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Office of Science ESAAB Review

Critical Decision 4

Approve Start of Operations

For the

NuMI Project

At the

Fermi National Accelerator Laboratory

Steve Webster

Federal Project Director

Fermi Site Office

February 28, 2005

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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 Project was initiated in FY1998**
- **The Commissioning Goals were achieved in February 2005, seven months ahead of schedule**
- **The Baseline Total Project Cost (Budget) was $171,368K**
- **The Project will be completed under budget, (approximately $800K of TEC funds and $2.6M of OPC funds will be remaining at Project closeout. These are estimates and may change as the final closeout occurs)**

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Various Underground Construction Pictures

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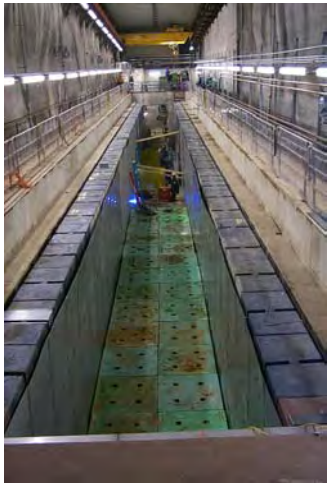
Target Hall

12/2000



1/2004

4/2003

8/2004

10/2003

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Far Detector at Soudan

9/2001

12/2000

Complete
8/2003

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MINOS Hall

MI-65 Building

MINOS Building

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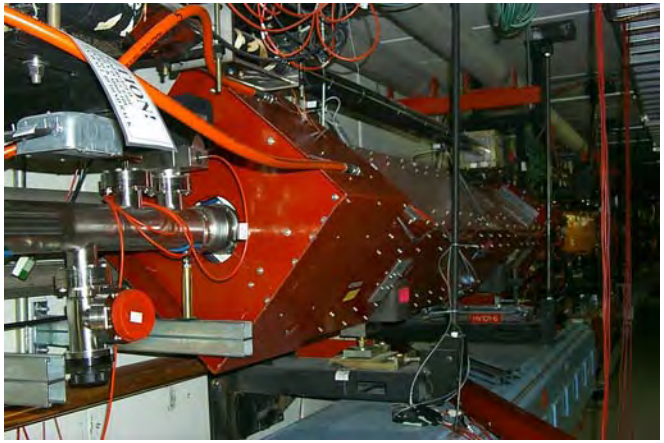

Shielded Magnet

MI NuMI Stub

Pre-Target Tunnel

Horn in Target Chase

Summary of SC Review

- An SC Review focused on CD-4 readiness was conducted on February 17, 2005.
- The review concluded that:
  - all commissioning goals have been met
  - all CD-4 requirements have been met
  - one punch list item remains
    - Installation of a Chiller for the Target Hall, scheduled to be complete by March 11, 2005

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NuMI Commissioning Goals in Project Execution Plan Have Been Achieved

- Proton Intensity in Target Hall
- Beam alignment
- Neutrino beam energy
- Cosmic ray muons detected in Near Detector
- NuMI-generated neutrino events observed in the Near Detector
- Cosmic ray muons and atmospheric neutrinos detected in Far Dectector

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DOE M 413.3-1 Prerequisites for CD-4

- Performance Criteria have been met
- The Safety Analysis Document was approved and issued
- Maintenance and Operating Procedures exist
- Acceptance testing completed and verified
- An Operational Readiness Review was conducted
- Trained and qualified operations and maintenance staff exist
- A project transition to operations report was issued

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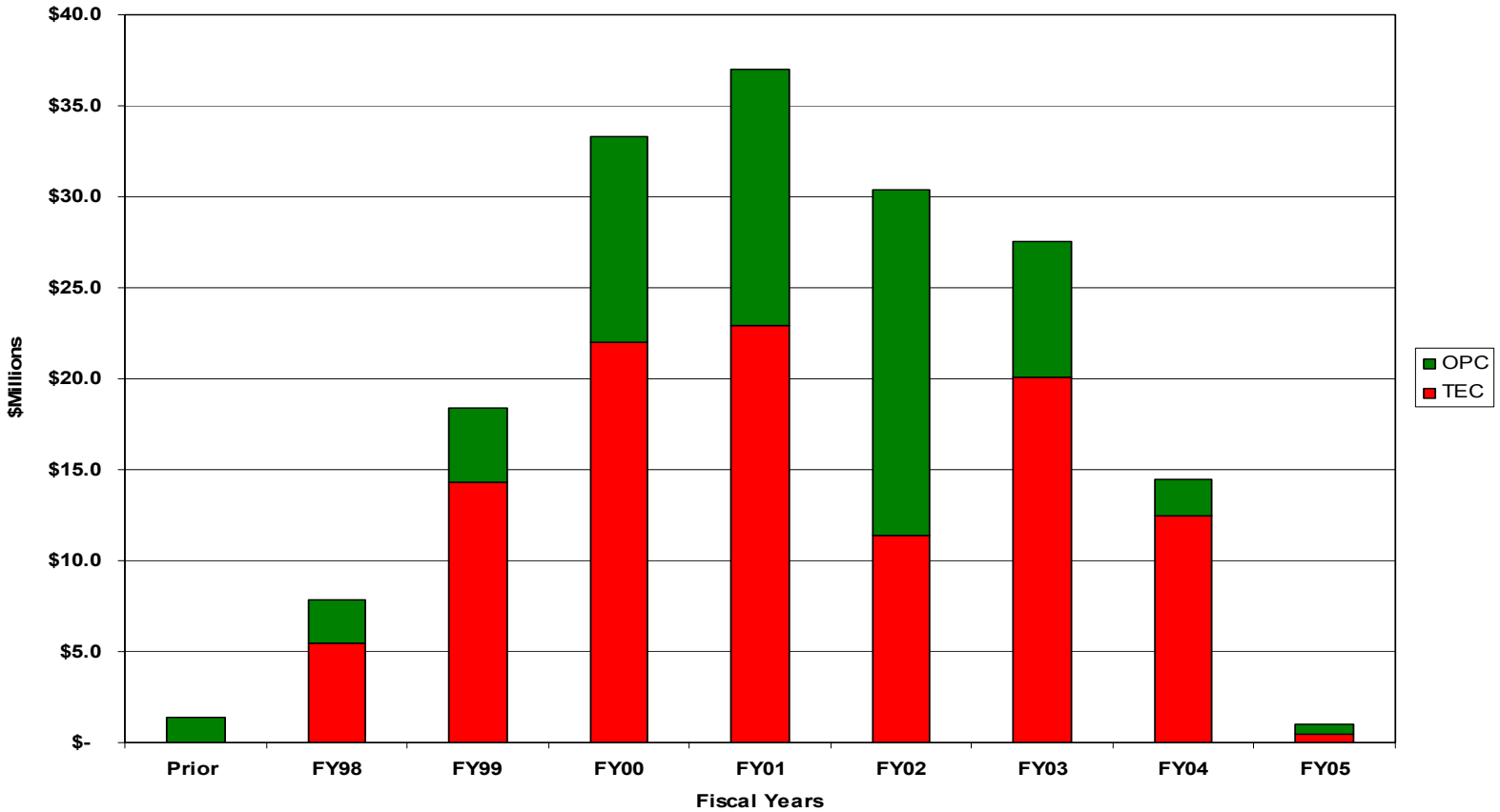
Conclusion

- NuMI Commissioning Goals have been met
- The Project will be completed ahead of schedule and within budget
- Requirements for CD-4 have been satisfied
- There are no remaining issues or corrections that will impact final cost
- The Project Closeout report will be issued in the Summer 2005

Recommend Approval of CD-4

BACKUP VIEWGRAPHS



TEC	$ -	$ 5.500	$ 14.300	$ 22.000	$ 22.949	$ 11.400	$ 19.842	$ 12.426	$ 0.751	$ 109.168
OPC	$ 1.417	$ 2.348	$ 4.114	$ 11.324	$ 14.062	$ 19.000	$ 7.435	$ 2.000	$ 0.500	$ 62.200
TPC	$ 1.417	$ 7.848	$ 18.414	$ 33.324	$ 37.011	$ 30.400	$ 27.277	$ 14.426	$ 1.251	$ 171.368