Collider –Accelerator Department Machine Advisory Committee
2-4 November 2011 Meeting (MAC-08)

DRAFT Charge

In the last polarized proton run at 250 GeV the average store luminosity was increased from previously $55\times10^{30}cm^{-2}s^{-1}$ to now $90\times10^{30}cm^{-2}s^{-1}$, and the average polarization from 35% to 48%. Plans to increase the proton luminosity and polarization further will be presented. The two main upgrades are a new polarized source, and electron lenses to partially compensate the head-on beam-beam effect.

Also in the last run, the gold-gold average store luminosity increased from $20\times10^{26}cm^{-2}s^{-1}$ to $30\times10^{26}cm^{-2}s^{-1}$ in part due to improvements in the installed longitudinal and vertical stochastic cooling systems. Further upgrades include the commissioning of the Electron Beam Ion Source (EBIS), horizontal stochastic cooling systems, as well as a 56 MHz SRF system that provides more longitudinal focusing.

Please review, comment on, and offer recommendations as appropriate on the completeness of the planning for the upgrades, and whether the upgrades correctly address the luminosity and polarization limitation in RHIC.

It is requested that a concise report responsive to this charge be forwarded to the C-AD Chair Thomas Roser by 18 November 2011.