

Stabilising the Voltage of the DC Accelerating Column of the ISIS Pre-injector Using a Beam Current Controlled 'Bouncer', M. PERKINS, V.C. CLOKE, ISIS, Rutherford Appleton Laboratory, U.K. - To prevent the EHT supply tripping on overcurrent after an electrical discharge in the accelerating column and thus allow rapid recovery of the accelerating potential, the limiting resistor value has been increased. This resistor which connects the reservoir capacitor to the high voltage platform has been changed from 10 k Ω to 1 M Ω . The now excessive sag on the accelerating voltage, resulting from beam loading is compensated by 'bouncing' the voltage at the base of the reservoir capacitor. The Bouncer, operating in an extremely electrically hostile environment is fully remote controlled with automatic control of the Bouncer pulse provided by feedback from a beam current toroid. The paper describes the design of the system and covers such factors as reliability, electrical safety interlocking and oil cooling as well as satisfying the required performance specifications.