

MiniBooNE Report

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Week Summary 08 Jan – 22 Jan

Offline

- Continued offline due to 25m absorber problem
 - Two 25 ton steel blocks dropped into the beamline.
 - AD team headed by Mike Andrews working on repair plan.
 - Initial analysis of chains by MEI.
 - Working on 25m absorber Monte Carlo.

25m Absorber Region:



Repair Plan: Phase I

- Work on repairs to put back 25m absorber back into original configuration.
 - Mike Andrew leading AD repair team:
 - Phase I: lower plates to safe position.
 - Phase II: replace chains, raise plates.
- Build in-house lowering/lifting mechanism using two screw jacks.
 - Pros: cheaper and safer than 300 ton crane.
 - Cons: takes longer, ie design, review, construction of lifting mechanism.

Repair Plan: Phase II

- Broken chains being sent to MEI and LANL for extensive analysis.
 - Assume all chains bad, has impact on lowering procedure.
 - Need to identify if metal cracked or brittle.
 - Did environment play a part, eg. test for presence of Nitric/Chloride acids.
- Design new hanging device
 - metal rods, what type of material, painted?

Broken Chain From Plate #10



Break point very clean. Crack found on surface

Corrosion is surface only, consistent with wet environment

Welds intact

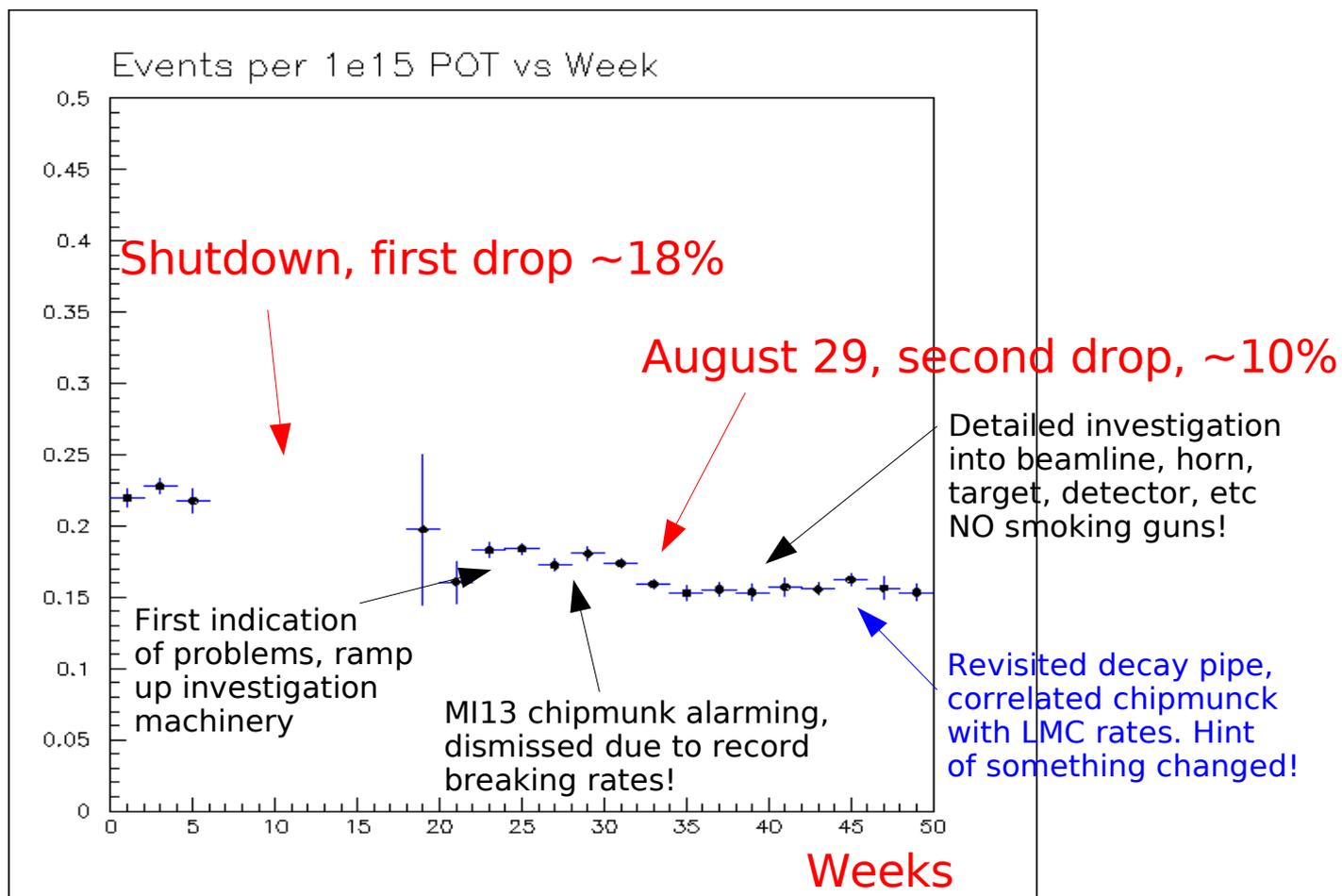
Chain working load 17T (25T blocks), tested to x2, break point at x4 working load

AntiNeutrino Data Analysis

- We know when/where/which blocks fell into place.
 - #10 (BLM) fell during March shutdown.
 - #7 fell August 29, 3:28 am.
- Enough information to write detailed Geant4 simulation.
 - Secondary interactions become important, similar modeling to target.
 - Data/MC comparisons of neutrino rates, energy, RS/WS ratios, and LMC data.

Data Quality Corrected Neutrinos/POT from Jan 18/06 to Jan 1/07

(Full absorber drops neutrino rates by ~40%)



Future Plans

- Work on repairs to put back 25m absorber in original condition.
- Work on simulation of 25m absorber with two plates deployed to understand data.
- MiniBooNE beamline will be down for 2 months
 - Have $1.5E20$ POT in antineutrino mode.
 - Come back up in March, run 2-3 months to get good sample of no absorber plate data.
- Continue running the detector to take NuMI beam data and be supernova live.