

**POLICY INSTRUCTIONS ON THE
SUBJECT OF PLANNING & DESIGN,
EXECUTION / IMPLEMENTATION &
ENERGIZATION OF EXTERNAL
ELECTRIFICATION OF HOUSING
SCHEMES & COMMERCIAL PLAZAS**

October, 1998.



PAKISTAN
WATER AND POWER DEVELOPMENT AUTHORITY

Office of the
General Manager (PE&S)
WAPDA, 8th Floor LDA Plaza,
LAHORE.

No. 6891-97 /GM(PE&S)/CE(DP)/

Dated: 6/10/1998.

SUBJECT:- POLICY INSTRUCTIONS ON THE SUBJECT OF PLANNING & DESIGN, EXECUTION/IMPLEMENTATION & ENERGIZATION OF EXTERNAL ELECTRIFICATION OF HOUSING SCHEMES & COMMERCIAL BUILDINGS.

The Co-ordination Committee nominated by M.D(Dist.), which also consisted representatives of the developers/sponsors of Housing Schemes and Commercial Buildings, and their Consultants discussed all the aspects and concluded the discussions with its recommendations. These recommendations have been finalized with the following policy instructions on the subject.

PLANNING & DESIGN

A) INTERNAL SYSTEM

1. The instructions already issued by GM(PE&S) WAPDA on the subject of Load Criteria for Big and Small Cities and for urban and rural areas are quite comprehensive and needs no revision at this stage.

2. Within the colony area, the conductor sizes for HT/LT may be proposed as per Technical Design requirements to justify the load flow in various Sections, but the minimum conductor size for HT shall be ACSR "RABBIT" and that for LT AA "ANT".
3. The load for Street Light shall be assessed and incorporated in the design. The Street Light Phase shall be provided in the Design and BOQ but the Street Light fittings shall be provided by the Sponsoring Agency at its cost and it shall not be included in the Design and BOQ.
4. The provision of LT Circuit Breakers for 100/200 KVA Transformers is deleted from the Design.
5. ① Small Projects having ultimate load demand of upto 400KW shall be accommodated from the existing nearest 11KV Feeder even if the voltage drop exceeds the limit of 5% but this shall not go beyond 11%. In case it exceeds 11% then working shall be made in accordance with Para B(b) given in the succeeding part.
6. The approved design shall remain intact till completion of the Project provided the design vetting charges are paid within a period of three (3) months.
7. A variation of upto 5% in the "as built" Drawing with reference to the original approved Drawing will be accepted in all the individual material items except the Transformers. The Variation in the quantity of Transformers shall have to be reported with justification.

B) POWER SOURCE

HOUSING SCHEMES & COMMERCIAL BUILDINGS.

② For an ultimate load demand upto 2500KW, the supply of power shall be proposed from the existing nearest 11KV Feeder with the assurance that its Voltage Drops and Technical Losses remain within limits of 5% and 3.5% respectively. Three different situations may come across as under:-

a) If the voltage drops and technical losses of the existing 11KV Feeder from which the electrification is proposed, are within permissible limits and remain within permissible limits even with simulation of the ultimate load demand, the proposed load shall be accommodated.

b) If the voltage drops and technical losses of the existing 11KV Feeder from which the electrification is proposed, are within permissible limits before simulation of the load demand of the Scheme but exceeds the permissible limits when analyzed with the ultimate Load Demand, then rehabilitation of the feeder shall have to be done. The Sponsor shall pay the cost of rehabilitation in a way to bring voltage drop and technical losses within permissible limits.

c) If the existing 11KV Feeder from which the load is proposed has percentage voltage drops and technical losses already more than the specified value, analysis may be made with the consideration of feeding the proposed load through Augmentation/ Renovation to bring down the voltage drops and technical losses within permissible limits. The Sponsor shall pay the cost of rehabilitation based on cost sharing basis in a way to bring voltage

drop and technical losses within permissible limits. His cost share shall be to compensate for the change in voltage drops and power loss percentages arising out of the simulation of his ultimate load demand from the initial figures, whereas the balance cost of rehabilitation to bring the values within permissible limits shall stand on WAPDA's part. The physical rehabilitation of the system under WAPDA Program shall not be made a pre-requisite because WAPDA has its own Program to follow, as the load of the scheme also takes a long time to fully develop. However, the amount recovered from the Sponsoring Agency as worked out in the light of analysis elaborated in the earlier part of this Para, shall be utilized immediately towards system improvement to the possible extent.

For both the situations (b) & (c) above, the immediate load requirement of the Sponsoring Agency shall be met with from the existing system without any pre-condition of rehabilitation/renovation because it will be a very small percentage of the total load.

A situation may arise when even with all rehabilitation possible, the ultimate load demand upto 2500KW is not possible to consider from the existing 11KV Feeder, then an independent feeder is the only solution at the expense of the Sponsoring Agency including the cost of the Grid-end Breaker. For such a situation and also for an ultimate load demand above 2500KW, the following course of action shall be adopted:-

The load shall be proposed from an independent feeder at the expense of the Sponsoring Agency from the nearest Grid Station. This may give rise to following different situations:-

- a) When the existing Loading conditions of the nearest Grid Station from which the supply of power is proposed do permit by all means, to feed the proposed load, an independent feeder shall be drawn on full cost to be borne by the Sponsoring Agency alongwith the cost of Grid -end Breaker.
- b) When the existing loading conditions of the nearest Grid Station from which the supply of power is proposed do not permit the ultimate load demand to be fed, then since the immediate load requirement is very small, so it would be allowed and the ultimate demand may be left towards Augmented/Additional proposed capacity situation. In due course of time, all efforts shall be made to augment/extend the transformation capacity by WAPDA.
- c) More than one independent feeders may be required in some cases of Housing Schemes/Colonies to technically justify the ultimate load demand. In such cases, the supply source shall also be decided keeping in view the above course of action.

For all the above situations, it may also be considered to accommodate the immediate small load requirement of the Sponsoring Agency from the existing WAPDA system, in situations where construction of the proposed independent feeder/s is to take time for some reasons. However, the entire estimated cost shall be recovered from the Sponsoring Agency and no escalation shall be charged from the Sponsor for construction of the source line/s by WAPDA at any later stage. This shall not only facilitate the sponsors, but will generate revenue for WAPDA instead of un-necessary delay in supply of power to these Projects. The dedicated

feeder constructed for a Sponsor/Developer shall not be taped off without having his prior consent when any grouping is to be considered.

The Commercial buildings and Shopping Plazas having load demand of over 2500KW shall however, be given supply of power through grouping with similar nature buildings on cost sharing basis proportionate to their load demand, instead of proposing independent feeder. This would facilitate against the problems of Right-of-Way in the Central City Area and also will ensure optimum utilization of the system capacity. Immediate load requirement may be allowed from the existing system in the light of above proposal.

COMMERCIAL BUILDINGS (METERING ARRANGEMENTS)

- a) Buildings owned and maintained by the Developers.
One-Point supply arrangements as per prevailing instructions and applicable tariff.
- b) Built and spaces sold to different customers on ownership basis.
 - (i) Individual Metering Points shall be provided to every Owner.
 - (ii) Metering shall be made on each floor at an appropriate location directly accessible. Individual meters shall be enclosed in the Cabinets fixed at this location. The Bus-Bar and the meter Cabinets shall be properly designed to ensure all measures regarding security against power theft and any foul play with the wiring. These shall be provided by the Developers at their cost.

The above arrangement shall continue for the ongoing Projects and however, for the conceptual Projects, the following up-graded metering systems shall be considered for data acquisition of the meters installed on each floor:-

- i) Single-Port Digital Data Acquisition System to acquire quick and accurate readings at a proper place on each Floor for a bunch of say 50 to 100 meters through Single Port Hand Held Data Acquisition Devices. This arrangement shall provide a limited access, i.e. only to be authorized identified person, which may then be down loaded for billing purposes. This shall be possible with installation of Solid State/Digital Energy Meters. Any foul play/tempering with any of the meters could also be identified on the basis of the Software developed for this package.
- ii) Remote Metering System through Cordless Mobile Hand Held Digital Devices. This will ensure quick and accurate readings of the meters installed in the buildings.

The expenses for adopting the up-graded metering system shall be borne by the Developers.

IMPLEMENTATION/EXECUTION

OPTIONS AVAILABLE TO SPONSORS/DEVELOPERS.

On Cost deposits with WAPDA by the Developing Agency
(Execution by WAPDA)

- i) Sponsoring Agency shall deposit the estimated cost worked out by WAPDA against the approved design submitted by Consultant of the Sponsoring Agency. The amount recovered shall remain with the executing agency to arrange for timely procurement of the material.

ii) WAPDA shall fulfill its commitments for completion of the construction work according to the schedule finalized with the Sponsoring Agency.

iii) A Committee comprising the following Officers of the Distribution Company shall watch the progress and quality of work on regular basis:-

- a) Director(CM&O),
- b) S.E. Operation concerned.
- c) P.D. Construction

iv) If the Sponsoring Agency intends to get the job executed in phases, the cost for the proposed phases may be recovered as and when their execution is requested but the energization shall only be allowed when the entire system is constructed or otherwise the entire cost for the Project is deposited. In case of deposit of cost for the work to be executed later, no escalation will be charged by WAPDA at any later stage.

v) Consultant of the Sponsoring Agency shall also be associated by the Committee so as to satisfy the Sponsors for quality of the work and use of material as per estimate.

vi) Regular reporting shall be made by the Committee.

2) Execution through WAPDA approved Contractors
by the Developers at their own arrangements

The instructions already issued vide this office letter No. 4467-80/GM(PE&S)/CE(DP)/ dated 21.05.1998 circulated under Office Order No.4481-95/GM(PE&S)/CE(DP)/ dated 21.05.1998, shall be applicable and to be followed. However, the Bank Guarantee equivalent to 25% of the entire estimated cost to be submitted by the sponsoring agency before getting approval for execution of the work through WAPDA approved Contractors may be released observing the following procedure:-

"The Guarantee shall be released in phases on successful completion of the part of the system by the Sponsoring Agency duly verified by the inspection committee nominated above. The release of Guarantee shall be worked out on proportional cost basis for the completed work against the total work."

3) One-Point bulk supply at 11KV under Non-Licensee status.

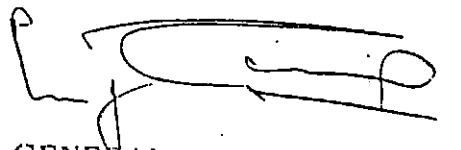
- i) One-Point bulk supply at 11KV under non-Licensee status shall be allowed against the applied load subject to necessary approval of the competent authority for non-Licensee status after observing necessary instructions.
- ii) The system beyond the metering point i.e. within the Colony area shall be maintained and operated by the Sponsoring Agency. This system may be constructed by the Sponsoring Agency according to its need.
- iii) While energizing the metering system at one-point, the material purchase documents, invoices, shall be examined to ensure that the legitimate material has been used in the scheme. The material shall be purchased from the WAPDA approved manufacturers.

The material purchase procedure under Para-4(a&b) of the instructions referred against Option-2 above shall be followed and however, the condition of inspection by Chief Engineer(M.I) and that of supervision/inspection by WAPDA and the relevant fees shall not apply, because the system will be maintained and operated by the Sponsoring Agency. These documents shall be examined by the S.E. Operation concerned and Director(IC) of the respective Distribution Company.

ENERGIZATION

The energization of the system shall be made as soon as the final inspection of the works is completed by the Committee earlier nominated and all the pre-requisites have been fulfilled by the Sponsoring Agency. This process shall not be ordinarily delayed.

The above policy instructions shall be applicable to all the conceptual Projects and however, the ongoing Projects shall be dealt with on case to case basis and if their process stage is such that any of the above instructions can apply, it shall be processed. It is also decided that the Planning & Designing, & supervision of the works of Housing Schemes/Colonies and Commercial Buildings shall be done by the qualified Consultants. The Consultants and Contractors may be pre-qualified for these Projects in due course of time. In the meantime, the Consultants registered with Pakistan Engineering Council and Contractors approved by WAPDA, shall continue to work.


GENERAL MANAGER(PE&S)

c.c to:-

- 1- PS to Member(Power)Wapda, Wapda House, Lahore.
- 2- M.D(Dist.)Wapda, Wapda House, Lahore.
- 3- General Manager(Opr.)Wapda, Wapda House, Lahore.
- 4- General Manager(CS)Wapda, Wapda House, Lahore.
- 5- General Manager(P&IC)Wapda, Wapda House, Lahore.
- 6- Chief Engineer(Dist.Planning)Wapda, LDA Plaza, Lahore.
- 7- All Chief Executives Distribution Electric Supply Companies.