

2.3 EXTERNAL POWER SUPPLY

OPTION 1 :-

2.3.1 The Demand Calculation is given in Annexure Attached.

2.3.2 The Total Connected Load is around 5006.08 KW and the Expected Maximum Demand is 2726 @ 50% Overall Diversity for Residential & 75% for Commercial. considering 0.9 power factor and 80% all day efficiency of the transformer the demand load is 3786 KVA

2.3.3 Three Nos of Dry type Transformers of 1250 KVA capacity with 11KV as primary voltage and 433V as secondary voltage, with Off-load Tap Changer have been considered, to be housed at Basement level.

2.3.4 The space allocation for Tower wise substation is been identified, which will house the back up DG sets as well.

ESS to have the following :

HT Supply from the Metering cubical shall be Terminated in a 1 Panel (single panel board) 11 KV , 800A ,350 MVA VCB HT Board near the Meter room for local **Isolation**. The supply from **HT Isolator** shall be brought to the 11KV , 800A, 350MVA VCB HT 4 Panel Board in the Substation(i.e 1 no I/C & 3 no O/G) Which Supply to Three Nos 11/433V Step down Transformer.

OPTION 2 :-

Proposed Separate Transformer for Each Towers & Common Services and Energies throu RMU

FOR TOWER T1 & T4

The Demand Calculation is given in Annexure Attached.

The Total Connected Load is around 951.63 KW and the Expected Maximum Demand is 477.78 @ 50% Overall Diversity for Residential & 75% for Commercial. considering 0.9 power factor and 80% all day efficiency of the transformer the demand load is 663.58KVA

One Nos of Dry type Transformers of 750 KVA capacity with 11KV as primary voltage and 433V as secondary voltage, with Off-load Tap Changer have been considered, to be housed at Basement level.

FOR TOWER T2 & T3

The Demand Calculation is given in Annexure Attached.

The Total Connected Load is around 951.46 KW and the Expected Maximum Demand is 477.69 @ 50% Overall Diversity for Residential & 75% for Commercial. considering 0.9 power factor and 80% all day efficiency of the transformer the demand load is 663.46KVA

One Nos of Dry type Transformers of 750 KVA capacity with 11KV as primary voltage and 433V as secondary voltage, with Off-load Tap Changer have been considered, to be housed at Basement level.

FOR TOWER T5

The Demand Calculation is given in Annexure Attached.

The Total Connected Load is around 745.78 KW and the Expected Maximum Demand is 373.89 @ 50% Overall Diversity for Residential & 75% for Commercial. considering 0.9 power factor and 80% all day efficiency of the transformer the demand load is 519.29 KVA

One Nos of Dry type Transformers of 630 KVA capacity with 11KV as primary voltage and 433V as secondary voltage, with Off-load Tap Changer have been considered, to be housed at Basement level.

FOR TOWER T6 & T7

The Demand Calculation is given in Annexure Attached.

The Total Connected Load is around 1491.56 KW and the Expected Maximum Demand is 747.78 @ 50% Overall Diversity for Residential & 75% for Commercial. considering 0.9 power factor and 80% all day efficiency of the transformer the demand load is 1038.59 KVA

One Nos of Dry type Transformers of 1000 KVA capacity with 11KV as primary voltage and 433V as secondary voltage, with Off-load Tap Changer have been considered, to be housed at Basement level.

FOR COMMON SERVICES

The Demand Calculation is given in Annexure Attached.

The Total Connected Load is around 865.66 KW and the Expected Maximum Demand is 649.25 @ 50% Overall Diversity for Residential & 75% for Commercial. considering 0.9 power factor and 80% all day efficiency of the transformer the demand load is 901.73 KVA

One Nos of Dry type Transformers of 1000 KVA capacity with 11KV as primary voltage and 433V as secondary voltage, with Off-load Tap Changer have been considered, to be housed at Basement level.

2.3.4 The electrical distribution (HT) scheme assuming 11kV single from Main receiving station (MRS)

a) Power supply at 11KV on a VCB

b) Fault level on 11KV Bus is assumed as 350MVA.

c) Under ground Cables to be laid at a depth of 1.2M in an under ground in RCC Hume pipe. However the availability of Overhead/ Underground cables needs to be ascertained from Local Authorities.

d) Cabling with 11KV(E) 3Cx240 Sqmm XLPE cable is envisaged from MRS to ESS.

e) All the Three transformers Shall be Dry Type, Off Circuit Tapings Shall be Provided on the HV Windings. Tap Changing is Done by Means of off circuit links accessible through openings Provided. The Winding Insulation Shall be of Class F and Temperature rise limit to Class F i.e 90 Deg.

2.3.7 ESS (electrical substation) has the following LT Distribution is envisaged on 433V side of transformers

- One Main Distribution Panel with suitable Incomers and Outgoings to mains floor board / meter board panel capacity of respective Flats
- One feeder to Panel for Lifts machines (Located on Terrace of respective block) with required Outgoings- with another feeder coming from the Common services LT panel , so that dual supply are maintained as per the mandatory rules and regulations