The inclusive spectra of charged particles p, d, t, ³He, and ⁴He, and those in coincidence with alpha particles in reactions induced by 200 MeV alpha particles with ⁵⁸Ni targets have been measured. The charged particles were detected using two six-element detector telescopes. The first (second) of the telescopes consists of a 53µ (15µ) and a 1000µ (500µ) silicon surface barrier detectors plus four intrinsic germanium detectors of 10-15 mm thickness each. Measurements were made with one of the telescopes fixed at the laboratory angle of 12.5° on one side of the beam and the other telescope placed at 14.5°, 23°, 35° and 55° on the other side. The reduction of the data is in progress.

These measurements were motivated to obtain data to compare with similar results obtained in proton induced reactions.¹-⁴ Qualitatively the characteristics of the inclusive charged particle spectra produced with the two probes are similar. Some features of the (p,2p) results can be understood (see a contribution by G. Ciangaru et al in this report) in a picture which assumes that after the incident proton has initiated a (p,p₁p₂) reaction with a target proton, the energy spectra of protons in coincidence with a high energy forward going proton (p₁) corresponds to that produced by the other proton (p₂) inelastically scattered from the nucleus as it propagates through it. If this picture is valid then one should see similar proton spectra in coincidence with alpha particles in reaction of (a,αp) type.

³) G. Ciangaru et al., submitted for publication; also see this report, p. 143.