AGS2000 Startup:

E949 Sensitivity with Westinghouse MG set

Conditions	AGS PS	E_p GeV	Flux Tp	$\sigma_K{}^*$ %	$\|P_K\|$ MeV/c	spill/cyc. sec/sec	DF %	Min. Sens. 10^6/hr	New anal. 10^6/hr
Proposal	Siemans	24	65	100	730	4.1/6.4	64	8.5 (100%)	12.4(146%)
Plan A	Westing.	24	30	100	610	1.0/5.4	19	2.9 (34%)	4.6 (54%)
"Plan B"	Westing.	18	65	100	650	2.2/4.9	45	7.1 (84%)	11.2(130%)
			65	70	690	2.2/4.9	45	6.5 (76%)	9.6(112%)
Plan C	**Westing.**	**18**	**65**	100	**670**	**2.8/5.4**	**52**	**7.7 (91%)**	**11.7(137%)**
			65	70	**710**	**2.8/5.4**	**52**	**6.9 (81%)**	**9.7(113%)**
Plan D	Westing.	15	65	100	730	4.0/6.4	63	8.4 (98%)	12.2 (143%)
			65	70	745	3.2/5.6	57	7.2 (85%)	10.2 (120%)
			65	55	755	2.7/5.1	53	6.5 (76%)	8.9 (104%)

Notes:

1. 24 GeV operation with the Westinghouse is not optimum due to the low duty factor.
2. Plan C which uses the latest available information from Jon Sanberg appears to be the best choice.
3. $*$ Sensitivity is calculated with several different values for kaon production to reflect the uncertainties in actual K production (see below).
4. Phil thinks that the new target will allow operations at up to 30 Tp/sec. (All cases studied are at or under this limit.)

It is expected that E949 can reach (or exceed) the nominal rate of data collection specified in the proposal using the Westinghouse motor generator. Even though there is some uncertainty in the cross sections for K production and primary beam losses due to increased emittance at lower proton momentum, E949 will optimize the running conditions by adjusting the incident K momentum using a technique which has been confirmed in previous measurements.
Since there is a possibility that higher effective rates can be achieved at 15 GeV than at 18 GeV, measurements will be made to find the optimum.