



DELHI TRANSCO LIMITED

(A Govt of NCT of Delhi Undertaking)

No.F.DTL/202/Opr(Plg.)/2017-18/Mgr(CE&STU)/G-32/116

Dt. 16.02.2018

Subject: Minutes of the 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018.

Sir,

The minutes of the 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018 at 10:30AM in the office of General Manager (T) Planning, Shakti Deep Bldg., Jhandewalan Extn., New Delhi are enclosed herewith for kind information and further necessary action please.

Thanking You.

Encl.: As above

Yours Faithfully,


(Susheel Gupta)

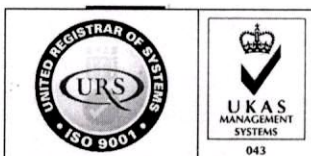
Manager (T) Planning-CE&STU

To

1. Jt. Director (Engg), DERC
2. Chief Engineer (E-I), NDMC
3. Chief Engineer (E-II), NDMC
4. CWE(Utility), MES
5. Chief Executive Officer, TPDDL
6. Chief Executive Officer, BRPL
7. Chief Executive Officer, BYPL
8. Chief Electrical Engineer(PS-2), DMRC
9. General Manager, BTPS
10. SE, HVPNL, Gurgaon
11. Executive Officer, EEREM Center, Power Deptt, GNCTD
12. Head (Electrical Terminal), GMR
13. GM (Electrical) NCRTC
14. Director (Planning-Land Policy), DDA
15. Chief Engineer (TS) BBMB, Panipat
16. GM (CM&SEM), DTL
17. GM (O&M-I), DTL
18. GM (O&M-II), DTL
19. GM (Project-I), DTL
20. GM (C&MM), DTL
21. GM (Planning), DTL
22. GM(Protection & DM), DTL
23. DGM (Planning), DTL

Copy for favour of kind information to:-

1. CMD, DTL
2. Director(Oprs), DTL
3. Director (Technical) HVPNL
4. Member(Power) BBMB, Chandigarh
5. ED (T) SLDC, Delhi
6. Addl. Secy(Power), GNCTD



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Minutes of the 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018 at 10:30AM in the office of General Manager (Planning) DTL

On the outset, General Manager (Planning) DTL welcomed the representatives of the utilities in the meeting. The list of participants is enclosed as Annexure.

A. Confirmation of Minutes of 2nd Steering Committee Meeting of 2017-18 held on 30.10.2017

The minutes of the 2nd Steering Committee Meeting held on 30.10.2017 were circulated vide letter No. F.DTL/202/Opr(Plg.)/2017-18/Mgr(CE&STU)/G-32/94 dated 14.12.2017. No comments were received.

The Steering Committee approved the minutes of the meeting held on 30.10.2017.

B. Follow-up action of decision taken in previous Steering Committee meetings:

1. Establishment of 400kV S/Stn. Gopalpur.

In the last Steering Committee meeting held on 30.10.2017, it was decided that a joint site visit of TPDDL and DTL may be carried out at 220kV Gopalpur for determining the shifting work required to clear the land for establishment of 400kV S/Stn.

Accordingly, joint site visits were held. The following is road map for the establishment of 400kV Gopalpur S/Stn. by the year 2021-22.

S.No.	Details of plan to be carried out in stages	Time Line
1.	<ul style="list-style-type: none"> ➤ Removal of 33/11kV, 16 MVA Transformer No. 1 & 2 along with 11kV Panels and outgoing feeder cables ➤ Conversion of 66kV AIS into 66kV GIS with installation of two new 160MVA Power Transformer at new location. ➤ Temporary connection of new 2 no. 160MVA Transformer with existing 220kV switch yard by underground cable (U/G cable would be utilized with upcoming 220kV GIS). ➤ Termination of 66kV feeders to 66kV GIS after conversion of Overhead feeders (DTL premises) to U/G cable by TPDDL. 	<p>Completion by - October 2018</p> <p>The tender is under process- to be awarded by March 2018</p> <p>Completion by - June 2019</p> <p>Completion by - June 2019</p>
2.	<ul style="list-style-type: none"> ➤ Conversion of 33kV AIS into 33kV GIS with installation of new 100MVA (220/33kV ratio) Power Transformer at new location. ➤ Temporary connection of 2 no. 100MVA Transformer with existing 220kV switch yard by underground cable (U/G cable would be utilized with upcoming 220kV GIS). ➤ Termination of 33kV feeders to 33kV GIS after conversion of Overhead feeders (DTL premises) to U/G cables by TPDDL 	<p>Award by- March, 2019</p> <p>Completion by - March, 2020</p>
3.	<ul style="list-style-type: none"> ➤ Construction of 400kV M/C in-feed to 400kV Gopal Pur by LILO of 400kV D/C Bawana-Maharanibagh-Mandola from 400kV Multi-circuit (M/C) Tower. Stringing of conductors is required till drain only as rest 	<p>Award by - March, 2019</p> <p>Completion by March, 2020</p>

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

	<p>of stringing shall be possible after conversion of 220kV Gopal Pur – Mandola O/H portion to cable at the entry point.</p> <ul style="list-style-type: none"> ➤ Conversion of 33kV Gopal Pur-Wazirabad overhead line in to cable by TPDDL to facilitate RoW for 400kV. 	
4.	<ul style="list-style-type: none"> ➤ Construction of 220kV GIS at proposed location. Temporary control room shall be set-up in ALDC Building. ➤ Conversion of 220kV D/C Gopal Pur- Mandola O/H line into O/H cum U/G with its connection to 220kV GIS (conversion of O/H T/L into cable near the substation) to facilitate the entry of 400kV in-feed for 400kV side of the Substation. ➤ Construction of 400kV GIS with 4 x 500MVA Pr. Transformer with 125MVA reactor and connection with 220kV GIS through Cable. ➤ Construction of Control Room –cum - Administrative Building at proposed location. ➤ Removal of temporary connection of 160 & 100MVA ICTs and permanent connection with 220kV GIS. ➤ Finally, the connection of 220kV bays with proposed 220kV GIS by GI Pipe bus arrangement. 	<p>Award by – June, 2019 Completion by June, 2021</p>

The matter was deliberated in the Steering Committee wherein TPDDL was requested to align the laying of 33kV and 66kV cables in line with the above schedule so that after energisation of the cables the 33kV and 66kV overhead feeders could be shifted to pave way for timely completion of the 400kV sub-station at Gopalpur.

TPDDL agreed for the same.

It was also informed by TPDDL that the load of all the 11kV feeders have been shifted from 220kV Gopalpur, and mentioned that if DTL wanted to remove the 11kV switchgears and transformers they may do so.

The Steering Committee advised DTL and TPDDL to adhere the timelines drawn out above for the establishment of 400kV sub-station at Gopalpur.

NCRTC raised the matter regarding power requirement for their Delhi – Sonapat – Panipat corridor from 220kV Gopalpur as their corridor is passing through the Burari area. They requested 2 No. 66kV bays from the upcoming 66kV at Gopalpur. The 66kV GIS has been envisaged with 13 No. 66kV bays (10 feeders + 2 Incomers + 1 B/C). At present, 66kV Dheerpur circuit-I & II, DJB Burari circuit I&II (connected in single bay at present) and 66kV Mukundpur (DMRC) circuit are in operation. These feeders would be shifted to 66kV GIS. TPDDL informed that considering the load growth in the area they are pursuing the matter with GNCTD for creation of a new 66kV sub-station in Burari area for which 2 no. 66kV bays are required. As such, 2 no. 66kV bays can be provided to NCRTC. The above 220/66kV system along with 220/66kV system at Shalimar Bagh and upcoming 220/66kV SGTN will be sufficient to cater the requirement of the area.

In view of above, 2 no. 66kV bays were agreed to be provided to NCRTC from 220/66kV Gopalpur.

2. Evacuation Plan of 220/66kV Papankalan-III S/Stn.

The 220kV Papankalan-3 got commissioned (220kV buses energized) through LILO of 220kV Bamnauli-Naraina D/C at Papankalan-3 on 27.12.2017. The 220/66kV 160MVA transformers are likely to be charged. The Steering Committee meeting held on 30.10.17 finalized the evacuation plan as under:-

Sr. No.	Name of Feeder	Expected date of Commissioning
1.	G-6 Dwarka	January 2018
2.	G-7 Dwarka	January 2018
3.	G-4 circuit-I	February 2018
4.	G-4 circuit-II	February 2018
5.	DMICDC Circuit-I	2019-20
6.	DMICDC Circuit-II	
7.	DMICDC Circuit-III	
8.	DMICDC Circuit-IV	
9.	Palam RSS (DMRC)	January 2018
10.	DIAL circuit-I	Interconnectors between 220/66kV PPK-III and 220/66kV DIAL which will be laid by BRPL and later may be utilized by BRPL for connectivity to the grid substations to be established by BRPL in future.
11.	DIAL circuit-II	

BRPL was requested to provide the current status of implementation of the schemes as envisaged above. BRPL informed that the work for laying of the cables to connect 2 circuits of G-4 and one circuit each to G-6 and G-7 has already been awarded and is expected to be completed by Feb-2018. The feeders of DMICDC are to be expected by March 2019.

The matter regarding connectivity of 220kV PPK-III and 220kV DIAL was also discussed to provide alternate source to 220kV DIAL for improving reliability at IGI International Airport. The representative of GMR/DIAL informed that during the year 2012, the second connectivity of 220kV DIAL was agreed from the upcoming 220kV PPK-III. 220kV bay is also available at 220kV DIAL for this purpose. As such he insisted for 220kV connectivity to ensure reliability of supply of DIAL.

During the deliberations, it was emphasized that as the new cable connectivity would aggravate high voltage problem in the system, a suitable reactor is also required to be installed at 220kV DIAL to arrest the high voltage issue which is already creating reliability issue even at present. It was also informed that a piece of land adjacent to 220kV DIAL may be used for installation of the reactor.

It was decided that the possibility of connecting the two sub-stations at 220kV level shall be explored instead of connecting at 66kV level as earlier finalized in the above evacuation plan at Sr. No. 10 & 11 subject to the condition of providing land for installation of 1 no. 25MVAR, 220kV Reactor to arrest the high voltage issues arising out of 220kV cables. The 2 no. 66kV feeders (as shown at Sr. no. 10 & 11 in evacuation table) shall therefore be utilized directly by BRPL. BRPL was requested to expedite the 66KV feeders work for evacuation of power from 220/66kV PPK-III. In view of the above, the revised evacuation plan of 220kV PPK-III is as under:

Sr. No.	Name of Feeder	Expected date of Commissioning
1.	G-6 Dwarka	March 2018
2.	G-7 Dwarka	March 2018
3.	G-4 circuit-I	March 2018
4.	G-4 circuit-II	March 2018
5.	DMICDC Circuit-I	2019-20
6.	DMICDC Circuit-II	
7.	DMICDC Circuit-III	2020-21

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

8.	DMICDC Circuit-IV	
9.	Palam RSS (DMRC)	March 2018
10.	Dwarka Sec-23 ckt-I	2020-21
11.	Dwarka Sec-23 ckt -II	

3. Hot Reserve Transformers

The latest status as decided in the Steering Committee meeting is as under:

S. N.	Transformati on Capacity	Populat ion in no.	Hot Reserve (No.) Decided	Status																													
1.	400/220kV, 500MVA ICT	2	1x500MVA	One 400/220kV 500MVA transformer would be installed as hot reserve by the year 2019-20 and would be placed at Bamnauli. In case of damage of 315MVA in future, the same would be replaced with 500MVA.																													
2.	400/220kV, 315MVA ICT	14																															
3.	220/66kV, 160MVA	22	2x160MVA +1x100 MVA	One 160MVA transformer would be kept as hot reserve and placed at Mundka and the 2nd 160MVA Hot reserve 220/66kV transformer would be kept at Rohini-2. Both the transformers would be provided by 2019-20.																													
4.	220/66kV, 100MVA	42		<p>O&M Department informed that the 220/66-33/11kV, 100MVA transformer damaged at Papankalan-I on 04.09.2016 at 06:35 hours which was earlier planned as Hot Reserve at PPK-I may not materialise as the matter of repair has gone under legal tussle. They requested for new 220/66kV, 100MVA hot reserve transformer at 220kV Papankalan -I considering the aging of the existing transformers and the population of the transformers.</p> <p>In view of the above, the Steering Committee agreed for providing new 220/66kV, 100MVA hot reserve transformer at 220kV Papankalan –I by 2019-20.</p>																													
5	220/33kV, 100MVA	37	2	One 220/33kV, 100MVA transformer which has already been decided as hot reserve and placed at Patparganj. Eventually, the transformer is required to be shifted to Naraina due to the failure of 100MVA at 220kV Naraina. Therefore, the new hot reserve is required at 220kV Patparganj. The other Hot Reserve Transformer would be placed at Kashmere Gate. These transformers would be provided by 2019-20.																													
6	66/11kV 20MVA	24	NIL	<p>Steering Committee in its meeting held on 15.03.2017 has decided that in case of exigency, the Discoms may provide these transformer on returnable basis.</p> <p>As per the decision taken in the Steering Committee Meeting held on 30.10.17 the transformer augmentation has been planned as under:</p>																													
7	33/11kV 16MVA	16																															
<table border="1"> <thead> <tr> <th>S.N</th> <th>Sub Station</th> <th>Details of existing Tx.</th> <th>Augmentation Plan</th> <th>Year</th> </tr> </thead> <tbody> <tr> <td rowspan="2">1</td> <td>Lodhi Road</td> <td>2 no 33/11kV 20MVA</td> <td>2 no 33/11kV 25MVA</td> <td>2018-19</td> </tr> <tr> <td>Lodhi Road</td> <td>2 no 33/11kV 16MVA</td> <td>2 no 33/11kV 25MVA</td> <td>2018-19</td> </tr> <tr> <td>2</td> <td>Najafgarh</td> <td>2 no 66/11kV 20MVA</td> <td>2 no 33/11kV 31.5MVA</td> <td>2019-20</td> </tr> <tr> <td>3</td> <td>Okhla</td> <td>2 no 66/11kV 20MVA</td> <td>2 no 66/11kV 31.5MVA</td> <td>2019-20</td> </tr> <tr> <td>4</td> <td>Sarita</td> <td>2 no 66/11kV</td> <td>2 no 66/11kV</td> <td>2019-</td> </tr> </tbody> </table>					S.N	Sub Station	Details of existing Tx.	Augmentation Plan	Year	1	Lodhi Road	2 no 33/11kV 20MVA	2 no 33/11kV 25MVA	2018-19	Lodhi Road	2 no 33/11kV 16MVA	2 no 33/11kV 25MVA	2018-19	2	Najafgarh	2 no 66/11kV 20MVA	2 no 33/11kV 31.5MVA	2019-20	3	Okhla	2 no 66/11kV 20MVA	2 no 66/11kV 31.5MVA	2019-20	4	Sarita	2 no 66/11kV	2 no 66/11kV	2019-
S.N	Sub Station	Details of existing Tx.	Augmentation Plan	Year																													
1	Lodhi Road	2 no 33/11kV 20MVA	2 no 33/11kV 25MVA	2018-19																													
	Lodhi Road	2 no 33/11kV 16MVA	2 no 33/11kV 25MVA	2018-19																													
2	Najafgarh	2 no 66/11kV 20MVA	2 no 33/11kV 31.5MVA	2019-20																													
3	Okhla	2 no 66/11kV 20MVA	2 no 66/11kV 31.5MVA	2019-20																													
4	Sarita	2 no 66/11kV	2 no 66/11kV	2019-																													

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

					Vihar	20MVA	31.5MVA	20
				5	Pappankalan-I	2 no 66/11kV 20MVA	2 no 66/11kV 31.5MVA	2020-21
				6	Mehrauli	2 no 66/11kV 20MVA	2 no 66/11kV 31.5MVA	2021-22

O&M Department of DTL explained the need of more hot reserve due to the number of failures of Transformers in Delhi Power System. They pointed out the details of failure of Transformers during last two years (2015-2017) as under:

S. N.	Voltage Class	Capacity in MVA	Year of Commissioning	Make of Tr.	Damaged on	Reason	Remarks
1.	220/33 kV	100 MVA Geeta Colony	2005	BHEL	02.02.16	Transformer damaged due to internal insulation failure	Visible damage noticed on Y-ph winding during joint inspection with OEM. Revived on 25.05.16 at 12.42 hrs.
2.	400/220/33 kV	315 MVA Bawana	2010	EMCO	8.3.2016	Transformer damaged and caught fire	High energy arcing due to internal fault in transformer. Probable cause might be damage of insulation in Y-Ph MV winding. MV Bushing of Y & B-Ph completely damaged. Revived on 19.05.16 at 1802 hrs.
3.	220/66/33/11kV	100 MVA PPK-I	2006	EMCO	04.9.16	HV Y-PH WINDING of transformer damaged	Inter turn fault in Y-Ph HV winding. The Tr. was replaced with Hot reserve 160 MVA Tr. commissioned at Kanjhawala Sub-stn.
4.	220/66/33/11kV	100 MVA Park Street	1994	BHEL	11.9.16	Transformer was manually switched off due to abnormally high winding temperature & during internal inspection transformer was declared faulty by OEM i.e M/S BHEL.	No visible fault was detected during inspection. However, due to abnormal temp. rise and high magnetizing and excitation current, abnormal formation of acetylene gas and SFRA deviation, Transformer couldn't be charged. Replaced with 100MVA Tr. from Papankalan-I.
5.	220/33/11 kV	100 MVA Wazirpur	2014	EMCO	19.10.16	Transformer tripped on differential & during internal inspection transformer was declared faulty by OEM i.e M/S EMCO. transformer repaired & installed/ relocated at OKHLA.	Internal fault in the transformer as confirmed due to abnormal formation of acetylene gas. The Tr. was replaced by new Tr. to be commissioned at Preet Vihar. The dismantled EMCO make Tr. was shifted to Okhla after repair on 03.05.17 at 1544 hrs.
6.	220/33/11 kV	100 MVA Geeta Colony	2005	BHEL	1.12.16	Transformer tripped on differential & damaged	R-ph HV-LV winding shorted, confirmed from insulation resistance test. The Tr. was replaced by new Tr. IMP make on 27.04.17 at 1337 hrs.
7.	400/220kV/33kV	315 MVA Bawana	2000	BHEL	11.2.16	Transformer burnt and damaged	The Tr. was replaced with the Hot reserve Tr. kept at Bamnauli Sub-stn. Revived on 28.03.17 at 2135 hrs.
8.	220/33/11kV	100MVA Lodhi Road	1994	BHEL	22.03.17	Transformer tripped on differential, buchholz & damaged	Fault in R-Ph winding and shifting of core
9.	220/33kV	100MVA Okhla	2010	EMCO	07.04.17	Transformer became faulty & repaired lateron.	Tr. damaged due to internal fault in the winding. The dismantled EMCO make Tr. from Wazirpur was shifted to Okhla after its repair.

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

10.	220/33/ 11kV	100MVA Naraina	2002	CGL	26.07.17	Transformer burnt and damaged	Tr. might have burnt due to external fault may be due to blasting of R or B-Ph HV/LV Bushing.
11.	400/ 220kV	315MVA Bawana	1998	BHEL	30.11.17	Transformer became faulty	Tr. Damaged due to insulation failure of 220kV R-Ph Bushing lead resulting oil surge and damage to 400kV R-Ph Bushing, 220kV R,Y,B-Ph Bushings, and 33kV Y-Ph Bushing.

At present there is no spare capacity available to replace Trs in case of failure.

They requested availability of spare capacity of Trs as decided in the Steering Committee Meetings and also requested the replacement of aged Transformers.

Planning Department of DTL informed that they have already drawn a detailed plan of augmentation/replacement of Trs in Business Plan 2017-22 as under:

Sr. No.	Name of the Sub Station	Qty. (No.)	Year	Scheme status as on date
1	Sarita Vihar	1	2018-19	Under tendering stage
2	Narela	1	2018-19	Under Preparation
3	Najafgarh	2	2018-19	Under tendering stage
4	Okhla	1	2018-19	Under Preparation
5	Mehrauli	1	2019-20	To be prepared
6	Patparganj	2	2019-20	To be prepared
Total		8		

After detailed deliberations, Steering Committee approved the hot reserve capacity as mentioned in the table of opening para of the item and also advised DTL to adhere the time lines of augmentation/replacement of Trs. mentioned in Business Plan 2017-22.

4. Power Evacuation Plan of 220/66/33kV R. K. Puram S/Stn.

The construction work of 220/66/33kV R.K. Puram is under progress and all efforts are going on to commission the substation before Summer, 2018.

In the last Steering Committee meeting BRPL informed the evacuation plan as under:

220/33kV level R K Puram:

S. No	Previously Proposed Feeders	Proposed Feeder (revised)	Reason for revision	DERC Approval status	Load (MW)	Time Line	Remarks
1.	Bhikajee Cama	Bhikaji Cama	No Change	Under Submission	20	Immediate	By LILO JNU- Bhikaji Cama & Shorting JNU & IIT at JNU
2.	IIT	IIT	No Change	Under Submission	10	Immediate	
3.	R K Puram-I Ckt-I	R K Puram Ckt-I	No Change	Under Submission	15	Immediate	Fresh Ckt in place of JNU- RKP Ckt-1 & 2
4.	R K Puram-2 Ckt-I	R K Puram Ckt-2	No Change	Under Submission	15	Immediate	
5.	Siri Fort	Masjid Moth	LILO Proposed	Under Submission	15	Immediate	By LILO of Masjid Moth – Adhchini circuit
6.	Adhchini	Adhchini	No Change	Under Submission	15	Immediate	
7.	Vasant Vihar	Future ckt -1	--	Under Planning			
8.	Shivalik	Future ckt -2	--	Under Planning			
9.	Shivalik	Future ckt -3	--	Under Planning			
TOTAL					90		

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

220/66kV Level R.K.Puram

S. No	Previously Proposed Feeders	Proposed Feeder (revised)	Reason for revision	DERC Approval status	Load (MW)	Time Line
1.	Vasant Kunj C block ckt-1	Vasant Kunj B block ckt-1	B Block Vasant Kunj is not in Ring	Existing	30	2019-20
2.	Vasant Kunj C block ckt-2	Vasant Kunj B block ckt-2	B Block Vasant Kunj is not in Ring	Existing	30	2019-20
3.	West of JNU circuit-1	West of JNU circuit-1	No Change	Existing	20	2019-20
4.	West of JNU circuit-2	West of JNU circuit-2	No Change	Existing	20	2019-20
5.	JNU Ckt-1	Future circuit -1	--	Under Planning		
6.	JNU Ckt-2	Future circuit -2	--	Under Planning		
		TOTAL			100	

In the last Steering Committee meeting BRPL was advised to expedite 66kV evacuation in alignment with the commissioning schedule of 220/66/33kV S/Stn.

BRPL informed that the entire area around 220kV R.K. Puram is being fed at 33kV level and the 66kV level was created on the requirement of DMRC.

DTL informed that the land for sub-station was facilitated by DMRC as no other land was available in the vicinity, therefore 66kV level was created to provide supply to DMRC. However, keeping in view of the load development and its density it is advisable that the Discom shifts load to the 66kV level by developing the associated distribution network.

BRPL agreed to shift the load of JNU by December 2019 and Vasant Kunj B-block by July,2019 to 220kV R.K. Puram. Other Evacuation Plan of 66kV would be as mentioned above.

5. Power Evacuation Plan of 220/33kV Timarpur S/Stn.

In the last Steering Committee meeting it was decided that a joint site visit of TPDDL and DTL may be carried out at Timarpur to explore the possibility of evacuation. Accordingly, joint site was carried out.

Earlier, the Chandrawal Scheme was devised with 3x100MVA transformers with following evacuation plan:

S. No.	Name of Feeder	Expected date of Commissioning	Remarks
1.	DU Ckt	TPDDL informed that all the circuits are ready for commissioning as and when the Chandrawal S/Stn. is commissioned.	LILO of DU - Hudson Lane at Chandrawal.
2.	Hudson Lane Ckt		LILO of Wazirabad - Civil line ckt at Chandrawal.
3.	Wazirabad Ckt		LILO of DIFR - Indra Vihar ckt. at Chandrawal.
4.	Civil Line Ckt		LILO of Tripolia -Shakti Nagar ckt. at Chandrawal.
5.	Indra Vihar Ckt		LILO of GTK -Azadpur ckt. at Chandrawal.
6.	DIFR Ckt		LILO of Model town - Azadpur ckt. at Chandrawal.
7.	Tripolia Ckt		
8.	Shakti Nagar Ckt		
9.	GTK Ckt		
10.	Azadpur Ckt		
11.	Model Town Ckt(Future Ckt)		
12.	Azadpur Ckt.(Future Ckt)		

In view of change of location of sub-station from Chandrawal to Timarpur on account of non clearance of DJB for cable laying due to their upcoming project near Chandrawal, TPDDL was advised to draw out evacuation plan from Timarpur 220kV sub-station.

TPDDL informed that in line with Steering committee Decision in meeting held on 30.10.2017, a site visit was carried out with DTL officials and on individual basis for feasibility of 220KV Timarpur. TPDDL further informed that on detailed analysis, it was found that only 4 no. feeders for DIFR & Indra Vihar are possible from the location of 220kV Timarpur.

DTL informed that the scheme for 220kV sub-station at Timarpur has been finalized and the infeed scheme (220kV D/C U/G cable link from 220kV Kashmiri Gate to 220kV Timarpur) has even been sent to C&MM division for tendering process which will be required to be stopped in case of change of location. Moreover, if location is to be shifted at this stage, it would further delay the establishment of 220kV sub-station in the area. DTL further informed that the present land is under the possession of DTL, however, if location is changed, the new land allocation from ground zero would further add delay in the establishment of the sub-station as the new land allocation is a difficult and lengthy process.

TPDDL was stressed that more feeders such as Civil Line and Wazirabad etc. may be taken out by TPDDL from 220kV Timarpur for which TPDDL should make all out efforts.

Steering Committee advised TPDDL and DTL to sort out the issue of evacuation problem as the 33kV cable constraints can still be managed compared to that of the 220kV cable constraints and also considering the fact that no other feasible option of suitable land (70mx 70m approx) for the sub-station is available in the vicinity of the area. TPDDL was also advised to make all out efforts to take out the feeders for Civil Line and Wazirabad etc. from 220kV Timarpur as there is no other feasible option of suitable land for the sub-station.

6. Requirement of Power by NCRTC at Maharani Bagh/ Sarai Kale Khan for their upcoming RRTS projects respectively

National Capital Region Transport Corporation Ltd. (NCRTC) informed that they have been mandated for implementing the rail based Regional Rapid Transit System (RRTS) in the following three prioritized corridors:

- Delhi – Ghaziabad – Meerut
- Delhi – Sonapat – Panipat
- Delhi – Gurgaon – Rewari - Alwar

The RRTS needs electrical power for the operation of the trains and running & maintaining the various services like lighting, lift, escalators, HVAC system and operating the signaling & tele communication system etc. at RRTS station & train depot near Sarai Kale Khan, New Delhi.

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

It is proposed to construct two Traction Receiving Substations to cater for loads on the two RRTS corridors. The estimated electric load for these RSS/TSS is 50 MW each and is expected to come by 2021-22.

The power requirement for the above corridors was discussed as under:

Sr. No.	Corridor	Feeding Arrangement suggested by NCRTC	Discussion and Suggestion
1	Delhi – Sonapat – Panipat	2 No. 66kV GIS feeder bays from 220kV Gopalpur	-Agreed-
2	Delhi – Gurgaon – Rewari - Alwar	2 No. 66kV GIS feeder bays from 220kV DIAL	At present there are 5 No. spare 66kV bays at 220/66kV DIAL out of which 1 no. 66kV bay is for future 66kV incomer. It was agreed to provide 2 no. 66kV bays to NCRTC from 220/66kV DIAL. The remaining 2 No. 66kV feeder bays shall be utilized by DIAL for providing supply to Terminals T1 and T4.
3	Delhi –Ghaziabad – Meerut	2 No. 66kV GIS feeder bays from 220kV Maharani Bagh (66kV system is to be developed), if not feasible 2x220kV bays may be provided.	<p>The area is covered with 33kV network of BRPL. To meet the requirement, DTL has already planned 220/33kV substation with 3x100 MVA Transformers, 1x100 MVA (future transformer) and 12 no. 33kV feeder bays (total 17 No. 33kV bays: 12 feeders+4 incomers+1 B/C).</p> <p>The creation of 66kV system to cater the traction load of NCRTC system would create system reliability issue due to variable load. It was suggested to avail the supply at 33kV level by NCRTC at Maharani Bagh.</p> <p>NCRTC expressed their technical difficulty being the standard conversion for traction load from 66kV to 25kV. However, agreed to explore the possibility. They also requested to provide the supply from 66kV Gazipur if it is not possible to establish 66kV system at Maharani Bagh, which was also turned down due to space constraint.</p> <p>With regard to the request of 220kV bays, the Committee was of the strong view that the traction load should not be allowed at 220kV owing to technical difficulties of catering low load demand through high capacity 220kV cables being encountered at 220kV Shalimar Bagh and Kashmiri Gate at present.</p>

7. DDA Land Pooling- Power Requirement

In the last Steering Committee meeting held on 30.10.17, it was decided to hold a separate meeting with DDA, BRPL and TPDDL to understand the issue for further discussions.

Accordingly, a meeting was held on 22.11.2017 where in the representative of TPDDL attended. BRPL did not attend despite notice. The gist of discussions and decision were informed as under:-

- (a) DDA officers explained the land pooling policy and indicated that the proposed land pooling policy is having feature of land pooling of private as well as public properties. It was indicated that the pooling policy is of voluntary nature and would be developed in a coordinated way, if the 60% or more participation is forthcoming from the private sector, then DDA would develop the area in co-ordinated way. The Power requirement as well as the infrastructure is also required to be assessed depending upon the finalization of actual development.
- (b) DDA also appreciated that although the necessary information/data were provided by DTL/Discoms at the time of its preparation in the year 2007-08, but it needs to be revisited by respective utility as we are approaching toward end of the MPD-2021. If necessary correction is observed, the same is required to be communicated to DDA promptly, so as to incorporate in the upcoming plan, which will be prepared keeping in view of the upcoming land policy.
- (c) It was informed that DTL has already finalized the infrastructure development at transmission levels involving 220kV, 400kV and 765 kV upto the year 2021-22. The upcoming 220kV Sanjay Gandhi Transport Nagar, 220kV Tikri Khurd are proposed to be functional by the year 2021-22. These s/stns are mainly meant for TPDDL areas, eventually falling under P-I And P-II zones of DDA zonal Plan. Correspondingly, TPDDL has also earmarked many 66kV s/stns in the area.
- (d) Similarly, for the Zone-N, which also falls in the TPDDL area, DTL has planned one 220kV s/stn namely Barwala, which is likely to be completed in FY 2022-23. The sub-station will take care of the upcoming load in the area along with 220kV Rohini-II which is already commissioned, and would be utilised its optimum level with such developments in the area.
- (e) There was no representation from the BRPL side in the meeting. However, it has been observed that for the Zones K-1 & L, which falls under BRPL area, DTL has already made functional one 220kV s/stn Pappankalan-III recently. One 400kV s/stn is under construction at Dwarka Sec-5 along with 220kV s/stn. Further 02 more 220/66kV s/stns are planned at Sec-26 Dwarka (likely to be commissioned by 2021-22) and at Jhatikalan area. Accordingly, BRPL has also planned the down-stream distribution network to cater the load demand of the area.
- (f) Similarly, Power infrastructure depending upon the actual load growth would also be created beyond 2021-22.

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

- (g) It was also observed that the ground level data for 66/33 kV level s/stns were found missing in the submitted zonal land use plan for the BRPL area for the Zones: K1 & L. It may be due to non-submission of relevant details at that time by BRPL to DDA. Though, it was observed that number of s/stns have been planned in the area.
- (h) It was decided to discuss the matter further in SCM which is the appropriate forum for such discussions and drawing coordinated development of electrical network depending upon the load requirement.

In the Steering Committee Meeting it was informed that the details of the zone-wise plan are as under:

Sr. No.	ZONE	Transmission System Plans		Distribution System Plans
		Name of the S/Stn.	Status	
1.	Zone-P(I) & P(II)	1. Establishment of 220kV S/Stn. at Sanjay Gandhi Transport Nagar (SGTN) 2. Establishment of 220kV S/Stn. at Tikri Khurd.	Tender have been floated and is under evaluation. Scheduled for commissioning in 2019-20. Land has been identified, Payment has also been made. DDA is yet to handover identified land. Scheduled for commissioning in 2021-22.	Tata Power is the concerned Distribution Company of the area. They have earmarked their 66kV S/Stn. in line with the plan of DTL.
2.	Zone-N	1. 220kV Rohini-II is already commissioned to serve this area, and 2. Establishment of 220kV S/Stn. at Barwala.	Already commissioned. Land has been identified; matter is being taken up with DDA for its allotment. This S/Stn. will be taken up in the next Business Plan to be commissioned by 2022-23.	Tata Power is the concerned Distribution Company of the area. They have earmarked their 66kV sub-stations in line with the plan of DTL.
3.	Zone-K-1 and L	1. Establishment of 220kV S/Stn. at PPK-III. 2. A 400/220/66kV S/Stn. is under construction at Sector-5 Dwarka. 3. 220kV Sector-26, Bharthal S/Stn. is planned to be commissioned in 2021-22. 4. 220kV Jhatikalan S/Stn. is planned to be commissioned in 2021-22.	Already commissioned. S/Stn. is due for commissioning in 2018-19. There are issues about Right of Way for 400kV in-feed. Matter is under consideration with DDA for final Route clearance. Land is available with DTL. Scheme is under preparation for commissioning of this S/Stn. in 2021-22. Land is available with DTL within the 765kV Jhatikalan S/stn. Scheme is under preparation for commissioning of this S/Stn. in 2021-22.	BSES Rajdhani is the concerned Distribution Company of the area. They have earmarked their 66kV sub-stations in line with the plan of DTL.

Steering Committee opined that Power demand and infrastructure may also be required to be assessed afresh in view of proposed changes in MPD 2021 and proposed changes in FAR. Steering Committee advised for a separate meeting in this regard.

8. Status of additional five 33kV GIS bays at AIIMS

In the Steering Committee meeting held on 30.10.2017, BRPL informed that they require 4 bays (2 for upcoming AIIMS-II Grid S/Stn., one for NDSE –II and one for HUDCO feeders) by Summer 2018. One 33kV I/C bay is also required to be installed for additional 220/33kV, 100MVA transformer (as per Business Plan 2021-22).

Due to specific reasons, only the OEM can do the extension works as informed in the Steering Committee meeting held on 30.10.17.

As such, Schneider, the OEM of the 33kV GIS (earlier AREVA) has been pursued many times to give the offer. But the same has not yet been received. Therefore, it was informed that the bay extension may get delayed.

BRPL explained that these bays are required to be established as early as possible. With regard to 33kV AIIMS-II which is required to be fed through 2 additional 33kV bays through 220kV AIIMS is expected by March 2019. However, the other 2 bays are immediately required as 33kV GIS at NDSE-II is going to be completed before March-2018. Hudco cable is also required to be laid along with NDSE-II cable and the grid is at present radially fed.

The Steering Committee found that the 5 No. 33kV GIS bays are essentially required (2 for upcoming 33kV AIIMS-II Grid S/Stn., one for 33kV NDSE –II and one for 33kV HUDCO feeders + One 33kV I/C bay for additional 220/33kV, 100MVA transformer) and hence advised DTL to pursue with the OEM for establishment of additional 5 No. 33kV GIS bays at 220kV AIIMS sub-station at the earliest.

9. Status of 66kV bays at 220kV Sarita Vihar for additional feeds to Mithapur and Jasola Grid Stations of BRPL

Steering Committee held on 30.10.17 advised DTL to explore the possibility of addition of bays at Sarita Vihar 220kV S/Stn. The issue was pursued with O&M Section of Sarita Vihar S/Stn. The details of the availability of 66kV bays at Sarita Vihar are as under:-

S.No.	Details of 66kV bays	Remarks
1	Mathura Road Ckt.No.1	
2	Mathura Road Ckt.No.2	
3	Incomer No.1	
4	20MVA transformer No.1	
5	Bus Coupler	
6	20MVA Transformer No.2	
7	Incomer 2	
8	DMRC Kalkaji Ckt.NO.3	
9	20MVA Capacitor Bank	
10	DMRC-2	
11	DMRC-1	
12	Spare	Only structures are available

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

13	Spare	
14	Meethapur	
15	Jasola	
16	Incomer-3	
17	Spare	This bay was created for connection of Timarpur Okhla Waste Management Plant for which they have deposited Rupees 71,17,000/- on 04.10.13.

BRPL informed that at present Mithapur and Jasola Grid Stations are connected by single circuit from 220kV Sarita Vihar with interlinking between Mithapur and Jasola Grid Stations to take care of contingency arising out of any one of the direct circuit and requested to establish 2 no. additional 66kV bays at 220kV Sarita Vihar to have independent double circuit feed to the grids namely Mithapur and Jasola to ensure reliability.

In view of the above, it was decided that scheme for 2 no. new 66kV bays be prepared by DTL for providing additional feeds to Mithapur and Jasola Grid Stations of BRPL before Summer 2019.

10. 33kV bay addition at 220kV Peera Garhi S/Stn.

In the last Steering Committee meeting held on 30.10.17, DTL was advised to explore the possibility of addition of 6 No. 33kV additional bays at Peeragarhi S/Stn. to accommodate following feeders.

- i) 33kV Peera Garhi Ckt.1 - M/s BRPL
- ii) 33kV Peera Garhi Ckt.2 - M/s BRPL
- iii) 33kV Madipur Ckt. - M/s BRPL
- iv) 33kV Paschim Vihar ckt. - M/s BRPL
- v) 33kV Kirti Nagar - M/s TPDDL
- vi) 33kV Saraswati Garden - M/s TPDDL

Note:

- (a) S. No. (i) and (ii) are for new grid s/stn. and S. No. (iii) to (vi) are for network redundancy.
- (b) No additional 220/33kV 100MVA Trf. would be installed due to non availability of space apart from non availability of 220kV and 33kV GIS bays.

Subsequently, a site visit has been carried on 11/12/17 and it was found that in 33kV GIS building 4 panels can be added to the right side of the 33kV GIS panels and 2 panels can be added to the left. However, the same can be possible only through OEM M/s Schneider as the 33kV GIS expansion with other make 33kV GIS bays is not possible with the same sequence of continuity in the existing bus arrangement as the 33kV GIS has Modular design plug-in type arrangement.

The Steering Committee found that the 6 No. 33kV GIS bays are essentially required for maintaining the stability of power supply in the area and therefore advised DTL to plan the additional 6 No. 33kV GIS bays at 220kV Peera Garhi through OEM being no other viable option and ensure the commissioning before Summer 2019. It was also confirmed no additional 100MVA transformer would be installed as decided in the Steering Committee Meeting held on 30.10.2017.

C. New Issues.

1. Shifting of 66kV D/C O/H Line of BRPL at 220kV Mehrauli Sub-station for construction of 5 No. 66kV feeder bays (4 bays for BRPL and 1 bay for DMRC)

A scheme for establishment of 5 no. 66kV additional bays along with conversion of existing 66kV Twin Zebra bus to Quad Zebra bus at the existing 220/66kV Mehrauli Substation was initiated on 09.09.2013 based on the decision taken in the Steering Committee held on dt.17.04.2012. Out of 5 no. 66kV bays, one bay was meant for DMRC for their Line-8 (KalindiKunj-Janakpuri Section) and 2 no. bays for Fatehpur Beri and 2 no. bays for Andheria Bagh Substations of BRPL.

Based on the above, a P.O. has been placed to M/s Srex power for Establishment of 5 nos. additional 66kV bays at the existing 220kV Mehrauli Substation by extension of the existing 66kV switchyard.

Since Fatehpur Beri sub-station has been commissioned recently, for regular feeding of the Substation, as decided in the Steering Committee held on dt.30.10.2017, 2 No. 66kV Capacitor Bank bays at 220kV Mehrauli S/S have been spared for providing feed to Fatehpur Beri sub-station (Fatehpur Beri Ckt-I energized from 220kV Mehrauli on 28.12.2017 at 16:50 hrs and Fatehpur Beri Ckt-II energized on 16.01.2018 at 18:15hrs). Now, the bays are required for providing the feed to 66kV Andheria Bagh Substation of BRPL before Summer, 2018. The Capacitor Banks are also required to be re-energized in the new 66kV bays.

Number of Joint site visits were carried out with the vendor in presence of DTL officers from Civil, Project, O&M and Planning departments. During the site visit, it was found that space available in the existing yard located in bay no. 19 can be used for development of one no. 66kV bay and the remaining 4 no. bays can be established in the extended yard. This was suggested to avoid the infringement of existing 66kV Mehrauli – Bijwasan and 66kV Mehrauli – Palam Overhead Transmission Lines erected on the same towers.

In view of the above, the following arrangement was agreed to facilitate timely establishment of 5 no. 66kV feeder bays:

- (a) 1 bay shall be established in the space available at bay no. 19 of the existing yard and remaining 4 bays in the extended yard.
- (b) 1 bay shall be established in continuation to the existing yard and 3 bays shall be established in the proposed location for new bays to give safe clearance to the proposed bays from the existing 66kV Line as the shutdown of existing 66kV Mehrauli – Bijwasan and 66kV Mehrauli –Palam Circuits of BRPL is not possible for long duration for shifting of the O/H 66kV Line.
- (c) Since the level of new yard is approximately 1 meter above the existing 66kV Switchyard level, two no. towers would be erected at the location where yard level varies by modifying CT-5 tower. All other towers in the proposed gantry structure shall be of the same design of the existing gantry structure.

Due to the above arrangement, shifting of the 66kV O/H Line is not required.

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

It was informed that out of the 5 No. 66kV bays, 1 No. 66kV bay is for DMRC Phase-III (Janapuri-Kalindi Kunj Corridor).

DMRC informed that they do not require the 66kV bay from 220/66kV Mehrauli and the same may be utilized by BRPL. BRPL confirmed that they would utilize the 66kV feeder bay for connecting to their Vasant Kunj B-Block grid to provide additional feed to the grid sub-station as Vasant Kunj B-Block sub-station is now radially fed through 220kV Vasant Kunj via Vasant Kunj C-Block.

Steering Committee agreed the above proposal.

The proposal of O&M Department regarding provision of bus Sectionalizer for 66kV bus at 220/66kV S/Stn. Mehrauli was also discussed. It was decided that the construction of bus sectionalizer is not technically feasible due to space constraint in the 66kV switch yard at the S/Stn.

2. Remedial Measures to overcome the Transmission Constraints pointed out by SLDC

SLDC has pointed out the Transmission system constraints at the time of occurrence of peak demand i.e. 6526MW at 15.31.37hrs. on 06.06.2017 as under :-

No. of Sub-Stations and Transmission lines where reliability (n-1 criteria) does not exist

Voltage level	Total number of stations / Lines	Number of sub-stations/Lines n-1 criteria does not meet
400kV	6 (Including 400kV Mandola & Maharani Bagh of PGCIL)	1 (without 500MVA at Bamnauli)
220kV	36 (including 220kV Maharani Bagh)	16
400kV lines	13 pairs (26 no)	--
220kV lines	51 pairs (102 no.)	35 no.

The details of the Sub-Stations which do not meet (n-1) reliability criteria along with the Plan to ease the Transmission constraints is as follow:

S. NO	NAME OF S/STN.	VOLTA GE LEVEL (kV)	INSTALLED TRANSFOR MATION CAPACITY (MVA)	TOTAL LOAD OF S/STN. IN MW AT PEAK 6526MW 06.06.2017 AT 15.31.37HRS.	Constraints pointed out by SLDC	Plan to ease Transmission constraints as discussed in the meeting
	400kV					
1	BAMNAULI	400/220	1630	1013	n-1 criteria does not meet in case of outage of a 500MVA ICT.	400kV Tughlakhabad and Dwarka ISTS are under construction. The S/Stns. are expected by 2018-19. After which the load of DIAL, Mehrauli, Vasant Kunj would be shifted to Tughlakhabad ISTS and Naraina, PPK-I etc. to Dwarka ISTS easing the loading on 400kV Bamnauli.

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

220kV						
1	GOPALPUR	220/66	100	78	Only one Transformer is available.	Addition of 2x160 MVA (one new & other up gradation 100 to 160MVA) and 66 kV GIS at Gopalpur by 19-20.
		220/33	200	104	n-1 criteria does not meet.	
2	SHALIMARBA GH	220/66	100	76	Only one Transformer is available at present.	Establishment of 220/66kV GIS at SGTN by 2019-20. Further in the meeting held in the chamber of Dir(Oprns) on 02.01.2018, it was decided to shift 100MVA CGL make Trf of Mehrauli (which remains at no load) to 220kV Shalimar Bagh before Summer 2018. Additional 04 no. 66kV Bays and 2 No. 220kV bays are also to be erected before Summer' 18.
		220/33	200	118	n-1 criteria does not meet	The load is interchangeable with Wazirpur.
3	BAWANA	220/66	100	55	Only one Tx. is available	The load is interchangeable with DSIIDC Bawana/ Kanjhawala. It was stopgap arrangement for meeting DSIIDC Bawana. It was decided to continue with this arrangement.
4	KANJHAWAL A	220/66	200	160	n-1 criteria does not meet.	Addition of new 220/66 kV, 160 MVA ICT by 2018-19
5	OKHLA	220/66	200	164	n-1 criteria does not meet	100 MVA ICTs to 160 MVA ICT capacity augmentation and establishment of 220/66kV Tuglakabad substation by 2018-19.
6	GEETA COLONY	220/33	200	119	n-1 criteria does not meet. Load is interchangeable with Patparganj.	DISCOM needs to shift the partial load at Preet Vihar to give instant relief to maintain n-1 criteria at Geeta colony. Additional Tx. installation is very tedious due to severe space constraints. BYPL agreed to explore the possibility to shift load to Preet Vihar though it is in other zone.
7	PARKSTREET	220/66	200	134	n-1 criteria does not meet	DISCOM should shift load to Ridge Valley to give instant relief.
		220/33	200	134	n-1 criteria does not meet	NDMC needs to shift the load to Electric Lane to give instant relief to maintain n-1 criteria at Park Street for 33kV level. Establishment 220/33 kV GIS at Dev Nagar by 2019-20 would also ease loading.
8	SUBZIMANDI	220/33	200	142	n-1 criteria does not meet.	Establishment of 220/33 kV GIS substation at Dev Nagar by 2019-20. Addition of 1 no. 100MVA is possible after 220kV GIS conversion due to space constraints. The addition is envisaged in 2021-22.

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

9	NAJAFGARH	220/66	400	293	n-1 criteria does not meet. However, part load is interchangeable.	2 No. 100 MVA to 160 MVA Augmentation by 2018-19.
10	TRAUMA CENTER	220/33	200	126	n-1 criteria does not meet.	Establishment of 220/66 & 220/33 kV GIS at R K Puram by 2018-19. Addition of new 220/33 kV, 100 MVA ICT by 2021-22.
11	PATPARGANJ	220/66	200	104	n-1 criteria does not meet	No constraint in normal condition as load is interchangeable with Gazipur, S.O.W. and Harsh Vihar substations.
12	WAZIRPUR	220/33	200	141	n-1 criteria does not meet. However, load is interchangeable.	At present loading interchangeable with Shalimar Bagh. Addition of 100MVA is planned for 2019-20 after remodelling of the yard due to space constraints.
13	I.P.STN.	220/33	300	222	n-1 criteria does not meet. However, load is interchangeable.	No constraint in normal condition as load is interchangeable with Rajghat, Lodhi Road etc.
14	RAJGHAT	220/33	200	131	n-1 criteria does not meet. However, load is interchangeable.	No constraint in normal condition as load is interchangeable with I.P. Station and Kashmiri Gate etc.
15	MASJID MOTH	220/33	300	206	n-1 criteria does not meet in case of outage of a 220/33kV 100MVA Tr. However, load is interchangeable.	No constraint in normal condition as load is interchangeable with Okhla.
16	PEERAGARHI	220/33	200	174	n-1 criteria does not meet.	The new (3 rd) 220/33 kV, 100 MVA transformer installed and charged on 20.07.2017 at 18:02 hrs. on no load. The 33kV I/C would be charged soon.

The Details of Transmission lines that do not meet (n-1) reliability criteria at the time of peak demand (6526 MW on 06.06.2017 at 15:31:37 hrs) along with the plan to ease the transmission constraints is as follow:

S. No.	Name of the Element	MW	MVAR	Remarks	Plan to ease Transmission constraints
1	220 KV BAMNAULI-DIAL CKT.-I	103	-42	n-1 criteria does not meet.	LILO of Mehrauli-BTPS at the upcoming 400kV Tughlakabad by 2018-19. HTLS re-conductoring of 220kV BTPS-Meharuli-DIAL-Bamnauli line for which LOI has been issued.
2	220 KV BAMNAULI-DIAL CKT.-II	102	-39		

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

3.	220 KV BAMNAULI-PAPANKALAN CKT.-I	174	20	n-1 criteria does not meet.	S/C LILO of 220kV Bamnauli-Naraina at PPK-I has been commissioned. 220kV D/C line from upcoming 400kV Dwarka substation to PPK-I by 2020-21. 220kV D/C line from upcoming 400kV Dwarka substation to PPK-II by 2020-21.
4	220 KV BAMNAULI-PAPANKALAN CKT.-II	181	28		
5	220 KV BAMNAULI-PAPANKALAN-II CKT.-I	147	28		
6	220 KV BAMNAULI-PAPANKALAN-II CKT.-II	145	25		
7	220 KV BAWANA-ROHINI CKT.-I	140	1	n-1 criteria does not meet.	
8	220 KV BAWANA-ROHINI CKT.-II	123	-18		
9	220 KV BTPS - BALLABGARH CKT. -I	-107	1	n-1 criteria does not meet	BBMB is the owner of this transmission line. The decision of re-conductoring of this line with HTLS conductor has been under discussion since long. But due to the complete closure of BTPS during winter season and complete closure of stage-I units permanently, the re-conductoring cannot be feasible due shut down issues. Further, after commissioning of 400kV Tughlakabad in 2018-19, this line would not have much importance with regard to Delhi Power Supply.
10	220 KV BTPS - BALLABGARH CKT. -II	-106	3		
11	220 KV GOPALPUR-MANDAULA CKT.-I	-168	-24	n-1 criteria does not meet.	The commissioning of 220/66kV at SGTN & 220/33kV at Timarpur (or any other site in the vicinity) will ease the loading of these circuits by 2019-20. Up-gradation to 400kV of 220kV Gopal Pur
12	220 KV GOPALPUR-	-177	-26		

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

	MANDAULA CKT.-II				is also proposed by 2021-22. However considering the load growth in the area and the Gopalpur S/stn is also supplying power to 220 kV Subzi mandi and the main source is 220kV Mandola-Gopalpur D/C line, it would be appropriate to reconductor the circuits with HTLS conductors for maintaining reliability of the power supply.
13	220 KV IPPOWER-PATPARGANJ CKT.-I	-131	-24	n-1 criteria does not meet.	The conductors are of Double Dog type. The capacity of the conductor is more than Zebra, hence n-1 criteria meets.
14	220 KV IPPOWER-PATPARGANJ CKT.-II	-139	-28		
15	220 KV MEHRAULI-BTPS CKT.-I	-136	-9	n-1 criteria does not meet.	LILO of Mehrauli-BTPS at 400kV Tughlakabad. Further, HTLS re-conductoring of 220kV BTPS-Meharuli-Dial-Bamnauli line for which LOI has been issued.
16	220 KV MEHRAULI-BTPS CKT.-II	-140	-8		
17	220 KV KANJHAWALA-NAJAFGARH CKT.	146	9	n-1 criteria does not meet. However, load is interchangeable	Load is interchangeable.
18	220 KV MAHARANI BAGH-TRAUMA CENTRE CKT.-I	120	10	n-1 criteria does not meet.	The cable is of size 1200 sq.mm., hence n-1 criteria meets. Load is also interchangeable.
19	220 KV MAHARANI BAGH-TRAUMA CENTRE CKT.-II	120	10		
20	220 KV OKHLA-BTPS CKT.-I	-151	-1	n-1 criteria does not meet.	Establishment of 400/220/66kV Tuglakabad substation by 2018-19 and the proposed connectivity of 220kV Okhla with Tuglakabad would ease the loading.
21	220 KV OKHLA-BTPS CKT.-II	-187	-28		
22	220 KV MUNDKA-KANJHAWALA CKT.	146	9	n-1 criteria does not meet. However, load is interchangeable	Load is interchangeable.
23	220 KV MUNDKA-NAJAFGARH CKT.	153	33	n-1 criteria does not meet. However, load is interchangeable	

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

24	220 KV MUNDKA-PEERAGARHI CKT.-I	159	-33	n-1 criteria does not meet. However, load is interchangeable	Load is interchangeable.
25	220 KV MUNDKA-PEERAGARHI CKT.-II	157	-31		
26	220 KV PRAGATI-PARK STREET CKT.-I	139	-3	n-1 criteria does not meet.	The 220kV connectivity of Park Street with Maharani Bagh through Lodhi Road and Electric Lane is being established before Summer 2018.
27	220 KV PRAGATI-PARK STREET CKT.-II	141	-7		
28	220 KV HARSH VIHAR - PREET VIHAR CKT. -I	197	-30	n-1 criteria does not meet.	Load is interchangeable.
29	220 KV HARSH VIHAR - PREET VIHAR CKT. -II	198	-29		
30	220 KV PATPARGANJ-PREET VIHAR CKT.-I	183	10	n-1 criteria does not meet.	Load is interchangeable.
31	220 KV PATPARGANJ-PREET VIHAR CKT. -II	183	10		
32	220 KV WAZIRABAD-MANDAULA CKT.-I	-162	-34	n-1 criteria does not meet.	Load is interchangeable. All DISCOMS requested for augmentation of the circuits with HTLS conductors to maintain reliability. O&M Deptt. of DTL also supported the views.
33	220 KV WAZIRABAD-MANDAULA CKT.-II	-161	34		
34	220 KV WAZIRABAD-MANDAULA CKT.-III	-160	-36		
35	220 KV WAZIRABAD-MANDAULA CKT.-IV	-164	-36		

In addition to the above, a few other related points were discussed and agreed as under:

- (a) To maintain n-1 criteria in case of outage of 220/66kV, 100MVA at 400kV Bawana, TPDDL was requested to make an alternate arrangement for the feeders being fed from 100 MVA transformer at 400kV Bawana as the same was just a stopgap arrangement for meeting power requirement of DSIIDC Bawana before the establishment of 220kV DSIIDC Bawana-I sub-station. TPDDL informed that Bawana-6 and 7 are being fed from 400kV Bawana and after connecting RG-34 to Bawana-6 the load will be shifted to

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

220kV Rohini-II. It was decided to continue with the 100MVA Transformer and TPDDL was advised to make alternate arrangement for the feeders being fed from the transformer so that load may be shifted in case of outage of the transformer.

- (b) The O&M Deptt. of DTL pointed out that the old existing 220kV T/L from Okhla to T-point on BTPS-Mehrauli T/L is to be utilized for providing D/C T/L connectivity of 220kV Okhla from 400 kV Tuglakabad. The T/L is required to be strengthened as towers of this T/L are old and electrical clearance of the conductors above ground is also not proper at some of the places in the T/L. As the subject work is being undertaken by Powergrid so the matter may be undertaken with Powergrid for strengthening of the said T/L.
- (c) BYPL was requested to shift the load of Kanti Nagar from 220/33kV Geeta Colony to 220/33kV Preet Vihar to provide relief and to maintain n-1 criteria at 220/33kV Geeta Colony.
- (d) NDMC was requested to shift the load of Hanuman Road from 220kV Park Street to 220/33kV Electric Lane to give relief and to maintain n-1 criteria at 220/33kV Park Street.
- (e) Keeping in view the loading of the 220 kV Wazirabad-Mandaula Circuits, it was agreed that the conductor of the circuits is required to be replaced with HTLS conductor subject to provision of fund from PSDF.
- (f) On the decision of shifting of 100MVA CGL make Trf of Mehrauli (which remains at no load) to 220kV Shalimar Bagh, BRPL requested to install an additional 160 MVA Transformer at 220kV Mehrauli to feed additional 5 no. 66kV bays. The matter was deliberated and Steering Committee advised BRPL to shift some of the 66kV load from 220kV Mehrauli to 220kV R.K. Puram. BRPL agreed to explore the possibility in addition to shifting of the load of JNU and Vasant Kunj B-block to 220kV R.K. Puram. It was informed that DTL has plan to augment the existing 100 MVA transformer at 220kV Mehrauli by 2019-20.

3. Provision of 66kV line CVTs in 66kV feeders emanating from 220kV Papankalan-III which is being established by Powergrid as a deposit work of DTL- DMRC Issue

As per the design of PGCIL only bus CVTs are provided which would take care the protection requirement for 66kV outgoing feeders. However, DMRC have requested for line CVTs in their feeder emanating from PPK-III.

The Protection Department of DTL has informed that in a cable feeder line current differential is mandatory for protection scheme in compliance with the decision taken in the 6th GCC meeting of Delhi held on 08.05.2012 and the same is to be provided by the cable owning agency. It was also informed by the Protection Department that since year 2010, DMRC has been providing numerical line current differential relay at both ends of the cable with optical fibre connectivity to have appropriate protection for the cable to ensure grid stability.

The existing protection scheme of PPK-III substation having Bus CVT is enough to meet the CVT requirement of the Distance/Line current Differential Protection.

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

DMRC representative was not in agreement with the view of Protection Department and was of the view that as per the Protection Plan approved by the GCC the numerical line current differential relay are not mandatory for lines more than 1 km long. He cited the relevant extracts of the Protection Plan in this regard as under:

Protection norms for 66KV, 33KV & 11KV feeders

Line	Protection as per agenda	Protection after amendment
66KV line in mesh	Main-I Distance/line current differential protection & directional O/C and E/F with high set.	Main Protection:- IEC61850 compliant Numerical Distance Protection/line current differential protection with built in fault locator , disturbance recorder and event logger for all overhead lines of length more than 1 KM. For all underground cables and over head lines upto 1 km. length main protection shall be essentially Numerical line current differential protection. Back up Protection:- Directional Over Current and Earth Fault protection.
66KV double ckt. parallel fdr.	Main.I Distance/line current differential protection and directional O/C & E/F.	Main Protection:- IEC61850 compliant Numerical Distance Protection/line current differential protection with built in fault locator , disturbance recorder and event logger for all overhead lines of length more than 1 KM. For all underground cables and over head lines upto 1 km. length main protection shall be essentially Numerical line current differential protection. Back up Protection:- Directional Over Current and Earth Fault protection.
33KV Parallel feeder	Distance/line current differential protection & directional O/C & E/F.	Main Protection:- IEC61850 compliant Numerical Distance Protection/line current differential protection with built in fault locator , disturbance recorder and event logger for all overhead lines of length more than 1 KM. For all underground cables and over head lines upto 1 km. length main protection shall be essentially Numerical line current differential protection. Back up Protection:- Directional Over Current and Earth Fault protection.
66KV single ckt. feeder	Distance/line current differential protection. Non direction O/C E/F.	Main Protection:- IEC61850 compliant Numerical Distance Protection/line current differential protection with built in fault locator , disturbance recorder and event logger for all overhead lines of length more than 1 KM. For all underground cables and over head lines upto 1 km. length main protection shall be essentially Numerical line current differential protection. Back up Protection:- Non Directional Over Current and Earth Fault protection.
33KV single ckt. feeder	Distance/line current differential protection. Non direction O/C E/F.	Main Protection:- IEC61850 compliant Numerical Distance Protection/line current differential protection with built in fault locator , disturbance recorder and event logger for all overhead lines of length more than 1 KM. For all underground cables and over head lines upto 1 km. length main protection shall be essentially Numerical line current differential protection. Back up Protection:- Non Directional Over Current and Earth Fault protection.
11KV feeder emanating from DTL/GENCO Grid (with minimum settings)	Non-directional O/C E/F with high set feature.	Non-directional O/C E/F with high set feature (at first switching station control shall be with CB only).

After deliberation, it was decided that line CVTs may be provided by DTL as line CVTs are not provided by Power grid who has implemented the Substation scheme. Till the time of installation of Line CVTs, the Bus CVTs may be utilized.

With regard to provision of current differential relays in the feeder, Steering Committee decided to refer the matter to the Protection Sub-Committee of Delhi.

4. Summer 2018 Preparedness

A. System Augmentation Works carried out in DTL since last summer.

- LILO 220kV Bamnauli-Naraina D/C (HTLS) at Papankalan-III has been commissioned in Nov. 2017.
- 220/66kV Papankalan-III with 2x160MVA to be commissioned soon.
- S/C LILO of 220kV Naraina-Bamnauli at Papankalan-I commissioned (providing second connectivity to Papankalan-I)
- Additional 220/33kV, 100MVA transformer at Peera Garhi has been commissioned in July, 2017.

B. Upcoming Projects

- Additional 220/66kV, 100MVA (CGL make) transformer at Mehrauli would be shifted to Shalimar Bagh and to be commissioned before Summer 2018.
- Additional 4 No. 66kV bays and 2 No. 220kV bays are to be establishment at 220kV Shalimar Bagh before Summer 2018.
- 2 No. 66kV additional bays to be installed at 220kV Patparganj to feed Mayur Vihar-I Ckt. No. 2 and Khichripur Ckt. No. 2 before Summer 2018.
- Construction of 400/220kV Tuglakabad ISTS with 4x500MVA is in full swing and likely to be completed by June, 2018.
- 220kV Tuglakabad- BTPS D/C
- 220kV Tuglakabad-Mehrauli D/C
- 220kV Tuglakabad-Okhla D/C
- Construction of 400/220kV Dwarka ISTS with 4x500MVA is in full swing and likely to be completed by in 2018-19.
- LILO of the 220kV Bamnauli- Papankalan III- Naraina D/C is proposed at Dwarka. The shifting of 220kV Bamauli- Naraina D/C T/L is required for the establishment of 400kV connectivity of 400kV Dwarka. Therefore, the LILO of 220kV Bamnauli- Papankalan III- Naraina D/C at Dwarka is proposed to be taken along with the work of 400kV T/L.
- LILO of the 220kV Bamnauli- Papankalan-I at 400kV Dwarka is also proposed to be taken along with the work of 400kV T/L as part ROW of the circuit is also required for 400kV ISTS Dwarka connectivity.
- 04 No. 33kV bays at Park Street one for Prashad Nagar, one for Shankar Road and two bays for Tibia College Grid S/Stn. are being made available- 2 bays already completed but cables have not been connected by BYPL. BYPL informed that cables would be energized before Summer 2018.
- 3rd 220/33kV 100MVA Transformer at Lodhi Road expected before summer-2018.

C. System Strengthening Works carried out/ being carried by BYPL

BYPL provided the details as under:

NEW GRID					
S NO.	SCHEME DESCRIPTION	CAPACITY ADDITION	UOM	CAPEX (LACS)	COMPLETION DATE
1	C Block Krishna Nagar	36	MVA	1000	completed
1	Tibia College	50	MVA	1000	April-18

POWER TRANSFORMER ADDITION					
S NO.	Grid	CAPACITY ADDITION	UOM	CAPEX (LACS)	COMPLETION DATE
1	Dwarkapuri	25	MVA	384	completed
2	Vivek Vihar	25	MVA	375	completed
3	Dallupura	25	MVA	375	completed
4	GH-II	25	MVA	375	Feb-18
5	BG Road(15 to 25 MVA)	10	MVA	170	Feb-18

NEW INFEEED					
S NO.	SCHEME DESCRIPTION	CAPACITY ADDITION	UOM	CAPEX (LACS)	COMPLETION DATE
1	220 KV Preet Vihar To Preet Vihar and CBD-I	7	KM	409	completed
2	Park Street To Tibia College	20	KM	500	April-18
3	220 KV Preet Vihar To Guru Angad Nagar and ShakarPur By LILO	10	KM	400	Mar-18
4	New Infeed From 220KV Park Street to Shankar Road Grid	4.6	KM	300	Mar-18
5	New Infeed From 220KV Park Street to Prasad Nagar Grid	10	KM	400	Mar-18

D. System Strengthening Works carried out/ being carried by TPDDL

TPDDL provided the details as under:

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

New Grid	66/11kV Karala GIS Grid	Work is in progress & shall be completed before Summer 18.
	66/11kV DJB Burari Grid	Charged
	66/11 KV RG-20 Grid	Work is in progress & shall be completed before Summer 18.
Transformer Addition	66/11 KV, 20 MVA PTR -3 at A-7 Narela Grid.	Work is in progress & shall be completed before Summer 18.
	66/11 KV, 20 MVA PTR -4 at DSIDC-1 Grid.	Work is in progress & shall be completed before Summer 18.
	66/11 KV, 20 MVA PTR -4 at DSIDC-2 Grid.	Work is in progress & shall be completed before Summer 18.
	66/11 KV 4th PTR at Bhalaswa Grid	Work is in progress & shall be completed before Summer 18.
	33/11kV 25 MVA 3rd PTR at Gulabi Bagh Grid	Charged
LINE ADDITION	Single to twin cable of 33 kV Subzi Mandi to Shakti Ngr Ckt.	Work is in progress & shall be completed before Summer 18.
	Single to twin cable of 33 kV ShahzadaBagh - GulabiBagh Ckt.	Work is in progress & shall be completed before Summer 18.
	Single to twin cable of 33 kV Rewari Lines to Payal Ckt.	Work is in progress & shall be completed before Summer 18.
	66 KV D/C from Karala to RG-20.	Work is in progress & shall be completed before Summer 18.
	66 KV D/C from RG-20 to RG-22.	Work is in progress & shall be completed before Summer 18.
	66 KV Double Ckt Line from 220kV Kanjhawala to Karala Grid.	Work is in progress & shall be completed before Summer 18.
Transformer Augmentation	66KV Double ckt line from RG 34 to BW06 Grid	Work is in progress & shall be completed before Summer 18.
	Rewari Lines; PTR-1; 16 to 25 MVA	Work is in progress & shall be completed before Summer 18.
	220 Bawana; PTR-2; 20 to 25 MVA	Work is in progress & shall be completed before Summer 18.
Revamping/Strengthening of Old Equipment	Shakti Nagar; PTR-2 ; 20 to 25 MVA	Work is in progress & shall be completed before Summer 18.
	66KV Narela-Bhalaswa Ckt 1 & 2 (Partial)	Work is in progress & shall be completed before Summer 18.

E. NDMC representative intimated that their system has enough redundancy to meet the Summer 2018 demand.

F. System Strengthening Works carried out/ being carried by BRPL

BRPL provided the details as under:

S.No.	Scheme Details	Capacity Addition	Status
1	ETC of New Grid at Fatehpur Beri	50 MVA	Commissioned
2	ETC of New Grid at Mithapur	50 MVA	Commissioned
3	ETC of New Grid at G-7 Dwarka	50 MVA	Commissioned
4	Installation of additional 33/11 kV Power Trnsformer at HUDCO	16 MVA	Commissioned
5	Augmentation of 66/11 kV Power Transformer from 20 MVA to 31.5 MVA at G-5 Matiyala	11.5 MVA	Commissioned
6	Augmentation of 66/11 kV Power Transformer from 20 MVA to 31.5 MVA at Batra	11.5 MVA	Commissioned
7	Installation of additional 66/11 kV Power Trnsformer at Paschim Vihar	25 MVA	Commissioned
8	Installation of additional 66/11 kV Power Trnsformer at G-2 Dwarka	25 MVA	Commissioned
9	Laying of 66 kV Cables from 220 kv Sarita Vihar to Jasola	2x3 Ckt. Km	Commissioned
10	Laying of 33 kV Cables from B Block Vasant Kunj to Andheria Bagh	2x3 Ckt. Km	Commissioned

5. Policy and Proposals in respect of Power in Regional Plan 2021 of NCR

It was intimated that a request has been received from GNCTD for providing the consolidated status of implementation of Policy and Proposals in respect of Power in the Regional Plan 2021 of NCR. The utilities were requested to provide the detail in the following areas:

Sr. No	Issues	Detail provided by the Utilities
i.	The Regional Plan 2021 estimates the total power requirement of NCT Delhi sub-region for the year 2021 is 14,211MW with additional installed capacity of 7,597	DTL The power demand assessed in 19 th EPS for Delhi is 7471 MW by 2021-22.

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

	MW.	
ii.	State Government should allocate power to the Sub-region from new state sector projects.	Delhi has limitation for internal generation from conventional sources i.e. coal due to pollution stipulations and non availability of gas. However, as per the Solar Policy, 2016 announced by the State Government, it has a massive plan of Solar Generation of 1000MW by 2020 and 2000MW by 2025.
iii.	State Government should ensure the allocated quota to the Sub-region from the present allocation/generation of power.	As above.
iv.	State Government should enter Memorandum of Understanding (MoU) with the power generation companies in order to ensure requisite allocation of power to the Sub-region simultaneously and expeditiously.	From the year 2007-08, the power procurement responsibility lies with the DISCOMs. All Discoms have ensured that there would not be any power supply interruption due to shortage of power.
v.	Modern techniques for Load Management must be adopted to flatten the load curve and reduce the peak demand.	<p>TPDDL provided the following information</p> <ol style="list-style-type: none"> a. Promotion of energy efficient appliances and devices as explained in detail against point no. vii below. b. TOD tariff for Industrial Consumers. c. TPDDL has implemented a pilot for Automatic Demand Response system with 161 consumers with 11 MW of schedulable load. This system can be scaled up and used to shift non-essential load from peak periods. d. Delhi Jal Board peak shifting: TPDDL after a detailed analysis of the load profiles of TPDDL & Delhi Jal Board (DJB, water utility in Delhi) plants, suggested DJB to shift its morning operation hours for water pumping stations by 2 hours. This has helped in minimizing the coincidence with TPDDL peak hours which resulted in a saving of 2 MW of power from the peak demand. <p>BRPL also provided the following information:</p> <ol style="list-style-type: none"> a. Promotion of energy efficient appliances and devices as explained in detail against point no vii below. b. TOD tariff for Industrial / Commercial/ Domestic Consumers. c. Delhi Jal Board peak shifting: BRPL after a detailed analysis of the load profiles of BRPL & Delhi Jal Board, suggested DJB to shift its morning operation hours for water pumping stations by 2 hours. This has helped in minimizing the coincidence with BRPL peak hours which resulted in a saving of 3 MW of energy from the peak demand.
vi.	Street lighting on national highways/state highways within NCR can have centrally controlled system through operation of ripple generator.	----
vii.	Energy efficient housing should be promoted.	<p>TPDDL has intimated the following:-</p> <ol style="list-style-type: none"> i. TPDDL being the only utility empanelled as BEE Grade-I Energy Service Company (ESCO) is providing value added Energy Efficiency services along with partnered solution providers. Services are offered at two financing options: - CAPEX model where the Consumer is willing to invest itself in the ESCO Program and ESCO shall provide energy savings solution and performance Bank Guarantees; and RESCO model where the ESCO invests directly and gets reimbursed by the consumer from energy savings. It has

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

		<p>successfully been awarded Energy Audit order of 55.59 MW sanctioned load cumulative YTD and ESCO Project Implementation Order for 8.58 MW sanctioned load cumulative YTD.</p> <p>ii. The company has also implemented a project on “Automated Demand Response with Smart Meter” and achieved a distinction of becoming first Indian Power utility where ADR and AMI (Advance Metering Infrastructure for Smart Meters) are conceptualized together. The Project is implemented in partnership with IBM, Honeywell, Landis + Gyr with participation of select Commercial and Industrial Consumers having contract load more than 100 KW, it created automated demand response capacity of 11 MW to effectively manage demand during Grid emergency.</p> <p>iii. Under UJALA Scheme it is offering energy efficient LED lights (9 W LED Bulb and 20W LED Tube light) and BEE 5 star rated Ceiling Fans at discounted rates. Over 6, 00,000 numbers of products have been distributed till now which will result in deemed energy savings of 17.46 MU and load reduction of potential of 5.2 MW.</p> <p>iv. Under DSM based energy efficient lighting program (DELP) it has distributed 13 lakh 7 W LED bulbs at upfront and EMI payment modes to 2,80,429 customers. The program led to annual deemed energy savings of 440.7 MUs, load reduction of 9.7 MW and 14685.3 M Ton CO2 reductions.</p> <p>v. TATA POWER-DDL came up with the first utility based discounted LED Lighting and BEE 5 star Ceiling Fans program with OEMs. Under this scheme, the complete range of LED lighting and BEE 5 star ceiling fan products with 11 varieties (e.g. LED bulbs, Tube Lights, Panels and Down Lighters, ceiling fan of different color & design variants etc.) were offered to customers at attractive prices. The company has achieved annual deemed savings of approximate 8 MUs against 1 lakh LED lighting and BEE 5 star ceiling fan product distribution.</p> <p>vi. Tata Power DDL has implemented DERC approved rebate based AC scheme. The Scheme offers upto 50% discount on MRP of the BEE 5 star rated ACs and Inverter ACs in exchange of the existing old ACs. All the old ACs collected under the scheme disposed- off in the environment friendly manner. Total 17123 number of non-star rated ACs have been replaced under AC replacement scheme which led to load reduction of 15.30 MW and deemed savings of 13.18 MUs annually.</p> <p>vii. Tata Power DDL in consortium with Havells has been awarded the North Delhi Municipal Corporation LED streetlight Project under which Havells is the technology partner and Tata Power DDL is the implementation partner. There is ensured guaranteed energy savings of 64 %. The LED street light project will result in load reduction of 14 MW in Tata Power-DDL area.</p> <p>BYPL intimated that in coordination with EESL for the use of house hold LED Light and energy efficient fan, thus reduction in Peak MW Load of BYPL as under:</p> <table border="1" data-bbox="715 1688 1508 1935"> <thead> <tr> <th colspan="4">BYPL sales Nos. (till Jan'18)</th> <th colspan="4">MW Peak Load Reduction (Assuming 20W reduction per point)</th> <th rowspan="2">Remarks</th> </tr> <tr> <th>Period</th> <th>LED</th> <th>Tube light</th> <th>Fan</th> <th>LED</th> <th>Tube light</th> <th>Fan</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>FY 2015-16</td> <td>1307000</td> <td></td> <td></td> <td>26.1</td> <td>0.0</td> <td>0.0</td> <td>26.1</td> <td>DELP started in Jun'15</td> </tr> </tbody> </table>	BYPL sales Nos. (till Jan'18)				MW Peak Load Reduction (Assuming 20W reduction per point)				Remarks	Period	LED	Tube light	Fan	LED	Tube light	Fan	Total	FY 2015-16	1307000			26.1	0.0	0.0	26.1	DELP started in Jun'15
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FY 2015-16	1307000			26.1	0.0	0.0	26.1	DELP started in Jun'15																				

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

FY 2016-17	516703	8514	215	10.3	0.2	0.0	10.5	Ujala started on 26.06.16 Sales are accounted as - DELP till Jun'16 & UJALA from Jul'16 onwards
FY 2017-18 (til Jan'18)	266905	25024	2777	5.3	0.5	0.1	5.9	
BYP L Total (MTD)	2090608	33538	2992	41.8	0.7	0.1	42.5	

Similarly, BRPL also provided the following information:

- Under UJALA Scheme it is offering energy efficient LED lights (9 W LED Bulb and 20 W LED Tube light) and BEE 5 star rated Ceiling Fans at discounted rates. Over 13, 50,000 numbers of products have been distributed till now which will result in deemed energy savings of 32.97 MU and load reduction of potential of 12.7 MW.
- Under DSM based energy efficient lighting program (DELP) it has distributed 25.3 lakh 7 W LED bulbs at upfront and EMI payment modes to 5,18,162 customers. The program led to annual deemed energy savings of 52.58 MUs, load reduction of 20.2 MW and 42592.8 Ton CO2 reductions annually.
- BSES Rajdhani Power Limited-BRPL came up with the first utility based discounted LED Lighting and BEE 5 star Ceiling Fans program with OEMs. Under this scheme, the complete range of LED lighting and BEE 5 star ceiling fan products (e.g. LED bulbs, Tube Lights, ceiling fan of different color & design variants etc.) were offered to customers at attractive prices. The company has achieved annual deemed savings of approximate 8 MUs against 1 lakh LED lighting and BEE 5 star ceiling fan product distribution.
- BSES Rajdhani Power Limited-BRPL is going to implement DERC approved rebate based AC scheme. The Scheme offers 10,000 Acs up to 40% discount on MRP of the BEE 5 star rated ACs and Inverter ACs in exchange of the existing old ACs. The scheme shall be operated under 100% buy back arrangement. All the old ACs will be collected under the scheme disposed- off in the environment friendly manner. The Expected annual saving is 9.12 Mus.
- BSES has signed a tripartite agreement with EESL and SDMC to install LED based street lights. In phase 1, Under the Street light National Program, South Delhi Municipal Corporation area alone accounts for over 2 lakhs street lights replacements. The commutative annual energy saving in SDMC through this program is 2.65 crore KWh which has helped to avoid capacity addition of 6.6 MW, resulting in a daily reduction of 22,000 tones of greenhouse gases. Street lighting National program Phase II EESL has to install 75,000 more street lights with more focus on

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

		installation in Parks. Till date, total 2.72 Lakhs conventional street lights replaced with LED lights against the target of 2.75 lakhs.																																			
viii.	Concept of 66kV underground cable ring main system should be planned and executed in new townships to provide uninterrupted power supply.	All Discoms are implementing the same to the extent possible.																																			
ix.	Improvement in Transmission and Distribution in the Sub-region.	<p>NDMC has informed that this is being done through IPDS launched by Government of India. The submission of BYPL is given in the Note #1. The submission of TPDDL is given in the Note #2. Submission of BRPL is given here under:</p> <p>BRPL takes continuous steps to ensure that the Transmission and Distribution Network keeps on working smoothly and is augmented as is required to meet increasing energy demands. Below table summarises the capacity addition in last 3 years in BRPL area.</p> <table border="1"> <thead> <tr> <th>S. No</th> <th>Type of Equipment</th> <th>FY 14-15</th> <th>FY 15-16</th> <th>FY 16-17</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Power Transformers (MVA)</td> <td>193</td> <td>224</td> <td>158</td> </tr> <tr> <td>2</td> <td>Distribution Transformers (MVA)</td> <td>60</td> <td>21</td> <td>141</td> </tr> <tr> <td>3</td> <td>66 & 33 kV Lines (Ckt. Km.)</td> <td>20</td> <td>27</td> <td>21</td> </tr> <tr> <td>4</td> <td>11 kV Lines (Ckt. Km)</td> <td>47</td> <td>69</td> <td>253</td> </tr> <tr> <td>5</td> <td>0.433 kV Lines (Ckt. Km.)</td> <td>61</td> <td>47</td> <td>323</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	S. No	Type of Equipment	FY 14-15	FY 15-16	FY 16-17	1	Power Transformers (MVA)	193	224	158	2	Distribution Transformers (MVA)	60	21	141	3	66 & 33 kV Lines (Ckt. Km.)	20	27	21	4	11 kV Lines (Ckt. Km)	47	69	253	5	0.433 kV Lines (Ckt. Km.)	61	47	323					
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4	11 kV Lines (Ckt. Km)	47	69	253																																	
5	0.433 kV Lines (Ckt. Km.)	61	47	323																																	
x.	Promotion for Non-Conventional Energy Resources.	<p>As mentioned at Sr. No. (ii) above the Govt. of NCT of Delhi has announced Solar Policy, 2016 with a massive plan of Solar Generation of 1000MW by 2020 and 2000MW by 2025.</p> <p>Further, DERC has mandated Renewable power purchase obligation in the Business Plan Regulation 2017 wherein regulation 27 stipulate the target of renewal purchase obligation for the Distribution licensees as under:-</p> <table border="1"> <thead> <tr> <th>Sr. No.</th> <th>Details</th> <th>17-18</th> <th>18-19</th> <th>19-20</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Solar Target (Minimum)</td> <td>2.75%</td> <td>4.75%</td> <td>6.75%</td> </tr> <tr> <td>2</td> <td>TOTAL</td> <td>11.50%</td> <td>14.25%</td> <td>17.00%</td> </tr> </tbody> </table> <p>Note:- RPO in % of the total sale of power to the retail consumers in the area of supply of the DISCOM excluding procurement of Hydro Power.</p> <p>In addition to the above DISCOMS informed the details as under:-</p> <p>NDMC informed that NDMC building and Schools are equipped with Solar system.</p> <p>The submission of BYPL is given in the Note #3.</p> <p>TPDDL has given the following information:</p> <p>a. TPDDL had its own 1.6 MW of installed solar capacity.</p> <p>b. PPO of 220 MW has been signed with various solar power plants. Of</p>	Sr. No.	Details	17-18	18-19	19-20	1	Solar Target (Minimum)	2.75%	4.75%	6.75%	2	TOTAL	11.50%	14.25%	17.00%																				
Sr. No.	Details	17-18	18-19	19-20																																	
1	Solar Target (Minimum)	2.75%	4.75%	6.75%																																	
2	TOTAL	11.50%	14.25%	17.00%																																	

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

		<p>this 20 MW is already commissioned.</p> <p>c. 13.01 MW is supplied from two waste to energy plants in Delhi.</p> <p>d. PPO of 60.3 MW has been signed with small Hydro projects of which 27.5 MW is already commissioned.</p> <p>e. TPDDL has also taken steps to smoothen the way for consumers willing to set up solar plants under the Net-Metering schemes. It has tied up 3 agencies which will set up the solar plant for the consumer in a hassle free manner. The consumer only need to apply to TPDDL as a single point of contact, and TPDDL ensures that the entire activity is carried out smoothly. Till now 393 no of applications for 23.5 MW has been received.</p>
xi.	NCR Planning Board has requested State Government to identify one town/part of town to be developed as an energy efficient town.	-----

Note#1: The Improvement in Distribution system by BYPL is as follow:

- Network Improvement Plan shown below is in alignment to Business Plan which was already submitted to DERC in year 2016.
- Business Plan was framed after detailed study of EHV & Distribution network. The parameters considered for framing Business Plan were as follows
 - Peak Load trend on YOY basis (Projected growth CAGR 6%)
 - Energy served trend on YOY basis
 - To meet N-1 capacity at EHV(66/33KV) & Distribution level.
 - Capacity to Peak Load ratio at EHV & Distribution level.

Network Improvement Plan

S. No	Description	UoM	2017-18	2018-19	2019-20	2020-21
1	Peak Demand in BYPL	MW	1459	1547	1639	1738
CAPACITY ADDITION PLAN						
2	Power Transformer (66/33KV)	MVA	125	125	100	75
3	Infeed to 66 KV Grid	Km	7	6	6	0
4	Infeed to 33 KV Grid	Km	14	21	24	15
5	11KV Feeders	Km	35	35	30	20
6	DT	MVA	140	100	105	80
7	LT Feeder	Km	100	100	105	80

Note#2:

TPDDL takes continuous steps to ensure that the Transmission and Distribution Network keeps on working smoothly and is augmented as is required to meet increasing energy demands. Some of the steps that TPDDL have been doing are.

- a. Addition of Grids: 8 No. of Grid S/Stn have been commissioned in FY14-15, FY15-16 and FY16-17.
- b. Major Equipment added each year are as follows:

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

Sl No	Type of Equipment	FY14-15	FY15-16	FY16-17
1.	Power Transformers (MVA)	28	464	290
2.	Distribution Transformers (MVA)	107.0	126.7	152.7
3.	66 & 33 kV Lines (Ckt. Km.)	57.8	61.0	45.1
4.	11 kV Lines (Ckt. Km)	194.6	366.2	129.1
5.	0.433 kV Lines (Ckt. Km.)	521.8	82.8	171.8

- c. Overhauling of PTRs: Every year on a need based requirement Power Transformers are overhauled. TPDDL has also developed competency to perform the same in-house to reduce dependency of vendors. The work done since FY14-15 is as follows:

Financial Year	No of PTRs	MVA
FY14-15	11	237
FY15-16	2	40
FY16-17	17	380

Also 13 nos. of OLTC have also been overhauled.

- d. 8 No. Sick Power Transformers have been replaced.
- e. 24 sick battery banks and 3 no. chargers have been replaced.
- f. 95 no. earthing pits have been revamped and/or added.
- g. 567 towers revamped and strengthened.
- h. Porcelain insulators replaced with Polymer insulators on 11 Transmission lines.

Note#3:

Renewable Work done in last 1 year by BYPL is as under:

NET Metering work				
Sr No.	TYPE	No.	Solar Capacity (KW)	Sanctioned load (KW)
1	NET Meter installed	122	9006	25855
2	Solar Installation Under Process	2	3280	22033
3	No. of connections under process	8	83	110

6. Redistribution of the 66kV Mundka-I & Mundka-II feeders at 400/220/66kV Mundka (Tikri Kalan)

A number of 66kV feeders are emanating from 400/220/66kV Mundka and providing feed to TPDDL, BRPL and DMRC. Out of these, 2 No. 66kV feeders (Mundka-I & Mundka-II) are going to 66kV Mundka Grid substation of BRPL from 66kV Bus-I & Bus-II and are at the same side of bus section. During maintenance works, the shutdown of both the buses (Bus-I & Bus-II) is required affecting the supply of 66kV Mundka Grid of BRPL. In view of the above O&M Department of DTL has requested to re-allocate one of the feeders at the other end of bus section i.e. at bus-III or bus-IV so that uninterrupted power supply is provided to 66kV Mundka Grid of BRPL.

Steering Committee advised BRPL and DTL to conduct a joint site visit at 400/220/66kV Mundka (Tikri Kalan) and resolve the issue in the interest of the reliability of power supply to 66kV Mundka grid.

7. **Conversion of 66kVAIS to GIS at 220/66/33kV Patparganj Grid S/Stn.**

At present due to space constraints at 220kV Patparganj, most of the 66kV circuits and even incomers of 220/66kV, 100MVA trf. No.1 & 2 do not have bus selection causing reliability issues. The details are here under:

S.No.	Element Name	Bus-I	Bus-II
1.	66kV Incomer No, 1	✓	X
2.	66kV Incomer No, 1I	X	✓
3.	Mayur Vihar	X	✓
4.	GH-I Ckt-I	✓	✓
5.	GH-I Ckt-II	X	✓
6.	Khichdi Pur	✓	✓
7.	Vivek Vihar Ckt-I	✓	✓
8.	Vivek Vihar Ckt-II	✓	✓
9.	Capacitor Bank-I	✓	✓
10.	Capacitor Bank-II	✓	✓
11.	Akshardham	✓	✓

To resolve the issue, 12 No. 66kV Hybrid Bays are envisaged in the Business Plan of DTL for 2018-19. In the Steering Committee meeting held on 30.10.2017 while discussing the issue of conversion of 66kV & 33kVAIS to GIS at Park Street, the Steering Committee was of the view that to avoid maintenance issues and to ensure reliable power supply the different combinations of hybrid and GIS along with AIS may be avoided. Accordingly, Steering Committee advised DTL to convert complete 33kV and 66kV system at Park Street Station to GIS.

As such Steering Committee was requested to consider the proposal of conversion of 66kV AIS to GIS at Patparganj.

Steering Committee considered the proposal of conversion of 66kV AIS to GIS at 220kV Patparganj and advised DTL to explore the possibility to establish 66kV GIS separately so that the existing 66kV feeders could be shifted to the GIS to avoid disruption of power supply of the areas fed through 66kV feeders emanating from 220kV Patparganj. DTL was also advised to explore the possibility of provision of double bus selection scheme for all 220kV elements at 220kV Patparganj for the sake of system reliability as some of the elements do not have bus selection facility as detailed here under:

S.No.	Element Name	Bus-I	Bus-II
1.	Geeta Colony Ckt-I	✓	✓
2.	Geeta Colony Ckt-II	✓	✓
3.	IP Ckt-I	✓	✓
4.	IP Ckt-II	✓	✓
5.	Preet Vihar Ckt-I	X	✓
6.	Preet Vihar Ckt-II	✓	✓
7.	Gazipur	✓	✓
8.	220/33kV 100MVA Tx-I	✓	✓
9.	220/33kV 100MVA Tx-II	✓	X
10.	220/33kV 100MVA Tx-III	✓	✓
11.	220/66kV 100MVA Tx-I	✓	✓
12.	220/66kV 100MVA Tx-II	✓	✓

D. TPDDL Issues

1. Replacement of Sick and old aged PTRs with new 25 MVA PTRs at various Grids

Around 34 Power Transformers in TPDDL are more than 25 years old. Above mentioned Power Transformers are in critical condition considering ageing of Solid cellulose insulation. There is no methodology to revive the life of Solid insulation at Site.

The method for checking the mechanical properties of insulating paper is known as Degree of Polymerization (DP). It is generally suggested that DP values less than 250 represent the lower limits for end-of-life criteria for paper insulation and for values below 150; the paper is without mechanical strength. The results of these tests will be a deciding factor in rebuilding or scrapping a transformer.

However DP test is not practical for in-service transformers. Analysis of paper insulation for its DP value requires removal of a few strips of paper from suspect sites. This procedure can only be carried out during transformer repairs. Since it is usually not practical (and often dangerous to the transformer) to obtain a paper sample from a de-energized, in-service transformer an alternative method has been found. When a cellulose molecule de-polymerizes (breaks into smaller lengths or ring structures), a chemical compound known as a furan is formed.

Based on credible 3rd Party Laboratory results, above mentioned Power Transformers have high Furan content. As per standards, Furan level within 1-10 ppm indicates heavy deterioration in paper insulation of power transformer and recommends replacement of transformer as these cannot be made healthy through normal overhauling and filtration process. Above mentioned sick transformers based on test result and ageing factor are prone to untimely failure and requires replacement on priority. In view of above, TPDDL requested Steering Committee to consider the replacement of the following transformers.

a) Replacement of sick 20MVA 66/11kV PTR-3 with new 25 MVA 66/11kV PTR at RG-02 Grid

Existing PTR-3 was installed and commissioned at RG-02 grid in 1980 and served its useful life. Furan contents for existing PTR on 05-12-17 were 2.96 ppm. Furan content more than 1.0 ppm (mg/Kg) in oil indicates the poor quality of solid insulation due to extensive decomposition of paper. Therefore, it is proposed to replace sick 66/11kV 20 MVA PTR-3 with new 66/11kV 25 MVA PTR at RG-02 Grid to avoid any possible failure of sick Power Transformer on account of high Furan content and age factor. The loading details are as under:

Grid	RATE D MVA	VOLTA GE	PTR No.	Manufacture r of asset	Construction Year	Age	Date of Sampling	Furan (ppm)	Testing Agency
RG-02	20 MVA	66/11KV	PTR-3	CGL	1980	38	27-11-17	2.96	ERDA

Grid Name	Voltage Ratio	T/F No.	T/F Capacity (MVA)	PTR Load MVA (Summer'17)	Load Growth (%)	PTR Load MVA (Summer'19)
RG-02	66/11kV	PTR -1	20	17.22	6.8%	18.12
RG-02	66/11kV	PTR-2	20	15.57	6.8%	11.34
RG-02	66/11kV	PTR -3	20	16.49	6.8%	10.61

b) Replacement of sick 16MVA 33/11kV PTR-2 with new 25 MVA 33/11kV PTR at Pandav Nagar Grid

Existing PTR-2 was installed and commissioned at Pandav Nagar Grid in 1982 and almost served its useful life. Furan contents for existing PTR on 05-12-17 were 1.14 ppm. Furan content more than 1.0 ppm (mg/Kg) in oil indicates the poor quality of solid insulation due to extensive decomposition of paper. Therefore, it is proposed to replace sick 33/11kV 16 MVA PTR-2 with new 33/11kV 25 MVA PTR at Pandav Nagar Grid to avoid any possible failure of sick PTR on account of high Furan content and age factor. The loading details are as under:

Grid	RATED MVA	VOLTAGE	PTR No.	Manufacturer of asset	Construction Year	Age	Date of Sampling	Furan (ppm)	Testing Agency
Pandav Nagar	16 MVA	33/11KV	PTR-2	CGL	1982	36	27-11-17	1.14	ERDA

Grid Name	Voltage Ratio	T/F No.	T/F Capacity (MVA)	PTR Load MVA (Summer'17)	Load Growth (%)	PTR Load MVA (Summer'19)
Pandav Nagar	33/11	TRF-1	16	6.34	2.8%	6.69
Pandav Nagar	33/11	TRF-2	16	6.04	2.8%	5.61

c) Replacement of sick 20MVA 66/11kV PTR-1 with new 25 MVA 66/11kV PTR at RG-03 Grid

Existing 20 MVA PTR-1 was installed and commissioned at RG-03 grid in year 1985, almost served its useful life. Furan contents for existing PTR on 05-12-17 were 2.98 ppm. Furan content more than 1.0 ppm (mg/Kg) in oil indicates the poor quality of solid insulation due to extensive decomposition of paper. Therefore, it is proposed to replace sick 66/11kV 20 MVA PTR-1 with new 66/11kV 25 MVA PTR at RG-03 Grid to avoid any possible failure of sick Power Transformer on account of high Furan content and age factor. The loading details are as under:

Grid	RATED MVA	VOLTAGE	PTR No.	Manufacturer of asset	Construction Year	Age	Date of Sampling	Furan (ppm)	Testing Agency
RG-03	20 MVA	66/11kV	PTR -1	BHEL	1985	33	27-11-17	2.98	ERDA

Grid Name	Voltage Ratio	T/F No.	T/F Capacity (MVA)	PTR Load MVA (Summer'17)	Load Growth (%)	PTR Load MVA (Summer'19)
RG-3	66/11	TRF-1	20	10.75	4.6%	11.75
RG-3	66/11	TRF-2	20	10.41	4.6%	11.39
RG-3	66/11	TRF-3	25	7.00	4.6%	7.66

d. Replacement of sick 20MVA 66/11kV PTR-2 with new 25 MVA 66/11kV PTR at Badli Grid

Existing PTR-1 was installed and commissioned at Badli grid in 1985, almost served its useful life. Furan contents for existing PTR on 05-12-17 were 1.1 ppm. Furan content more than 1.0 ppm (mg/Kg) in oil indicates the poor quality of solid insulation due to extensive decomposition of paper. Therefore, it is proposed to replace sick 66/11kV 20

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

MVA PTR-2 with new 66/11kV 25 MVA PTR at Badli Grid to avoid any possible failure of sick PTR on account of high Furan content and age factor. The loading details are as under:

Grid	RATED MVA	VOLTAGE	PTR No.	Manufacturer of asset	Construction Year	Age	Date of Sampling	Furan (ppm)	Testing Agency
Badli	20 MVA	66/11KV	PTR-2	BHEL	1985	33	27-11-17	1.1	ERDA

Grid Name	Voltage Ratio	T/F No.	T/F Capacity (MVA)	PTR Load MVA (Summer'17)	Load Growth (%)	PTR Load MVA (Summer'19)
Badli	66/11	TRF-1	25	18.72	5.5%	10.27
Badli	66/11	TRF-2	20	14.66	5.5%	15.30
Badli	66/11	TRF-3	25	10.50	5.5%	13.32

e) Replacement of sick 20MVA 66/11kV PTR-1 with new 25 MVA 66/11kV PTR at PP-2 Grid

Existing PTR-1 was installed and commissioned at PP-2 grid in 1985, almost served its useful life. Furan contents for existing PTR on 05-12-17 were 1.0 ppm. Furan content more than 1.0 ppm(mg/Kg) in oil indicates the poor quality of solid insulation due to extensive decomposition of paper. Therefore, it is proposed to replace sick 66/11kV 20 MVA PTR-1 with new 66/11kV 25 MVA PTR at PP-2 Grid to avoid any possible failure of sick PTR on account of high Furan content and age factor. The loading details are as under:

Grid	RATED MVA	VOLTAGE	PTR No.	Manufacturer of asset	Year of Construction	Age	Date of Sampling	Furan (ppm)	Testing Agency
PP-2	20 MVA	66/11kv	PTR-1	BHEL	1985	33	27-11-17	1.0	ERDA

Grid Name	Voltage Ratio	T/F No.	T/F Capacity (MVA)	PTR Load MVA (Summer'17)	Load Growth (%)	PTR Load MVA (Summer'19)
PP-2	66/11	TRF-1	20	13.52	2.4%	14.17
PP-2	66/11	TRF-2	25	7.04	2.4%	7.37
PP-2	66/11	TRF-3	20	14.78	2.4%	15.48

f) Replacement of sick 16MVA 33/11kV PTR-2 with new 25 MVA 33/11kV PTR at WZP-2 Grid

Existing PTR-2 was installed and commissioned at WZP-2 grid in 1986, almost served its useful life. Furan contents for existing PTR on 05-12-17 were 1.07 ppm. Furan content more than 1.0 ppm(mg/Kg) in oil indicates the poor quality of solid insulation due to extensive decomposition of paper. Therefore, it is proposed to replace sick 33/11kV 16 MVA PTR-2 with new 33/11kV 25 MVA PTR at WZP-2 Grid to avoid any possible failure of sick PTR on account of high Furan content and age factor. The loading details are as under:

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

Grid	RATED MVA	VOLTAGE	PTR No.	Manufacturer of asset	Construction Year	Age	Date of Sampling	Furan (ppm)	Testing Agency
WZP-2	16 MVA	66/11kv	PTR-2	GENERAL ELECTRIC	1986	32	27-11-17	1.07	ERDA

Grid Name	Voltage Ratio	T/F No.	T/F Capacity (MVA)	PTR Load MVA (Summer'17)	Load Growth (%)	PTR Load MVA (Summer'19)
WZP-2	33/11	TRF-1	16	9.77	2.5%	10.26
WZP-2	33/11	TRF-2	16	10.16	2.5%	13.86
WZP-2	33/11	TRF-3	25	7.91	2.5%	8.30

g) Replacement of sick 20MVA 66/11kV PTR-3 with new 25 MVA 66/11kV PTR at Rewari Line Grid

Existing PTR-3 was installed and commissioned at Rewari Line Grid in 1990, almost served its useful life.

During routine testing, performed internally by TPDDL, it was found that DGA is showing High Acetylene and Ethylene content. Results of DGA Test is as below.

S No.	SAMPLED BY	Date of Sample	Methane CH4	Ethane C2H6	Ethylene C2H4	Acetylene/C2H2	Hydrogen H2	CO	CO2	Water	TOTAL
1	INHOUSE LAB -KELMAN KIT	16.04.14	37	116	147	4.5	16	118	6445	34	439
2	INHOUSE LAB -KELMAN KIT	13.08.14	53	136	157	4.5	10	307	9659	39	668
3	INHOUSE LAB -KELMAN KIT	16.01.15	29	58	135	3.5	6	96	7299	24	328
4	INHOUSE LAB -KELMAN KIT	28.03.16	23	74	208	7.5	16	100	6878	36	429
5	INHOUSE LAB -KELMAN KIT	01.06.16	24	102	217	5.5	20	197	7610	42	566
6	INHOUSE LAB -KELMAN KIT	05.09.16	26	92	206	5.5	22	233	8701	48	585
7	INHOUSE LAB -KELMAN KIT	13.12.16	35	70	245	8.5	17	169	9269	27	544

Limit of Various Gases in DGA

Gas Concentration Limit	ABBR.	IEEE-C.57.104	WARNING
METHANE	(CH4)	120	400
ETHANE	(C2H6)	65	100
ETHYLENE	(C2H4)	50	100
ACETYLENE	(C2H2)	2	5
HYDROGEN	(H2)	100	700
CARBON MONOXIDE	(CO)	350	570
CARBON DIOXIDE	(CO2)	2500	4000
Total Dissolved Combustible Gas	(TDCG)	700	1900

Whenever power transformer goes under abnormal thermal and electrical stresses, certain gases are produced due to decomposition of transformer insulating oil.

- a) Insulation overheating results in high carbon monoxide, high carbon dioxide.
- b) Oil overheating results in formation of methane, ethane and ethylene.
- c) Corona results in formation of hydrogen.

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

d) Arcing is the most severe condition in a transformer and is indicated by even low levels of acetylene.

Also, Tan Delta value (testing done on 24.10.2017), was found to be on very higher side. Tan Delta is a diagnostic test conducted on the insulation of windings. It gives an idea of the aging process in the winding and enables us to predict the remaining life of the Transformer. This test works upon the principle that any insulation in its pure state acts as a capacitor.

Mode	Observed values	
	Capacitance(pf)	DF (Dissipation Factor in %)
CH	3109.67	2.453
CHL	5739.37	3.793
CH+CHL	8849.23	3.319
CL	7007.57	2.740
CL+CHL	12747.49	3.213

Therefore, it is proposed to replace sick 66/11kV 20 MVA PTR-3 with new 66/11kV 25 MVA PTR at Rewari Line Grid to avoid any possible failure of sick PTR on account of high DGA result, high Tan delta value and age factor. The loading details are as under:

Grid Name	Voltage Ratio	T/F No.	T/F Capacity (MVA)	PTR Load MVA (Summer'17)	Load Growth (%)	PTR Load MVA (Summer'19)
Rewari Line	33/11	TRF-1	16	14.48	1.1%	14.80
Rewari Line	33/11	TRF-2	20	14.70	1.1%	13.49
Rewari Line	66/11	TRF-3	20	16.46	1.1%	16.82

TPDDL submitted that the above replacement proposals are for the transformers which are more than 25 years old and are in critical condition considering aging of solid cellulose insulation.

It was further informed by TPDDL that before putting up the proposals for augmentation/replacement techno economic viability has been assessed by a Committee comprising of O&M, Protection, Finance wings of their organization. The other Discoms also informed that similar Committee is also available in their system.

After deliberation, Steering Committee reiterated the earlier decision and advised TPDDL to replace 33/11kV transformers with 25MVA Transformers and 66/11kV transformers with 31.5 MVA instead of 25 MVA Transformers.

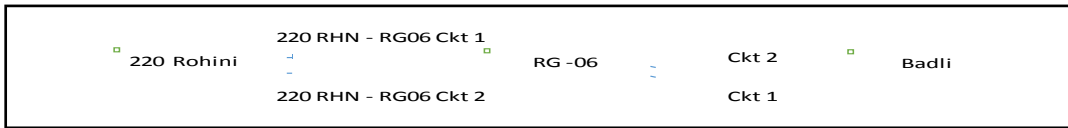
2. Change in nomenclature of circuits at 220kV Rohini substation.

TPDDL informed that as per Steering Committee Meeting held on 04.01.2017, laying of 66kV U/G D/C between RG-06 Grid and Rohini – DC 1 Grid along with construction of 02 No. of 66kV O/D Bays at both Grids was approved 'In principle'. As there was space constraint at RG-06 grid for construction of 2 no of Bays, therefore 2 no Bays were made available after bypassing 220kV RHN Ckt-1 and Badli Ckt-2 ckt at RG-6 Grid.

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

TPDDL, therefore, requested to change nomenclature of existing 66kVRohini – RG06 ckt 1 as 220kVRohini – Badli ckt and 66kVRohini – RG06 ckt 2 as 66kVRohini – RG06 ckt as 220kV Rohini end after execution of this proposal.

Existing SLD:



Proposed SLD:



The Steering Committee approved 'In-Principle' the above change in nomenclature but stressed TPDDL to shift 68 MVA load from 220kV Rohini-1 to 220kV Rohini-2 Grid by May 2018 as earlier envisaged after 66 kV U/G double circuit connectivity between RG-6 Grid and Rohini DC-1 Grid.

3. Establishment of 400kV S/Stn Gopalpur

TPDDL submitted that in order to pave way for the establishment of 400KV S/ Stn at Gopalpur, site visit was held with DTL and TPDDL officials in order to shift corresponding 66kV and 33kV O/H lines for clearing of land for establishment of 400kV S/Stn under Intra State Scheme. TPDDL was asked to provide cross sectional diagram for 33kV & 66kV Trench to be made in 220kV Gopalpur. The same has been provided to DTL.

TPDDL requested DTL to provide commissioning and execution schedule for proposed 66kV and 33kV GIS Bays at 220kV Gopalpur S/Stn so that TPDDL can start the estimation preparation for shifting of its 66kV and 33kV O/H lines at Gopalpur S/Stn.

The matter has already covered in detail at item no. B.1. Steering Committee advised TPDDL to do the needful as discussed in item B.1.

4. Provision for 66kV Double Bus Bar isolator arrangement for PTRs at various Grids

TPDDL informed that 66kV Badli Grid, Jahangirpuri Grid, Mangolpuri -1 Grid and Pitampura 1 Grid were established in year 1986, 1982, 1989 and 1984 respectively. These grids have Double bus bar with Bus coupler arrangement at 66KV level. However for some PTRs in these grids, Bus Selection is not available, as there is only single bus isolator for these PTRs. This affects Equipment availability during maintenance of these bus Isolators. TPDDL requested for Provision for 66kV Double Bus Bar isolator arrangement for following PTRs:

1. PTR 3 at Badli
2. PTR 3 at Jahangirpuri
3. PTR 3 at Mangolpuri -1
4. PTR 3 at Pitampura -1

The matter was considered and proposal was agreed ‘In Principle’ by the Steering Committee.

5. Power Evacuation Plan of 220/33kV Timarpur S/Stn

TPDDL submitted that in line with Steering Committee Decision in meeting held on 30.10.2017, a site visit was carried out with DTL officials and on individual basis for feasibility of 220KV Timarpur. TPDDL further informed that on detailed analysis, it was found that only 4 no. feeders for DIFR & Indra Vihar are possible from the location of 220kV Timarpur.

The matter has already covered in detail at item no. B.5.

6. Status of DTL’s critical Projects related to TPDDL licensee area

TPDDL requested DTL to share the latest status of the below mentioned critical projects. The matter was discussed and the list of the projects along with updated status is as follows:-

Sr. No.	Name of Scheme	Submission of TPDDL	Status provided in the meeting
1.	220/66 KV SGTN Grid with associated lines.	<p>The scheme was originally planned as per CEA study for the year 2015-16 and subsequently revised by DTL for 2018-19. The work has not yet been awarded. The Grid is required to ensure N-1 of the lines and PTR of the load fed through Narela 220 KV and Gopal Pur 220 KV DTL Grids. TPDDL has already laid 4 circuits to be connected to this Grid.</p> <p>As per SLDC comments it is required to meet reliability standards of the Network. SLDC has shared that it would be completed by 16-17. In the PFA document the timelines has been revised to 17-18 and now in business plan it has been further revised to 18-19 by DTL.</p> <p>In case of failure of supply from Narela or Gopal Pur, the reliability of the supply would be compromised to great extent. The areas that will get adversely impacted are Burari, Jagat Pur, Dheerpur, Dhakka, Mukherjee Nagar, Bhalswa, Sant Nagar, all colonies in the area of from Karnal Bye Pass to Wazirabad, Swaroop Nagar, Libas Pur, Jahangir Puri, Azad Pur, Aadarsh Nagar, Siraspur, Pitam Pura, Rohini, Rithala, Vijay Vihar, Prashant Vihar etc.</p>	<p>Status has been regularly updated in the SCMs. The details of the projects have been elaborated in the SCM dated 12.08.16 wherein delays were also informed. However, it was again reiterated. The establishment of SGTN S/Stn. along with in-feeds was envisaged under Tariff Based Competitive Bidding (TBCB) route.</p> <p>The schemes under TBCB route could not be proceeded due to non-experience of implementation of such process. As such Govt. of NCTD reviewed the matter and advised to execute these schemes by DTL vide MOM dt. 26.06.2015. Subsequently, DTL prepared the scheme and got approval from Board of Directors in its meeting held on 04.11.2015. Now it is under tendering stage and under evaluation. Tentative commissioning is by July 2019.</p> <p>It may be noted that the scheme is mainly meant for enhancement of reliability of area. The areas proposed to be fed from this S/Stn. are at</p>

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

			present being met through 220kV Narela and Gopalpur S/Stns. of DTL.
2.	Additional 160 MVA PTR at Gopalpur Grid with 4 no. additional bays.	<p>The scheme was originally planned as per CEA study for the year 2014-15 and subsequently revised by DTL for 2017-18. Still the work has not been awarded. The additional PTR is required to meet N-1 of the PTR as there is only one PTR at Gopal Pur 220/66 KV Grid. The new DJB Grid is coming in Burari which would be connected to Gopal Pur for which bays have been approved by Steering Committee.</p> <p>Though one 220/66 KV, 100 MVA PTR has been made available by DTL at Shalimar Bagh by utilizing the dual ratio available in existing 220/66/33 KV 100 MVA Power Transformer. But still that will not meet the demand.</p> <p>The areas that will get adversely impacted are Burari, Jagat Pur, Dheerpur, Dhakka, Mukherjee Nagar, Bhalswa, Sant Nagar, all colonies in the area of from Karnal Bye Pass to Wazirabad, Swaroop Nagar, Libas Pur etc.</p>	<p>The status of the stations and reasons for delay was elaborated in the SCMs. At present, the system consists of one 220/66kV, 100 MVA Power Transformer feeding 66kV Dheerpur, Burari & DMRC Ckt from Gopalpur. These load can be fed from 220kV Narela and Rohini S/Stns. of DTL. DMRC has established 66 kV supply from their 220kV Jahangir Puri S/Stn. recently to feed Mukundpur RSS. Considering the requirement and to ensure reliability of power supply to the areas, a scheme was prepared by DTL for establishment of 02 no. 220/66kV, 160MVA transformer and 66kV GIS Grid S/Stn. at Gopal Pur S/Stn. of DTL. To avoid disruption of supply the scheme is drawn out as under:-</p> <ol style="list-style-type: none"> Establishment of 2x220/66kV, 160MVA transformer and 10 no. 66kV GIS feeder bays. Shift the entire 66kV feeders to 66kV GIS. Dismantle the 220/66kV, 100MVA Power Transformer. Erect 2nd 220/66kV 160MVA Transformer to ensure N-1 reliability. <p>To accomplish the entire work the completion period of project is fixed as 24 months. The Board of Directors of DTL approved the scheme in its meeting held on 23.03.2015. Three bidders participated in the tender process. However, only one bid (M/s. SIEMENS) was technically qualified and financial bid got opened considering the urgent requirement. The bidder has quoted the exorbitantly high cost. As such it was decided to drop the tender. After</p>

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

			completion of the retendering process the scheme has been retendered and now it is under evaluation. Tentative commissioning is by April 2019.
3.	220/33kV Dev Nagar (Karol Bagh)	In the special Steering Committee Meeting held on 14.03.2016 for considering the Business Plan of DTL for the period 2016-17 to 2021-22 it was informed by TPDDL that 33kV Shehzada Bagh, 33kV Rama Road and 33kV DCM grid S/Stns. of TPDDL are operating without any reliability and are dependent mainly on 220kV Narela-Rohtak Road D/C old deteriorated D/C of BBMB. As such they required 6 No. 33kV bays from Dev Nagar. In the SCM held on 15.03.2017, TPDDL has been allocated 8 bays from the station namely Shehzada Bagh Ckt-I & II, Gulabi Bagh Ckt, GTK Ckt, Tripolia Ckt., Rama Road Ckt., PUSA Ckt. and DCM circuit. In the meeting it was informed that the S/Stn. would be commissioned in the year 2018-19. TPDDL requested earlier commissioning of the S/Stn. for maintaining reliability of the power supply of the areas.	CPWD has provided land for 220/33kV Dev Nagar for establishment of 220kV S/Stn. by DTL and 33kV S/Stn. by BYPL. After long persuasion with L&DO by Govt. of Delhi the land was allocated and handed over to DTL on 4 th July 2017. The BOD of DTL has approved the scheme in its meeting held on 26.09.17. The scheme is under Tendering Process. Commissioning is in 2019-20. Further the main source to feed the S/Stn. was from the proposed 400kV S/Stn. at IP (shifted from RPH Complex as the site falls in the Yamuna Flood Plain). The 400kV S/Stn at IP also could not be materialized. As such, the infeed was now envisaged through LILO of S/C Electric Lane –Park Street at Dev Nagar. Till the S/Stn. is commissioned (by the year 2019-20) BYPL and TPDDL are required to manage with the available sources.
4.	220/33kV Punjabi Bagh	In the special Steering Committee Meeting held on 14.03.2016 for considering the Business Plan of DTL for the period 2016-17 to 2021-22 it was informed by TPDDL that they required 5 bays to reduce dependency on 220kV Narela-Rohtak Road D/C old deteriorated line of BBMB. It was informed that the S/Stn. would be commissioned in 2018-19. TPDDL requested earlier commissioning of the S/Stn. for maintaining reliability of the power supply of the areas.	The issue was discussed in the SCM held on 29.06.17 and 30.10.17 wherein it was informed that the 220kV at Punjabi Bagh was conceived as up-gradation of existing 33kV Vishal grid of BRPL. Considering the practical difficulties to remodel the existing S/Stn. without affecting the power supply of the areas fed from the S/Stn, new location for establishment of 220kV S/Stn. is being explored at Zakhira. As per the Business Plan of DTL the commissioning schedule of the project is in 2019-20.

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

			New location for establishment of 220kV S/Stn. is being explored. As such, the project may be delayed.
5.	1X160MVA PTR along with new 66kV Bays at 220kV Shalimar Bagh	At present only one 220/66kV 100MVA transformer is available without any redundancy in the system. 220kV SGTN was also inordinately delayed. To ensure reliability of the power supply the transformer should be established before summer 2018.	In the meeting held in the chamber of Dir(Oprns), on 02.01.2018 it was decided to shift 100MVA CGL make Trf of Mehrauli (which remains at no load) to 220kV Shalimar Bagh. Additional 04 no. 66kV Bays and 2 No. 220kV bays are also to be erected by Summer' 18.
6.	Installation of 220/66 KV 160 MVA PTR at 220/66 KV Kanjhawala Grid	Considering the capacity of the S/Stn. at 360MVA (2x100MVA + 1x160MVA) TPDDL put more load on the S/Stn. But before summer 2017, 160MVA Transformer was shifted to PPK-I. The Transformer should be reinstalled before summer 2018 as at present the S/Stn. is operating without n-1 contingency.	The scheme is under Tendering Process. Expected before Summer-2019. It was also informed in the meeting held in the chamber of Dir(Opr) DTL on 02.01.2018 that TPDDL should manage the load during summer 2018 with the existing arrangement.
7.	Installation of 220/33 KV 100 MVA PTR at 220/33 KV Wazir Pur	At present the S/Stn. does not meet n-1 redundancy. Additional transformer is required to be installed before summer 2018.	It requires a lot of re-arrangement and is expected by Summer-2019. The issue was also discussed in the meeting held on 02.01.2018 in the chamber of Dir(Oprns) where in the issue of modification of yard for the installation of additional transformer was informed. It was told that the scheme would be devised in such a way that the transformer would be made available by summer-2019.
8.	220/66kV Tikrikhurd Grid	In the SCM held on 10.07.2015 it was informed that the S/Stn. having 12 No. 66kV feeders is going to be tendered with the completion schedule of 24 months from then. This is required to meet the contingency of area fed from 220kV Narela and DSIDC Bawana S/Stn. As such a S/Stn. is required urgently.	Already informed in SCM dated 29.06.2017 that the scheme of 220kV substation at Tikri Khurd has been shifted to the last phase of the Business Plan i.e. in 2021-22 due to low load growth in the surrounding area.
9.	Establishment of 220/33kV Chandrawal Grid with associated lines	As per original time lines fixed by CEA, the S/Stn. was planned in 2015-16. Further the target was revised by DTL for 2018-19.	It had been informed in the SCM held on 29.06.2017 that the matter of RoW for the infeed of the S/Stn. was being

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

		<p>The Grid is required to ensure n-1 of the lines and PTR of the load fed through Subzi Mandi 220kV and Kashmere Gate 220kV DTL Grids. As per SLDC comments it is required to meet reliability standards of the network and would be completed by 16-17.</p> <p>In the PFA document the timelines has been revised to 17-18 and now in business plan it has been further revised to 18-19.</p> <p>It is learnt that now this location has been shifted to Timarpur. This location is quite close to existing Gopalpur 220kV. Still TPDDL would manage though their 33kV network length would increase. We are apprehensive of further delay in timelines. In the event of failure of supply from Subzi Mandi or Gopal Pur; the areas which will get adversely impacted are Kamla Nagar, Roop Nagar, Hudson Lane, Kingsway Kamp, Delhi University, Malka Ganj etc.</p>	<p>pursued with DJB for long. Due to the RoW constraints informed by DJB the 220kV Chandrawal was required to be relocated to near by Timarpur (the most suitable land available in the vicinity of Chandrawal area). TPDDL was requested to draw out plan for evacuation of Timarpur S/Stn. The same was reiterated in the SCM held on 30.10.2017.</p>
10.	<p>Alternate feed 220/33kV Radially fed Subzi Mandi Grid</p>	<p>As per original time lines fixed by CEA, the S/Stn. was planned in 2015-16. Further the target was revised by DTL for 2020-21.</p> <p>220kV Subzi Mandi Grid is currently radially connected with 220kV Gopalpur Grid. As per 12th plan of CEA, this Grid was to be connected with 220kV Park Street through U/G line by 15-16. Now as per Business plan of DTL, this Grid is to be connected with 220kV Chandrawal by LILO of one no of 220kV Gopalpur-Subzi Mandi Ckt. Revised timeline of 220kV Chandrawal is 18-19. DTL has another plan to connect 220kV Subzi Mandi with 220kV Karol Bagh through D/C U/G line which is to be executed by 20-21.</p> <p>The areas that will get adversely impacted are Kamla Nagar, Roop Nagar, Hudson lanes, Kingsway Kamp, Delhi University, Hindu Rao Hospital, Bara Hindu Rao, Azad Market, Shakti Nagar, Old Subzi Mandi, Roshanara Road, Kharia Mohalla, Kala Ret, Malak Ganj, Gulabi Bagh, Shashtri Nagar, Shehzada Bagh etc.</p>	<p>It has been informed in various SCMs that due to sever space constraints the additional connectivity or installation of additional 100MVA transformer at 220kV Subzi Mandi is possible only after conversion of AIS to GIS.</p> <p>The entire load of the S/Stn. should be shifted to the nearby 220kV S/Stn. (Chandrawal is now being relocated to Timarpur). After that the conversion of existing AIS to GIS is required to be carried out at Subzi Mandi for providing alternate feed. As per the Business Plan of DTL for the period 2017-22 the conversion of AIS to GIS at 220kV Subzi Mandi is planned in the year 21-22. The additional connectivity of Subzi Mandi with Dev Nagar S/Stn. is also planned in 21-22.</p>

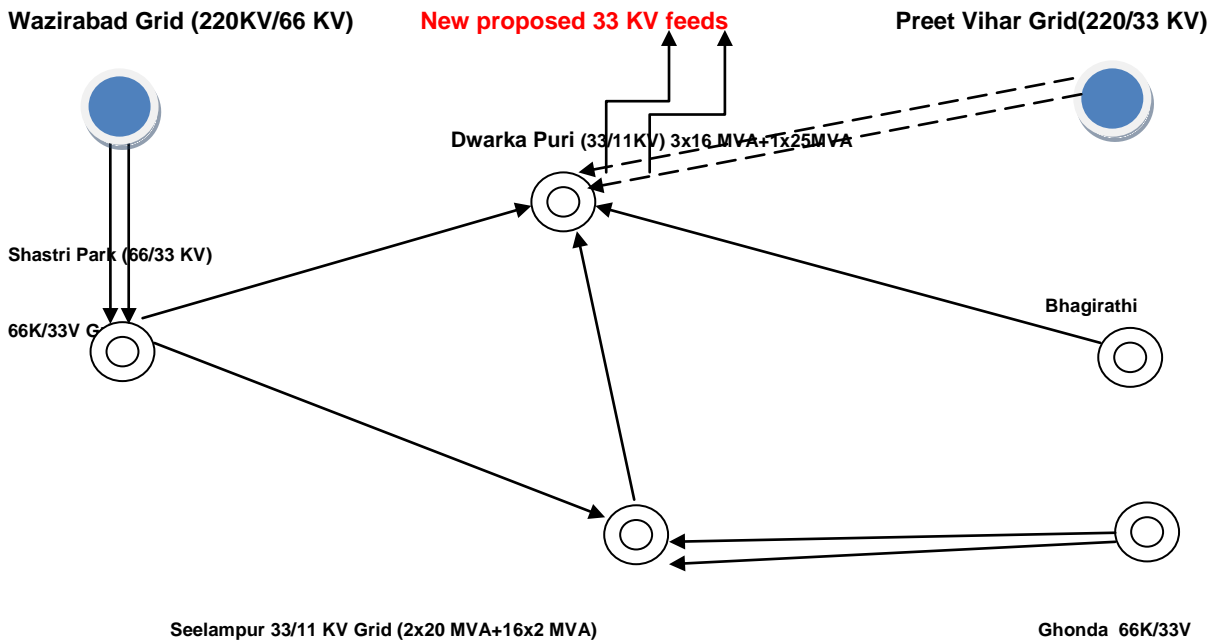
TPDDL requested the Steering Committee to impress upon DTL to adhere the time lines now informed, for each projects as many slippages have already occurred. DTL informed that all possible steps have already been taken to stick to the time lines despite the fact that DTL is passing through severe financial constraints due to non-payment of dues by some of the Distribution Utilities.

E. BYPL Issues.

1. Laying of 2no. 33KV circuits from 220KV Preet Vihar to 33KV Dwarkapuri Grid

The existing installed capacity of Dwarka Puri Grid is 73 MVA & there is no direct feed from any of 220 KV DTL Grid. Currently, Dwarka puri Grid is having 33KV feeds from Bhagirathi, Shastri Park(East) and Seelampur Grid and all being fed from Wazirabad 220 KV Grid. In case of failure from upstream grid, the supply of whole area goes off.

Laying of one circuit from 220KV Preet Vihar Grid to 33KV Dwarkapuri Grid is already approved by the **SCM held on 16/04/2015**. But as the installed capacity of Dwarkapuri Grid is 73 MVA it is proposed to lay two no. 33 KV ckts. from Preet Vihar 220 kV Grid instead of one already approved so that the second circuit be laid simultaneously. This will enhance the reliability of the Dwarka Puri grid in-feed & will be cost effective on account of no extra road restoration charges required for laying 2 ckts.



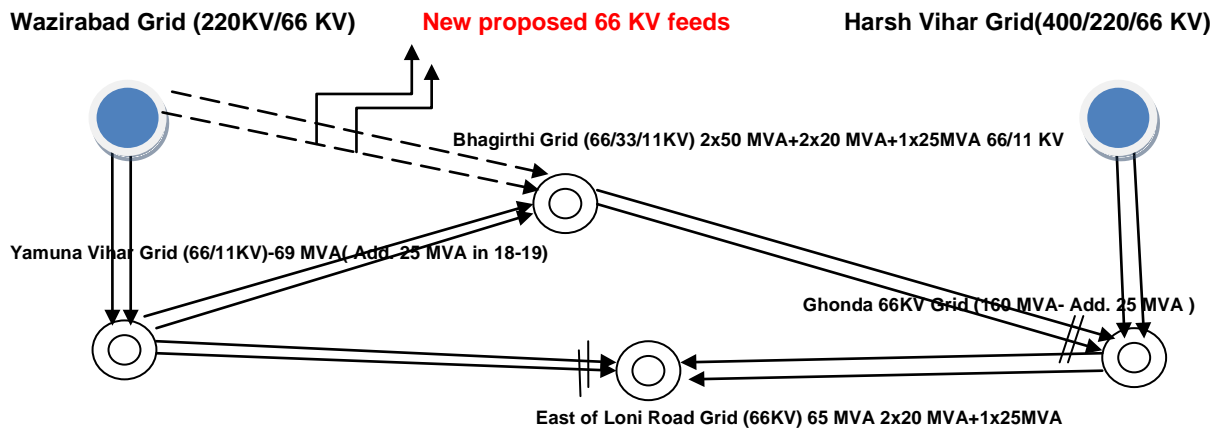
DTL informed that 2 no. 33kV bays for 33kV Dwarkapuri Grid from 220/33kV Preet Vihar have already been approved as per the evacuation plan finalized in the SCM held on 30.10.2017. The 33kV GIS bays are available at 220kV Preet Vihar for laying of 2 no 33kV Ckt. to 33kV Dwarkapuri Grid.

After the deliberations, the above proposal was agreed in principal by the Steering Committee.

2. Allocation of 2 no. 66KV bays at 220KV Wazirabad Grid for 66KV Bhagirathi Grid.

It has been decided in SCM held on 30/10/2017 that DTL will provide 2 No. 66 KV bays at 220 KV Wazirabad Grid before Summer 2019 as at Harsh Vihar Grid bay addition through GIS will take time. The installed capacity at Bhagirathi Grid is 165 MVA (a) 2x50 MVA, 66/33 KV (b) 2x20 MVA+1x25MVA 66/11 KV. Peak loading of this Grid in Summer 2017 was 784 A (95 MVA).

But for Bhagirathi Grid there is no direct feed from any DTL Grid. As such BYPL is proposing to lay 2 No 66KV direct Circuits from Wazirabad 220 KV Grid 66/11 KV Bhagirathi. BYPL requested SCM to approve and DTL be advised to allocate the two bays & make them ready at the earliest.



After deliberation the proposal was agreed 'In-Principle' by the Steering Committee.

F. BRPL Issues.

1. Handing over of IP station Bay no. 38 for further connection of Supreme Court Complex (near Pragati Maidan) feeder.

BRPL submitted that during Steering Committee Meeting on 30-10-2017, BRPL requested NDMC to vacate the 33kV Bay No. 38 at IP Station and hand it over to BRPL for further connection to Supreme Court (Additional Building Complex at Pragati Maidan) feeder.

The said bay was allocated to BRPL for connection to Supreme Court Complex in Steering Committee meeting held on 06-05-2016. BRPL informed that they have executed 33 kV Cable laying work and the same is in final stage. Now they need the bay for cable connection.

BRPL submitted that they have already requested to vacate and hand over the 33 kV Bay No. 38 at IP Station but no action was taken till date.

BRPL again requested the Steering Committee to intervene in the matter for early handing over of the bay.

DTL informed that the allocation of 1 No. 33kV feeder bay (bay No. 38) to BRPL (along with laying of 02 No. 33kV cables) at 220/33kV IP Substation for feeding Supreme Court of India at Pragati Maidan, New Delhi has already been done vide letter dated 30.06.2017 subject to completion of the formalities. A copy of the allocation letter was handed over to BRPL.

NDMC requested the Steering Committee to allow to club bay 38 in bay 42 of and requested Steering Committee to intervene.

The matter was also discussed at item No.G.1 wherein Steering Committee advised NDMC to vacate the 33kV bay no. 38 at 220kV I.P. Sub-station immediately without any further delay to facilitate early connection of the supply to Supreme Court of India at Pragati Maidan. BRPL may, therefore, go ahead to connect the 33kV cable to 33 kV Bay No. 38 at 220kV I.P. Sub-station in co-ordination with Protection Division/O&M Deptt. of DTL and NDMC.

2. New connection of 5 MW at National Intelligence Grid (NAT grid), Andheria Mod, New Delhi

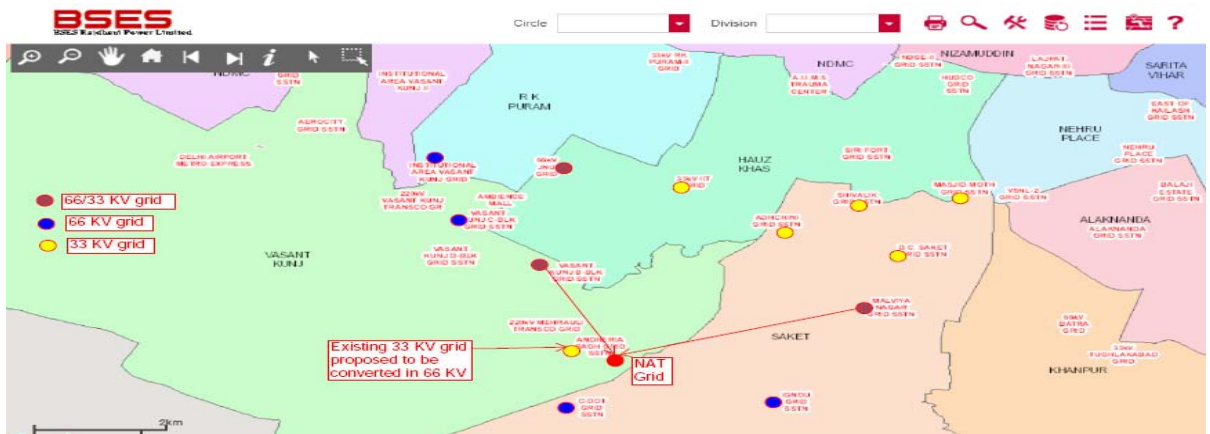
BRPL submitted that NAT grid has applied for new connection of 5 MW load at its Andheria Mod premises.

Since the total load demand is more than 4 MW, the supply is required to be released on 33 KV/ 66 KV. It is proposed to provide two sources on 33 KV to the consumer.

- One source from Malviya Nagar
- Second source from B-blk Vasant Kunj
- Both sources to be dedicated for NAT grid
- Though there is 33 KV Andheria Bagh grid in the vicinity, but it is proposed to be converted on 66 KV. This shall eliminate all sources coming to this grid at present.
- There is no other nearby source of 33 KV.

It is proposed to install 33 KV GIS switchgears in BRPL switching substation within consumer's premises for providing highest reliability of Power supply considering the importance of the consumer .

Route Map:



After deliberation, the Steering Committee accorded 'In-Principal' approval to the proposal.

3. New connection of 8 MW at Reliance jio Mall, Vikaspuri, New Delhi

Reliance jio Mall, Vikaspuri has applied for new connection of 8 MW load.

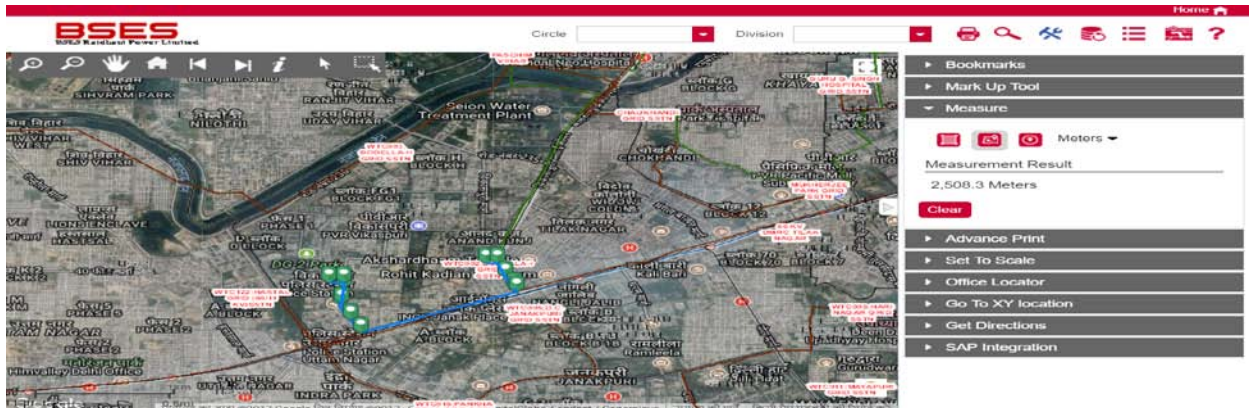
Since the total load demand is more than 4 MW, the supply is required to be released on 33 KV/ 66 KV. It is proposed to provide two dedicated sources to the consumer from 66kV Bodella-1 grid.

Major works involved in this process are:

Minutes of 3rd Steering Committee Meeting of 2017-18 held on 17.01.2018

1. Installation of 2x30 MVA, 66/33 KV PTRs at Bodella-1 grid
2. Two nos. circuits from Bodella-1 grid to RJIO mall
3. 33 KV BRPL switching S/Stn within RJIO premises

Route Map:



Steering Committee was requested to approve the proposal. It was also informed that from 33kV side of Budella-I, 33kV District Centre Janakpuri would also be provided connectivity as at present the 33kV sub-station is radially fed from 66kV Pankha Road sub-station.

After deliberations, the Steering Committee accorded 'In-Principal' approval to the proposal.

G. Additional Issues

1. Termination of 33kV feeder cable of NDMC (presently connected at 33kV bay no. 38) with bay no. 42 at 220kV I.P. Station.

NDMC submitted that at present the 33kV Bay No. 38 at 220/33kV I.P. Station is feeding to Connaught Place Grid Station of NDMC and the bay has already been allocated to BRPL for feeding Supreme Court of India at Pragati Maidan, New Delhi in the Steering Committee Meeting dated 06.05.2016. NDMC further requested for utilization of the feeder cable at bay no. 38 by termination of the 33kV feeder cable with bay no. 42 at 220kV I.P. Station to spare bay no. 38 to be utilized by BRPL.

The matter was considered by the Steering Committee and decided to allow NDMC for termination of 33kV feeder cable (presently connected at 33kV bay no. 38) with bay no. 42 at 220kV I.P. Station to spare bay no. 38 which is to be utilized by BRPL for feeding Supreme Court of India at Pragati Maidan, New Delhi subject to completion of formalities.

Steering Committee further advised NDMC to vacate the 33kV bay no. 38 at 220kV I.P. Sub-station immediately without any further delay to facilitate early connection of the supply to Supreme Court of India at Pragati Maidan.

2. Termination of 66kV D/C Rohtak Road-Gurugram O/H T/L at 220/66kV Bharthal/66KVBRPL/DMICDC substations

In the last Steering Committee meeting held on 30.10.2017 the matter was discussed and it was decided that the 66kV source to Gurugram shall be provided from proposed 220/66kV Bhartal (which is likely to be commissioned by 2020-21) instead of 66kV source from 220kV

Rohtak Road to bypass the low clearance area of the 66kV Rohtak Road-Gurugram circuit to avoid the mishappenings in future. In the mean time the modalities may be worked out by a joint site visit of HVPNL, BRPL and DTL to feed the Mehrauli Road, Gurugram substation of HVPNL.

It was decided to convene a separate meeting with DMICDC, BRPL and HVPNL for co-ordination on the issue of shifting/termination of the said 66kV D/C Rohtak Road-Gurugram O/H T/L to nearby DTL/BRPL 66kV Substation.

3. Establishment of 220KV ESS at Sarojini Nagar for redevelopment of General Pool Residential Accommodation (GPRA) Colonies at Sarojini Nagar, Netaji Nagar and Nauroji Nagar

In the last Steering Committee meeting held on 30.10.2017, DTL was advised to device scheme for establishment of 220/33kV, 3x100MVA Substation as per the load requirement projected by NBCC at the earliest on deposit mode. For system stability, it was advised to include 220kV, 2 no. 25MVAR Reactors in the scheme.

NDMC requested DTL to provide the estimate for establishment of the 220kV, 3x100MVA substation as per the request of NBCC so that necessary approval from the concerned agencies can be obtained for implementation of the project as NDMC has also planned number of down-stream sub-stations.

DTL agreed to make all the efforts to provide the estimate by the end of March 2018.

The meeting ended with thanks to the Chair.

ATTENDANCE SHEET

Steering Committee Meeting held on 17.01.2018 at 10.30 AM in the office of General Manager (Planning), DTL

Sr. No.	Name of the Officer	Designation	Org.	Contact No.	E-mail address
1.	Shri R.D. Gupta	G.M.(Electrical)	NCRTC	9205188015	rd.gupta@ncrtc.in
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3.	Shri Atul Singh	AM/DIAL	GMR	9599556697	atul.singh@gmrgroup.in
4.	Shri Shailesh Gupta	Sr. Manager CES	BYPL	8595254901	shailesh.k.gupta@relianceada.com
5.	Shri Kailash Chand	Manager (T) Project-IB-I	DTL	9999533777	kchand70@gmail.com
6.	Ms. Bhanu Gehlot	Manager CES	BRPL	8287841170	bhanu.gehlot@relianceada.com
7.	Shri Prem Gomber	Head(P&E)	BYPL	9312782565	prem.gomber@relianceada.com
8.	Shri Kishan Pal	ASVP(P&E)	BYPL	9312667177	kishanpal@relianceada.com
9.	Shri S.R. Meena	AGE E/M	MES	8130750809	geelectric@gmail.com
10.	Shri Abhinav Srivastava	DGM CES	BRPL	9350134826	abhinav.r.srivastava@relianceada.com
11.	Shri S.K. Sharma	G.M.(O&M)I	DTL	9999533640	gmomdtl@gmail.com
12.	Shri Birendra Prasad	GM(O&M)II	DTL	9999533663	bprasadgm.dtl@gmail.com
13.	Shri S.K. Suman	SE E-V	NDMC	9968286610	se.elect5@ndmc.gov.in
14.	Shri Surender Kumar	EE(E)Plg-33kV	NDMC	9810285758	eep33.elect@ndmc.gov.in
15.	Shri K.S. Meena	XEN(M/F)	NDMC	9811203020	eemf.elect@ndmcmil.gov.in
16.	Shri J.P. Sharma	Add.S.E./ O&M (Punjabi Bagh)	BBMB	9416300534	xenomdlh@gmail.com
17.	Shri Pourush Garg	DGM HOG-NEG	TPDDL	9971395283	pourush.garg@tatapower-ddl.com
18.	Ms. Manisha Dhar	A.M.	TPDDL	9810807396	manisha.dhar@tatapower-ddl.com
19.	Shri Naveen Goel	Manager (T) SLDC	DTL	9999533950	naveengoel06@gmail.com
20.	Shri Sanjeev Kumar	AM(T) SLDC	DTL	9999533917	sanjeevkumar2474@gmail.com
21.	Shri Susheel Gupta	Manager(T) CE&STU	DTL	9999533926	susheel.gupta@dtl.gov.in
22.	Shri R.S. Meena	DGM(T) Planning	DTL	9999533665	rsmeena@live.in
23.	Smt. Poonam Rathore	AM(T) to GM(Plg)	DTL	9999533915	poonam.ltg@gmail.com
24.	Shri L.P.Kushwaha	DGM(O&M) South	DTL	9999533664	lpksbm@rediffmail.com
25.	Shri Ashish Bhatia	Dy. CEE	DMRC	9650574448	abhatia1206@gmail.com