This paper analyses N-1 security in an interconnected ac/dc transmission system using power transfer distribution factors (PTDFs). In the case of a dc converter outage, the power needs to be redistributed among the remaining converter to maintain power balance and operation of the dc grid. The redistribution of power has a sudden effect on the power-flow in the interconnected ac system. This may cause overloading of lines and transformers resulting in disconnection of equipment, and as a consequence cascading failure. The PTDF is used as a method to analyze and avoid violating limits by in the dc voltage control design consider the power distribution for a converter outage. By proper design and utilizing the proposed method increases the N-1 security and the secure transfer limits. This article proposes a method which minimizes the 2-norm of the sum of the PTDFs with constraints of not violating any line or transformer limits. Simulations were performed in a model of the Nordic power system where a dc grid is placed on top. The simulation supports the method as a tool to consider transfer limits in the grid to avoid violate the same and increase the security after a converter outage.