A high efficiency neutron/proton detector for high-$Q^2$ form factor measurements

BRIAN QUINN, GREGG FRANKLIN, VAHE MAMYAN, Carnegie Mellon Univ., THE SBS COLLABORATION — A hadron calorimeter for use with the Super Bigbite Spectrometer in Hall A at Jefferson Lab is in the final stages of design and simulation. It is a *shashlik* calorimeter with iron and scintillator layers with wavelength shifter readout. It has been designed to give excellent spatial and timing resolution. Its stable high efficiency for both neutrons and protons will make it a valuable tool for high-$Q^2$ nucleon-coincidence measurements of nucleon form factors. The design will be presented along with results of detailed simulation.

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