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SLC Control Program

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SLAC's Software Engineering Newsletter
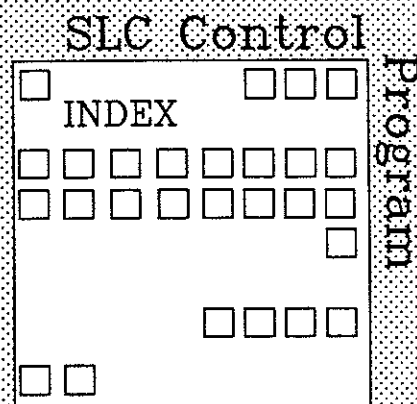
New e$^+$ System MPS Displays

August 23, 1990

Author: *Daniel Van Olst*   **Subsystem:** *e$^+$ System*   **User Impact:** *Moderate*
Panel Changes: *Several*   **Documents:** *No*   **Help File:** *No*

Ten new displays have been created to aid in determining the cause of an e$^+$ MPS trip. All these displays are located on the "E+ MPS PANEL". Once this panel is selected, The summary display is generated automatically and indicates which displays to go to for tracking down a fault. Each of the subsidiary displays has an associated panel for resetting any faults. Note that it may be necessary to press an interlock reset to force a display to reflect the mixing logic of its inputs.

These displays are similar to the existing Arc MPS displays. However, the ARC MPS system has only one output, while the e$^+$ MPS system has four (LI19 TIU, LI20 TIU, RATE LIMIT, and HLAM/KICKER permit.) Please Cater all problems, or contact Dan Van Olst directly.

Wire and Beam Scan Software

August 22, 1990

Author: *Linda Hendrickson*   **Subsystem:** *Accelerator*   **User Impact:** *Small*
Panel Changes: *None*   **Documents:** *No*   **Help File:** *No*

Several minor modifications have been recently made to the wire and beam scan software.

1. Wire and beam scans are no longer allowed when the machine is rate-limited to 1 pps. This change was required due to BPM problems at this low beam rate.

2. Negative scan step sizes are now allowed for wire and beam scans. This allows users to request scans in both directions.

3. When the machine is running at 120 pps, wires sometimes cannot scan at a fast enough speed. The wire scan software has been modified so that, when the desired wire speed is at least 10 percent more than the maximum allowed, the software will scan only on time slot 1 at an effective beam rate of 60 pps.

4. The auto beam collide software has been modified to calculate luminosity and Z's per hour using the actual beam rate, including 10 pps rate limiting. Previous software used the nominal beam rate, resulting in calculated luminosity which was higher than the actual value. In addition, the normalized Z's per hour calculation now normalizes its calculation to a beam intensity of 10^{10} particles and to 120 pps so that this number is independent of the current beam rate.

BPM Time Slot and Bunch Delay Changes

August 22, 1990

Author: *Linda Hendrickson*   **Subsystem:** *BPMs*   **User Impact:** *Small*
Panel Changes: *None*   **Documents:** *No*   **Help File:** *No*

BPM software has been modified to allow users to modify bunch delay or time slot values for a BPM measurement definition without requiring a private calibration. These parameters may be entered on the BPM calibration panel for the current measurement definition. This feature is "sticky," and once the user has entered bunch delay or time slot for a measurement definition, any measurements or calibrations which are performed using this definition will use them regardless of any associated public calibration parameters.

Changes to ACCESS

August 21, 1990

Author: *Ken Underwood*   **Subsystem:** *All Areas*   **User Impact:** *None*
Panel Changes: *None*   **Documents:** *None*   **Help File:** *None*

The ACCESS program has been modified to log a message in the error log for each command. Included in the message is the process name, typically BATCH_nnn, the parent SCP id, and the text of the ACCESS command. Blank and comment lines are excluded. This additional information will facilitate tracking of ACCESS activities.

Fast Energy Feedback at 120 Hz

August 22, 1990

Author: *Nan Phinney*   **Subsystem:** *Linac*   **User Impact:** *Small*
Panel Changes: *None*   **Documents:** *No*   **Help File:** *None*

The Fast Feedback which stabilizes the energy of the beams at the end of the Linac has been limited to a maximum update rate of 60 hz. If the steering loops in the same micro, FB31, are turned off, the energy loop can update at a rate of 120 hz. Software mods now allow these loops to be turned off while the energy loop is active. They have only been used for monitoring since the steering control was moved upstream of the LI29 and LI30 collimators and will now remain off during normal operation.

Changes to Injection

August 23, 1990

Author: *Michael Glaviano*   **Subsystem:** *SCP*   **User Impact:** *Some*
Panel Changes: *None*   **Documents:** *None*   **Help File:** *None*

There are two small changes in the behavior of the Injection software. The first is that if direction of ENERGY FIT is not specified as x in the Injection Configuration, then the direction defaults to NONE. This will also be reflected on the panel. The second change is that Injection will no longer save a Gold Orbit if the *Reference* BPM is offline. If the RENEW GOLD button is pressed under these circumstances, then Injection will issue some messages and refuse to save the Gold Orbit.