

**DAKSHIN HARYANA BIJLI VITRAN NIGAM**

Instruction No. 8/2006/PD&C

From

The Chief Engineer/PD&C,  
DHBVNL, Hisar.

To

1. All Chief Engineers (OP) in DHBVNL.
2. All S.Es (OP) in DHBVNL.

Memo. No. Ch- 13 /P&D-932

Dated: 17.07.2006

Subject:

Guidelines for providing electrical system in the colonies/multi-storey buildings developed by HUDA/HSIDC/Colonizers Licensee/SEZ.

Enclosed please find herewith guidelines on the subject as cited above. You are requested to keep the above guidelines in view while sanctioning the bulk and other electrical connection and layout plans in the area for new sectors, being developed by HUDA/HSIDC/Colonizers licensee/SEZ.

DA/ As above.

Chief Engineer/PD&C,  
DHBVNL, Hisar.

Endst. No. Ch- 13 /P&D-932

Dated: 17.07.2006.

Copy of the above is forwarded to the following, in continuation to this office Memo. No. 314/SPS/MD dated 27.06.2006. They are requested to keep the above guidelines in view for, with regard to providing electrical system in the colonies, multi-storey buildings, being developed by HUDA/HSIDC/Colonizers Licensee/SEZ. The above guidelines may be issued to the authorized colonizers and SEZ:-

1. Engineer-in-Chief, HUDA, Panchkula.
2. S.E./Electrical, HSIDC, Gurgaon.

DA/ As above.

Chief Engineer/PD&C,  
DHBVNL, Hisar.

CC:

1. Sr. P.S. to M.D., DHBVNL, Hisar for kind information of Managing Director.
2. Sr. P.S. to Director (OP) DHBVNL, Hisar for kind information of Director (OP).
3. P.S. to Director (Projects) DHBVNL, Hisar for kind information of Director (Projects).

GUIDELINES FOR PROVIDING  
ELECTRICAL SYSTEM IN THE  
COLONIES/MULTI STOREY  
BUILDINGS DEVELOPED BY  
HUDA/HSIDC/COLONIZERS  
LICENSEE/SEZ

## **CHAPTER –I**

### **INTRODUCTION**

There are 3 main developing agencies in the State namely: HUDA/HSIDC/ Colonizers Licensee & SEZ. As per the provisions in the Town and Country Planning Act, the Developers are required to provide complete infrastructure/ services while developing any residential, commercial or industrial sectors/areas. The important constituent of infrastructure is the electrical system. The electrical system constitutes the availability of feeding source i.e. provision of Grid Sub Stations as per load requirement, transmission lines, indoor switch/distribution Sub Stations provided for distribution transformers, LT lines and service lines for feeding to the end consumers. The electrical system is provided as per particular load requirement.

The load requirement for a particular category/group of consumers i.e. different category of residential plots and different category of flats, different category of commercial sites, i.e., common Show Rooms, Small Booths, Shopping Malls, Resorts, Multiplexes, having Cinema Houses, Restaurants and other activities including Company Show Rooms, Company offices etc. All these categories of consumers have different type of

electrical load requirement. The load requirement of each category of consumer has been arrived at after considerable load studies.

As the load requirement for plotted areas and residential multi storey flats is different, similarly the load requirement for commercial Booths, Show Rooms sites, Company's Houses, Shopping Malls, Resorts, Restaurants and Multiplexes is also different, and hence the norms have been framed separately for each category.

The guidelines for providing electrical system in the area being developed by the Developers have been laid down to maintain uniformity. As per the decision taken by the Government of Haryana regarding beautification of urban areas, uniformity of electrical system will play significant role in the beautification of urban areas.

Depending upon locations and requirement the overhead and undergrounds system have been suggested.

While framing the guidelines, precautions have been taken to meet with the requirement of provisions of grid Code for distribution system.

## CHAPTER-II

### **Guidelines for electrification of residential sectors.**

A:- For sectors having plotted area (assuming sector size of 200 acre):

The basis for electrification of any residential sector having residential plots is the ultimate load requirement of that particular sector for residential houses and other common & commercial utilities for which the following procedure will have to be followed:-

- i) The Developer should possess the proper license from the Town and Country Planning Department.
- ii) The approved land plan should have the complete details of areas under various categories like size-wise residential plots, detail of plots earmarked for multi storey buildings or group housing Societies, size wise Commercial plots and the total area to be covered for Market, Resorts, Restaurants, Multiplexes, Schools, Colleges or any other Educational Institutions, Hospitals, Dispensary, Community Centers, Police Stations, Water Supply Schemes, Sewerage Disposal schemes, Electricity indoor Sub Station, Out Door Sub Stations or any other important utility for which specific land is earmarked.
- iii) On the basis of land area earmarked as per detail in para-ii above, the load calculation shall be made as per guidelines laid down for specific category of load in specific area/size of plot. The guidelines for load calculations for residential plotted areas

are attached as Annexure-I. Load calculations for residential multistorey buildings are attached as Annexure-II and load calculations for commercial areas are attached as Annexure-III.

After arriving at total load requirement of the sector, the following schemes shall be followed for designing the feeding arrangements of the load of the sector:-

| <b>Sr. No.</b> | <b>Load</b>                                    | <b>Voltage level of Sub-stations</b>                               | <b>Load requirement</b>            |
|----------------|--|--|------------------------------------|
| (a)            | Upto 5 MVA                                     | Through Independent feeder from existing Sub-station of HVPN/DHBVN | -                                  |
| (b)            | Plus 5 MVA                                     | 33 KV Sub-stations   | 2 Acres(120x80 mtr)                |
| (c)            | Plus 15MVA                                     | 66/132KV Sub-Stn.  | 4/12 Acres(140x120mtr/240x200 mtr) |
| (d)            | Plus 75 MVA                                    | 220 KV Sub-Stn.  | 20Acres(300x300 mtr)               |
| (e)            | Indoor switching station-cum-complaint centers |  | 2 Nos. per Sector.                 |

Line corridors also will have to be provided as per following norms:-

- i) 11 KV - 6 Mtrs.
- ii) 33 KV - 12 Mtrs.
- iii) 66/132KV/220KV - 35 mtrs.

The location of the Sub-station land site should preferably in the centre of the sector on main road and may be allotted in corner plot to avoid cross-over of other sites.

1. The above mentioned works shall be carried out at the cost of Developer. For example taking out of 11 KV independent feeder,

where, the augmentation of power transformer is required at the feeding Sub Station, the Developer shall be liable to bear the proportionate share cost of augmentation of power transformer. Of course, the works shall be carried out and executed by HVPN/DHBVN as the case may be

2. As far the land for creation of indoor switching station cum complaint centers, at least 2 numbers per sector shall be constructed at the cost of the Developer and shall be handed over to DHBVN complete in all respect for maintenance and operation.
3. Grid Sub Station i.e. 33 KV, 66 KV, 132 KV or 220 KV shall be constructed by the Developer at his own cost and shall be handed over to DHBVN/HVPN free of cost.
4. For creation of the above Sub Stations the cost of feeding transmission line and its right of way shall be arranged by the Developer through his own sources.
5. The cost of terminal arrangement of the transmission lines at DHBVN/HVPN Sub Stations shall be born by the Developer as per sanctioned estimate/standard design of DHBVN/HVPN.
6. For the creation of Sub Station/Transmission works, material shall be used as per specification of DHBVN/HVPN. Before erection of major items inspection will be got carried out from DHBVN/HVPN Authorities. The inspection charges @ 1.5% of the estimated cost of work shall be paid by the Developer to DHBVN/HVPN.

**Detailed Guidelines for Electrification of New sector/upcoming Urban areas/authorized areas developed by private colonizers.**

**A. For Plots of size 10 Marla and above Category:**

- ii) Electrification will be done only through 11 kV line on 11 Mtr. long PCC poles and the length of the span will not be more than 50 mtrs. 80/50mm<sup>2</sup> ACSR conductor will be used for 11 kv line (may be underground also).
- iii) 25/63/100 KVA completely self protected (CSP) type transformers shall be installed for 2-4 number houses depending upon the load requirement as per norms. The distribution transformer shall have a provision of DT meter.
- iv) For releasing the connection, a meter Pillar box shall be installed near the T/F for housing the consumer bus bar and from bus bar, the connection will be taken to the consumer meter, which also be housed in the same pillar box. The armoured cable service line will be provided from pillar box to consumer premises. One meter pillar box can house 4,6,8,10 no. meters depending upon the location.
- v) Street light phase shall be provided under the 11 kV line through 30mm<sup>2</sup> insulated ACSR conductor by installing distribution transformer(s), alongwith DT meter, as per load requirements in the area which will be dedicated only for street light.



## **B. For Plot of Size less than 10 Marla Categories**

- ii) 11 KV line will be laid on 11 meter PCC poles wherever possible keeping in view the width of the roads. The span length should not be more than 50 Mtrs. 80/50 mm<sup>2</sup> ACSR conductor will be used (may be underground).
- iii) 25/63/100 KVA completely self protected (CSP) type transformers shall be installed from where the connections will be made for 4-6 consumers through insulated conductor.
- iv) Wherever it is not possible to install ACSR conductors due to less clearance, then Aerial Bunched Conductors can be used (can be underground).
- v) Connection will be released to the individual consumer by installing the meter in meter pillar boxes near the pole. From the LT side of T/F, connection will be taken to a common bus bar which will be installed within meter pillar box. Bus bar will be completely protected.
- vi) Wherever it is not possible to install Meter Pillar Box, the consumer meter shall be installed outside the gate of the house in proper MCB.
- vii) Street light phase shall be provided under the 11 kV line through 30 mm<sup>2</sup> insulated ACSR conductor by installing distribution transformer(s) of desired capacity with meter in the area which will be dedicated only for street light.

## **C. Group Housing Societies.**

- i) 11 kV line will be laid up to the Boundary wall of the Group Housing Society on 11 meter poles with span length of 50 meters.

- ii) 200 KVA, 400 KVA, 500 KVA & 1000 KVA Distribution Transformers (CSP type) or sealed unit S/Stns., shall be installed according to the requirement of load and shall be installed adjacent to the HT meter room.
- iii) Single point HT/LT NDS connection shall be given for common services like lift, water supply, street light etc. for which the metering equipment shall be installed near the main gate of the outer boundary wall of the society.
- iv) The LT shall be taken directly from the DT through armoured cable up to the Building, if laid underground, it should be through open-able trench with facility for maintenance and inspection.
- v) The meters will be installed at one place in the stilt at the basement of the building, in the Meter Pillar Boxes. 10-14 no. consumer meters shall be installed in single meter pillar box.
- vi) In case of captive power supply, dual use meters shall be used as per Nigam's specification.

### **Annexure-1**

### **Load Norms for Plots Sector/Colonies being developed by HUDA/Private Colonies.**

| Sr. No. | Class of City | Size Category of Plot/Load Norms 14 KW |         |          |          |         |         |         |         |
|---------|---------------|--|---------|----------|----------|---------|---------|---------|---------|
|         |               | 2 Kanal                                | 1 Kanal | 14 Marla | 10 marla | 8 marla | 6 marla | 4 marla | 2 marla |
| 1.      | A Class       | 40 KW                                  | 30 KW   | 25 KW    | 20 KW    | 16 KW   | 12 KW   | 10 KW   | 6 KW    |
| 2.      | B Class       | 30 KW                                  | 20 KW   | 20 KW    | 15 KW    | 10 KW   | 8 KW    | 6 KW    | 4 KW    |
| 3.      | C Class       | 25 KW                                  | 20 KW   | 15 KW    | 12 KW    | 8 KW    | 6 KW    | 6 KW    | 2 KW    |

Note: The classification of city for the purpose of load projection of Plots & Flats shall be as under:-

- i) A Class:- Faridabad, Gurgaon, Manesar.
- ii) B Class:- Sirsa, Fatehabad, Hisar, Bhiwani,  
Narnaul  
Palwal, Dharuhera, Rewari, Hansi.
- iii) C Class:- All other cities/Town in DHBVNL,  
which are not covered in 'A' & 'B'  
class as above.
- iv) D Class:- Stores flats are generally constructed  
in "Class-A" were the load norms  
shall be as

**Annexure-II**

**Load Norms for Flats being constructed by Group Housing Societies**

| Sr. No. | Flats having covered area | Connected load |
|---------|---------------------------|----------------|
| 1.      | Upto 900 Sq. ft.          | 8 KW           |
| 2.      | From 901 to 1600 Sq. ft.  | 16 KW          |
| 3.      | From 1601 to 2500 Sq. ft. | 20 KW          |
| 4.      | Above 2500 Sq. ft.        | 24 KW          |

### **Annexure-III**

#### **Load Norms for Commercial/Institutional areas**

Load norms for commercial area shall be taken as 25 KVA per 1000 Sq. ft. of covered area.