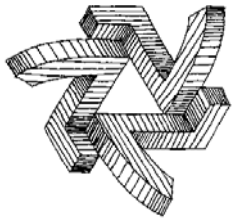


D. Bogert
DOE Info.
May 17, 2004

NuMI Absorber Installation

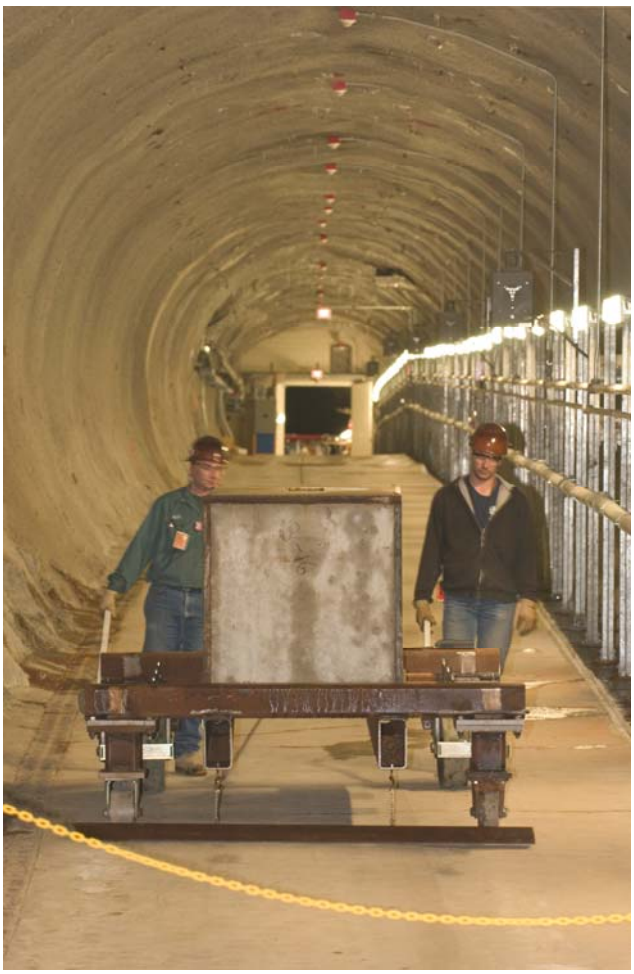
During the week of May 10, 2004 installation of the NuMI Absorber began. A total of ten concrete shielding blocks were transported from the shaft uphill to the absorber hall. Eight concrete shielding blocks were set in position. Approximately 140 blocks of steel and concrete (about 80 are steel blocks) are needed to build the absorber, in addition to the absorber core, a drip pan, and installation of tracks for the Hadron Monitor.

In the absence of the electric forklift, all blocks are being winched up the absorber access hill. This process takes about one hour for a round trip of the cart pulled by the winch. Lighter (less than 4 ton) concrete blocks are being set with a smaller electric forklift. Heavier blocks will use a hydraulic gantry system, until (and if) the large electric forklift is repaired sufficiently to place the blocks in the absorber hall. The latest estimate for motor replacement is two more weeks, and a revision of the gear ratio to permit replacement of the winch system is at least a further six weeks away.

The winch and gantry system is very labor intensive, using a rigging crew of at least six plus partial time for the shaft top and bottom landers.

D. Bogert
DOE Info.
May 24, 2004

NuMI Absorber Installation



Moving a "B-block" up the hill of the Absorber Access on a cart pulled by a winch.

During the week of May 17, 2004 installation of the NuMI Absorber continued. Eleven concrete blocks were installed this week. At the end of the week a total of 19 concrete blocks had been installed; the first level of the "front frame" was completed with 16 blocks and 3 blocks had been placed on the second level using the lifting gantry. On Wednesday, May 19, a failure of a MINOS Shaft Crane brake prevented any further delivery of blocks down the shaft. The crane was repaired by the end of day Friday May 21. Work is expected to resume Monday May 24.

D. Bogert
DOE Info.
May 31, 2004

NuMI Absorber Installation

Installation of the fourth "J-Block" that completes the "concrete frame" at the upstream end of the Hadron Absorber. Note the use of wire ropes to tie the block to the gantry beam because of limited headroom.

During the week of May 24th the concrete frame was completed at the upstream end of the Absorber. Seven large blocks were set, and about six small blocks were set. The "slot" for the insertion of the hadron monitor was created, and the large steel "door frame" to shield the slot was mounted and welded in place. Additional "B-blocks" were transported to the absorber Hall. On Thursday May 27th the shaft crane brake system again failed, and although the installation crew was ready to transport the first 10-ton steel "blue block," no further transport was possible until the crane could be repaired. Information from the forklift vendor indicated further delays were expected since the larger motor did not physically fit. The use of the winch and gantries will continue.

D. Bogert
DOE Info.
June 7, 2004

NuMI Absorber Installation

LEFT: During the week of May 31 thru June 4, 2004 'Blue Block' placement began. 18 blue blocks were lowered down the shaft and set in the first two layers below the "drip pan" location.

RIGHT: The "Hoist" fork lift was again delivered after testing at the vendor. After delivering one block it again overheated on the second trip up the access hill.

During the week of May 31st the placement of blue blocks commenced on the two layers below the drip pan. Three rows of six blocks were set, and two 'B' blocks were set just back of the 'frame'. The small block to create the door over the "slot" for the insertion of the hadron monitor was chained in place awaiting the mounting track. The shaft crane brake system was repaired on Saturday May 29th, and a large meeting of crane designers, engineers, and controls specialists was convened on June 2nd to consider improvements to prevent future failures. The "Hoist" forklift again failed after one trip with a blue block up the ramp. It is now viewed as unlikely that the Hoist forklift can contribute to the absorber assembly. A modification to the winch cart to permit the transport of two blue blocks per trip is being made. The use of the winch and gantries will continue.

D. Bogert
DOE Info.
June 14, 2004

NuMI Absorber Installation

During the week of June 7th the first two levels of blue blocks (total of 24 blue blocks) were Completed, and 12 more blue blocks were brought to the absorber hall for later use. A total of 18 blue blocks were transported this week.

During the week of June 7th the placement of blue blocks on the two layers below the drip pan was completed. A task not included in the design was then found to be necessary, as the elevation variance under the drip pan was found to exceed two inches. Shims were set under the corners of future blocks, and grout was placed over the entire surface to provide a level support surface for the drip pan. The shimming and grouting was completed Friday June 11th, and the drip pan was brought in two pieces to the absorber hall. On Monday June 14th it will be set and welded, and then the construction of the absorber pile will resume. Twelve more blue blocks were transported to the absorber hall as inventory for the future. A total of 36 blue blocks of an eventual 88 have been transported. The Hoist forklift was again tested after the installation of cooling fans, and again failed. The absorber will be completed without further attempts to use it.

D. Bogert

DOE Info.

June 21, 2004

NuMI Absorber Installation

During the week of June 14th the drip pan installation was completed, and 3 inch steel was placed under the outside rows of the next layers. 24 blue blocks were then set, and the absorber core alignment steel pad was set.

During the week of June 14th the placement of blue blocks on the two layers above the drip pan was completed. The drip pan was set and welded, and steel plates to lift the outer layers were transported and placed. The hadron monitor support rails were mounted under the guidance of the University of Texas staff. 48 of an eventual total of 88 blue blocks have been transported and set. Twelve blocks were transported during this week, in addition to the work related transporting ind setting to the 3 inch steel shims and the absorber core leveling pad. Stacking of small concrete blocks at the front face of the absorber pile began on Friday.

D. Bogert
DOE Info.
June 28, 2004

NuMI Absorber Installation

During the week of June 21st the major effort was to construct the so-called “Helium Box” to exclude circulating air from the volume between the Hadron Monitor and the upstream face of the absorber core. Parts were delivered and the box’s frame and skin welding was completed on Saturday June 26th. It was determined that the box could not be placed with all of the blue blocks already set remaining in place, and four blocks were removed to permit the box to slide into place. While waiting for the Helium Box to be completed and delivered, hand-stacking of the front face shielding continued, and 8 more blue blocks were staged to the absorber hall, and 8 concrete “B-blocks” were staged and set for the east side concrete perimeter layer. The lifting fixtures for the aluminum absorber core were load tested and approved. After the Helium box is installed on Monday June 28th, the four blue blocks removed to permit installation will be re-set, and the absorber base plate will be final aligned. Then the absorber core will be transported and set.

Approximately one day of shaft time was lost to various MINOS shaft crane difficulties (brakes smelling, intermittent up-down controls, etc.)

56 of 88 blue blocks have been transported to the Absorber Hall.

D. Bogert
DOE Info.
July 5, 2004

NuMI Absorber Installation

During the week of June 28th the air exclusion box and the absorber core were completed, transported to the absorber hall, and installed. The upper left picture shows the air exclusion box being delivered to the shaft, the upper right picture shows the aluminum core and cooling pipes in place, the lower left picture shows the threading of the cooling pipes through the first steel core segment, and the lower right picture shows the completed absorber core. A few more B-blocks were set on the outer east and west layers.

D. Bogert
DOE Info.
July 12, 2004

NuMI Absorber Installation

LEFT: At the start of the week the absorber core was ready for the welding of the cooling pipe extensions. After that work, a layer of "vertically stacked" blue blocks was completed on the east and west sides of the absorber core.

At the end of the week 64 of a final total of 88 blue blocks had been transported and stacked in the pile. On both the east and west sides 7 of 12 "B-blocks" had been placed. Four more B-blocks have been transported to the Absorber Hall.

During the week of July 5th the eight "planks" that support the final two layers of blue blocks on top of the core were delivered. The pile is ready for the next leveling and grouting so that the planks may be set. On Friday the 9th of July the remaining continuous cast salvage slab pieces were selected from the US Steel inventory lists. Delivery will begin the week of the 19th of July. A few pieces remain from an earlier delivery and cutting will begin. This material will be stacked between the blue blocks and the ceiling.

D. Bogert
DOE Info.
July 19, 2004

NuMI Absorber Installation

LEFT: At the start of the week the vertical blocks were all installed at the absorber core level. The top of that row was surveyed and shims were set. A grout layer was placed and steel planking then was set.

During the week of July 12th the eight "planks" that support the final two layers of blue blocks on top of the core were placed. A special plank was fabricated and set to fill the gap on top the steel absorber core. The outside concrete shielding was finished on both the east and west sides; a total of 12 B blocks are in position on each side. Thirteen more blue blocks were delivered to the absorber hall to be set on top the steel planks. Delivery of the continuous cast salvage slabs began, and cutting of the slabs for the top two nine inch layers began. An additional test of the Hoist forklift was unsuccessful; no further testing is envisioned. Only eleven blue blocks remain to be delivered to the Absorber Hall.

D. Bogert

DOE Info.

July 26, 2004

NuMI Absorber Installation

LEFT: At the start of the week the steel planks were ready for the placement of the final two layers of blue blocks. During the week one layer of 12 blue blocks was set, and 9.11" steel pieces were started to be set on the outer B-Blocks.

During the week of July 19th the last of the 88 Blue Blocks were transported to the Absorber Hall, and 12 Blue Blocks were set on the first layer over the absorber core. Only 12 Blue Blocks remain to be set. The first of the 9.11 inch steel blocks were delivered to the Absorber Hall, and seven pieces were set, five on the east wall and two on the west wall. A total of 78 9.11" blocks must be set on top of the absorber in various locations. Eleven pieces have been delivered to the Absorber Hall. Most of the remaining pieces have been cut at the Meson Assembly Building. The low profile beam to be used with the gantry to set the highest pieces has been fabricated and load tested.

D. Bogert
DOE Info.
August 2, 2004

NuMI Absorber Installation

LEFT: At the start of the week the absorber pile was ready for the placement of the final row of blue blocks and for more of the 9.11 inch steel blocks to be set. At the end of the week nine of the final row of blue blocks were set and 26 more pieces of 9.11 inch steel were set.

During the week of July 26th nine Blue Blocks were set on the final layer over the absorber core. Only 3 of the 88 Blue Blocks remain to be set. More of the 9.11 inch steel blocks were delivered to the Absorber Hall, and 26 more pieces were set for a total of 33. Thirteen more pieces are available in the Absorber Hall, and 19 are on the MINOS hardstand. Only 13 more of the total of 78 remain to be delivered to MINOS. All of the remaining pieces will have been cut at the Meson Assembly Building early next week. Parts to extend the absorber core cooling loops are being fabricated. Welding of the absorber core cooling loops will resume next week.

D. Bogert
DOE Info.
August 9, 2004

NuMI Absorber Installation

LEFT: At the start of the week the absorber pile was ready for the placement of the lower back row of "B-blocks" and then for more of the 9.11 inch steel blocks to be set. At the end of the week all of the 88 blue blocks and a total of 53 pieces of 9.11 inch steel had been set.

During the week of August 2nd the last three Blue Blocks were set on the final layer over the absorber core. More of the 9.11 inch steel blocks were delivered to the Absorber Hall, and 20 more pieces were set for a total of 53. Seven more pieces are available in the Absorber Hall, and the final 18 are on the MINOS hardstand. Only 25 more of the total of 78 remain to set in the absorber pile. 10 "B-blocks" were set. Welding to extend the 32 absorber core cooling loop pipes to the west outside of the absorber pile began. Welding of the absorber core cooling loop extensions will complete early next week. The remaining four "B-blocks, and the last 9.11 steel pieces, may then be set. The absorber will then be complete, and the labyrinth may be started.

D. Bogert

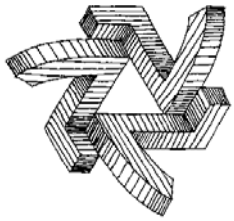
DOE Info.

August 16, 2004

NuMI Absorber Installation

LEFT: By midweek of the week of August 9th, all 32 of the absorber core cooling pipes had been extended from the absorber core to outside of the absorber pile. After that work was completed, the final four "B-blocks" were set in place and the setting of the back upper layers of 9.11 inch steel began.

RIGHT: Laborers completed the masonry to seal the space between the absorber pile and the decay pipe shielding on both the east and west sides of the absorber. During the week a total of four "B-Blocks" were transported and set, and 14 more 9.11 pieces of steel were set on top of the absorber. A steel support member, visible in the above picture, and an odd sized piece, were also set. At the end of the week, only eleven (of 78) 9.11 inch pieces of steel remained to be set to complete the absorber pile. Then the gantry system will be dismantled, the absorber hall cleaned out, and the first muon monitor frame may be constructed. After that the access labyrinth is the only remaining item to be assembled.



D. Bogert
DOE Info.
August 23, 2004

NuMI Absorber Installation

On Tuesday August 17th the last of the 11 remaining pieces of the 9.11 inch steel pieces were set, and the absorber pile was completed. On Wednesday, the gantry system was disassembled and transported to the surface. The small gantry at the top of the ramp was also removed. The gantry tracks were disassembled and transported to the surface. On Friday the “poly-bead” box was brought into the Absorber Hall” and placed in position. The Absorber Hall was cleaned out, and the setting of the entrance labyrinth wall began. At the end of the week five blocks (3 “B blocks” and 2 “C blocks”) had been transported and one “C” and two “B” blocks had been placed. The labyrinth was drawn on the floor, and a slight modification was made to the plan so that a sufficient entrance passage would remain. About six or seven large blocks remain to be transported for the base of the labyrinth wall. Smaller blocks have been delivered to the surface for closing the top of the labyrinth wall. These will probably be set as each row of the labyrinth is completed. The beamline was located by survey in the muon alcoves.

D. Bogert

DOE Info.

August 30, 2004

NuMI Absorber Installation

Left: The completed absorber pile. The white "poly-bead-box" (with 32 pipes for the core cooling system) was modified to permit an additional pipe for the drip-pan drain to pass through the box.

Right: The labyrinth under construction. In this picture one "B" block is missing from the inside row and the outer row has been started.

During the week of August 23rd a reduced staff of riggers continued the installation of the labyrinth and built most of the downstream decay passage radiation gate. By the end of the week 2 of 2 "C" blocks were set, 1 of 1 "A" blocks was set, and 7 of 9 "B" blocks were set. Only two "B" blocks remained to be transported and set, and four "E" blocks were yet to be set. More than 50% of the handstacking to close the gap to the passage ceiling was completed. Only a few days of work remains. The riggers will also set the supports for the Muon chambers in alcoves 1 through 3. The tank to catch any RAW water leaking into the drip pan was delivered.

D. Bogert
DOE Info.
September 6, 2004

NuMI Absorber Installation

Left: The Muon Detector frame in Muon Alcove #2 (where Muon Alcove #1 is in the absorber hall) was assembled by the riggers. The assembly of the Muon Detector frame in alcove #1 was started. Muon Detector modules built at the University of Texas in Austin are visible stacked along the right wall. Debbie Harris and Sacha Kopp are shown visiting the detector frame.

During the week of August 30th the reduced staff of riggers completed the installation of the labyrinth and the downstream decay passage radiation gate. The absorber hall was cleaned up, and all the rigger's equipment was removed to the surface except for that necessary to assemble the three muon detector frames. By the end of the week the first of the three frames was complete.

D. Bogert
DOE Info.
September 13, 2004

NuMI Absorber Installation

Top: The completed labyrinth is shown looking into the Absorber Hall from the access passage.

Lower: Assembly of all three of the muon monitor frames was completed.

During the week of September 6th the reduced staff of riggers completed the installation of the muon monitor frames, and demobilized. Remaining work includes: 1) Installation of the absorber core cooling manifolds; 2) Completing the drip pan piping into the recovery tank; 3) Assembly of the relocated decay passage stairs; 4) Installing readout of the Absorber Core thermocouples, and 5) Filling the poly-bead box.