Initial transcription and abortive initiation involves the repetitive synthesis and release of short RNA strands before promoter escape. This process has been shown by single-molecule FRET that it occurs through a DNA-scrunching mechanism by RNA polymerase. Abortive initiation by a multi-subunit RNAP have previously been studied using total-internal-reflection fluorescence (TIRF) microscopy on surface-immobilized transcription complexes (Margeat et al., Biophys J, 2006, 90, 1419-31). However, the low time resolution used (400 ms per frame) did not allow observations of conformational changes of the RNAP-DNA complex occurring during initial transcription. Here, we developed a FRET assay that reports on the expansion and compaction of the transcription bubble during RNA synthesis. Using an improved temporal resolution of TIRF, we are able to study the kinetics of abortive initiation. For the first time, we directly observed DNA-scrunching in the synthesis of RNA; and DNA-unscrunching in RNA release and backward translocation, which returns RNAP to the state of open complex.