

DELHI TRANSCO LIMITED
(Regd. Office: Shakti Sadan, Kotla Road, New Delhi-110002)

AGENDA OF OCC MEETING DT. 28.10.2016

Date : **28.10.2016 (Friday)**
Time : **10:30 AM**
Venue : **Delhi International Airport (P) Ltd.,
Ground Floor Auditorium, New Udaan Bhawan,
Opp. Terminal 3, IGI Airport**

1.0 Confirmation of minutes of OCC meeting dated. 28.09.16.

An OCC meeting was held on 28.09.16 in accordance with the agenda circulated vide letter dt. 26.09.16. Minutes of the aforesaid OCC meeting were issued vide letter dt. 04.10.16.

Members may like to confirm the same.

2.1 Status of Hot Reserve of transformers at all levels.

DTL to update the status of 100MVA hot reserve transformer and cold reserves at 66kV and 33kV level:

S. No	Capacity	Present population in nos.	Status of the hot reserve as on 28.10.16
1.	220/66kV Tx 160MVA	22	DERC had approved 160MVA Transformer at PPK-II as hot reserve. However, load has been taken on same transformer. Considering the loading conditions at PPK-II and light load conditions at Kanjhawla, OCC advised DTL to consider 160MVA Transformer at Kanjhawla as hot reserve for next two years and members agreed for the same. DTL informed that the transformer at Kanjhawla is being transferred to PPK-I and the 100MVA Tx at PPK-I is being routed to Park street for replacement of failed transformer. OCC advised DTL to start the process for purchase of 160MVA Power transformer for hot reserve. O&M deptt., DTL may kindly update the status.
2.	220/66kV Tx 100MVA	42	DTL informed that tender for supply and ETC of 220/33kV 100MVA Tx as hot reserve at 220kV Patparganj Substation has been awarded. Tx. is expected to be commissioned before March, 2017. OCC advised DTL planning to propose in steering committee meeting for having 220/66-33 KV, 100MVA Tx as spare in DTL system. Planning deptt., DTL may kindly update the status.
3.	220/33kV Tx 100MVA	37	

4.	66/11kV 20MVA Tx.	24	DTL Planning department informed that the scheme for 25MVA power transformers has been prepared and however the same are for replacement and not for reserve. OCC advised DTL to get the approval of DERC for cold reserve transformers each at 66kV and 33kV level for further action. Planning deptt., DTL may kindly update the status.
5.	33/11kV 16MVA Tx.	16	

2.2 Sheath earthing of all outgoing 66kV cable at 220kV Pappankalan-II substation.

DTL informed that the sheath earthing of all outgoing 66kV cables are to be properly strengthened at 220kV PPK-II Substation. DTL informed that earthing of 66kV GGSB and 66kV Matiyala circuits are not proper.

During the meeting dt.30.08.16, OCC advised BRPL to look into the same and ensure adequate earthing to avoid unwarranted damage to the cable and maintain continuity of supply.

During the OCC meeting dt.-28.09.2016, DTL informed that no action has been taken till date. BRPL confirmed that they shall attend the shortcomings observed by DTL regarding earthing of 66kV cables emanating from PPK-II substation in co-ordination with them. OCC advised that the sheath earthing of O/G cables be connected with the Earth-Mat of Sub-Stn.

BRPL to update.

2.3 No protection on 11kV feeders emanating from 220kV Gazipur substation.

DTL O&M Substation in-charge of Gazipur informed that there is “NO protection/circuit breaker” exist at BYPL end on 11 KV out going feeders emanating from Gazipur.

The issue has been deliberated during meeting dt.30.08.16 and OCC advised BYPL to submit the status of protection of 11kV feeders emanating from 220kV Gazipur substation to DTL OS department before next OCC meeting.

During the OCC meeting dt.-28.09.2016, BYPL informed that they shall provide the data before next OCC meeting. BYPL further informed that all the 11kV feeders emanating from DTL Gazipur grid are terminating on circuit breaker at first switching substation except RMUs. RMUs terminate on isolators.

BYPL to update.

2.4 Alternative supply arrangement for IGI Airport, Delhi

DTL informed that at present, IGI Airport is being provided supply from only one source i.e. 220kV DIAL sub station. In this regard, DTL requested Airport authority i.e. DIAL to have alternate power supply source in case of failure of supply from DIAL S/Stn. of DTL.

The issue was discussed during the OCC meeting dt.-28.09.2016, wherein DIAL informed that presently there are three terminals at IGI Airport. The power to Terminal –I & II is fed through 8 nos of 33kV outgoing feeders from 66kV Palam S/Stn. which is having two sources of supply from 220kV Mehrauli and from 220kV Vasant Kunj S/stn. However, power source to Terminal – III is only from 220kV DIAL S/Stn. at 66kV Level. Representative of DIAL further stated there is no 66kV Bus arrangement at 66kV DIAL S/Stn.

OCC during the meeting dt.-28.09.2016, pointed out that DIAL should explore the possibility of utilizing idle 66kV feeder from Palam s/stn terminating near 220kV DIAL S/stn. BRPL representative stated that this feeder is lying redundant for the last about three years and PTW on this is still with DIAL and if DIAL is not utilizing this feeder than they may surrender this bay to BRPL.

OCC advised DIAL to submit the schematic arrangement of power supply to existing terminals of IGI Airport in the next OCC meeting. Representative of DIAL agreed to submit the same alongwith their future plan of utilizing the redundant 66kV Line.

GMR-DIAL to update

2.5 Possibility for allocation of additional 33kV Bays at 220kV Sub-Stn AIIMS

DTL Planning deptt. vide its letter dt.-03.10.2016 has informed that M/s BRPL has requested DTL Planning deptt. to explore the possibility of allocation of additional 33kV bays at 220kV S/Stn. AIIMS.

DTL, Planning deptt. & BRPL to update the status.

3.0 SLDC Agenda Points

3.1 Synchronization of 12 MW Gazipur Waste to Energy Plant.

The Waste to Energy Plant of EDWPCL is connected at 66KV level to the 220/66KV Gazipur sub-station of DTL. The 66KV feeder connecting the plant to the sub-station was charged on 19.08.2015. Thereafter, the plant was drawing power from BYPL through DTL substation at Gazipur.

On **21.10.2015**, the plant itself synchronized with the grid without informing to the control room of SLDC and started injecting power in to the grid. The plant has now requested to consider the said date as date of synchronization.

Regarding date of synchronization, it is informed that the generator is required to obtain the permission of the SLDC, Delhi (concerned load dispatch Centre in its case) before injecting its infirm power into the grid.

The relevant clause 8.(7) of the Central Electricity Regulatory Commission (Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-State Transmission and related matters) Regulations, 2009 is reproduced here under for clarity in this regard:

'A generating station, including captive generating plant which has been granted connectivity to the grid shall be allowed to undertake testing including full load testing by injecting its infirm power into the grid before being put into commercial operation, even before availing any type of open access, after obtaining permission of the concerned Regional Load Dispatch Centre, which shall keep grid security in view while granting such permission.'

During OCC meeting dt. 28.07.16, EDWPCL informed that they have synchronized with Gazipur grid on **21.10.15** for turbine testing and de-synchronized after the testing. OCC advised EDWPCL to inform and take permission from Delhi SLDC before actual synchronization of their system with grid. OCC further advised EDWPCL to submit the relay settings at their end to DTL Protection and OS divisions for review. EDWPCL informed that they shall submit the same to DTL. EDWPCL further informed that their communication system is ready and requested DTL to kindly check the same.

During meeting dt.30.08.16, OCC advised EDWPCL to submit the telemetry data to SLDC within 2 weeks before proceeding to next step.

During the OCC meeting dt.-28.09.2016, EDWPCL informed that they shall provide the telemetry data to SLDC by 30th September, 2016.

EDWPCL to update.

4.0 Joint Checking of Overhead Power Line crossings (TPDDL) with railway representatives.

Railways informed that due to sharp increase in falling of power line crossings on railway traction wire, which resulting into extensive damage to 25kV Traction equipments and disruption of railway traffic. As such railways requested to carry out joint survey of all overhead power line crossings of TPDDL with railway representatives to avoid any failure of these crossings in future.

During meeting dt. 30.08.16, OCC advised DTL and DISCOMs to nominate the representatives for joint inspection of transmission lines along railway crossings from their end and send the same to Railways for suitable dates of inspection.

DISCOMs raised the issue of free power block from railways to carry out necessary maintenance work. OCC advised members from DTL and DISCOMs to provide nominations for joint inspection from their end so that the same may be sent to Railways.

DTL/DISCOMs/Northern Railways to update.

5.0 Shutdown of Generation Plant (TPDDL agenda)

On dated 17.07.2016, Delhi DISCOMs had given consent for shutdown of one unit of NTPC-Jhajjar. NTPC-Jhajjar has two major beneficiaries - Delhi & Haryana, both with 46% share. So consent of both was required to shut down unit.

However due to paddy season Haryana required its full share from the plant. Haryana was ready to give consent provided they received their full share from the plant. In such a scenario a mechanism at NRLDC level is required which allows NTPC-Jhajjar to shut down one unit and curtailing the schedule of Delhi Only. Of the two remaining units, Haryana will continue to receive its full share, while Delhi will only receive the rest. A real-time change of allocation percentages in such scenarios is required.

During the OCC meeting dt.28.07.16, OCC advised SLDC and DISCOMs to have a separate meeting at SLDC building to deliberate on the aforesaid issue before proposing to NRLDC/NRPC.

During OCC meeting dt. 30.08.16, SLDC informed that meeting is yet to be convened. OCC advised SLDC and DISCOMs to have meeting on the aforesaid issue during 2nd week of September, 2016.

During the OCC meeting dt.-28.09.2016, SLDC informed that no meeting could be held yet and the meeting with DISCOMs shall be conveyed during October, 2016 for deliberation on the aforesaid issue.

SLDC and DISCOMs to update.

6.0 Permission for installation of communication equipment in DTL premises (BYPL Agenda Point)

As per OCC meeting dt. 04.05.16, BYPL submitted request for permission to install BYPL equipment like network rack, tower etc for new Link connectivity for FRTUs installed in the DTL grids.

BYPL requested DTL to provide update on the status of request/permission for the same, as the FRTU communication equipment installed presently are outdated and are not working as required for BYPL Operations.

During the OCC meeting dt.30.08.16, BYPL informed that they have not submitted any request letter to Director (Operations), DTL till date. OCC again advised BYPL to request DTL at the earliest for further necessary action. OCC further advised DTL and BYPL to explore the possibility of communication of 11kV feeders in similar way to that of 66kV and 33kV feeders.

During the OCC meeting dt.-28.09.2016, BYPL informed that they shall write a request letter to Dir(Oprms.), DTL for further process and action. OCC advised TPDDL and BRPL to proceed in the similar way to BYPL for installation of communication equipment in DTL premises.

BYPL to update.

7.0 PPCL Agenda points

7.1 Minor Overhauling of STG#1 Generator Inspection

PPCL informed vide their letter dt.-21.10.2016 (Refer Annex-1) that at PPS-III, Bawana (1500MW CCGT) as per Preventive maintenance schedule of Steam Turbine & Generator, recommended by BHEL for STG#1, Minor overhauling of Steam turbine & Generator Inspection of STG#1 is scheduled from 1/11/2016 to 30/11/2016.

Due to this, STG#1 is proposed to be taken under shutdown w.e.f. 1/11/2016 to 30/11/2016. GT#2 will be available in open cycle operation during proposed period. Module#2 (comprising of GT#3, GT#4 & STG#2) will be available in combined cycle operation. Module#1 will be restored to combined cycle operation w.e.f. 1st Dec 2016. This is for kind information to all members.

7.2 Waiver of UI charges (Account deviation charges on 18.11.2015)

PPCL informed vide their letter dt.-21.10.2016 (Refer Annex-1,2,3) that on 18.11.2015 at PPS-III, Bawana GT#3 and STG#2 was on bar at 250MW load. GT#3 tripped at 18:27 hrs. due to fault in 220kV DSIIDC ckt. (blast of lightning arrester) and station generation became zero. PPS-3 control room informed SLDC and requested to waive of the UI charges during the same period because the tripping was due to fault at DTL end (message no.-6515-11/74 dt.18.11.2015 at 18:29 hrs.-copy enclosed). Correspondence was also done through mail dt.19.01.2016. As per the deviation settlement account for the period 16.11.2015 to 22.11.2015 week 34. UI charges levied on PPS-III Bawana an amount of Rs.3.15902 lakhs. Again after that various communications was done with SLDC vide letter no. GM(T)/site/project/PPS-3/15-16/1008 dt.15.02.2016 and letter vide no. GM(T)/site/project/PPS-3/15-16/1629 dt.27.08.2016 to waive off the deviation amount imposed on PPS-III, Bawana and issue revised DSM account but till date no waive off UI charges was taken.

PPCL requested before OCC to consider the case of UI waiver and SLDC be asked for necessary action in this matter. PPCL further requested to issue the Revised deviation settlement account for the same duration.

SLDC to update.

8.0 BBMB agenda points

8.1 Regarding ownership of equipments installed at 220kV S/Stn BBMB Delhi

BBMB vide their letter dt.-19.10.2016 (Refer Annex.-4) has informed that BBMB Punjabi Bagh have not any documentary proof regarding 'Ownership' of equipments installed by DTL erstwhile DESU at 220kV Sub-Stn BBMB, Delhi, which is essentially required to maintain the equipments in the wake of uninterrupted power supply from BBMB Delhi Sub-Stn.Hence, **BBMB has desired to provide the list of Ownership of equipments installed at 220kV Sub-Stn Punjabi Bagh BBMB Delhi along with the supporting documents.**

Presently, it is brought to your kind notice that one no. 66/33kV 30MVA T/F was commissioned in 1982.The name plate data of the transformer reflects that it is the DESU property.This transformer has achieved its useful life of 34 years.Due to ageing effect of T/F, the Frantic Compounds content is 2750, which is on higher side as compared to permissible limit.It indicates the severe deterioration of solid insulation in the T/F. The Tan Delta value of HV Red bushing, checked by Protection team BBMB Panipat is 2.144% which is also on higher side. The Tan Delta value of winding of T/F is also on higher side and **our Protection Division has recommended to replace the Transformer with new Transformer.**

In view of above facts, BBMB has requested to take appropriate action to replace the said Power T/F at the earliest to avoid any interruption in the Power supply in case of any outage due to breakdown of this T/F.

Members may deliberate.

8.2 Regarding availing of shut down on 220kV Lines at Narela S/Stn without prior intimation to BBMB

BBMB vide their letter dt.-19.10.2016 (Refer Annex.-4) has informed that they have experienced in the past that whenever DTL avails scheduled/emergent shutdown on 220kV R/Road-Narela ckt.-I & II and 220kV Narela-Panipat ckt.-I, II & III, it is not pre-intimated to BBMB as a result, no advance planning can be made by BBMB for maintenance of S/Stn and transmission lines. If availing shut down is intimated within stipulated time than a planning for cleaning disc insulators/mtc. Of S/Stn equipments etc. can be made in order to reduce the outage of lines.

O&M, DTL may deliberate.

9.0 Shutdowns

9.1 (A) Proposed shutdowns of O&M, DTL

DTL, O&M deptt. has proposed the planned shutdowns for the month of November, 2016 as per enclosed Annexure-5.

Members may deliberate.

9.1 (B) Proposed shutdowns of DTL Project Deptt.

DTL, Project deptt. Has proposed the planned shutdown at 220kV Lodhi Road (Refer Annex-6) as per the following details:-

S. No	Date	Time	Name of Equipment	Work to be carried out	Remarks
1.	06/11/2016 (Sunday)	06.00 Hrs to 11.00 Hrs	220 kV Ckt-1 / line-1 Lodhi Road to Maharani Bagh	To carry out dismantling work of 3nos. 220kV CVTs along with supporting structures in 220kV bay no.1 at Lodhi Road 220/33kV S/Stn.	100 MVA Tr. no. 1 to be out. Load may be transferred to 100 MVA Tr. no. 2. Note- After dismantling of these CVTs, the new foundations are to be constructed for 220kV cable end termination kits for connecting upcoming 220kV GIS through 220kV cable at Lodhi Road

Members may deliberate.

10.0 Long/Recent outage of Elements in Delhi power system.

Members to update the status of following Long/Recent outage of Elements in Delhi Power system:

S. No.	Element's Name	DISCOM /DTL	Date and Time of outage	Remarks/ Status as on 25.10.16
1.	33kV BAY -3 (IP – Kilokri)	BRPL	22.02.11	Clearance from Railways for laying of Underground cables near Bhairon Road is pending. OCC advised BRPL to inform DTL after awarding of the said work.

Agenda of OCC meeting dt. 28.10.16

2.	33kV RIDGE VALLEY - KHEBAR LINE CKT.-I	BRPL	08.02.15	Breaker faulty. To be revamped by including in GIS. GIS is commissioned. SCADA work is in progress. Expected by 30.10.16
3.	33kV RIDGE VALLEY - KHEBAR LINE CKT.-II	BRPL	31.01.16	GIS is commissioned. SCADA work is in progress. Expected by 30.10.16
4.	66kV RIDGE VALLEY-V.KUNJ CKT.-II AT RIDGE VALLEY	BRPL	13.02.16	UNDER SHUT DOWN
5.	66kV RIDGE VALLEY - V.KUNJ CKT.-I	BRPL	25.02.16	UNDER SHUT DOWN
6.	20MVA PR.TR.-III AT VSNL	BRPL	20.07.16	UNDER BREAK DOWN
7.	33kV ROHTAK ROAD - MADIPUR CKT.	BRPL	28.05.16	CABLE FAULTY.
8.	66kV SAGARPUR - REWARI LINE CKT.	BRPL	30.07.16	'B' PH. CABLE FAULTY.
9.	30MVA PR.TR. AT NANGLOI	BRPL	18.08.16	UNDER SHUT DOWN.
10.	33kV BAY-30 (IP-KAMLA MARKET)	BYPL	24.10.16	R-Ph SINGLE CABLE FAULTY
11.	33KV PANDAV NAGAR - DMS CKT.	TPDDL	03.04.16	PROBLEM IN RMU. EXPECTED BY 30.10.16
12.	33kV SMB-FC WAZIRPUR-II CKT. CABLE-I	TPDDL		CABLE FAULTY
13.	400kV BAMNAULI - JHAKTIKARA CKT.-I	DTL	22.05.16	Tower erection work is yet to be started. In process of tendering.
14.	400kV Bawana-Mundka –I & II	DTL	27.09.16	Shutdown for raising the height of transmission line which is infringing the DMRC corridor.
15.	220/66kV 100MVA PR.TR.-III AT 220kV PPK-I	DTL	04.09.16	HV SIDE 'Y' PH. WINDING DAMAGED.
16.	220/33kV 100MVA PR.TR.-II AT 220kV PARK STREET	DTL	11.09.16	The transformer have been put Off due to rise in oil temperature and it will be replaced by the transformer at

				220kV Pappankalan-I.
17.	220/33kV 100MVA PR.TR.-I AT 220kV WAZIRPUR	DTL	19.10.16	Tr. Tripped on Differential and Buchholz. Internal inspection has been carried out and the transformer will be charged after the recommendations of OEM.

ADDITIONAL AGENDA BY SLDC

1. Winter preparedness and Reactive Power Management

During the winter months, specially November 2015 to March 2016 high voltages were experienced in Delhi system particularly during off peak hour. Last year during the period 02.11.2015 to 27.03.2016 Delhi has been injecting reactive power to the grid at high voltage conditions which led to paying of Rs. 538 Lakhs to Reactive Pool Account of NRPC whereas the Discoms has to pay only Rs 28.29 lakhs. Which indicates that DTL System has generated Reactive power to the tune of corresponding to Rs 509.71 lakhs . The details are as under:

Reactive energy account issued by NRPC for Delhi as a whole (2015-16).

Week No.	Duration			MVARh Drawal		Amount in Rs. Lacs		Net Amount in Rs. Lacs
				High Voltage	Low Voltage	High Voltage	Low Voltage	
1	30-Mar-15	--	5-Apr-15	6595.00	2.80	-8.05209	0.00336	-8.04873
2	6-Apr-15	--	12-Apr-15	9025.80	2.80	-11.28225	0.00350	-11.27875
3	13-Apr-15	--	19-Apr-15	11320.50	0.00	-14.15063	0.00000	-14.15063
4	20-Apr-15	--	26-Apr-15	9928.90	26.10	-12.41113	0.03263	-12.37850
5	27-Apr-15	--	3-May-15	10282.10	103.60	-12.85263	0.12950	-12.72313
6	4-May-15	--	10-May-15	-1743.80	179.00	2.17975	0.22375	2.40350
7	11-May-15	--	17-May-15	8559.20	352.60	-10.69900	0.44075	-10.25825
8	18-May-15	--	24-May-15	1894.50	113.60	-2.36813	0.14200	-2.22613
9	25-May-15	--	31-May-15	780.60	287.70	-0.97575	0.35963	-0.61613
10	1-Jun-15	--	7-Jun-15	2196.80	38.80	-2.74600	0.04850	-2.69750
11	8-Jun-15	--	14-Jun-15	1815.20	354.10	-2.26900	0.44263	-1.82638
12	15-Jun-15	--	21-Jun-15	1279.40	236.40	-1.59925	0.29550	-1.30375
13	22-Jun-15	--	28-Jun-15	3057.10	185.90	-3.82138	0.23238	-3.58900
14	29-Jun-15	--	5-Jul-15	2535.30	53.50	-3.16913	0.06688	-3.10225
15	6-Jul-15	--	12-Jul-15	14176.70	119.30	-17.72088	0.14913	-17.57175
16	13-Jul-15	--	19-Jul-15	4126.70	65.90	-5.15838	0.08238	-5.07600
17	20-Jul-15	--	26-Jul-15	3202.20	82.40	-4.00275	0.10300	-3.89975
18	27-Jul-15	--	2-Aug-15	1493.00	0.00	-1.86625	0.00000	-1.86625
19	3-Aug-15	--	9-Aug-15	39110.60	54714.20	-48.88825	68.39275	19.50450
20	10-Aug-15	--	16-Aug-15	5174.10	23.40	-6.46763	0.02925	-6.43838
21	17-Aug-15	--	23-Aug-15	2052.30	142.20	-2.56538	0.17775	-2.38763

22	24-Aug-15	--	30-Aug-15	637.80	88.40	-0.79725	0.11050	-0.68675
23	31-Aug-15	--	6-Sep-15	-680.30	70.10	0.85038	0.08763	0.93800
24	7-Sep-15	--	13-Sep-15	-542.00	38.60	0.67750	0.04825	0.72575
25	14-Sep-15	--	20-Sep-15	9114.80	111.70	-11.39350	0.13963	-11.25388
26	21-Sep-15	--	27-Sep-15	9052.60	27.90	-11.31575	0.03488	-11.28088
27	28-Sep-15	--	4-Oct-15	2366.70	63.70	-2.95838	0.07963	-2.87875
28	5-Oct-15	--	11-Oct-15	2106.60	-36.40	-2.63325	-0.04550	-2.67875
29	12-Oct-15	--	18-Oct-15	5327.20	28.60	-6.65900	0.03575	-6.62325
30	19-Oct-15	--	25-Oct-15	3678.40	53.60	-4.59800	0.06700	-4.53100
31	26-Oct-15	--	1-Nov-15	43718.70	52952.80	-54.64838	66.19100	11.54263
32	2-Nov-15	--	8-Nov-15	-7307.90	22.90	9.13488	0.02863	9.16350
33	9-Nov-15	--	15-Nov-15	-11633.80	2.40	14.54225	0.00300	14.54525
34	16-Nov-15	--	22-Nov-15	-10130.70	0.00	12.66338	0.00000	12.66338
35	23-Nov-15	--	29-Nov-15	-15325.10	2.70	19.15638	0.00338	19.15975
36	30-Nov-15	--	6-Dec-15	-13971.10	3.40	17.46388	0.00425	17.46813
37	7-Dec-15	--	13-Dec-15	-15086.70	4.90	18.85838	0.00613	18.86450

Week No.	Duration			MVARh Drawal		Amount in Rs. Lacs		Net Amount in Rs. Lacs
				High Voltage	Low Voltage	High Voltage	Low Voltage	
38	14-Dec-15	--	20-Dec-15	-19114.60	5.70	23.89325	0.00713	23.90038
39	21-Dec-15	--	27-Dec-15	-23206.30	2.20	29.00788	0.00275	29.01063
40	28-Dec-15	--	3-Jan-16	-22447.20	1.30	28.05900	0.00163	28.06063
41	4-Jan-16	--	10-Jan-16	-20804.80	3.50	26.00600	0.00438	26.01038
42	11-Jan-16	--	17-Jan-16	-23119.30	-8.00	28.89913	-0.01000	28.88913
43	18-Jan-16	--	24-Jan-16	-22867.00	1.90	28.58375	0.00238	28.58613
44	25-Jan-16	--	31-Jan-16	-26143.80	-0.40	32.67975	-0.00050	32.67925
45	1-Feb-16	--	7-Feb-16	-24100.40	0.00	30.12550	0.00000	30.12550
46	8-Feb-16	--	14-Feb-16	-27748.40	6.10	34.68550	0.00763	34.69313
47	15-Feb-16	--	21-Feb-16	-29437.90	0.00	36.79738	0.00000	36.79738
48	22-Feb-16	--	28-Feb-16	-27303.50	0.00	34.12938	0.00000	34.12938
49	29-Feb-16	--	6-Mar-16	-21732.50	-0.10	27.16563	-0.00013	27.16550
50	7-Mar-16	--	13-Mar-16	-21550.90	0.00	26.93863	0.00000	26.93863
51	14-Mar-16	--	20-Mar-16	-20538.70	0.00	25.67338	0.00000	25.67338
52	21-Mar-16	--	27-Mar-16	-26930.80	0.00	33.66350	0.00000	33.66350
	Total			-218858.70	110531.8	273.76504	138.1646	411.92965

In case of energy, (-)ve indicates injection and in case of amount (-)ve indicates receivable.

Amount corresponding to Reactive power Drawl /Injection by Discoms (All figures in Lakhs):

Month	BRPL	BYPL	TPDDL	MES	NDMC	NET AMOUNT
NOV-15	-5.58	-19.26	4.70	0.03	-8.99	-29.10
DEC-15	7.96	7.79	11.26	0.30	-7.87	19.458
JAN-16	13.144	2.56	10.58	0.58	-5.31	21.55

FEB-16	12.19	0.16	8.28	0.17	-4.42	16.40
MAR-16	0	0	0.006	0	0	-0.0103
					TOTAL	28.29

The issue was deliberated in the 15th GCC Meeting wherein it was advised that corrective measures are required to be taken during high voltage conditions. This issue should also be regularly discussed and monitored in the Delhi OCC Meetings.

Further in the 128th OCC Meeting of NRPC against Agenda Point no. 23 by NRLDC the following was deliberated.

A. *High Voltage/Reactive Power Management: This year, during Aug-Sept 2016 months also, number of nodes in Northern region have been experiencing high voltage in Punjab, Haryana, Delhi NCR, some parts of Rajasthan and Uttar Pradesh especially during morning 0500-0700 hours as well as just prior to evening peak hours [natural low load conditions as well as low load condition due to load groups supply hours]. On the onset of coming winter in Northern Region, it is anticipated that voltage would further rise and it would be one of the key challenges for grid especially during night off-peak conditions. To curb the high voltages, following proactive actions are suggested:*

i. Switching off Capacitor banks during off peak hours .

B. Tap Optimization of ICTs

- i. Monitoring of Scatter plots (HV side and LV side voltage plot) of ICTs*
- ii. Tap change based on scatter plot*
- iii. Tap change confirmation with control centers .*

C. Generator Reactive absorption

- i. Sensitize the generators to absorb the MVAR as per the system requirement w.r.t their capability curve*
- ii. Generator transformer tap change as per the system requirement*

As far as high voltage is concerned it was observed that during last year Mainly at following substations voltages at 400kV /220kV levels were High .

1. Maharaniabagh S/stn.
2. Mundka S/stn.
3. Bamnauli S/stn.

The endeavour of the substation Incharge should be NIL reactive power Injection at High Voltages for system Security .If required , Transformers /Lines are switched off to control injection of reactive power at 400kV through ICT's .

The following steps were taken on 26.10.2016 to control reactive power injection.

- a. All capacitor banks in Discoms and DTL were switched off.
- b. 220kV Maharani Bagh- E.lane one ckt put off .
- c. 220kV Maharani Bagh- Trauma centre one ckt put off .
- d. 220kV Maharani Bagh- Majid Modh one ckt put off .
- e. 220kV Mundka-Peeragarhi one ckt put off.
- f. 220kV Peeragarhi-Wazirpur one ckt off.
- g. One no. of 160Mva, 220/66kV, Transformer put off at Mundka.

Despite above measures, the reactive power injection during night hours of 26/27-10-2016 was as under :

Hours	Mandola	Bawana	Maharani Bagh	Mundka	H.Vihar	Bamnauli
23	41	-1	-74	-53	-2	-44
24	32	-8	-81	-57	--	-52
1	20	-16	-85	-63	--	-58
2	2	-24	-90	-65	--	-71
3	-9	-27	-89	-68	--	-79
4	-20	-30	-90	-66	--	-83
5	-22	-28	-88	-68	--	-80
6	-9	-28	-85	-66	--	-54
7	21	-19	-85	-65	--	-39

Tap position

Maharani Bagh	315MVA -	12	500MVA -	9
Bawana	315MVA -	9		
Mandola	500MVA -	9		
Harsh Vihar	315MVA -	9		
Bamnauli	315MVA-	9	500MVA -	9
Mundka	315MVA -	6		

From the above it appears that installation of reactors at 400kV Mundka , Bamnauli, Maharani Bagh and Bawana is a long term solution. The matter was discussed in detail in 34th TCC Meeting held on 25.10.2016 at Rishikesh. It was clarified by CTU that they have conducted the comprehensive study for reactive power complementation and concluded that 125 MVAR Reactor is required to be installed at 400kV Mandola s/stn. It was also explained that the system studies were carried out based on assumption that three upcoming ISTS at Tuglakabad, Dwarka & I.P. with 125MVAR Reactor provision at each sub station for 2018-19 conditions. The minimum load assumed was 2500MW. On the request of DTL the studies would be repeated for 1500MW minimum load.

Since the reactors installations may take 2-3 years till the time Delhi system has to remain vigilant for voltage regulations particularly during winter nights for stable system operation.

2. System Study for capacitor requirement in Northern Region for the year 2016-17 & 17-18.

In the 37th NRPC Meeting held in March 2016 it was decided that the Task of System Studies for assessment of Capacitor requirement in Northern Region would be entrusted to CPRI. To carry out capacitor studies CPRI has submitted format for submission of Data. These formats were forwarded to Manager, OS, DTL for providing requisite information. The information has to be given by O&M Department of DTL and from Project / Planning Deptt for projects likely to be commissioned in 2016-17 & 2017-18.

Till date no information has been received by SLDC. It is informed that the installation of capacitor in this scheme is being funded through PSDF further in the absence of data NRPC would inform Hon'ble CERC and PSDF Nodal Agency regarding non finalization of capacitor requirement. The copy of the formats is again attached herewith for providing the information at the earliest.

OCC to deliberate