# S L A C   M E M O R A N D U M

TO:             ANITA (T-486), PEP-II OPS, EOICs              DATE: 12-Jun-2006

FROM:           Rick Iverson

SUBJECT:        Linac/ESA electron beam startup checklist for ANITA (T-486)

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Schedule: ANITA (T-486) to run in ESA from Jun 12-26, 2006

Purpose: Measure the Askaryan effect in ice.  Calibration of the entire ANITA balloon flight antenna array, using a simulation of high energy neutrino showers in Antarctic ice.

_____1) Establish Electrons to CA11 PR-55 at 28.5GeV.
BEAM: 28.5GeV, 2E+07 to 2E+09 electrons/bunch, 1-10pps
LI28 emits       = "8 by 0.8"   That is $X < 8.0e-5mr$, $Y < 0.8e-5mr$.
Energy spread    = 0.2% (minimum).
AMPL,DR13,13 = 40Mev (short bunch)
LI02-6 Phase     = -20deg, LI11-21 Phase= -16deg (short bunch) [LI09,10,17,18=0.0deg]

_____2) These are the configs to start with. After the first shift,
configs will be saved that are more current.

BSY-ESA Magnet       config NOR #455 26-Apr-06 "T474, T480 after y beta match"
SLC CIDESA BPM       config NOR #134 26-Apr-06 "T474, T480 after y beta match"
COLLLI30             config NOR #286 26-Apr-06 "T474, T480 after y beta match"

_____3) Verify that the BAS is signed off and the Beam containment items in the BAS are active.

_____4) Check that the ESA BCS and MPS are made up.

_____5) When the experimenters are ready for beam,
-Go to no access, pull the vacuum valves etc.
-Set the beam rate to 1hz.
-Verify that the LI29 feedback is on and working.
-Bring the beam past D-10.
*Note:It is not necessary to degauss 50-B1.  Just do "LGPS OFF" and set the
launch with CA11,XCOR,36 and YCOR 37.

-Touch up steering and energy until the bpms match the reference orbit
listed above.
-Sector 30 PLIC level should be 50 to 100mV.  The beam
emittance may need tuning if the PLIC is too high.
-Ask the experimenters if you want to go to 10Hz.
-Call the ANITA (T-486) experimenters in the ESA counting house (x2811) and let them know
that the beam is ready.  Since the signature of the Askaryan effect in ice is adversely affected by
backgrounds generated by beam tails, there is a premium on minimizing the tails.  This can be
accomplished by tuning the LI06 and LI12 feedback set points to minimize the LI28 emittance.