



NOvA Project Status

John Cooper & Ron Ray

July 5, 2006



Interactions with DOE

- June 22 NEPA Scoping meeting
 - Attendees: **Jon Cooper**, Steve Webster, Keith Schuh, Bill Griffing, **John Cooper**, Teri Dykhuis, Don Cossairt, Sally Arnold, Peter Sieback, H(?). Unugboji (DOE intern), Vicki Prouty, Paul Kesich
- Officials:
 - Pete Siebach is the NEPA Compliance Officer advising Joanna Livengood
 - Sally Arnold is the NEPA Document Coordinator
 - She controls the document, so we all take our orders from her
 - Vicki Prouty is CH Legal advisor to Joanna, John Cooper should feel free to ask her for advice
- John Cooper gave copies of CDR to above, gave a quick tour of the document, Keith had several overheads with similar info
- Pete on EA vs. CX vs. EIS
 - Accelerator items all seem to naturally land in EA, so Jon C will send memo to Pete, Pete will send formal memo to Joanna
- Sally needs: A "Purpose & Need" statement. Concise, 3-4 sentences.
 - Sally was gone last week, Keith and John will work on statement this week.
- Path Forward: Pete needs the timeline for 5 critical points
 - 1. NEPA determination (by Pete) June
 - 2. Notify both states (who?) July (discussion: notify Wisconsin about increased intensity,? conclude "yes")
 - 3. State/ Public Comment period
 - 4. FONSI drafted
 - 5. FONSI issued
 - Pete suggests "we" (Keith) write an Environmental Impacts Analysis Plan (provided an example from Pacific Northwest National Lab) with narrative of our plan for 3 parts (Minnesota, Fermilab, Tritium) and timeline.



Interactions with DOE

- June 30: Provided pdf of CDR to Mike Procario, he needed it for OECCM
 - OK?



What we need for CD-2 Review

NOvA Work List for CD-2 <small>(red means new since last version)</small>		Early Finish Date	Possible Late Finish Date	Actual Finish Date	comments
Cooperative Agreement					
	Recipient Selected = Site Selection	1-Nov-06	15-Dec-06		
	Negotiations concluded	15-Jan-07	1-Apr-07		Needed or cost estimate is uncertain?
NEPA					
	Scoping Meeting	22-Jun-06		22-Jun-06	
	Environmental Impacts Analysis Plan and 5 point timeline	7-Jul-06			
Minnesota Part					
	RGU (Responsible Government Unit) in place	15-Jan-07			
	Minnesota EAW (site specific)	15-Jan-07	1-Mar-07		This is after the 30 day comment period
	Wetland Permit Processing by USACE	1-Apr-07	1-Dec-07		Need for CD-2, not for CD-2 review
Fermilab NOvA Part					
	Integration Prototype on surface	31-Aug-06			containment, FP
	Near Detector in MINOS access tunnel	31-Aug-06			containment, FP, access issues
	Scintillator Blending & Storage	31-Aug-06			containment, transportation
	Module Factory	31-Aug-06			adhesive ventilation
	Block Raiser construction & tests with load	31-Aug-06			construction activity
	Full scale prototype construction & test	31-Aug-06			construction activity
	Full flat prototype for time & motion study	31-Aug-06			probably at ANL
Fermilab Tritium Part					
	Water Task Force report	21-Sep-06			
Site and Building					
Ash River Site					
	EAW update	1-Nov-06			
	Wetland Permit Application prepared	1-Dec-06			
Other Sites					
	EAW	1-Jul-07	30-Sep-07		
Building					
	Independent Cost & Schedule Review	15-Sep-06	15-Oct-06		
	30% Drawings	15-Dec-06			



What we need for CD-2 Review, page 2

NOVA Work List for CD-2 <small>(red means new since last version)</small>		Early Finish Date	Possible Late Finish Date	Actual Finish Date	comments
Liquid Scintillator					
	Tests of commercial Tintometer	21-Jul-06			device expected July 10
	Fermilab blending model description & cost	15-Aug-06			
	issue RFP for off-site blending	1-Aug-06			
	RFP responses for off-site blending	1-Sep-06			
	evaluate waveshifter concentration				June 27 initial report given
	evaluate pseudocumene concentration				June 27 initial report given
	decide waveshifter/pseudocumene to match fiber diameter	9-Aug-06			
Wavelength Shifting Fiber					
	Updated Kuraray quote	1-Jun-06	1-Jul-06		initial info on June 30, still dealing with vendor
	evaluate fiber diameter	1-Aug-06			
	decide fiber diameter	9-Aug-06			
PVC Extrusions					
	Choose die proof resin (NOVA-2)	5-May-06		5-Jun-06	
	Proof 16 cell die at die manufacturer	26-Jun-06	17-Jul-06		
	Tune 16 cell die at extruder	14-Jul-06	18-Aug-06		includes initial samples
	Issue RFP for 70,000 lb test resin + full detector option	5-Jun-06		23-Jun-06	
	RFP responses for resin	5-Jun-06	21-Jul-06		material delivered 8/25 - 9/1
	Produce 3500 m of 16 cell material, horizontal, rutile	4-Aug-06	15-Sep-06		
	Measure mechanical properties of NOVA-2 in 16 cells	30-Sep-06	15-Oct-06		
	React to measurements of 16-cell extrusions	31-Oct-06			
	Still would have vertical die left to do				4 month turn around on existing die
	Still would have anatase vs. rutile TiO2 choice hanging?				May get enough info during "Tune 16 cell die"
	Order resin for 1500 m of 16 cell material in anatase	15-Aug-06			
	Still would not have final 16 vs 32 cell decision				But would have work around concept/tests



What we need for CD-2 Review, page 3

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PVC Modules					
	final endplate design	31-Aug-06			
	final manifold design	31-Aug-06			
	adhesive choice	30-Sep-06			
	adhesive vs. RF welding	1-Dec-06	1-Apr-07		
	factory stringing machine and flycutting machine	1-Oct-06			
	factory gluing machine	1-Nov-06			
	final overflow tank design (now grouped and part of assembly)				
	Time & Motion studies with 16 cell, 12 ft(early) & 53 ft(later) objects	15-Dec-06			
Electronics					
	Receive 1st 10 APDs from Hamamatsu	1-Oct-06			
	Get updated "target price" of APDs from Hamamatsu	1-Nov-06			
	completed studies of front end ASIC	10-Aug-06			
	Front End Board prototype II testing	6-Oct-06			
Data Acquisition					
	prototype Data Concentrator tests complete	15-Dec-06			
Near Assembly					
	Initial design of mechanical structure				
	Initial design of mechanical systems				
Far Assembly					
	Validation of plane adhesive choice	16-May-06			
	Validation of installation procedures	27-Jul-06	15-Aug-06		
	Validation of structural design	17-Aug-06			
	Initial designs of mechanical systems	30-Sep-06			access, ight tightening, cooling, filling
	Designs of mechanical systems & tooling	8-Jan-07			



What we need for CD-2 Review, page 4

NOvA Work List for CD-2 <i>(red means new since last version)</i>		Early Finish Date	Possible Late Finish Date	Actual Finish Date	comments
Project Management					
	final Project Execution Plan	1-Aug-06			Try to settle this one first?
	final Project Management Plan				
	final Configuration Management Document				
	final Risk Management Plan				
	draft Performance Management System Document (EVMS)	21-Jul-06			
	final Performance Management System Document (EVMS)				
	draft PSAD				
	Outside Review Mechanical Structure: Creep Mitigation	1-Sep-06			
	1st draft Technical Design Report (blanks identified)	1-Oct-06			Project Office produces draft 1
	2nd draft Technical Design Report (50% blanks filled)	1-Nov-06			updates from L2 Managers
	final Technical Design Report	15-Dec-06			final updates, final edit by Project Office
	draft 20 kt Cost & Schedule matching funding profile	10-Aug-06			
	final Cost & Schedule	15-Dec-06			??

- NOvA Technical Board (all L2s) saw this work list in our June 28 meeting
 - Source of some of the changed dates
 - They know we are aiming at a CD-2 Director's Review in January.....



Sufficient Project Personnel?

- Some identified needs
 - **Administrative support high level full time**
 - Req almost in system? (**Strait meeting with Montgomery on this one**)
 - **Help for monthly report startup**
 - Could be admin person?
 - **More engineering on Block Raiser**
 - Final design, staged design allowing test phase?
 - Dave Pushka & Vic Guarino taking a few weeks to go back to basics before proceeding -- Still talking, not yet agreeing, **but creeping closer to resolution**
 - More PPD effort
 - likely will want FEA to confirm hand calculations
 - **More engineering & help on Near Detector**
 - Leon Beverly? John Voirin? Both familiar with shaft & tunnel.
 - Installation transport, containment, fire protection, mobility
 - Have Karen Kephart, lost Rob Plunkett, have ANL engineers
 - Peter Lucas is new L3, Vic Guarino looking at issues



Sufficient Project Personnel?

- More identified needs
 - **Scintillator Blending**
 - Visit to Renkert Oil April 27: possible blending in Minneapolis
 - Still a **long** way from concluding this could work without substantial risk to performance
 - Starting to put together an RFP for outside blending to test the waters
 - **Then** work on structure, containment, pump skid specification if in house
 - Thinking about prototype mix for early 2007 in house
 - Involve PPD process control group?
 - **Meeting with L2, L3s, Bob Cibic June 29**
 - **QA step length is critical parameter**
 - » **Tintometer July 10, might be a 30 second measurement**
 - » **developing 2 devices to check it, they might take an hour for each measurement**
 - » **Current device takes 3 hours and must be monitored during measurement**
 - **Bob C. developing a list of bidders, goal is “August” for RFP and in-house.**
 - **Thinking to visit an outside blender so we don’t invent too much for a Fermilab model**
 - **QA person, part time probably OK for now.....**
 - No progress
 - **Electronics infrastructure and Slow Controls**
 - Italy for Slow controls, but when?, Leon Beverly for infrastructure?
 - Craig Dukes (Univ of Virginia) as new L3
 - understands Italians eventually, already working with them
 - asked John Oliver and Dave Pushka to look harder at the power and cooling issues across L2 boundaries