0.1 Beam Checkout with Superharps and Beam Position Monitors

- Experts: Mark Jones,Deb Biswas, Thir Guatam
- Expected time: 3 hours
- Initial measurement of beam spot size. Followed by calibration of girder BPMs
- Conditions:

beam current:	5 A
fast raster:	off
target:	none

- Ask MCC to do superharp scan with superharps IHA3H07A and IHA3H07B and put entry in ELOG. Record the 3 BPMs positions (3H07A,3H07B,3H07C) during scan.
  - Want beam spot with sigma_x and sigma_y below 200 um (beam pass 1-4) and below 300 um for beam pass 5.
    - If beam spot size is too large contact Run Coordinator to decide how to proceed.
    - If good beam spot size, then this will be first point in beam alignment
  - Determine the BPM offset from measure harp position
  - Are X (Y) from IHA3H07A and IHA3H07B at zero within 300 um?
    - If not ask MCC to center using the BPMs as relative guide.
- Calibrate Girder BPMs to the girder harps at 5uA
  - Ask MCC to put beam at x=0,y=0 on BPMA take superharps at both BPMs and record the three BPM's, both from MEDM/TCL and from the data stream after short runs. Repeat for the following beam positions
  - Ask MCC to to put beam at x=0,y=1 on BPMA
  - Ask MCC to to put beam at x=0,y=-1 on BPMA
  - Ask MCC to to put beam at x=1,y=0 on BPMA
  - Ask MCC to to put beam at x=-1,y=0 on BPMA
  - Ask MCC to to put beam at x=-2,y=2 on BPMA
  - Ask MCC to to put beam at x=-2,y=-2 on BPMA
  - Ask MCC to to put beam at x=2,y=-2 on BPMA
  - Ask MCC to to put beam at x=2,y=+2 on BPMA

- Calibrate Girder BPMs to the girder harps at 30uA , by repeating procedure taking BPM data at 30uA, harp at 5uA.
- Calibrate Girder BPMs to the girder harps at 60uA, by repeating procedure.
- Check raster size use harp at 5uA
  - Take harp scans with a fast raster with varying sizes: 2 by 2, 3 by 3, and 4 by 4 mm2.