SECTION - 11
SUBSTATIONS AND HIGH VOLTAGE INSTALLATION

11.1 MV NETWORK DESIGN REQUIREMENTS & GUIDELINES (11KV)

11.1.1 Ring Supply consisting of two feeders (two-feed ring) is mainly granted for power supply as normal feeding arrangement. Three-feed ring arrangement may be adopted for cases where all MV switchgears/ RMUs are installed in one location to ensure the specific supply reliability.

11.1.2 For reliable power supply; N-1 offline criterion is considered. Hence, in case of power failure in one of the feeders, the other feeder should be capable to meet whole demand for maximum 6 hours duration.

11.1.3 DEWA standard 11 kV cable sizes are 3/C 300mm2 Copper XLPE, 3/C 240mm2 Copper XLPE, and 3/C 240mm2 Aluminum XLPE.

11.1.4 The maximum sustained load of 11kV feeder is 175A/3MW (for 300mm2 Copper XLPE cables – summer rating).

11.1.5 The maximum sustained load of 11kV feeder is 160A/2.7MW (for 240mm2 Copper XLPE cables – summer rating).

11.1.6 For bulk loads such as furnaces or district cooling requiring direct HV supply (private equipment's), space for metering units at client's premises/substation shall be considered. Necessary documents, drawings and SLD shall be submitted for comments/approval at design stage.

11.1.7 Single unit load demand shall not exceed the maximum sustained current of MV cable/feeder, which is maximum 175A/3MW for 11kV feeder.

11.1.8 Parallel operation of DEWA's MV feeders are not allowed at any circumstances, and accordingly proper interlocking (Electrical & Mechanical) shall be provided where required.

11.1.9 Standby generators are not allowed to operate in parallel with DEWA's network. Therefore, proper interlocking shall be provided where it is required.

11.1.10 The client should maintain power factor between 0.95(lagging) and unity at point of connection with DEWA's MV Network

11.1.11 The client should comply with DEWA's limits of maximum allowable motors' starting currents and corresponding maximum electrical power ratings for the motors as follow: