

Comments for Review of NuMI Instrumentation
& Multiwire Conceptual Design
October 14, 2002

From John Krider

1. Overall remarks

Titanium foil SEMs have some advantages over tungsten wire SEMs, although the wire SEMs have been made to work in many applications. The rest of the hardware/software for these two types of detectors is similar, which would make them easier to employ than a totally different technology. The foil technology is relatively mature, but there are some mechanical issues with the structure.

2. Itemized suggestions

- 1) The spring tensioning mechanism for the strips should be analyzed more carefully. It appears to me to be something that could work in the 1 gram range of tension, but not 90 grams.
- 2) There is a related question of how much tension is needed on a 7 inch long strip to keep it straight enough under transverse stresses of gravity or asymmetric heating across the width. Also, what happens to the strips during baking or during pumping down or letting up the vacuum, when there is significant gas pressure on the strips?
- 3) How are electrical connections made to the strips? I have seen spot welded joints on CERN strips, and the first generation Pbar target SEM had spot welded wires that worked well but required significant practice.