diameter		1-Aug-06	13-Oct-06		
	attenuation length of 0.7 mm fiber	15-Sep-06	30-Oct-06	24-Oct-06	OK, 17% acceptance loss, 1-2% atten. loss
	attenuation length of 0.6 mm fiber	30-Sep-06	30-Oct-06	24-Oct-06	not OK, 34% accept loss, 10% atten. Loss
	decide fiber diameter	9-Aug-06	30-Oct-06	26-Oct-06	0.7 mm with thicker cladding
	decide K27 waveshifter concentration (range is 150 - 750 ppm)	9-Feb-07	15-Jun-07		confused by data, 250 ppm looks low, Kuraray agrees something was wrong with the 250 ppm. New samples coming 5/1 and 5/21
	Need Procurement (?) help to avoid 5-8% duty on import	1-Oct-07			Advertised in FedBizOpps. Dealing with questions.
TDR					
	Second draft based on Project Office first draft of Oct 17	9-Nov-06		7-Feb-07	
	latest draft			2-Apr-07	Current draft requires measurements from additional R&D fiber to be delivered May 1
	"final" version back to Project Office control	9-Mar-07			Carl iterating draft after discussion with John/Ron on April 12
	Cost & Schedule R&D part done	30-Mar-07		12-Apr-07	done
	Cost & Schedule Construction part done	16-Apr-07			
	Risk assessment done	15-Apr-07			
	BOEs done	15-May-07			



CD-2 Worklist, PVC extrusions

NOVA Work List for CD-2 <small>(red means new since last version)</small>		Original Estimated Finish Date	Current Estimate of Finish Date	Actual Finish Date	comments
PVC Extrusions					
Horizontal Extrusion die					
	Choose die proof resin (NOVA-2 with rutile TiO2)	5-May-06		5-Jun-06	
	Proof 16 cell die at die manufacturer	26-Jun-06	31-Jul-06	24-Jul-06	done at Extrutech, not at die manufacturer
	Tune 16 cell die at extruder	14-Jul-06	18-Aug-06	25-Jul-06	got samples but NOVA-2 resin clogged die
	Rework die after initial tests	21-Aug-06		18-Sep-06	rework continues through March 07
	2nd test with new rutile PVC resins and reworked die	1-Sep-06	18-Sep-06	18-Sep-06	
Rutile TiO2 extrusions					
	Issue RFP for 70,000 lb test resin + full detector option	5-Jun-06		23-Jun-06	but will have to do best & final, NOVA-2 clog
	RFP responses for resin	5-Jun-06	21-Jul-06	21-Jul-06	able to update cost estimate with this info
	Start modifications of rutile resin	1-Oct-06		16-Oct-06	Runs in Oct, Nov, Jan
	End modifications of rutile resin	8-Oct-06		21-Nov-06	N-24 selected as baseline resin
	Measure mechanical properties of rutile mixture in 16 cells	30-Sep-06	31-Dec-06	1-Jan-07	strength, creep, ... needed for structure FEA
	Issue RFP for 70,000 lb rutile resin, BEST and FINAL	1-Sep-06	26-Dec-06	11-Jan-07	N-24
	Order the 70,000 lb for 3500 m production		26-Dec-06	30-Jan-07	
	Start production, 3500 m of 16 cell horizontal material in rutile	4-Aug-06	13-Mar-07	13-Mar-07	14 day effort truncated since 2nd vendor resin failed
	Measure variations in rutile 16 cell material (width, thickness,...)	27-Mar-07			started, need info for structure details
Anatase TiO2 extrusions					
	Order first anatase versions of rutile resins	25-Sep-06	15-Sep-06	18-Sep-06	got N-20 and N-23
	First test of anatase TiO2	7-Sep-06	25-Sep-06	3-Oct-06	light output measurements show 15% gain
	Start modifications of anatase resin		21-Nov-06	21-Nov-06	Runs in Nov, Jan, Feb
	End modifications of anatase resin			14-Feb-07	15%, 17%, and 18% versions all work
	Measure mechanical properties of anatase mixture in 16 cells	30-Sep-06	31-Dec-06	1-Jan-07	strength, creep, ... needed for structure FEA
	Order 30,000 lb resin for 1500 m of 16 cell material in anatase	15-Aug-06	1-Apr-07	27-Apr-07	April 17 test of N-27 OK, ordered 130,000 lbs
	Start production 1500 m of 16 cell horizontal material in anatase	15-Apr-07			
Vertical Extrusion die (50% thicker walls & webs)					
	Issue P.O. to modify existing die for vertical extrusions	1-Sep-06		24-Aug-06	Will be a 1 month window with no die.
	Die returns after modification for vertical extrusions	15-Jan-06	1-Jun-07		die not available during May
	Production extrusion of thicker vertical material	15-Jun-07			
	Decide on TDR baseline resin: rutile or anatase	15-Oct-06	30-Oct-06	26-Oct-06	Anatase , but detailed mix still unresolved
	Final 16 vs 32 cell decision			28-Sep-06	Plan is 16+16 = 32, only adhesive in question
	Devcon adhesive tests of 32 cell from two 16 cell objects	21-Aug-06		21-Aug-06	ANL ES&H: Devcon-60 volatiles OK, Jan 24
	RF welding test to make a 32 cell from two 16 cell objects	1-Nov-06		27-Oct-06	got first sample, abandoned this path Nov 9
TDR					
	Second draft based on Project Office first draft of Oct 17	9-Nov-06		12-Jan-07	
	"final" version back to Project Office control	9-Mar-07		15-Apr-07	siill missing some parts, but mostly there
	Cost & Schedule R&D part done	30-Mar-07		12-Apr-07	done
	Cost & Schedule Construction part done	16-Apr-07			
	Risk assessment done	15-Apr-07			
	BOEs done	15-May-07			



CD-2 Worklist, PVC Modules

NOVA Work List for CD-2 <small>(red means new since last version)</small>		Original Estimated Finish Date	Current Estimate of Finish Date	Actual Finish Date	comments
PVC Modules					
	evaluate 0.7 mm fiber fragility in Module Assembly	15-Sep-06		18-Sep-06	quantitative evaluation says OK on 10/24/06
	evaluate 0.6 mm fiber fragility in Module Assembly	22-Sep-06		5-Oct-06	~ OK, but worries remain
	test black PVC for conductivity	15-Sep-06		5-Dec-06	Not conductive enough. Insert a wire?
	final grounding scheme decided	9-Feb-07	15-Mar-07		Aeorsol study indicates grounding unnecessary?
	final endplate design	31-Aug-06	15-Oct-06	18-Oct-06	
	final manifold design	31-Aug-06	15-Oct-06	18-Oct-06	
	adhesive choice	30-Sep-06	15-Dec-06	15-Dec-06	DP-190 next to scintillator plus Plastic Welder for strength
	adhesive vs. RF welding	1-Dec-06	1-Apr-07	20-Nov-06	adhesive in TDR
	factory stringing machine	1-Oct-06	1-Nov-06	14-Nov-06	internal review approved design
	factory flycutting machine	1-Oct-06		15-Jul-06	MINOS flycutter tested successfully
	factory gluing machine	1-Nov-06	15-Dec-06	15-Dec-06	pneumatic, so easy
	Time & Motion studies with 16 cell, 12 ft(early) & 53 ft(later) objects	15-Dec-06	15-Feb-07	9-Feb-07	73% based on T&M, still need 53 ft handling
	Building selected for Factory #1 at Fermilab	22-Dec-06			need for TDR, want to say WideBand Lab
	Cost information in hand for loading dock conversion	5-Jan-07		5-Jan-07	need for Cost & Schedule
	Cost information in hand for pallet lifting fixture	1-Apr-07			
	Laboratory agrees with factory building selection	19-Jan-07		6-Mar-07	Wideband
TDR					
	Second draft based on Project Office first draft of Oct 17	9-Nov-06		13-Dec-06	
	"final" version back to Project Office control	9-Mar-07		18-Mar-07	Ken, 71 pages, needs more on Fermilab factory
	Cost & Schedule R&D part done	30-Mar-07			Still not closed
	Cost & Schedule Construction part done	16-Apr-07			
	Risk assessment done	15-Apr-07			
	BOEs done	15-May-07			



CD-2 Worklist, Electronics & DAQ

NOvA Work List for CD-2 <small>(red means new since last version)</small>		Original Estimated Finish Date	Current Estimate of Finish Date	Actual Finish Date	comments
Electronics					
	Receive 1st 10 APDs from Hamamatsu	1-Oct-06	5-Jan-07	6-Jan-07	as expected, some dead pixels, but performance of working pixels OK
	Receive 2nd 10 APDs from Hamamatsu	1-Mar-07	30-Mar-07	3-Apr-07	got the next 10, testing in process
	Get updated "target price" of APDs from Hamamatsu	1-Nov-06	1-May-07		all pixels work, but dark currents higher
	completed studies of front end ASIC	10-Aug-06		28-Aug-06	follows test of 2nd 10 delivery
	Start testing of Front End Board prototype 2	1-Dec-07	1-Jan-07	9-Feb-07	Fermilab tests done, packaging for user tests
	Front End Board prototype 2 testing complete	6-Oct-06	15-Mar-07	3-Apr-07	1 under test, 4 more in assembly
	Cooling scheme choice for TDR: water or R-134a	1-Oct-06	1-Nov-06	26-Oct-06	performance met design goals.
	Outside review of cooling design	1-Nov-06		17-Nov-07	water
	TDR				But will iterate for revised design
	Second draft based on Project Office first draft of Oct 17	9-Nov-06		6-Nov-06	
	"final" version back to Project Office control	9-Mar-07		27-Mar-07	now more complete, 29 vs. initial 24 pgs
	Cost & Schedule R&D part done	30-Mar-07		27-Apr-07	
	Cost & Schedule Construction part done	16-Apr-07			
	Risk assessment done	15-Apr-07			
	BOEs done	15-May-07			
Data Acquisition					
	prototype Data Concentrator boards ready to test	1-Jan-07		1-Feb-07	first board of 5
	prototype Data Concentrator tests complete	15-Dec-06	1-Apr-07	18-Apr-07	1 board tested, still testing others, memory problem fixed (unterminated address lines)
	TDR				
	Second draft based on Project Office first draft of Oct 17	9-Nov-06		6-Nov-07	
	"final" version back to Project Office control	9-Mar-07		27-Mar-07	More complete, also 29 pages.
	Cost & Schedule R&D part done	30-Mar-07		13-Apr-07	done
	Cost & Schedule Construction part done	16-Apr-07			
	Risk assessment done	15-Apr-07			
	BOEs done	15-May-07			



CD-2 Worklist, Near Detector

NOVA Work List for CD-2 <i>(red means new since last version)</i>		Original Estimated Finish Date	Current Estimate of Finish Date	Actual Finish Date	comments
Near Assembly					
	Initial design of mechanical structure	19-Sep-06		19-Sep-06	have initial write-up, now revising
	Initial design of mechanical systems	19-Sep-06		19-Sep-06	have initial write-up, now revising
	Near design at TDR level	1-Nov-06		22-Nov-06	have 2nd draft of TDR chapter 15
	Cost information in hand for excavation schemes and rotation schemes	22-Dec-06		18-Dec-06	(still missing a NOVA fixture cost estimate)
	Lab support of decision on excavation in the tunnel	19-Jan-07		20-Mar-07	condition is that we must get out of 1/2 of tunnel without compromising 100% containment
	TDR				
	Second draft based on Project Office first draft of Oct 17	9-Nov-06		9-Nov-06	
	latest draft			6-Feb-07	waiting for tunnel decision
	"final" version back to Project Office control	9-Mar-07	1-May-07		coping with Montgomery challenge to write up a full scheme to get out of the way. Counter scheme being studied with more excavation and containment in floor excavation. Review 4/27. Need final cost estimates
	Cost & Schedule R&D part done	30-Mar-07		15-Mar-07	done
	Cost & Schedule Construction part done	16-Apr-07			
	Risk assessment done	15-Apr-07			
	BOEs done	15-May-07			



CD-2 Worklist, Far Detector Assembly

NOVA Work List for CD-2 <i>(red means new since last version)</i>		Original Estimated Finish Date	Current Estimate of Finish Date	Actual Finish Date	comments
Far Assembly					
	Validation of plane adhesive choice	16-May-06		11-Jul-06	3M-2216 initial choice revised to Devcon-60 on Feb 12
	Tests of 3 plane assemblies with 3M2216 and 16-cell extrusions	22-Sep-06	6-Oct-06	19-Oct-06	Held at 80 psi
	Tests of 3 plane assemblies with Devcon Plastic Welder and 16-cell extrusions	22-Sep-06	2-Jan-07		in progress, 11 plane test
	RF welding, plane to plane, 4 plane test at Ashland	31-Oct-06	1-Dec-06	27-Oct-06	have first sample
	RF welding, 3 plane assembly to compare			9-Nov-06	RF welding eliminated, Emabond withdraws
	settle baseline installation procedures	27-Jul-06	5-Oct-06	5-Oct-06	have initial write-up, now revising
	Validation of structural design	17-Aug-06	7-Nov-06		ongoing internal review in progress
	Initial design of access system for top of detector	30-Sep-06	19-Oct-06	31-Oct-06	linked to building design. Concrete ==> rolling platforms, now the baseline.
	Initial design of light tightening scheme	3-Oct-06	31-Jan-07	9-Feb-07	Paint identified.
	Initial design of scintillator filling scheme	26-Sep-06		26-Sep-06	linked to building design. Concrete ==> rolling platforms, now the baseline.
	final scintillator overflow tank design	5-Dec-06		5-Dec-06	task moved from modules to assembly
	Block Raiser design review	5-Dec-06	12-Dec-06	12-Dec-06	Block Pivoter selected, must iterate forks & baseplate, requires more PVC FEA.
	Designs of mechanical systems & tooling	8-Jan-07	15-Mar-07		working goal for structure and pivoter
TDR					
	Second draft based on Project Office first draft of Oct 17	9-Nov-06		9-Nov-06	
	"final" version back to Project Office control	23-Mar-07		23-Mar-07	143 pages in April 9 update, still missing a few sections/figs
	Cost & Schedule R&D part done	30-Mar-07		15-Mar-07	done
	Cost & Schedule Construction part done	16-Apr-07			
	Risk assessment done	15-Apr-07			
	BOEs done	15-May-07			



CD-2 Worklist, Project Management

NOvA Work List for CD-2 <i>(red means new since last version)</i>		Original Estimated Finish Date	Current Estimate of Finish Date	Actual Finish Date	comments
Project Management					
	final Project Execution Plan	1-Aug-06	31-Jan-07	8-Feb-07	last proj part, Cost by L2
	draft of PMP including the Cooperative Agreement	2-Jan-07	31-Jan-07	16-Feb-07	includes org charts for CA
	final Project Management Plan	12-Jan-07			
	final Configuration Management Document	12-Jan-07			Elaine looking at ANU relative to plan
	final Risk Management Plan	12-Jan-07		26-Dec-07	
	Risk Registry done	13-Dec-06		13-Dec-06	have Excel version, examining WelcomRisk
	draft Procurement Plan (partial)	1-Aug-06		29-Aug-06	request from Lutha
	final Procurement Plan	21-Jan-07		20-Dec-06	1/18 DOE response that it is OK, add ANU?
	draft Performance Management System Document (EVMS)	21-Jul-06		23-Aug-06	NOvA-doc-1084 (lab-wide plan)
	final Performance Management System Document (EVMS)	19-Jan-07			
	QA Plan - update CD-1 QA appendix into standalone plan	31-Jan-07	31-Jan-07	29-Apr-07	Revised Feb 22 version to align with 414.1c. Waiting for some minor input to finish
	draft PSAD	1-Apr-06	1-May-07		had draft at CD-1, Keith has started update
	Security Vulnerability Assessment Report	18-Sep-06		18-Sep-06	Needed only for nuclear facilities. We have it anyway.
	Cyber Security Plan			16-Oct-06	Steve Webster: not needed if not IT project
	draft doc on High Performance Sustainable Bldg considerations	13-Sep-06		13-Sep-06	FESS Sustainable Design Review Procedure
	final doc on High Performance Sustainable Bldg considerations				LEED checklist by project team @ CD-3
	Begin monthly reports	1-May-06		27-Jun-06	May 2006 report finished June 27,2006



CD-2 Worklist,

Project Management, part 2

NOVA Work List for CD-2 <i>(red means new since last version)</i>		Original Estimated Finish Date	Current Estimate of Finish Date	Actual Finish Date	comments
	1st draft Technical Design Report (blanks identified)	1-Oct-06	6-Oct-06	17-Oct-06	
	2nd draft Technical Design Report, Chapters other than L2 work				
	Ch 1 Executive Summary	20-Jan-07	6-Apr-07		John
	Ch 2 Using the NuMI Beam	9-Nov-06	9-Mar-07	19-Mar-07	Mark, 5 pages
	Ch 3 Updated Science Case	9-Nov-06	9-Mar-07	13-Apr-07	Gary, 11 pages, 4 small sections to go
	Ch 4 Scientific Design Criteria	9-Nov-06	9-Mar-07	11-Apr-07	Mark, 6 pages
	Ch 5 Overview of NOVA Design	9-Nov-06	9-Mar-07		John + Nancy
	Ch 6 Performance of NOVA Design	9-Nov-06	9-Mar-07		have Cooper part on technical design criteria, have Mualem / Caltech multicell test 1st draft, have Shanahan draft part in hand
	Ch 7 WBS structure	9-Nov-06	6-Apr-07		Ron has R&D done except ANU
	Ch 18 Cost, Schedule, Scope	20-Jan-07	6-Apr-07		John
	Appendix A: Guide to Other NOVA Documents	20-Jan-07	9-Mar-07	2-Apr-07	Ron, 4 pgs
	final Technical Design Report	15-Dec-06	14-May-07		final updates, final edit by Project Office will have some missing sections
	update R&D portion of C&S	30-Sep-06	11-Dec-06	15-Dec-06	needs modifications, needs ANU
	final R&D portion of C&S	15-Feb-07	30-Mar-07		Bill will close all of it by 5/1
	draft construction 20 kt Cost & Schedule matching 2005 funding profile	10-Aug-06		15-Aug-06	"match" is approximate
	2nd draft construction 18 kt C & S following technical decisions & 2006 profile	1-Nov-06	15-May-07		April 26: finished model to advance building construction in 08/09. Provided written guidance to L2s
	3rd draft construction 18 kt C&S, adjust to profile	5-Dec-06	1-Jun-07		
	final Cost & Schedule	15-Dec-06	????		full BOE (partial likely, major costs in hand)