Linear accelerators are typically monitored and treatments terminated using an internal ionization chamber and integrator preset to a given number of monitor units (MU). When all the programmed MU are delivered, a stop pulse is generated; however, this is not instantaneously effective. The time needed to deactivate relays and for the large magnetic fields to collapse is measurable, predictable, and of clinical interest. As we move to conformal therapy with multileaf collimators to deliver many small dose segments, the monitor end effect can reach proportions that should not be ignored. We have made measurements on linear accelerators with a pulse scaler counting fractional monitor unit pulses generated by the dose integrator. The data shows that extra integrator pulses exist after the delivery of the last MU, and the excess is a constant that varies with the dose rate. When delivering segmented treatment, with a higher number of segments, there will be a greater proportional accumulation of extra integrator pulses. This linear accelerator monitor end effect may have significant dosimetric consequences for patient treatment. When treating with 200 MU/min dose rate, about 0.25 MU has been found to be the excess dose after the programmed MU have been delivered. It was also found that the extra dose in MU for multi-segment treatment is very close to the number of the segments multiplied by 1/4. Therefore the excess dose can become significant when treating with large number of segmented fields. A simple instrumentation modification is proposed to circumvent this problem.