MINOS NEAR DETECTOR

- Status
- Plans for Installation and Commissioning

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MINOS Detectors

- 1” Fe/1cm plastic scintillator
- 4.1 cm transverse segmentation
- WLS fiber readout into multi-anode PMTs

Near Detector readout single ended
Near Detector

- Smaller than Far Detector
- 282 planes (153 scintillator), partial instrumentation
- 980t, 4.8m x 3.8m x 16.6m
- Every 5th plane throughout detector is fully instrumented
- 1.2T magnetic field
Near Detector Function

First 120 planes: each plane instrumented
Last 162 planes: multiplexed spectrometer region
Readout Electronics

- High Rate Neutrino Experiment
  - >30 interactions/10μs spill
- QIE based system
  - Multiranging, Deadtimeless 19ns sampling over entire spill
- Electronics Assembly nearly complete
- Checkout >50% complete

Component Count (not counting ~10% spares):
- 9328 MENUS
- 583 MINDERS
- 81 MASTERS
Near Detector Status

- All ND planes ready for installation
  - Staging at New Muon
  - Rack assembly in progress
  - Beneficial Occupancy: Jan. 31, 2004

- Integration tests: 8 spectrometer planes
  - Prior to B.O., test integration of planes, fiber cables, PMTs, electronics, Light Injection
  - Possibly readout with DAQ, schedule permitting
Installation

- Installation expected to start ~ 6-8 weeks after Beneficial Occupancy
- Aim for 2 planes/day
  - Stage from NMS to MINOS Surface Building
  - Expect $O(30)$ weeks to complete

Practicing plane manipulation with strongback
Commissioning

• Aim to commission planes as they go in
  – Light leaks
  – basic functioning, operational parameters of scintillator, PMT, electronics, Light Injection system

• Great experience gained at Calibration Detector at CERN

• Hope to demonstrate interactions in 1st few minutes of neutrino beam.