Fermilab

October 11, 1995

To: MAD

From: Dave Capista

Subject: MECAR operation during the 6/95 study period

The MECAR system was scheduled to be used 36 hours during the study period. In practice the system was used a bit more since there is increasing pressure to switch completely over to MECAR. During this period of MECAR operation there were power supply studies, tune calibration, general tune-up with this system, and identification and some repair of bugs found in both the applications program and the MECAR operating system.

The tune calibration went fairly smooth and resulted in a calibration table that approximates the tune to within .02. It would be nice to calibrate this table a bit better during startup but routine changes to this table will cause operational confusion.

A general tune-up with MECAR was performed. This tuning had some confusion associated with it due to the variety of studies that were in progress. At several times the Main Ring was switched back to Dec B/C because of the uncertainty of the MECAR system. I suspect that this type of confusion will continue if we switch to the MECAR system during startup since there will be other problems and we do not have very much operating experience with MECAR. Even with the confusion of the study period, operators managed to obtain about 2.8 E12 ppp on the \$29 cycles, which I feel is fairly good for the amount of time given to work on intensity.

There were several problems identified with the MECAR applications software and the MECAR operating system. The MECAR operating system returned an out of memory error, which required a reboot to clear. I think we also need to discuss with the MECAR

people how we are going to handle the DC mode, since this is currently using the \$2D ramp in a confusing manner to give 8 GEV. The applications software had several problems. Some of the problems can be fixed by changing the arrangement of the page to make things more obvious and less confusing. There were also several bugs discovered, one of which prevented us from loading the tune on the \$2B ramp. A problem with tune ramp closure occurred which caused power supply aborts and prevented us from learning in a ramp. These problems need to be addressed before startup if we want this system to be reliable. On the positive side, the MECAR operating system and applications software seems to be usable. Given the amount of training operators have been given of the new system (none) they were able to figure how to get through most problems.