



Figure 5.6 Oscilloscope traces illustrating the dependence of the quasi-steady driven plasma currents on the line generator charging voltage. (i) Line generator current waveforms for the indicated line charging voltages. The current in Phase 1 is the larger of the two superposed RF currents in each of (a) - (e). The timescale is  $5\mu\text{s}/\text{div}$ . and the vertical scale is  $667\text{Amps}/\text{div}$ . (ii) Rogowski belt measurements of the driven toroidal current. The vertical scale in each of (a) - (e) is  $460\text{Amps}/\text{div}$ . (iii) Calibrated Hall probe measurements of the change in the steady toroidal magnetic field on the minor axis,  $\Delta B_{\text{tor}}(R_0, 0)$ , produced by the quasi-steady driven poloidal current. The vertical scale is  $47\text{G}/\text{div}$ . The timescale in each of (ii) and (iii) is  $10\mu\text{s}/\text{div}$ . The experiments were performed in Argon at a pressure of  $1\text{ mTorr}$ . A steady toroidal magnetic field of  $128\text{G}$  and a DC vertical magnetic field of  $8\text{G}$  (each measured at  $r=R_0$ ) were applied.