

## **7C AS PER NEPRA STANDARDS**

To meet with NEPRA Standards regarding distribution of electricity supply of consumers, there are many constraints which affect the quality of service being provided to the consumers' i.e. Financial, Political and Technical.

Since the creation of WAPDA / and later on DISCOs, main emphasis was on extension of distribution system network / Rural Electrification. Due to political stress, the construction works were carried out with out observing Standard Design instructions and technical parameters which resulted in lengthy 11 kV & 400 V lines ( Average 61 KM) and 125 over loaded feeders causing increased voltage drop and technical losses. A huge finance is required to set right / rehabilitate the system.

The shortage of staff specially technical staff is also hurdle in achieving the standards set by NEPRA and it is also affecting the performance of Company. No mechanism is available for recruitment of staff matching the increasing number of connections and work is already more than yardstick. Further even the staff is not provided according to yard stick.

The bifurcation of Sub Division / Divisions has also not been carried out due to lake of finance. There is a ban over the new recruitment and the vacant posts are not being filled.

### **REASONS FOR ANY PERFORMANCE AGAINST STANDARDS.**

- i. Lengthy 11-KV feeder ( average 61 km) with extension Load, resultantly voltage drop at certain feeders are very high.
- ii. Non Implementation of staff yardstick, Non creation of new Sub Division / Division and bifurcation of over loaded Sub Division / Division.
- iii. Non-provision of adequate vehicles equipped with buckets and necessary T&P, due to inefficient budget.
- iv. The shortage fail in generation is also creation low voltage problems.
- v. Over loaded 11 kV feeders.
- vi. Theft incidents of transformer and distribution HT lines.

- vii. Low frequency.
- viii. Overloading of transformers after load shedding spell of abnormal duration.
- ix. 11 kV Panel life (deterioration due to repeated switching).
- x. Distribution transformer life.
- xi. Cultural evils.
  - a. Firing during ceremonies.
  - b. Kite flying.
  - c. Unforeseen incidents (accidents, switching by consumer at sectionalized T-Off at their own).
- xii. Bird age near slaughter houses.
- xiii. 11 kV feeder length more than 11 KM (radial).
- xiv. Extension in load by general consumer without approval resulting in overloading of T/F / system and hence causing interruptions.

### **WORST SERVED CONSUMER.**

- i. During summer season the consumers at tail end of feeders are affected badly due to low voltage problem.
- ii. The consumers fed through 66-KV Grid Station have to face low voltage problem.
- iii. The consumer being fed through single phase L.T lines are affected badly.

### **WORST PERFORMANCE CIRCUITS.**

- i. Over Loaded 132 Kv Transmission Lines
- ii. 66-KV transmission lines.
- iii. Lengthy 11-KV lines.
- iv. Lengthy LT lines.
- v. Lengthy PVC cables in Narrow Street.
- vi. Lengthy cable in rural area.

**PLAN TO IMPROVE THE REPORTED POOR PERFORMANCE AREAS RELATED GEOGRAPHY, INVESTMENT PLANS ARE ORGANIZATIONAL CHANGE.**

Plans being prepared and implemented by SEPCO are of following types:-

- ❖ Presently there are 40 no Power Transformers at 35 grid stations are over loaded also 04 no 132 kv Transmission Lines are over loaded.
- ❖ 66-KV Grid Stations are being upgraded with 132-kV and new 132-KV Grid Stations are being added at load centers, reducing length of H.T line in this regard a plan for which PC-I of seventh STG has been submitted to planning commission proposing 12 No. new Grid Stations and conversion of 09 no 66-KV grid stations into 132-KV lines.
- ❖ Augmentation of existing 08 Nos overloaded and addition 12 no of new Power Transformers at Grid Stations have been Planed.
- ❖ Re-conducting of existing overloaded transmission line and addition of new circuits.
- ❖ Installation of 132-KV capacitors banks at Grid Stations.
- ❖ Similarly in LD system heavily loaded existing 11-KV feeders are being rehabilitated through re-conducting, bifurcation and area planning.
- ❖ Installation of 11-KV capacitors and reconductring of existing overloaded deteriorated HT / LT lines with suitable higher capacity of conductor.
- ❖ Addition and augmentation existing overloaded distribution transformers and maintenance work on distribution network.
- ❖ Conversion of LT system into HT system.
- ❖ Summary of proposed plan for coming five years is as under.

## SUMMARY OF PROPOSED WORKS FOR SYSTEM IMPROVEMENT

SR. #	DESCRIPTION	UNIT	TOTAL
1	New Grid Stations	No.	<b>12</b>
2	Conversion of Grid Stations	No.	<b>9</b>
3	Extension of Power T/F	No.	<b>12</b>
4	Augmentation of Power T/F	No.	<b>8</b>
5	Extension of Line Bay	No.	<b>21</b>
6	New 132 KV T/Lines (421 SDT + 56 D/C)	Km	<b>477</b>
7	Reconductoring of T/Lines	Km	<b>159</b>
8	Installation of Capacitors	MVAR	<b>241.2</b>
9	New 11 KV Lines	Km	<b>2650</b>
10	Reconductoring of HT Lines	Km	<b>2055</b>
11	New LT Line	Km	<b>1420</b>
12	Reconductoring of LT Lines	No.	<b>440</b>
13	11 KV Capacitors	No.	<b>137</b>
14	11 KV O/G Panels	No.	<b>30</b>
15	New Distribution T/Fs	No.	<b>2981</b>
16	Replacing O/Loaded T/Fs	No.	<b>2200</b>
17	Energy Meters	No.	<b>86100</b>
18	ABC Cable	KM	<b>4400</b>
19	Solid State Meters	No.	<b>193500</b>

## **EXPECTED PERFORMANCE IMPROVEMENT AS A RESULT OF INVESTMENT.**

As a result of investment made in SEPCO power system, some improvements have been achieved like Reduction in voltage drop and energy losses. The investment during financial year 2014-15 has been made in the following key areas:-

### **(A) NEW GRID STATIONS**

The following 03 No. Grid Stations has completed Commissioned in year 2014-15.

Sr	Name of Work	Scope of work		Expenditure (RS. MN)	Commissioned
01	132 kV JACOBABAD-2	PT/F bay	1X13MVA	108.90	04.09.2014
		LINE BAY-	02		
		PT BAY	01		
02	132 KV BUXAPUR	PT/F bay	1X13MVA	74.66	04.12.2014
		LINE BAY-	02		
		PT BAY	01		
03	132 KV MAHMOOD-A- BAGH	PT bay.	1X13MVA	81.086	12.06.2015
		ISO BAY-	01		
		PT BAY	NIL		

**(B) EXTENSION OF (T/BAY) WITH POWER TRANSFORMER.**

The extension of following Grid Station has been carried out in year 2014-15.

<b>Sr</b>	<b>Name of Work</b>	<b>Scope of work</b>	<b>Expenditure In (MLN).</b>	<b>Commissioned</b>
01		NIL		

**(C) AUGMENTATION OF POWER TRANSFORMERS.**

The augmentation of following power transformers have been carried out during year 2014-15.

<b>Sr</b>	<b>Name of Work</b>	<b>Scope of work</b>	<b>Expenditure In (MLN).</b>	<b>Commissioned</b>
01	AUGMENTATION OF 2 MVA WITH 5 MVA AT 66 KV NARA-2	05 MVA	1.694	21.08.2014
02	AUGMENTATION OF 10/13 MVA WITH 20/26 MVA AT 132 KV MIRPUR MATHELO	20/ 26 MVA	25.103	13.03.2015
03	AUGMENTATION OF 10/13 MVA WITH 20/26 MVA AT 132 KV SUKKUR SITE	20/ 26 MVA	55.00	27.06.2015
<b>TOTAL:-</b>			<b>81.797 MILLIONS</b>	

**(D) CONSTRUCTION OF NEW TRANSMISSION LINE.**

The following new Transmission lines have been completed (Commissioned) in 2014-15:-

<b>Sr</b>	<b>Name of Work</b>	<b>Scope of work</b>	<b>Expenditure In (MLN).</b>	<b>Commissioned</b>
01	IN / OUT FEED FOR 132 KV LARKANA CITY	02 KM D/C	42.68	23.09.2014
02	IN/OUT FEED FOR 132 KV MADEJI	11.49 KM D/C	97.284	01.05..2015
03	LINE FEED FOR 132 KV MAHMOODA- A-BAGH	15 KM T/OFF	94.122	03.06.2015
<b>TOTAL:-</b>			<b>234.086 MILLIONS</b>	

**E. CONVERSION FROM 66 KV TO 132 KV**

The following 01 no conversion from 66 KV to 132 KV has been completed / Commissioned during financial year 2014-15.

<b>Sr</b>	<b>Name of Work</b>	<b>Scope of work</b>	<b>Expenditure In (MLN).</b>	<b>Commissioned</b>
01	132 KV GRID STATION LARKANA CITY	POWER TRANSFORMERS 2X20/26 MVA LINE BAYS 02 NOS PT BAY	270.00	23.09.2014
<b>TOTAL:-</b>			<b>270.00 MILLIONS</b>	

### HT WORKS (11 KV)

UNDER ACCOUNT HEAD	AMOUNT UTILIZED (MLN.)
ELR:	<b>50.753</b>
DOP:	<b>42.356</b>

### LT WORKS (400 V)

UNDER ACCOUNT HEAD	AMOUNT UTILIZED (MLN.)
ELR:	<b>26.636</b>
DOP :	<b>21.412</b>

The following 11 KV feeders having high technical losses and voltage drop were bifurcated and new 11 KV feeders were constructed. Similarly, the overloaded feeders were rehabilitated by carrying out reconducting-. The detail of 11 KV system rehabilitation is as follow:-

#### DETAIL OF WORKS

Sr. No:	Description	No of Works Completed	Expenditure during FY 2014-15 (MLN.)
01	11 KV FEEDERS CONSTRUCTED FOR BIFURCATION	<b>7</b>	<b>50.753</b>
02	11 KV FEEDERS RECONDUCTORING	<b>7</b>	<b>42.356</b>
03	LT PROPOSALS COMPLETED	<b>29</b>	<b>26.636</b>
04	DISTRIBUTION TRANSFORMERS ADDED IN SYSTEM	<b>25</b>	<b>21.412</b>
05	DISTRIBUTION TRANSFORMERS AUGMENTED	<b>463</b>	<b>238.646</b>



### **DELAY IN INSTALLATION OF NEW CONNECTION**

Time frame of certain new connections had not been fulfilled due to shortage of material in Stores. Observance of PPRA rules has stretched the Procurement process and resultantly supply of material was delayed.

It is hoped that fruitful results will be achieved in upcoming months.