

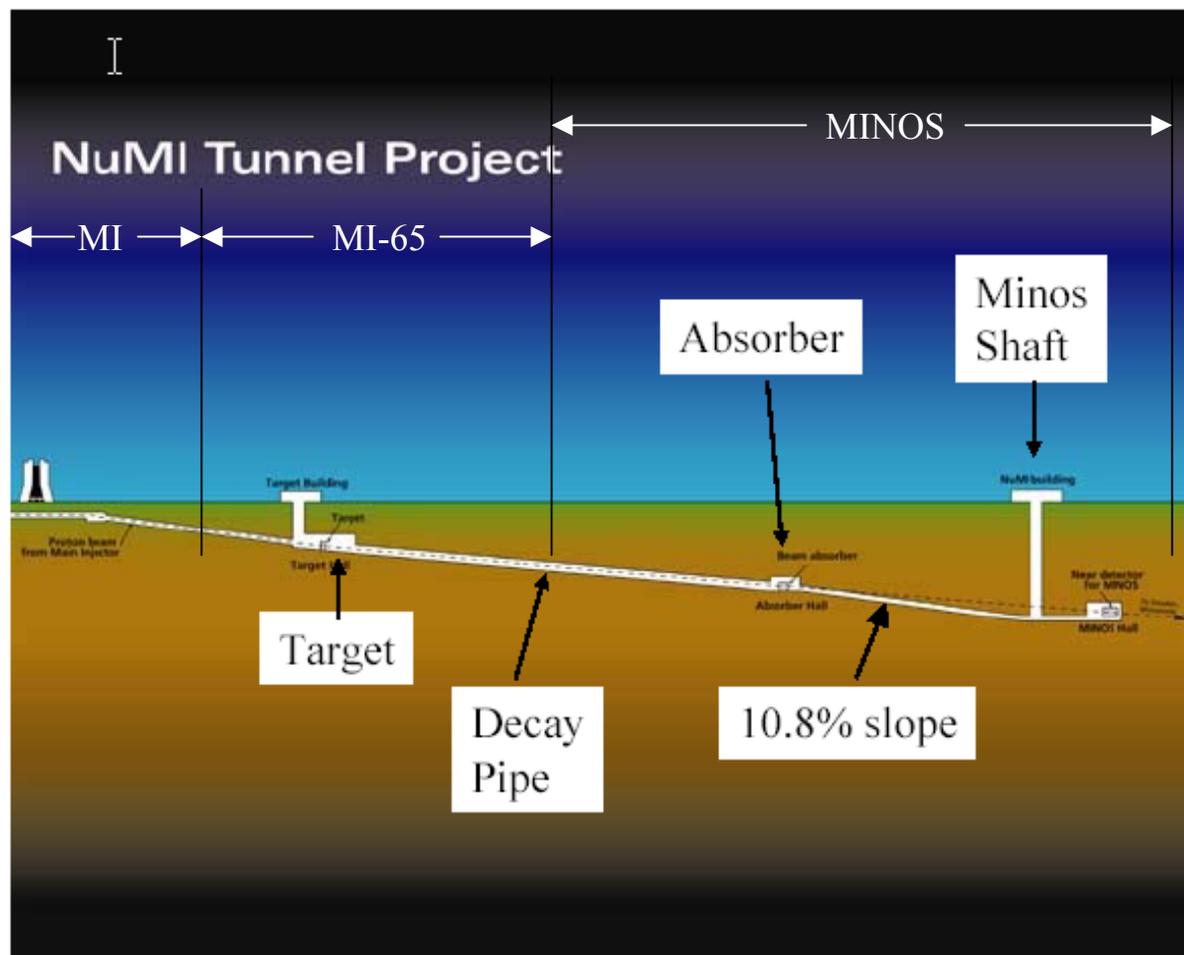


Installation Overview

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- 1) Organization
 - 2) Processes
 - 3) Application to the installation areas



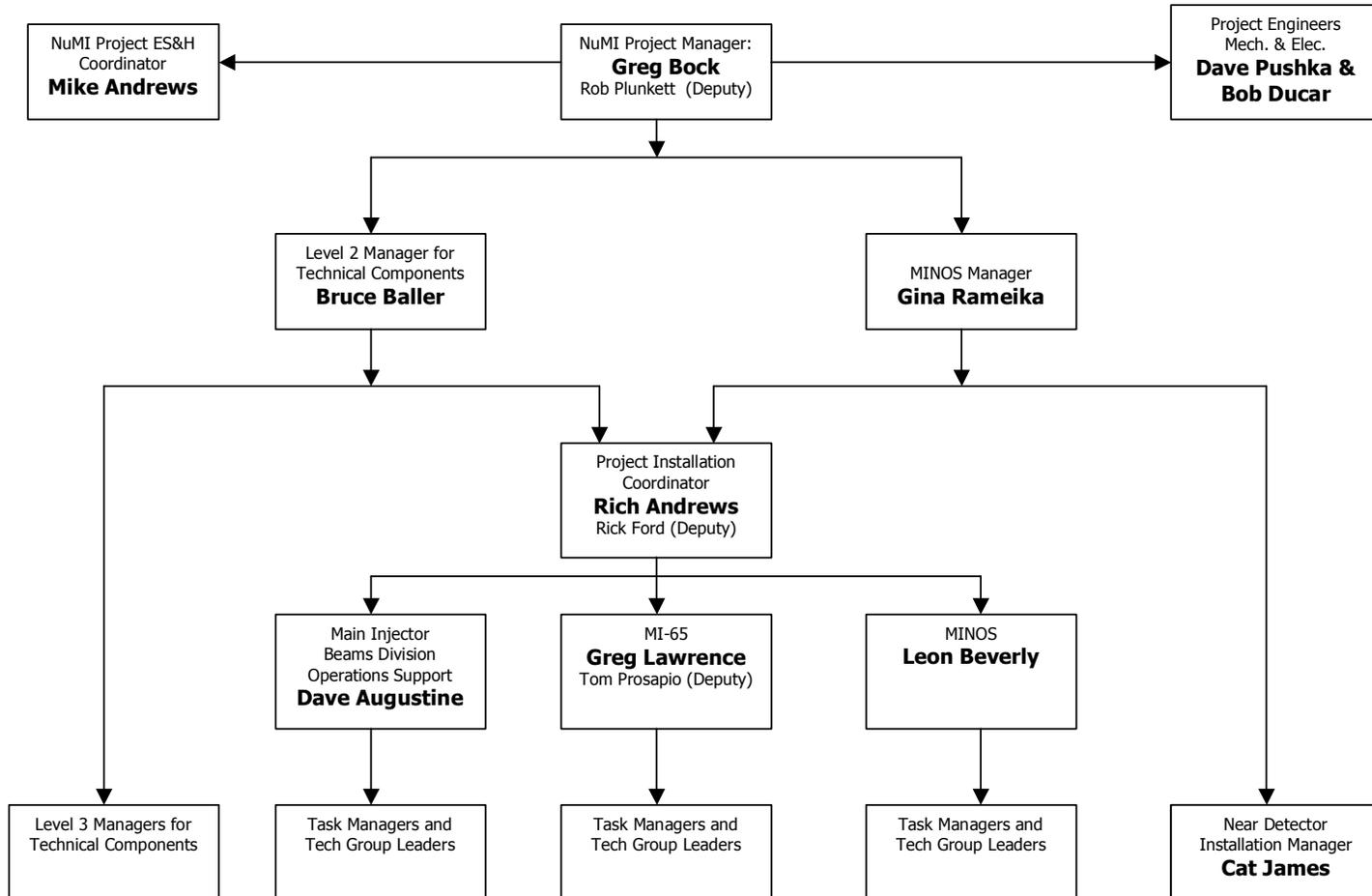
NuMI Environment



- 743' surface elevation
- 405' bottom of shaft
- 464.71' Absorber Cavern



NuMI Installation Team





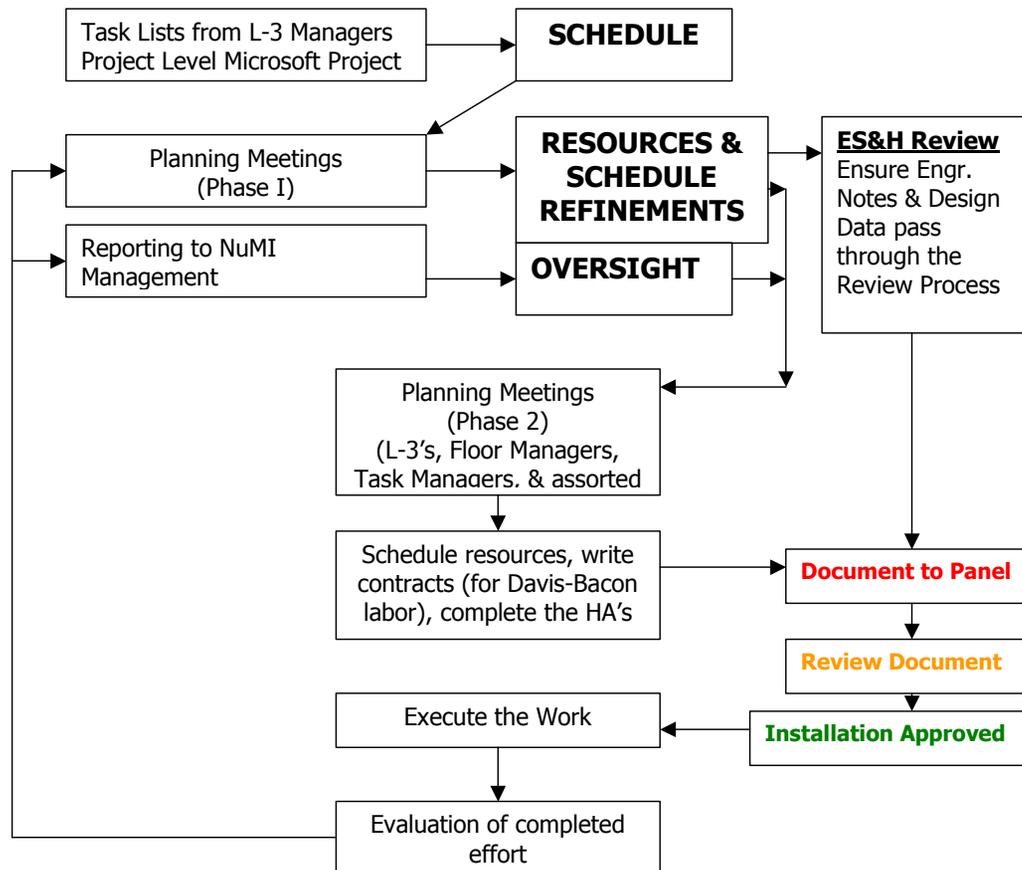
Approval Process for Installation

Director's Review
12FEB04
Rich Andrews

- Documentation includes Engineering Notes, Design Drawings, Installation Plans, and Hazard Analyses.
- ES&H Coordinator follows all documents through the review and approval process to ensure timely completion of appropriate documents
- The NuMI ES&H/QA Committee, representing Beams Division, Particle Physics Technical Division, and the ES&H Section, ensures that Engineering Note review is satisfactory.
- Hazard Analyses are written by the Task Managers, and approved by the ES&H Coordinator.
- Planned work activities are discussed in the Installation Meetings (all L-3's and Project Management present,) and the weekly planning meeting for the particular area prior to initiation of the work.
- Daily planning meeting between Floor Manager and ES&H Coordinator is held every day to verify all work for the day has been approved and future work is discussed.
- Daily briefings are held with all of the workers in the area to discuss the plans for the day, and mitigated hazards.



Installation Process



NuMI



MINOS

Installation Overview

Main Injector



What we will present for Main Injector Status

- Outline the current state of the Installation
- What are our plans for using the Short Shutdowns between now and Summer '04
- Do we have a schedule for the Summer '04 Shutdown?
- What uncertainties remain?



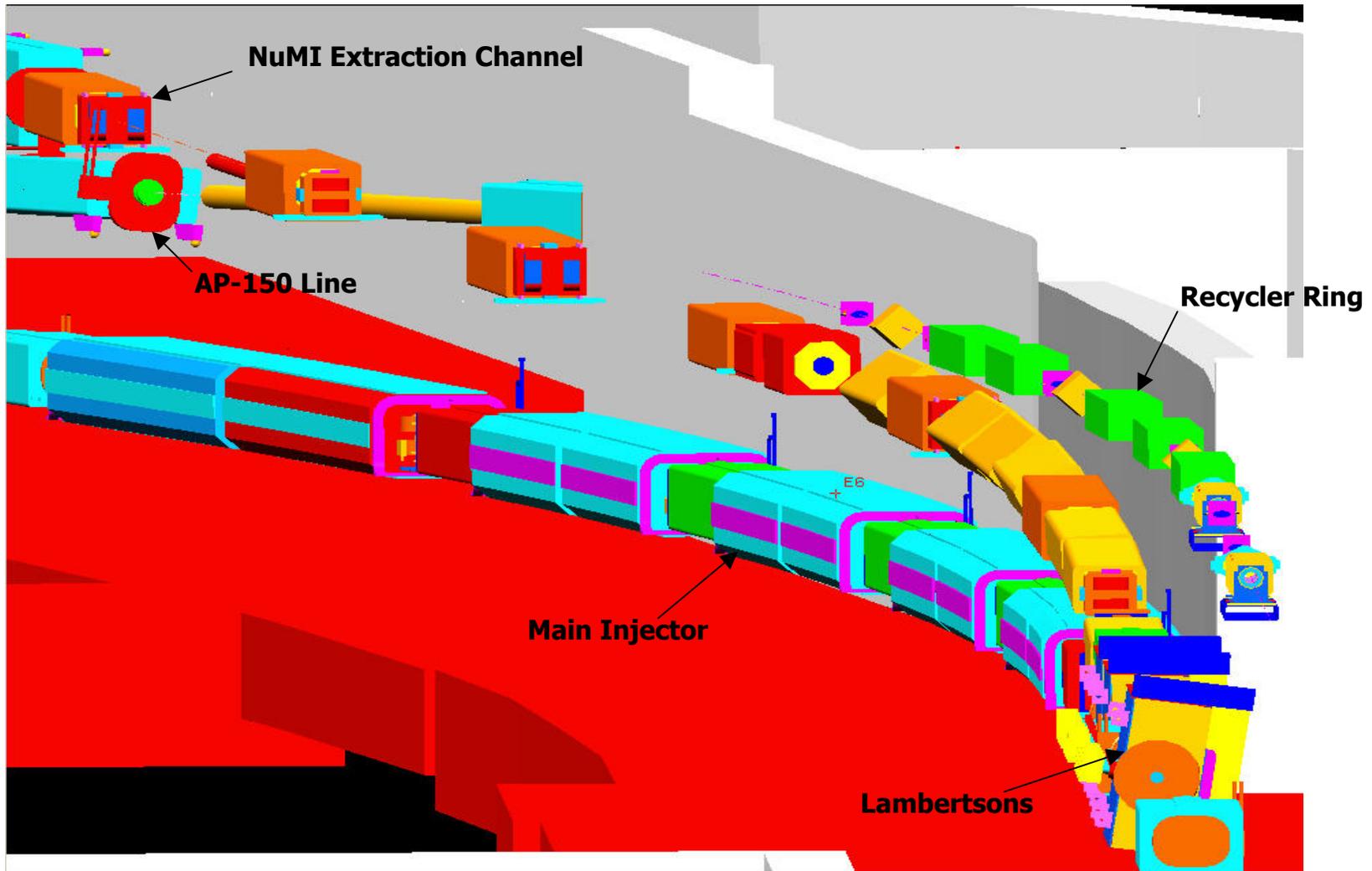
Uncertainties

- Whether NuMI will be able to effectively use Short Shutdowns (given priority and restricted accesses)
- Task which needs further definition
- Device readiness for Summer '04 Shutdown



Extraction from MI (Shutdown Work)

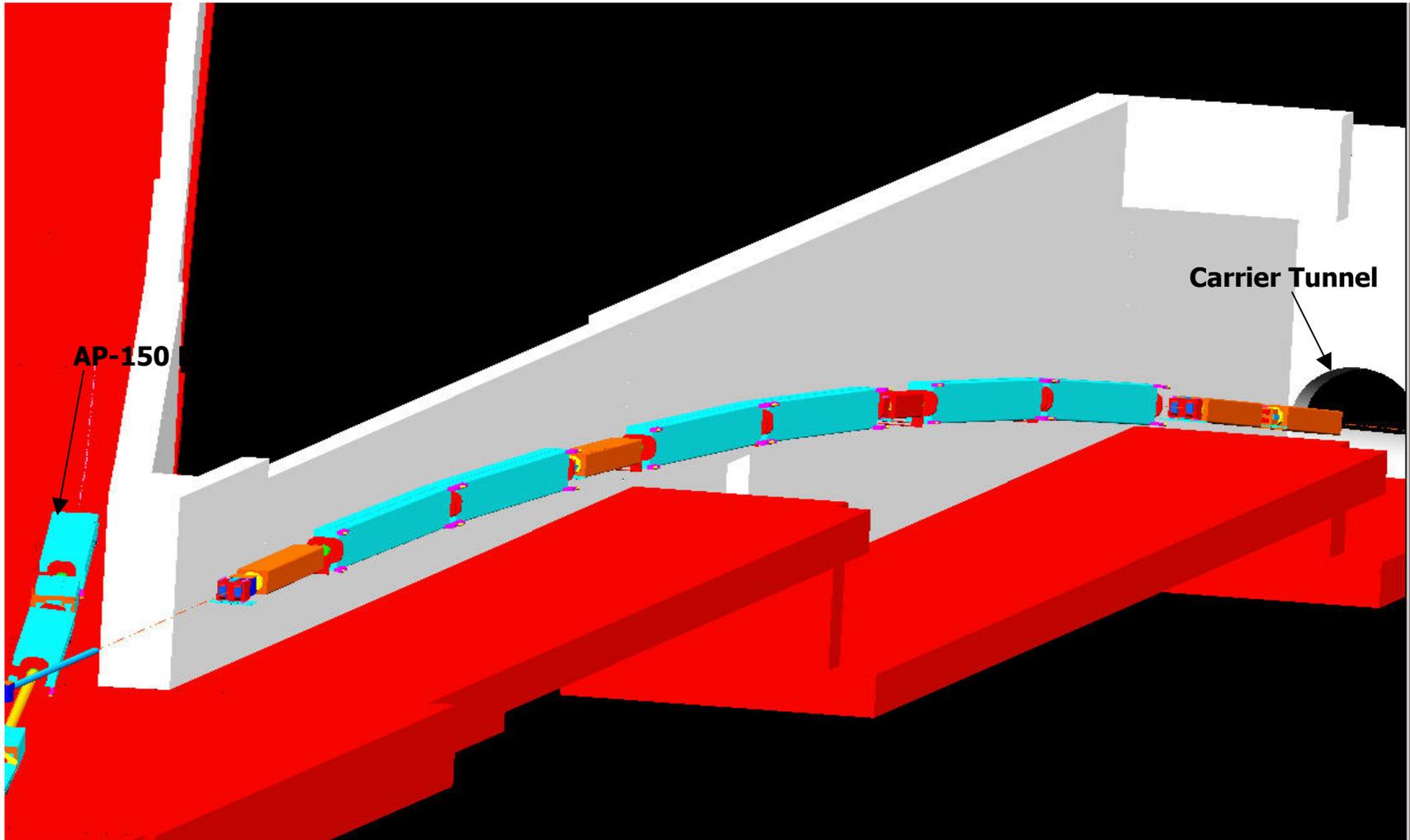
Director's Review
12FEB04
Rich Andrews





NuMI Stub (Shutdown Work)

Director's Review
12FEB04
Rich Andrews



NuMI



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Target Area



What we will present for MI-65

- Outline the current state of Installation
 - « Show the schedule
 - « Show state of Installation (pictures)
 - « Special problems encountered (T&M Contractors, documentation readiness, etc.)
- Present an outline of our remaining work
 - « Show current work profile for remaining block installation and air block completion
 - « Show the work that follows: air handling, duct work, horn power supply, RAW Skids, Stripline, horn, target, carriage, etc.)
 - « Remaining installation in the Carrier and Pre-target areas



Floor Managers Responsibilities in MI-65

Director's Review
12FEB04
Rich Andrews

- There is a Floor Manager and a Deputy
- The Floor Manager (Greg Lawrence) is responsible for the oversight of the building activities and implementing the developed plans. Normally handles day to day activities
- The Deputy (Tom Prosapio) concentrates on developing the schedule, writing the T&M contracts, & ensuring that the documentation is in place.
- During this startup, at least one of the Floor Manager's is always present at MI-65 when there are work activities.
- When we change to a two shift installation pace for the shielding blocks, only the task manager will be present.



Sample Detailed Installation Plan for MI-65

- **Week One (10/20/03 thru 10/24/03)**

1. Initiate Access Procedures
 2. Underground Training – T&M Personnel
 3. Set Up Access Controls – Signage (Information and Instructions), Badge Box, Fencing, Lock Cores (Building Doors and Elevator Fencing), and Post Hazard Analysis
 4. Locate Self Rescuers in the Underground Enclosure
 5. Install Temporary Phone at Base of Shaft
 6. Begin Installation of the Permanent Phone System
 7. Set Up/Test Shaft Communications (Two-Way Radio Sets)
 8. Begin Installation of the Target Pile Zero-Layer
 9. Transport and Stage Green Blocks @ MI-65 Hardstand (64)
 10. Transport and Place Communications Racks in Electronics Room
 11. Set up and Test Pre-target Magnet Moving System
- Clean the Decay Pipe

- **Week Two (10/27/03 thru 10/31/03)**

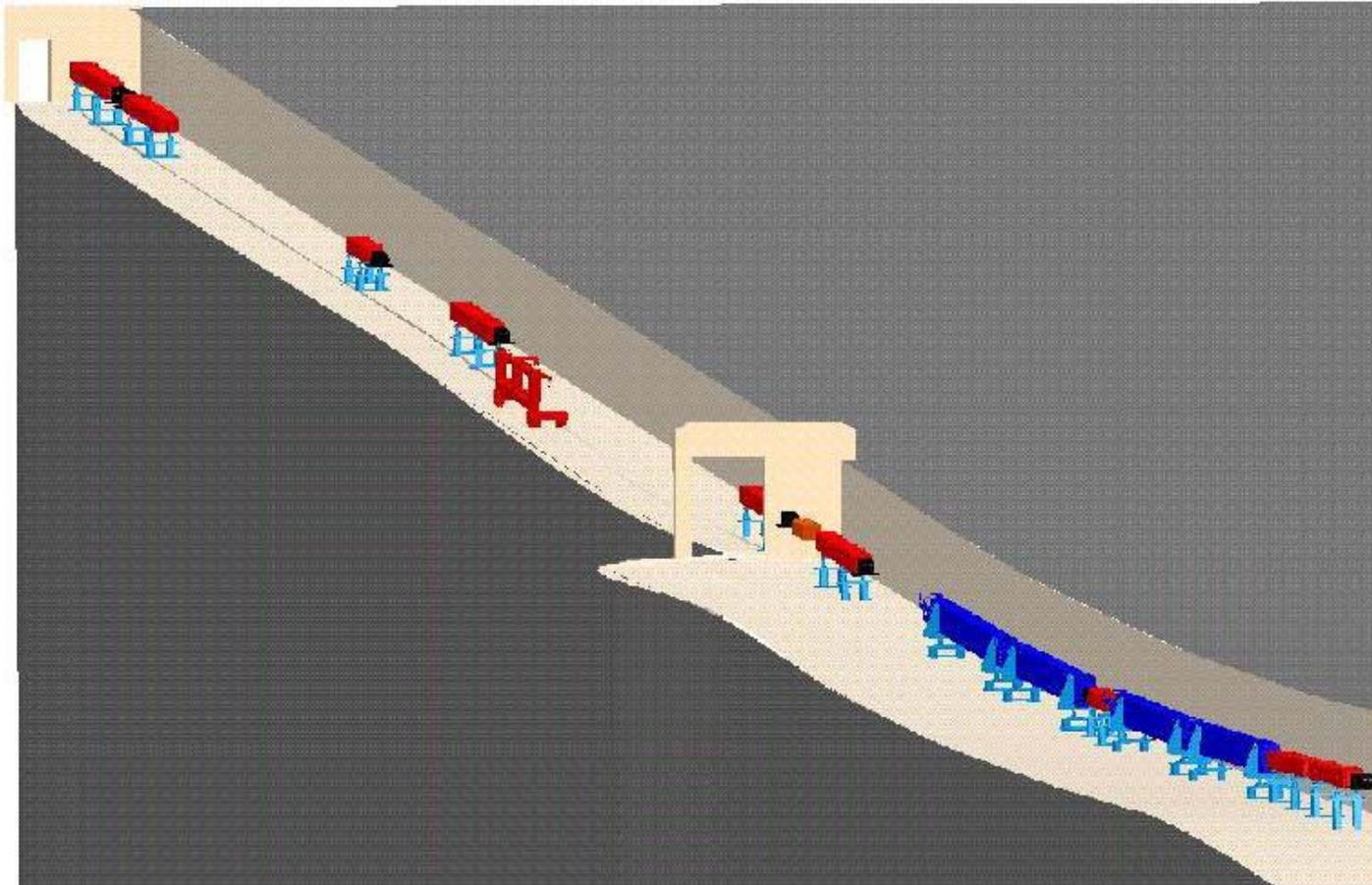
1. Continue Target Pile Zero Layer Installation
 2. Continue Installation of Permanent Phone System
 3. Begin Installation of Communications Racks/Links in MI-65 Electronics Room
 4. Continue Staging Green & Blue Blocks @ MI-65 Hardstand (144)
 5. Transport and Place RAW, Horn, and Decay Pipe Cooling Skids in RAW Room
 6. Transport and Place Target Pile Chiller Unit in RAW Room
- Transport and Stage Upstream Decay Pipe Window

Developed by Tom Prosapio



MINOS

Pre-Target



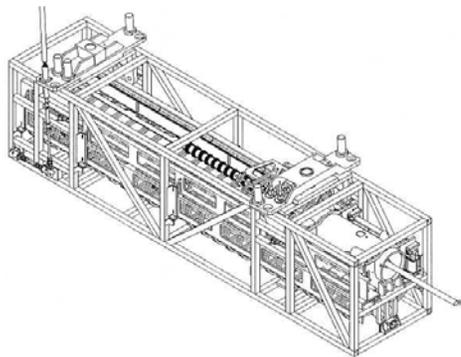
From Mayling Wong



Target Hall in pictures

(plus re-circulating air cooling, target, hot work cell, etc)

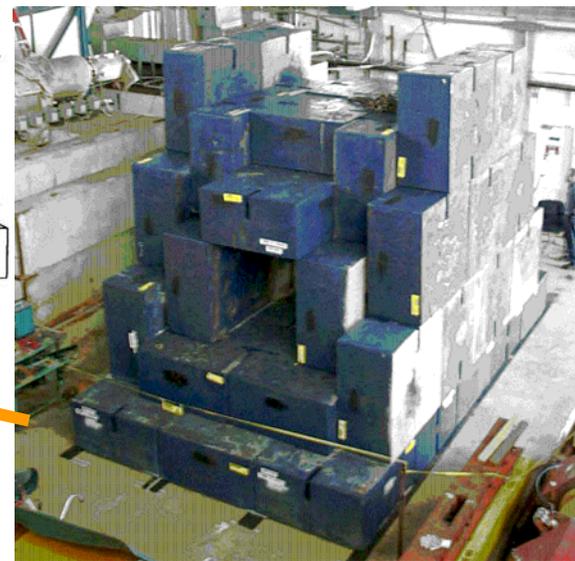
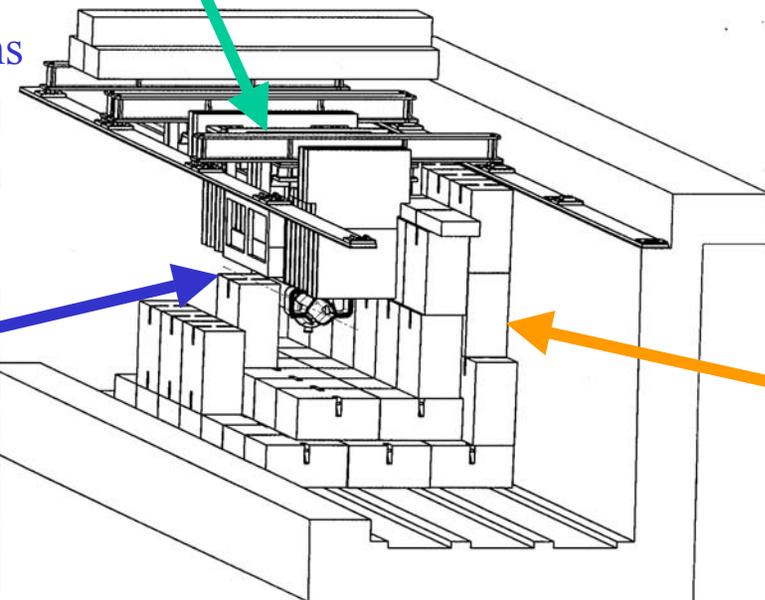
1 of three 27 ton support modules



Target with motion system



1 of two focusing horns



(10% of) Shielding Blocks

NuMI



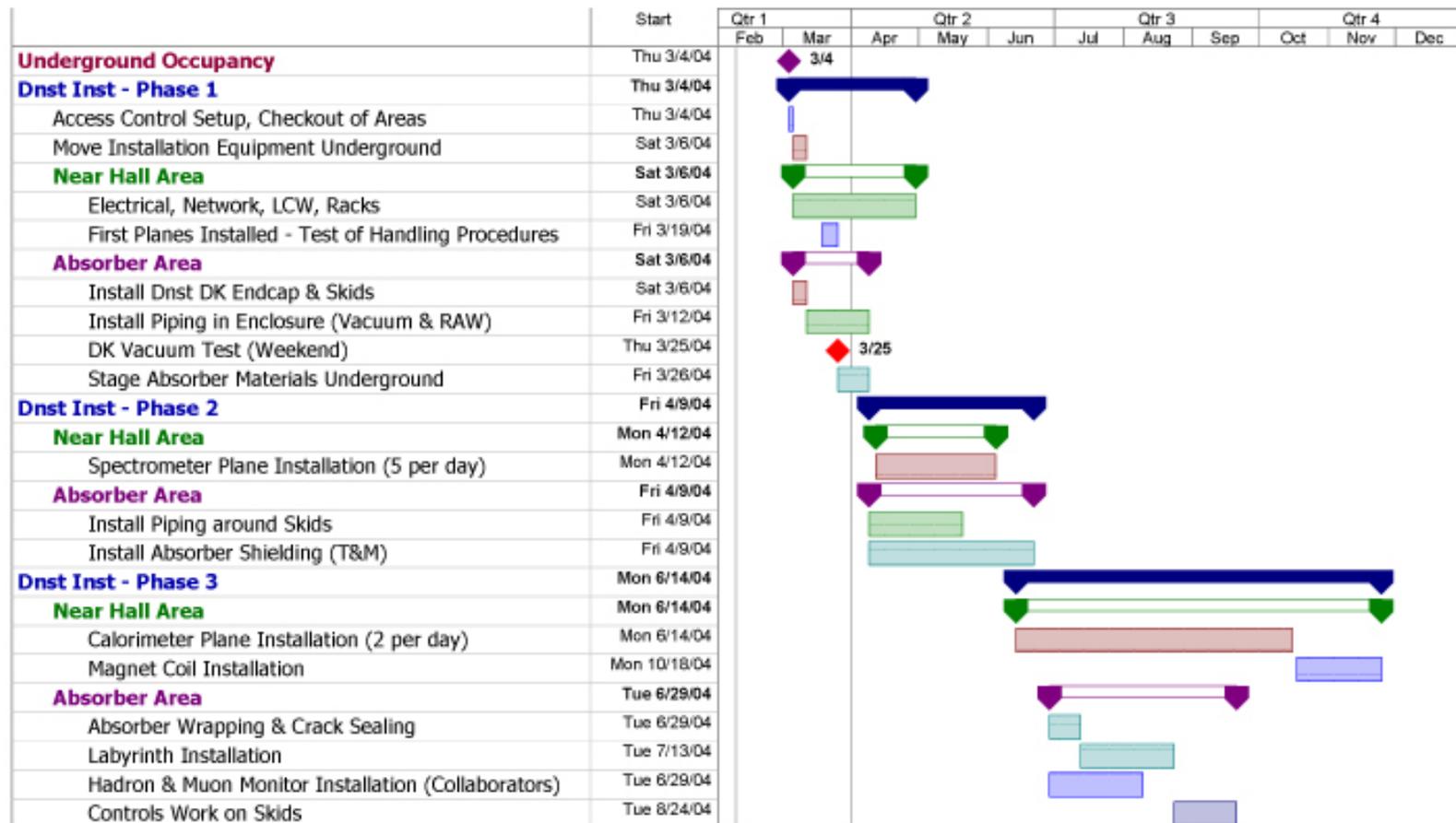
MINOS

MINOS Area



MINOS Installation Plan

WBS 1.1.4 (Absorber & Decay) &
WBS 2.5 (Near Detector)





Responsibilities in MINOS Area

Director's Review
12FEB04
Rich Andrews

- Installation Managers (Cat James & Jonathon Thron)
 - « Responsible for the development of the Detector Installation Plan
 - « Responsible for budget oversight for Detector and Absorber
- Floor Manager (Leon Beverly)
 - « Manages the schedule under the oversight of the Install. Coord.
 - « Writing the necessary contracts for executing work
 - « Manages the day to day operations at the site
- Task Manager for MINOS Building (M. Mascione)
 - « Crane operation
 - « Material flow through the building and to the work areas
- Task Manager for Absorber (Del Miller)
 - « Develops the plan for assembling the Absorber
 - « Supervises the T&M responsible for installation
- Task Manager for Detector (John Voirin)
 - « Develops the plan for Detector assembly
 - « Supervises lab personnel responsible for assembly



Planning for B.O. (MINOS)

- Weekly meetings with Installation Team, Installation Manager & L-3's.
- Topics of discussion include planning of tasks, checking status of work in progress (pre-assembly, procurement, etc.)
- Sharing experiences of MI and MI-65 activities.



MINOS Activity

- An overall work plan is being developed
 - ◀ Installation group is completely assembled and meets regularly
 - ◀ Task Managers are included in this effort:
 - * Mike Mascione
 - * Delmar Miller
 - * John Voirin
 - ◀ Project and Design Engineers also participate in these discussions:
 - * Bob Ducar
 - * Jim Kilmer
 - * Dave Pushka
 - * Ernie Villegas
- Includes an integrated schedule
 - ◀ Critical tasks are being identified



Planning for the transition to Beneficial Occupancy

-
- Review the start-up plan
 - Look at the floor management plan
 - What are the critical path tasks, and what measures will be taken to mitigate them?



MINOS Planning

- Now have a schedule which has integrated Absorber and Detector Parts.
- Working out a detailed list of tasks to be completed before installation can begin.
- We have developed a detailed schedule (day by day) of the 1st 6 to 8 weeks.