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Real Compton Scattering Measurement at Jefferson Lab AREG DANAGOULIAN, University of Illinois, E99-114 COLLABORATION, JEFFERSON LAB HALL A COLLABORATION — An experiment has been carried out to measure the cross sections for Real Compton Scattering (RCS) on the proton for 3-6 GeV electron beam energies and a wide distribution of scattering angles. In addition, a measurement of longitudinal and transverse polarization transfers was made at a 3.48 GeV beam energy and a scattering angle of $\theta_{cm} = 120^o$. These measurements were done to test the existing theoretical mechanisms for this process and will possibly lead to the determination of RCS form factors which are related to the Generalized Parton Distributions (GPD). The experiment was conducted in Hall A of Thomas Jefferson National Accelerator Facility(Jefferson Lab). It used a polarized and unpolarized electron beam, a 6% copper radiator (to produce a bremsstrahlung photon beam), the Hall A liquid hydrogen target, a high resolution spectrometer with a focal plane polarimeter, and a photon hodoscope calorimeter built by the RCS collaboration. Results of the cross sections and polarization transfer measurements will be presented.

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