A TRV stress similar to that which occurs at a short-line fault may occur, due to the busbar connections on the supply side of the circuit breaker. This TRV stress is referred to as the Initial Transient Recovery Voltage, or ITRV. Due to the relatively short distances involved, the time to the first peak will be short, typically less than 1 μs. The surge impedance of the busbar in a station is lower than that observed for overhead lines.

Figure shows the origin (ITRV and the TRV for terminal fault (1), and for short-line fault (2)) of the various contributions to the total recovery voltage for terminal faults and short-line faults. At the source side of the circuit breaker the TRV is generated by the supply network, whereas the substation topology, mainly the busbars, generates the ITRV oscillation. For a short-line fault, the total recovery voltage comprises three components: the TRV (network), the ITRV (substation) and the line oscillation.