SOP FOR ELECTRIFICATION OF HOUSING SCHEMES / COLONIES / SOCIETIES

Pakistan Electric Power Company (PEPCO)

January, 2019

PAKI STAN ELECTRIC POWER COMPANY (PVT.) LTD

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OFFICE OF THE
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HESCO HQ
DIARY SECTION
953
14/1/19

No. 10-20/GM(TS)/

Dated. 04.01.2019

Chief Executive Officers,
All DISCOs HESCO.

Sub:- REVISION OF SOP FOR EXTERNAL ELECTRIFICATION OF HOUSING SCHEMES/ COLONIES / SOCIETIES.

It is of common knowledge that the SOPs for external electrification of housing schemes/ societies / colonies were standardized by WAPDA 25-years back, while dynamics of the Sector have changed tremendously since then. Consequently, revision of existing policy is badly felt. In this regard, HESCO took the initiative and requested PEPCO for revision of the load criteria of housing schemes and high rise buildings. HESCO's proposal was circulated to all DISCOs for comments.

In addition, some of the DISCOs have already modified the previously issued WAPDA SOPs/instructions and are following their own, after getting approval from the respective BODs.

Since it is a matter of national/departmental interest, it was decided at the PEPCO level that overhauling of existing policy regarding external electrification of housing schemes be carried-out by taking all the DISCOs on board. As such, a number of consultative sessions with concerned GMs / CEs of all DISCOs, CEO LESCO & CEO FESCO were held and thorough deliberations were carried out on the subject matter. After mutual consensus among all stakeholders, a draft of revised SOP has been prepared, which is exclusively meant for guidance of DISCOs.

This draft SOP is thus required to be taken as guidance only for preparation of the company specific SOP for external electrification of housing schemes / colonies / societies, while incorporating specific local requirements, if needed. Implementation of the same in the field, however, will be after approval or ratification by the respective BODs of DISCOs.

On the other hand, as PEPCO coordinated with all the DISCOs and has provided technical support for preparation of a draft of uniform policy / guidelines on the issue, the draft SOPs may not be considered as any specific direction from the management company and the final document be firmed-up as a DISCO SOP, thus warding-off any possible future legal complications for PEPCO.

This is issued with the approval of Managing Director PEPCO.

(Engr. Adnan Riaz Mir)
General Manager (Technical Services)

HESCO HQ
Diary No: E-252
Dated: 15-01-19
CEO
GM (Tech)
GM (Opn)
COO
CE(P&E)
CE(Devt)
HR&AD
FD
Director
15/01/19.

HESCO HQ
Chief [illegible] Hyderabad
Diary No.
Dated
[illegible]

Encl: As above

C.C.

SO to MD PEPCO.

Load Assessment Criteria

The consultant will work out detail of plots to be fed from each distribution transformer according to load criteria. The assessed load on each distribution transformer should not exceed 80% of its rated capacity.

Load Criteria for Cities, Dist. HQ Level, All Cantonment Areas

Plot Size= 2 Kanal	Components	No.	Watts	Total (kW)	Demand Factor (%)	Total Load (kW)
	Light Points	110	40	4.400	30	1.32
	Ceiling Fans	20	80	1.600	30	0.48
	Exhaust Fans	8	80	0.640	30	0.19
	Ordinary Plugs	25	100	2.500	30	0.75
	Power Plugs	6	1000	6.000	100	6.00
	ACs	6	1500	9.000	100	9.00
Total Load						17.74 kW

Plot Size= 1Kanal	Components	No.	Watts	Total (kW)	Demand Factor (%)	Total Load (kW)
	Light Points	80	40	3.200	30	0.96
	Ceiling Fans	16	80	1.280	30	0.38
	Exhaust Fans	7	80	0.560	30	0.17
	Ordinary Plugs	20	100	2.000	30	0.60
	Power Plugs	4	1000	4.000	100	4.00
	ACs	3	1500	4.500	100	4.50
Total Load						10.61 kW

Plot Size= 10 Marla	Components	No.	Watts	Total (kW)	Demand Factor (%)	Total Load (kW)
	Light Points	60	40	2.400	30	0.72
	Ceiling Fans	12	80	0.960	30	0.29
	Exhaust Fans	6	80	0.480	30	0.14
	Ordinary Plugs	15	100	1.500	30	0.45
	Power Plugs	2	1000	2.000	100	2.00
	ACs	2	1500	3.000	100	3.00
Total Load						6.60 kW

Plot Size= 5 Marla	Components	No.	Watts	Total (kW)	Demand Factor (%)	Total Load (kW)
	Light Points	40	40	1.600	30	0.48
	Ceiling Fans	8	80	0.640	30	0.19
	Exhaust Fans	6	80	0.480	30	0.14
	Ordinary Plugs	10	100	1.000	30	0.30
	Power Plugs	2	1000	2.000	100	2.00
	ACs	1	1500	1.500	100	1.50
Total Load						4.62 kW

Plot Size= 3 Marla	Components	No.	Watts	Total (kW)	Demand Factor (%)	Total Load (kW)
	Light Points	20	40	0.840	30	0.24
	Ceiling Fans	5	80	0.400	30	0.12
	Exhaust Fans	2	80	0.160	30	0.05
	Ordinary Plugs	8	100	0.800	30	0.24
	Power Plugs	1	1000	1.000	100	1.00
	ACs	1	1500	1.500	100	1.50
Total Load						3.15 kW

Load Criteria for Commercial Centers

Description	Watts/ Sq. Ft.
Banks, Office Building	5
Beauty Parlors, Hair Saloons	4
Schools, Mosques	3
Shops, Hospitals, Clubs, Community Centres, Restaurant, Hotels, Motels, Court Rooms	2
Lodges	1.5
Auditoriums, Masjid, Church	1
Garages, Corridors	0.5
Ware-House Storage, Play Ground	0.25
Fan Load, TV, Refrigerator, Deep Freezer	2
Air Conditioning Load	8

Note: Load of other provisions like escalators, lifts, water supply, etc. will be taken as per actual demand.

Load Determining Factors

1.	Development Factor	= 85%
2.	Diversity Factor	= 125%
3.	Power Factor	= 85%
4.	Location Factor (Big City)	= 100%
5.	Location Factor (Small city*)	= 80%

$$U.L.D = \frac{\text{Total Demand x Development Factor x Location Factor}}{\text{Diversity Factor}}$$

U.L.D = Ultimate Load Demand

Loading of transformers may be kept within 80%

- Big City = Dist. HQ. Cantonment Boards
- Small City = Tehsil, Sub Tehsil & UC administration