DØ Upgrade Monthly Progress Report

for the month of February, 2001

Subsystem: Master Schedule and Overview
WBS: All
Date Submitted: 3/30/01
Submitted By: Harry Weerts, Bill Freeman

Done	Reportable Milestone	Date	Baseline	Variance
X	M1-Solenoid Delivered to Fermilab	5/12/97	5/12/97	0 w
X	M2-Central Preshower Module Fabrication Complete	12/16/97	12/16/97	0 w
X	M2-Central Preshower Installed on Solenoid	5/21/98	5/21/98	0 w
X	M1-Solenoid Installed and Tested	9/30/98	9/30/98	0 w
X	M3-Level Ø-South Installed	5/8/00	2/9/00	12.6 w
X	M2-Muon End Toroids Installed on Platform	8/4/00	11/15/00	-14.2 w
X	M1-Begin Shield Wall Removal/Ready to Roll-in	11/7/00	11/22/00	-2.2 w
X	M1-Detector Rolled-in and Hooked Up	2/27/01	2/2/01	3.4 w

Note: The full set of reportable milestones are collected and sorted by date at the end of this report. Also, a separate monthly report for the solenoid project will no longer be included, since that project is now formally complete. The reportable milestones associated with the solenoid project are now included in the above list.

Areas of Concern

Technical
See individual subsystem reports

Schedule
See individual subsystem reports

Resources
None

Cost
None

Change Requests

None

Progress Summary

The mechanically complete DØ detector was in the Collision Hall, and hookup continued throughout February. Preparations for the start of Run II on March 1, 2001 continued.

DØ Upgrade Monthly Progress Report

for the month of February, 2001

Subsystem: Silicon Tracker
WBS: 1.1.1
Date Submitted: 3/20/01
Submitted By: Marcel Demarteau, Ron Lipton

Done	Reportable Milestone	Date	Baseline	Variance
X	H Half-Wedge Fabrication 20% Complete	10/15/99	10/15/99	0 w
X	3 Chip Ladder Fabrication 80% Complete	10/26/99	10/20/99	0.6 w
X	9 Chip Ladder Fabrication 20% Complete	11/4/99	11/3/99	0.2 w
X	F Wedge Assemblies 20% Complete	1/24/00	1/19/00	0.4 w
X	6 Chip Ladder Fabrication 20% Complete	1/31/00	1/3/00	3.86 w
X	H Half-Wedge Fabrication 80% Complete	3/29/00	2/23/00	5 w
X	6 Chip Ladder Fabrication 80% Complete	7/12/00	3/14/00	16.8 w
X	Low Mass Cables Available For Silicon South	7/17/00	NA	0 w
X	9 Chip Ladder Fabrication 80% Complete	7/31/00	3/27/00	17.4 w
X	F Wedge Assemblies 80% Complete	7/31/00	4/26/00	13.2 w
X	Low Mass Cables Available for Silicon North	9/4/00	NA	0 w
X	M2-First Silicon Tracker Barrel/Disk Module Complete	9/14/00	1/24/00	33 w
X	South H-Disks Ready to Move to DAB	10/13/00	7/3/00	14.4 w
X	South Half-Cylinder Complete and Ready to Move to DAB	10/25/00	8/1/00	12.2 w
X	M3-All Silicon Tracker Barrels/Disks Complete	11/22/00	8/25/00	12.6 w
X	North Half-Cylinder Complete and Ready to Move to DAB	12/12/00	9/18/00	12 w
X	M1-Central Silicon Complete	12/12/00	9/18/00	12 w
X	M2-Silicon Tracker Installed in Solenoid/Fiber Tracker	2/12/01	9/25/00	19 w

Areas of Concern

Technical
None

Schedule
None

Resources
None

Cost
None

Change Requests

None

Progress Summary

Work on the cooling system and associated interlocks has been completed. Cabling work has focussed on the south side of the detector. Late delivery and debugging of power supplies and associated controls and interlocks delayed the commissioning of the electronics and readout system. Cabling has proved to be difficult and high- and low-mass cables have been installed for ~1/4 of the detector. We expect to complete cabling and detector checkout during the two-week April shutdown.

DØ Upgrade Monthly Progress Report

for the month of February, 2001

Subsystem: Fiber Tracker and VLPCs
WBS: 1.1.2
Date Submitted: 3/26/01
Submitted By: Alan D. Bross

Done	Reportable Milestone	Date	Baseline	Variance
	Detector			
X	M2 - Assembly Design Complete	3/5/99	3/5/99	0 w
X	M2-First Cylinder Complete	9/2/99	9/2/99	0 w
X	M3-Fiber Tracker Ribbon Fabrication 50% Complete	11/5/99	11/12/99	-0.9 w
X	M2-Fiber Tracker Assembly Begun	2/1/00	12/6/99	6.2 w
X	M3-Fiber Tracker Cylinders 8, 7, 6, and 5 Complete	3/2/00	1/28/00	5 w
X	M3-Fiber Tracker Ribbon Fabrication Complete	5/10/00	3/6/00	9.5 w
X	M3-Fiber Tracker Ribbon Mounting Complete	5/13/00	4/20/00	3.3 w
X	M2-Fiber Tracker Assembly Complete	5/26/00	5/4/00	3.3 w
X	Waveguide Production 50% Complete	7/24/00	1/29/00	24.6 w
X	M3-Waveguide Production Complete	11/7/00	6/5/00	22 w
	VLPCs			
X	M2-VLPC Production 50% Complete	8/31/97	8/31/97	0 w
X	M3-VLPC Cryo System Operational	8/18/00	6/12/00	9.6 w
X	M3-VLPC Cassette Assembly 50% Complete	9/13/00	4/12/00	21.5 w
	M3-VLPC Cassette Assembly Complete	3/12/01	8/22/00	27.4 w

Areas of Concern

Technical
None

Schedule
None

Resources
None

Cost
None

Change Requests

None

Progress Summary

92 VLPC cassettes fabricated.

DØ Upgrade Monthly Progress Report

for the month of February, 2001

Subsystem: Forward Preshower
WBS: 1.1.4
Date Submitted: 3/20/01
Submitted By: Abid Patwa

Done	Reportable Milestone	Date	Baseline	Variance
X	M2-Forward Preshower Module Fabrication Begun	11/4/98	11/4/98	0 w
X	M3-1st Forward Preshower Detector Complete	2/24/00	1/12/00	6.2 w
X	Module Fabrication and Testing Complete	4/1/00	12/10/99	14 w
X	M3-2nd Forward Preshower Detector Complete	4/3/00	3/8/00	3.6 w

Areas of Concern

Technical

The limited space within the CC-EC inter-cryostat gap to route the collection of FPS waveguides to the VLPC readout requires careful integration with existing cables and services from other subdetectors. This has resulted in slight deviations from the original FPS routing scheme. Potential areas with nominal clearances have been identified. Nonetheless, the cabling scheme including the proper use of strain relieving for each end detector is presently being re-evaluated in order to allow all cables to efficiently run about the EC to their relevant readout chain.

Schedule

Although the production of FPS waveguides is nearing completion, the installation and hook-up of any cable on the cryostat heads requires complex interleaving and cannot be done partially. Therefore, the FPS group is working closely with other subdetectors and DØ personnel to schedule the installation during potential Tevatron downtimes.

Resources

None

Cost

None

Change Requests

None

Progress Summary

- Waveguide production continued at Notre Dame and Indiana University, with all cables that will occupy the FPS shower layers 1 and 2 completed. Cable production for the forward MIP-detecting layers (3 and 4) continued and is approximately 50% complete.
- The twisted-pair ribbon cables controlling monitoring and calibration LEDs located within the FPS were installed through the end calorimeter cable winders and carefully routed to their corresponding pulsing electronics at the platform. Hook-up of these electrical cables at the detector-end will be done in-situ of FPS waveguide installation.
- A final mapping and labeling scheme for the twisted-pair ribbon cables was determined. The information is currently being entered into the DØ hardware-mapping database.

DØ Upgrade Monthly Progress Report

for the month of February, 2001

Subsystem: Tracking Electronics
WBS: 1.1.5
Date Submitted: 3/28/01
Submitted By: Marvin Johnson, Fred Borcherding

Done	Reportable Milestone	Date	Baseline	Variance
X	First Readout Crate Installed & Working	11/16/99	12/2/99	-2 w
X	10 Digital Boards Available	7/28/00	3/22/00	18 w
X	Ten 8-chip Analog Boards Available	8/8/00	4/19/00	15.4 w
X	Multichip Modules Received	1/27/01	2/23/00	46.6 w
	Mixer Boards Ready	3/14/01	6/22/00	36.2 w

Areas of Concern

Technical
None

Schedule
Delays in mixer board and AFE board production.

Resources
None

Cost
None

Change Requests

None

Progress Summary

Silicon Electronics
The silicon is electronics is essentially complete. All hardware has been built and tested. All crates are installed and all but two are powered. Over half of the modules and associated cables are installed. Final installation is proceeding in parallel with detector commissioning and check-out.

Fiber Electronics.

- All the digital hardware is here except for the mixer board which is delayed until April. Hardware checkout should be complete by the end of March and be ready for installation. Crates and power supplies are installed for both the digital and analog boards.

- The analog board layout (AFE 8) was revised to correct some errors and resubmitted for manufacture. We expect circuit boards by the end of March. Checkout of the prototypes continued. The board sees light and we are able to trigger on signals of about 10 femtoCoulomb. However, we do see a significant non-linearity in the SVX readout. This problem appears to be related to the SVX but we are not yet certain. This error needs to be fixed before the boards are constructed.

- The AFE 12 board layout is proceeding slowly. The schematic and layout are proceeding in parallel with completion expected near the end of March. The modifications are to incorporate changes required in the AFE8 board. Thus, we hope that the prototype will be very close to the final version.

DØ Upgrade Monthly Progress Report

for the month of February, 2001

Subsystem: Calorimeter Electronics
WBS: 1.2.1
Date Submitted: 3/30/01
Submitted By: Mike Tuts

Done	Reportable Milestone	Date	Baseline	Variance
X	SCA Testing Complete	11/23/99	12/15/99	-2.8 w
X	Shaper Hybrid 50% Complete	2/22/00	5/9/00	-11.05 w
X	M2-Calorimeter Preamp System Test Complete	7/13/00	3/31/00	14.4 w
X	Daughterboard Vendor Production Complete	12/7/00	6/16/00	24 w
X	M3-Calorimeter CC,ECN Preamp Installation Complete	1/15/01	3/31/00	39.4 w
	BLS Motherboard Assembly Complete	3/23/01	8/7/00	31.4 w
	M2-Calorimeter BLS Assembly Complete	3/30/01	9/26/00	25.4 w
	Timing System Installed	4/2/01	8/18/00	30.8 w

Areas of Concern

Technical

None

Schedule

The BLS motherboard assembly vendor is producing boards at a significantly reduced rate compared to the contract (now ~25/wk). We expect completion in two weeks. The calorimeter BLS assembly milestone will be complete shortly thereafter. The last remaining item is the trigger pickoff cards for the BLS motherboards. The CC is expected to be completed in two weeks, and the EC summers are in process and will be completed in five weeks.

Resources

None

Cost

None

Change Requests

None

Progress Summary

All infrastructure is installed (power supplies, cooling etc). All preamps are installed. BLS cards and trigger summers are being installed as they become available. The CC will be complete in two weeks. Commissioning continued.

DØ Upgrade Monthly Progress Report

for the month of February, 2001

Subsystem: Intercryostat Detector
WBS: 1.2.2
Date Submitted: 3/28/01
Submitted By: Andy White, Lee Sawyer

Done	Reportable Milestone	Date	Baseline	Variance
X	M3-ICD Tile Modules/Boxes Ready	4/19/00	1/18/00	13.2 w
X	M2-ICD Modules Arrive at Fermilab	4/24/00	1/25/00	12.8 w
X	M3-InterCryostat Detectors Installed	5/5/00	2/1/00	13.6 w
	Drawers Ready	3/6/01	12/14/99	60.2 w

Areas of Concern

Technical

- Fiber cables on SW EC (lower quadrant) – need scheme to interleave with FPS fibers.
- Fiber cables collide with SMT 80-conductor cables – need to move blocks/backplanes out in Z direction.

Schedule

Goal is to have ICD tiles calibrated for installation at end of April – schedule is tight.

Resources

Need technical help to move blocks/backplanes.

Cost

None

Change Requests

None

Progress Summary

- Five ICD tiles reinstalled on the EC SW lower quadrant.
- Fiber cables connected and routed across EC face to backplane.
- All cable services connected to the SW block/crate and powered up OK.
- Signals seen on 44 of 48 channels.
- Half of the drawers completed at Louisiana Tech.
- First set of matched PMTs produced at University of Texas -Arlington

DØ Upgrade Monthly Progress Report

for the month of February, 2001

Subsystem: Muon Central
WBS: 1.3.2
Date Submitted: 3/23/01
Submitted By: Tom Diehl

Done	Reportable Milestone	Date	Baseline	Variance
	CFA Commissioning Complete	2/15/01	7/10/00	30.3 w
	PDT Commissioning Complete	2/20/01	6/9/00	34.8 w

Areas of Concern

Technical

None

Schedule

None

Resources

During February the number of FTE physicists commissioning the three systems that make up the central muon detector increased to 5.9 with the arrival of a person to work on the Cosmic Cap and with increased effort on the A-ϕ system provided by another person. The Cosmic Cap detector has sufficient manpower for commissioning. The PDT system has barely started commissioning and is so understaffed as to strain hope for being ready in time for collisions.

Cost

None

Change Requests

None

Progress Summary

- The Cosmic Cap and A-ϕ scintillation counters have achieved significant milestones this month. All channels are operating and have been readout under high-voltage.
- Assembly of the PDT gas system mechanical parts was finished. The controls have been designed and installation work remains to be finished. There is some hope that we will be able to flow gas in time for collisions if the tube trailer filled with gas arrives in time.
- In mid-February the Fermilab engineer produced a first-working version of the PDT control-card data-formatting software. That was followed by a flurry of installation in which the number of PDTs available for readout was increased from 18 to approximately 50 (out of 94) before the collision hall was closed. Approximately half of these require extensive debugging.

DØ Upgrade Monthly Progress Report

for the month of February, 2001

Subsystem: Muon Forward Trigger Detectors
WBS: 1.3.3
Date Submitted: 3/20/01
Submitted By: Dmitri Denisov

Done	Reportable Milestone	Date	Baseline	Variance
X	M2-Muon Forward Trigger Counter Assembly 10% Complete	10/12/98	10/12/98	0 w
X	All Pixel Octants Assembled	2/23/00	4/4/00	-5.8 w
X	All Muon Forward Trigger Detector Planes Installed	1/12/01	8/25/00	18.6 w

Areas of Concern

Technical
None

Schedule
None

Resources
Presence of IHEP visitors is critical for continued commissioning of the forward muon trigger system and operation during Run II. Support from Fermilab at a reasonable level is required.

Cost
None

Change Requests

None

Progress Summary

The forward muon trigger system, consisting of 4608 scintillation counters, has been completely cabled and connected to front-end and readout electronics, as well as the high voltage system. All 48 octants have been commissioned using cosmic rays with zero channels failed. Long-term stability tests of system operation, including high voltage and readout system, are in progress. Off-line and on-line software developments continued. The system is ready for data collection in Run II.

DØ Upgrade Monthly Progress Report

for the month of February, 2001

Subsystem: Muon Forward Tracker
WBS: 1.3.4
Date Submitted: 3/20/01
Submitted By: Dmitri Denisov

Done	Reportable Milestone	Date	Baseline	Variance
X	M2-Muon Forward Tracker MDT Assembly 10% Complete	1/29/99	1/29/99	0 w
X	Arrival Of C-Layer MDT Modules At FNAL	11/3/99	10/22/99	1.68 w
X	M2-All Muon Forward Tracker MDT Modules At Fermilab	3/30/00	3/10/00	2.8 w
X	B-Layer Octants Assembled	8/24/00	4/18/00	18.04 w
X	All MDT Octants Assembled	8/24/00	7/14/00	5.8 w
X	Muon Forward Tracker B-Layer Planes Installed	12/22/00	6/15/00	26.2 w
X	All MDT Planes Installed	12/22/00	8/4/00	19.2 w

Areas of Concern

Technical

MDT HV system is not functioning according to specifications. Channels are tripping due to over-voltage even when no reason exists. Experts are working to solve the problem. A temporary high voltage system is in use.

Schedule

None

Resources

The presence of visitors from JINR is critical for continued commissioning and running of the forward muon tracking detector. Most of the visitors involved in assembly are leaving, and support for commissioning of the detector with beam and operation is suffering.

Cost

None

Change Requests

None

Progress Summary

The MDT system is connected to gas and front-end electronics. All 48 octants (50,000 wires) have been commissioned with a test gas mixture and temporary HV system. The number of dead channels is about 0.2%. The gas leaks for the full system are about 3% of the input gas flow. Front-end and readout electronics function properly. The system is ready for Run II.

DØ Upgrade Monthly Progress Report

for the month of February, 2001

Subsystem: Muon Electronics
WBS: 1.3.5
Date Submitted: 3/20/01
Submitted By: Bill Freeman

Done	Reportable Milestone	Date	Baseline	Variance
X	MDT ADB Fabrication Complete	12/2/99	12/2/99	0 w
X	MDC Fabrication Complete	1/31/00	12/13/99	5 w
X	M2-Muon Electronics Preproduction Installation Complete	1/31/00	12/13/99	5 w
X	FEB, CB Production Complete	4/10/00	1/3/00	14 w
X	SFE, SRC Fabrication Complete	9/21/00	2/3/00	32.5 w
X	MRC, MFC Production Complete	10/18/00	3/27/00	28.8 w

Areas of Concern

Technical
None

Schedule
None

Resources
None

Cost
None

Change Requests

None

Progress Summary

The muon electronics project is complete.

DØ Upgrade Monthly Progress Report

for the month of February, 2001

Subsystem: Trigger
WBS: 1.4.1-1.4.5
Date Submitted: 3/21/01
Submitted By: Gerald C. Blazey

Done	Reportable Milestone	Date	Baseline	Variance
X	SLICs Received	12/10/99	11/10/99	4 w
X	M3-Establish Single Crate Internal Data Movement	2/17/00	1/6/00	6 w
X	Preproduction MTCxx, MTFB, and MTCM Complete	10/19/00	1/24/00	38 w
X	M3-Muon Level 1 Trigger Preproduction Testing Complete	11/8/00	4/18/00	28.6 w
X	MBTs Received	1/31/01	3/16/00	44 w
	Production MTCxx, MTFB, and MTCM Complete	3/2/01	6/27/00	34 w
	M3- Cal Readout Available to L2	3/20/01	2/11/00	55.6 w
	Global Installation Complete	3/23/01	7/12/00	35 w
	L2 Cal Installation Complete	3/23/01	8/21/00	29.4 w
	Alpha Cards Received	3/30/01	5/15/00	44 w
	L2 Muon Installation Complete	4/27/01	7/26/00	38 w
	L2 CTT Installation Complete	4/27/01	8/9/00	36 w
	M3-Trigger Level 2 Commissioned	6/4/01	9/21/00	35 w
	M3-L3 Operational (One Full Chain)	6/6/01	6/1/00	51 w

Areas of Concern

Technical

Tests continued on the AFE8 performance.

Schedule

The interim Level 3/DAQ system will not be available until April or May and the final system until summer or mid-summer. This may delay commissioning of the experiment.

Resources

Repair of the Level 2 Alphas continued to require extensive engineering manpower. The Level 1 digital systems have been hindered by a lack of technicians.

Cost

None

Change Requests

None

Progress Summary

LuminosityMonitor

Luminosity monitor installation was completed.

Level 1

Modification of the Run I Level 1 calorimeter trigger components continued and other components were prototyped. Debugging of Level 1 muon electronics is underway. An operating muon octant was installed in the collision hall. Noise and performance studies of the AFE8 cards continue. The order for AFE8 board production was released. Work began to understand the qualification process for received boards. Level 1 tracking digital component production is underway and programming efforts have shifted to tracking triggers in preparation for first beam.

Level 2
Debugging of Level 2 Alpha cards continues at UIC and FCC, and the number of operational boards has reached seven. Progress has been made on preparation for an additional order of twelve Level 2 Alphas. Work has also started on a replacement card, the Level 2 Beta, to be built by an Orsay/University of Maryland/University of Virginia collaboration. The MBT firmware development continued. Extensive tests of the CIC and SFOs were conducted in the moveable counting house and these are nearing approval. A modified FIC was tested at DAB without errors. Level 2 muon firmware and software development continued. Software development of Alpha/MBT communications advanced. Oklahoma University continued work on the Level 2 CTT preprocessor code. Test and design of Level 2 STT prototypes continued.

Level 3
Level 3 filtering activities included online tests and filter updates. A committee was formed to monitor and direct progress of the Level 3/DAQ hardware. The SIB1 was manufactured and stuffed, and debugging began. A companion card was designed and the layout nearly completed. Progress was made on design of the Ethernet upgrade.

DØ Upgrade Monthly Progress Report

for the month of February, 2001

Subsystem: Online
WBS: 1.5.1
Date Submitted: 3/28/01
Submitted By: Stuart Fuess

Done	Reportable Milestone	Date	Baseline	Variance
X	Steady DAQ Running	3/17/00	3/31/00	-2 w

Areas of Concern

Technical
None

Schedule
None

Resources
None

Cost
None

Change Requests

None

Progress Summary

- Held weekly workshops to incrementally demonstrate functionality of calibration system for various detector elements.
- Improved secondary data path (SDAQ) and integrated it into DAQ framework. This is now a standard tool for CFT and SMT commissioning.
- Continued progress on "version 2" of the primary event path DAQ components, in preparation for running on new host systems (at higher OS version), with multiple streams, and with higher data rates. Made long-term stability tests of the software and system.
- Installed local DNS servers.
- Installed and connected ~2.5 Terabytes of data buffer disk.
- Created online NT domain.
- Created cluster of two host nodes.
- Configured internal and external Online web servers.
- Received Operational Readiness Clearance for commissioning phase.

February '01 Financial Summary

The month of February, fiscal year 2001, closed with new obligations for the DØ Upgrade Project totaling $1,287K on equipment M&S funds. The Project's actual ledger obligations are larger due to the restoration of $1,285K to university collaborators who participated in FY00 forward funding contributions. While a month-to-month Project spending plan is not anticipated, in order to meet completion deadlines, the majority of FY01 equipment funds are expected to be obligated in the first half of the fiscal year. As a result of additional budget transfers, the Project's FY01 M&S budget allocation is now $3,247K.

The M&S Upgrade Project balance is currently $863K, excluding contingency. Contributions to the Upgrade currently total $1,435K. As of the end of December, DØ Upgrade Spokespersons have negotiated additional non-DoE contributions of approximately $274K. Because the Project managers routinely reevaluate funding needs, the Estimate-To-Complete (ETC) continues to be synonymous with the Project's M&S balance. The overall cost of the Project has increased. The contingency, which is held by the Directorate, further increases the total Project cost. Additional contingency requests are expected in calendar year 2001.

The Project currently has commitments with universities and other institutions in the DØ Collaboration, via active Memoranda of Understanding (MoU), totaling $5,760K. These funds represent an obligation on the part of the DØ Upgrade Project and are regularly costed each month via invoices received from theses institutions as work is completed. In addition, several institutions have made significant contributions to the DØ Upgrade. A list of the institutions involved, as well as a more detailed breakdown of the commitments and costs, follows.

DØ Upgrade Monthly Progress Report

for the month of February, 2001

FY01 Financial Report as of 2/28/01

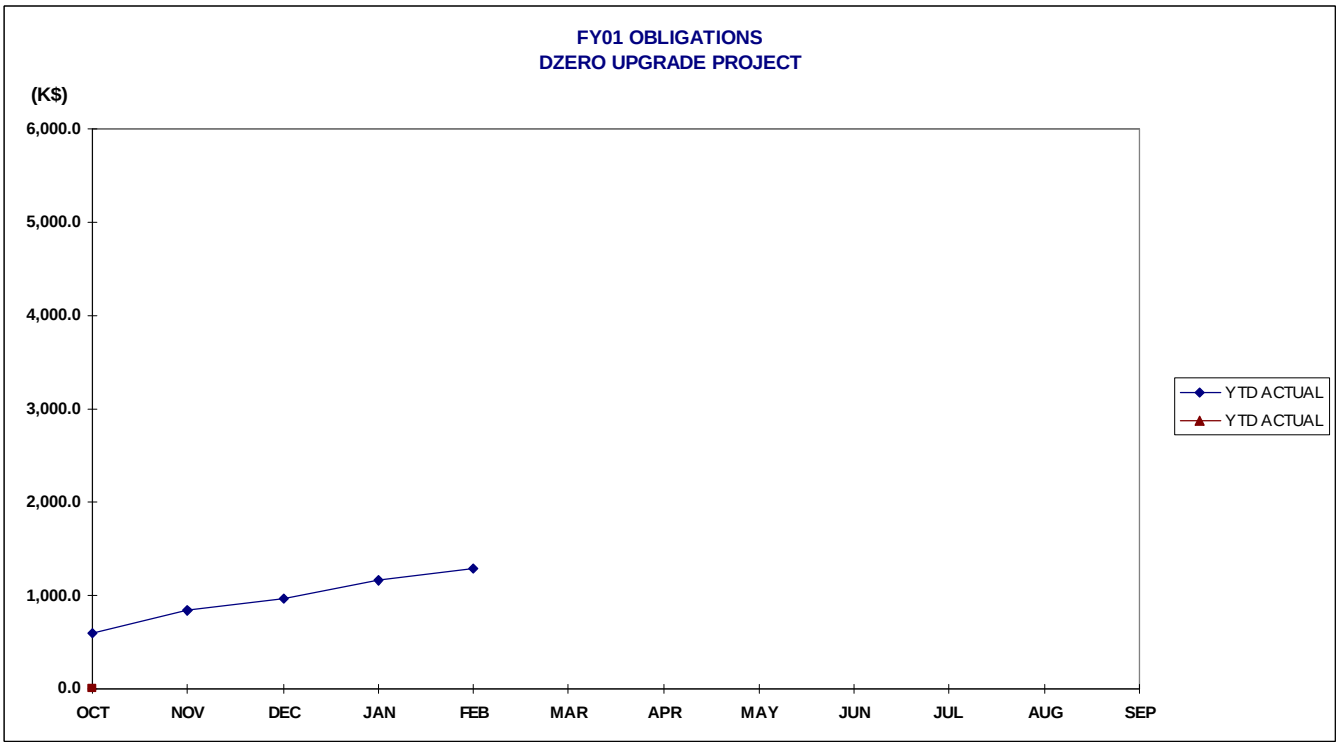
		COST ESTIMATE	PRIOR YR OBLIG	FY01 YTD OBLIG	NON-DoE CONTRIB	PROJECT BALANCE
1	TOTAL DZERO UPGRADE PROJECT	42,358.7	38,774.3	1,286.5	1,435.1	862.9
1.1	TRACKING DETECTORS	20,682.1	19,795.1	636.7	13.1	237.2
1.1.1	SILICON TRACKER	8,256.2	7,924.0	291.1	13.1	28.0
1.1.2	FIBER TRACKER	7,851.4	7,697.6	109.9	0.0	43.9
1.1.3	CENTRAL PRESHOWER DETECTOR	228.7	228.7	0.5	0.0	-0.5
1.1.4	FORWARD PRESHOWER DETECTOR	514.9	514.9	0.1	0.0	-0.1
1.1.5	TRACKING ELECTRONICS	3,830.8	3,429.8	235.0	0.0	165.9
1.2	CALORIMETER	4,711.6	4,489.2	2.2	210.0	10.2
1.2.1	FRONT-END ELECTRONICS	4,402.6	4,180.2	2.2	210.0	10.2
1.2.2	INTERCRYOSTAT DETECTOR	309.0	309.0	0.0	0.0	0.0
1.3	MUON DETECTORS	9,495.8	8,568.2	220.2	665.3	42.1
1.3.1	COSMIC RAY SCINTILLATOR	1,223.2	963.2	0.0	260.0	0.0
1.3.2	CENTRAL TRIGGER DETECTORS	954.7	793.2	15.7	145.8	-0.1
1.3.3	FORWARD TRIGGER DETECTOR	2,133.3	1,766.8	79.5	259.5	27.5
1.3.4	FORWARD TRACKING DETECTOR	1,410.8	1,297.2	93.6	0.0	20.0
1.3.5	FRONT-END ELECTRONICS	3,773.9	3,747.8	31.4	0.0	-5.3
1.4	TRIGGER	6,641.2	5,276.9	334.0	546.7	483.7
1.4.1	FRAMEWORK	1,859.4	1,859.4	0.0	0.0	0.0
1.4.2	LEVEL 0	136.4	130.6	2.2	0.0	3.5
1.4.3	LEVEL 1	1,588.2	1,356.0	114.3	0.0	117.9
1.4.4	LEVEL 2	2,005.8	1,104.5	217.4	546.7	137.3
1.4.5	LEVEL 3	1,051.5	826.5	0.0	0.0	225.0
1.5	ONLINE EQUIPMENT	828.0	644.9	93.4	0.0	89.7
1.5.1	ON-LINE EQUIPMENT	828.0	644.9	93.4	0.0	89.7

DEFINITION OF TERMS:

Funds:	DØ Upgrade = M&S Equipment Funds; Solenoid = AIP Plant Funds.
Cost Estimate:	Total Project and Sub-Project estimates without contingency.
Prior Year Obligations:	Obligations for fiscal years '92 through '00 as applicable.
FY 01 Year-to-Date Obligations:	Obligations for fiscal year '01.
Project Balance:	Cost Estimate - (Prior Year Obligations + Fiscal 01 YTD Obligations)

DØ Upgrade Monthly Progress Report

for the month of February, 2001



	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
YTD ACTUAL	597.4	831.3	971.5	1,166.0	1,286.5							
YTD PLAN												

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Active MOUs as of 2/28/01

INSTITUTION	EQUIPMENT	R&D	TOTAL COSTED
Boston University	298,200	5,200	273,619
Brown University	820,076	131,000	215,083
California State University, Fresno	26,160		21,533
Institute for High Energy Physics (IHEP)	270,433		168,313
Kansas State University	208,800	135,808	205,662
Louisiana Tech University	98,856		64,295
Michigan State University	384,238	176,000	174,059
Northern Illinois University	148,000	28,000	166,000
Petersburg Nuclear Physics Institute	4,000		0
SUNY at Stony Brook	1,273,567	20,000	751,763
University of Arizona	826,017	44,600	720,489
University of IL, Chicago	129,103	24,100	93,142
University of Kansas, Center for Research, Inc.	16,000		15,931
University of Maryland	178,900		0
University of Notre Dame	68,000	122,500	124,931
University of Oklahoma	43,000		38,433
University of Texas, Arlington	162,886		139,200
University of Washington	110,005	6,200	82,650
Total Fermilab Funds:	$5,066,241	$693,408	
Total Costed:	2,913,655	341,448	$3,255,103
Total Open Commitments:	$2,152,585	$351,960	273,619

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Reportable Milestones Summary

Done	Reportable Milestones	Project	Date	Baseline	Var.
X	M1-Solenoid Delivered to Fermilab	Solenoid	5/12/97	5/12/97	0 w
X	M2-VLPC Production 50% Complete	VLPCs	8/31/97	8/31/97	0 w
X	M2-Central Preshower Module Fabrication Complete	Central Preshower	12/16/97	12/16/97	0 w
X	M2-Central Preshower Installed on Solenoid	Central Preshower	5/21/98	5/21/98	0 w
X	M1-Solenoid Installed and Tested	Solenoid	9/30/98	9/30/98	0 w
X	M2-Muon Forward Trigger Counter Assembly 10% Complete	Muon Forward Trigger	10/12/98	10/12/98	0 w
X	M2-Forward Preshower Module Fabrication Begun	Forward Preshower	11/4/98	11/4/98	0 w
X	M2-Muon Forward Tracker MDT Assembly 10% Complete	Muon Forward Tracker	1/29/99	1/29/99	0 w
X	M2 - Assembly Design Complete	Fiber Tracker	3/5/99	3/5/99	0 w
X	M2-First Cylinder Complete	Fiber Tracker	9/2/99	9/2/99	0 w
X	H Half-Wedge Fabrication 20% Complete	Silicon Tracker	10/15/99	10/15/99	0 w
X	3 Chip Ladder Fabrication 80% Complete	Silicon Tracker	10/26/99	10/20/99	0.6 w
X	Arrival Of C-Layer MDT Modules At FNAL	Muon Forward Tracker	11/3/99	10/22/99	1.7 w
X	9 Chip Ladder Fabrication 20% Complete	Silicon Tracker	11/4/99	11/3/99	0.2 w
X	M3-Fiber Tracker Ribbon Fabrication 50% Complete	Fiber Tracker	11/5/99	11/12/99	-0.9 w
X	First Readout Crate Installed & Working	Silicon Electronics	11/16/99	12/2/99	-2 w
X	SCA Testing Complete	Calorimeter Electronics	11/23/99	12/15/99	-2.8 w
X	MDT ADB Fabrication Complete	Muon Electronics	12/2/99	12/2/99	0 w
X	SLICs Received	Trigger	12/10/99	11/10/99	4 w
X	F Wedge Assemblies 20% Complete	Silicon Tracker	1/24/00	1/19/00	0.4 w
X	6 Chip Ladder Fabrication 20% Complete	Silicon Tracker	1/31/00	1/3/00	3.9 w
X	MDC Fabrication Complete	Muon Electronics	1/31/00	12/13/99	5 w
X	M2-Muon Electronics Preproduction Installation Complete	Muon Electronics	1/31/00	12/13/99	5 w
X	M2-Fiber Tracker Assembly Begun	Fiber Tracker	2/1/00	12/6/99	6.2 w
X	M3-Establish Single Crate Internal Data Movement	Trigger	2/17/00	1/6/00	6 w
X	Shaper Hybrid 50% Complete	Calorimeter Electronics	2/22/00	5/9/00	-11 w
X	All Pixel Octants Assembled	Muon Forward Trigger	2/23/00	4/4/00	-5.8 w
X	M3-1st Forward Preshower Detector Complete	Forward Preshower	2/24/00	1/12/00	6.2 w
X	M3-Fiber Tracker Cylinders 8, 7, 6, and 5 Complete	Fiber Tracker	3/2/00	1/28/00	5 w
X	Steady DAQ Running	Online	3/17/00	3/31/00	-2 w
X	H Half-Wedge Fabrication 80% Complete	Silicon Tracker	3/29/00	2/23/00	5 w
X	M2-All Muon Forward Tracker MDT Modules At Fermilab	Muon Forward Tracker	3/30/00	3/10/00	2.8 w
X	Module Fabrication and Testing Complete	Forward Preshower	4/1/00	12/10/99	14 w
X	M3-2nd Forward Preshower Detector Complete	Forward Preshower	4/3/00	3/8/00	3.6 w
X	FEB, CB Production Complete	Muon Electronics	4/10/00	1/3/00	14 w
X	M3-ICD Tile Modules/Boxes Ready	Intercryostat Detector	4/19/00	1/18/00	13.2 w
X	M2-ICD Modules Arrive at Fermilab	Intercryostat Detector	4/24/00	1/25/00	12.8 w
X	M3-InterCryostat Detectors Installed	Intercryostat Detector	5/5/00	2/1/00	13.6 w
X	M3-Level Ø-South Installed	Luminosity Monitor	5/8/00	2/9/00	12.6 w
X	M3-Fiber Tracker Ribbon Fabrication Complete	Fiber Tracker	5/10/00	3/6/00	9.5 w
X	M3-Fiber Tracker Ribbon Mounting Complete	Fiber Tracker	5/13/00	4/20/00	3.3 w
X	M2-Fiber Tracker Assembly Complete	Fiber Tracker	5/26/00	5/4/00	3.3 w
X	6 Chip Ladder Fabrication 80% Complete	Silicon Tracker	7/12/00	3/14/00	16.8 w
X	M2-Calorimeter Preamp System Test Complete	Calorimeter Electronics	7/13/00	3/31/00	14.4 w
X	Low Mass Cables Available For Silicon South	Silicon Tracker	7/17/00	NA	0 w
X	Waveguide Production 50% Complete	Fiber Tracker	7/24/00	1/29/00	24.6 w
X	10 Digital Boards Available	Fiber Electronics	7/28/00	3/22/00	18 w
X	9 Chip Ladder Fabrication 80% Complete	Silicon Tracker	7/31/00	3/27/00	17.4 w
X	F Wedge Assemblies 80% Complete	Silicon Tracker	7/31/00	4/26/00	13.2 w
X	M2-Muon End Toroids Installed on Platform	Master	8/4/00	11/15/00	-14.2 w
X	Ten 8-chip Analog Boards Available	Fiber Electronics	8/8/00	4/19/00	15.4 w
X	M3-VLPC Cryo System Operational	VLPCs	8/18/00	6/12/00	9.6 w
X	B-Layer Octants Assembled	Muon Forward Tracker	8/24/00	4/18/00	18 w

X	All MDT Octants Assembled	Muon Forward Tracker	8/24/00	7/14/00	5.8 w
X	Low Mass Cables Available for Silicon North	Silicon Tracker	9/4/00	NA	0 w
X	M3-VLPC Cassette Assembly 50% Complete	VLPCs	9/13/00	4/12/00	21.5 w
X	M2-First Silicon Tracker Barrel/Disk Module Complete	Silicon Tracker	9/14/00	1/24/00	33 w
X	SFE, SRC Fabrication Complete	Muon Electronics	9/21/00	2/3/00	32.5 w
X	South H-Disks Ready to Move to DAB	Silicon Tracker	10/13/00	7/3/00	14.4 w
X	MRC, MFC Production Complete	Muon Electronics	10/18/00	3/27/00	28.8 w
X	Preproduction MTCxx, MTFB, and MTCM Complete	Trigger	10/19/00	1/24/00	38 w
X	South Half-Cylinder Complete and Ready to Move to DAB	Silicon Tracker	10/25/00	8/1/00	12.2 w
X	M1-Begin Shield Wall Removal/Ready to Roll-in	Master	11/7/00	11/22/00	-2.2 w
X	M3-Waveguide Production Complete	Fiber Tracker	11/7/00	6/5/00	22 w
X	M3-Muon Level 1 Trigger Preproduction Testing Complete	Trigger	11/8/00	4/18/00	28.6 w
X	M3-All Silicon Tracker Barrels/Disks Complete	Silicon Tracker	11/22/00	8/25/00	12.6 w
X	Daughterboard Vendor Production Complete	Calorimeter Electronics	12/7/00	6/16/00	24 w
X	North Half-Cylinder Complete and Ready to Move to DAB	Silicon Tracker	12/12/00	9/18/00	12 w
X	M1-Central Silicon Complete	Silicon Tracker	12/12/00	9/18/00	12 w
X	Muon Forward Tracker B-Layer Planes Installed	Muon Forward Tracker	12/22/00	6/15/00	26.2 w
X	All MDT Planes Installed	Muon Forward Tracker	12/22/00	8/4/00	19.2 w
X	All Muon Forward Trigger Detector Planes Installed	Muon Forward Trigger	1/12/01	8/25/00	18.6 w
X	M3-Calorimeter CC, ECN Preamp Installation Complete	Calorimeter Electronics	1/15/01	3/31/00	39.4 w
X	Multichip Modules Received	Fiber Electronics	1/27/01	2/23/00	46.6 w
X	MBTs Received	Trigger	1/31/01	3/16/00	44 w
X	M2-Silicon Tracker Installed in Solenoid/Fiber Tracker	Silicon Tracker	2/12/01	9/25/00	19 w
X	M1-Detector Rolled-in and Hooked Up	Master	2/27/01	2/2/01	3.4 w
	Production MTCxx, MTFB, and MTCM Complete	Trigger	3/2/01	6/27/00	34 w
	Drawers Ready	Intercryostat Detector	3/6/01	12/14/99	60.2 w
	M3-VLPC Cassette Assembly Complete	VLPCs	3/12/01	8/22/00	27.4 w
	Mixer Boards Ready	Fiber Electronics	3/14/01	6/22/00	36.2 w
	M3- Cal Readout Available to L2	Trigger	3/20/01	2/11/00	55.6 w
	BLS Motherboard Assembly Complete	Calorimeter Electronics	3/23/01	8/7/00	31.4 w
	Global Installation Complete	Trigger	3/23/01	7/12/00	35 w
	L2 Cal Installation Complete	Trigger	3/23/01	8/21/00	29.4 w
	M2-Calorimeter BLS Assembly Complete	Calorimeter Electronics	3/30/01	9/26/00	25.4 w
	Alpha Cards Received	Trigger	3/30/01	5/15/00	44 w
	Timing System Installed	Calorimeter Electronics	4/2/01	8/18/00	30.8 w
	PDT Commissioning Complete	Muon Central	4/17/01	6/9/00	42.8 w
	CFA Commissioning Complete	Muon Central	4/19/01	7/10/00	39.3 w
	L2 Muon Installation Complete	Trigger	4/27/01	7/26/00	38 w
	L2 CTT Installation Complete	Trigger	4/27/01	8/9/00	36 w
	M3-Trigger Level 2 Commissioned	Trigger	6/4/01	9/21/00	35 w
	M3-L3 Operational (One Full Chain)	Trigger	6/6/01	6/1/00	51 w