



Week in Review: 01/20/03 -01/26/03

Ron Moore – FNAL

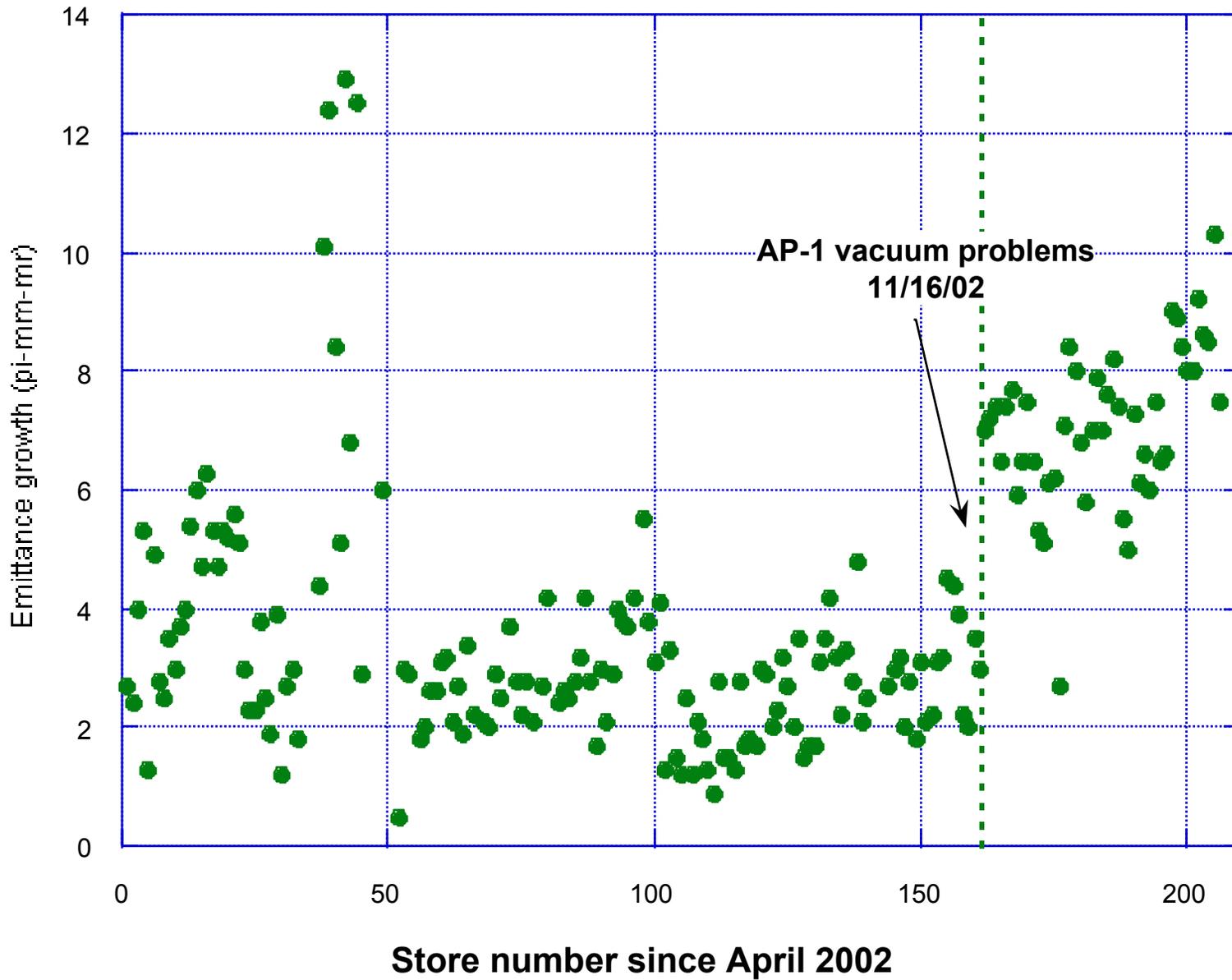
- Found obstacle in AP-1 line
- Replacing corroded Tevatron dipole stands



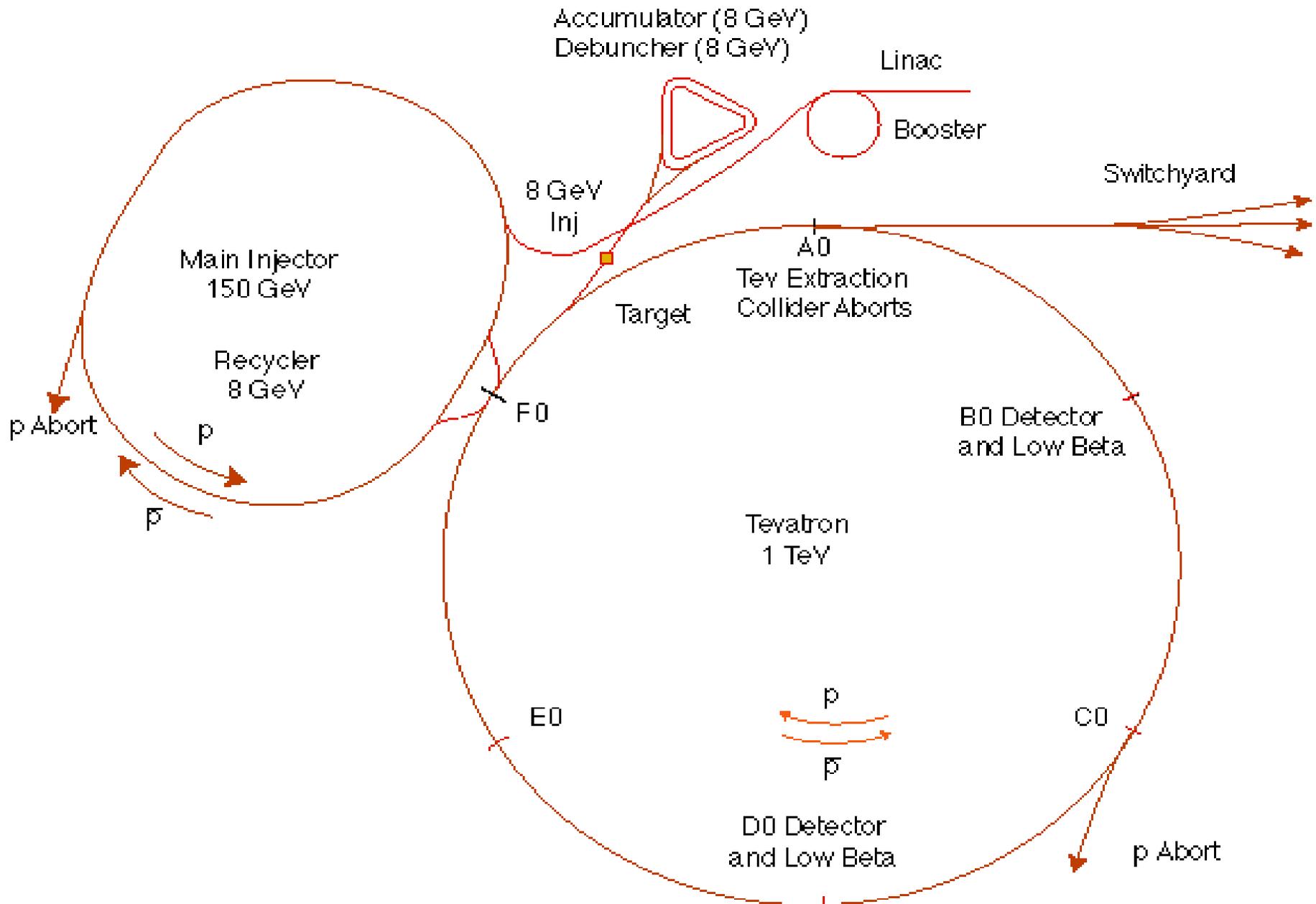
AP-1 Line Obstruction

- After 11/17 beam accident that caused vacuum leak at TOR105, saw higher than usual losses nearby and higher emittance growth of pbars in region during shots
 - Pbar emittances increased $7-8\pi$ (up from 3π) between Acc and MI
- Opened AP-1 at SEM grid 103 on 12/3 – nothing seen, but SEM wire dangling at edge of aperture
 - Wire removed, but problem was unresolved

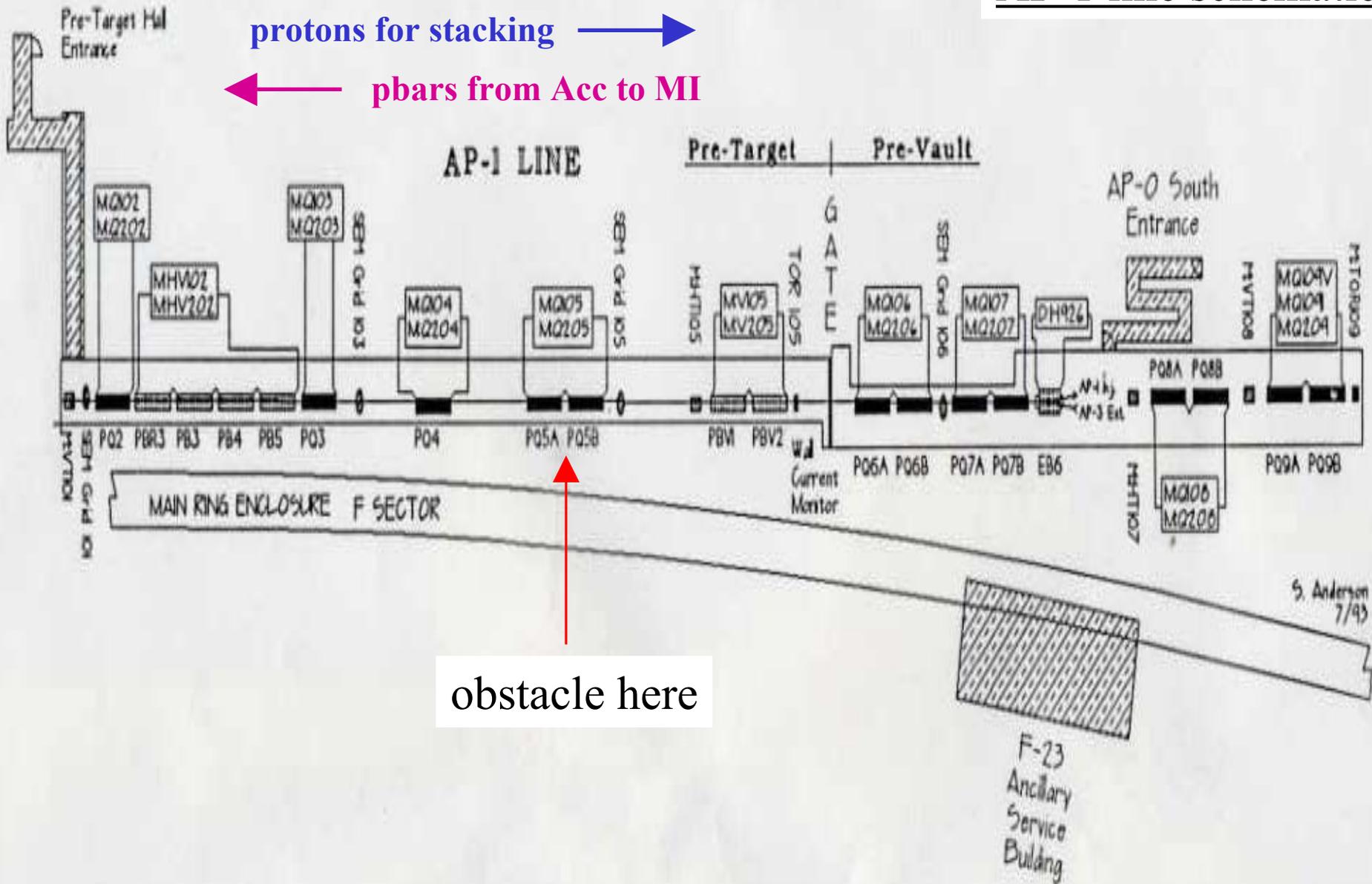
Pbar emittance growth between the Accumulator and M.I.

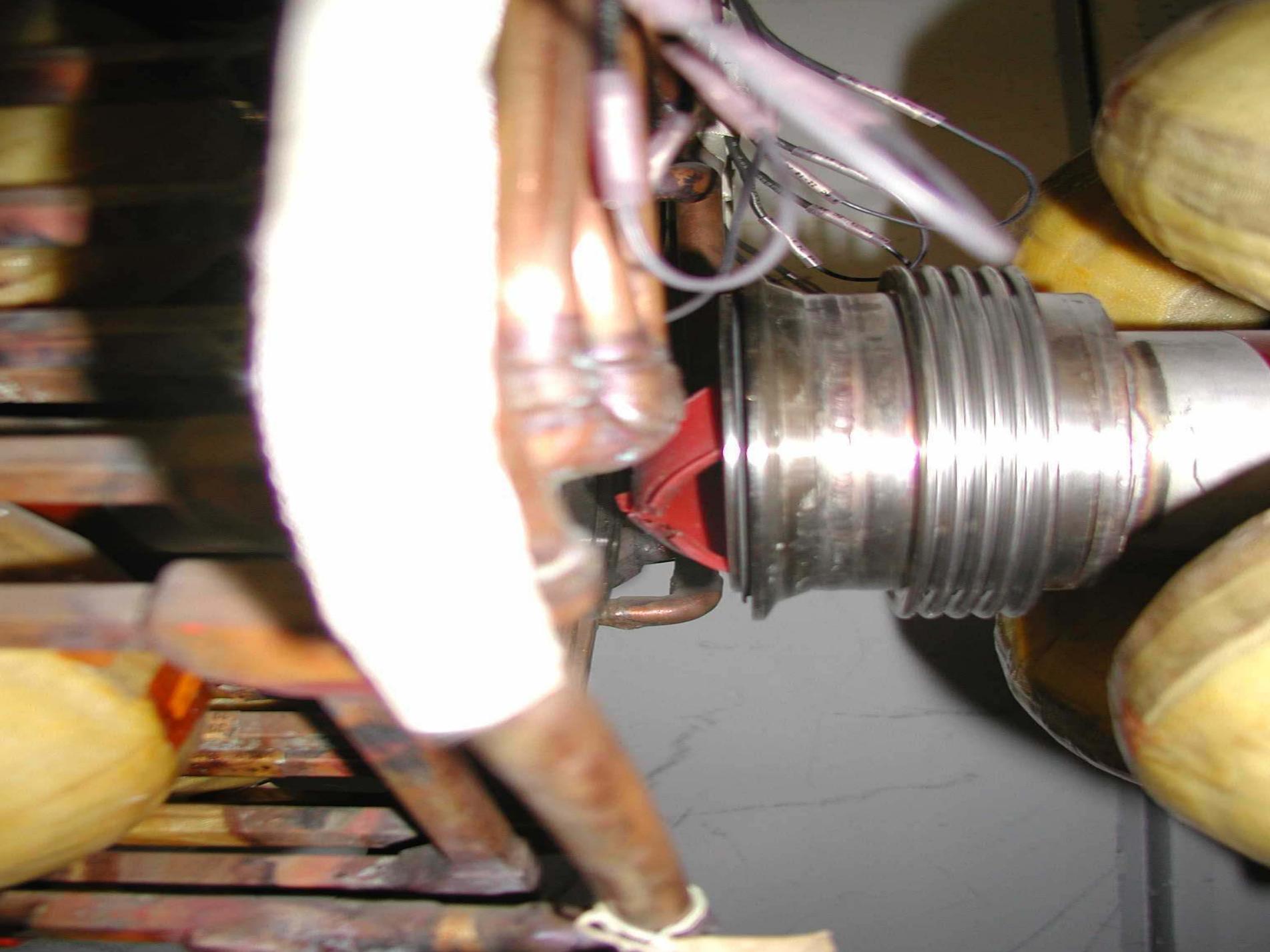


Fermilab Tevatron Accelerator With Main Injector



AP-1 line schematic





Plastic beampipe cap removed from AP-1 line on 1/21



Protons came out of page; pbars went into page



Plastic Cap in AP-1

- Thought to have been there many years...
 - Hard to notice once hole was formed
- Red cap moved during vacuum incident in Nov.
 - Beam no longer through hole \Rightarrow problem appears
- After removal, expect reduced pbar emittance growth between Accumulator and Main Injector
 - Perhaps slightly smaller pbar emittances in Tev, too
 - No earth-shattering improvements expected



Tevatron Magnet Stand Replacements

- Replacing stands for dipoles A16-3, A21-2, A21-3, A21-4
 - Stands appear very corroded – [safety issue](#)
- “Quick and dirty” mechanical measurements indicate significant dipole rolls; to be confirmed with optical survey
 - These rolls make the dipole correctors run harder, but not a big problem currently
 - At least one quad (not low- β) rolled significantly?
- Will just replace stands now; fix alignment later
- Catalog all magnet stands, roll measurements now
 - address stand replacement, alignment later

Tev A16-3 Dipole Photos



courtesy Ray Stefanski

Tev A16-3 Upstream Stand



courtesy Todd Johnson



Summary

- Found and removed red plastic pipe cap in AP-1
 - Been there for a long time
 - Source of proton losses during stacking, pbar emittance growth during shots

- Replacing stands of 4 Tevatron dipoles
 - Stands very corroded, posed a safety hazard
 - Catalog all other magnet stands for future work