6-18-97 VTC Report from L1 Trigger
by Fred Wohn, for the L1 Group

(1) We have examined the impact of a 10% cut in L1 funds "remaining to be spent." Since the FY97 Statement of Work between BNL and the Ames Lab is fixed, we interpret this to mean the funds in FY98 and beyond. According to the L1 cost presented at the May 1997 TAC Review, the L1 CTC was $1334K (total of the 4 cost categories: BL, US-J, AEE and Riken). A "10% CTC savings" would thus be $133K. By further wbs scrubbing and simplification of the BBC algorithm, we can reduce the L1 CTC by $101K ($26K of final scrubbing and $75K less for the BBC). A $101K reduction should have no impact on the L1 subsystem.

We estimate a reduction of the CTC for the BBC L1 from \$142K to \$67K by returning to a much simpler algorithm (such as the "first hit" algorithm first proposed for the CDR) rather than a "time bin with the most counts" algorithm. [\$75K savings is an estimate; we will recost it in wbs detail when PM says use the simpler scheme.] We feel that this is reasonable since the fraction of the triggers with a first-hit algorithm that are due to beam-gas hits is too small to be a concern, based on a simulation study done recently by the Hiroshima BBC group, who had earlier asked us to change our first-hit scheme to a "time bin with the most counts" scheme. The proposal is now being studied by the Hiroshima group (see e-mail of 6-18-97 from Toru Sugitate).

(2) Iowa State institutional contribution by physicists to the L1 construction work falls into two general areas:

- **Transfer of "Prototype System Tests" from engineers to physicists. There is no additional savings however since we already did this before the last TAC Review. (The already- eliminated cost was $35K, corresponding to 14 weeks of engineering hours done by physicists.)**
- **Transfer of nearly all "Installation and Testing at RHIC" from engineers to physicists. This had been done months ago during our wbs bottoms-up, with associated hours and travel costs to BNL taken out of the wbs. (This already-eliminated cost savings was $55K.)**