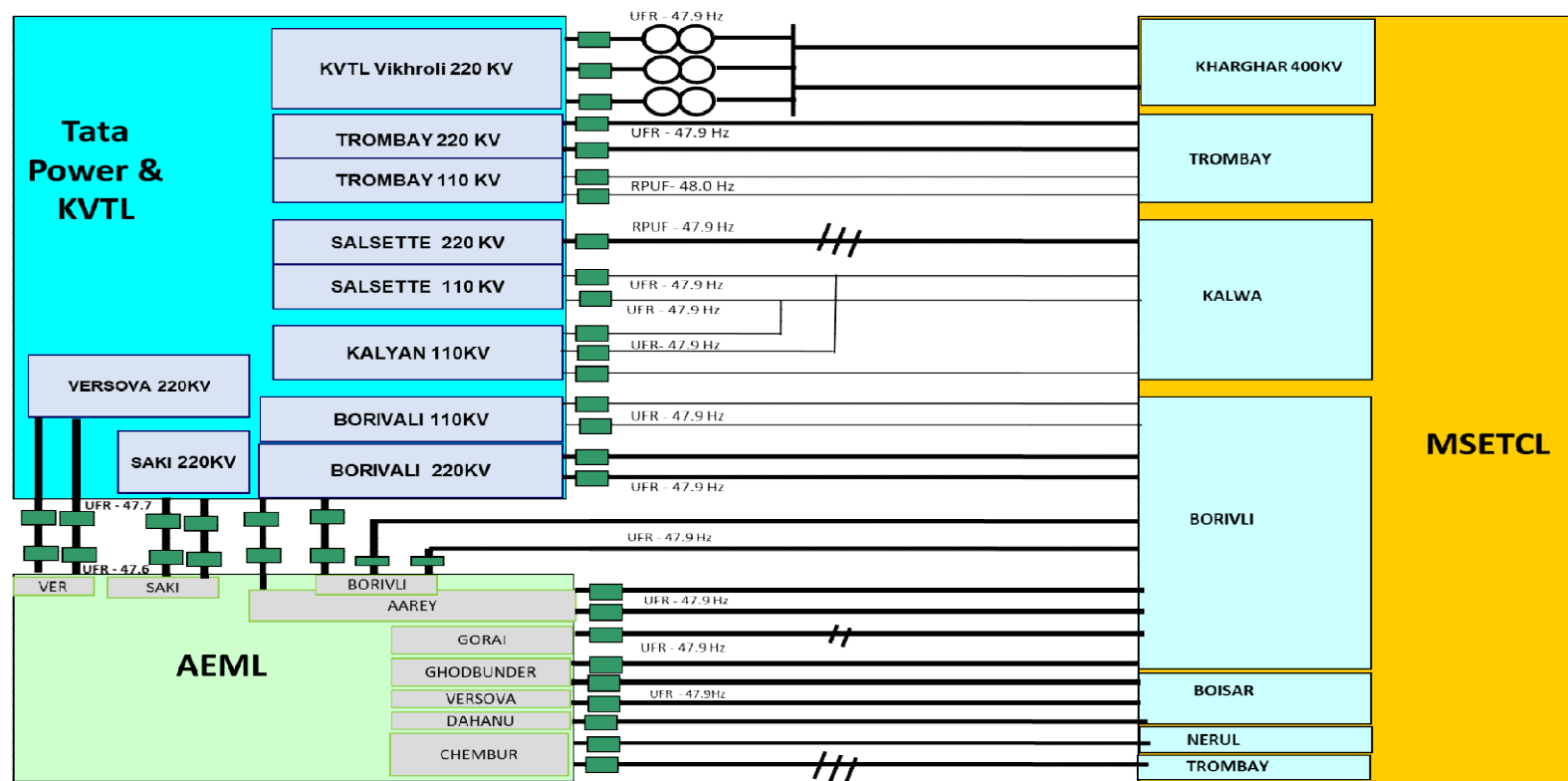


Mumbai Islanding System

Brief Description:

Maharashtra has an islanding scheme for Mumbai city known as Mumbai islanding scheme. In case of a disturbance in the Maharashtra system, the Mumbai system gets isolated from the rest of the grid by automatic tripping of tie lines at 47.9 Hz.

Major inter connections of the island



Summary of operation of Mumbai islanding scheme

Mumbai (TPC+Adani) system meets the load of Mumbai with generation of Tata Power (i.e. generation at Trombay, Bhira, Bhivpuri, Khopoli) & Adani (Dahanu Thermal Power Station) & by drawing power from MSETCL system. The peak demand of Mumbai met was about 4000 MW and the total installed capacity in Mumbai is 1877 MW (AEML: 500 MW, TPC Hydro: 447 MW and TPC Thermal: 930 MW). The Mumbai islanding scheme is a multi-level islanding scheme that operates under predefined abnormal system conditions.

1. At all EHV stations in AEML (Goregaon, Gorai, Ghodbandar, Dahanu, Versova, Borivali, Saki, Aarey & Chembur) automatic under frequency load shedding is at 48.4 Hz. ROCOF relays are set to operate at 49.0 Hz with 0.5 Hz/sec decline in frequency.
2. At all EHV stations in TPC automatic under frequency load shedding is at 48.4Hz to ensure load generation balance in Mumbai region after islanding from MSETCL. ROCOF relays are set to operate at all stations at 49.0 Hz with 0.5 Hz/sec decline in frequency in the TPC system to ensure successful islanding.
3. Load shedding quantum: All feeders at all the above-mentioned substations in AEML & TPC has been wired except super critical load around 500 MW. (TPC + AEML + BEST + Railways).
4. System isolates from the MSETCL system at all tie points at 47.9 Hz except at the following where it is 47.9 Hz + Reverse Power Flow (RPF) condition (from Mumbai to MSETCL).

Level - I: (TPC + AEML): 110 kV Trombay, 220 kV Salsette

Level - 2: TPC system separates from AEML at 47.7 Hz at all ties points at TPC end whereas plain 47.6 Hz frequency at AEML ends for all tie points with TPC.

After separation, the Mumbai sub-system continues to survive on its own generation & load.

Mumbai Islanding scheme healthiness is monitored continuously on RTC basis and monthly report is submitted to SLDC.

SCADA Visibility:

Load – Generation balance and load shedding quantum in real time is monitored through SCADA. The same is available to SLDC on real time.

Scheme up dation:

400KV KVTL Interconnection: KVTL tie point was taken in service on 30th January 2024 with Islanding setting of 47.9 Hz for tripping of ICT 220KV breakers.

Islanding scheme is reviewed yearly once during Islanding committee review meeting or in case of any change in the network.