Comments for Review of NuMI Primary Beamline
System Design and Installation -- July 18, 2001

From: J. Misek 7/25/01

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Vacuum:

A subsequent discussion with Terry Anderson clarified some questions I had regarding the layout of the roughing stations. Terry confirmed that there are roughing stations right at the 600 liter ion pumps on either side of the carrier pipe. I was concerned that there may be a problem starting the ion pumps if the roughing pumps were a distance away. This is not the case so everything should be fine. I asked if the roughing stations would be permanent at these locations and Terry said that they would be brought down by hand. He felt the components were light enough to do this. One final note on the vacuum. Care and thought must be given to the high voltage connections for ion pumps and gauges given the probable damp conditions in the pretarget enclosure. This has been a problem in our existing machines. Terry is aware of this problem.

Magnet stands and magnet installation:

I see no problem with the stands. The magnet installation plan in the NUMI stub utilizing the two monorail cranes looks to be viable. This plan may seem complicated but I believe it will allow for a predictable installation schedule as opposed to rigging in with blocks and jacks. Replacement of a failed component will be straightforward as long as the hoists are available. As I mentioned at the review, care must be taken when using two hoists in tandem. The installation in the pretarget region was not finalized so comments will only be general in nature. The means of moving the magnets into position will have to be well thought out given the steep slope. Wheeled vehicles would seem to be a safety issue given the possibility of a damp surface, which may be prone to slippage. A positive drive system with a geared rack may be more fail-safe. Use of cables, as was for the NUMI absorber installation, should be avoided if at all possible. With enough time and engineering, an acceptable approach can be developed. As a final comment, I would hope that the tunnel design and outfitting in this region will accommodate personnel traffic. A sound slip free surface with the possible addition of railings should be investigated.