

Total skin electron therapy (TSET) is a well established procedure in the treatment of T-cell lymphoma. In this modality, the entire skin is treated uniformly to a specific depth. Dosimetric objectives of a TSET program include large fields with a uniform dose distribution at the treatment surface and a minimal x-ray contamination. A six dual field technique is commissioned and implemented in our institution to treat Mycosis Fungoides patients with two different beam energies. Dose uniformity and percent depth dose distributions were measured using a 3.2 mm thick and a 6.0 mm thick acrylic degraders in the path of the nominal 6MeV high dose rate total skin electron beam from a Varian Clinac 2100 in a single, dual, and six dual beam arrangements. The use of such scatterers/degraders in the path of the dual total skin electron beams resulted in two clinically usable penetrating beams. The composite percent depth dose of all six dual fields for the 3.2 mm thick and 6.0 mm thick degraders yielded an 80% dose at ~7 mm and at ~4 mm depth, respectively. A very good dose uniformity was achieved in an anthropomorphic phantom with both beams in a six dual field arrangement, checked with TLD measurements and film dosimetry. The treatment of patients using either of the two penetrating beams gave a very good response to the disease treated.