

MiniBooNE Report

Richard Van de Water
Los Alamos National Laboratory
for the MiniBooNE collaboration

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Week Summary 05 Feb – 12 Feb Offline

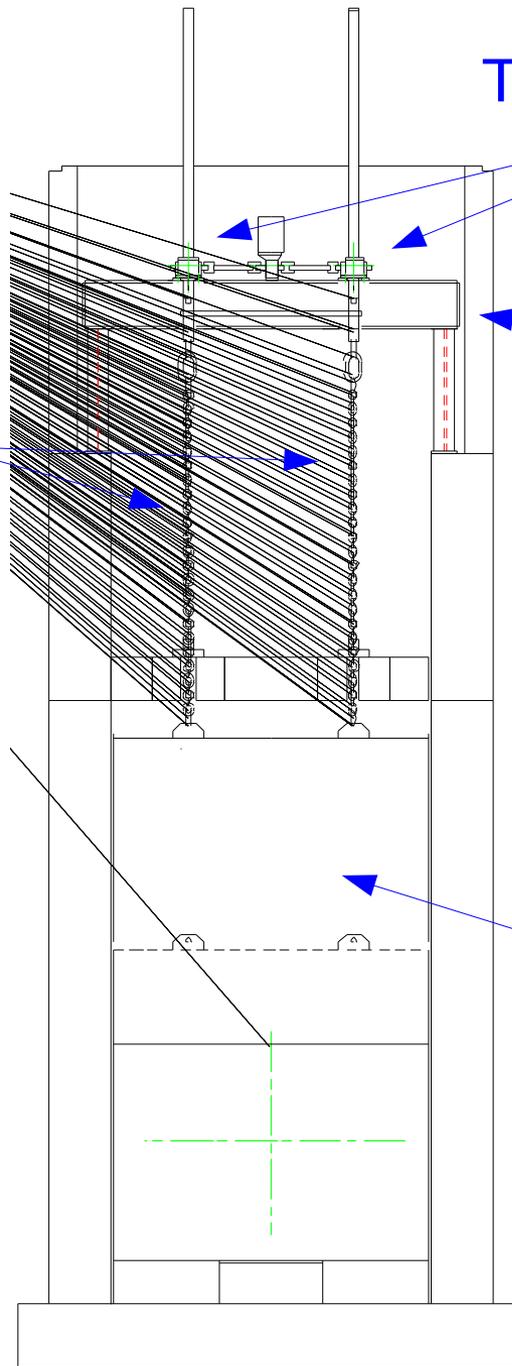
- Continued offline due to 25m absorber problem
- Two 25 ton steel blocks dropped into the beamline.
 - Possibly a third plate dropped Jan 28, 4am? Today opened absorber region, no new plates fell.
 - Lifting device designed and acquiring parts.
 - Analysis of chains shows hydrogen embrittlement.
- Initial results on 25m absorber Monte Carlo analysis.

Repair Plan: Phase I

- Work on repairs to put back 25m absorber back into original configuration.
 - Phase I: lower plates to safe position.
 - Phase II: replace chains, raise plates.
- Building in-house lowering/lifting mechanism using two screw jacks.
 - Design finalized and being reviewed.
 - Jacks are ordered, 1-2 week delivery time.

Repair Plan

Use old chains for lowering, new cable for raising.



Two 30 ton screw jacks

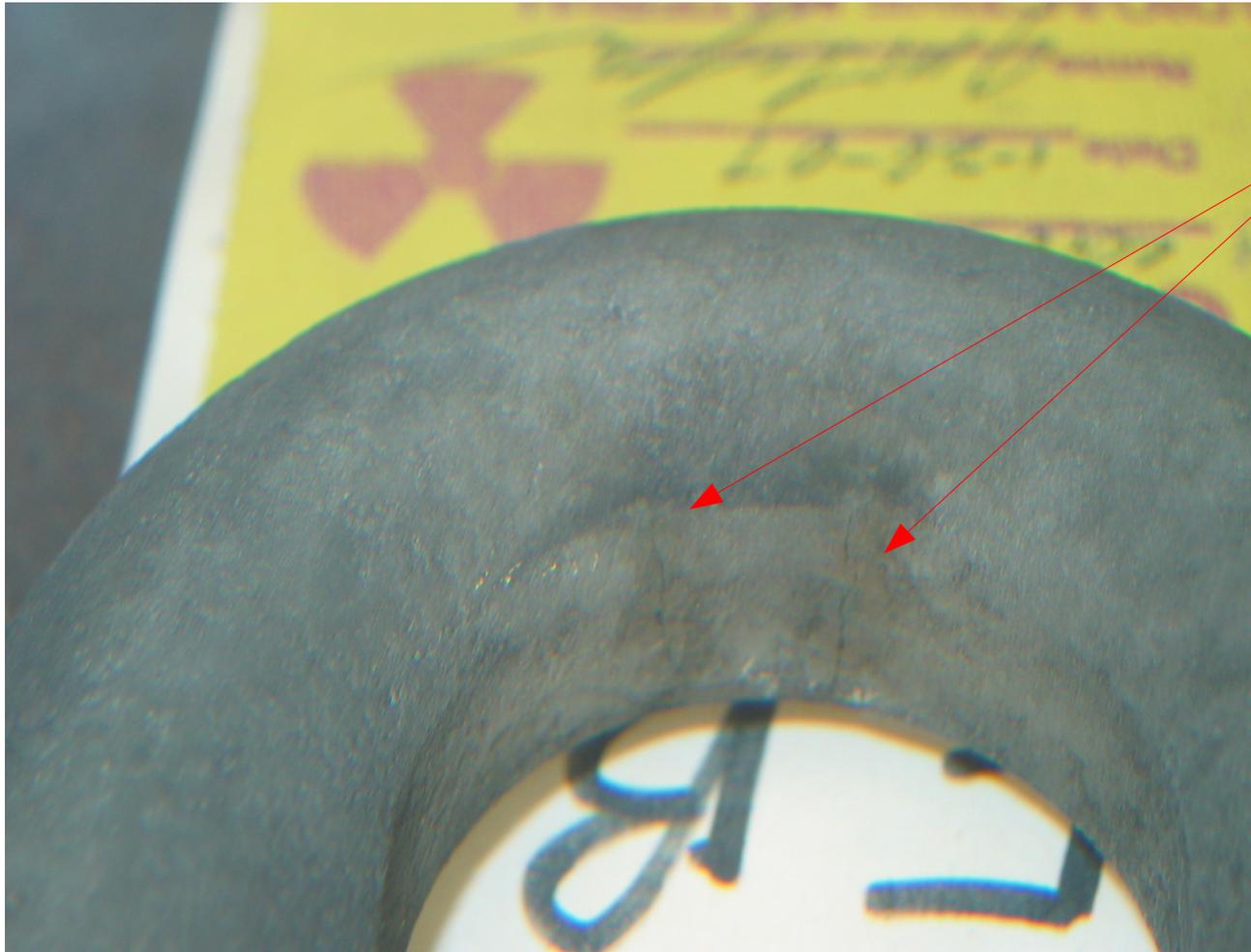
Lifting platform, twin I-beams

25 ton plates lowered into position. Can be raised with jacks as well.

Repair Plan: Phase II

- Broken chains being investigated by FNAL (TD) and MEI.
 - Found evidence for hydrogen cracking/embrittlement.
 - “The embrittlement of metal or alloy by atomic hydrogen involves the ingress of hydrogen into a component, an event that can seriously reduce the ductility and load-bearing capacity, cause cracking and catastrophic brittle failures at stresses below the yield stress of susceptible materials”.
--the Corrosion Doctor
- Designing new hanging device
 - Will use stainless steel cables.

Cleaned Chain Link



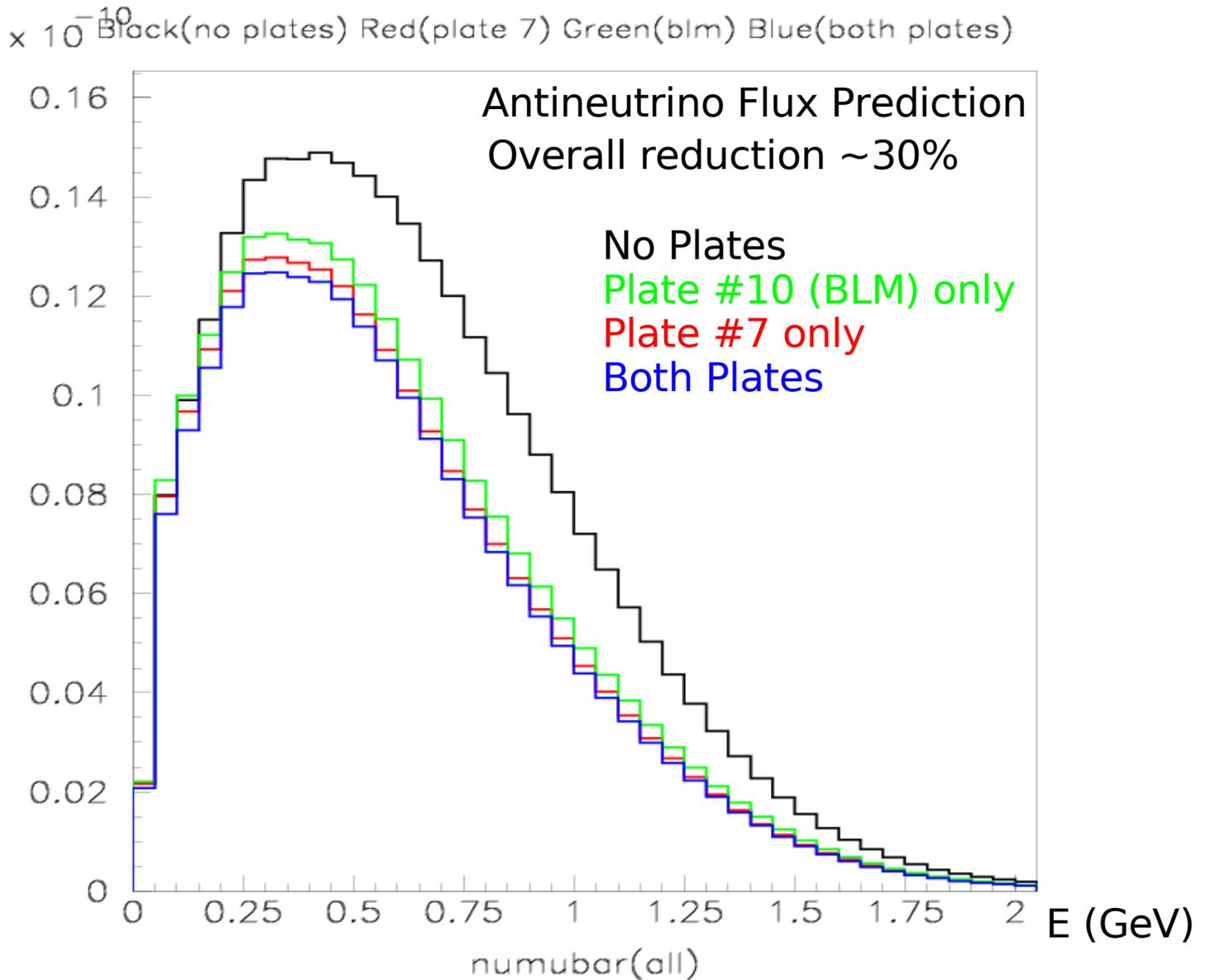
Surface cracks in saddle region, investigating depth of cracks.

Chain working load 17T (25T blocks), tested to x2, break point at x4 working load

AntiNeutrino Data Analysis

- Started generating MC for three 25m absorber configurations.
 - No plates down (50m configuration).
 - #10 (BLM) plate down during shutdown.
 - Both #10 and #7 plates August 29/06.
- Will compare to measured neutrino rates, energy, RS/WS ratios, and LMC data.
- Antineutrino pion analysis coming along, will show results at an upcoming AEM.

25m Absorber MC



Future Plans

- Work on repairs to put back 25m absorber in original condition.
 - Plan to be back online early April in 50m configuration.
- Continue work on understanding antineutrino data.
- Continue running the detector to take NuMI beam data and be supernova live.