Performance of the White Circuits of the BESSY II Synchrotron, K. BÜRKMANN, G. SCHINDHELM, T. SCHNEEGANS, BESSY - The power supply system of the BESSY II booster synchrotron drives three independent 10 Hz White Circuits. A new concept for the 10 Hz AC converters, based on four-quadrant IGBT current sources is realized. The main features of the performance as stability in amplitude (±10 ppm) and phase (±150 ns), higher harmonic content (-75 db) and reliability are reported.