

CLASSIFICATION (When Filled In)

CONTRACT PERFORMANCE REPORT							FORM APPROVED		
FORMAT 5 - EXPLANATIONS AND PROBLEM ANALYSES							OMB No. 0704-0188		
1. CONTRACTOR		2. CONTRACT			3. PROGRAM		4. REPORT PERIOD		
a. NAME Fermi National Accelerator		a. NAME			a. NAME NOvA Project		a. FROM (YYYYMMDD) 2008/12/01		
b. LOCATION (Address and City) Batavia, Illinois		b. NUMBER			b. PHASE		b. TO (YYYYMMDD) 2008/12/31		
		c. TYPE	d. SHARE RATIO		c. EVMS ACCEPTANCE (YYYYMMDD) NO X YES				
1.8 Detector Assembly R&D									
	BCWS	BCWP	ACWP	SV in \$	SV in %	CV in \$	CV %	SPI	CPI
Current:	50,788	21,031	81,415	-29,757	-59%	-60,384	-287%	0.41	0.26
Cumulative	919,841	865,571	1,628,883	-54,270	-6%	-763,312	-88%	0.94	0.53
	BAC	EAC	VAC in \$	VAC in %	CPI to BAC	CPI to EAC			
At Complete	2,850,906	3,612,130	-761,224	-27%	1.62	1.00			
Thresholds Exceeded: Current Period Schedule, Current Period Cost, Cumulative Cost									
Explanation of Variance/Description of Problem: Cumulative Cost and Schedule Variance The cumulative cost variance is largely due to the fact that several technical issues with the detector structure and its assembly remained unresolved, or the level of effort needed to complete the design was underestimated. The largest cost to this task is labor, both within FNAL and purchased from ANL. Through November, \$778K has been purchased from ANL (P.O. 563811). The most significant variances are due to two categories of work: W.B.S. 1.8.2 - Structural Design Validation, \$283K – 64% complete Labor estimates for the structure analysis were too low, contributing to an overrun in cost and schedule here. The design of the Far Detector was developed as the understanding of internal stresses improved, so the overall time and cost overran the schedule. WBS 1.8.8 - Far Detector Prototypes, \$791K - 19% complete Technical problems with the module lifting fixture and the prototype adhesive dispenser have slowed work on these items, so they remain incomplete. Lifting fixture work has required more effort than anticipated to obtain a reliable vacuum connection between the fixture and the module. The adhesive dispense work was delayed while several safety questions, which had not been anticipated, were resolved. The adhesive pump that was obtained for the dispenser proved unsuitable, due to an unforeseen problem with clogging in the pumping mechanism. All these issues have delayed completion of the prototype program. An order for a replacement pump was placed in December and all safety issues with the dispenser mechanism have been addressed. A new vacuum cup system was designed for the lifting fixture, and early tests indicated that the reliability needed for this system may be achieved soon. Current Period Cost and Schedule Variance The current period variance is due to the same issues discussed above. Little progress could be claimed for the assembly tooling.									
Impact: Readiness for the FSAP construction has been delayed, but the schedule for the construction studies is still achievable. No major milestones are affected.									
Corrective Action: A new adhesive pump was identified and ordered. This new device appears to have the ability to deliver the quantity of adhesive we require. Delivery is anticipated in Feb., 2009. Several variations on the lifting fixture suction cups have been studied, and more modifications to the lifting fixture are planned to make these connections more reliable. The latest version appears to have the potential to meet our requirements.									
Monthly Summary (to include technical causes of VARs, Impacts) and Corrective Action(s): Problems with the vacuum lifting fixture and safety issues surrounding the adhesive dispenser contributed to delays in the project. A new adhesive dispenser was identified and ordered that should meet or needs. Work continues on improving the reliability of the lifting fixture.									
Prepared by: Pat Lukens			Date:			Approved by:			Date: