

MI BPM Installation Requirements

Requirements to install the new BPM system at MI40 (House 44)

- Closed orbit Measurements (State 0)
 - Measure: 53 Mhz protons, 20+ bunches, 1E10/bunch to 8E10/bunch
 - Display Frame
 - Profile frame
 - FTP
 - BPM Display and Smoothing programs (I39, I50) must be able to receive data from the new system.
 - System must be operational
 - MCR crew chief must be informed and agree to changes before they are made to the system.
 - Support departments must respond to failures.

Requirements to install the new BPM system at a second house

- The new MI40 BPM system must be functionally equivalent to the current BPM system
 - All Closed orbit measurements
 - Injection flash measurements
 - Extraction flash measurements
 - Averaged orbit
 - TBT measurements
 - Needs to support acquisition specifications for all states
 - Application software must be demonstrated to function correctly.
 - At least I39, I42, I50, I52, I75

Installation of BPMs

- The MI department is not currently comfortable installing BPM systems without stable beam present in the MI.
- There are many shutdown activities that make the need for BPM data a must on startup.
 - MI8 line modifications
 - 8 GeV line collimators
 - 7 large aperture quads
 - Lambertson magnet alignments
 - Orbit smoothing
- The department feels that there is a risk of large delays to the startup by installing these BPMs during the shutdown that is not present if we wait.

Questions about installing the new BPM system during the shutdown

- What is the cost to the BPM project if we wait to install the system after startup?
- If the system was installed during the shutdown, what procedures would insure the system would function at startup?
 - Timing
 - House delays
 - Need to be set correctly without beam
 - Channel delays
 - Detectors
 - Correct polarity
 - Scaling
 - Offsets
 - Need to be checked without beam
 - Possibly need aperture scans before and after installation
- Can these procedures be tested on a house before the shutdown?