The results of the calculation are compared with the experimental data in Fig. 4. The agreement is extremely good over the entire lead thickness range for the two energies shown.

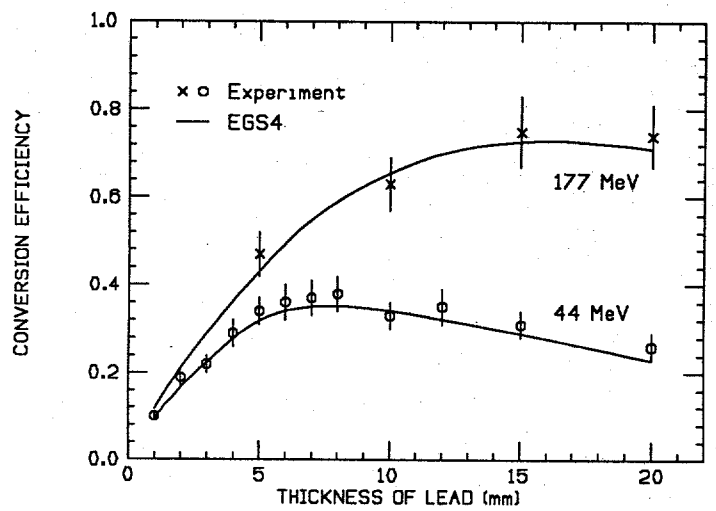

Figure 4. Absolute comparison of EGS4 simulation with a conversion efficiency experiment by Darriulat *et al*[6].

In the text describing the experimental results, Darriulat *et al* point out that the energy distribution in the scintillator showed characteristic peaks corresponding to one, two, or three secondary electrons that are produced in the lead and lose energy as they pass through the scintillator. To check out this observation with EGS4, the total energy deposition in the scintillator per incident photon was histogrammed for a photon energy of 177 MeV. Typical results are shown in Fig. 5. Two of the three electron peaks are indeed prominent and, based on a stopping power of ~ 2 MeV-cm^2/g, at least three peaks are located where one would expect them to be.

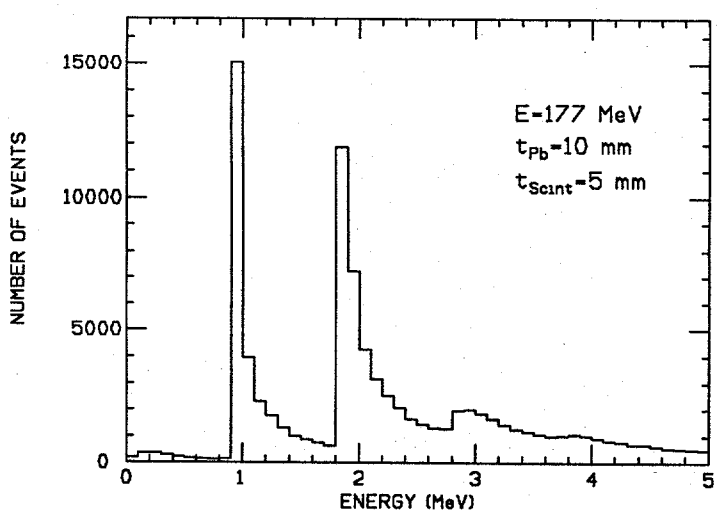

Figure 5. Energy distribution in the scintillator (EGS4 calculation).