NuMI

MINOS

September 16, 2005

TO: Steve Webster
DOE Project Director, NuMI

FROM: Greg Bock
Fermilab NuMI Project Manager

**SUBJECT: NuMI Monthly Report**

Attached is the final monthly report for the Fermilab NuMI Project.

Att.

cc: Distribution

# Neutrinos at the Main Injector (NuMI) Project

**Project No. 98-G-304**
**Progress Report No. 75**
**February 1-28, 2005 (Final Report)**
**(G. Bock, D. Bogert - Editors)**
**(NuMI-1077)**

## I. PROJECT DESCRIPTION

The NuMI Project provides for the construction of an intense, variable energy, beam of neutrinos using the Fermilab Main Injector, as well as large underground neutrino detectors located at Fermilab and Soudan, Minnesota. The purpose of the project is to enable a new generation of long baseline neutrino experiments that can decisively detect and accurately measure neutrino oscillations. Detection of such oscillations would firmly establish a non-zero value of neutrino mass. The neutrino beam will be of sufficient energy that experiments capable of identifying muon neutrino to tau neutrino oscillations are feasible. The scope of the NuMI Project includes the excavation of large underground laboratories to house the neutrino beam system and the MINOS detectors.

## II. OVERVIEW OF PROJECT STATUS – G. Bock

The NuMI Project is 100% completed. This is the final report.

On February 17 an Office of Science review of the NuMI project concluded that all the technical goals for the NuMI Project had been met. On February 28, 2005 CD-4 was granted, some seven months ahead of the DOE milestone date. At that time there was one punch list item: the connection of a water chiller that had been delivered. The chiller was subsequently installed and made operational on March 11, 2005.

On March 4 the NuMI Project was dedicated and celebrated by a large group of distinguished guests from Congress, the Department of Energy, local governments, contractors, project staff, MINOS collaboration members, and many members of the Fermilab community.

Since March routine operations of the NuMI beam and MINOS experiment have been underway. The operation and maintenance of the facility have been fully integrated into routine Laboratory operations. The NuMI project organization has been dissolved and all members of the project have been re-assigned. The MINOS experiment is collecting neutrino events at both the Fermilab and Minnesota sites. The number of integrated protons delivered to the NuMI target has exceeded the plans.

Financial closeout of the project is now complete. The final directive was approved August 31, 2005. The final cost of the TEC is $108,148K, about $1,014K less than the authorized amount. The final cost of the OPC is $59,604K, about $2,596K less than the authorized amount.

There were no injuries on the NuMI project during this final period.

More detailed information follows in the rest of this report.

## III. MASTER SCHEDULE AND FUNDING SUMMARY

The NuMI DOE Project Master Schedule is shown in Figure 1.

The DOE baseline milestones are shown in the figure as solid squares. These fixed milestones are defined in the DOE Project Execution Plan and the Baseline Change Proposal approved in December 2001. Shown as diamonds on the same line are the project's baseline projected dates for achieving the milestones. Actual dates of achieving milestones are shown as inverted black triangles.

Our actual progress is indicated by black 'thermometer' lines within the horizontal (baseline schedule) bars.

A Table titled "DOE Milestones vs. Current Forecast" follows immediately after the Project Master Schedule. That table lists all the approved Level 0-1-2 DOE milestone dates along with the project's current (and previous month's) forecast for achieving them. The list is sorted by DOE Milestone date. Milestones with forecast dates that have changed significantly in the last month are discussed in Section VIII of this report.

As always the TEC and OPC profiles are presented in the Funding Summary.

# NuMI Project
## (Fiscal Years)

7/5/05

| Description | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Critical Decisions** | | | | | | | | | | |
| CD-1 Approve Mission Need | L-0-1 | | | | | | | | | |
| CD-2 Approve Baselines | | | L-0-2 | | | | | | | |
| CD-3a Start Limited Construction | | | L-1-1 | | | | | | | |
| CD-3b Continue Construction | | | L-1-2 | | | | | | | |
| CD-4 Start Operations | | | | | | | | | | L-0-3 |
| **Technical Components** | | | | | | | | | | |
| Tech Components Design | | | | | | | | ** Complete ** | | |
| Top of Soudan #8 Mineshaft Located with GPS | | | L-2-2 | | | | | | | |
| Tech Components Construction | | | | | | | | ** Complete ** | | |
| High Current Pulse into Prototype Horn | | | | L-2-4 | | | | | | |
| Magnets for MI Stub Refurbished | | | | | L-2-8 | | | | | |
| Pre Bene Occup Tech Components Installation | | | | | | | | ** Complete ** | | |
| Post Bene Occup Tech Components Installation | | | | | | | | | ** Complete ** | |
| Technology Choice Made for Muon Monitors | | | | | | L-2-16 | | | | |
| Inner & Outer Conductors for First Production Horn Assen | | | | | | | L-1-6 | | | |
| Lambertson & C-Magnets Assembled & Tested | | | | | | | L-2-12 | | | |
| Complete Installation of Horn Power Supply | | | | | | | | | L-2-17 | |
| First Horn Installed | | | | | | | | | | L-2-13 |
| MI Stub Installation Complete | | | | | | | | | | L-2-15 |
| **Conventional Construction** | | | | | | | | | | |
| Facility Construction Title I Design Phase | | ** Complete ** | | | | | | | | |
| Facility UG Construction Title II Design Phase | | | ** Complete ** | | | | | | | |
| Site Prep & Util Title II Design | | | ** Complete ** | | | | | | | |
| Execute Site Prep & Util (Site Work) Sub-Cont | | | ** Complete ** | | | | | | | |
| NTP Issued for Fermilab Underground Subcontract | | | | L-2-3 | | | | | | |
| Execute Fermi Underground Sub-Cont | | | | | | | ** Complete ** | | | |
| Fermilab Underground Construction 50% Complete | | | | | | L-2-5 | | | | |
| Near Detector Hall Excavation Complete | | | | | | | L-2-7 | | | |
| Target Hall Excavation Complete | | | | | | | L-1-5 | | | |
| Service Building & Outfitting Bid Package Out | | | | | | | L-1-10 | | | |
| Svc Bldgs Erect & Outfit | | | | | | | | ** Complete ** | | |
| Target Service Building Shell Complete | | | | | | | | L-2-18 | | |
| Beneficial Occupancy of Service Buildings at Fermilab | | | | | | | | | L-2-11 | |
| **Project Management** | | | | | | | | | | |
| Start Commissioning Beam Line | | | | | | | | | | L-1-9 |
| System Commissioning | | | | | | | | | ** Complete ** | |
| **MINOS Detector Construction** | | | | | | | | | | |
| Plane Prototype | | | ** Complete ** | | | | | | | |
| MINOS Steel Purchase Subcontract Awarded | | | L-2-1 | | | | | | | |
| Near Detector Prototype Erected | | | | L-1-3 | | | | | | |
| Final Detector Design | | | | ** Complete ** | | | | | | |
| Near Steel Procurement | | | | | ** Complete ** | | | | | |
| Far Steel Procurement | | | | | | | | ** Complete ** | | |
| Mod Tech Factory Commissioned | | | | | L-2-6 | | | | | |
| Scintillator Module Production | | | | | | ** Complete ** | | | | |
| % Scintillator Produced | | | | | | | L-2-19 | | | |
| Super-Module Installation | | | | | | | | ** Complete ** | | |
| Cosmic Rays Observed in Far Detector | | | | | | L-2-10 | | | | |
| First Far Detector Super Module Complete & Tested | | | | | | | L-1-7 | | | |
| Mod Super-Module Installation | | | | | | | | ** Complete ** | | |
| Near Detector Plane Pre-assembly Complete | | | | | | | | L-2-20 | | |
| Near Detector Installation | | | | | | | | | ** Complete ** | |
| Start Commissioning with Both Far and Near DAQ | | | | | | | | | L-2-21 | |
| Near Detector Complete & Tested | | | | | | | | | | L-2-14 |
| Far Detector Complete & Tested | | | | | | | | | L-1-8 | |
| **Soudan Cavern** | | | | | | | | | | |
| Soudan Cavern Excavation | | | | ** Complete ** | | | | | | |
| Far Detector Excavation Complete | | | | | L-1-4 | | | | | |
| Soudan Cavern Outfitting | | | | | ** Complete ** | | | | | |
| Outfitting of Far Detector Enclosure Complete | | | | | | L-2-9 | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NuMI_Master_Sched 7/5/05 | Baseline Task | Summary Task | FNAL Current Projection | FNAL Forecast |
| | Critical Task | DOE Baseline Milestone | Milestone Complete | Task Status |

# DOE Milestone vs Current Forecast
## (Sorted by DOE Milestone Date)

3/18/2005

| Milestone Description | PEP Milestone # | DOE Milestones (As of 12/2001) | Last Month's Forecast Milestone (1/2005) | Current Month's Forecast Milestone (2/2005) | DOE Milestone Variance (Cal Days) | Monthly Variance (Cal Days) | Notes |
|---|---|---|---|---|---|---|---|
| CD-1 Approve Mission Need | L-0-1 | 3/17/1997 | 3/17/1997 | 3/17/1997 | 0 | 0 | Complete |
| CD-3a Start Limited Construction | L-1-1 | 2/15/1999 | 2/23/1999 | 2/23/1999 | (8) | 0 | Complete |
| CD-2 Approve Baselines | L-0-2 | 2/17/1999 | 2/17/1999 | 2/17/1999 | 0 | 0 | Complete |
| CD-3b Continue Construction | L-1-2 | 3/31/1999 | 5/21/1999 | 5/21/1999 | (51) | 0 | Complete |
| MINOS Steel Purchase Subcontract Awarded | L-2-1 | 4/1/1999 | 3/15/1999 | 3/15/1999 | 17 | 0 | Complete |
| Top of Soudan #8 Mineshaft Located with GPS | L-2-2 | 6/28/1999 | 6/16/1999 | 6/16/1999 | 12 | 0 | Complete |
| Far Detector Prototype Erected | L-1-3 | 1/17/2000 | 11/10/1999 | 11/10/1999 | 68 | 0 | Complete |
| NTP Issued for Fermilab Underground Subcontract | L-2-3 | 3/6/2000 | 3/6/2000 | 3/6/2000 | 0 | 0 | Complete |
| High Current Pulse into Prototype Horn | L-2-4 | 3/14/2000 | 7/14/2000 | 7/14/2000 | (122) | 0 | Complete |
| CalTech Factory Commissioned | L-2-6 | 9/29/2000 | 9/1/2000 | 9/1/2000 | 28 | 0 | Complete |
| Far Detector Excavation Complete | L-1-4 | 10/2/2000 | 12/22/2000 | 12/22/2000 | (81) | 0 | Complete |
| Fermilab Underground Construction 50% Complete | L-2-5 | 2/6/2001 | 6/29/2001 | 6/29/2001 | (143) | 0 | Complete |
| Magnets for MI Stub Refurbished | L-2-8 | 4/30/2001 | 4/30/2001 | 4/30/2001 | 0 | 0 | Complete |
| Outfitting of Far Detector Enclosure Complete | L-2-9 | 4/30/2001 | 7/19/2001 | 7/19/2001 | (80) | 0 | Complete |
| Cosmic Rays Observed in Far Detector | L-2-10 | 3/22/2002 | 8/31/2001 | 8/31/2001 | 203 | 0 | Complete |
| Technology Choice Made for Muon Monitors | L-2-16 | 5/30/2002 | 12/10/2001 | 12/10/2001 | 171 | 0 | Complete |
| Service Building & Outfitting Bid Package Out | L-1-10 | 7/30/2002 | 2/25/2002 | 2/25/2002 | 155 | 0 | Complete |
| 75% Scintillator Produced | L-2-19 | 8/30/2002 | 5/24/2002 | 5/24/2002 | 98 | 0 | Complete |
| Near Detector Hall Excavation Complete | L-2-7 | 12/30/2002 | 8/30/2002 | 8/30/2002 | 122 | 0 | Complete |
| Target Hall Excavation Complete | L-1-5 | 12/30/2002 | 10/4/2002 | 10/4/2002 | 87 | 0 | Complete |
| Lambertson & C-Magnets Assembled & Tested | L-2-12 | 2/1/2003 | 10/31/2002 | 10/31/2002 | 93 | 0 | Complete |
| First Far Detector Super Mod Complete & Tested | L-1-7 | 3/15/2003 | 7/24/2002 | 7/24/2002 | 234 | 0 | Complete |
| Inner & Outer Conductors for First Production Horn Assembled | L-1-6 | 4/14/2003 | 2/5/2003 | 2/5/2003 | 68 | 0 | Complete |
| Target Service Building Shell Complete | L-2-18 | 9/30/2003 | 6/17/2003 | 6/17/2003 | 105 | 0 | Complete |
| Near Plane Pre-assembly Complete | L-2-20 | 10/10/2003 | 12/17/2002 | 12/17/2002 | 297 | 0 | Complete |
| Far Detector Complete & Tested | L-1-8 | 4/25/2004 | 7/9/2003 | 7/9/2003 | 291 | 0 | Complete |
| Beneficial Occupancy of Service Buildings at Fermilab | L-2-11 | 5/31/2004 | 3/10/2004 | 3/10/2004 | 82 | 0 | Complete |
| Start Commissioning with Both Near and Far DAQ | L-2-21 | 8/30/2004 | 8/2/2004 | 8/2/2004 | 28 | 0 | Complete |
| Complete Installation of Horn Power Supply | L-2-17 | 9/1/2004 | 5/28/2004 | 5/28/2004 | 96 | 0 | Complete |
| MI Stub Installation Complete | L-2-15 | 3/11/2005 | 11/11/2004 | 11/11/2004 | 120 | 0 | Complete |
| Near Detector Complete & Tested | L-2-14 | 3/31/2005 | 1/20/2005 | 1/20/2005 | 70 | 0 | Complete |
| First Horn Installed | L-2-13 | 4/7/2005 | 6/1/2004 | 6/1/2004 | 310 | 0 | Complete |
| Start Commissioning | L-1-9 | 9/1/2005 | 12/3/2004 | 12/3/2004 | 272 | 0 | Complete |
| CD-4 Start Operations | L-0-3 | 9/30/2005 | 2/28/2005 | 2/28/2005 | 214 | 0 | Complete |

## IV. FUNDING SUMMARY (K$)

Funding Summary (as of 2/28/2005), amounts in thousands

| YEAR | TEC (NuMI Facility) Appropriations | OPC (MINOS, Soudan) Obligations<br>Actual costs through FY04. Plan from Baseline Change Proposal |
|---|---|---|
| Prior FY's | 0 | 1,417 actual |
| FY98 | 5,500 | 2,348 actual |
| FY99 | 14,300 | 4,114 actual |
| FY00 | 22,000 | 11,324 actual |
| FY01 | 22,949[1] | 13,598 actual |
| FY02 | 11,400 | 17,227 actual |
| FY03 | 19,842[1,2,3] | 7,067 actual |
| FY04 | 12,426[2,4] | 2,109 actual |
| FY05 | 745[2,3,4,5] | 2,996 |
| **TOTALS** | **109,162** | **62,200** |

Note [1]: FY01 Rescission removed $51K from plant line and $26K from OPC. We planned the restoration of these funds in FY03.

Note [2]: FY03, FY04, and FYY05 plant line funds as recommended for inclusion in the Baseline Change Proposal by the September DOE Review and approved in December 2001. This is the $33.042M in additional funding in the rebaseline proposal from Project Management.

Note [3]: FY03 Rescission removed $251K from plant line. We show the restoration of these funds in FY05.

Note [4]: FY04 Rescission removed $73.750K from plant line. FY05 Rescission removed $6.256K. This funding was NOT restored and the TPC of the project was correspondingly reduced.

**TEC Funding Appropriated,**
**Not yet authorized**
0[5]

**Total TEC funding authorized**
109,162[5]

**TEC Obligations to date, (Not including requisitions in progress)**
108,169 59,562 **OPC Obligations to date**

**TEC Funding authorized but not obligated**
993

Note [5]: Full FY05 allocation.

## IV. FINAL FUNDING SUMMARY ($K)

Funding Summary (as of 6/30/2005), amounts in thousands

| YEAR | TEC (NuMI Facility) Appropriations | OPC (MINOS, Soudan) Obligations |
|---|---|---|
| | | **Actual costs through FY05. Plan from Baseline Change Proposal** |
| Prior FY's | 0 | 1,417 actual |
| FY98 | 5,500 | 2,348 actual |
| FY99 | 14,300 | 4,114 actual |
| FY00 | 22,000 | 11,324 actual |
| FY01 | 22,949[1] | 13,598 actual |
| FY02 | 11,400 | 17,227 actual |
| FY03 | 19,842[1,2,3] | 7,067 actual |
| FY04 | 12,426[2,4] | 2,109 actual |
| FY05 | 745[2,3,4,5] | 400 actual |
| | | 2,596 unused |
| **TOTALS** | **109,162** | **62,200** |

Note [1]: FY01 Rescission removed $51K from plant line and $26K from OPC. We planned the restoration of these funds in FY03.

Note [2]: FY03, FY04, and FYY05 plant line funds as recommended for inclusion in the Baseline Change Proposal by the September DOE Review and approved in December 2001. This is the $33.042M in additional funding in the rebaseline proposal from Project Management.

Note [3]: FY03 Rescission removed $251K from plant line. We show the restoration of these funds in FY05.

Note [4]: FY04 Rescission removed $73.750K from plant line. FY05 Rescission removed $6.256K. This funding was NOT restored and the TPC of the project was correspondingly reduced.

**TEC Funding Appropriated, Not yet authorized**
0[5]

**Total TEC funding authorized**
109,162[5]

**TEC Obligations/Costs (Final)**
108,148 — 59,604 **OPC Obligations/Costs (Final)**

**TEC Funding authorized but not obligated**
1,014 — 2,596 **OPC Funds not obligated**

Note [5]: Full FY05 allocation.

# V. NARRATIVE HIGHLIGHTS

## MANAGEMENT HIGHLIGHTS – G. Bock

CD 4 was achieved on February 28, 2005, seven months ahead of the DOE Milestone date of September 30, 2005.

## Procurement Highlights – R. Huite

Complete.

## NuMI FACILITY AT FERMILAB TECHNICAL COMPONENTS (WBS 1.1) – B. Baller, N. Grossman

### Overview

With the exception of the installation of the target chase air chiller, all work was completed during the month of February.

The chiller installation was completed in March.

Regular operation of the NuMI facility then began.

## Integration and Installation – R. Andrews

### Main Injector:

COMPLETE.

### MI-65:

During the month of February 2005 the focus of the installation team was to complete installation activities in the Target Hall and support rooms and prepare for beam operations. Work continued on the installation of the Target Chase Air Cooling System for cooling of the horn and target modules. Supply and Return piping along with the distribution manifold was completed to the heat exchanger coils in the return ductwork. Interconnecting wires and tubing were routed and terminated to instrumentation devices and various control and monitoring panels. The system was tested and airflows adjusted for final operation of the system.

A final survey of all beam line devices in the Carrier and Pre-Target tunnels was completed. The "R" block cover over the horn and target modules was placed and sealed and tested for leakage. Controls were added and final adjustment made to ventilating devices in the facility to control air dissipation to the outside world. Facilities for instrument gases were added into the support rooms.

Installation of the 140 ton chiller unit for the Target Chase Cooling System in the RAW room concluded installation activities for the MI-65 Target area.

**MINOS:**

This area is essentially COMPLETE:

1. The bottle racks that supply the Muon Chambers have been moved from the tunnel to the MINOS Service Building.

2. A heat run of the coil was done to verify the operating parameters after setting up the flow interlock, balancing the detector to monitor the coil voltage and the over current interlock.

**Primary Beam (WBS 1.1.1) – S. Childress**

**Overview**

WBS 1.1.1 is now fully complete.

**Beam Permit System – R. Ducar**

The NuMI Beam Permit System continued its excellent performance in support of beam commissioning activities in February. Work continued on the implementation of "Main Injector Beam Quality" inputs. New electronics that support monitoring for beam presence in the extraction kicker gap were installed and tested. The "Golden File" was modified to provide tighter limits on the major bend and quadrupole power supplies (+/- 0.5% and +/- 2% respectively). Loss monitor trip points were reduced by two orders of magnitude from those of the December and January runs. Slides were prepared to afford an "Operational Tour" of how to use the Beam Permit System console facilities as an aid to commissioners and operators.

**Neutrino Beam Devices (WBS 1.1.2) – J. Hylen, K. Anderson, D. Ayres, A. Stefanik**

**I. Magnetic Focusing Horns and their Modules**

All work on horns and modules is done.

**II. Target, Baffle, Carrier and Module**

All work on target, baffle, carrier and target module is done.

**III. Target Hall Shielding / Cooling**

***Re-circulating Air Cooling System.***

The chiller for the target hall re-circulating air cooling system was received from the vendor in February. This was the last remaining major equipment item. Piping to the chiller and power connections were installed.

About one week or so into March, we were able to run the chiller manually, at which point it was used to remove beam heating. Bringing the system under remote computer control and programming it to automatically track beam heating levels took another two weeks after that.

Commissioning and checkout of the beam at low repetition rate, up to full intensity of protons per spill, was done without the chiller and in parallel with chiller commissioning. High power running (high intensity at high repetition rate) required the chiller to be operational.

Check-out of the re-circulating air fan system, balancing of air flows and sealing of air leaks was done in February.

***Shielding.***

All shielding is in place.

**IV. Radioactive component handling**

Radioactive component handling tests are complete.

We installed a scale on the West wall of the target hall for the crane camera system.

**V. Instrumentation/Electronics**

Some instrumentation work (related to the chiller system) remains.

**VI. Beam tests**

The horn/target systems have been running and functioning normally during commissioning beam tests.

**Power Supply Systems (WBS 1.1.3) – G. Krafczyk**

**Horn Power Supply (K. Bourkland)**

Complete.

**Extraction Kicker Power Supply (C. Jensen)**

Complete.

**Conventional Power Supplies (S. Hays)**

Complete.

**Decay Region & Hadron Absorber (WBS 1.1.4) – D. Bogert, C. James**

Complete.

## Neutrino Beam Monitoring (WBS 1.1.5) – D. Harris, S. Kopp

**Hadron Monitors:**

Complete.

**Muon Monitors:**

Complete.

## Survey, Alignment & Geodesy (WBS 1.1.6) – W. Smart

Two nights of astronomical observations produced a precise verification of the azimuth between sight risers 2 and 3. The internal standard deviation of these measurements was 0.21 arc seconds and the result agreed with our previous measurement (by other methods) to 0.74 arc seconds.

Final alignment of the proton beam elements downstream of the Hobbit door in the pre-target area was completed early in the month. As found and other corrections for the profile monitors and BPM's which measure the position of the primary proton beam were calculated and collected for use in correcting the raw measurements of these instruments.

Relative height measurements were made of the near detector east rail and survey monuments downstream of the MINOS shaft to check for any changes since the weight of the detector was installed.

The survey engineer effort for NuMI in February was 2.9 mw, with 1.0 mw used for astronomical observation of to improve the measurement of sight riser 2 and 3 positions, 0.5 for checks, computations, and calculations for the final alignment of instrumentation and Target Hall components, and 1.4 mw to final align beam components in pre-target.

## Beamline Utilities (WBS 1.1.7) –D. Pushka

Complete. Systems are fully operational.

## Controls, Interlocks and Cable Installation (WBS 1.1.8) – R. Ducar

While WBS 1.1.8 activities were essentially completed in January 2005, a few minor activities remained and were completed in February. A variable frequency drive (VFD) was installed for the exhaust fan at EAV-3 to afford control of lower airflow during operations. The VFD replaced a fixed speed across the line starter. The air damper controls at both Target Hall and MINOS were validated. It was verified that both of these dampers close and selected airflows were reduced to desired values automatically upon establishment of the CDC Permit. Status of the air dampers being closed is formed as necessary inputs to the Beam Permit System.

Electrical activities, under the supervision of the WBS 1.1.8 Level 3 Manager, were again concentrated at MI-65, mostly underground and directly related to installation of the Target Pile Cooling System. A salvaged end rack and associated electrical power was added to equipment rack THSR101 to accommodate various modules and wiring for the Target Pile Cooling System PLC. With the long-awaited arrival of the refrigeration and glycol pump skid in the RAW

Room, electrical installations were finally able to proceed. The remote control and status panel for the skid was mounted in the Power Supply Support Room. Various conduits for AC power and control and instrumentation wiring were installed. A coordinated utility power shutdown enabled connection of 480 VAC service to both the refrigeration skid and the duct reheater control panel. Other electrical activities included providing utility power for kicker instrumentation, installation of a remote control cable for the 13.8 kV disconnect switch at MI-65, and connection of valve actuators on the Horn 1 and Horn 2 RAW skids.

**MINOS DETECTORS (WBS 2.0) – R. Rameika**

In February the MINOS Detectors operated routinely. Many neutrino interactions have been recorded and are being analyzed. Except for costs associated with project close out (WBS 2.6) all aspects of the MINOS Detectors were complete at the end of February.

All work is now complete.

## VI. ES&H HIGHLIGHTS – M. Andrews

### Management Overview – M. Andrews

Until project completion, Mike Andrews, the NuMI Project ESH Coordinator continued to provide ES&H support for the Installation and Commissioning Phases of the NuMI Project. His primary efforts continued to be to provide ESH support to the NuMI Project managers, floor managers and task managers for all installation and commissioning activities. He also provided oversight of the implementation of the Time and Materials and Fixed Price subcontractor's safety programs, which included concurring with the subcontractor on where improvements are needed and the priority for those improvements. Additional efforts included attending pre-shift safety meetings at MI-65, attending work planning meetings at MINOS, hazard analysis review and participating in daily and weekly ES&H Inspections with the site Floor Manager and representatives from the DOE Fermi Area Office.

The NuMI Project ESH Coordinator chaired a weekly meeting with members of NuMI project management team to discuss work planning issues, ESH/QA review updates and issues, equipment/system testing, hazard analysis issues, training issues, facility safety issues, and general ES&H program issues

ES&H support personnel and NuMI/MINOS floor managers for the installation phase of the project continued to meet on a daily basis to discuss the daily schedule, upcoming tasks, related ESH requirements, hazard analysis, ESH training and other ESH issues until CD4 was achieved. They also reviewed and planned for upcoming tasks in the schedule. This effort is now complete.

### NuMI Beam Safety Issues – M. Andrews

Until project completion, the NuMI Project ESH Coordinator (Mike Andrews) and the NuMI ES&H/QA Committee Chair (Keith Schuh) met to discuss and coordinate the process for completing upcoming equipment reviews by the committee. They also discussed the status of reviews, which are now complete. The ESH/QA review committee completed reviews of the

Target Pile Air Cooling System, and supplemental ODH reviews of the TRANE cooling system in the absorber area and the muon alcove nitrogen gas system in the MINOS shaft. All ESH/QA reviews have now been completed for the NuMI/MINOS Project.

The NuMI Project ESH Coordinator continued to meet with Particle Physics Division, Accelerator Division ESH Department and AD Operations Department to discuss transitional issues. The transition issues included Search & Secure, Building and Underground access, Building Management, PPE requirements, and ESH Training

Weekly Installation Meetings have concluded between NuMI Project ES&H personnel, Floor Managers and L2/L3 Managers. The topics discussed included installation schedule, testing/commission schedules, equipment ESH/QA reviews and general coordination issues.

**Installation Safety – M. Andrews**

A daily meeting was held between the Installation Coordinator(s), MI-65 Floor Managers, the NuMI Project ES&H Coordinator, and the Field Safety Coordinator to discuss installation activities for the day, upcoming activities, hazards analyses, installation procedures and ES&H/QA review status.

NuMI Project Management, FNAL ES&H Section, and DOE Area Office performed multiple ES&H reviews and audits during the month of February 2005. NuMI Project Management conducted ES&H Inspections on February 3rd, 10th, 17th, and 24th, 2005. Results of an inspection were communicated to the MI-65 and MINOS Floor Managers at the close out meeting held immediately following the inspection.

The Floor Managers continued to hold work planning meetings with all site workers, which include a review of task hazards. T&M subcontractor personnel held weekly toolbox meetings. NuMI Project Management continued to monitor these meetings.

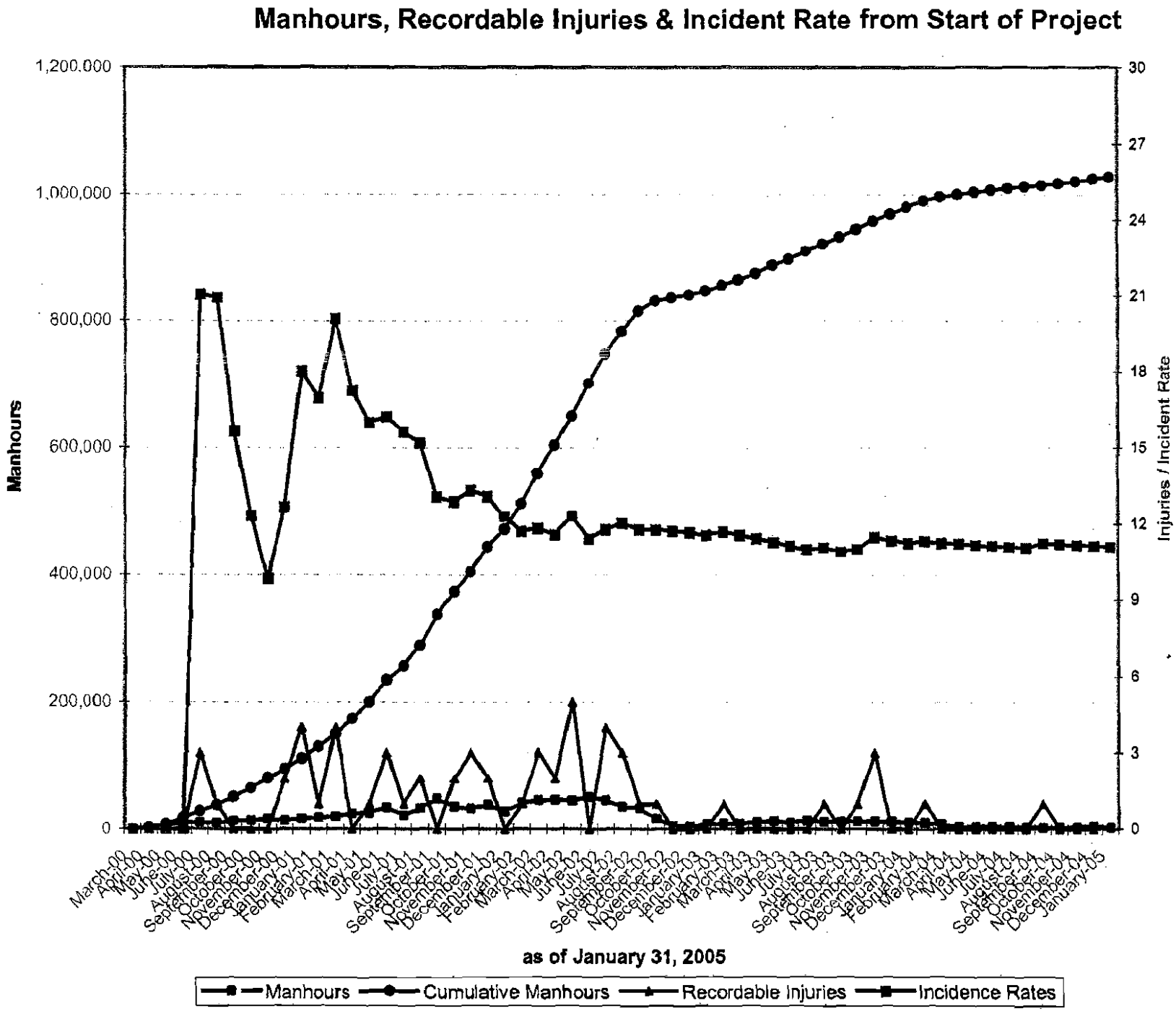
Task Managers continued to develop task related HA's and submitting Hazard Analysis documentation for review and acceptance to the NuMI Field Safety Coordinator for all new tasks. ESH personnel and Floor Managers also met with members of the Fermi support groups to review tasks and explain the requirements to complete those tasks, as they related to schedule and ESH.

There were no OSHA-recordable injuries during the month of February 2005.

The NuMI Project had completed 166 days without an OSHA-recordable injury or illness.

**Project Safety Performance**

Safety Performance for the NuMI Construction/Installation Project for 2005 Calendar Year to Date includes a Recordable Incident Rate of 0.0, a Lost Time Incident Rate of 0.0, and a Lost Workday Incident Rate of 0.0. The Project to Date Safety Performance includes a Recordable Incident Rate of 11.1, a Lost Time Incident Rate of 2.5, and a Lost Workday Incident Rate of 7.0. Figure 2 shows man-hours worked, and recordable injury and incident rates from the start of the NuMI construction subcontracts through February 2005.


Manhours, Recordable Injuries & Incident Rate from Start of Project
Manhours
Injuries / Incident Rate
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
30
27
24
21
18
15
12
9
6
3
0
March-00
April-00
May-00
June-00
July-00
August-00
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February-04
March-04
April-04
May-04
June-04
July-04
August-04
September-04
October-04
November-04
December-04
January-05
as of January 31, 2005
Manhours
Cumulative Manhours
Recordable Injuries
Incidence Rates

**Radiation Safety – N. Grossman**

The ARR Form from FESHM 2010 was signed in December, giving the NuMI Project approval to operate. The ARR report gave recommendations to be completed by project completion in 2005. All these recommendations have been addressed and completed. The responses are posted on the DOE Review for CD-4 web page: http://www-numi.fnal.gov/doefeb05review/index.html. All tasks that needed to be completed for full intensity beam operation have been completed. All documentation and forms for full intensity beam operation have been completed. A summary of much of this documentation is on the DOE Review for CD-4 web page.

## VII. LEVEL 3 MILESTONES

The current NuMI/MINOS Level 3 Milestones are shown in Figure 3. Milestones for the period 8/04 to 9/05 are shown. The triangles are the fixed Fermilab milestones. Note that we show L3 milestones along with the new "L-3-n" identifiers. Actual dates of achieving milestones are shown as black diamonds. Currently projected dates for achieving milestones are shown as hollow diamonds. Projected milestone dates which differ from the fixed Fermilab milestone dates by more than two weeks are flagged as **<Late>** or **<Early>**.

## VIII. VARIANCE ANALYSIS – G. Bock

**DOE Milestones and Project Costs**

Milestone L-0-4 (Start Operations) was achieved February 28, 2005.

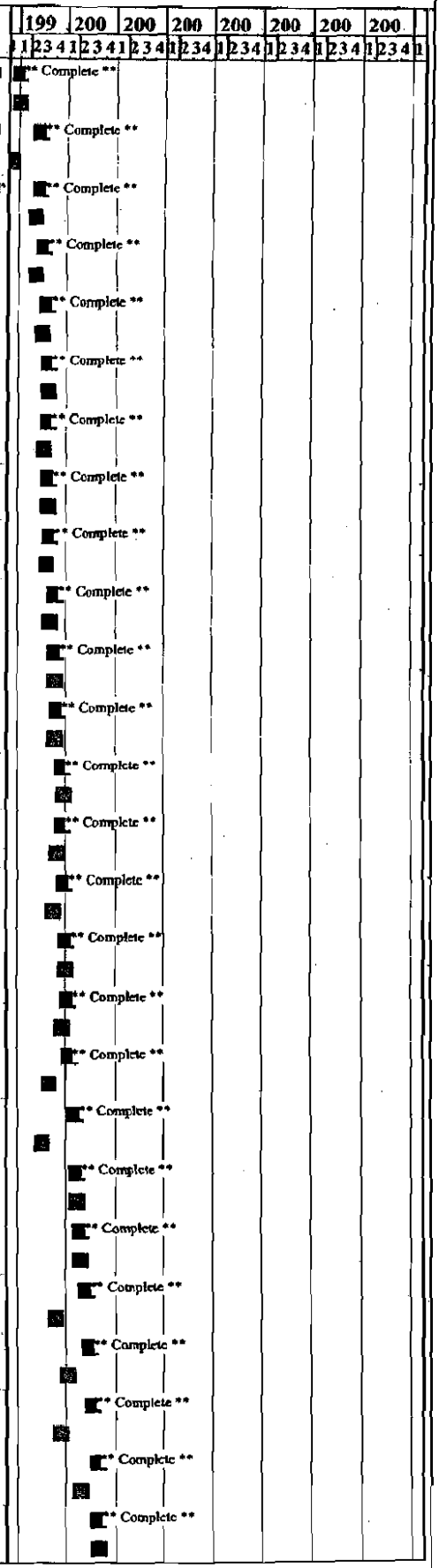
Financial closeout of the project is now complete. The final directive was approved August 31, 2005 and remaining TEC funds have been returned and the remaining previously authorized OPC funds have been reprogrammed. The final cost of the TEC is $108,148K, about $1,014K less than the authorized amount. The final cost of the OPC is $59,604K, about $2,596K less than the authorized amount.

Final costs for the NuMI Project are reported in the cost tables in Section IX.

# NuMI WBS Level 3 Milestones
## (All Milestones)

7/5/05

| Mlstn# | WBS Lev | Name | FNAL Cur Forecast | FNAL Base Date | Float |
|---|---|---|---|---|---|
| L-3-10 | 114 | Decay Region Pre-Engineering Shielding Design Complete | 7/8/98 | 7/8/98 | 0 d |
| L-3-11 | 111 | Freeze Target Station Location | 12/21/98 | 5/7/98 | 0 d |
| L-3-12 | 122 | Sub Title I to DOE | 12/23/98 | 11/25/98 | 0 d |
| L-3-13 | 112 | Complete Prototype Cooling Tests | 1/25/99 | 11/20/98 | 0 d |
| L-3-14 | 122 | DOE Approve Title I | 2/12/99 | 1/15/99 | 0 d |
| L-3-15 | 112 | Initiate Procurement Cycle for Prototype Horn | 2/22/99 | 2/22/99 | 0 d |
| L-3-16 | 111 | Baffle Geometry Fixed | 3/2/99 | 1/25/99 | 0 d |
| L-3-17 | 112 | Complete Design of Prototype Horn Conductors | 3/5/99 | 2/22/99 | 0 d |
| L-3-18 | 123 | Site Prep Title II Design 60% Complete | 3/15/99 | 2/12/99 | 0 d |
| L-3-19 | 123 | Site Prep Title II Design 90% Complete | 4/23/99 | 3/19/99 | 0 d |
| L-3-30 | 113 | 90% Confidence in Production Horn Stripline Design | 4/30/99 | 4/30/99 | 0 d |
| L-3-31 | 123 | UG Design 60% Complete | 5/7/99 | 4/23/99 | 0 d |
| L-3-32 | 116 | Momments for Alignment | 6/7/99 | 7/1/99 | 0 d |
| L-3-33 | 112 | Complete Installation of Prototype Target at AP0 | 6/7/99 | 5/14/99 | 0 d |
| L-3-34 | 124 | Award Contract for Site Prep Work & Initial Utilities | 7/1/99 | 4/5/99 | 0 d |
| L-3-35 | 124 | Issue Notice-to-Proceed (NTP) for Site Prep Contract | 7/12/99 | 7/12/99 | 0 d |
| L-3-36 | 123 | UG Design 90% Complete | 7/19/99 | 6/18/99 | 0 d |
| L-3-37 | 113 | Compl SCR/TL Sample Testing | 8/2/99 | 3/5/99 | 0 d |
| L-3-38 | 114 | Absorber Pre-Engineering Shielding Design Complete | 9/16/99 | 1/7/99 | 0 d |
| L-3-39 | 112 | Complete Prototype Target Testing at AP0 | 10/6/99 | 9/23/99 | 0 d |
| L-3-50 | 117 | VacuumRequirements Verified | 10/29/99 | 10/29/99 | 0 d |
| L-3-51 | 111 | Compl Instrument Spec for Primary Beam | 12/3/99 | 5/3/99 | 0 d |
| L-3-52 | 113 | Compl Power Supply Modif for Horn Tests for Prototype | 12/23/99 | 7/22/99 | 0 d |
| L-3-53 | 112 | Proto Horn - Complete Corrosion Develpment Work | 1/31/00 | 5/28/99 | 0 d |
| L-3-54 | 112 | Compl Analysis of Prototype Targ Tests | 2/29/00 | 10/28/99 | 0 d |
| L-3-55 | 120 | Begin Facility Construction (U/G) (NTP) | 3/6/00 | 3/6/00 | 0 d |

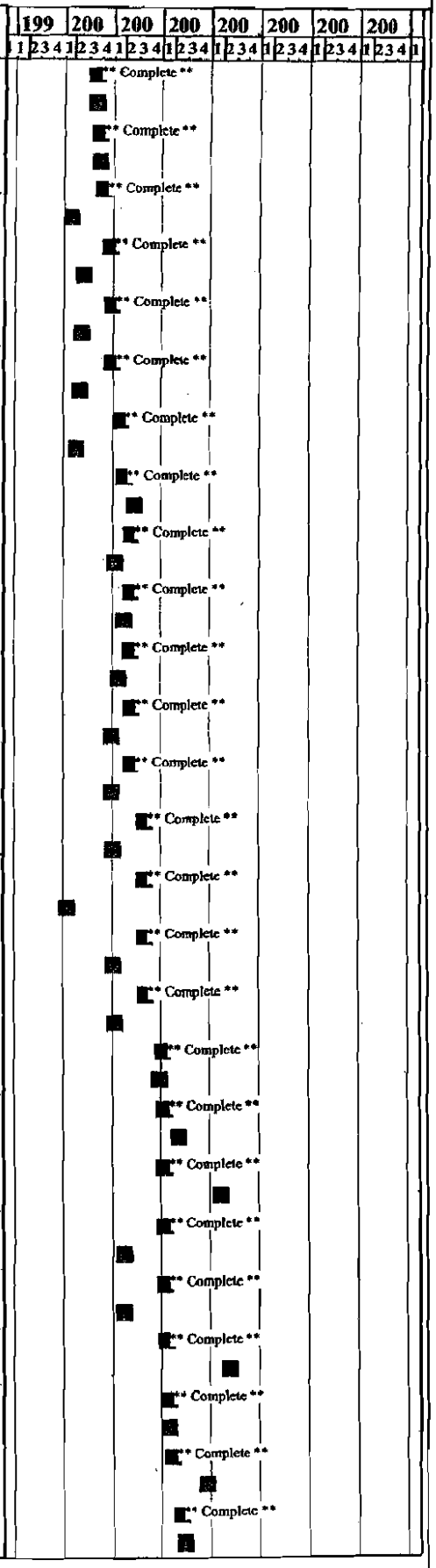



FNAL Current Forecast ◆ FNAL Baseline Date ■ Milestone Complete ■

# NuMI WBS Level 3 Milestones
## (All Milestones)

7/5/05

| Mlstn# | WBS Lev | Name | FNAL Cur Forecast | FNAL Base Date | Float |
|---|---|---|---|---|---|
| L-3-56 | 124 | Issue Notice to Proceed (NTP) for U/G Sub Contract | 3/6/00 | 3/6/00 | 0 d |
| L-3-57 | 120 | Begin Below Ground Work | 4/3/00 | 4/3/00 | 0 d |
| L-3-58 | 117 | P&IDs Complete for all Water Systems | 4/28/00 | 9/1/99 | 0 d |
| L-3-59 | 112 | Complete Installation of Proto Horn at MI-8 | 6/23/00 | 12/3/99 | 0 d |
| L-3-70 | 113 | Prototype Horn Power Supply Testing Complete | 6/29/00 | 11/24/99 | 0 d |
| L-3-71 | 114 | Initial Fin Elem Mod of Abs Core Created (Therm Studies) | 6/30/00 | 11/4/99 | 0 d |
| L-3-72 | 114 | Spec Written for Finite Elem Modeling of Absorber Core | 9/1/00 | 10/15/99 | 0 d |
| L-3-73 | 113 | Horn Power Supply Design Complete | 9/28/00 | 12/22/00 | 0 d |
| L-3-74 | 112 | Production Target Design Complete | 11/30/00 | 7/25/00 | 0 d |
| L-3-75 | 112 | Production Horn 2 Design Complete | 11/30/00 | 10/9/00 | 0 d |
| L-3-76 | 113 | Complete Design & FEA of Horn Conductors | 12/1/00 | 8/28/00 | 0 d |
| L-3-77 | 117 | Specs Complete for all Water System Equipment | 12/1/00 | 7/3/00 | 0 d |
| L-3-78 | 117 | Specs Compl for D.S. LCW Syst | 12/1/00 | 7/3/00 | 0 d |
| L-3-79 | 112 | Complete Design & Drawings for Horn 1 Conductor | 2/28/01 | 7/17/00 | 0 d |
| L-3-90 | 112 | Complete Design & Drawings for Horn 2 Conductor | 2/28/01 | 7/30/99 | 0 d |
| L-3-91 | 112 | Production Horn 1 Design Complete | 2/28/01 | 7/17/00 | 0 d |
| L-3-92 | 112 | Complete Horn 1 Production Mount Design & Drawings | 3/1/01 | 7/24/00 | 0 d |
| L-3-93 | 113 | Complete Assembly of Horn Power Supply | 7/16/01 | 6/20/01 | 0 d |
| L-3-94 | 113 | Compl Install Test Facility (MI-8) Horn PS & TL | 7/27/01 | 11/5/01 | 0 d |
| L-3-95 | 113 | Complete Test Stand Transmission Line Installation | 7/27/01 | 9/19/02 | 0 d |
| L-3-96 | 117 | PFDs Complete for all Water Systems | 7/31/01 | 9/29/00 | 0 d |
| L-3-97 | 117 | PFDs Complete for D.S. LCW System | 7/31/01 | 9/29/00 | 0 d |
| L-3-98 | 111 | Document Beam Sheet | 8/1/01 | 11/19/02 | 0 d |
| L-3-99 | 111 | Reclaimed Magnets & New Trims Ready for Install | 8/31/01 | 8/24/01 | 0 d |
| L-3-110 | 113 | Complete Horn Power Supply Testing at MI-8 | 9/14/01 | 6/6/02 | 0 d |
| L-3-111 | 114 | Complete Engineering Review of Hadron Absorber | 11/20/01 | 12/21/01 | 0 d |

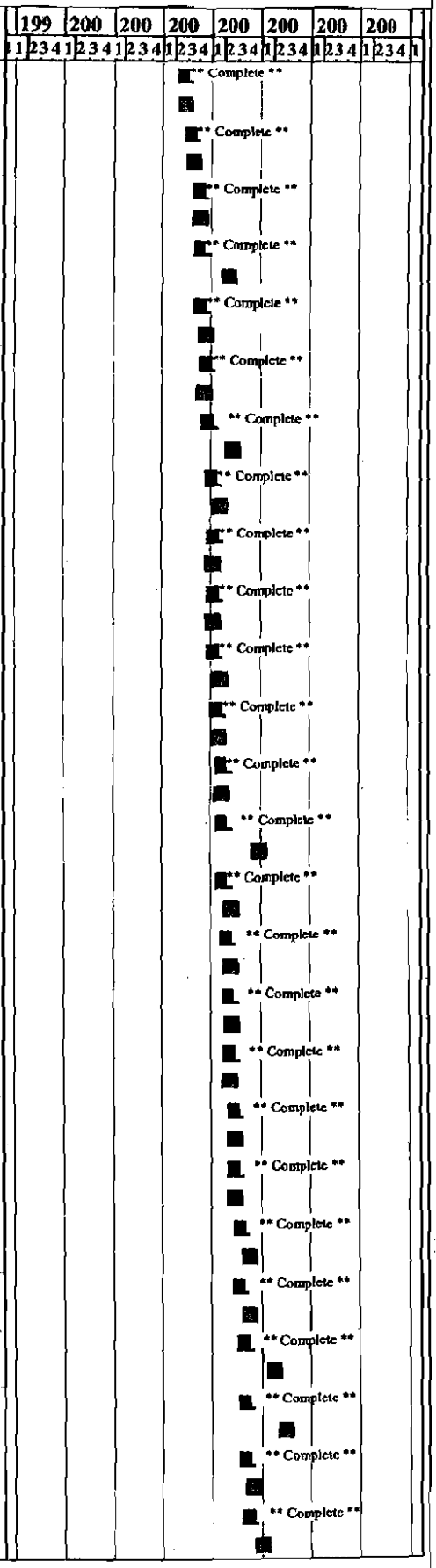



FNAL Current Forecast ◘ FNAL Baseline Date ■ Milestone Complete ■

# NuMI WBS Level 3 Milestones
## (All Milestones)

7/5/05

| Mlstn# | WBS Lev | Name | FNAL Cur Forecast | FNAL Base Date | Float |
|---|---|---|---|---|---|
| L-3-112 | 112 | Complete Testing of Horn Prototype in MI-8 | 12/21/01 | 12/21/01 | 0 d |
| L-3-113 | 116 | Precise Surface Survey MINOS & Target Sites | 2/15/02 | 2/15/02 | 0 d |
| L-3-114 | 120 | T&H NCMO Estimate Start Vac Decay Pipe/Shielding Install | 4/17/02 | 4/17/02 | 0 d |
| L-3-115 | 114 | Initiate Review of Engineering Note for Upstream End Cap for Decay Pipe | 4/29/02 | 11/7/02 | 0 d |
| L-3-116 | 112 | Finish Module 1 Detail Design | 4/30/02 | 5/24/02 | 0 d |
| L-3-117 | 114 | Review Radiation Safety Numbers for Absorber Cavern | 5/31/02 | 5/17/02 | 0 d |
| L-3-118 | 114 | Finish ASME Vacuum Vessel Shell Calculations/FESHM Note | 6/26/02 | 12/9/02 | 0 d |
| L-3-119 | 120 | T&H NCMO Estimate Finish Vac Decay Pipe/Shielding Install | 7/17/02 | 9/5/02 | 0 d |
| L-3-130 | 115 | Muon Monitors Design Review Complete | 7/24/02 | 7/17/02 | 0 d |
| L-3-131 | 115 | Downstream Hadron Monitors Design Review Complete | 7/24/02 | 7/17/02 | 0 d |
| L-3-132 | 112 | Horn 2 Inner Conductor Welded | 7/29/02 | 9/2/02 | 0 d |
| L-3-133 | 112 | Target Carrier Design Complete | 8/30/02 | 8/26/02 | 0 d |
| L-3-134 | 124 | Issue NTP-1 for Service Bldgs & Outfitting Contract | 9/27/02 | 9/18/02 | 0 d |
| L-3-135 | 111 | Operational Beam Permit Prototype | 9/30/02 | 7/2/03 | 0 d |
| L-3-136 | 113 | Conventional Magnet Power Supply Syst Design Complete | 10/1/02 | 11/25/02 | 0 d |
| L-3-137 | 120 | T&H NCMO Estimate BO of Healy Upstream Area | 11/1/02 | 12/4/02 | 0 d |
| L-3-138 | 120 | T&H NCMO Estimate BO of Healy Downstream Area | 11/22/02 | 12/4/02 | 0 d |
| L-3-139 | 113 | Start Testing of Prototype Horn 1 Flex Joint at MI-8 | 12/2/02 | 11/8/02 | 0 d |
| L-3-150 | 112 | Sub Bid Pkge for Target Module Main Frame | 12/23/02 | 12/23/02 | 0 d |
| L-3-151 | 112 | Sub Bid Pkge for Horn2 Module Main Frame | 12/23/02 | 12/23/02 | 0 d |
| L-3-154 | 111 | BPM Electronics Technology Selection | 1/31/03 | 4/1/03 | 0 d |
| L-3-152 | 112 | Horn 1 Inner Conductor Welding Compl | 2/5/03 | 4/7/03 | 0 d |
| L-3-155 | 118 | L3 Managers Review of Controls Syst Design Compl | 3/3/03 | 10/10/03 | 0 d |
| L-3-196 | 112 | Production Target Fabrication Complete | 3/17/03 | 12/19/03 | 0 d |
| L-3-157 | 111 | Kicker Magnet & Cooling Syst Design & Dwgs Compl | 3/20/03 | 5/8/03 | 0 d |
| L-3-179 | 120 | Pit Liner Complete | 3/31/03 | 7/7/03 | 0 d |

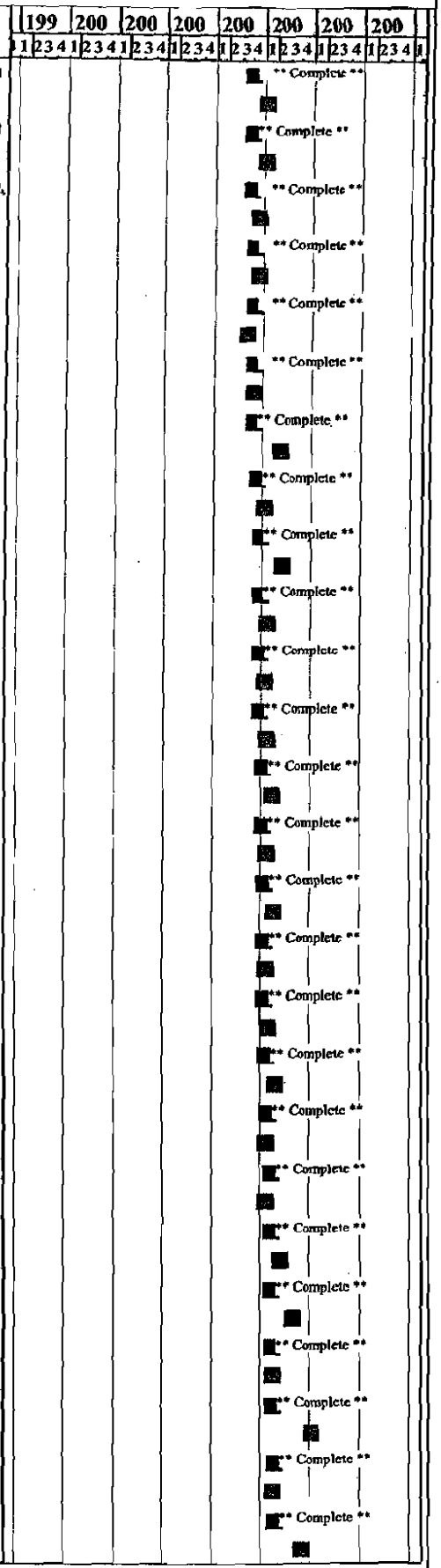



FNAL Current Forecast ◆ FNAL Baseline Date ■ Milestone Complete ■

# NuMI WBS Level 3 Milestones
## (All Milestones)

7/5/05

| MIstn# | WBS Lev | Name | FNAL Cur Forecast | FNAL Base Date | Float |
|---|---|---|---|---|---|
| L-3-172 | 113 | Kicker Power Supply Design & Dwgs Compl | 3/31/03 | 7/17/03 | 0 d |
| L-3-173 | 114 | Purch Order for Core Modules, AluminumSubmitted | 4/1/03 | 7/15/03 | 0 d |
| L-3-158 | 112 | Lower Chase Shielding Fab & Installation Dwg Set Compl | 4/1/03 | 5/26/03 | 0 d |
| L-3-177 | 120 | Service Bldg Foundations Complete | 4/21/03 | 5/23/03 | 0 d |
| L-3-159 | 111 | Stub Major Magnet Stands Design & Drawings Compl | 4/30/03 | 3/17/03 | 0 d |
| L-3-156 | 112 | Production Horn 2 Assembly Complete | 4/30/03 | 5/1/03 | 0 d |
| L-3-192 | 117 | U.S. LCW Syst Piping & Equip Installed in MI-62 | 4/30/03 | 11/7/03 | 0 d |
| L-3-175 | 118 | Sub Req for Shaft Cables for SB&O Installation | 5/23/03 | 7/15/03 | 0 d |
| L-3-178 | 114 | Core Backshielding Steel Fabricated | 6/16/03 | 11/28/03 | 0 d |
| L-3-191 | 120 | Target Service Bldg Shell Complete | 6/17/03 | 8/15/03 | 0 d |
| L-3-327 | 111 | Conventional Magnets Ready for Installation in 2003 Shutdown | 6/30/03 | 7/25/03 | 0 d |
| L-3-176 | 118 | Cable System Specifications Complete | 6/30/03 | 8/18/03 | 0 d |
| L-3-193 | 120 | MSB Shell Complete | 7/14/03 | 9/19/03 | 0 d |
| L-3-332 | 111 | Pre-Target Magnet Stands Design & Drafting Complete | 7/15/03 | 8/15/03 | 0 d |
| L-3-171 | 112 | Upper Chase Shielding Fab & Installation Dwg Set Compl | 7/31/03 | 9/29/03 | 0 d |
| L-3-174 | 112 | Production Horn 1 Assembly Complete | 7/31/03 | 8/7/03 | 0 d |
| L-3-328 | 111 | Major Magnet Stands Ready for MI and Stub Installation | 8/1/03 | 9/2/03 | 0 d |
| L-3-333 | 111 | BPM Electronics Procurement Started | 8/22/03 | 10/17/03 | 0 d |
| L-3-190 | 112 | Complete Horn 2 Operational Testing in Test Stand | 8/29/03 | 8/22/03 | 0 d |
| L-3-170 | 113 | Transmission Line Design & Dwgs Compl | 9/15/03 | 8/15/03 | 0 d |
| L-3-197 | 112 | Complete Horn 1 Operational Testing in Test Stand | 9/15/03 | 12/5/03 | 0 d |
| L-3-335 | 111 | Complete BeamPermit System Input Parameters | 9/22/03 | 2/20/04 | 0 d |
| L-3-194 | 112 | Assembly of Horn 1 Module Complete | 9/30/03 | 10/7/03 | 0 d |
| L-3-215 | 111 | Lambertson Magnet Installation Complete | 10/10/03 | 7/23/04 | 0 d |
| L-3-198 | 120 | Beneficial Occupancy of UG Target Area | 10/20/03 | 10/6/03 | 0 d |
| L-3-219 | 111 | Extraction Devices Ready for Installation | 10/23/03 | 4/30/04 | 0 d |

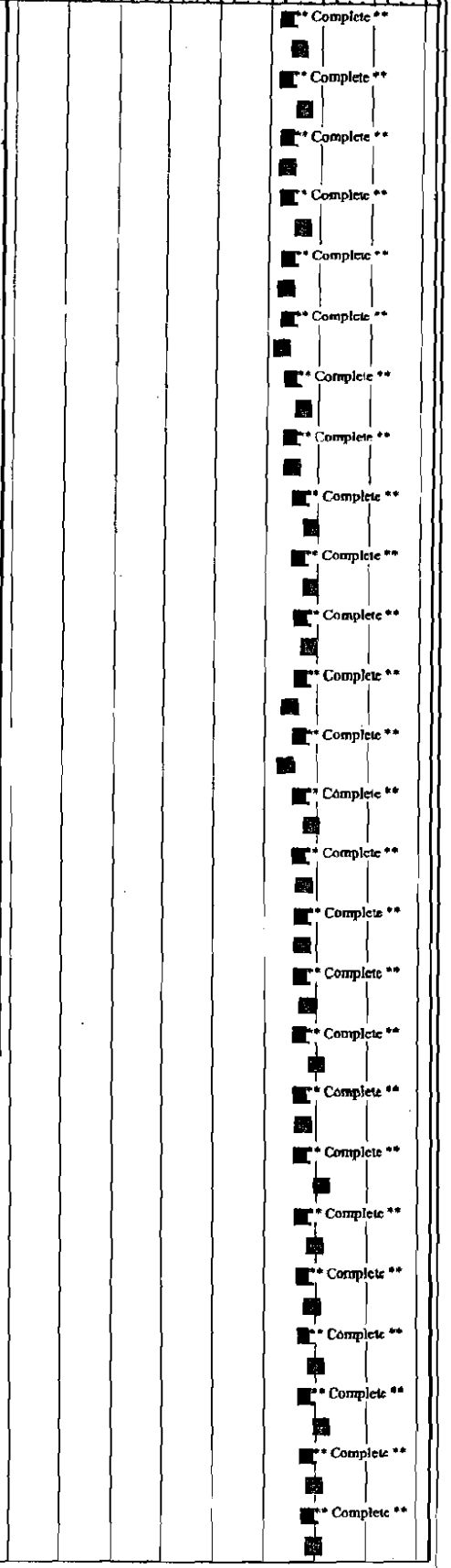



FNAL Current Forecast ◆ FNAL Baseline Date ■ Milestone Complete ■

# NuMI WBS Level 3 Milestones
## (All Milestones)

7/5/05

| Mlstn# | WBS Lev | Name | FNAL Cur Forecast | FNAL Base Date | Float |
|---|---|---|---|---|---|
| L-3-329 | 111 | MI & Stub Magnets Installed & Ready for Low Power Testing | 11/3/03 | 1/15/04 | 0 d |
| L-3-216 | 112 | Assembly of Horn 2 Module Complete | 11/4/03 | 2/26/04 | 0 d |
| L-3-334 | 111 | Start Construction of Multi-Wires | 11/7/03 | 11/3/03 | 0 d |
| L-3-210 | 114 | Start of U.S. VacuumEndcap Installation | 11/10/03 | 2/27/04 | 0 d |
| L-3-237 | 111 | Pre-Target Equip Stands Ready for Installation | 11/26/03 | 11/3/03 | 0 d |
| L-3-153 | 117 | RAW Systems Engineering Notes Sent for Review | 12/1/03 | 9/30/03 | 0 d |
| L-3-213 | 115 | Muon Monitors Ready for Installation | 12/23/03 | 3/19/04 | 0 d |
| L-3-331 | 111 | Kicker Magnet Construction Complete | 12/23/03 | 12/26/03 | 0 d |
| L-3-308 | 112 | Assy of Horn 2 & Module Complete | 2/27/04 | 5/20/04 | 0 d |
| L-3-195 | 113 | Kicker Power Supply Construction Complete | 2/27/04 | 5/20/04 | 0 d |
| L-3-234 | 118 | Fiber Optic Cable Installation Complete | 3/10/04 | 5/12/04 | 0 d |
| L-3-218 | 120 | B.O. of MINOS Shaft, Absorber, MINOS Tunnel & MINOS Hall | 3/10/04 | 12/26/03 | 0 d |
| L-3-211 | 120 | MINOS Service Bldg Complete | 3/10/04 | 11/26/03 | 0 d |
| L-3-238 | 114 | All Hadron Absorber Core Material Delivered | 3/11/04 | 5/31/04 | 0 d |
| L-3-235 | 112 | Assy of Target/Baffle Module Complete | 3/19/04 | 4/8/04 | 0 d |
| L-3-212 | 112 | Assy of Horn 1 & Module Complete | 3/22/04 | 3/29/04 | 0 d |
| L-3-315 | 112 | Targ Pile Carriage Pads on Concrete Install Compl | 3/26/04 | 5/3/04 | 0 d |
| L-3-214 | 118 | FIRUS Cable System Installation Complete | 3/29/04 | 7/14/04 | 0 d |
| L-3-310 | 112 | Install BottomShielding Complete | 3/31/04 | 4/2/04 | 0 d |
| L-3-236 | 116 | Network in Target Hall | 3/31/04 | 8/6/04 | 0 d |
| L-3-231 | 117 | All Water System Skids Installed in Enclosures | 4/5/04 | 6/14/04 | 0 d |
| L-3-330 | 111 | Low Power Test of MI Magnets Started | 4/15/04 | 6/7/04 | 0 d |
| L-3-250 | 113 | Power Supply Refurbishing Complete | 4/26/04 | 7/9/04 | 0 d |
| L-3-239 | 114 | Test of VacuumIntegrity Complete | 5/3/04 | 8/13/04 | 0 d |
| L-3-230 | 111 | Kicker Ready to Install | 5/21/04 | 6/29/04 | 0 d |
| L-3-326 | 118 | Personnel Safety Interlock Syst Engineering & Des Compl | 5/26/04 | 6/29/04 | 0 d |

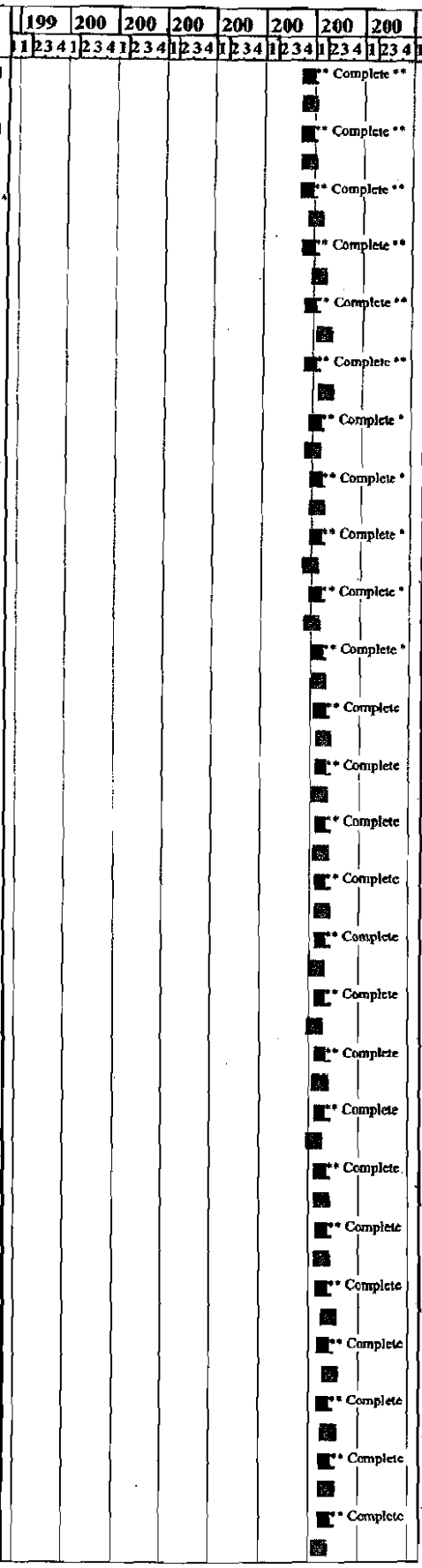



FNAL Current Forecast  FNAL Baseline Date  Milestone Complete

# NuMI WBS Level 3 Milestones
## (All Milestones)

7/5/05

| Mlstn# | WBS Lev | Name | FNAL Cur Forecast | FNAL Base Date | Float |
|---|---|---|---|---|---|
| L-3-199 | 113 | Compl Install of Horn Power Supply in PS Room | 5/28/04 | 6/1/04 | 0 d |
| L-3-320 | 113 | Receipt of Major Transmission Line Materials & Parts | 5/28/04 | 6/1/04 | 0 d |
| L-3-254 | 112 | Compl Placement of Horn 1 into Target Station | 6/1/04 | 7/19/04 | 0 d |
| L-3-314 | 112 | Compl Placement of Horn 2 Assy into Target Station | 6/7/04 | 8/9/04 | 0 d |
| L-3-232 | 114 | Start Absorber Outer Shielding Installation | 6/24/04 | 9/23/04 | 0 d |
| L-3-256 | 114 | Assy of Core on Carrier Complete | 7/2/04 | 10/11/04 | 0 d |
| L-3-271 | 111 | Target Interface Baffle/Window Ready for Install | 7/28/04 | 7/12/04 | 0 d |
| L-3-276 | 113 | Complete Assy/Installation of Stripline | 8/17/04 | 8/19/04 | 0 d |
| L-3-252 | 111 | Instrumentation Ready to Install (Except Profile Monitors) | 8/20/04 | 6/21/04 | 0 d |
| L-3-309 | 112 | Assy of Target Baffle on Module Complete | 8/20/04 | 7/5/04 | 0 d |
| L-3-251 | 111 | Profile Monitor Construction Complete | 9/1/04 | 9/1/04 | 0 d |
| L-3-277 | 113 | Compl Install & Testing of Kicker PS | 9/22/04 | 10/5/04 | 0 d |
| L-3-324 | 118 | NuMI Stub Cables Installed | 9/27/04 | 9/13/04 | 0 d |
| L-3-257 | 118 | MI60 Cable Syst Install Compl (Excl Trim Elements) | 9/28/04 | 9/20/04 | 0 d |
| L-3-318 | 113 | Power Test of MI60 & MI-62 Power Supplies Complete | 9/29/04 | 10/8/04 | 0 d |
| L-3-259 | 118 | Personnel Safety Interlock System Installation Complete | 9/29/04 | 8/27/04 | 0 d |
| L-3-321 | 117 | All Water System Skid Instrumentation Connected | 9/30/04 | 8/6/04 | 0 d |
| L-3-293 | 118 | MI-62 Cable System Installation Complete | 9/30/04 | 9/24/04 | 0 d |
| L-3-217 | 115 | Downstream Hadron Monitors Ready for Installation | 10/1/04 | 8/9/04 | 0 d |
| L-3-255 | 115 | Muon Monitors Installed | 10/11/04 | 10/6/04 | 0 d |
| L-3-270 | 112 | Target & Horn Installation Complete | 10/18/04 | 10/8/04 | 0 d |
| L-3-319 | 113 | Start to Pulse & Checkout Horn System | 10/18/04 | 11/19/04 | 0 d |
| L-3-279 | 118 | Controls Installation Complete | 10/27/04 | 12/7/04 | 0 d |
| L-3-253 | 118 | Pre-Targ Hall & Targ Hall Cable Syst Installation Compl | 10/27/04 | 12/6/04 | 0 d |
| L-3-291 | 111 | MI Stnb Installation Complete | 11/11/04 | 11/15/04 | 0 d |
| L-3-311 | 111 | Install Pre-target Instrumentation Complete | 11/15/04 | 9/23/04 | 0 d |

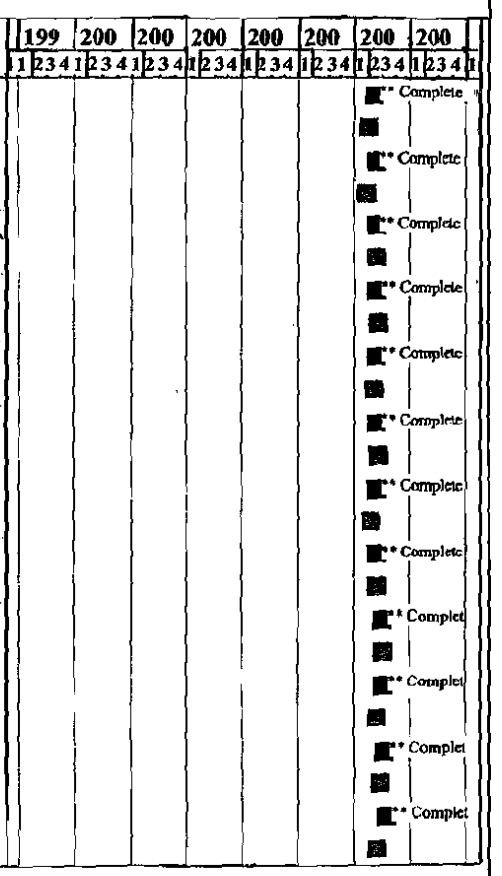



FNAL Current Forecast ◆ FNAL Baseline Date ■ Milestone Complete ■

# NuMI WBS Level 3 Milestones
## (All Milestones)

7/5/05

| Mlstn# | WBS Lev | Name | FNAL Cur Forecast | FNAL Base Date | Float |
|---|---|---|---|---|---|
| L-3-258 | 115 | Downstream Hadron Monitor Installed | 11/15/04 | 10/1/04 | 0 d |
| L-3-274 | 113 | Power Test of TH Conventional Power Supplies Compl | 11/23/04 | 9/22/04 | 0 d |
| L-3-299 | 111 | Extraction & Primary Beam Checked Out | 11/24/04 | 12/1/04 | 0 d |
| L-3-325 | 118 | Controls Checkout Complete | 11/29/04 | 12/14/04 | 0 d |
| L-3-278 | 111 | Pre-Target Checkout Complete | 11/30/04 | 11/8/04 | 0 d |
| L-3-295 | 112 | Pulse & Checkout Horn System Complete | 11/30/04 | 12/7/04 | 0 d |
| L-3-297 | 115 | Downstream Hadron Monitor Operational | 11/30/04 | 10/20/04 | 0 d |
| L-3-298 | 117 | VacuumSystems Checked Out | 11/30/04 | 11/29/04 | 0 d |
| L-3-296 | 115 | Muon Monitors Operational | 12/30/04 | 1/6/05 | 0 d |
| L-3-272 | 117 | All Water Systems Checked Out | 12/30/04 | 11/19/04 | 0 d |
| L-3-294 | 114 | Checkout Absorber Complete | 1/24/05 | 12/20/04 | 0 d |
| L-3-290 | 112 | Shielding Installation Complete (Pre-Radioactive Component Handling) | 1/31/05 | 11/18/04 | 0 d |

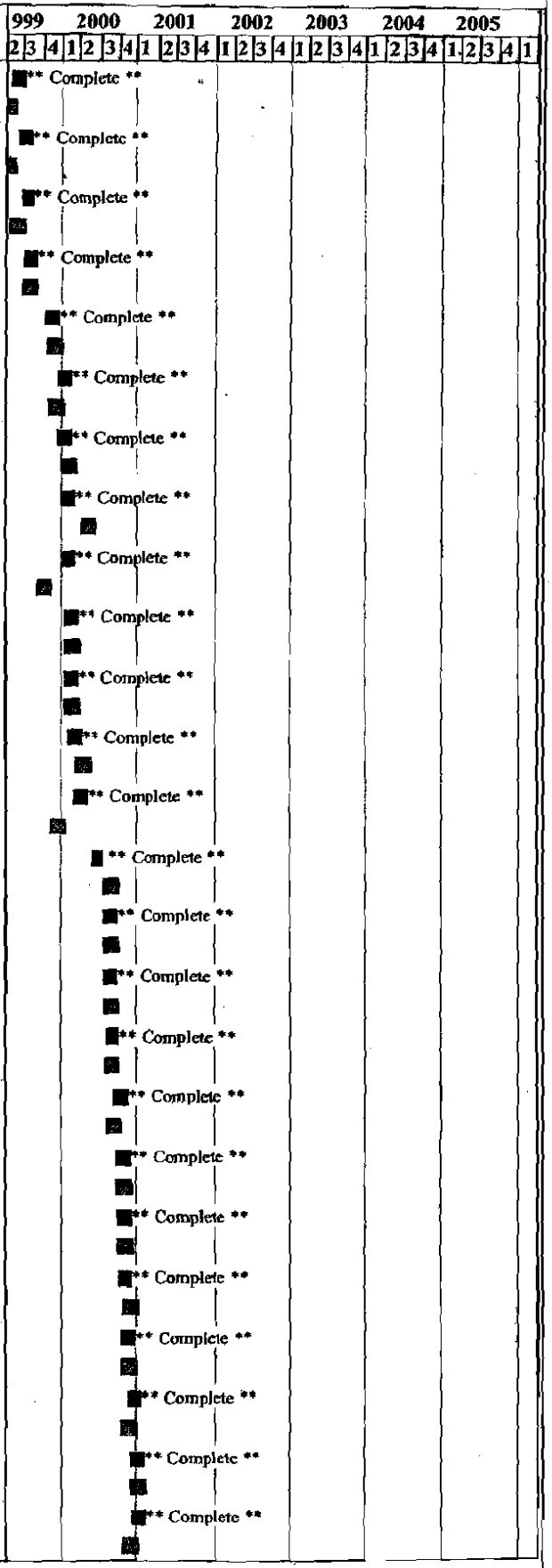



FNAL Current Forecast ✪ FNAL Baseline Date ■ Milestone Complete ■

# MINOS WBS Level 3 Milestones
## All Milestones

7/5/05

| Mlstn # | WBS Lev | Name | FNAL Cur Forecas | FNAL Base Date | Float |
|---|---|---|---|---|---|
| L-3-0 | 251 | Near Inst Shaft Lifting Equip Design Approval | 1/15/99 | 11/27/98 | 0d |
| L-3-1 | 251 | Power & Cooling Design Approval | 2/15/99 | 11/27/98 | 0d |
| L-3-2 | 211 | Far Detector -Steel Design Complete | 3/2/99 | 1/6/99 | 0d |
| L-3-3 | 212 | Far Strongback Design Complete | 3/16/99 | 3/5/99 | 0d |
| L-3-5 | 223 | Decide Light Output Requirements for Physics | 6/30/99 | 6/30/99 | 0d |
| L-3-7 | 214 | Far Coil Design Complete | 8/30/99 | 7/12/99 | 0d |
| L-3-8 | 214 | Near Coil Design Complete | 8/30/99 | 9/9/99 | 0d |
| L-3-9 | 212 | Near Strongback Design Complete | 9/10/99 | 12/17/99 | 0d |
| L-3-21 | 211 | Near Detector Steel Design Complete | 9/16/99 | 5/17/99 | 0d |
| L-3-22 | 223 | Decide Details of Scint, Fiber & Mod Des Features | 10/1/99 | 9/30/99 | 0d |
| L-3-23 | 231 | Begin ND Final Front End Electronics Design | 10/1/99 | 10/1/99 | 0d |
| L-3-24 | 235 | Database Ready | 10/15/99 | 11/15/99 | 0d |
| L-3-25 | 233 | Data Routing & Trigger Definition & Design Done | 11/12/99 | 7/23/99 | 0d |
| L-3-26 | 225 | Connector Design Complete | 2/1/00 | 4/3/00 | 0d |
| L-3-27 | 223 | Scintillator Mod Des Features Pass Final Rvw | 3/31/00 | 3/31/00 | 0d |
| -3-28 | 221 | Place Orders for Extruded Scintillator | 4/3/00 | 4/3/00 | 0d |
| -3-29 | 227 | Fiber Gluing Machine Design Complete | 4/20/00 | 4/3/00 | 0d |
| -3-40 | 213 | Near Detector Support Design Complete | 5/30/00 | 4/7/00 | 0d |
| -3-41 | 224 | First 50 "Production" PMTs Delivered | 6/1/00 | 6/1/00 | 0d |
| -3-42 | 225 | Final Review of MUX Box System | 6/13/00 | 6/13/00 | 0d |
| -3-43 | 221 | First Load of Scintillator Delivered to Caltech | 6/21/00 | 7/8/00 | 0d |
| -3-44 | 236 | Far Clock Distribution Prototype Tested | 6/30/00 | 6/30/00 | 0d |
| -3-45 | 223 | Startup Module Components at Caltech | 7/28/00 | 6/30/00 | 0d |
| 3-46 | 228 | Caltech Factory Ready for Test Production | 8/10/00 | 8/10/00 | 0d |
| 3-47 | 227 | All Production Equipment at Caltech | 8/15/00 | 7/10/00 | 0d |




FNAL Current Forecast  FNAL Baseline Date  Milestone Complete

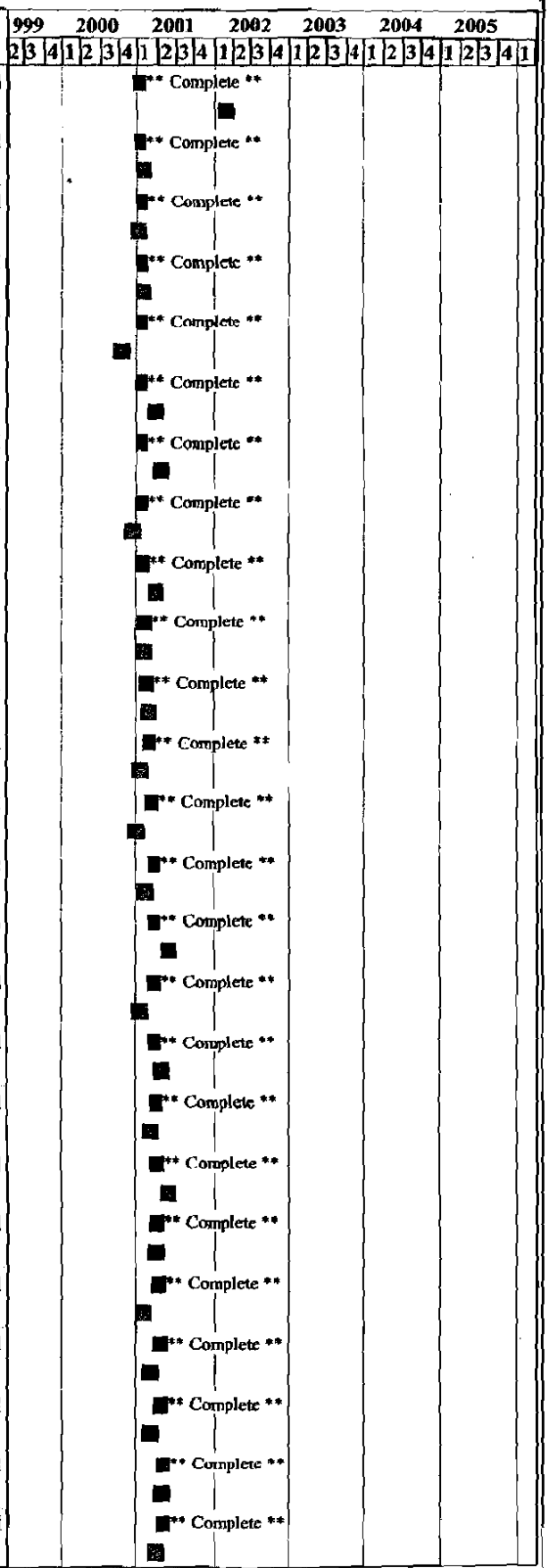


MINOS_Feb05_Status.mpp

# MINOS WBS Level 3 Milestones
## All Milestones

7/5/05

| Mlstn # | WBS Lev | Name | FNAL Cur Forecas | FNAL Base Date | Float |
|---|---|---|---|---|---|
| L-3-48 | 212 | 2nd ND Strongback Purchased | 8/16/00 | 10/1/01 | 0d |
| L-3-49 | 222 | Second Production Batch of WLS Fiber at Caltech | 8/28/00 | 8/30/00 | 0d |
| L-3-60 | 227 | Production Equip at Caltech Functioning | 8/30/00 | 8/10/00 | 0d |
| L-3-61 | 228 | Caltech Factory Ready for Start Production | 8/30/00 | 8/30/00 | 0d |
| L-3-62 | 212 | Far Fixtures Design Complete | 8/31/00 | 5/30/00 | 0d |
| L-3-63 | 221 | 5% of Scintillator Produced (10% of SM1) | 9/1/00 | 11/3/00 | 0d |
| L-3-64 | 224 | 5% of Near PMTs Delivered (10 M64s) | 9/1/00 | 12/1/00 | 0d |
| L-3-65 | 220 | Caltech Factory Commissioning | 9/1/00 | 7/17/00 | 0d |
| L-3-66 | 222 | 5% of WLS Fiber Delivered (10% of SM1) | 9/5/00 | 11/3/00 | 0d |
| L-3-67 | 224 | Complete PMT Specifications | 9/15/00 | 9/1/00 | 0d |
| L-3-68 | 222 | 5% of Clear Fiber Delivered | 9/22/00 | 9/29/00 | 0d |
| L-3-69 | 223 | Calibration Module Components at Caltech | 10/2/00 | 8/21/00 | 0d |
| -3-80 | 224 | First 50 PMTs Evaluated, Final Full Order Placed | 10/16/00 | 8/1/00 | 0d |
| -3-81 | 223 | 1% of Module Components at Minnesota | 10/30/00 | 9/15/00 | 0d |
| -3-83 | 222 | 10% of WLS Fiber Delivered (20% of SM1) | 11/1/00 | 1/2/01 | 0d |
| -3-84 | 223 | 1% of Mod Components at Caltech (5 Planes) | 11/1/00 | 8/21/00 | 0d |
| -3-85 | 225 | MUX Box Factories Operating | 11/1/00 | 12/1/00 | 0d |
| -3-86 | 228 | Minnesota Factory Ready for Test Production | 11/6/00 | 10/10/00 | 0d |
| -3-87 | 221 | 10% of Scintillator Produced (20% of SM1) | 11/15/00 | 1/2/01 | 0d |
| -3-88 | 228 | Minnesota Factory Ready to Start Production | 11/15/00 | 10/30/00 | 0d |
| -3-89 | 227 | All Production Equipment at Minnesota | 11/20/00 | 9/11/00 | 0d |
| -3-100 | 211 | Authorize SM1 Steel Purchase | 11/30/00 | 10/2/00 | 0d |
| -3-102 | 227 | Production Equip at Minnesota Functioning | 12/1/00 | 10/10/00 | 0d |
| -3-103 | 226 | Scintillator Modules for Calibration Module | 12/11/00 | 12/1/00 | 0d |
| -3-104 | 228 | Modules for Calibration Module Complete (Caltech) | 12/11/00 | 10/30/00 | 0d |




FNAL Current Forecast  FNAL Baseline Date  Milestone Complete

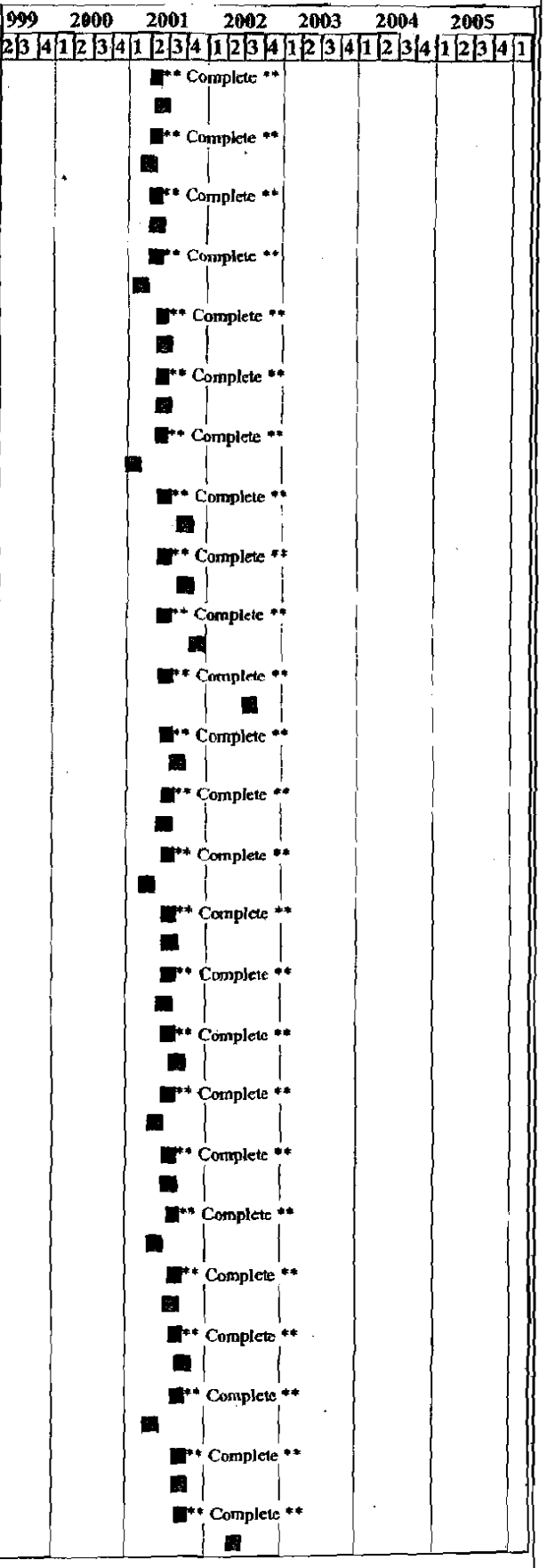


MINOS_Feb05_Status.mpp

# MINOS WBS Level 3 Milestones
## All Milestones

7/5/05

| Mlstn # | WBS Lev | Name | FNAL Cur Forecas | FNAL Base Date | Float |
|---|---|---|---|---|---|
| L-3-105 | 222 | 5% of Clear Fiber Cables Fabricated (10% of SM1) | 12/15/00 | 1/2/01 | 0d |
| L-3-106 | 223 | 10% of Mod Compnts Prod & Del (50 Planes) | 12/15/00 | 10/30/00 | 0d |
| L-3-107 | 225 | 10 MUX Boxes Complete | 12/15/00 | 12/15/00 | 0d |
| L-3-108 | 224 | 5% of PMTs Delivered (10% of SM1, 75 M16s) | 12/21/00 | 9/29/00 | 0d |
| L-3-109 | 223 | 25% of Mod Compnts Delivered (50% of SM1) | 1/15/01 | 1/15/01 | 0d |
| L-3-120 | 223 | 10% of Near Module Components Produced | 1/15/01 | 1/15/01 | 0d |
| L-3-121 | 212 | Far Strongbacks Purchased | 1/15/01 | 8/22/00 | 0d |
| L-3-122 | 222 | 25% of WLS Fiber Delivered (50% of SM1) | 2/1/01 | 5/1/01 | 0d |
| L-3-123 | 223 | 50% of Near Components Delivered | 2/1/01 | 4/30/01 | 0d |
| -3-124 | 223 | 75% of Mod Components Delivered (50% of SM2) | 2/1/01 | 6/29/01 | 0d |
| -3-125 | 211 | Near Steel Purchased | 2/9/01 | 2/28/02 | 0d |
| -3-126 | 223 | 50% of Mod Compnts Delivered (100% of SM1) | 2/15/01 | 3/30/01 | 0d |
| -3-127 | 228 | 5% of Far Modules Produced (10% of SM1) | 2/20/01 | 2/1/01 | 0d |
| -3-128 | 231 | ND QIE Chip Ordered for Production | 2/22/01 | 11/1/00 | 0d |
| -3-129 | 222 | 25% of Clear Fiber Delivered | 2/28/01 | 3/1/01 | 0d |
| -3-140 | 224 | 25% of M16s Delivered (50% of SM1) | 2/28/01 | 1/30/01 | 0d |
| 3-141 | 227 | Near Production Equipment Ready at Argonne | 2/28/01 | 4/2/01 | 0d |
| 3-142 | 228 | 10 Planes of SM1 Scint Modules at Soudan | 2/28/01 | 12/15/00 | 0d |
| 3-143 | 225 | 5% of Far MUX Boxes Complete (10% of SM1) | 3/1/01 | 3/1/01 | 0d |
| -144 | 228 | Minnesota Factory at Full Production Pace | 3/20/01 | 12/15/00 | 0d |
| -145 | 234 | Triggering Software Ready | 3/30/01 | 3/1/01 | 0d |
| -146 | 221 | 25% of Scintillator Produced (50% of SM1) | 4/2/01 | 5/1/01 | 0d |
| -147 | 228 | Caltech Factory at Full Production Pace (4 | 4/10/01 | 11/30/00 | 0d |
| -148 | 234 | Data Acquisition Ready | 4/16/01 | 4/16/01 | 0d |
| -149 | 212 | Near Fixture Design Complete | 4/30/01 | 1/2/02 | 0d |




NAL Current Forecast  FNAL Baseline Date  Milestone Complete



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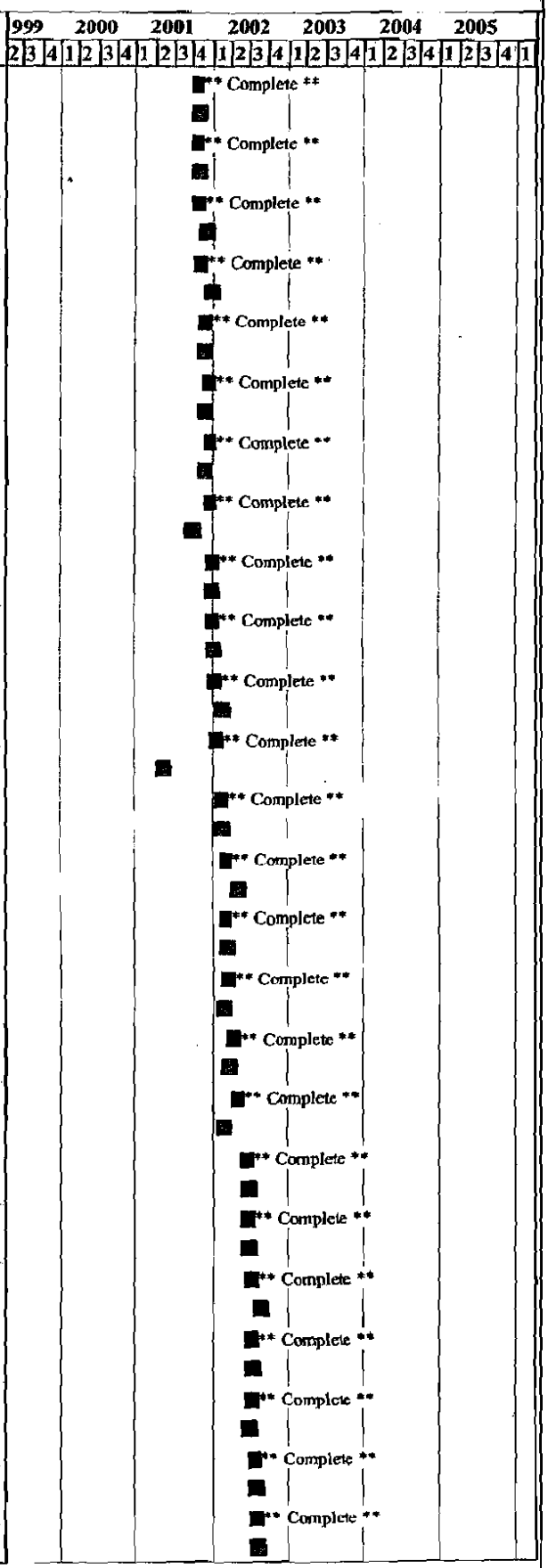
# MINOS WBS Level 3 Milestones
## All Milestones

| Mlstn # | WBS Lev | Name | FNAL Cur Forecas | FNAL Base Date | Float |
|---|---|---|---|---|---|
| L-3-160 | 222 | 25% of Clear Fiber Cables Fabricated (50% of SM1) | 6/1/01 | 6/1/01 | 0d |
| L-3-161 | 226 | Calibration Module Assembled | 6/1/01 | 6/1/01 | 0d |
| L-3-162 | 211 | First SM1 Steel Delivered | 6/12/01 | 7/11/01 | 0d |
| L-3-163 | 228 | 10% of Near Modules Complete | 6/15/01 | 8/1/01 | 0d |
| L-3-164 | 228 | 25% of Far Modules Complete (50% of SM1) | 7/16/01 | 7/2/01 | 0d |
| L-3-166 | 212 | Far Fixtures Ready for Installation | 7/27/01 | 7/2/01 | 0d |
| L-3-167 | 225 | 25% of Far MUX Boxes Complete (50% of SM1) | 7/30/01 | 7/2/01 | 0d |
| -3-168 | 230 | Electronics Ready for Installation - SM1 | 7/31/01 | 5/1/01 | 0d |
| -3-169 | 211 | First Near Steel Delivered | 8/14/01 | 8/2/01 | 0d |
| -3-180 | 222 | 50% of Clear Fiber Delivered | 8/15/01 | 8/15/01 | 0d |
| -3-181 | 222 | 50% of WLS Fiber Delivered (100% of SM1) | 8/24/01 | 9/28/01 | 0d |
| -3-182 | 226 | First Set of Light Injection Equip Ready for Far Det | 8/30/01 | 12/15/00 | 0d |
| -3-183 | 223 | 100% of Mod Componts Del (100% of SM2 + Near) | 9/28/01 | 9/28/01 | 0d |
| 3-184 | 226 | First Test Beam Running Complete | 10/15/01 | 12/15/01 | 0d |
| 3-185 | 228 | First Near Scint Modules at FNAL | 10/15/01 | 10/15/01 | 0d |
| 3-186 | 224 | 50% of M16s Delivered (100% of SM1) | 10/30/01 | 10/1/01 | 0d |
| 3-187 | 222 | 50% of Clear Fiber Cables Fabricated (100% of SM1) | 11/30/01 | 10/30/01 | 0d |
| 3-188 | 211 | SM2 Steel Purchased | 12/17/01 | 10/1/01 | 0d |
| -189 | 222 | 75% of Clear Fiber Delivered | 2/1/02 | 2/1/02 | 0d |
| -200 | 212 | Near Fixtures Ready for Installation | 2/6/02 | 2/6/02 | 0d |
| -201 | 222 | 75% of WLS Fiber Delivered | 2/15/02 | 4/1/02 | 0d |
| -202 | 228 | 50% of Far Modules Complete (100% of SM1) | 2/20/02 | 2/20/02 | 0d |
| -203 | 228 | 50% of Near Modules Complete | 2/20/02 | 2/1/02 | 0d |
| -204 | 226 | Light Injection Equipment for SM1 Complete | 3/1/02 | 3/1/02 | 0d |
| 205 | 228 | First SM2 Scint Modules at Soudan | 3/21/02 | 3/21/02 | 0d |

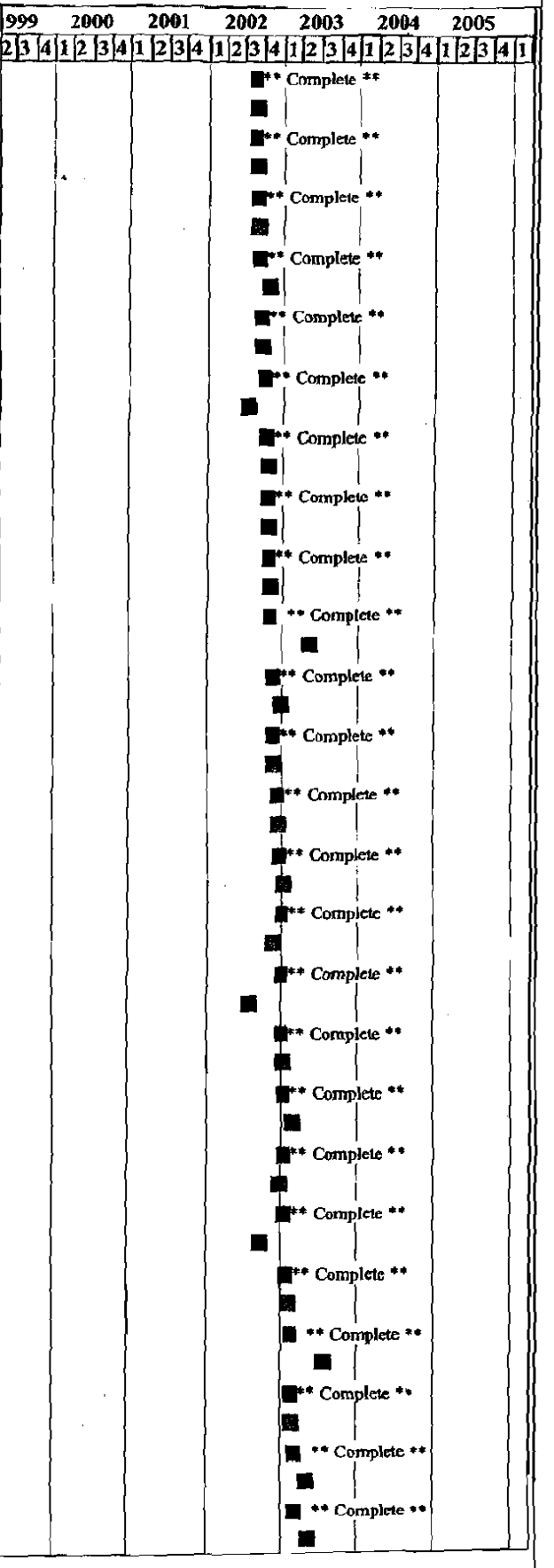



IAL Current Forecast  FNAL Baseline Date  Milestone Complete

# MINOS WBS Level 3 Milestones
## All Milestones

7/5/05

| Mlstn # | WBS Lev | Name | FNAL Cur Forecas | FNAL Base Date | Float |
|---|---|---|---|---|---|
| L-3-206 | 224 | 50% of Near PMTs Delivered (100 M64s) | 4/1/02 | 4/1/02 | 0d |
| L-3-207 | 230 | Electronics Ready for Installation - SM2 | 4/1/02 | 4/1/02 | 0d |
| L-3-208 | 224 | 75% of M16s Delivered (50% of SM2) | 4/15/02 | 4/15/02 | 0d |
| L-3-209 | 222 | 75% of Clear Fiber Cables Fabricated (50% of SM2) | 4/19/02 | 6/3/02 | 0d |
| L-3-220 | 225 | 10% of Near MUX Boxes Complete | 5/1/02 | 5/1/02 | 0d |
| L-3-221 | 225 | 50% of Far MUX Boxes Complete (100% of SM1) | 5/15/02 | 2/15/02 | 0d |
| L-3-222 | 221 | 75% of Scintillator Produced | 5/24/02 | 6/3/02 | 0d |
| L-3-223 | 231 | ND Vertical Slice Complete | 6/3/02 | 6/3/02 | 0d |
| L-3-224 | 245 | 230 SM1 Planes Complete | 6/5/02 | 6/7/02 | 0d |
| -3-225 | 211 | First SM2 Steel Delivered | 6/17/02 | 12/18/02 | 0d |
| -3-226 | 222 | 100% of Clear Fiber Delivered | 6/28/02 | 7/30/02 | 0d |
| -3-227 | 228 | 75% of Far Modules Complete (50% of SM2) | 7/1/02 | 7/1/02 | 0d |
| -3-228 | 245 | Approve SM1 Coil Turnon - UMN/DNR/FNAL | 7/24/02 | 7/15/02 | 0d |
| -3-229 | 236 | All Orders Placed | 7/30/02 | 8/15/02 | 0d |
| -3-240 | 222 | 10% of ND Clear Cables Complete | 8/15/02 | 7/1/02 | 0d |
| 3-241 | 226 | Light Injection Equipment for SM2 Complete | 8/15/02 | 3/1/02 | 0d |
| 3-242 | 236 | Far Clock Distribution Ordered | 8/15/02 | 8/15/02 | 0d |
| 3-243 | 222 | 100% of WLS Fiber Delivered | 8/20/02 | 9/30/02 | 0d |
| 3-244 | 224 | 100% of M16s Delivered (100% of SM2) | 8/20/02 | 8/1/02 | 0d |
| -245 | 225 | 75% of Far MUX Boxes Complete (50% of SM2) | 8/30/02 | 5/1/02 | 0d |
| -246 | 245 | 50 SM2 Planes Complete | 9/5/02 | 9/9/02 | 0d |
| -247 | 214 | Near Magnet Coil Delivery | 9/23/02 | 3/3/03 | 0d |
| -248 | 224 | 100% of Near PMTs Delivered (200 M64s) | 10/1/02 | 10/1/02 | 0d |
| -249 | 224 | Spare PMTs Delivered | 10/15/02 | 12/2/02 | 0d |
| -260 | 226 | Second Test Beam Running Complete | 10/15/02 | 12/15/02 | 0d |




NAL Current Forecast  FNAL Baseline Date  Milestone Complete

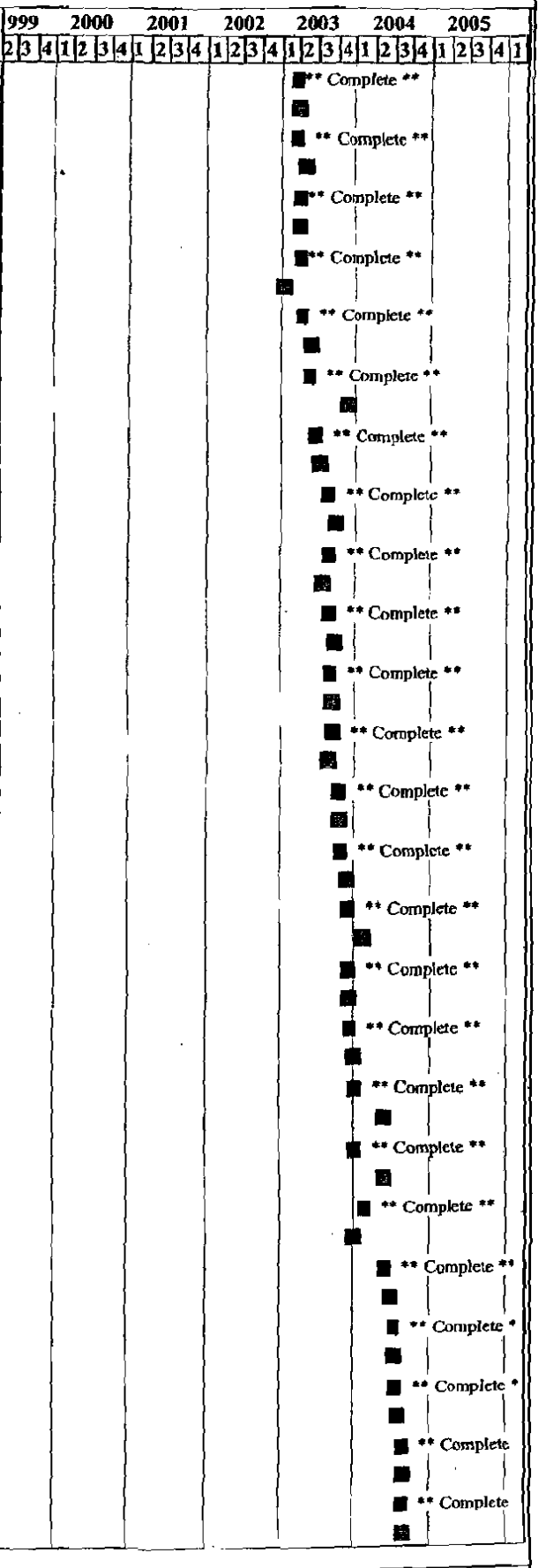


MINOS_Feb05_Status.mpp

# MINOS WBS Level 3 Milestones
## All Milestones

7/5/05

| Mlstn # | WBS Lev | Name | FNAL Cur Forecas | FNAL Base Date | Float |
|---|---|---|---|---|---|
| L-3-261 | 222 | 100% Clear Fiber Cables Fabricated (100% of SM2) | 10/30/02 | 10/30/02 | 0d |
| L-3-262 | 221 | 100% of Scintillator Produced | 10/31/02 | 12/2/02 | 0d |
| L-3-263 | 245 | 100 SM2 Planes Complete | 11/13/02 | 11/1/02 | 0d |
| L-3-264 | 231 | ND FE Prototype Tests Complete | 11/15/02 | 8/12/02 | 0d |
| L-3-265 | 228 | 100% of Near Modules Complete | 11/27/02 | 1/3/03 | 0d |
| L-3-266 | 225 | 50% of Near MUX Boxes Complete | 1/2/03 | 6/30/03 | 0d |
| L-3-267 | 245 | 150 SM2 Planes Complete | 1/30/03 | 2/14/03 | 0d |
| L-3-281 | 222 | 50% of ND Clear Cables Complete | 3/31/03 | 4/29/03 | 0d |
| -3-269 | 228 | 100% of Far Modules Complete (100% of SM2) | 4/4/03 | 3/3/03 | 0d |
| -3-280 | 245 | 200 SM2 Planes Complete | 4/7/03 | 5/1/03 | 0d |
| -3-282 | 231 | Begin MENU Card Checkout | 4/15/03 | 4/15/03 | 0d |
| -3-268 | 225 | 100% of Far MUX Boxes Complete (100% of SM2) | 4/24/03 | 3/31/03 | 0d |
| -3-283 | 211 | Final Steel Delivery to Soudan | 5/30/03 | 5/30/03 | 0d |
| -3-284 | 245 | All SM2 Planes Installed | 6/5/03 | 6/30/03 | 0d |
| 3-300 | 245 | Approve SM2 Coil Turnon - UMN/DNR/FNAL | 7/9/03 | 9/15/03 | 0d |
| 3-287 | 231 | Complete Shipping for CalDet | 7/10/03 | 7/10/03 | 0d |
| 3-286 | 253 | Complete Cable/Rack Mock-up | 7/22/03 | 7/28/03 | 0d |
| -288 | 222 | 100% of ND Clear Cables Complete | 8/15/03 | 12/31/03 | 0d |
| -285 | 225 | 100% of Near MUX Boxes Complete | 8/15/03 | 12/30/03 | 0d |
| -289 | 251 | 50% of ND Rack Assy Complete | 9/30/03 | 7/31/03 | 0d |
| -303 | 251 | 80% of ND Rack Assy Complete | 1/5/04 | 1/30/04 | 0d |
| 336 | 251 | Checkout of Readout Equipment | 2/20/04 | 2/15/04 | 0d |
| 302 | 250 | Near Detector Infrastructure Installation | 2/27/04 | 3/8/04 | 0d |
| 304 | 253 | Begin Spectrometer Plane Installation | 3/31/04 | 3/31/04 | 0d |
| 341 | 253 | Plane 281 Installed | 3/31/04 | 3/31/04 | 0d |




AL Current Forecast  FNAL Baseline Date  Milestone Complete

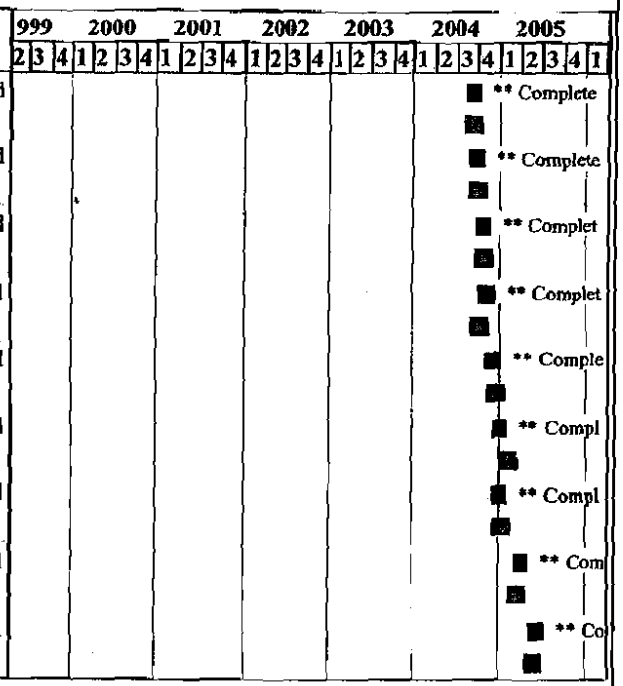


MINOS_Feb05_Status.mpp

# MINOS WBS Level 3 Milestones
## All Milestones

7/5/05

| Mlstn # | WBS Lev | Name | FNAL Cur Forecas | FNAL Base Date | Float |
|---|---|---|---|---|---|
| L-3-301 | 231 | Begin Near FE Electronics Installation | 4/26/04 | 4/19/04 | 0d |
| L-3-305 | 253 | 25% Detector Installed | 5/5/04 | 4/29/04 | 0d |
| L-3-337 | 253 | Spectrometer Installation Complete | 6/1/04 | 5/27/04 | 0d |
| L-3-340 | 251 | PORC for Electronics Operation Obtained | 6/17/04 | 5/12/04 | 0d |
| L-3-338 | 253 | 50% of Calorimeter Planes Installed | 7/14/04 | 7/19/04 | 0d |
| L-3-339 | 253 | 100% Detector Planes Installed | 8/11/04 | 9/7/04 | 0d |
| L-3-342 | 253 | Calorimeter Readout Installed | 8/12/04 | 8/16/04 | 0d |
| L-3-343 | 253 | Obtain PORC for Magnet Operation | 11/19/04 | 10/18/04 | 0d |
| L-3-306 | 250 | Near Detector Installation Complete | 1/20/05 | 12/24/04 | 181d |




NAL Current Forecast  FNAL Baseline Date  Milestone Complete



MINOS_Feb05_Status.mpp

# IX. COST REPORTS

**Note that in this final report we include two sets of cost tables – one from February 2005 and the final reports from June 2005. Final cost for the NuMI Project are reported in the "latest revised estimate" column.**

Cost and earned value reports for the NuMI Project are presented in two sets, one for WBS 1.0 Total Estimated Cost (TEC), and a second for Other Project Costs (OPC) that includes both the MINOS Detector (WBS 2.0) and Project Support (WBS 3.0). Information for all segments of the project is summarized at WBS Level 3 except in the case of the OPC CURVE Reports that are at WBS Level 2 instead. The actual cost of work performed (ACWP) is comprised of the following: 1) costs collected and reported by the Fermilab financial system, 2) costs collected and reported to NuMI Project Management by the University of Minnesota in their monthly progress report for WBS 3.3 MINOS Cavern, and 3) an estimate of the value of work performed by the United Kingdom (UK) collaborating institutions towards their in-kind contribution. Since the UK collaborating institutions are not required to report their actual costs to NuMI Project Management, we are assuming that actual current period costs and cumulative costs are equal to current period earned value and cumulative earned value, respectively. Each set of cost and earned value reports includes the following:

**CPR Format 1A**
This is a modified version of the traditional CPR Format 1 report that shows indirect cost for each WBS Level 3 rather than as a single line item for the entire project. As a result it is possible to review the status of both burdened and unburdened costs for each major system or cost component. In addition, the report for the OPC includes a summary section at the end, with WBS Level 2 totals for the MINOS Detector and Project Support segments of the project.

**CPR Format 3**
This is the traditional format for reporting changes to the project baseline that were approved and implemented in the current reporting period, as well as their impact on the time phased project baseline.

**Plan v Act Reports**
These reports compare burdened planned costs (BCWS) with burdened actual costs (ACWP) on a cumulative basis through the end of the prior fiscal year, and by month for the current fiscal year. There are two versions of this report, one for total cost, and a second for labor costs only. Both OPC versions exclude the value of UK In-Kind Contributions and thus represent US Funds only.

**NuMI Project Obligations**
This report reflects burdened obligations to date, including requisitions in progress, for the entire project, as recorded in the Fermilab financial system. Consequently, it does not include any assumed obligations with respect to work performed by the UK collaborating institutions. Nor does it reflect actual amounts obligated by the University of Minnesota under the grant for WBS 3.3 MINOS Cavern; instead, obligations shown for WBS 3.3 represent the cumulative amount of the Financial Plan transfers to the University of Minnesota from the Fermilab budget.

# NuMI Project TEC

($000's Omitted)

Cost Performance Report - Work Breakdown Structure

| Contractor: | Fermi National Accelerator Laboratory | Contract Type/No: | Project Name/No: | Report Period: |
|---|---|---|---|---|
| Location: | Batavia, Illinois | | NuMI TEC | 1/31/05 2/28/05 |

| Quantity | Negotiated Cost | Est. Cost Authorized Unpriced Work | Tgt. Profit/ Fee % | Tgt. Price | Est Price | Share Ratio | Contract Ceiling | Estimated Contract Ceiling |
|---|---|---|---|---|---|---|---|---|
| 1 | 109,168 | 0 | 0 0 | 109,168 | 0 | | 0 | 0 |

| WBS[2] WBS[3] Results... | Current Period | | | | | Cumulative to Date | | | | | At Completion | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Budgeted Cost | | Actual Cost | Variance | | Budgeted Cost | | Actual Cost | Variance | | | | |
| Item | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Budgeted | Latest Revised Estimate | Variance |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| **1.1 Technical Components** | | | | | | | | | | | | | |
| 1.1.1 Extraction & Primary Beam | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 4,892 | 4,892 | 4,854 | 0 | 38 | 4,892 | 4,892 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 1,094 | 1,094 | 1,106 | 0 | (12) | 1,094 | 1,094 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 5,986 | 5,986 | 5,960 | 0 | 26 | 5,986 | 5,986 | 0 |
| 1.1.2 Neutrino Beam Devices | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 71 | 119 | 71 | (47) | 9,520 | 9,506 | 9,786 | (14) | (280) | 9,520 | 9,520 | 0 |
| Indirect Cost | 0 | 12 | 19 | 12 | (7) | 2,279 | 2,276 | 2,132 | (2) | 144 | 2,279 | 2,279 | 0 |
| WBS[3]Totals: | 0 | 83 | 138 | 83 | (55) | 11,799 | 11,782 | 11,918 | (16) | (136) | 11,799 | 11,799 | 0 |
| 1.1.3 Power Supply System | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | (0) | 4,407 | 4,407 | 4,443 | 0 | (36) | 4,407 | 4,407 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | (0) | 1,072 | 1,072 | 1,044 | 0 | 28 | 1,072 | 1,072 | 0 |
| WBS[3]Totals: | 0 | 0 | 1 | 0 | (1) | 5,480 | 5,480 | 5,487 | 0 | (7) | 5,480 | 5,480 | 0 |
| 1.1.4 Hadron Decay and Absorber | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 2 | 0 | (2) | 1,294 | 1,294 | 1,306 | (0) | (12) | 1,294 | 1,294 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | (0) | 290 | 290 | 279 | 0 | 10 | 290 | 290 | 0 |
| WBS[3]Totals: | 0 | 0 | 2 | 0 | (2) | 1,584 | 1,584 | 1,586 | (0) | (1) | 1,584 | 1,584 | 0 |
| 1.1.5 Neutrino Beam Monitoring | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | (0) | 455 | 455 | 446 | 0 | 9 | 455 | 455 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | (0) | 26 | 26 | 39 | 0 | (14) | 26 | 26 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | (0) | 481 | 481 | 486 | 0 | (5) | 481 | 481 | 0 |
| 1.1.6 Alignment Systems | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 16 | 0 | (16) | 192 | 192 | 179 | 0 | 13 | 192 | 192 | 0 |
| Indirect Cost | 0 | 0 | 3 | 0 | (3) | 60 | 60 | 44 | 0 | 16 | 60 | 60 | 0 |
| WBS[3]Totals: | 0 | 0 | 18 | 0 | (18) | 251 | 251 | 223 | 0 | 29 | 251 | 251 | 0 |
| 1.1.7 Water, Vacuum & Gas Systems | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | (0) | 1,747 | 1,747 | 1,820 | 0 | (72) | 1,747 | 1,747 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | (0) | 434 | 434 | 391 | 0 | 44 | 434 | 434 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | (0) | 2,182 | 2,182 | 2,210 | 0 | (28) | 2,182 | 2,182 | 0 |
| 1.1.8 Installation and Integration | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 14 | 0 | (14) | 1,738 | 1,738 | 2,062 | 0 | (324) | 1,738 | 1,738 | 0 |
| Indirect Cost | 0 | 0 | 2 | 0 | (2) | 415 | 415 | 373 | 0 | 42 | 415 | 415 | 0 |
| WBS[3]Totals: | 0 | 0 | 16 | 0 | (16) | 2,153 | 2,153 | 2,435 | 0 | (282) | 2,153 | 2,153 | 0 |
| 1.1.9 Hadronic Hose (Close-out) | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 53 | 53 | 54 | 0 | (0) | 53 | 53 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 9 | 0 | (0) | 9 | 9 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 62 | 62 | 63 | 0 | (1) | 62 | 62 | 0 |
| WBS[2]Totals: | 0 | 83 | 175 | 83 | (92) | 29,977 | 29,961 | 30,367 | (16) | (406) | 29,977 | 29,977 | 0 |

# NuMI Project TEC

($000's Omitted)

Cost Performance Report - Work Breakdown Structure

| Contractor: | Fermi National Accelerator Laboratory | Contract Type/No: | Project Name/No: | Report Period: |
|---|---|---|---|---|
| Location: | Batavia, Illinois | | NuMI TEC | 1/31/05 2/28/05 |

| Quantity | Negotiated Cost | Est. Cost Authorized Unpriced Work | Tgt. Profit/ Fee % | | Tgt. Price | Est Price | Share Ratio | Contract Ceiling | Estimated Contract Ceiling |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 109,168 | 0 | 0 | 0 | 109,168 | 0 | | 0 | 0 |

| WBS[2] WBS[3] Results... | Current Period | | | | | Cumulative to Date | | | | | At Completion | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Budgeted Cost | | Actual Cost Work Performed | Variance | | Budgeted Cost | | Actual Cost Work Performed | Variance | | | Latest Revised Estimate | Variance |
| Item | Work Scheduled | Work Performed | | Schedule | Cost | Work Scheduled | Work Performed | | Schedule | Cost | Budgeted | | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| **1.2 Facility Construction** | | | | | | | | | | | | | |
| 1.2.1 Facility Physics Design Phase | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 49 | 49 | 52 | 0 | (3) | 49 | 49 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 21 | 21 | 19 | 0 | 2 | 21 | 21 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 70 | 70 | 70 | 0 | (0) | 70 | 70 | 0 |
| 1.2.2 Facility Construction Title I Design Phase | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 1,254 | 1,254 | 1,288 | 0 | (34) | 1,254 | 1,254 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 184 | 184 | 149 | 0 | 35 | 184 | 184 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 1,438 | 1,438 | 1,437 | 0 | 1 | 1,438 | 1,438 | 0 |
| 1.2.3 Facility Construction Title II Design Phase | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 2,620 | 2,620 | 2,807 | 0 | (187) | 2,620 | 2,620 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 355 | 355 | 167 | 0 | 188 | 355 | 355 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 2,975 | 2,975 | 2,974 | 0 | 1 | 2,975 | 2,975 | 0 |
| 1.2.4 Facility Construction Phase | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 68,572 | 68,572 | 68,599 | 0 | (27) | 68,572 | 68,572 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 1,596 | 1,596 | 1,505 | 0 | 91 | 1,596 | 1,596 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 70,169 | 70,169 | 70,104 | 0 | 65 | 70,169 | 70,169 | 0 |
| WBS[2]Totals: | 0 | 0 | 0 | 0 | 0 | 74,652 | 74,652 | 74,586 | 0 | 67 | 74,652 | 74,652 | 0 |
| **1.3 Project Management** | | | | | | | | | | | | | |
| 1.3.1 FY 98 Project Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 208 | 208 | 104 | 0 | 104 | 208 | 208 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 66 | 66 | 37 | 0 | 29 | 66 | 66 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 275 | 275 | 141 | 0 | 133 | 275 | 275 | 0 |
| 1.3.2 FY 99 Project Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 425 | 425 | 512 | 0 | (88) | 425 | 425 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 135 | 135 | 149 | 0 | (14) | 135 | 135 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 560 | 560 | 661 | 0 | (102) | 560 | 560 | 0 |
| 1.3.3 FY 00 Project Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 436 | 436 | 521 | 0 | (85) | 436 | 436 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 139 | 139 | 142 | 0 | (3) | 139 | 139 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 575 | 575 | 663 | 0 | (88) | 575 | 575 | 0 |
| 1.3.4 FY 01 Project Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 332 | 332 | 331 | 0 | 1 | 332 | 332 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 106 | 106 | 92 | 0 | 14 | 106 | 106 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 438 | 438 | 423 | 0 | 15 | 438 | 438 | 0 |

# NuMI Project TEC

($000's Omitted)

Cost Performance Report - Work Breakdown Structure

| Contractor: | Fermi National Accelerator Laboratory | Contract Type/No: | Project Name/No: | Report Period: |
|---|---|---|---|---|
| Location: | Batavia, Illinois | | NuMI TEC | 1/31/05 2/28/05 |

| Quantity | Negotiated Cost | Est. Cost Authorized Unpriced Work | Tgt. Profit/ Fee % | | Tgt. Price | Est Price | Share Ratio | Contract Ceiling | Estimated Contract Ceiling |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 109,168 | 0 | 0 | 0 | 109,168 | 0 | | 0 | 0 |

| WBS[2] WBS[3] Results... | Current Period | | | | | Cumulative to Date | | | | | At Completion | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Budgeted Cost | | Actual Cost | Variance | | Budgeted Cost | | Actual Cost | Variance | | | | |
| Item | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Budgeted | Latest Revised Estimate | Variance |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| 1.3.5 FY 02 Project Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 533 | 533 | 253 | 0 | 281 | 533 | 533 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 170 | 170 | 72 | 0 | 98 | 170 | 170 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 703 | 703 | 324 | 0 | 378 | 703 | 703 | 0 |
| 1.3.6 FY 03 Project Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 411 | 411 | 324 | 0 | 87 | 411 | 411 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 131 | 131 | 98 | 0 | 33 | 131 | 131 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 541 | 541 | 421 | 0 | 120 | 541 | 541 | 0 |
| 1.3.7 FY 04 Project Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 45 | 45 | 332 | 0 | (287) | 45 | 45 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 14 | 14 | 99 | 0 | (84) | 14 | 14 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 59 | 59 | 430 | 0 | (371) | 59 | 59 | 0 |
| 1.3.8 FY 05 Project Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 4 | 4 | 0 | 0 | 4 | 19 | 19 | 50 | 0 | (31) | 23 | 23 | 0 |
| Indirect Cost | 1 | 1 | 0 | 0 | 1 | 6 | 6 | 15 | 0 | (9) | 7 | 7 | 0 |
| WBS[3]Totals: | 5 | 5 | 0 | 0 | 5 | 25 | 25 | 65 | 0 | (40) | 31 | 31 | 0 |
| 1.3.9 NuMI-Unallocated Budget | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | (0) | 0 | 0 | 0 | 0 | (0) | 0 | 0 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | (0) | 0 | 0 | 0 | 0 | (0) | 0 | 0 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | (0) | 0 | 0 | 0 | 0 | (0) | 0 | 0 | 0 |
| WBS[2]Totals: | 5 | 5 | 0 | 0 | 5 | 3,176 | 3,176 | 3,130 | 0 | 46 | 3,181 | 3,181 | 0 |
| General and Administrative | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Undistributed Budget | | | | | | | | | | | 0 | 0 | 0 |
| Sub Total | 5 | 88 | 175 | 83 | (87) | 107,805 | 107,789 | 108,082 | (16) | (293) | 107,811 | 107,811 | 0 |
| Contingency | | | | | | | | | | | 1,358 | 1,358 | 0 |
| Total | 5 | 88 | 175 | 83 | (87) | 107,805 | 107,789 | 108,082 | (16) | (293) | 109,168 | 109,168 | 0 |

# NuMI Project TEC

($000's Omitted)

Cost Performance Report - Baseline

| | | | |
|---|---|---|---|
| Contractor: Fermi National Accelerator Laboratory | Contract Type/No: | Project Name/No: NuMI TEC | Report Period: 1/31/05 2/28/05 |
| Location: Batavia, Illinois | | | |

| (1) Original Contract Target Cost | (2) Negotiated Contract Changes | (3) Current Target Cost | (4) Est. Cost Authorized Autherized Unpriced Work | (5) Contract Budget Base (3) + (4) | (6) Total Allocated Budget | (7) Difference (5) - (6) |
|---|---|---|---|---|---|---|
| 76,200 | 32,968 | 109,168 | 0 | 109,168 | 109,168 | 0 |

| (8) Contract Start Date | (9) Contract Definitization Date | (10) Last Item Delivery Date | (11) Contract Completion Date | (12) Estimated Completion Date |
|---|---|---|---|---|
| 10/1/97 | 10/1/97 | 9/30/03 | 9/30/03 | 9/30/03 |

| Item | BCWS Cum to Date | BCWS for Report Period | Budgeted Cost for Work Scheduled (Non-Cumulative) | | | | | | | | | | | | Undist Budget | Total Budget |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Six Month Forecast | | | | | | (Enter Specific Periods) | | | | | | | |
| | | | +1 MAR05 | +2 APR05 | +3 MAY05 | +4 JUN05 | +5 JUL05 | +6 AUG05 | BAL FY05 | | | | | | | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | | (15) | (16) |
| PM Baseline (Beginning of Period) | 107,801 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 107,811 |
| PM Baseline (End of Period) | 107,805 | | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 107,811 |
| Contingency | | | | | | | | | | | | | | | | 1,358 |
| Total | | | | | | | | | | | | | | | | 109,168 |

# NuMI Project TEC

($000's Omitted)

| Program: NUMITEC | Description: NuMI TEC | Approval: Program Manager |
|---|---|---|
| Run Date: 03/22/05 | Status Date: 2/28/2005 | Functional Manager |
| | | Cost Account Manager |

| DESCRIPTION | | PR YRS | OCT04 | NOV04 | DEC04 | JAN05 | FEB05 | MAR05 | APR05 | MAY05 | JUN05 | JUL05 | AUG05 | SEP05 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.1 Technical Components | | | | | | | | | | | | | | | |
| 1.1.1 Extraction & Primary Beam | BCWS | 5,613 | 10 | 363 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,986 |
| | ACWP | 5,892 | 46 | 17 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,960 |
| 1.1.2 Neutrino Beam Devices | BCWS | 11,132 | 104 | 532 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11,799 |
| | ACWP | 11,012 | 221 | 170 | 240 | 137 | 138 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11,918 |
| 1.1.3 Power Supply System | BCWS | 5,321 | 15 | 143 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,480 |
| | ACWP | 5,343 | 77 | 61 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,487 |
| 1.1.4 Hadron Decay and Absorber | BCWS | 1,360 | 64 | 118 | 43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,584 |
| | ACWP | 1,554 | 12 | 4 | 19 | (5) | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,586 |
| 1.1.5 Neutrino Beam Monitoring | BCWS | 456 | 6 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 481 |
| | ACWP | 473 | (1) | 4 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 486 |
| 1.1.6 Alignment Systems | BCWS | 289 | 6 | (44) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 251 |
| | ACWP | 202 | 0 | 0 | 3 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 223 |
| 1.1.7 Water, Vacuum & Gas Systems | BCWS | 2,036 | 31 | 115 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,182 |
| | ACWP | 2,111 | 41 | 35 | 14 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,210 |
| 1.1.8 Installation and Integration | BCWS | 2,227 | 66 | (231) | 86 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,153 |
| | ACWP | 2,100 | 35 | 53 | 62 | 169 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,435 |
| 1.1.9 Hadronic Hose (Close-out) | BCWS | 62 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 62 |
| | ACWP | 63 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 |
| WBS[2] Totals: | BCWS | 28,495 | 303 | 995 | 179 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29,977 |
| | ACWP | 28,750 | 431 | 344 | 348 | 319 | 175 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30,367 |
| 1.2 Facility Construction | | | | | | | | | | | | | | | |
| 1.2.1 Facility Physics Design Phase | BCWS | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| | ACWP | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| 1.2.2 Facility Construction Title I Design Phase | BCWS | 1,438 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,438 |
| | ACWP | 1,437 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,437 |
| 1.2.3 Facility Construction Title II Design Phase | BCWS | 2,975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,975 |
| | ACWP | 2,974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,974 |
| 1.2.4 Facility Construction Phase | BCWS | 70,169 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70,169 |
| | ACWP | 70,104 | 1 | 1 | 0 | (1) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70,104 |
| WBS[2] Totals: | BCWS | 74,652 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 74,652 |
| | ACWP | 74,585 | 1 | 1 | 0 | (1) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 74,586 |
| 1.3 Project Management | | | | | | | | | | | | | | | |
| 1.3.1 FY 98 Project Management | BCWS | 275 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 275 |
| | ACWP | 141 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 141 |
| 1.3.2 FY 99 Project Management | BCWS | 560 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 560 |
| | ACWP | 661 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 661 |
| 1.3.3 FY 00 Project Management | BCWS | 575 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 575 |
| | ACWP | 663 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 663 |

# NuMI Project TEC

($000's Omitted)

| Program: | Description: | Approval: |
|---|---|---|
| NUMITEC | NuMI TEC | Program Manager |
| Run Date: 03/22/05 | Status Date: 2/28/2005 | Functional Manager |
| | | Cost Account Manager |

| DESCRIPTION | | PR YRS | OCT04 | NOV04 | DEC04 | JAN05 | FEB05 | MAR05 | APR05 | MAY05 | JUN05 | JUL05 | AUG05 | SEP05 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.3.4 FY 01 Project Management | BCWS | 438 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 438 |
| | ACWP | 423 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 423 |
| 1.3.5 FY 02 Project Management | BCWS | 703 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 703 |
| | ACWP | 324 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 324 |
| 1.3.6 FY 03 Project Management | BCWS | 541 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 541 |
| | ACWP | 421 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 421 |
| 1.3.7 FY 04 Project Management | BCWS | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 |
| | ACWP | 430 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 430 |
| 1.3.8 FY 05 Project Management | BCWS | 0 | 5 | 5 | 5 | 5 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| | ACWP | 0 | 26 | 21 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 65 |
| 1.3.9 NuMI-Unallocated Budget | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WBS[2] Totals: | BCWS | 3,151 | 5 | 5 | 5 | 5 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 3,181 |
| | ACWP | 3,064 | 27 | 21 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,130 |
| **Grand Totals:** | BCWS | 106,298 | 308 | 1,001 | 185 | 10 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 107,811 |
| | ACWP | 106,399 | 458 | 365 | 366 | 318 | 175 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 108,082 |

# NuMI Project TEC - Labor Only

($000's Omitted)

| Program: NUMITEC | Description: NuMI TEC | Approval: Program Manager |
|---|---|---|
| Run Date: 03/22/05 | Status Date: 2/28/2005 | Functional Manager |
| | | Cost Account Manager |

| DESCRIPTION | | PR YRS | OCT04 | NOV04 | DEC04 | JAN05 | FEB05 | MAR05 | APR05 | MAY05 | JUN05 | JUL05 | AUG05 | SEP05 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.1 Technical Components** | | | | | | | | | | | | | | | |
| 1.1.1 Extraction & Primary Beam | BCWS | 2,416 | 10 | 363 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,789 |
| | ACWP | 3,195 | 22 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,226 |
| 1.1.2 Neutrino Beam Devices | BCWS | 5,671 | 40 | 515 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,247 |
| | ACWP | 5,740 | 20 | 27 | 31 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,824 |
| 1.1.3 Power Supply System | BCWS | 2,785 | 15 | 143 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,943 |
| | ACWP | 3,286 | 50 | 48 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,386 |
| 1.1.4 Hadron Decay and Absorber | BCWS | 585 | 14 | 26 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 647 |
| | ACWP | 730 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 735 |
| 1.1.5 Neutrino Beam Monitoring | BCWS | 78 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 78 |
| | ACWP | 75 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 75 |
| 1.1.6 Alignment Systems | BCWS | 236 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 241 |
| | ACWP | 148 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 148 |
| 1.1.7 Water, Vacuum & Gas Systems | BCWS | 1,102 | 31 | 115 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,248 |
| | ACWP | 918 | 7 | 11 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 945 |
| 1.1.8 Installation and Integration | BCWS | 958 | 46 | 46 | 34 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,088 |
| | ACWP | 447 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 449 |
| 1.1.9 Hadronic Hose (Close-out) | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WBS[2] Totals: | BCWS | 13,830 | 158 | 1,211 | 78 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15,281 |
| | ACWP | 14,539 | 101 | 99 | 43 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14,788 |
| **1.2 Facility Construction** | | | | | | | | | | | | | | | |
| 1.2.1 Facility Physics Design Phase | BCWS | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| | ACWP | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| 1.2.2 Facility Construction Title I Design Phase | BCWS | 300 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 300 |
| | ACWP | 299 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 299 |
| 1.2.3 Facility Construction Title II Design Phase | BCWS | 556 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 556 |
| | ACWP | 556 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 556 |
| 1.2.4 Facility Construction Phase | BCWS | 3,071 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,071 |
| | ACWP | 3,389 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,389 |
| WBS[2] Totals: | BCWS | 3,998 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,998 |
| | ACWP | 4,314 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4,314 |
| **1.3 Project Management** | | | | | | | | | | | | | | | |
| 1.3.1 FY 98 Project Management | BCWS | 275 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 275 |
| | ACWP | 125 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 125 |
| 1.3.2 FY 99 Project Management | BCWS | 560 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 560 |
| | ACWP | 595 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 595 |
| 1.3.3 FY 00 Project Management | BCWS | 575 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 575 |
| | ACWP | 616 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 616 |

# NuMI Project TEC - Labor Only

($000's Omitted)

| Program: | Description: | Approval: |
|---|---|---|
| NUMITEC | NuMI TEC | Program Manager |
| Run Date: 03/22/05 | Status Date: 2/28/2005 | Functional Manager |
| | | Cost Account Manager |

| DESCRIPTION | | PR YRS | OCT04 | NOV04 | DEC04 | JAN05 | FEB05 | MAR05 | APR05 | MAY05 | JUN05 | JUL05 | AUG05 | SEP05 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.3.4 FY 01 Project Management | BCWS | 438 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 438 |
| | ACWP | 416 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 416 |
| 1.3.5 FY 02 Project Management | BCWS | 703 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 703 |
| | ACWP | 324 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 324 |
| 1.3.6 FY 03 Project Management | BCWS | 541 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 541 |
| | ACWP | 416 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 416 |
| 1.3.7 FY 04 Project Management | BCWS | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 |
| | ACWP | 428 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 428 |
| 1.3.8 FY 05 Project Management | BCWS | 0 | 5 | 5 | 5 | 5 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| | ACWP | 0 | 26 | 21 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 65 |
| WBS[2] Totals: | BCWS | 3,151 | 5 | 5 | 5 | 5 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 3,181 |
| | ACWP | 2,921 | 26 | 21 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,986 |
| **Grand Totals:** | BCWS | 20,978 | 163 | 1,216 | 83 | 10 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 22,460 |
| | ACWP | 21,773 | 128 | 119 | 61 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22,088 |

# NuMI Other Project Costs

($000's Omitted)

Cost Performance Report - Work Breakdown Structure

| Contractor: | Fermi National Accelerator Laboratory | Contract Type/No: | Project Name/No: | Report Period: |
|---|---|---|---|---|
| Location: | Batavia | | NuMI Other Proj Costs | 1/31/05 2/28/05 |

| Quantity | Negotiated Cost | Est. Cost Authorized Unpriced Work | Tgt. Profit/ Fee % | | Tgt. Price | Est Price | Share Ratio | Contract Ceiling | Estimated Contract Ceiling |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 62,200 | 0 | 0 | 0 | 62,200 | 0 | | 0 | 0 |

| WBS[2] WBS[3] Results... | Current Period | | | | | Cumulative to Date | | | | | At Completion | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Budgeted Cost | | Actual Cost | Variance | | Budgeted Cost | | Actual Cost | Variance | | | | |
| Item | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Budgeted | Latest Revised Estimate | Variance |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| **2.1 Magnets: Steel & Coils** | | | | | | | | | | | | | |
| 2.1.1 Steel Plane Fabrication | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 4,372 | 4,372 | 4,348 | 0 | 24 | 4,372 | 4,372 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 229 | 229 | 226 | 0 | 3 | 229 | 229 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 4,601 | 4,601 | 4,574 | 0 | 27 | 4,601 | 4,601 | 0 |
| 2.1.2 Steel handling fixtures | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 637 | 637 | 637 | (0) | 0 | 637 | 637 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 156 | 156 | 157 | 0 | (0) | 156 | 156 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 793 | 793 | 793 | 0 | (0) | 793 | 793 | 0 |
| 2.1.3 Near Detector Support Structures | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | (2) | (2) | 1 | 0 | (4) | (2) | (2) | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 4 | 4 | 4 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 |
| 2.1.4 Magnet Coil | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 1,386 | 1,386 | 1,373 | (0) | 14 | 1,386 | 1,386 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 286 | 286 | 300 | 0 | (14) | 286 | 286 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 1,673 | 1,673 | 1,672 | 0 | 0 | 1,673 | 1,673 | 0 |
| 2.1.5 Detector Plane Prototypes | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 390 | 390 | 394 | 0 | (4) | 390 | 390 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 106 | 106 | 102 | (0) | 4 | 106 | 106 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 495 | 495 | 496 | (0) | (0) | 495 | 495 | 0 |
| 2.1.6 Steel Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 53 | 53 | 53 | 0 | (0) | 53 | 53 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 5 | (0) | (0) | 4 | 4 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 57 | 57 | 58 | (0) | (0) | 57 | 57 | 0 |
| WBS[2]Totals: | 0 | 0 | 0 | 0 | 0 | 7,621 | 7,621 | 7,595 | 0 | 27 | 7,621 | 7,621 | 0 |
| **2.2 Scintillator Detector Fabrication** | | | | | | | | | | | | | |
| 2.2.1 Scintillator Strips | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 2,890 | 2,890 | 2,867 | 0 | 22 | 2,890 | 2,890 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 266 | 266 | 289 | (0) | (23) | 266 | 266 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 3,156 | 3,156 | 3,156 | 0 | (0) | 3,156 | 3,156 | 0 |
| 2.2.2 Fiber | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 4,236 | 4,236 | 4,270 | 0 | (34) | 4,236 | 4,236 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 60 | 60 | 26 | (0) | 34 | 60 | 60 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 4,296 | 4,296 | 4,296 | (0) | (0) | 4,296 | 4,296 | 0 |

# NuMI Other Project Costs

($000's Omitted)

Cost Performance Report - Work Breakdown Structure

| Contractor: | Fermi National Accelerator Laboratory | Contract Type/No: | Project Name/No: | Report Period: |
|---|---|---|---|---|
| Location: | Batavia | | NuMI Other Proj Costs | 1/31/05 2/28/05 |

| Quantity | Negotiated Cost | Est. Cost Authorized Unpriced Work | Tgt. Profit/ Fee % | | Tgt. Price | Est Price | Share Ratio | Contract Ceiling | Estimated Contract Ceiling |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 62,200 | 0 | 0 | 0 | 62,200 | 0 | | 0 | 0 |

| WBS[2] WBS[3] Results... | Current Period | | | | | Cumulative to Date | | | | | At Completion | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Budgeted Cost | | Actual Cost | Variance | | Budgeted Cost | | Actual Cost | Variance | | | | |
| Item | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Budgeted | Latest Revised Estimate | Variance |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| 2.2.3 Scintillator Modules | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 1,899 | 1,899 | 1,893 | 0 | 6 | 1,899 | 1,899 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 83 | 83 | 89 | 0 | (6) | 83 | 83 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 1,982 | 1,982 | 1,982 | 0 | 0 | 1,982 | 1,982 | 0 |
| 2.2.4 Photodetector Systems | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 2,156 | 2,156 | 2,170 | 0 | (14) | 2,156 | 2,156 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 23 | 23 | 9 | 0 | 14 | 23 | 23 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 2,179 | 2,179 | 2,179 | 0 | (0) | 2,179 | 2,179 | 0 |
| 2.2.5 Mux Boxes & Connectors | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 1,394 | 1,394 | 1,397 | (0) | (4) | 1,394 | 1,394 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 27 | 27 | 23 | (0) | 4 | 27 | 27 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 1,421 | 1,421 | 1,421 | (0) | 0 | 1,421 | 1,421 | 0 |
| 2.2.6 Calibration Systems | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 1,102 | 1,102 | 1,103 | 0 | (0) | 1,102 | 1,102 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 1,103 | 1,103 | 1,103 | 0 | 0 | 1,103 | 1,103 | 0 |
| 2.2.7 Ass'y & Test Equipment | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 1,677 | 1,677 | 1,677 | (0) | (0) | 1,677 | 1,677 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 53 | 53 | 53 | (0) | (0) | 53 | 53 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 1,731 | 1,731 | 1,731 | (0) | (0) | 1,731 | 1,731 | 0 |
| 2.2.8 Factories | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 3,232 | 3,232 | 3,266 | 0 | (35) | 3,232 | 3,232 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 47 | 47 | 4 | 0 | 43 | 47 | 47 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 3,279 | 3,279 | 3,271 | 0 | 8 | 3,279 | 3,279 | 0 |
| 2.2.9 Scintillator Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 371 | 371 | 375 | (0) | (4) | 371 | 371 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 5 | 0 | 4 | 9 | 9 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 379 | 379 | 379 | (0) | (0) | 379 | 379 | 0 |
| WBS[2]Totals: | 0 | 0 | 0 | 0 | 0 | 19,525 | 19,525 | 19,517 | 0 | 8 | 19,525 | 19,525 | 0 |
| **2.3 Electronics, DAQ & Database** | | | | | | | | | | | | | |
| 2.3.1 Near Detector Front End | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 4,151 | 4,151 | 4,070 | (0) | 81 | 4,151 | 4,151 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 450 | 450 | 511 | 0 | (61) | 450 | 450 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 4,601 | 4,601 | 4,581 | 0 | 20 | 4,601 | 4,601 | 0 |
| 2.3.2 Far Detector Front-end | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 1,590 | 1,590 | 1,593 | 0 | (2) | 1,590 | 1,590 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 82 | 82 | 79 | 0 | 3 | 82 | 82 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 1,673 | 1,673 | 1,672 | 0 | 1 | 1,673 | 1,673 | 0 |

# NuMI Other Project Costs

($000's Omitted)

Cost Performance Report - Work Breakdown Structure

| Contractor: | Fermi National Accelerator Laboratory | Contract Type/No: | Project Name/No: | Report Period: |
|---|---|---|---|---|
| Location: | Batavia | | NuMI Other Proj Costs | 1/31/05 2/28/05 |

| Quantity | Negotiated Cost | Est. Cost Authorized Unpriced Work | Tgt. Profit/ Fee % | | Tgt. Price | Est Price | Share Ratio | Contract Ceiling | Estimated Contract Ceiling |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 62,200 | 0 | 0 | 0 | 62,200 | 0 | | 0 | 0 |

| WBS[2] WBS[3] Results... | Current Period | | | | | Cumulative to Date | | | | | At Completion | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Budgeted Cost | | Actual Cost | Variance | | Budgeted Cost | | Actual Cost | Variance | | | | |
| Item | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Budgeted | Latest Revised Estimate | Variance |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| 2.3.3 Data Routing & Trigger Farm | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 1,241 | 1,241 | 1,241 | (0) | 0 | 1,241 | 1,241 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 1,241 | 1,241 | 1,241 | (0) | 0 | 1,241 | 1,241 | 0 |
| 2.3.4 Data Acquisition & Triggering | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 391 | 391 | 391 | 0 | 0 | 391 | 391 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 391 | 391 | 391 | 0 | 0 | 391 | 391 | 0 |
| 2.3.5 Database | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 10 | 0 | (0) | 10 | 10 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 10 | 0 | (0) | 10 | 10 | 0 |
| 2.3.6 Auxilliary Systems | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 495 | 495 | 494 | 0 | 1 | 495 | 495 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 48 | 48 | 50 | 0 | (2) | 48 | 48 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 543 | 543 | 544 | 0 | (1) | 543 | 543 | 0 |
| 2.3.7 Electronics Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 214 | 214 | 217 | 0 | (3) | 214 | 214 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 1 | 0 | 2 | 3 | 3 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 218 | 218 | 218 | 0 | (0) | 218 | 218 | 0 |
| 2.3.8 Slow Control & Monitoring | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 407 | 407 | 386 | 0 | 21 | 407 | 407 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 12 | 12 | 14 | (0) | (2) | 12 | 12 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 419 | 419 | 400 | 0 | 19 | 419 | 419 | 0 |
| 2.3.9 HV System | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 67 | 67 | 66 | (0) | 0 | 67 | 67 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 11 | 0 | (0) | 10 | 10 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 77 | 77 | 77 | (0) | 0 | 77 | 77 | 0 |
| WBS[2]Totals: | 0 | 0 | 0 | 0 | 0 | 9,173 | 9,173 | 9,134 | 0 | 39 | 9,173 | 9,173 | 0 |
| **2.4 Far Detector Installation** | | | | | | | | | | | | | |
| 2.4.1 FDI Completed Design Tasks | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2.4.2 FDI Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 541 | 541 | 550 | 0 | (9) | 541 | 541 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 43 | 43 | 34 | (0) | 9 | 43 | 43 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 584 | 584 | 584 | 0 | (0) | 584 | 584 | 0 |

# NuMI Other Project Costs

($000's Omitted)

Cost Performance Report - Work Breakdown Structure

| Contractor: | Fermi National Accelerator Laboratory | Contract Type/No: | Project Name/No: | Report Period: |
|---|---|---|---|---|
| Location: | Batavia | | NuMI Other Proj Costs | 1/31/05 - 2/28/05 |

| Quantity | Negotiated Cost | Est. Cost Authorized Unpriced Work | Tgt. Profit/ Fee % | | Tgt. Price | Est Price | Share Ratio | Contract Ceiling | Estimated Contract Ceiling |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 62,200 | 0 | 0 | 0 | 62,200 | 0 | | 0 | 0 |

| WBS[2] WBS[3] Results... | Current Period | | | | | Cumulative to Date | | | | | At Completion | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Budgeted Cost | | Actual Cost | Variance | | Budgeted Cost | | Actual Cost | Variance | | | | |
| Item | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Budgeted | Latest Revised Estimate | Variance |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| 2.4.3 SDN-FDI Construction Oversight | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 115 | 115 | 115 | 0 | 0 | 115 | 115 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 115 | 115 | 115 | 0 | 0 | 115 | 115 | 0 |
| 2.4.4 FDI Soudan Lab Infrastructure Setup | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 470 | 470 | 469 | 0 | 1 | 470 | 470 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 4 | 0 | (0) | 3 | 3 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 473 | 473 | 473 | 0 | 0 | 473 | 473 | 0 |
| 2.4.5 SDN-FDI Detector Installation | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 2,960 | 2,960 | 2,953 | 0 | 7 | 2,960 | 2,960 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | (6) | 0 | 0 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 2,960 | 2,960 | 2,959 | 0 | 0 | 2,960 | 2,960 | 0 |
| 2.4.6 SDN-FDI DNR Costs | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 382 | 382 | 378 | 0 | 4 | 382 | 382 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | (1) | 0 | 0 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 382 | 382 | 378 | 0 | 3 | 382 | 382 | 0 |
| 2.4.7 FDI Alignment & Survey | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 58 | 58 | 58 | 0 | (1) | 58 | 58 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 9 | 0 | 0 | 10 | 10 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 67 | 67 | 67 | 0 | (0) | 67 | 67 | 0 |
| WBS[2]Totals: | 0 | 0 | 0 | 0 | 0 | 4,581 | 4,581 | 4,577 | 0 | 4 | 4,581 | 4,581 | 0 |
| **2.5 Near Detector Installation** | | | | | | | | | | | | | |
| 2.5.1 NDI Infrastructure | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 2 | 0 | (2) | 402 | 402 | 386 | 0 | 17 | 402 | 402 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | (0) | 110 | 110 | 77 | 0 | 33 | 110 | 110 | 0 |
| WBS[3]Totals: | 0 | 0 | 2 | 0 | (2) | 512 | 512 | 462 | 0 | 50 | 512 | 512 | 0 |
| 2.5.2 NDI Plane Assembly | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 393 | 393 | 403 | 0 | (10) | 393 | 393 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 123 | 123 | 111 | (0) | 12 | 123 | 123 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 516 | 516 | 514 | 0 | 2 | 516 | 516 | 0 |
| 2.5.3 NDI Detector Installation | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 2 | 0 | (2) | 898 | 898 | 1,091 | 0 | (193) | 898 | 898 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | (0) | 254 | 254 | 270 | 0 | (16) | 254 | 254 | 0 |
| WBS[3]Totals: | 0 | 0 | 2 | 0 | (2) | 1,151 | 1,151 | 1,360 | 0 | (209) | 1,151 | 1,151 | 0 |
| 2.5.4 NDI Facility Experimental Infrastructure | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 200 | 200 | 215 | 0 | (15) | 200 | 200 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 38 | 38 | 38 | 0 | 0 | 38 | 38 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 238 | 238 | 253 | 0 | (15) | 238 | 238 | 0 |

# NuMI Other Project Costs

($000's Omitted)

Cost Performance Report - Work Breakdown Structure

| Contractor: | Fermi National Accelerator Laboratory | Contract Type/No: | Project Name/No: | Report Period: |
|---|---|---|---|---|
| Location: | Batavia | | NuMI Other Proj Costs | 1/31/05 2/28/05 |

| Quantity | Negotiated Cost | Est. Cost Authorized Unpriced Work | Tgt. Profit/ Fee % | | Tgt. Price | Est Price | Share Ratia | Contract Ceiling | Estimated Contract Ceiling |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 62,200 | 0 | 0 | 0 | 62,200 | 0 | | 0 | 0 |

| WBS[2] WBS[3] Results... | Current Period | | | | | Cumulative to Date | | | | | At Completion | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Budgeted Cost | | Actual Cost | Variance | | Budgeted Cost | | Actual Cost | Variance | | | | |
| Item | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Budgeted | Latest Revised Estimate | Variance |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| 2.5.5 RBI SB&O Experimental Systems Outfitting | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 2,944 | 2,944 | 2,944 | 0 | (0) | 2,944 | 2,944 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 2,944 | 2,944 | 2,944 | 0 | (0) | 2,944 | 2,944 | 0 |
| WBS[2]Totals: | 0 | 0 | 4 | 0 | (4) | 5,361 | 5,361 | 5,533 | 0 | (172) | 5,361 | 5,361 | 0 |
| 2.6 MINOS Project Management | | | | | | | | | | | | | |
| 2.6.1 FNL-Project Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 27 | 0 | (27) | 1,241 | 1,241 | 1,348 | 0 | (107) | 1,241 | 1,241 | 0 |
| Indirect Cost | 0 | 0 | 8 | 0 | (8) | 388 | 388 | 377 | 0 | 12 | 388 | 388 | 0 |
| WBS[3]Totals: | 0 | 0 | 36 | 0 | (36) | 1,629 | 1,629 | 1,724 | 0 | (95) | 1,629 | 1,629 | 0 |
| 2.6.2 ANL-Project Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 96 | 96 | 96 | 0 | (0) | 96 | 96 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 98 | 98 | 98 | 0 | (0) | 98 | 98 | 0 |
| WBS[2]Totals: | 0 | 0 | 36 | 0 | (36) | 1,727 | 1,727 | 1,822 | 0 | (95) | 1,727 | 1,727 | 0 |
| 3.1 NuMI Conceptual Design | | | | | | | | | | | | | |
| 3.1.1 FNL-BD-NuMI CDR | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 407 | 407 | 407 | 0 | 0 | 407 | 407 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 82 | 82 | 80 | 0 | 2 | 82 | 82 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 489 | 489 | 487 | 0 | 2 | 489 | 489 | 0 |
| 3.1.2 FNL-BD-NuMI FESS CDR | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 282 | 282 | 282 | 0 | 0 | 282 | 282 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 64 | 64 | 64 | 0 | 0 | 64 | 64 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 346 | 346 | 346 | 0 | 0 | 346 | 346 | 0 |
| 3.1.3 FNL-NuMI Beam Design | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 612 | 612 | 612 | 0 | (0) | 612 | 612 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 186 | 186 | 184 | 0 | 3 | 186 | 186 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 798 | 798 | 796 | 0 | 3 | 798 | 798 | 0 |
| 3.1.4 FNL-BD-NuMI Project Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 184 | 184 | 184 | 0 | (0) | 184 | 184 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 51 | 51 | 50 | 0 | 1 | 51 | 51 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 235 | 235 | 234 | 0 | 1 | 235 | 235 | 0 |
| 3.1.5 FNL-Soudan Lab Design | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 55 | 55 | 56 | 0 | (1) | 55 | 55 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 9 | 0 | 1 | 10 | 10 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 65 | 65 | 65 | 0 | 0 | 65 | 65 | 0 |
| WBS[2]Totals: | 0 | 0 | 0 | 0 | 0 | 1,934 | 1,934 | 1,928 | 0 | 6 | 1,934 | 1,934 | 0 |

# NuMI Other Project Costs

($000's Omitted)

Cost Performance Report - Work Breakdown Structure

| Contractor: | Fermi National Accelerator Laboratory | Contract Type/No: | Project Name/No: | Report Period: |
|---|---|---|---|---|
| Location: | Batavia | | NuMI Other Proj Costs | 1/31/05 2/28/05 |

| Quantity | Negotiated Cost | Est. Cost Authorized Unpriced Work | Tgt. Profit/ Fee % | | Tgt. Price | Est Price | Share Ratio | Contract Ceiling | Estimated Contract Ceiling |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 62,200 | 0 | 0 | 0 | 62,200 | 0 | | 0 | 0 |

| WBS[2] WBS[3] Results... | Current Period | | | | | Cumulative to Date | | | | | At Completion | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Budgeted Cost | | Actual Cost Work Performed | Variance | | Budgeted Cost | | Actual Cost Work Performed | Variance | | | Latest Revised Estimate | |
| Item | Work Scheduled | Work Performed | | Schedule | Cost | Work Scheduled | Work Performed | | Schedule | Cost | Budgeted | | Variance |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| **3.2 MINOS Detector R&D** | | | | | | | | | | | | | |
| 3.2.1 FNL-MINOS Scintillator R&D | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 872 | 872 | 870 | 0 | 2 | 872 | 872 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 115 | 115 | 118 | 0 | (2) | 115 | 115 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 988 | 988 | 988 | 0 | 0 | 988 | 988 | 0 |
| 3.2.2 FNL-MINOS Steel R&D | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 549 | 549 | 550 | 0 | (1) | 549 | 549 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 95 | 95 | 94 | 0 | 1 | 95 | 95 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 644 | 644 | 644 | 0 | (0) | 644 | 644 | 0 |
| 3.2.3 FNL-RD-Neutrino Oscillation R&D | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 116 | 116 | 116 | 0 | 0 | 116 | 116 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 20 | 20 | 20 | (0) | 0 | 20 | 20 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 136 | 136 | 136 | (0) | 0 | 136 | 136 | 0 |
| WBS[2]Totals: | 0 | 0 | 0 | 0 | 0 | 1,768 | 1,768 | 1,768 | (0) | 0 | 1,768 | 1,768 | 0 |
| **3.3 MINOS Cavern** | | | | | | | | | | | | | |
| 3.3.0 Preconstruction Work | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 758 | 758 | 758 | 0 | 0 | 758 | 758 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 758 | 758 | 758 | 0 | 0 | 758 | 758 | 0 |
| 3.3.1 Cavern Construction | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 6,597 | 6,597 | 6,597 | 0 | 0 | 6,597 | 6,597 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 6,597 | 6,597 | 6,597 | 0 | 0 | 6,597 | 6,597 | 0 |
| 3.3.2 Cavern Outfitting | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 7,171 | 7,171 | 7,171 | 0 | 0 | 7,171 | 7,171 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 7,171 | 7,171 | 7,171 | 0 | 0 | 7,171 | 7,171 | 0 |
| WBS[2]Totals: | 0 | 0 | 0 | 0 | 0 | 14,527 | 14,527 | 14,527 | 0 | 0 | 14,527 | 14,527 | 0 |
| **3.4 Soudan/MINOS Operating** | | | | | | | | | | | | | |
| 3.4.1 UMN-Mine Crew Support/Soudan Gen'l Operations | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 1,523 | 1,523 | 1,503 | 0 | 20 | 1,523 | 1,523 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 8 | 8 | 27 | 0 | (20) | 8 | 8 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 1,531 | 1,531 | 1,531 | 0 | (0) | 1,531 | 1,531 | 0 |
| 3.4.2 UMN-Breitung Township Building Rental | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 75 | 75 | 75 | 0 | (0) | 75 | 75 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 75 | 75 | 75 | 0 | (0) | 75 | 75 | 0 |
| 3.4.3 UMN-E Peterson Salary | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 71 | 71 | 71 | 0 | 0 | 71 | 71 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 71 | 71 | 71 | 0 | 0 | 71 | 71 | 0 |
| WBS[2]Totals: | 0 | 0 | 0 | 0 | 0 | 1,677 | 1,677 | 1,677 | 0 | (0) | 1,677 | 1,677 | 0 |

# NuMI Other Project Costs

($000's Omitted)

Cost Performance Report - Work Breakdown Structure

| Contractor: | Fermi National Accelerator Laboratory | Contract Type/No: | Project Name/No: | Report Period: |
|---|---|---|---|---|
| Location: | Batavia | | NuMI Other Proj Costs | 1/31/05 2/28/05 |

| Quantity | Negotiated Cost | Est. Cost Authorized Unpriced Work | Tgt. Profit/ Fee % | | Tgt. Price | Est Price | Share Ratio | Contract Ceiling | Estimated Contract Ceiling |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 62,200 | 0 | 0 | 0 | 62,200 | 0 | | 0 | 0 |

| WBS[2] WBS[3] Results... | Current Period | | | | | Cumulative to Date | | | | | At Completion | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Budgeted Cost | | Actual Cost | Variance | | Budgeted Cost | | Actual Cost | Variance | | | | |
| Item | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Budgeted | Latest Revised Estimate | Variance |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| General and Administrative | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Undistributed Budget | | | | | | | | | | | 0 | 0 | 0 |
| Sub Total | 0 | 0 | 40 | 0 | (40) | 67,894 | 67,894 | 68,078 | 0 | (184) | 67,894 | 67,894 | 0 |
| Contingency + MINOS Scope Reserve | | | | | | | | | | | 2,899 | 2,899 | 0 |
| Total NuMI Other Proj Costs | 0 | 0 | 40 | 0 | (40) | 67,894 | 67,894 | 68,078 | 0 | (184) | 70,793 | 70,793 | 0 |
| UK In-Kind Contribution | 0 | 0 | 0 | 0 | 0 | (4,835) | (4,835) | (4,835) | (0) | 0 | (4,835) | (4,835) | 0 |
| Minnesota Preconstruction Funds | 0 | 0 | 0 | 0 | 0 | (758) | (758) | (758) | 0 | 0 | (758) | (758) | 0 |
| Minnesota Construction Funds FY99 | 0 | 0 | 0 | 0 | 0 | (3,000) | (3,000) | (3,000) | 0 | 0 | (3,000) | (3,000) | 0 |
| Total US Funds | 0 | 0 | 40 | 0 | (40) | 59,301 | 59,301 | 59,485 | 0 | (184) | 62,200 | 62,200 | 0 |
| WBS(2)Totals: | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 31 | 0 | (31) | 45,057 | 45,057 | 45,298 | (0) | (241) | 45,057 | 45,057 | 0 |
| Indirect Cost | 0 | 0 | 9 | 0 | (9) | 2,931 | 2,931 | 2,880 | 0 | 52 | 2,931 | 2,931 | 0 |
| Subtotal | 0 | 0 | 40 | 0 | (40) | 47,988 | 47,988 | 48,178 | 0 | (190) | 47,988 | 47,988 | 0 |
| UK In-Kind Contribution | 0 | 0 | 0 | 0 | 0 | (4,835) | (4,835) | (4,835) | (0) | 0 | (4,835) | (4,835) | 0 |
| Total MINOS Detector | 0 | 0 | 40 | 0 | (40) | 43,153 | 43,153 | 43,343 | 0 | (190) | 43,153 | 43,153 | 0 |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 19,273 | 19,273 | 19,253 | 0 | 20 | 19,273 | 19,273 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 633 | 633 | 646 | 0 | (14) | 633 | 633 | 0 |
| Subtotal | 0 | 0 | 0 | 0 | 0 | 19,906 | 19,906 | 19,900 | 0 | 6 | 19,906 | 19,906 | 0 |
| Minnesota Preconstruction Funds | 0 | 0 | 0 | 0 | 0 | (758) | (758) | (758) | 0 | 0 | (758) | (758) | 0 |
| Minnesota Construction Funds FY99 | 0 | 0 | 0 | 0 | 0 | (3,000) | (3,000) | (3,000) | 0 | 0 | (3,000) | (3,000) | 0 |
| Total Project Support | 0 | 0 | 0 | 0 | 0 | 16,148 | 16,148 | 16,142 | 0 | 6 | 16,148 | 16,148 | 0 |
| Contingency + MINOS Scope Reserve | | | | | | | | | | | 2,899 | 2,899 | 0 |
| Total US Funds | 0 | 0 | 40 | 0 | (40) | 59,301 | 59,301 | 59,485 | 0 | (184) | 62,200 | 62,200 | 0 |

# NuMI Other Project Costs

($000's Omitted)

Cost Performance Report - Baseline

| Contractor: | Fermi National Accelerator Laboratory | Contract Type/No: | Project Name/No: | Report Period: | |
|---|---|---|---|---|---|
| Location: | Batavia, Illinois | | NuMI Other Proj Costs | 1/31/05 | 2/28/05 |

| (1) Original Contract Target Cost | (2) Negotiated Contract Changes | (3) Current Target Cost | (4) Est. Cost Authorized Authorized Unpriced Work | (5) Contract Budget Base (3) + (4) | (6) Total Allocated Budget | (7) Difference (5) - (6) |
|---|---|---|---|---|---|---|
| 62,200 | 0 | 62,200 | 0 | 62,200 | 62,200 | 0 |

| (8) Contract Start Date | (9) Contract Definitization Date | (10) Last Item Delivery Date | (11) Contract Completion Date | (12) Estimated Completion Date |
|---|---|---|---|---|
| 10/1/97 | 10/1/97 | 4/30/04 | 4/30/04 | 4/30/04 |

| Item | BCWS Cum to Date | BCWS for Report Period | Budgeted Cost for Work Scheduled (Non-Cumulative) | | | | | | | | | | | Undist Budget | Total Budget |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Six Month Forecast | | | | | | (Enter Specific Periods) | | | | | | |
| | | | +1 MAR05 | +2 APR05 | +3 MAY05 | +4 JUN05 | +5 JUL05 | +6 AUG05 | BAL FY05 | | | | | | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) |
| PM Baseline (Beginning of Period) | 67,894 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67,894 |
| PM Baseline (End of Period) | 67,894 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67,894 |
| Contingency + MINOS Scope Reserve | | | | | | | | | | | | | | | 2,899 |
| Total NuMI Other Project Costs | | | | | | | | | | | | | | | 70,793 |
| UK In-Kind Contribution | | | | | | | | | | | | | | | (4,835) |
| Minnesota Preconstruction Funds | | | | | | | | | | | | | | | (758) |
| Minnesota Preconstruction Funds FY99 | | | | | | | | | | | | | | | (3,000) |
| Total US Funds | | | | | | | | | | | | | | | 62,200 |

# NuMI Other Project Costs - US Funds

($000's Omitted)

| Program: NUMIOPC | Description: NuMI Other Proj Costs | Approval: Program Manager |
|---|---|---|
| Run Date: 03/23/05 | Status Date: 2/28/2005 | Functional Manager |
| | | Cost Account Manager |

| DESCRIPTION | | PR YRS | OCT04 | NOV04 | DEC04 | JAN05 | FEB05 | MAR05 | APR05 | MAY05 | JUN05 | JUL05 | AUG05 | SEP05 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2.1 Magnets: Steel & Coils** | | | | | | | | | | | | | | | |
| 2.1.1 Steel Plane Fabrication | BCWS | 4,601 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4,601 |
| | ACWP | 4,601 | 0 | 0 | (27) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4,574 |
| 2.1.2 Steel handling fixtures | BCWS | 793 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 793 |
| | ACWP | 793 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 793 |
| 2.1.3 Near Detector Support Structures | BCWS | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | ACWP | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 2.1.4 Magnet Coil | BCWS | 1,673 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,673 |
| | ACWP | 1,672 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,672 |
| 2.1.5 Detector Plane Prototypes | BCWS | 495 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 495 |
| | ACWP | 496 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 496 |
| 2.1.6 Steel Management | BCWS | 57 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 57 |
| | ACWP | 58 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 |
| WBS[2] Totals: | BCWS | 7,621 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7,621 |
| | ACWP | 7,622 | 0 | 0 | (27) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7,595 |
| **2.2 Scintillator Detector Fabrication** | | | | | | | | | | | | | | | |
| 2.2.1 Scintillator Strips | BCWS | 2,971 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,971 |
| | ACWP | 2,972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,972 |
| 2.2.2 Fiber | BCWS | 3,961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,961 |
| | ACWP | 3,961 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,961 |
| 2.2.3 Scintillator Modules | BCWS | 1,982 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,982 |
| | ACWP | 1,985 | 0 | (3) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,982 |
| 2.2.4 Photodetector Systems | BCWS | 1,702 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,702 |
| | ACWP | 1,702 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,702 |
| 2.2.5 Mux Boxes & Connectors | BCWS | 1,094 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,094 |
| | ACWP | 1,093 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,093 |
| 2.2.6 Calibration Systems | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2.2.7 Ass'y & Test Equipment | BCWS | 1,721 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,721 |
| | ACWP | 1,721 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,721 |
| 2.2.8 Factories | BCWS | 3,279 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,279 |
| | ACWP | 3,271 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,271 |
| 2.2.9 Scintillator Management | BCWS | 379 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 379 |
| | ACWP | 379 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 379 |
| WBS[2] Totals: | BCWS | 17,089 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17,089 |
| | ACWP | 17,084 | 0 | (3) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17,081 |
| **2.3 Electronics, DAQ & Database** | | | | | | | | | | | | | | | |
| 2.3.1 Near Detector Front End | BCWS | 4,596 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4,601 |
| | ACWP | 4,579 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4,581 |
| 2.3.2 Far Detector Front-end | BCWS | 1,197 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,197 |
| | ACWP | 1,196 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,196 |

# NuMI Project Obligations

| WBS # | DESCRIPTION | Total Budget Feb-05 | Amounts as of February 28, 2005: PTD Cost | PO Encumbrances | Requisition Encumbrances | PTD Obligations | Remaining Obligation Authority |
|---|---|---|---|---|---|---|---|
| 2.6.2 | MINOS ANL Project Management | 98 | 98 | 0 | 0 | 98 | 0 |
| 2.6 | MINOS Project Management | 1,822 | 1,822 | 0 | 0 | 1,822 | 0 |
| 2 | MINOS Detector | 43,420 | 43,343 | 77 | 0 | 43,420 | 0 |
| 3.1.1 | NuMI CDR | 487 | 487 | 0 | 0 | 487 | 0 |
| 3.1.2 | NuMI FESS CDR | 346 | 346 | 0 | 0 | 346 | 0 |
| 3.1.3 | Beam Design | 796 | 796 | 0 | 0 | 796 | 0 |
| 3.1.4 | Project Management | 234 | 234 | 0 | 0 | 234 | 0 |
| 3.1.5 | Soudan Lab Design | 65 | 65 | 0 | 0 | 65 | 0 |
| 3.1 | NuMI Conceptual Design | 1,928 | 1,928 | 0 | 0 | 1,928 | 0 |
| 3.2.1 | MINOS Scintillatar R&D | 988 | 988 | 0 | 0 | 988 | 0 |
| 3.2.2 | MINOS Steel R&D | 644 | 644 | 0 | 0 | 644 | 0 |
| 3.2.3 | Neutrino Oscillation R&D | 136 | 136 | 0 | 0 | 136 | 0 |
| 3.2 | MINOS Detector R&D | 1,768 | 1,768 | 0 | 0 | 1,768 | 0 |
| 3.3 | MINOS Cavern | 10,769 | 10,769 | 0 | 0 | 10,769 | 0 |
| 3.4.1 | Mine Crew Suppart/Soudan Gen'l Operations | 1,531 | 1,531 | 0 | 0 | 1,531 | 0 |
| 3.4.2 | Breitung Township Building Rental | 75 | 75 | 0 | 0 | 75 | 0 |
| 3.4.3 | E Peterson Salary | 71 | 71 | 0 | 0 | 71 | 0 |
| 3.4 | Soudan/MINOS Operating | 1,677 | 1,677 | 0 | 0 | 1,677 | 0 |
| 3 | Project Support | 16,142 | 16,142 | 0 | 0 | 16,142 | 0 |
| | Total Other Project Costs (OPC's) | 59,562 | 59,485 | 77 | 0 | 59,562 | 0 |
| | NuMI TPC (Total Project Cost) | 168,724 | 167,567 | 164 | 0 | 167,731 | 993 |

# NuMI TEC Project

($000's Omitted)

Cost Performance Report - Work Breakdown Structure

| Contractor: | Fermi National Accelerator Laboratory | Contract Type/No: | Project Name/No: | Report Period: |
|---|---|---|---|---|
| Location: | Batavia, Illinois | | NuMI TEC | 5/31/05 6/30/05 |

| Quantity | Negotiated Cost | Est. Cost Authorized Unpriced Work | Tgt. Profit/ Fee % | | Tgt. Price | Est Price | Share Ratio | Contract Ceiling | Estimated Contract Ceiling |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 109,162 | 0 | 0 | 0 | 109,162 | 0 | | 0 | 0 |

| WBS[2] WBS[3] Results... | Current Period | | | | | Cumulative to Date | | | | | At Completion | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Budgeted Cost | | Actual Cost | Variance | | Budgeted Cost | | Actual Cost | Variance | | | | |
| Item | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Budgeted | Latest Revised Estimate | Variance |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| **1.1 Technical Components** | | | | | | | | | | | | | |
| 1.1.1 Extraction & Primary Beam | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 41 | 0 | (41) | 4,892 | 4,892 | 4,895 | 0 | (3) | 4,892 | 4,895 | (3) |
| Indirect Cost | 0 | 0 | 0 | 0 | (0) | 1,094 | 1,094 | 1,106 | 0 | (12) | 1,094 | 1,106 | (12) |
| WBS[3]Totals: | 0 | 0 | 41 | 0 | (41) | 5,986 | 5,986 | 6,001 | 0 | (16) | 5,986 | 6,001 | (16) |
| 1.1.2 Neutrino Beam Devices | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | (0) | 9,520 | 9,520 | 9,786 | 0 | (266) | 9,520 | 9,786 | (266) |
| Indirect Cost | 0 | 0 | 0 | 0 | (0) | 2,279 | 2,279 | 2,132 | 0 | 146 | 2,279 | 2,132 | 146 |
| WBS[3]Totals: | 0 | 0 | 1 | 0 | (1) | 11,799 | 11,799 | 11,918 | 0 | (120) | 11,799 | 11,918 | (120) |
| 1.1.3 Power Supply System | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 1 | 0 | (1) | 4,407 | 4,407 | 4,444 | 0 | (37) | 4,407 | 4,444 | (37) |
| Indirect Cost | 0 | 0 | 0 | 0 | (0) | 1,072 | 1,072 | 1,046 | 0 | 26 | 1,072 | 1,046 | 26 |
| WBS[3]Totals: | 0 | 0 | 1 | 0 | (1) | 5,480 | 5,480 | 5,490 | 0 | (11) | 5,480 | 5,490 | (11) |
| 1.1.4 Hadron Decay and Absorber | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 1,294 | 1,294 | 1,306 | (0) | (12) | 1,294 | 1,306 | (12) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 290 | 290 | 279 | 0 | 10 | 290 | 279 | 10 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 1,584 | 1,584 | 1,586 | (0) | (1) | 1,584 | 1,586 | (1) |
| 1.1.5 Neutrino Beam Monitoring | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 455 | 455 | 444 | 0 | 12 | 455 | 444 | 12 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 26 | 26 | 39 | 0 | (13) | 26 | 39 | (13) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 481 | 481 | 483 | 0 | (1) | 481 | 483 | (1) |
| 1.1.6 Alignment Systems | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 18 | 0 | (18) | 192 | 192 | 197 | 0 | (5) | 192 | 197 | (5) |
| Indirect Cost | 0 | 0 | 3 | 0 | (3) | 60 | 60 | 47 | 0 | 13 | 60 | 47 | 13 |
| WBS[3]Totals: | 0 | 0 | 21 | 0 | (21) | 251 | 251 | 244 | 0 | 8 | 251 | 244 | 8 |
| 1.1.7 Water, Vacuum & Gas Systems | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | (0) | 1,747 | 1,747 | 1,818 | 0 | (71) | 1,747 | 1,818 | (71) |
| Indirect Cost | 0 | 0 | 0 | 0 | (0) | 434 | 434 | 390 | 0 | 44 | 434 | 390 | 44 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | (0) | 2,182 | 2,182 | 2,209 | 0 | (27) | 2,182 | 2,209 | (27) |
| 1.1.8 Installation and Integration | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | (0) | 1,738 | 1,738 | 2,062 | 0 | (324) | 1,738 | 2,062 | (324) |
| Indirect Cost | 0 | 0 | 0 | 0 | (0) | 415 | 415 | 373 | 0 | 42 | 415 | 373 | 42 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | (0) | 2,153 | 2,153 | 2,435 | 0 | (282) | 2,153 | 2,435 | (282) |
| 1.1.9 Hadronic Hose (Close-out) | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 53 | 53 | 54 | 0 | (0) | 53 | 54 | (0) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 9 | 0 | (0) | 9 | 9 | (0) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 62 | 62 | 63 | 0 | (1) | 62 | 63 | (1) |
| WBS[2]Totals: | 0 | 0 | 64 | 0 | (64) | 29,977 | 29,977 | 30,429 | (0) | (451) | 29,977 | 30,429 | (451) |

$000's Omitted

# NuMI Project Obligations

| WBS # | DESCRIPTION | Total Budget Feb-05 | Amounts as of February 28, 2005 | | | | Remaining Obligation Authority |
|---|---|---|---|---|---|---|---|
| | | | PTD Cost | PO Encumbrances | Requisition Encumbrances | PTD Obligations | |
| 1.1.1 | Extraction & Primary Beam | 5,986 | 5,960 | 41 | 0 | 6,002 | (16) |
| 1.1.2 | Neutrino Beam Devices | 11,799 | 11,918 | 4 | 0 | 11,921 | (123) |
| 1.1.3 | Power Supply System | 5,480 | 5,487 | 9 | 0 | 5,495 | (16) |
| 1.1.4 | Hadron Decay & Absorber | 1,584 | 1,586 | 0 | 0 | 1,586 | (1) |
| 1.1.5 | Neutrino Beam Monitoring | 481 | 486 | 2 | 0 | 487 | (6) |
| 1.1.6 | Alignment Systems | 251 | 223 | 18 | 0 | 241 | 11 |
| 1.1.7 | Water, Vacuum & Gas Systems | 2,182 | 2,210 | 0 | 0 | 2,210 | (28) |
| 1.1.8 | Installation & Integration | 2,153 | 2,435 | 10 | 0 | 2,445 | (292) |
| 1.1.9 | Hadronic Hose | 62 | 63 | 0 | 0 | 63 | (1) |
| 1.1 | **Technical Components** | 29,977 | 30,367 | 83 | 0 | 30,450 | (473) |
| 1.2.1 | Facility Physics Design Phase | 70 | 70 | 0 | 0 | 70 | (0) |
| 1.2.2 | Facility Construction Title I Design Phase | 1,438 | 1,437 | 0 | 0 | 1,437 | 1 |
| 1.2.3 | Facility Construction Title II Design Phase | 2,975 | 2,974 | 0 | 0 | 2,974 | 1 |
| 1.2.4 | Facility Construction Phase | 70,169 | 70,104 | 1 | 0 | 70,105 | 64 |
| 1.2 | **Facility Construction** | 74,652 | 74,586 | 1 | 0 | 74,586 | 66 |
| 1.3.1 | FY98 Project Management | 275 | 141 | 0 | 0 | 141 | 133 |
| 1.3.2 | FY99 Project Management | 560 | 661 | 0 | 0 | 661 | (102) |
| 1.3.3 | FY00 Project Management | 575 | 663 | 0 | 0 | 663 | (88) |
| 1.3.4 | FY01 Project Management | 438 | 423 | 0 | 0 | 423 | 15 |
| 1.3.5 | FY02 Project Management | 703 | 324 | 0 | 0 | 324 | 378 |
| 1.3.6 | FY03 Project Management | 541 | 421 | 0 | 0 | 421 | 120 |
| 1.3.7 | FY04 Project Management | 59 | 430 | 0 | 0 | 430 | (371) |
| 1.3.8 | FY05 Project Management | 31 | 65 | 3 | 0 | 68 | (37) |
| 1.3.9 | Unallocated Budget | 1,351 | 0 | 0 | 0 | 0 | 1,351 |
| 1.3 | **Project Management** | 4,532 | 3,130 | 3 | 0 | 3,132 | 1,400 |
| 1 | **NuMI TEC (Total Estimated Cost)** | 109,162 | 108,082 | 87 | 0 | 108,169 | 993 |
| 2.1.1 | MINOS-Steel Plane Fabrication | 4,574 | 4,574 | 0 | 0 | 4,574 | 0 |
| 2.1.2 | MINOS-Steel Handling Fixtures | 793 | 793 | 0 | 0 | 793 | 0 |
| 2.1.3 | MINOS Near Detector Support Structures | 1 | 1 | 0 | 0 | 1 | 0 |
| 2.1.4 | MINOS Magnet Coil | 1,672 | 1,672 | 0 | 0 | 1,672 | 0 |
| 2.1.5 | MINOS Detector Plane Prototypes | 496 | 496 | 0 | 0 | 496 | 0 |
| 2.1.6 | MINOS Steel Management | 58 | 58 | 0 | 0 | 58 | 0 |
| 2.1 | **MINOS-Magnets: Steel & Coils** | 7,595 | 7,595 | 0 | 0 | 7,595 | 0 |

$000's Omitted

# NuMI Project Obligations

| WBS # | DESCRIPTION | Total Budget Feb-05 | Amounts as of February 28, 2005: PTD Cost | PO Encumbrances | Requisition Encumbrances | PTD Obligations | Remaining Obligation Authority |
|---|---|---|---|---|---|---|---|
| 2.2.1 | MINOS Scintillator Strips | 2,972 | 2,972 | 0 | 0 | 2,972 | 0 |
| 2.2.2 | MINOS Fiber | 3,961 | 3,961 | 0 | 0 | 3,961 | 0 |
| 2.2.3 | MINOS Scintillator Modules | 1,982 | 1,982 | 0 | 0 | 1,982 | 0 |
| 2.2.4 | MINOS Photodetector Systems | 1,702 | 1,702 | 0 | 0 | 1,702 | 0 |
| 2.2.5 | MINOS Mux Boxes & Connectors | 1,093 | 1,093 | 0 | 0 | 1,093 | 0 |
| 2.2.6 | MINOS Calibration Systems | 0 | 0 | 0 | 0 | 0 | 0 |
| 2.2.7 | MINOS Ass'y & Test Equipment | 1,721 | 1,721 | 0 | 0 | 1,721 | 0 |
| 2.2.8 | MINOS Factories | 3,271 | 3,271 | 0 | 0 | 3,271 | 0 |
| 2.2.9 | MINOS Scintillator Management | 379 | 379 | 0 | 0 | 379 | 0 |
| **2.2** | **MINOS-Scintillator Detector Fabrication** | **17,081** | **17,081** | **0** | **0** | **17,081** | **0** |
| | | | | | | | |
| 2.3.1 | MINOS Near Detector Front-end | 4,585 | 4,581 | 4 | 0 | 4,585 | 0 |
| 2.3.2 | MINOS Far Detector Front-end | 1,196 | 1,196 | 0 | 0 | 1,196 | 0 |
| 2.3.3 | MINOS Data Routing & Trigger Farm | 0 | 0 | 0 | 0 | 0 | 0 |
| 2.3.4 | MINOS Data Acquisition & Triggering | 0 | 0 | 0 | 0 | 0 | 0 |
| 2.3.5 | MINOS Database | 10 | 10 | 0 | 0 | 10 | 0 |
| 2.3.6 | MINOS Auxiliary Systems | 253 | 253 | 0 | 0 | 253 | 0 |
| 2.3.7 | MINOS Electronics Management | 218 | 218 | 0 | 0 | 218 | 0 |
| 2.3.8 | MINOS Slow Control & Monitoring | 427 | 400 | 27 | 0 | 427 | 0 |
| 2.3.9 | MINOS HV System | 77 | 77 | 0 | 0 | 77 | 0 |
| **2.3** | **MINOS-Electronics: DAQ & Database** | **6,767** | **6,735** | **31** | **0** | **6,767** | **0** |
| | | | | | | | |
| 2.4.1 | MINOS FDI Completed Design Tasks | 0 | 0 | 0 | 0 | 0 | 0 |
| 2.4.2 | MINOS FDI Minecrew Management | 584 | 584 | 0 | 0 | 584 | 0 |
| 2.4.3 | MINOS FDI MINOS Construction Oversight | 115 | 115 | 0 | 0 | 115 | 0 |
| 2.4.4 | MINOS FDI Soudan Lab Infrastructure Setup | 473 | 473 | 0 | 0 | 473 | 0 |
| 2.4.5 | MINOS FDI Detector Installation | 2,959 | 2,959 | 0 | 0 | 2,959 | 0 |
| 2.4.6 | MINOS FDI DNR Costs | 378 | 378 | 0 | 0 | 378 | 0 |
| 2.4.7 | MINOS FDI Alignment & Survey | 67 | 67 | 0 | 0 | 67 | 0 |
| **2.4** | **MINOS Far Detector Installation (FDI)** | **4,577** | **4,577** | **0** | **0** | **4,577** | **0** |
| | | | | | | | |
| 2.5.1 | MINOS NDI Infrastructure | 473 | 462 | 11 | 0 | 473 | 0 |
| 2.5.2 | MINOS NDI Plane Assembly | 514 | 514 | 0 | 0 | 514 | 0 |
| 2.5.3 | MINOS NDI Detector Installation | 1,395 | 1,360 | 35 | 0 | 1,395 | 0 |
| 2.5.4 | MINOS NDI Facility Experimental Infrastructure | 253 | 253 | 0 | 0 | 253 | 0 |
| 2.5.5 | MINOS NDI SB&O Experimental Systems Outfitting | 2,944 | 2,944 | 0 | 0 | 2,944 | 0 |
| **2.5** | **MINOS Near Detector Installation (NDI)** | **5,579** | **5,533** | **46** | **0** | **5,579** | **0** |
| | | | | | | | |
| 2.6.1 | MINOS FNL Project Management | 1,724 | 1,724 | 0 | 0 | 1,724 | 0 |

# NuMI Other Project Costs - US Funds - Labor Only

($000's Omitted)

| Program: NUMIOPC | Description: NuMI Other Proj Costs | Approval: Program Manager |
|---|---|---|
| Run Date: 03/23/05 | Status Date: 2/28/2005 | Functional Manager |
| | | Cost Account Manager |

| DESCRIPTION | | PR YRS | OCT04 | NOV04 | DEC04 | JAN05 | FEB05 | MAR05 | APR05 | MAY05 | JUN05 | JUL05 | AUG05 | SEP05 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.3.7 Electronics Management | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2.3.8 Slow Control & Monitoring | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 2.3.9 HV System | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WBS[2] Totals: | BCWS | 705 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 705 |
| | ACWP | 1,185 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,185 |
| **2.4 Far Detector Installation** | | | | | | | | | | | | | | | |
| 2.4.1 FDI Completed Design Tasks | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2.4.2 FDI Management | BCWS | 89 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 89 |
| | ACWP | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 47 |
| 2.4.4 FDI Soudan Lab Infrastructure Setup | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| 2.4.7 FDI Alignment & Survey | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WBS[2] Totals: | BCWS | 89 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 89 |
| | ACWP | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| **2.5 Near Detector Installation** | | | | | | | | | | | | | | | |
| 2.5.1 NDI Infrastructure | BCWS | 389 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 389 |
| | ACWP | 145 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 145 |
| 2.5.2 NDI Plane Assembly | BCWS | 501 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 501 |
| | ACWP | 468 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 468 |
| 2.5.3 NDI Detector Installation | BCWS | 951 | 45 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 999 |
| | ACWP | 786 | 59 | 56 | 43 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 971 |
| 2.5.4 NDI Facility Experimental Infrastructure | BCWS | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| | ACWP | 58 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 |
| 2.5.5 RBI SB&O Experimental Systems Outfitting | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WBS[2] Totals: | BCWS | 1,878 | 45 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,926 |
| | ACWP | 1,456 | 59 | 56 | 43 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,642 |
| **2.6 MINOS Project Management** | | | | | | | | | | | | | | | |
| 2.6.1 FNL-Project Management | BCWS | 1,496 | 20 | 21 | 22 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,580 |
| | ACWP | 1,410 | 36 | 33 | 28 | 32 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,575 |
| 2.6.2 ANL-Project Management | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WBS[2] Totals: | BCWS | 1,496 | 20 | 21 | 22 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,580 |
| | ACWP | 1,410 | 36 | 33 | 28 | 32 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,575 |

# NuMI Other Project Costs - US Funds - Labor Only

($000's Omitted)

| Program: NUMIOPC | Description: NuMI Other Proj Costs | Approval: Program Manager |
|---|---|---|
| Run Date: 03/23/05 | Status Date: 2/28/2005 | Functional Manager |
| | | Cost Account Manager |

| DESCRIPTION | | PR YRS | OCT04 | NOV04 | DEC04 | JAN05 | FEB05 | MAR05 | APR05 | MAY05 | JUN05 | JUL05 | AUG05 | SEP05 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **3.1 NuMI Conceptual Design** | | | | | | | | | | | | | | | |
| 3.1.1 FNL-BD-NuMI CDR | BCWS | 99 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 |
| | ACWP | 99 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 99 |
| 3.1.2 FNL-BD-NuMI FESS CDR | BCWS | 112 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 112 |
| | ACWP | 112 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 112 |
| 3.1.3 FNL-NuMI Beam Design | BCWS | 530 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 530 |
| | ACWP | 529 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 529 |
| 3.1.4 FNL-BD-NuMI Project Management | BCWS | 132 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 132 |
| | ACWP | 132 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 132 |
| 3.1.5 FNL-Soudan Lab Design | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WBS[2] Totals: | BCWS | 872 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 872 |
| | ACWP | 872 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 872 |
| **3.2 MINOS Detector R&D** | | | | | | | | | | | | | | | |
| 3.2.1 FNL-MINOS Scintillator R&D | BCWS | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| | ACWP | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| 3.2.2 FNL-MINOS Steel R&D | BCWS | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| | ACWP | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 |
| 3.2.3 FNL-RD-Neutrino Oscillation R&D | BCWS | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| | ACWP | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| WBS[2] Totals: | BCWS | 62 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 62 |
| | ACWP | 62 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 62 |
| **3.4 Soudan/MINOS Operating** | | | | | | | | | | | | | | | |
| 3.4.1 UMN-Mine Crew Support/Soudan Gen'l Operations | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 3.4.2 UMN-Breitung Township Building Rental | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WBS[2] Totals: | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| **Grand Totals:** | BCWS | 6,768 | 65 | 23 | 24 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,899 |
| | ACWP | 7,791 | 95 | 89 | 72 | 60 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8,142 |

# NuMI Other Project Costs - US Funds

($000's Omitted)

| Program: | Description: | Approval: |
|---|---|---|
| NUMIOPC | NuMI Other Proj Costs | Program Manager |
| Run Date: 03/23/05 | Status Date: 2/28/2005 | Functional Manager |
| | | Cost Account Manager |

| DESCRIPTION | | PR YRS | OCT04 | NOV04 | DEC04 | JAN05 | FEB05 | MAR05 | APR05 | MAY05 | JUN05 | JUL05 | AUG05 | SEP05 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.4.2 UMN-Breitung Township Building Rental | BCWS | 75 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 75 |
| | ACWP | 75 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 75 |
| 3.4.3 UMN-E Peterson Salary | BCWS | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 71 |
| | ACWP | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 71 |
| WBS[2] Totals: | BCWS | 1,677 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,677 |
| | ACWP | 1,677 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,677 |
| **Grand Totals:** | BCWS | 62,906 | 78 | 32 | 24 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63,059 |
| | ACWP | 62,868 | 127 | 90 | 56 | 61 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63,243 |

# NuMI Other Project Costs - US Funds - Labor Only

($000's Omitted)

| Program: NUMIOPC | Description: NuMI Other Proj Costs | Approval: Program Manager |
|---|---|---|
| Run Date: 03/23/05 | Status Date: 2/28/2005 | Functional Manager |
| | | Cost Account Manager |

| DESCRIPTION | | PR YRS | OCT04 | NOV04 | DEC04 | JAN05 | FEB05 | MAR05 | APR05 | MAY05 | JUN05 | JUL05 | AUG05 | SEP05 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2.1 Magnets: Steel & Coils** | | | | | | | | | | | | | | | |
| 2.1.1 Steel Plane Fabrication | BCWS | 130 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 130 |
| | ACWP | 171 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 171 |
| 2.1.2 Steel handling fixtures | BCWS | 437 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 437 |
| | ACWP | 560 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 560 |
| 2.1.3 Near Detector Support Structures | BCWS | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 |
| | ACWP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2.1.4 Magnet Coil | BCWS | 564 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 564 |
| | ACWP | 839 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 839 |
| 2.1.5 Detector Plane Prototypes | BCWS | 355 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 355 |
| | ACWP | 375 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 375 |
| 2.1.6 Steel Management | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| WBS[2] Totals: | BCWS | 1,522 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,522 |
| | ACWP | 1,946 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,946 |
| **2.2 Scintillator Detector Fabrication** | | | | | | | | | | | | | | | |
| 2.2.1 Scintillator Strips | BCWS | 111 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 111 |
| | ACWP | 344 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 344 |
| 2.2.2 Fiber | BCWS | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| | ACWP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2.2.3 Scintillator Modules | BCWS | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| | ACWP | 284 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 284 |
| 2.2.5 Mux Boxes & Connectors | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 |
| 2.2.6 Calibration Systems | BCWS | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| | ACWP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2.2.7 Ass'y & Test Equipment | BCWS | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| | ACWP | 139 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 139 |
| 2.2.8 Factories | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2.2.9 Scintillator Management | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WBS[2] Totals: | BCWS | 144 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 144 |
| | ACWP | 805 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 805 |
| **2.3 Electronics, DAQ & Database** | | | | | | | | | | | | | | | |
| 2.3.1 Near Detector Front End | BCWS | 444 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 444 |
| | ACWP | 831 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 831 |
| 2.3.2 Far Detector Front-end | BCWS | 112 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 112 |
| | ACWP | 176 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 176 |
| 2.3.6 Auxilliary Systems | BCWS | 148 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 148 |
| | ACWP | 172 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 172 |

# NuMI Other Project Costs - US Funds

($000's Omitted)

| Program: NUMIOPC | Description: NuMI Other Proj Costs | Approval: Program Manager |
|---|---|---|
| Run Date: 03/23/05 | Status Date: 2/28/2005 | Functional Manager |
| | | Cost Account Manager |

| DESCRIPTION | | PR YRS | OCT04 | NOV04 | DEC04 | JAN05 | FEB05 | MAR05 | APR05 | MAY05 | JUN05 | JUL05 | AUG05 | SEP05 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.3.5 Database | BCWS | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| | ACWP | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 2.3.6 Auxilliary Systems | BCWS | 252 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 252 |
| | ACWP | 253 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 253 |
| 2.3.7 Electronics Management | BCWS | 218 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 218 |
| | ACWP | 218 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 218 |
| 2.3.8 Slow Control & Monitoring | BCWS | 419 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 419 |
| | ACWP | 400 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 400 |
| 2.3.9 HV System | BCWS | 77 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 77 |
| | ACWP | 77 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 77 |
| WBS[2] Totals: | BCWS | 6,769 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,774 |
| | ACWP | 6,734 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,735 |
| **2.4 Far Detector Installation** | | | | | | | | | | | | | | | |
| 2.4.1 FDI Completed Design Tasks | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2.4.2 FDI Management | BCWS | 584 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 584 |
| | ACWP | 584 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 584 |
| 2.4.3 SDN-FDI Construction Oversight | BCWS | 115 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 115 |
| | ACWP | 115 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 115 |
| 2.4.4 FDI Soudan Lab Infrastructure Setup | BCWS | 473 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 473 |
| | ACWP | 473 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 473 |
| 2.4.5 SDN-FDI Detector Installation | BCWS | 2,960 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,960 |
| | ACWP | 2,959 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,959 |
| 2.4.6 SDN-FDI DNR Costs | BCWS | 382 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 382 |
| | ACWP | 378 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 378 |
| 2.4.7 FDI Alignment & Survey | BCWS | 67 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 |
| | ACWP | 67 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 |
| WBS[2] Totals: | BCWS | 4,581 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4,581 |
| | ACWP | 4,577 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4,577 |
| **2.5 Near Detector Installation** | | | | | | | | | | | | | | | |
| 2.5.1 NDI Infrastructure | BCWS | 512 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 512 |
| | ACWP | 431 | 18 | 10 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 462 |
| 2.5.2 NDI Plane Assembly | BCWS | 516 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 516 |
| | ACWP | 514 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 514 |
| 2.5.3 NDI Detector Installation | BCWS | 1,087 | 53 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,151 |
| | ACWP | 1,164 | 69 | 53 | 43 | 28 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,360 |
| 2.5.4 NDI Facility Experimental Infrastructure | BCWS | 238 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 238 |
| | ACWP | 241 | 2 | (2) | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 253 |
| 2.5.5 RBI SB&O Experimental Systems Outfitting | BCWS | 2,944 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,944 |
| | ACWP | 2,944 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,944 |
| WBS[2] Totals: | BCWS | 5,297 | 53 | 9 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,361 |
| | ACWP | 5,295 | 89 | 60 | 55 | 29 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,533 |

# NuMI Other Project Costs - US Funds

($000's Omitted)

| Program: | Description: | Approval: |
|---|---|---|
| NUMIOPC | NuMI Other Proj Costs | Program Manager |
| Run Date: 03/23/05 | Status Date: 2/28/2005 | Functional Manager |
| | | Cost Account Manager |

| DESCRIPTION | | PR YRS | OCT04 | NOV04 | DEC04 | JAN05 | FEB05 | MAR05 | APR05 | MAY05 | JUN05 | JUL05 | AUG05 | SEP05 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2.6 MINOS Project Management** | | | | | | | | | | | | | | | |
| 2.6.1 FNL-Project Management | BCWS | 1,545 | 20 | 21 | 22 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,629 |
| | ACWP | 1,559 | 36 | 33 | 28 | 32 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,724 |
| 2.6.2 ANL-Project Management | BCWS | 98 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 98 |
| | ACWP | 98 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 98 |
| WBS[2] Totals: | BCWS | 1,643 | 20 | 21 | 22 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,727 |
| | ACWP | 1,657 | 36 | 33 | 28 | 32 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,822 |
| **3.1 NuMI Conceptual Design** | | | | | | | | | | | | | | | |
| 3.1.1 FNL-BD-NuMI CDR | BCWS | 489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 489 |
| | ACWP | 487 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 487 |
| 3.1.2 FNL-BD-NuMI FESS CDR | BCWS | 346 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 346 |
| | ACWP | 346 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 346 |
| 3.1.3 FNL-NuMI Beam Design | BCWS | 798 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 798 |
| | ACWP | 796 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 796 |
| 3.1.4 FNL-BD-NuMI Project Management | BCWS | 235 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 235 |
| | ACWP | 234 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 234 |
| 3.1.5 FNL-Soudan Lab Design | BCWS | 65 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 65 |
| | ACWP | 65 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 65 |
| WBS[2] Totals: | BCWS | 1,934 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,934 |
| | ACWP | 1,928 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,928 |
| **3.2 MINOS Detector R&D** | | | | | | | | | | | | | | | |
| 3.2.1 FNL-MINOS Scintillator R&D | BCWS | 988 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 988 |
| | ACWP | 988 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 988 |
| 3.2.2 FNL-MINOS Steel R&D | BCWS | 644 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 644 |
| | ACWP | 644 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 644 |
| 3.2.3 FNL-RD-Neutrino Oscillation R&D | BCWS | 136 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 136 |
| | ACWP | 136 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 136 |
| WBS[2] Totals: | BCWS | 1,768 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,768 |
| | ACWP | 1,768 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,768 |
| **3.3 MINOS Cavern** | | | | | | | | | | | | | | | |
| 3.3.0 Preconstruction Work | BCWS | 758 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 758 |
| | ACWP | 758 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 758 |
| 3.3.1 Cavern Construction | BCWS | 6,597 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,597 |
| | ACWP | 6,597 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,597 |
| 3.3.2 Cavern Outfitting | BCWS | 7,171 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7,171 |
| | ACWP | 7,171 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7,171 |
| WBS[2] Totals: | BCWS | 14,527 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14,527 |
| | ACWP | 14,527 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14,527 |
| **3.4 Soudan/MINOS Operating** | | | | | | | | | | | | | | | |
| 3.4.1 UMN-Mine Crew Support/Soudan Gen'l Operations | BCWS | 1,531 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,531 |
| | ACWP | 1,531 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,531 |

# NuMI TEC Project

($000's Omitted)

Cost Performance Report - Work Breakdown Structure

| Contractor: | Fermi National Accelerator Laboratory | Contract Type/No: | Project Name/No: | Report Period: |
|---|---|---|---|---|
| Location: | Batavia, Illinois | | NuMI TEC | 5/31/05 6/30/05 |

| Quantity | Negotiated Cost | Est. Cost Authorized Unpriced Work | Tgt. Profit/ Fee % | | Tgt. Price | Est Price | Share Ratio | Contract Ceiling | Estimated Contract Ceiling |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 109,162 | 0 | 0 | 0 | 109,162 | 0 | | 0 | 0 |

| WBS[2] WBS[3] Results... | Current Period | | | | | Cumulative to Date | | | | | At Completion | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Budgeted Cost | | Actual Cost | Variance | | Budgeted Cost | | Actual Cost | Variance | | | | |
| Item | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Budgeted | Latest Revised Estimate | Variance |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| **1.2 Facility Construction** | | | | | | | | | | | | | |
| 1.2.1 Facility Physics Design Phase | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 49 | 49 | 52 | 0 | (3) | 49 | 52 | (3) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 21 | 21 | 19 | 0 | 2 | 21 | 19 | 2 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 70 | 70 | 70 | 0 | (0) | 70 | 70 | (0) |
| 1.2.2 Facility Construction Title I Design Phase | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 1,254 | 1,254 | 1,288 | 0 | (34) | 1,254 | 1,288 | (34) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 184 | 184 | 149 | 0 | 35 | 184 | 149 | 35 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 1,438 | 1,438 | 1,437 | 0 | 1 | 1,438 | 1,437 | 1 |
| 1.2.3 Facility Construction Title II Design Phase | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 2,620 | 2,620 | 2,807 | 0 | (187) | 2,620 | 2,807 | (187) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 355 | 355 | 167 | 0 | 188 | 355 | 167 | 188 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 2,975 | 2,975 | 2,974 | 0 | 1 | 2,975 | 2,974 | 1 |
| 1.2.4 Facility Construction Phase | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 68,572 | 68,572 | 68,599 | 0 | (27) | 68,572 | 68,599 | (27) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 1,596 | 1,596 | 1,505 | 0 | 91 | 1,596 | 1,505 | 91 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 70,169 | 70,169 | 70,104 | 0 | 64 | 70,169 | 70,104 | 64 |
| WBS[2]Totals: | 0 | 0 | 0 | 0 | 0 | 74,652 | 74,652 | 74,586 | 0 | 67 | 74,652 | 74,586 | 67 |
| **1.3 Project Management** | | | | | | | | | | | | | |
| 1.3.1 FY 98 Project Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 208 | 208 | 104 | 0 | 104 | 208 | 104 | 104 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 66 | 66 | 37 | 0 | 29 | 66 | 37 | 29 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 275 | 275 | 141 | 0 | 133 | 275 | 141 | 133 |
| 1.3.2 FY 99 Project Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 425 | 425 | 512 | 0 | (88) | 425 | 512 | (88) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 135 | 135 | 149 | 0 | (14) | 135 | 149 | (14) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 560 | 560 | 661 | 0 | (102) | 560 | 661 | (102) |
| 1.3.3 FY 00 Project Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 436 | 436 | 521 | 0 | (85) | 436 | 521 | (85) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 139 | 139 | 142 | 0 | (3) | 139 | 142 | (3) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 575 | 575 | 663 | 0 | (88) | 575 | 663 | (88) |
| 1.3.4 FY 01 Project Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 332 | 332 | 331 | 0 | 1 | 332 | 331 | 1 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 106 | 106 | 92 | 0 | 14 | 106 | 92 | 14 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 438 | 438 | 423 | 0 | 15 | 438 | 423 | 15 |
| 1.3.5 FY 02 Project Management | | | | | | | | | | | | | |

# NuMI TEC Project

($000's Omitted)

Cost Performance Report - Work Breakdown Structure

| Contractor: | Fermi National Accelerator Laboratory | Contract Type/No: | Project Name/No: | Report Period: |
|---|---|---|---|---|
| Location: | Batavia, Illinois | | NuMI TEC | 5/31/05 6/30/05 |

| Quantity | Negotiated Cost | Est. Cost Authorized Unpriced Work | Tgt. Profit/ Fee % | | Tgt. Price | Est Price | Share Ratio | Contract Ceiling | Estimated Contract Ceiling |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 109,162 | 0 | 0 | 0 | 109,162 | 0 | | 0 | 0 |

| WBS[2] WBS[3] Results... | Current Period | | | | | Cumulative to Date | | | | | At Completion | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Budgeted Cost | | Actual Cost | Variance | | Budgeted Cost | | Actual Cost | Variance | | | | |
| Item | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Budgeted | Latest Revised Estimate | Variance |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 533 | 533 | 253 | 0 | 281 | 533 | 253 | 281 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 170 | 170 | 72 | 0 | 98 | 170 | 72 | 98 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 703 | 703 | 324 | 0 | 378 | 703 | 324 | 378 |
| 1.3.6 FY 03 Project Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 411 | 411 | 324 | 0 | 87 | 411 | 324 | 87 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 131 | 131 | 98 | 0 | 33 | 131 | 98 | 33 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 541 | 541 | 421 | 0 | 120 | 541 | 421 | 120 |
| 1.3.7 FY 04 Project Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 45 | 45 | 332 | 0 | (287) | 45 | 332 | (287) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 14 | 14 | 99 | 0 | (84) | 14 | 99 | (84) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 59 | 59 | 430 | 0 | (371) | 59 | 430 | (371) |
| 1.3.8 FY 05 Project Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 1 | 0 | (1) | 23 | 23 | 54 | 0 | (30) | 23 | 54 | (30) |
| Indirect Cost | 0 | 0 | 0 | 0 | (0) | 7 | 7 | 16 | 0 | (9) | 7 | 16 | (9) |
| WBS[3]Totals: | 0 | 0 | 2 | 0 | (2) | 31 | 31 | 70 | 0 | (39) | 31 | 70 | (39) |
| WBS[2]Totals: | 0 | 0 | 2 | 0 | (2) | 3,181 | 3,181 | 3,134 | 0 | 47 | 3,181 | 3,134 | 47 |
| General and Administrative | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Undistributed Budget | | | | | | | | | | | 0 | 0 | 0 |
| Sub Total | 0 | 0 | 66 | 0 | (66) | 107,811 | 107,811 | 108,148 | (0) | (337) | 107,811 | 108,148 | (337) |
| Contingency | | | | | | | | | | | 1,351 | 1,014 | 337 |
| Total | 0 | 0 | 66 | 0 | (66) | 107,811 | 107,811 | 108,148 | (0) | (337) | 109,162 | 109,162 | 0 |

# NuMI Project TEC

($000's Omitted)

| Program: | Description: | Approval: |
|---|---|---|
| NUMITEC | NuMI TEC | Program Manager |
| Run Date: 07/25/05 | Status Date: 6/30/2005 | Functional Manager |
| | | Cost Account Manager |

| DESCRIPTION | | PR YRS | OCT04 | NOV04 | DEC04 | JAN05 | FEB05 | MAR05 | APR05 | MAY05 | JUN05 | JUL05 | AUG05 | SEP05 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.1 Technical Components** | | | | | | | | | | | | | | | |
| 1.1.1 Extraction & Primary Beam | BCWS | 5,613 | 10 | 363 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,986 |
| | ACWP | 5,892 | 46 | 17 | 4 | 0 | 0 | 0 | 0 | 0 | 41 | 0 | 0 | 0 | 6,001 |
| 1.1.2 Neutrino Beam Devices | BCWS | 11,132 | 104 | 532 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11,799 |
| | ACWP | 11,012 | 221 | 170 | 240 | 137 | 138 | (0) | 0 | 0 | 1 | 0 | 0 | 0 | 11,918 |
| 1.1.3 Power Supply System | BCWS | 5,321 | 15 | 143 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5,480 |
| | ACWP | 5,343 | 77 | 61 | 6 | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 5,490 |
| 1.1.4 Hadron Decay and Absorber | BCWS | 1,360 | 64 | 118 | 43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,584 |
| | ACWP | 1,554 | 12 | 4 | 19 | (5) | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,586 |
| 1.1.5 Neutrino Beam Monitoring | BCWS | 456 | 6 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 481 |
| | ACWP | 473 | (1) | 4 | 0 | 9 | 0 | 0 | 0 | (3) | 0 | 0 | 0 | 0 | 483 |
| 1.1.6 Alignment Systems | BCWS | 289 | 6 | (44) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 251 |
| | ACWP | 202 | 0 | 0 | 3 | 0 | 18 | 0 | 0 | 0 | 21 | 0 | 0 | 0 | 244 |
| 1.1.7 Water, Vacuum & Gas Systems | BCWS | 2,036 | 31 | 115 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,182 |
| | ACWP | 2,111 | 41 | 35 | 14 | 9 | 0 | (0) | (1) | 0 | 0 | 0 | 0 | 0 | 2,209 |
| 1.1.8 Installation and Integration | BCWS | 2,227 | 66 | (231) | 86 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,153 |
| | ACWP | 2,100 | 35 | 53 | 62 | 169 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,435 |
| 1.1.9 Hadronic Hose (Close-out) | BCWS | 62 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 62 |
| | ACWP | 63 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 |
| WBS[2] Totals: | BCWS | 28,495 | 303 | 995 | 179 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29,977 |
| | ACWP | 28,750 | 431 | 344 | 348 | 319 | 175 | 2 | (1) | (3) | 64 | 0 | 0 | 0 | 30,429 |
| **1.2 Facility Construction** | | | | | | | | | | | | | | | |
| 1.2.1 Facility Physics Design Phase | BCWS | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| | ACWP | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| 1.2.2 Facility Construction Title I Design Phase | BCWS | 1,438 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,438 |
| | ACWP | 1,437 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,437 |
| 1.2.3 Facility Construction Title II Design Phase | BCWS | 2,975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,975 |
| | ACWP | 2,974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,974 |
| 1.2.4 Facility Construction Phase | BCWS | 70,169 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70,169 |
| | ACWP | 70,104 | 1 | 1 | 0 | (1) | 0 | 2 | (2) | 0 | 0 | 0 | 0 | 0 | 70,104 |
| WBS[2] Totals: | BCWS | 74,652 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 74,652 |
| | ACWP | 74,585 | 1 | 1 | 0 | (1) | 0 | 2 | (2) | 0 | 0 | 0 | 0 | 0 | 74,586 |
| **1.3 Project Management** | | | | | | | | | | | | | | | |
| 1.3.1 FY 98 Project Management | BCWS | 275 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 275 |
| | ACWP | 141 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 141 |
| 1.3.2 FY 99 Project Management | BCWS | 560 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 560 |
| | ACWP | 661 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 661 |
| 1.3.3 FY 00 Project Management | BCWS | 575 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 575 |
| | ACWP | 663 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 663 |
| 1.3.4 FY 01 Project Management | BCWS | 438 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 438 |
| | ACWP | 423 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 423 |
| 1.3.5 FY 02 Project Management | BCWS | 703 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 703 |
| | ACWP | 324 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 324 |

# NuMI Project TEC

($000's Omitted)

| Program: NUMITEC | Description: NuMI TEC | Approval: Program Manager |
|---|---|---|
| Run Date: 07/25/05 | Status Date: 6/30/2005 | Functional Manager |
| | | Cost Account Manager |

| DESCRIPTION | | PR YRS | OCT04 | NOV04 | DEC04 | JAN05 | FEB05 | MAR05 | APR05 | MAY05 | JUN05 | JUL05 | AUG05 | SEP05 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.3.6 FY 03 Project Management | BCWS | 541 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 541 |
| | ACWP | 421 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 421 |
| 1.3.7 FY 04 Project Management | BCWS | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 |
| | ACWP | 430 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 430 |
| 1.3.8 FY 05 Project Management | BCWS | 0 | 5 | 5 | 5 | 5 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| | ACWP | 0 | 26 | 21 | 18 | 0 | 0 | 3 | 0 | 0 | 2 | 0 | 0 | 0 | 70 |
| 1.3.9 NuMI-Unallocated Budget | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 0 | 0 | 0 | 0 | 0 | 0 | (0) | 0 | (0) | 0 | 0 | 0 | 0 | 0 |
| WBS[2] Totals: | BCWS | 3,151 | 5 | 5 | 5 | 5 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 3,181 |
| | ACWP | 3,064 | 27 | 21 | 18 | 0 | 0 | 3 | 0 | (0) | 2 | 0 | 0 | 0 | 3,134 |
| Grand Totals: | BCWS | 106,298 | 308 | 1,001 | 185 | 10 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 107,811 |
| | ACWP | 106,399 | 458 | 365 | 366 | 318 | 175 | 6 | (3) | (3) | 66 | 0 | 0 | 0 | 108,148 |

# NuMI Project TEC - Labor Only

($000's Omitted)

| Program: | Description: | Approval: |
|---|---|---|
| NUMITEC | NuMI TEC | Program Manager |
| Run Date: 07/25/05 | Status Date: 6/30/2005 | Functional Manager |
| | | Cost Account Manager |

| DESCRIPTION | | PR YRS | OCT04 | NOV04 | DEC04 | JAN05 | FEB05 | MAR05 | APR05 | MAY05 | JUN05 | JUL05 | AUG05 | SEP05 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.1 Technical Components** | | | | | | | | | | | | | | | |
| 1.1.1 Extraction & Primary Beam | BCWS | 2,416 | 10 | 363 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,789 |
| | ACWP | 3,195 | 22 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,226 |
| 1.1.2 Neutrino Beam Devices | BCWS | 5,671 | 40 | 515 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6,247 |
| | ACWP | 5,740 | 20 | 27 | 31 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 5,824 |
| 1.1.3 Power Supply System | BCWS | 2,785 | 15 | 143 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2,943 |
| | ACWP | 3,286 | 50 | 48 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3,387 |
| 1.1.4 Hadron Decay and Absorber | BCWS | 585 | 14 | 26 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 647 |
| | ACWP | 730 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 735 |
| 1.1.5 Neutrino Beam Monitoring | BCWS | 78 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 78 |
| | ACWP | 75 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 75 |
| 1.1.6 Alignment Systems | BCWS | 236 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 241 |
| | ACWP | 148 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 148 |
| 1.1.7 Water, Vacuum & Gas Systems | BCWS | 1,102 | 31 | 115 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,248 |
| | ACWP | 918 | 7 | 11 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 945 |
| 1.1.8 Installation and Integration | BCWS | 958 | 46 | 46 | 34 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,088 |
| | ACWP | 447 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 449 |
| 1.1.9 Hadronic Hose (Close-out) | BCWS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | ACWP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WBS[2] Totals: | BCWS | 13,830 | 158 | 1,211 | 78 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15,281 |
| | ACWP | 14,539 | 101 | 99 | 43 | 7 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 14,791 |
| **1.2 Facility Construction** | | | | | | | | | | | | | | | |
| 1.2.1 Facility Physics Design Phase | BCWS | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| | ACWP | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| 1.2.2 Facility Construction Title I Design Phase | BCWS | 300 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 300 |
| | ACWP | 299 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 299 |
| 1.2.3 Facility Construction Title II Design Phase | BCWS | 556 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 556 |
| | ACWP | 556 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 556 |
| 1.2.4 Facility Construction Phase | BCWS | 3,071 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,071 |
| | ACWP | 3,389 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,389 |
| WBS[2] Totals: | BCWS | 3,998 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3,998 |
| | ACWP | 4,314 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4,314 |
| **1.3 Project Management** | | | | | | | | | | | | | | | |
| 1.3.1 FY 98 Project Management | BCWS | 275 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 275 |
| | ACWP | 125 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 125 |
| 1.3.2 FY 99 Project Management | BCWS | 560 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 560 |
| | ACWP | 595 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 595 |
| 1.3.3 FY 00 Project Management | BCWS | 575 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 575 |
| | ACWP | 616 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 616 |
| 1.3.4 FY 01 Project Management | BCWS | 438 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 438 |
| | ACWP | 416 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 416 |
| 1.3.5 FY 02 Project Management | BCWS | 703 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 703 |
| | ACWP | 324 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 324 |

# NuMI Project TEC - Labor Only

($000's Omitted)

| Program: | Description: | Approval: |
|---|---|---|
| NUMITEC | NuMI TEC | Program Manager |
| Run Date: 07/25/05 | Status Date: 6/30/2005 | Functional Manager |
| | | Cost Account Manager |

| DESCRIPTION | | PR YRS | OCT04 | NOV04 | DEC04 | JAN05 | FEB05 | MAR05 | APR05 | MAY05 | JUN05 | JUL05 | AUG05 | SEP05 | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.3.6 FY 03 Project Management | BCWS | 541 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 541 |
| | ACWP | 416 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 416 |
| 1.3.7 FY 04 Project Management | BCWS | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 |
| | ACWP | 428 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 428 |
| 1.3.8 FY 05 Project Management | BCWS | 0 | 5 | 5 | 5 | 5 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 31 |
| | ACWP | 0 | 26 | 21 | 18 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 67 |
| WBS[2] Totals: | BCWS | 3,151 | 5 | 5 | 5 | 5 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 3,181 |
| | ACWP | 2,921 | 26 | 21 | 18 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2,987 |
| **Grand Totals:** | BCWS | 20,978 | 163 | 1,216 | 83 | 10 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 22,460 |
| | ACWP | 21,773 | 128 | 119 | 61 | 7 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 22,092 |

# NuMI Other Project Cost

($000's Omitted)

Cost Performance Report - Work Breakdown Structure

| Contractor: | Fermi National Accelerator Laboratory | Contract Type/No: | Project Name/No: | Report Period: |
|---|---|---|---|---|
| Location: | Batavia | | NuMI Other Proj Costs | 5/31/05 6/30/05 |

| Quantity | Negotiated Cost | Est. Cost Authorized Unpriced Work | Tgt. Profit/ Fee % | | Tgt. Price | Est Price | Share Ratio | Contract Ceiling | Estimated Contract Ceiling |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 62,200 | 0 | 0 | 0 | 62,200 | 0 | | 0 | 0 |

| WBS[2] WBS[3] Results... | Current Period | | | | | Cumulative to Date | | | | | At Completion | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Budgeted Cost | | Actual Cost Work Performed | Variance | | Budgeted Cost | | Actual Cost Work Performed | Variance | | | Latest Revised Estimate | Variance |
| Item | Work Scheduled | Work Performed | | Schedule | Cost | Work Scheduled | Work Performed | | Schedule | Cost | Budgeted | | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| **2.1 Magnets: Steel & Coils** | | | | | | | | | | | | | |
| 2.1.1 Steel Plane Fabrication | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 4,372 | 4,372 | 4,348 | 0 | 24 | 4,372 | 4,348 | 24 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 229 | 229 | 226 | 0 | 3 | 229 | 226 | 3 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 4,601 | 4,601 | 4,574 | 0 | 27 | 4,601 | 4,574 | 27 |
| 2.1.2 Steel handling fixtures | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 637 | 637 | 637 | (0) | 0 | 637 | 637 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 156 | 156 | 157 | 0 | (0) | 156 | 157 | (0) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 793 | 793 | 793 | 0 | (0) | 793 | 793 | (0) |
| 2.1.3 Near Detector Support Structures | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | (2) | (2) | 1 | 0 | (4) | (2) | 1 | (4) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 4 | 4 | 0 | 4 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 |
| 2.1.4 Magnet Coil | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 1,386 | 1,386 | 1,373 | (0) | 14 | 1,386 | 1,373 | 14 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 286 | 286 | 300 | 0 | (14) | 286 | 300 | (14) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 1,673 | 1,673 | 1,672 | 0 | 0 | 1,673 | 1,672 | 0 |
| 2.1.5 Detector Plane Prototypes | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 390 | 390 | 394 | 0 | (4) | 390 | 394 | (4) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 106 | 106 | 102 | (0) | 4 | 106 | 102 | 4 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 495 | 495 | 496 | (0) | (0) | 495 | 496 | (0) |
| 2.1.6 Steel Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 53 | 53 | 53 | 0 | (0) | 53 | 53 | (0) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 5 | (0) | (0) | 4 | 5 | (0) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 57 | 57 | 58 | (0) | (0) | 57 | 58 | (0) |
| WBS[2]Totals: | 0 | 0 | 0 | 0 | 0 | 7,621 | 7,621 | 7,595 | 0 | 27 | 7,621 | 7,595 | 27 |
| **2.2 Scintillator Detector Fabrication** | | | | | | | | | | | | | |
| 2.2.1 Scintillator Strips | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 2,890 | 2,890 | 2,867 | 0 | 22 | 2,890 | 2,867 | 22 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 266 | 266 | 289 | (0) | (23) | 266 | 289 | (23) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 3,156 | 3,156 | 3,156 | 0 | (0) | 3,156 | 3,156 | (0) |
| 2.2.2 Fiber | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 4,236 | 4,236 | 4,270 | 0 | (34) | 4,236 | 4,270 | (34) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 60 | 60 | 26 | (0) | 34 | 60 | 26 | 34 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 4,296 | 4,296 | 4,296 | (0) | (0) | 4,296 | 4,296 | (0) |

# NuMI Other Project Cost

($000's Omitted)

Cost Performance Report - Work Breakdown Structure

| Contractor: | Fermi National Accelerator Laboratory | Contract Type/No: | Project Name/No: | Report Period: |
|---|---|---|---|---|
| Location: | Batavia | | NuMI Other Proj Costs | 5/31/05 6/30/05 |

| Quantity | Negotiated Cost | Est. Cost Authorized Unpriced Work | Tgt. Profit/ Fee % | | Tgt. Price | Est Price | Share Ratio | Contract Ceiling | Estimated Contract Ceiling |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 62,200 | 0 | 0 | 0 | 62,200 | 0 | | 0 | 0 |

| WBS[2] WBS[3] Results... | Current Period | | | | | Cumulative to Date | | | | | At Completion | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Budgeted Cost | | Actual Cost | Variance | | Budgeted Cost | | Actual Cost | Variance | | | | |
| Item | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Budgeted | Latest Revised Estimate | Variance |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| 2.2.3 Scintillator Modules | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 1,899 | 1,899 | 1,896 | 0 | 3 | 1,899 | 1,896 | 3 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 83 | 83 | 89 | 0 | (6) | 83 | 89 | (6) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 1,982 | 1,982 | 1,985 | 0 | (3) | 1,982 | 1,985 | (3) |
| 2.2.4 Photodetector Systems | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 2,156 | 2,156 | 2,170 | 0 | (14) | 2,156 | 2,170 | (14) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 23 | 23 | 9 | 0 | 14 | 23 | 9 | 14 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 2,179 | 2,179 | 2,179 | 0 | (0) | 2,179 | 2,179 | (0) |
| 2.2.5 Mux Boxes & Connectors | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 1,394 | 1,394 | 1,397 | (0) | (4) | 1,394 | 1,397 | (4) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 27 | 27 | 23 | (0) | 4 | 27 | 23 | 4 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 1,421 | 1,421 | 1,421 | (0) | 0 | 1,421 | 1,421 | 0 |
| 2.2.6 Calibration Systems | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 1,102 | 1,102 | 1,103 | 0 | (0) | 1,102 | 1,103 | (0) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 1,103 | 1,103 | 1,103 | 0 | 0 | 1,103 | 1,103 | 0 |
| 2.2.7 Ass'y & Test Equipment | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 1,677 | 1,677 | 1,677 | (0) | (0) | 1,677 | 1,677 | (0) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 53 | 53 | 53 | (0) | (0) | 53 | 53 | (0) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 1,731 | 1,731 | 1,731 | (0) | (0) | 1,731 | 1,731 | (0) |
| 2.2.8 Factories | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 3,232 | 3,232 | 3,266 | 0 | (35) | 3,232 | 3,266 | (35) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 47 | 47 | 4 | 0 | 43 | 47 | 4 | 43 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 3,279 | 3,279 | 3,271 | 0 | 8 | 3,279 | 3,271 | 8 |
| 2.2.9 Scintillator Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 371 | 371 | 375 | (0) | (4) | 371 | 375 | (4) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 5 | 0 | 4 | 9 | 5 | 4 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 379 | 379 | 379 | (0) | (0) | 379 | 379 | (0) |
| WBS[2]Totals: | 0 | 0 | 0 | 0 | 0 | 19,525 | 19,525 | 19,520 | 0 | 5 | 19,525 | 19,520 | 5 |
| 2.3 Electronics, DAQ & Database | | | | | | | | | | | | | |
| 2.3.1 Near Detector Front End | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 4,151 | 4,151 | 4,070 | (0) | 81 | 4,151 | 4,070 | 81 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 450 | 450 | 511 | 0 | (61) | 450 | 511 | (61) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 4,601 | 4,601 | 4,581 | 0 | 20 | 4,601 | 4,581 | 20 |
| 2.3.2 Far Detector Front-end | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 1,590 | 1,590 | 1,593 | 0 | (2) | 1,590 | 1,593 | (2) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 82 | 82 | 79 | 0 | 3 | 82 | 79 | 3 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 1,673 | 1,673 | 1,672 | 0 | 1 | 1,673 | 1,672 | 1 |

# NuMI Other Project Cost

($000's Omitted)

Cost Performance Report - Work Breakdown Structure

| Contractor: | Fermi National Accelerator Laboratory | Contract Type/No: | Project Name/No: | Report Period: |
|---|---|---|---|---|
| Location: | Batavia | | NuMI Other Proj Costs | 5/31/05 6/30/05 |

| Quantity | Negotiated Cost | Est. Cost Authorized Unpriced Work | Tgt. Profit/ Fee % | | Tgt. Price | Est Price | Share Ratio | Contract Ceiling | Estimated Contract Ceiling |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 62,200 | 0 | 0 | 0 | 62,200 | 0 | | 0 | 0 |

| WBS[2] WBS[3] Results... | Current Period | | | | | Cumulative to Date | | | | | At Completion | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Budgeted Cost | | Actual Cost | Variance | | Budgeted Cost | | Actual Cost | Variance | | | | |
| Item | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Budgeted | Latest Revised Estimate | Variance |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| 2.3.3 Data Routing & Trigger Farm | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 1,241 | 1,241 | 1,241 | (0) | 0 | 1,241 | 1,241 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 1,241 | 1,241 | 1,241 | (0) | 0 | 1,241 | 1,241 | 0 |
| 2.3.4 Data Acquisition & Triggering | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 391 | 391 | 391 | 0 | 0 | 391 | 391 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 391 | 391 | 391 | 0 | 0 | 391 | 391 | 0 |
| 2.3.5 Database | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 10 | 0 | (0) | 10 | 10 | (0) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 10 | 0 | (0) | 10 | 10 | (0) |
| 2.3.6 Auxilliary Systems | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 495 | 495 | 494 | 0 | 1 | 495 | 494 | 1 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 48 | 48 | 50 | 0 | (2) | 48 | 50 | (2) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 543 | 543 | 544 | 0 | (1) | 543 | 544 | (1) |
| 2.3.7 Electronics Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 214 | 214 | 217 | 0 | (3) | 214 | 217 | (3) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 1 | 0 | 2 | 3 | 1 | 2 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 218 | 218 | 218 | 0 | (0) | 218 | 218 | (0) |
| 2.3.8 Slow Control & Monitoring | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 407 | 407 | 386 | 0 | 21 | 407 | 386 | 21 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 12 | 12 | 14 | (0) | (2) | 12 | 14 | (2) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 419 | 419 | 400 | 0 | 19 | 419 | 400 | 19 |
| 2.3.9 HV System | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 67 | 67 | 66 | (0) | 0 | 67 | 66 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 11 | 0 | (0) | 10 | 11 | (0) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 77 | 77 | 77 | (0) | 0 | 77 | 77 | 0 |
| WBS[2]Totals: | 0 | 0 | 0 | 0 | 0 | 9,173 | 9,173 | 9,134 | 0 | 39 | 9,173 | 9,134 | 39 |
| **2.4 Far Detector Installation** | | | | | | | | | | | | | |
| 2.4.1 FDI Completed Design Tasks | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2.4.2 FDI Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 541 | 541 | 550 | 0 | (9) | 541 | 550 | (9) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 43 | 43 | 34 | (0) | 9 | 43 | 34 | 9 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 584 | 584 | 584 | 0 | (0) | 584 | 584 | (0) |

# NuMI Other Project Cost

($000's Omitted)

Cost Performance Report - Work Breakdown Structure

| Contractor: | Fermi National Accelerator Laboratory | Contract Type/No: | Project Name/No: | Report Period: |
|---|---|---|---|---|
| Location: | Batavia | | NuMI Other Proj Costs | 5/31/05 6/30/05 |

| Quantity | Negotiated Cost | Est. Cost Authorized Unpriced Work | Tgt. Profit/ Fee % | | Tgt. Price | Est Price | Share Ratio | Contract Ceiling | Estimated Contract Ceiling |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 62,200 | 0 | 0 | 0 | 62,200 | 0 | | 0 | 0 |

| WBS[2] WBS[3] Results... | Current Period | | | | | Cumulative to Date | | | | | At Completion | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Budgeted Cost | | Actual Cost | Variance | | Budgeted Cost | | Actual Cost | Variance | | | | |
| Item | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Budgeted | Latest Revised Estimate | Variance |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| 2.4.3 SDN-FDI Construction Oversight | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 115 | 115 | 115 | 0 | 0 | 115 | 115 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 115 | 115 | 115 | 0 | 0 | 115 | 115 | 0 |
| 2.4.4 FDI Soudan Lab Infrastructure Setup | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 470 | 470 | 469 | 0 | 1 | 470 | 469 | 1 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 4 | 0 | (0) | 3 | 4 | (0) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 473 | 473 | 473 | 0 | 0 | 473 | 473 | 0 |
| 2.4.5 SDN-FDI Detector Installation | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 2,960 | 2,960 | 2,953 | 0 | 7 | 2,960 | 2,953 | 7 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | (6) | 0 | 6 | (6) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 2,960 | 2,960 | 2,959 | 0 | 0 | 2,960 | 2,959 | 0 |
| 2.4.6 SDN-FDI DNR Costs | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 382 | 382 | 378 | 0 | 4 | 382 | 378 | 4 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | (1) | 0 | 1 | (1) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 382 | 382 | 378 | 0 | 3 | 382 | 378 | 3 |
| 2.4.7 FDI Alignment & Survey | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 58 | 58 | 58 | 0 | (1) | 58 | 58 | (1) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 9 | 0 | 0 | 10 | 9 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 67 | 67 | 67 | 0 | (0) | 67 | 67 | (0) |
| WBS[2]Totals: | 0 | 0 | 0 | 0 | 0 | 4,581 | 4,581 | 4,577 | 0 | 4 | 4,581 | 4,577 | 4 |
| 2.5 Near Detector Installation | | | | | | | | | | | | | |
| 2.5.1 NDI Infrastructure | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 402 | 402 | 392 | 0 | 11 | 402 | 392 | 11 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 110 | 110 | 78 | 0 | 32 | 110 | 78 | 32 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 512 | 512 | 469 | 0 | 43 | 512 | 469 | 43 |
| 2.5.2 NDI Plane Assembly | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 393 | 393 | 403 | 0 | (10) | 393 | 403 | (10) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 123 | 123 | 111 | (0) | 12 | 123 | 111 | 12 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 516 | 516 | 514 | 0 | 2 | 516 | 514 | 2 |
| 2.5.3 NDI Detector Installation | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 3 | 0 | (3) | 898 | 898 | 1,103 | 0 | (206) | 898 | 1,103 | (206) |
| Indirect Cost | 0 | 0 | 1 | 0 | (1) | 254 | 254 | 271 | 0 | (17) | 254 | 271 | (17) |
| WBS[3]Totals: | 0 | 0 | 4 | 0 | (4) | 1,151 | 1,151 | 1,374 | 0 | (222) | 1,151 | 1,374 | (222) |
| 2.5.4 NDI Facility Experimental Infrastructure | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | (0) | 200 | 200 | 206 | 0 | (5) | 200 | 206 | (5) |
| Indirect Cost | 0 | 0 | 0 | 0 | (0) | 38 | 38 | 37 | 0 | 0 | 38 | 37 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | (0) | 238 | 238 | 243 | 0 | (5) | 238 | 243 | (5) |

# NuMI Other Project Cost

($000's Omitted)

Cost Performance Report - Work Breakdown Structure

| Contractor: | Fermi National Accelerator Laboratory | Contract Type/No: | Project Name/No: | Report Period: |
|---|---|---|---|---|
| Location: | Batavia | | NuMI Other Proj Costs | 5/31/05 6/30/05 |

| Quantity | Negotiated Cost | Est. Cost Authorized Unpriced Work | Tgt. Profit/ Fee % | | Tgt. Price | Est Price | Share Ratio | Contract Ceiling | Estimated Contract Ceiling |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 62,200 | 0 | 0 | 0 | 62,200 | 0 | | 0 | 0 |

| WBS[2] WBS[3] Results... | Current Period | | | | | Cumulative to Date | | | | | At Completion | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Budgeted Cost | | Actual Cost | Variance | | Budgeted Cost | | Actual Cost | Variance | | | Latest Revised | |
| Item | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Budgeted | Estimate | Variance |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| 2.5.5 RBI SB&O Experimental Systems Outfitting | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 2,944 | 2,944 | 2,944 | 0 | (0) | 2,944 | 2,944 | (0) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 2,944 | 2,944 | 2,944 | 0 | (0) | 2,944 | 2,944 | (0) |
| WBS[2]Totals: | 0 | 0 | 4 | 0 | (4) | 5,361 | 5,361 | 5,544 | 0 | (182) | 5,361 | 5,544 | (182) |
| **2.6 MINOS Project Management** | | | | | | | | | | | | | |
| 2.6.1 FNL-Project Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 5 | 0 | (5) | 1,241 | 1,241 | 1,429 | 0 | (188) | 1,241 | 1,429 | (188) |
| Indirect Cost | 0 | 0 | 2 | 0 | (2) | 388 | 388 | 401 | 0 | (13) | 388 | 401 | (13) |
| WBS[3]Totals: | 0 | 0 | 7 | 0 | (7) | 1,629 | 1,629 | 1,830 | 0 | (200) | 1,629 | 1,830 | (200) |
| 2.6.2 ANL-Project Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 96 | 96 | 96 | 0 | (0) | 96 | 96 | (0) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 98 | 98 | 98 | 0 | (0) | 98 | 98 | (0) |
| WBS[2]Totals: | 0 | 0 | 7 | 0 | (7) | 1,727 | 1,727 | 1,928 | 0 | (200) | 1,727 | 1,928 | (200) |
| **3.1 NuMI Conceptual Design** | | | | | | | | | | | | | |
| 3.1.1 FNL-BD-NuMI CDR | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 407 | 407 | 407 | 0 | 0 | 407 | 407 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 82 | 82 | 80 | 0 | 2 | 82 | 80 | 2 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 489 | 489 | 487 | 0 | 2 | 489 | 487 | 2 |
| 3.1.2 FNL-BD-NuMI FESS CDR | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 282 | 282 | 282 | 0 | 0 | 282 | 282 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 64 | 64 | 64 | 0 | 0 | 64 | 64 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 346 | 346 | 346 | 0 | 0 | 346 | 346 | 0 |
| 3.1.3 FNL-NuMI Beam Design | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 612 | 612 | 612 | 0 | (0) | 612 | 612 | (0) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 186 | 186 | 184 | 0 | 3 | 186 | 184 | 3 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 798 | 798 | 796 | 0 | 3 | 798 | 796 | 3 |
| 3.1.4 FNL-BD-NuMI Project Management | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 184 | 184 | 184 | 0 | (0) | 184 | 184 | (0) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 51 | 51 | 50 | 0 | 1 | 51 | 50 | 1 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 235 | 235 | 234 | 0 | 1 | 235 | 234 | 1 |
| 3.1.5 FNL-Soudan Lab Design | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 55 | 55 | 56 | 0 | (1) | 55 | 56 | (1) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 9 | 0 | 1 | 10 | 9 | 1 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 65 | 65 | 65 | 0 | 0 | 65 | 65 | 0 |
| WBS[2]Totals: | 0 | 0 | 0 | 0 | 0 | 1,934 | 1,934 | 1,928 | 0 | 6 | 1,934 | 1,928 | 6 |

# NuMI Other Project Cost

($000's Omitted)

Cost Performance Report - Work Breakdown Structure

| Contractor: | Fermi National Accelerator Laboratory | Contract Type/No: | Project Name/No: | Report Period: |
|---|---|---|---|---|
| Location: | Batavia | | NuMI Other Proj Costs | 5/31/05 6/30/05 |

| Quantity | Negotiated Cost | Est. Cost Authorized Unpriced Work | Tgt. Profit/ Fee % | | Tgt. Price | Est Price | Share Ratio | Contract Ceiling | Estimated Contract Ceiling |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 62,200 | 0 | 0 | 0 | 62,200 | 0 | | 0 | 0 |

| WBS[2] WBS[3] Results... | Current Period | | | | | Cumulative to Date | | | | | At Completion | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Budgeted Cost | | Actual Cost | Variance | | Budgeted Cost | | Actual Cost | Variance | | | | |
| Item | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Budgeted | Latest Revised Estimate | Variance |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| **3.2 MINOS Detector R&D** | | | | | | | | | | | | | |
| 3.2.1 FNL-MINOS Scintillator R&D | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 872 | 872 | 870 | 0 | 2 | 872 | 870 | 2 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 115 | 115 | 118 | 0 | (2) | 115 | 118 | (2) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 988 | 988 | 988 | 0 | 0 | 988 | 988 | 0 |
| 3.2.2 FNL-MINOS Steel R&D | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 549 | 549 | 550 | 0 | (1) | 549 | 550 | (1) |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 95 | 95 | 94 | 0 | 1 | 95 | 94 | 1 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 644 | 644 | 644 | 0 | (0) | 644 | 644 | (0) |
| 3.2.3 FNL-RD-Neutrino Oscillation R&D | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 116 | 116 | 116 | 0 | 0 | 116 | 116 | 0 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 20 | 20 | 20 | (0) | 0 | 20 | 20 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 136 | 136 | 136 | (0) | 0 | 136 | 136 | 0 |
| WBS[2]Totals: | 0 | 0 | 0 | 0 | 0 | 1,768 | 1,768 | 1,768 | (0) | 0 | 1,768 | 1,768 | 0 |
| **3.3 MINOS Cavern** | | | | | | | | | | | | | |
| 3.3.0 Preconstruction Work | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 758 | 758 | 758 | 0 | 0 | 758 | 758 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 758 | 758 | 758 | 0 | 0 | 758 | 758 | 0 |
| 3.3.1 Cavern Construction | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 6,597 | 6,597 | 6,597 | 0 | 0 | 6,597 | 6,597 | (0) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 6,597 | 6,597 | 6,597 | 0 | 0 | 6,597 | 6,597 | (0) |
| 3.3.2 Cavern Outfitting | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 7,171 | 7,171 | 7,171 | 0 | 0 | 7,171 | 7,171 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 7,171 | 7,171 | 7,171 | 0 | 0 | 7,171 | 7,171 | 0 |
| WBS[2]Totals: | 0 | 0 | 0 | 0 | 0 | 14,527 | 14,527 | 14,527 | 0 | 0 | 14,527 | 14,527 | (0) |
| **3.4 Soudan/MINOS Operating** | | | | | | | | | | | | | |
| 3.4.1 UMN-Mine Crew Support/Soudan Gen'l Operations | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 1,523 | 1,523 | 1,503 | 0 | 20 | 1,523 | 1,503 | 20 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 8 | 8 | 27 | 0 | (20) | 8 | 27 | (20) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 1,531 | 1,531 | 1,531 | 0 | (0) | 1,531 | 1,531 | (0) |
| 3.4.2 UMN-Breitung Township Building Rental | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 75 | 75 | 75 | 0 | (0) | 75 | 75 | (0) |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 75 | 75 | 75 | 0 | (0) | 75 | 75 | (0) |

# NuMI Other Project Cost

($000's Omitted)

| Cost Performance Report - Work Breakdown Structure | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Contractor: | Fermi National Accelerator Laboratory | | | | | Contract Type/No: | | | Project Name/No: | | Report Period: | | |
| Location: | Batavia | | | | | | | | NuMI Other Proj Costs | | 5/31/05 | 6/30/05 | |
| Quantity | Negotiated Cost | | Est. Cost Authorized Unpriced Work | | Tgt. Profit/ Fee % | | Tgt. Price | Est Price | Share Ratio | Contract Ceiling | Estimated Contract Ceiling | | |
| 1 | 62,200 | | 0 | | 0 | 0 | 62,200 | 0 | | 0 | 0 | | |
| WBS[2] WBS[3] Results... | Current Period | | | | | Cumulative to Date | | | | | At Completion | | |
| | Budgeted Cost | | Actual Cost | Variance | | Budgeted Cost | | Actual Cost | Variance | | | Latest Revised | |
| Item | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Work Scheduled | Work Performed | Work Performed | Schedule | Cost | Budgeted | Estimate | Variance |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| 3.4.3 UMN-E Peterson Salary | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 71 | 71 | 71 | 0 | 0 | 71 | 71 | 0 |
| WBS[3]Totals: | 0 | 0 | 0 | 0 | 0 | 71 | 71 | 71 | 0 | 0 | 71 | 71 | 0 |
| WBS[2]Totals: | 0 | 0 | 0 | 0 | 0 | 1,677 | 1,677 | 1,677 | 0 | (0) | 1,677 | 1,677 | (0) |
| General and Administrative | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Undistributed Budget | | | | | | | | | | | 0 | 0 | 0 |
| Sub Total | 0 | 0 | 11 | 0 | (11) | 67,894 | 67,894 | 68,197 | 0 | (303) | 67,894 | 68,197 | (303) |
| Contingency + MINOS Scope Reserve | | | | | | | | | | | 2,899 | 2,596 | 303 |
| Total NuMI Other Proj Costs | 0 | 0 | 11 | 0 | (11) | 67,894 | 67,894 | 68,197 | 0 | (303) | 70,793 | 70,793 | 0 |
| UK In-Kind Contribution | 0 | 0 | 0 | 0 | 0 | (4,835) | (4,835) | (4,835) | (0) | 0 | (4,835) | (4,835) | 0 |
| Minnesota Preconstruction Funds | 0 | 0 | 0 | 0 | 0 | (758) | (758) | (758) | 0 | 0 | (758) | (758) | 0 |
| Minnesota Construction Funds FY99 | 0 | 0 | 0 | 0 | 0 | (3,000) | (3,000) | (3,000) | 0 | 0 | (3,000) | (3,000) | 0 |
| Total US Funds | 0 | 0 | 11 | 0 | (11) | 59,301 | 59,301 | 59,604 | 0 | (303) | 62,200 | 62,200 | 0 |
| WBS[2]Totals: | | | | | | | | | | | | | |
| Direct Cost + Escalation | 0 | 0 | 8 | 0 | (8) | 45,057 | 45,057 | 45,391 | (0) | (334) | 45,057 | 45,391 | (334) |
| Indirect Cost | 0 | 0 | 2 | 0 | (2) | 2,931 | 2,931 | 2,906 | 0 | 25 | 2,931 | 2,906 | 25 |
| Subtotal | 0 | 0 | 11 | 0 | (11) | 47,988 | 47,988 | 48,297 | 0 | (309) | 47,988 | 48,297 | (309) |
| UK In-Kind Contribution | 0 | 0 | 0 | 0 | 0 | (4,835) | (4,835) | (4,835) | (0) | 0 | (4,835) | (4,835) | 0 |
| Total MINOS Detector | 0 | 0 | 11 | 0 | (11) | 43,153 | 43,153 | 43,462 | 0 | (309) | 43,153 | 43,462 | (309) |
| Direct Cost + Escalation | 0 | 0 | 0 | 0 | 0 | 19,273 | 19,273 | 19,253 | 0 | 20 | 19,273 | 19,253 | 20 |
| Indirect Cost | 0 | 0 | 0 | 0 | 0 | 633 | 633 | 646 | 0 | (14) | 633 | 646 | (14) |
| Subtotal | 0 | 0 | 0 | 0 | 0 | 19,906 | 19,906 | 19,900 | 0 | 6 | 19,906 | 19,900 | 6 |
| Minnesota Preconstruction Funds | 0 | 0 | 0 | 0 | 0 | (758) | (758) | (758) | 0 | 0 | (758) | (758) | 0 |
| Minnesota Construction Funds FY99 | 0 | 0 | 0 | 0 | 0 | (3,000) | (3,000) | (3,000) | 0 | 0 | (3,000) | (3,000) | 0 |
| Total Project Support | 0 | 0 | 0 | 0 | 0 | 16,148 | 16,148 | 16,142 | 0 | 6 | 16,148 | 16,142 | 6 |
| Contingency + MINOS Scope Reserve | | | | | | | | | | | 2,899 | 2,596 | 303 |
| Total US Funds | 0 | 0 | 11 | 0 | (11) | 59,301 | 59,301 | 59,604 | 0 | (303) | 62,200 | 62,200 | 0 |

# NuMI Project Obligations

$000's Omitted

| Wk Pkg | WBS # | Inst Code | DESCRIPTION | Total Budget Jun-05 | Amounts as of June 30, 2005: PTD Cost | PO Encumbrances | Requisition Encumbrances | PTD Obligations | Remaining Obligation Authority |
|---|---|---|---|---|---|---|---|---|---|
| YAA | 1.1.1.1 | | EPB/Physics Design Phase | 139 | 139 | | | 139 | 0 |
| YAB | 1.1.1.2 | | EPB/Title I & II Design Phase | 1,028 | 1,028 | | | 1,028 | 0 |
| YAC | 1.1.1.3.1 | | EPB/Title III | 252 | 252 | | | 252 | 0 |
| YAD | 1.1.1.3.2.1 | | EPB/Fabrication | 2,037 | 2,037 | | | 2,037 | 0 |
| YAE | 1.1.1.3.2.2 | | EPB/Assembly | 599 | 599 | | | 599 | 0 |
| YAG | 1.1.1.3.2.3 | | EPB/Lambertston Construction | 420 | 420 | | | 420 | 0 |
| YAH | 1.1.1.3.2.4 | | EPB/Refurbish & Repair B2 Magnets | 90 | 90 | | | 90 | 0 |
| YAK | 1.1.1.3.2.5 | | EPB/Refurbish & Repair 3Q120 Magnets | 92 | 92 | | | 92 | 0 |
| YAL | 1.1.1.3.2.6 | | EPB/Fabricate Add'l Trim Magnets | 200 | 200 | | | 200 | 0 |
| YAM | 1.1.1.3.2.7 | | EPB/Refurbish 5.5 - 2.87 - 60 Trim Dipoles | 13 | 13 | | | 13 | 0 |
| YAF | 1.1.1.3.3 | | EPB/Installation | 1,080 | 1,080 | | | 1,080 | 0 |
| | 1.1.1.3.4 | | EPB/Precommissioning | 3 | 3 | | | 3 | 0 |
| YAI | 1.1.1.4 | | EPB/Beamline Tests | 47 | 47 | | | 47 | 0 |
| YAJ | 1.1.1.5 | | EPB/Controls Software & Permit | 2 | 2 | | | 2 | 0 |
| YBA | 1.1.2.1 | | NBD/Physics Design Phase | 780 | 780 | | | 780 | 0 |
| YBB | 1.1.2.2 | | NBD/Title I & II Design Phase | 4,835 | 4,835 | | | 4,835 | 0 |
| YBC | 1.1.2.3.1 | | NBD/Title III | 149 | 149 | | | 149 | 0 |
| YBD | 1.1.2.3.2 | | NBD/Construction | 3,986 | 3,986 | | | 3,986 | 0 |
| | 1.1.2.3.3 | | NBD/Installation | 2,168 | 2,168 | | | 2,168 | 0 |
| | 1.1.2.3.4 | | NBD/Precommissioning | 0 | 0 | | | 0 | 0 |
| YCB | 1.1.3.2 | | PSS/Title I & II Design Phase | 1,677 | 1,677 | | | 1,677 | 0 |
| YCC | 1.1.3.3.1 | | PSS/Title III | 137 | 137 | | | 137 | 0 |
| YCD | 1.1.3.3.2 | | PSS/Construction & Fabrication | 3,192 | 3,192 | | | 3,192 | 0 |
| YCE | 1.1.3.3.3 | | PSS/Installation | 484 | 484 | | | 484 | 0 |
| | 1.1.3.3.4 | | PSS/Precommissioning | 0 | 0 | | | 0 | 0 |
| YDA | 1.1.4.1 | | HDA/Physics Design Phase | 60 | 60 | | | 60 | 0 |
| YDB | 1.1.4.2 | | HDA/Title I & II Design Phase | 536 | 536 | | | 536 | 0 |
| YDC | 1.1.4.3.1 | | HDA/Title III | 50 | 50 | | | 50 | 0 |
| | 1.1.4.3.2.1 | | HDA/Misc Construction Materials | 5 | 5 | | | 5 | 0 |
| YDE | 1.1.4.3.2.2 | | HDA/Absorber Construction | 332 | 332 | | | 332 | 0 |
| YDF | 1.1.4.3.2.3 | | HDA/Vacuum Window Construction | 31 | 31 | | | 31 | 0 |
| | 1.1.4.3.2.4 | | HDA/Installation | 572 | 572 | | | 572 | 0 |
| YEA | 1.1.5.1 | | NBM/Physics Design Phase | 80 | 80 | | | 80 | 0 |
| YEB | 1.1.5.2 | | NBM/Title I & II Design Phase | 299 | 299 | | | 299 | 0 |
| YEF | 1.1.5.4 | | NBM/Downstream Hadron Monitors | 103 | 103 | | | 103 | 0 |
| YFA | 1.1.6.1 | | ALS/Physics Design Phase | 89 | 89 | | | 89 | 0 |
| YFB | 1.1.6.2 | | ALS/Title I & II Design Phase | 9 | 9 | | | 9 | 0 |
| YFC | 1.1.6.3.1 | | ALS/Prepare Alignment Documentation | 2 | 2 | | | 2 | 0 |
| YFE | 1.1.6.3.3 | | ALS/Title III | 84 | 84 | | | 84 | 0 |

# NuMI Project Obligations

$000's Omitted

| Wk Pkg | WBS # | Inst Code | DESCRIPTION | Total Budget Jun-05 | Amounts as of June 30, 2005: PTD Cost | PO Encumbrances | Requisition Encumbrances | PTD Obligations | Remaining Obligation Authority |
|---|---|---|---|---|---|---|---|---|---|
| YFF | 1.1.6.3.4 | | ALS/Installation | 60 | 60 | | | 60 | 0 |
| YGA | 1.1.7.1 | | WVG/Physics Design Phase | 1 | 1 | | | 1 | 0 |
| YGB | 1.1.7.2 | | WVG/Title I & II Design Phase | 529 | 529 | | | 529 | 0 |
| YGC | 1.1.7.3.1 | | WVG/Title III | 117 | 117 | | | 117 | 0 |
| YGD | 1.1.7.3.2 | | WVG/Construction | 1,252 | 1,252 | | | 1,252 | 0 |
| | 1.1.7.3.3 | | WVG/Installation | 309 | 309 | | | 309 | 0 |
| YHA | 1.1.8.1 | | INST/Physics Design Phase | 50 | 50 | | | 50 | 0 |
| YHB | 1.1.8.2 | | INST/Title I & II Design Phase | 150 | 150 | | | 150 | 0 |
| YHC | 1.1.8.3.1 | | INST/Title III | 247 | 247 | | | 247 | 0 |
| YHD | 1.1.8.3.2 | | INST/Controls, Cables & Safety Systems Construction | 261 | 261 | | | 261 | 0 |
| YHE | 1.1.8.3.3 | | INST/Controls, Cables & Safety Systems Installation | 1,388 | 1,388 | | | 1,388 | 0 |
| YHF | 1.1.8.3.4 | | INST/Miscellaneous Installation Activities | 193 | 193 | | | 193 | 0 |
| | 1.1.8.3.5 | | INST/Precommission Controls, Cables & Safety Systems | 0 | 0 | | | 0 | 0 |
| | 1.1.8.4 | | INST/Moveable Shield Wall for the Target Hall | 146 | 146 | | | 146 | 0 |
| YJA | 1.1.9 | | Hadronic Hose (Close-out) | 63 | 63 | | | 63 | 0 |
| YIA | 1.2.1 | | Facility Const Physics Design Phase | 70 | 70 | | | 70 | 0 |
| YIB | 1.2.2 | | Facility Const Title I Design Phase | 1,437 | 1,437 | | | 1,437 | 0 |
| YIC | 1.2.3 | | Facility Const Title II Design Phase | 2,974 | 2,974 | | | 2,974 | 0 |
| YID | 1.2.4.2 | | Facility Const Title III Services | 6,750 | 6,750 | | | 6,750 | 0 |
| YIE | 1.2.4.3 | | Site Preparation & Utilities | 1,094 | 1,094 | | | 1,094 | 0 |
| YIF | 1.2.4.4 | | Underground Work | 40,356 | 40,356 | | | 40,356 | 0 |
| YIG | 1.2.4.5 | | Service Buildings & Outfitting | 17,790 | 17,790 | | | 17,790 | 0 |
| YII | 1.2.4.7 | | FNL Procurements for Conventional Construction | 421 | 421 | | | 421 | 0 |
| YIL | 1.2.4.8.1 | | Facility Const ESH&H | 753 | 753 | | | 753 | 0 |
| YIM | 1.2.4.8.2 | | Facility Const FESS Non-Engineering | 333 | 333 | | | 333 | 0 |
| YIN | 1.2.4.8.3 | | Facility Const UG Advisory Panel | 1,226 | 1,226 | | | 1,226 | 0 |
| YIO | 1.2.4.8.4 | | Facility Const Miscellaneous | 330 | 330 | | | 330 | 0 |
| YIP | 1.2.4.8.5 | | Facility Const Prebid Document Update | 1,051 | 1,051 | | | 1,051 | 0 |
| YKA | 1.3.1 | | FY 98 Project Management | 141 | 141 | | | 141 | 0 |
| YKB | 1.3.2 | | FY 99 Project Management | 661 | 661 | | | 661 | 0 |
| YKC | 1.3.3 | | FY00 Project Management | 663 | 663 | | | 663 | 0 |
| YKD | 1.3.4 | | FY01 Project Management | 423 | 423 | | | 423 | 0 |
| YKE | 1.3.5 | | FY02 Project Management | 324 | 324 | | | 324 | 0 |
| YKF | 1.3.6 | | FY03 Project Management | 421 | 421 | | | 421 | 0 |
| | 1.3.7 | | FY04 Project Management | 430 | 430 | | | 430 | 0 |
| | 1.3.8 | | FY05 Project Management | 70 | 70 | | | 70 | 0 |
| YKZ | 1.3.9 | | Unallocated Budget | 1,014 | 0 | | | 0 | 1,014 |
| YQF | 2.1.1.1.1 | FNL | EDI&A Far Detector Final Design | 70 | 70 | | | 70 | 0 |
| YQG | 2.1.1.1.2 | FNL | EDI&A Near Detector Final Design | 41 | 41 | | | 41 | 0 |
| YQA | 2.1.1.1.99 | FNL | EDI&A Steel Plane Fabrication | 0 | 0 | | | 0 | 0 |

# NuMI Project Obligations

$000's Omitted

| Wk Pkg | WBS # | Inst Code | DESCRIPTION | Total Budget Jun-05 | Amounts as of June 30, 2005: PTD Cost | PO Encumbrances | Requisition Encumbrances | PTD Obligations | Remaining Obligation Authority |
|---|---|---|---|---|---|---|---|---|---|
| YQH | 2.1.1.1.3.1 | FNL | EDI&A Oversight | 67 | 67 | | | 67 | 0 |
| YQI | 2.1.1.1.3.2 | UMN | EDI&A Oversight | 9 | 9 | | | 9 | 0 |
| YQB | 2.1.1.2 | FNL | 4 Plane Proto Far & Near | 79 | 79 | | | 79 | 0 |
| YQC | 2.1.1.3 | FNL | Module 1 Steel | 1,740 | 1,740 | | | 1,740 | 0 |
| YQD | 2.1.1.4 | FNL | Module 2 Steel | 1,722 | 1,722 | | | 1,722 | 0 |
| YQE | 2.1.1.6 | FNL | Near Steel | 845 | 845 | | | 845 | 0 |
| YQM | 2.1.2.1 | FNL | EDI&A Steel Handling Fixtures | 424 | 424 | | | 424 | 0 |
| YQN | 2.1.2.2 | FNL | Far Detector Fixtures | 177 | 177 | | | 177 | 0 |
| YQO | 2.1.2.3 | FNL | Near Detector Fixtures | 192 | 192 | | | 192 | 0 |
| YQS | 2.1.3.1 | FNL | EDI&A Near Detector Support Structures | 1 | 1 | | | 1 | 0 |
| | 2.1.3.2 | FNL | Purchase Near Detector Support Structures | 0 | 0 | | | 0 | 0 |
| | 2.1.3.3 | FNL | Purchase Near Bookend | 0 | 0 | | | 0 | 0 |
| YQY | 2.1.4.1 | FNL | EDI&A Magnet Coil | 527 | 527 | | | 527 | 0 |
| YQZ | 2.1.4.2 | FNL | Coil Materials - Far Detector | 329 | 329 | | | 329 | 0 |
| YRA | 2.1.4.3 | FNL | Coil Materials - Near Detector | 76 | 76 | | | 76 | 0 |
| YRB | 2.1.4.4 | FNL | Cooling System - Far Detector | 5 | 5 | | | 5 | 0 |
| YRI | 2.1.4.5 | FNL | Coil Fixtures - Near Detector | 32 | 32 | | | 32 | 0 |
| YRC | 2.1.4.6.1 | FNL | Instrumentation/Monitoring-Far Detector | 142 | 142 | | | 142 | 0 |
| YRH | 2.1.4.6.2 | UMN | Instrumentation/Monitoring-Far Detector | 62 | 62 | | | 62 | 0 |
| YRD | 2.1.4.6.99 | FNL | Instrumentation/Monitoring-Far Detector | 0 | 0 | | | 0 | 0 |
| YRE | 2.1.4.7 | FNL | Instrumentation/Monitoring-Near Detector | 33 | 33 | | | 33 | 0 |
| YRF | 2.1.4.8 | FNL | Manufacture Near Coil Parts | 302 | 302 | | | 302 | 0 |
| YRG | 2.1.4.9 | FNL | Far Coil Prototype | 165 | 165 | | | 165 | 0 |
| YRM | 2.1.5.1 | FNL | EDI&A Detector Plane Prototypes | 35 | 35 | | | 35 | 0 |
| YRN | 2.1.5.2 | FNL | Far 4 Plane Proto | 197 | 197 | | | 197 | 0 |
| YRO | 2.1.5.3 | FNL | Far 4 Plane Training School | 10 | 10 | | | 10 | 0 |
| YRP | 2.1.5.4 | FNL | Materials Handling Prototype | 115 | 115 | | | 115 | 0 |
| YRQ | 2.1.5.5 | FNL | Near 4 Plane Prototype | 138 | 138 | | | 138 | 0 |
| | 2.1.5.6 | FNL | Near 4 Plane Training School | 0 | 0 | | | 0 | 0 |
| YRW | 2.1.6.1 | FNL | Steel Mgmt Travel | 58 | 58 | | | 58 | 0 |
| YSA | 2.2.1.1.1 | FNL | EDI&A Scintillator Strips | 375 | 375 | | | 375 | 0 |
| YSB | 2.2.1.1.2 | ANL | EDI&A Scintillator Strips | 188 | 188 | | | 188 | 0 |
| YSC | 2.2.1.1.3 | UMN | EDI&A Scintillator Strips | 16 | 16 | | | 16 | 0 |
| YSD | 2.2.1.1.4 | CALT | EDI&A Scintillator Strips | 60 | 60 | | | 60 | 0 |
| YSL | 2.2.1.1.6 | TUF | EDI&A Scintillator Strips | 7 | 7 | | | 7 | 0 |
| YSP | 2.2.1.2.1 | ANL | Scintillator Strip Extruding | 0 | 0 | | | 0 | 0 |
| YTB | 2.2.1.2.3 | FNL | Scintillator Strip Extruding | 2,325 | 2,325 | | | 2,325 | 0 |
| YSE | 2.2.2.1.2 | IU | EDI&A Fiber | 91 | 91 | | | 91 | 0 |
| YSF | 2.2.2.1.3 | UMN | EDI&A Fiber | 32 | 32 | | | 32 | 0 |
| YSG | 2.2.2.1.5 | FNL | EDI&A Fiber | 99 | 99 | | | 99 | 0 |

# NuMI Project Obligations

$000's Omitted

| Wk Pkg | WBS # | Inst Code | DESCRIPTION | Total Budget Jun-05 | Amounts as of June 30, 2005: PTD Cost | PO Encumbrances | Requisition Encumbrances | PTD Obligations | Remaining Obligation Authority |
|---|---|---|---|---|---|---|---|---|---|
| YSH | 2.2.2.1.6 | CALT | EDI&A Fiber | 86 | 86 | | | 86 | 0 |
| YSQ | 2.2.2.2.1 | CALT | Fiber M&S | 1,272 | 1,272 | | | 1,272 | 0 |
| YUK | 2.2.2.2.2 | TAMU | Fiber M&S | 123 | 123 | | | 123 | 0 |
| YST | 2.2.2.2.4 | IU | Fiber M&S | 2,157 | 2,157 | | | 2,157 | 0 |
| YUN | 2.2.2.2.5 | JMU | Fiber M&S | 103 | 103 | | | 103 | 0 |
| YSJ | 2.2.3.1.1 | UMN | EDI&A Module Design & Prototyping | 302 | 302 | | | 302 | 0 |
| YSI | 2.2.3.1.2 | ANL | EDI&A Module Design & Prototyping | 46 | 46 | | | 46 | 0 |
| YSK | 2.2.3.1.3 | FNL | EDI&A Module Design & Prototyping | 153 | 153 | | | 153 | 0 |
| | 2.2.3.1.4 | IU | EDI&A Module Design & Prototyping | 0 | 0 | | | 0 | 0 |
| YSM | 2.2.3.1.5 | CALT | EDI&A Module Design & Prototyping | 9 | 9 | | | 9 | 0 |
| YSN | 2.2.3.1.6 | TUF | EDI&A Module Design & Prototyping | 4 | 4 | | | 4 | 0 |
| YUO | 2.2.3.2 | UMN | Scintillator Module Parts - Near Detector | 54 | 54 | | | 54 | 0 |
| YSW | 2.2.3.3.1 | FNL | Scintillator Module Parts - Far Detector | 1,083 | 1,083 | | | 1,083 | 0 |
| YTF | 2.2.3.3.2 | TUF | Scintillator Module Parts - Far Detector | 74 | 74 | | | 74 | 0 |
| YUS | 2.2.3.4 | FNL | Scintillator Module Parts | 261 | 261 | | | 261 | 0 |
| YSO | 2.2.4.1.2 | TXA | EDI&A Photodetector Systems | 124 | 124 | | | 124 | 0 |
| YSX | 2.2.4.2.1 | TXA | Photodetectors | 1,355 | 1,355 | | | 1,355 | 0 |
| YUL | 2.2.4.2.3 | ATH | Photodetectors | 23 | 23 | | | 23 | 0 |
| YSY | 2.2.4.3.1 | TXA | PMT Bases and Mounting for SM1 | 200 | 200 | | | 200 | 0 |
| YUP | 2.2.4.3.2 | UCL | PMT Bases and Mounting for SM2 | 0 | 0 | | | 0 | 0 |
| YSU | 2.2.5.1.2 | IU | EDI&A Mux Boxes & Connectors | 89 | 89 | | | 89 | 0 |
| YSV | 2.2.5.1.4 | FNL | EDI&A Mux Boxes & Connectors | 46 | 46 | | | 46 | 0 |
| YSZ | 2.2.5.1.5 | IU | QC LED Computer System | 31 | 31 | | | 31 | 0 |
| YSR | 2.2.5.2.1 | IU | Connectors | 159 | 159 | | | 159 | 0 |
| YUM | 2.2.5.2.3 | FNL | Connectors | 10 | 10 | | | 10 | 0 |
| YWJ | 2.2.5.2.4 | FNL | Connectors - Rework | 30 | 30 | | | 30 | 0 |
| YSS | 2.2.5.3.1 | IU | Mux Boxes | 447 | 447 | | | 447 | 0 |
| YUQ | 2.2.5.3.2 | TUF | Mux Boxes | 225 | 225 | | | 225 | 0 |
| YUG | 2.2.5.3.4 | TXA | Mux Boxes | 56 | 56 | | | 56 | 0 |
| YTA | 2.2.6.1.1 | FNL | EDI&A Calibration Systems | 0 | 0 | | | 0 | 0 |
| | 2.2.6.3.1 | FNL | Light Injection System - Near Detector | 0 | 0 | | | 0 | 0 |
| YTK | 2.2.7.1.1 | ANL | EDI&A Ass'y & Test Equipment | 243 | 243 | | | 243 | 0 |
| YTJ | 2.2.7.1.2 | FNL | EDI&A Ass'y & Test Equipment | 35 | 35 | | | 35 | 0 |
| YTN | 2.2.7.1.3 | UMN | EDI&A Ass'y & Test Equipment | 47 | 47 | | | 47 | 0 |
| YTM | 2.2.7.2.1.1 | ANL | Prototype Factory Equip Purch/Fabr | 255 | 255 | | | 255 | 0 |
| YTO | 2.2.7.2.1.2 | UMN | Prototype Factory Equip Purch/Fabr | 22 | 22 | | | 22 | 0 |
| YTL | 2.2.7.2.1.3 | FNL | Prototype Factory Equip Purch/Fabr | 152 | 152 | | | 152 | 0 |
| YTP | 2.2.7.2.2.1 | ANL | Factory 1 Equip Purch/Fabr | 217 | 217 | | | 217 | 0 |
| YTI | 2.2.7.2.2.2 | CALT | Factory 1 Equip Purch/Fabr | 103 | 103 | | | 103 | 0 |
| YTQ | 2.2.7.2.2.3 | FNL | Factory 1 Equip Purch/Fabr | 25 | 25 | | | 25 | 0 |

$000's Omitted

# NuMI Project Obligations

| Wk Pkg | WBS # | Inst Code | DESCRIPTION | Total Budget Jun-05 | Amounts as of June 30, 2005: PTD Cost | PO Encumbrances | Requisition Encumbrances | PTD Obligations | Remaining Obligation Authority |
|---|---|---|---|---|---|---|---|---|---|
| YTC | 2.2.7.2.2.4 | UMN | Factory 1 Equip Purch/Fabr | 57 | 57 | | | 57 | 0 |
| YTG | 2.2.7.2.3.1 | ANL | Factory 2 Equip Purch/Fabr | 307 | 307 | | | 307 | 0 |
| | 2.2.7.2.3.2 | FNL | Factary 2 Equip Purch/Fabr | 0 | 0 | | | 0 | 0 |
| YTD | 2.2.7.2.3.3 | UMN | Factory 2 Equip Purch/Fabr | 165 | 165 | | | 165 | 0 |
| YUT | 2.2.7.2.4.1 | ANL | Equip for Soudan Purch/Fabr | 31 | 31 | | | 31 | 0 |
| | 2.2.7.2.4.2 | FNL | Equip for Soudan Purch/Fabr | 0 | 0 | | | 0 | 0 |
| YUH | 2.2.7.2.4.3 | UMN | Equip for Soudan Purch/Fabr | 0 | 0 | | | 0 | 0 |
| | 2.2.7.2.5.1 | FNL | Near Detector Site Equip Purch/Fabr | 0 | 0 | | | 0 | 0 |
| YTE | 2.2.7.2.6.1 | ANL | Other Equipment | 61 | 61 | | | 61 | 0 |
| YUI | 2.2.7.2.6.3 | UMN | Other Equipment | 0 | 0 | | | 0 | 0 |
| YTT | 2.2.8.1 | ANL | EDI&A Factories | 28 | 28 | | | 28 | 0 |
| YTR | 2.2.8.2 | CALT | Factories Ass'y Line Outfitting 1 | 164 | 164 | | | 164 | 0 |
| YTS | 2.2.8.3 | UMN | Factories Ass'y Line Outfitting 2 | 172 | 172 | | | 172 | 0 |
| YTU | 2.2.8.4.1 | CALT | Module Production | 1,243 | 1,243 | | | 1,243 | 0 |
| YUU | 2.2.8.4.2 | UMN | Module Production | 1,164 | 1,164 | | | 1,164 | 0 |
| YUV | 2.2.8.4.3 | ANL | Near Detector Production | 500 | 500 | | | 500 | 0 |
| YTW | 2.2.9.1.1 | FNL | Scintillator Mgmt Salaries | 3 | 3 | | | 3 | 0 |
| YTV | 2.2.9.1.2 | ANL | Scintillator Mgmt Salaries | 101 | 101 | | | 101 | 0 |
| YTX | 2.2.9.1.3 | UMN | Scintillator Mgmt Salaries | 60 | 60 | | | 60 | 0 |
| YUJ | 2.2.9.2.1 | FNL | Scintillator Mgmt Travel | 0 | 0 | | | 0 | 0 |
| YTH | 2.2.9.2.2 | ANL | Scintillator Mgmt Travel | 27 | 27 | | | 27 | 0 |
| YTZ | 2.2.9.2.3 | CALT | Scintillator Mgmt Travel | 149 | 149 | | | 149 | 0 |
| YTY | 2.2.9.2.4 | UMN | Scintillator Mgmt Travel (Paid by FNL) | 39 | 39 | | | 39 | 0 |
| YUA | 2.3.1.1.1 | ANL | EDI&A Near Detector Front End | 897 | 897 | | | 897 | 0 |
| YUB | 2.3.1.1.2 | FNL | EDI&A Near Detector Front End | 568 | 568 | | | 568 | 0 |
| YWF | 2.3.1.1.3 | IIT | EDI&A Near Detector Front End | 96 | 96 | | | 96 | 0 |
| YUW | 2.3.1.2.1 | ANL | Parts Order and Assembly NDFE | 538 | 538 | | | 538 | 0 |
| YUD | 2.3.1.2.2 | FNL | Parts Order and Assembly NDFE | 2,154 | 2,154 | | | 2,154 | 0 |
| YWG | 2.3.1.3.1 | ANL | Production Checkout NDFE | 125 | 125 | | | 125 | 0 |
| YWH | 2.3.1.3.2 | FNL | Production Checkout NDFE | 202 | 202 | | | 202 | 0 |
| YWI | 2.3.1.4 | ANL | Installation NDFE | 0 | 0 | | | 0 | 0 |
| YUC | 2.3.2.1.2 | HVD | EDIA Far Detector Front End | 351 | 351 | | | 351 | 0 |
| YUE | 2.3.2.1.3 | FNL | EDIA Far Detector Front End | 121 | 121 | | | 121 | 0 |
| YUX | 2.3.2.2.2 | HVD | Parts Order and Assembly FDFE | 399 | 399 | | | 399 | 0 |
| YUF | 2.3.2.2.3 | FNL | Parts Order and Assembly FDFE | 296 | 296 | | | 296 | 0 |
| YUY | 2.3.2.3.1 | HVD | Production Checkout FDFE | 29 | 29 | | | 29 | 0 |
| | 2.3.2.3.2 | FNL | Production Checkout FDFE | 0 | 0 | | | 0 | 0 |
| | 2.3.2.4.1 | ANL | Installation FDFE | 0 | 0 | | | 0 | 0 |
| YVM | 2.3.5.1 | UMN | EDIA Database | 0 | 0 | | | 0 | 0 |
| YVN | 2.3.5.2 | UMN | Database Purchase & Programming | 10 | 10 | | | 10 | 0 |

# NuMI Project Obligations

$000's Omitted

| Wk Pkg | WBS # | Inst Code | DESCRIPTION | Total Budget Jun-05 | Amounts as of June 30, 2005 PTD Cost | PO Encumbrances | Requisition Encumbrances | PTD Obligations | Remaining Obligation Authority |
|---|---|---|---|---|---|---|---|---|---|
| YUZ | 2.3.6.2.2 | FNL | Clock Distribution System | 230 | 230 | | | 230 | 0 |
| YVT | 2.3.6.4 | IIT | Auxiliary Systems | 24 | 24 | | | 24 | 0 |
| YVV | 2.3.7.1 | ANL | Electronics Mgmt Travel | 47 | 47 | | | 47 | 0 |
| YVA | 2.3.7.2 | ANL | NDFE Electronics Level 3 Manager | 171 | 171 | | | 171 | 0 |
| YVX | 2.3.8.2.1 | FNL | Procurement and Assembly | 47 | 47 | | | 47 | 0 |
| YVY | 2.3.8.2.2 | UMN | Procurement and Assembly | 354 | 354 | | | 354 | 0 |
| YVZ | 2.3.9.3 | TAMU | HV System | 4 | 4 | | | 4 | 0 |
| YWD | 2.3.9.4 | FNL | HV System | 73 | 73 | | | 73 | 0 |
| | 2.4.1.1 | SDN | FDI Completed Design Tasks | 0 | 0 | | | 0 | 0 |
| YWB | 2.4.1.1.2 | FNL | EDI&A FDI Infrastucture | 0 | 0 | | | 0 | 0 |
| | 2.4.1.2 | FNL | FDI Soudan Completed Design Tasks | 0 | 0 | | | 0 | 0 |
| YVB | 2.4.2.1 | SDN | FDI Minecrew Management | 300 | 300 | | | 300 | 0 |
| YVK | 2.4.2.2 | FNL | FDI Minecrew Management | 234 | 234 | | | 234 | 0 |
| YVU | 2.4.2.4 | TAMU | FDI Minecrew Management | 49 | 49 | | | 49 | 0 |
| YVC | 2.4.3 | SDN | FDI MINOS Construction Oversight | 115 | 115 | | | 115 | 0 |
| YVD | 2.4.4.1 | SDN | FDI Soudan Lab Infrastructure Setup | 451 | 451 | | | 451 | 0 |
| YWC | 2.4.4.2 | FNL | FDI Soudan Lab Infrostructure Setup | 22 | 22 | | | 22 | 0 |
| YVE | 2.4.5 | SDN | FDI Labor Costs | 2,959 | 2,959 | | | 2,959 | 0 |
| YVF | 2.4.6 | SDN | FDI DNR Costs | 378 | 378 | | | 378 | 0 |
| YVG | 2.4.7.1 | SDN | FDI Purchases & Setup | 0 | 0 | | | 0 | 0 |
| YVI | 2.4.7.2 | FNL | FDI Alignment & Survey | 67 | 67 | | | 67 | 0 |
| YXA | 2.5.1.1 | FNL | NDI Infrastrucure EDI&A | 47 | 47 | | | 47 | 0 |
| YVL | 2.5.1.2.1 | FNL | NDI Install Support Structure | (0) | (0) | | | (0) | 0 |
| YVO | 2.5.1.2.2 | FNL | NDI Install Racks | 356 | 356 | | | 356 | 0 |
| | 2.5.1.2.3 | FNL | NDI NHI Install LCW System | 51 | 51 | | | 51 | 0 |
| YVP | 2.5.1.2.6 | FNL | NDI Install Coil Power Supply | 3 | 3 | | | 3 | 0 |
| | 2.5.1.2.7 | PITT | NDI NHI Rack Component Fabrication | 12 | 12 | | | 12 | 0 |
| YWE | 2.5.2.1.2 | IIT | NDI Plane Assembly EDI&A | 10 | 10 | | | 10 | 0 |
| YVJ | 2.5.2.2 | FNL | NDI New Muon Assembly Area Setup | 161 | 161 | | | 161 | 0 |
| YVW | 2.5.2.3 | FNL | NDI Assembly of Detector Planes-One Shift | 342 | 342 | | | 342 | 0 |
| | 2.5.3.1 | FNL | NDI Detector Installation EDI&A | 331 | 331 | | | 331 | 0 |
| | 2.5.3.2 | FNL | NDI Hall Tech Area Setup | 236 | 236 | | | 236 | 0 |
| | 2.5.3.3 | FNL | NDI Spectrometer Plane Installation | 318 | 318 | | | 318 | 0 |
| | 2.5.3.4 | FNL | NDI Calorimeter Plane Installation | 164 | 164 | | | 164 | 0 |
| YVR | 2.5.3.5 | FNL | NDI Detector Electronics Installation | 69 | 69 | | | 69 | 0 |
| YVS | 2.5.3.6 | FNL | NDI Magnet Coil Installation | 184 | 184 | | | 184 | 0 |
| | 2.5.3.7 | IIT | NDI Electronics Installation Technician | 71 | 71 | | | 71 | 0 |
| | 2.5.4 | | NDI Facility Experimental Infrastructure | 243 | 243 | | | 243 | 0 |
| YWL | 2.5.5 | RBI | NDI SB&O Experimental Systems Outfitting | 2,944 | 2,944 | | | 2,944 | 0 |
| YYA | 2.6.1 | FNL | Project Management | 1,830 | 1,830 | | | 1,830 | 0 |

# NuMI Project Obligations

$000's Omitted

| Wk Pkg | WBS # | Inst Code | DESCRIPTION | Total Budget Jun-05 | Amounts as of June 30, 2005: PTD Cost | PO Encumbrances | Requisition Encumbrances | PTD Obligations | Remaining Obligation Authority |
|---|---|---|---|---|---|---|---|---|---|
| YYB | 2.6.2 | ANL | Project Management | 98 | 98 | | | 98 | 0 |
| YZA | 3.1.1 | FNL | BD-NuMI CDR | 487 | 487 | | | 487 | 0 |
| YZB | 3.1.2 | FNL | BD-NuMI FESS CDR | 346 | 346 | | | 346 | 0 |
| YZC | 3.1.3.1 | FNL | BD-NuMI Beam (FNAL) | 555 | 555 | | | 555 | 0 |
| YZD | 3.1.3.2 | FNL | BD-NuMI Beam E&D (IHEP) | 241 | 241 | | | 241 | 0 |
| YZE | 3.1.4 | FNL | BD-NuMI Project Management | 234 | 234 | | | 234 | 0 |
| YZV | 3.1.5 | FNL | NuMI-Soudan Lab CDR | 65 | 65 | | | 65 | 0 |
| YZF | 3.2.1 | FNL | MINOS Scintillator R&D | 988 | 988 | | | 988 | 0 |
| YZG | 3.2.2 | FNL | MINOS Steel R&D | 644 | 644 | | | 644 | 0 |
| YZH | 3.2.3 | FNL | RD-Neutrino Oscillation R&D | 136 | 136 | | | 136 | 0 |
| | 3.3 | SDN-CONST | MINOS Cavern | 10,769 | 10,769 | | | 10,769 | 0 |
| YZU | 3.4.1 | SDN-OPER | NuMI-Mine Crew Support/Soudon Gen'l Operations | 1,531 | 1,531 | | | 1,531 | 0 |
| YZX | 3.4.2 | SDN-OPER | NuMI-Breitung Township Building Rental | 75 | 75 | | | 75 | 0 |
| YZW | 3.4.3 | SDN-OPER | NuMI-E Peterson Salary | 71 | 71 | | | 71 | 0 |
| | | | Totals | 168,766 | 167,752 | 0 | 0 | 167,752 | 1,014 |