

	<p>DELHI TRANSCO LIMITED (A Govt. of NCT of Delhi Undertaking) An ISO 9001:2008 certified company Office of DGM(T) OS, Convener-OCC 1st Floor, 220 kV Sub-Stn Park Street, Opp. Talkatora Stadium, Near R.M.L. Hospital, New Delhi-110001 Web:-www.dtl.gov.in, E-mail :- dgm.os@dtl.gov.in</p>
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No. F.DTL/831/F.4/2017-18/DGM (OS)/74

Date:-23.11.2017

To,
All Members of Operation Co-ordination committee

DTL	General Manager (O&M)-I, Chairman OCC	Fax no. 011-23366160
	General Manager (O&M)-II	
	General Manager (Planning)	Fax No.011-23622707
	General Manager (P/M & DM)	
	DGM (O&M) - North, East, West, South	
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BRPL	Vice President (SO)	Fax no. 011-39996549
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NDMC	Executive Engineer (M/F)	Fax no. 011-23235754
IPGCL	AGM (T) COS	Fax no. 011-23284797
	AGM (T) Opr. GTPS	Fax no. 011-23370884
PPCL	DGM (T) Opr. PPS-I	Fax no. 011-23378947
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MES	AEE/M.SLDC Officer	
BTPS	AGM (EEMG)	Fax no. 011-26944348
BBMB	Sr. Executive Engineer, O&M	Fax no. 011-28315542
DMRC	Addl. GM (Elect.)	Special Invitee
	General Manager (Elect.)	Special Invitee
GMR(DIAL)	GM(DIAL)	Special Invitee
N. Railways	Sr. DEE (TRD)	Special Invitee
EDWPCL	Director(EDWPCL)	Special Invitee
Delhi MSWSL	Station Incharge	Special Invitee

Sub :- MOM of Delhi OCC Meeting held on 20.11.2017 at 220kV Park Street Building.

Dear sir/madam,

Delhi OCC meeting for Nov-2017 was held on 20.11.2017 at O/o :- GM(O&M)-I, Delhi Transco Ltd., 220kV Sub-stn Park Street Building, Opp. Talkatora Stadium, Near R.M.L. Hospital, New Delhi-110001.

The minutes of meeting is enclosed herewith for your kind perusal and further necessary action please. The same has also been uploaded on DTL website, www.dtl.gov.in under the Tab "News and Information – OCC Meeting".

Thanking You.

Yours Sincerely,
sd/-
(Hitesh Kumar)
DGM(OS),DTL
Convener-OCC

Copy for favour of kind information to:

1. Member Secretary, NRPC, 18-A, SJS Marg, Katwaria Sarai, New Delhi-110016.
2. Secretary, DERC, Viniyamak Bhawan, C-Block, Shivalik, New Delhi-17.
3. Chairperson & Managing Director, DTL.
4. Director (Operations), DTL
5. General Manager (Project)-I, DTL
6. General Manager (Project)-II, DTL

**DGM(OS),DTL
Convener-OCC**

DELHI TRANSCO LIMITED

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

MOM OF DELHI OCC MEETING HELD ON 20.11.2017

GM (O&M)-I, DTL, Chairman-OCC welcomed the members of OCC. List of participants are enclosed herewith as Annexure-1. The meeting was started with the presentation on review of grid operation for Oct 2017. It was informed that Delhi peak demand of 4723 MW for Oct-2017 was met on 04.10.2017 at 15:29:43 hrs. Discom wise load as well as generation within Delhi during the peak and load curve for all the Discoms during the Oct month was depicted. Planning of Grid operation for Dec 2017 was also discussed, wherein it was explained that the anticipated peak demand for Dec 2017 would be around 4000 MW.

The point-wise deliberations made during the OCC meeting are as under:

1. Confirmation of minutes of Delhi OCC meeting held on dated 30.10.2017.

The previous Delhi OCC meeting was held on 30.10.2017 in accordance with the agenda circulated vide letter dt: 24.10.2017. Minutes of the aforesaid OCC meeting were issued vide letter dt.03.11.2017.

Members confirmed the same.

2. DTL Agenda :

2.1 Shutdown request of 400kV Bus-I and Bus-II at 400kV Maharaniabagh substation from 22nd November 2017 to 30th November 2017 on continuous basis by M/s PGCIL.

M/s PGCIL have informed vide their letter dt.-11.11.2017 (refer Annexure-1) that they will be undertaking maintenance activities at 400kV side of Maharaniabagh substation to replace/restore faulty GIS equipments at 400kV GIS and 220kV GIS side. The scheduled shutdown has already been accorded necessary approval in the 139th meeting of NRPC OCC. The approved schedule for maintenance activity is from **22nd November 2017 to 30th November 2017** (both days inclusive and shut down is continuous without any scope of intermittent charging of 400kV side in the event of any type of emergency, till 400kV bus gets fully restored/revived).

The brief details are as under:

- There was an Internal flashover in the B3 module of 400kV side of ICT-2 at Maharaniabagh. After inspection and analysis of OEM i.e, M/s ABB, the particular B3 module, which is interlinking with 400kV Bus-I & II required complete replacement.
- Due to criticality of B-3 module (which is just before breaker), the isolation is not possible, as a result of which both the 400kV bus bar needs to be put under shut down during replacement period.

DTL needs to prepare for alternate supply to radial and other connected 220kV substations, as both the 400kV source of Maharaniabagh substation (Dadri and Ballabgarh) will be unavailable during the complete shutdown period. All the four 220kV incomers will be switched off.

- During this proposed shutdown period Power Grid has also planned to execute following simultaneous rectification works to minimize the overall downtime of the system.

1. 220 kV side cable termination replacement of Y-Phase 500MVA ICT-3 bay by OEM.
 2. Arresting of SF6 gas leakage from B-phase outdoor duct of 500 MVA ICT-3 bay 400kV side.
- M/s PGCIL have further informed vide their letter dt.-11.11.2017 that during the shutdown period, power flow from Maharani Bagh Sub-stn through 400 kV Bus-I & II shall be fully interrupted. However, DTL may make alternate arrangement for charging of 220 kV Buses.
 - The peak load condition of Delhi is around 3500 MW. The alternate sources available around the affected zone are quite under-loaded. The nearby sources are **400kV Mandola** (via Wazirabad-Geeta Colony-Patparganj-IP-Pragati), **400kV Ballabhgarh** (via BTPS-Sarita Vihar), **400kV Harsh Vihar** (Via Preet Vihar-Patparganj-Gazipur/IP), **400kV Bamnauli** (via DIAL-Mehrauli-BTPS-Sarita Vihar). Further there are generation capacities (GT & Pragati-I) available to offset any unforeseen load growth.
 - SLDC seeks availability of 220 kV Bamnauli-Naraina ckts. for feeding supply arrangement to Ridge valley, Trauma centre, Electric lane and other stations which at present is getting supply from Maharani Bagh.
 - **It is important to mention here that the shutdown of 220 kV Bamnauli-Naraina ckts. were tentatively approved for project works, i.e. LILO at Pappankalan-III w.e.f. 15.11.2017 to 30.11.2017 in Delhi OCC meeting held on 30.10.2017.**
 - **This is to further inform that as approved in Delhi OCC meeting held on 30.10.2017, Allocation of upto 150 MW power to UPPTCL was approved through 220kV Ghazipur - 220kV Sahibabad ckt. w.e.f. 05.11.2017 to 12.11.2017 and thereafter through 220kV Ghazipur - 220kV Noida Sec 62 ckt. for another seven days for DMRC work. However as informed by SLDC, UPPTCL has not availed 150 MW power through 220kV Ghazipur - 220kV Sahibabad ckt. during 05.11.2017 to 12.11.2017. They are drawing power through 220kV Ghazipur - 220kV Noida Sec 62 ckt. link w.e.f. 11 Nov 2017 onwards. Keeping in view of Shutdown at Maharani Bagh, it will be difficult to allocate power to UPPTCL during the shutdown period at Maharani Bagh.**

In view of above, Delhi OCC may deliberate on the already approved shutdown of 139th NRPC OCC meeting “for Shutdown of both the 400kv Bus at Maharani Bagh, from 22nd to 30th of November 2017 (both dates inclusive)” for rectification/replacement of faulty 400kV GIS B-3 module work, for which PGCIL has mobilized complete materials and also service engineers of PGCIL and Ex-PAT engineers of ABB.

The matter was deliberated and consensus was made on following:-

(i)The shutdown of 400kV Bus-I and Bus-II at 400kV PGCIL Maharani Bagh substation was tentatively approved for seven days w.e.f. 23.11.2017 to 30.11.2017 on continuous basis subject to revival of one ckt. of 220kV BTPS-Mehrauli (under planned shutdown of PGCIL w.e.f. 21.11.2017, 8:00 AM for two days as detailed on Agenda S.No.-2.2).

(ii)The transmission network and power flow diagram during the shutdown period is attached as Annexure.

(iii)As a contingency plan, CE(PVVNL) and SE(UPPTCL) agreed for giving upto 100 MW power supply from UPPTCL Sub-stn to DTL Ghazipur Sub-stn in case of emergency during the shutdown period.

(iv)The requirement of upto 150MW power supply of UPPTCL through 220kV Ghazipur - 220kV Sahibabad ckt. for DMRC work will be fulfilled after revival of 400kV Bus-I & Bus-II at Maharani Bagh Sub-stn tentatively w.e.f. 05.12.2017 to 12.12.2017.

(v)The shutdown of 220 kV Bamnauli-Naraina ckts. for project works, i.e. LILO at Pappankalan-III were extended till the revival of 400kV Bus-I and Bus-II at 400kV Maharani Bagh substation and were tentatively approved w.e.f. 01.12.2017 to 15.12.2017.

(vi)OCC advised that the BTPS-Noida-Ghazipur link be properly maintained to avoid any exigency.

2.2 Requirement of shutdown for shifting of 220 kV BTPS-Mehrauli transmission line by M/s PGCIL.

M/s PGCIL have requested vide their letter dt.-30.10.2017 (refer Annexure-2) for shutdown of 220kV BTPS-Mehrauli Transmission line as per the following details:-

- a) In ongoing construction of 400kV GIS Building, it is anticipated that PEB structure erection may be obstructed by 220kV BTPS - Mehrauli transmission line which is passing over the premises and also from close vicinity from this building.
- b) To avoid this hindrance the immediate solution offered by M/s PGCIL is to shift this transmission line on ERS and keep one circuit energised till the permanent termination of this line may be carried out subsequent to statutory clearance accorded from forest, ASI, etc.
- c) For establishment of ERS, shutdown of 220kV BTPS-Mehrauli line is required for a period of one and half day.

The 400kV Tuglakabad GIS is an important upcoming substation to cater the load of south Delhi and for load generation balance for Delhi Control Area. However, in current scenario BTPS - Mehrauli ckts are important link between BTPS & Bamnauli complex catering load of IGI Airports and south Delhi area.

The matter was deliberated and consensus was made on following:-

(i)The shutdown request of M/s PGCIL for 220 kV BTPS-Mehrauli transmission line was tentatively approved w.e.f. 21.11.2017, 8:00 AM for two days.

(ii)PGCIL informed that one ckt. (towards outer side of building) will be energized on ERS, while the other ckt. (towards inner side of building) will be kept under shutdown for upto 15 days, after which the ckts. will be normalized.

In case of emergency, PGCIL representative agreed to energize the ckt. within half an hour of intimation.Nodal officer from PGCIL for the shutdown will be Sh. Vinai Kr. Sharma, AGM(Powergrid), M.No.-9873918535.The nodal officer from DTL side will be Sh. R.P. Chaurasia, Mgr.(T)O&M, M.No.-9999533913.

(iii)However, to maintain the uninterrupted power supply during the foggy season, OCC strongly recommended to keep intact 2nd ckt. also on ERS to cater the load of south Delhi area in case of any eventuality.

(iv)In case of any exigency, power supply at Vasant Kunj be extended through BRPL 66kV network, 66kV Ridge valley-66kV Vasant kunj Instl. Area-66kV Vasant kunj.

2.3 Finalization of Surge Impedance Loading (SIL) for different conductor configuration (overhead lines as well as underground cables) being used in DTL network for calculation of DTL Transmission System Availability as per new revised procedure finalized by DERC.

DERC has circulated new DERC Business Plan Regulation, 2017 which is forced for FY 2017-18, 2018-19 & 2019-20. The same has also been uploaded on DERC website. In the said

Business Plan Regulation 2017, the procedure for calculation of DTL Transmission System Availability has been revised (Refer Appendix-I, II, III on page 25-29).

As per new DERC Regulation, 2017 the guidelines and methods has been modified for calculation of Transmission System Availability, which includes:-

• **Weightage factor of different Transmission Elements:**

(a) For each circuit of AC lines is:

$$W_{\text{line}} = \text{Surge Impedance Loading (SIL)} \times \text{CKT Length (Km.)}$$

(b) For each ICT/ Power Transformer:

$$W_{\text{ICT}} = \text{The rated MVA capacity}$$

(c) For each Static VAR Compensator:

$$W_{\text{SVC}} = \text{The rated MVAR capacity (Inductive \& Capacitive)}$$

As per DERC Business Plan Regulation, 2017 the SIL rating for various voltage level and conductor configuration is mentioned in Appendix-II.

However, for the voltage levels and/or conductor configurations not listed in Appendix-II, an appropriate SIL based on technical considerations may be used for availability calculation under intimation to Long-term Transmission customers/DICs.

The list of different 220 kV underground XLPE cables being used in DTL system network for which SIL is not mentioned in Appendix-II are as under:-

S. No.	Voltage Level	Conductor Configuration	Max. cont. current rating	Max. cont. power transfer capability at 220 kV level
1	220 kV	XLPE Cable, 1000 Sq.mm.	633 A	241 MW
2	220 kV	XLPE Cable, 1200 Sq.mm.	658 A	250 MW
3	220 kV	XLPE Cable, 630 Sq.mm.	625 A	238 MW

Further, SIL for 66kV, 33kV and 11kV Overhead lines/Underground cables pertaining to Discoms are also not mentioned in Appendix-II.

Theoretically, Surge Impedance of 220 kV Overhead transmission lines generally lies in the range of 350-400 Ohms whereas for underground Cables it is in the range of 35-40 Ohms. Due to low surge impedance value, the theoretical calculation of SIL for 220 kV underground cables comes in the range of 1200-1300 MW, which is nearly 5 to 6 times the maximum continuous power transfer capability and thus is not feasible from loading point of view.

During FY 2010-11, DTL system Availability was calculated considering SIL as mentioned below:-

S.No.	Details of Overhead lines/Underground cables	SIL
1.	220 kV XLPE Underground cables (630/1000 sq.mm.)	132 MW
2.	66 kV O/H lines	20 MW
3.	66 kV U/G cables	25/30 MW
4.	33 kV O/H lines	10 MW
5.	33 kV U/G cables	15 MW

The matter was also discussed in previous Delhi OCC meeting held on 28.09.2017, wherein it was decided that DTL will examine the issue after considering all the facts and figures and will put up the data of SIL before OCC for its appraisal.

The observations of DTL regarding SIL are as under:-

- 1.The SIL for O/H 220kV Transmission line is generally 132MW whereas that of 1200 sq mm 220kV cable is 1180MW. However, the loading capacity of 220kV cable is generally much below than that of SIL.
- 2.From 2007-08 onwards till the implementation of 2011 Regulations the transmission system availability was computed on the basis of SIL x Line Length. During those periods SLDC has considered the SIL of cable circuits also as that of SIL of O/H Zebra conductors of Transmission lines i.e. 132MW. The following were the 220 kV cable circuits in operation:-

S. No.	Name of the Element	Circuit Kilometers	Conductor configuration	SIL (in MW) Considered by SLDC
1.	220kV KASHMERE GATE - DMRC CKT-I	0.25	630sq mm cable	132
2.	220kV KASHMERE GATE - DMRC CKT-II	0.25	630sq mm cable	132
3.	220kV NARAINA - RIDGE VALLEY CKT	4.233	1000sq mm cable	132
4.	220kV PRAGATI - PARK STREET CKT-I	7.334	630 sq mm cable	132
5.	220kV PRAGATI - PARK STREET CKT-II	7.334	630 sq mm cable	132
6.	220kV SHALIMAR BAGH - DMRC CKT	1.53	800sq mm cable	132

3. Considering the above facts, DTL recommended to adopt 132MW SIL in all 220KV cable circuits for computation of transmission system availability as was done earlier when similar methodology of computation of transmission system availability was in vogue. It was also considered that DERC had also approved the Transmission System Availability computation based on the same methodology during the period 2007-08 till the implementation of Tariff Regulations 2011 (applicable for the period 01.04.2011 to 31.03.2016). The details are as under:

S.N.	Petition No.	Date of Order	Description	Availability approved by DERC
1.	56/2008	31.07.2009	Petition for approval of incentive for Transmission system Availability achieved by DTL for 2007-08.	99.48%
2.	13/2009	12.10.2011	Petition for approval of incentive for Transmission system Availability achieved by DTL for 2008-09.	98.78%
3.	33/2010	07.02.2011	Petition for approval of incentive for Transmission system Availability achieved by DTL for 2009-10	98.39%
4.	65/2011	17.08.2012	Petition for approval of incentive for Transmission system Availability achieved by DTL for 2010-11	98.58%
From 1.04.2011 the incentive is in built in Tariff Order as per the Regulations				

4.The weightage factor of Capacitor Banks be considered as '1' for computing system availability of Capacitor Banks installed in DTL system as no methodology has been specified for computation of System Availability of Capacitor Banks though the other elements System Availability computation has been specified.

5.The SIL of 66kV, 33kV and 11kV be also taken same as that considered for the computation of System Availability of the 66kV, 33kV and 11kV feeder bays being maintained by DTL during the period 2007-2011 as DERC had also approved the same.

In view of the above details and for the purpose of calculation of DTL system Availability from FY 2017-18 onwards as per the DERC Business Plan Regulation 2017, the SIL for the AC lines in DTL system network as proposed by DTL are as under:-

S.No.	Details of Overhead lines/Underground cables	SIL
1.	220 kV XLPE Underground cables (630/1000/1200 sq.mm.)	132 MW
2.	66 kV O/H lines	20 MW
3.	66 kV U/G cables	30 MW
4.	66 kV (O/H lines + U/G cables)	25 MW
5.	33 kV O/H lines	10 MW
6.	33 kV U/G cables	15 MW
7.	33 kV (O/H lines + U/G cables)	15 MW
8.	11 kV AC lines	2 MW

After deliberations, OCC members agreed for the above proposed SIL values of AC lines for the purpose of calculation of DTL system Availability from FY 2017-18 and onwards as per the DERC Business Plan Regulation 2017.

3. Planned Shutdowns

3.1 Proposed planned shutdowns of O&M, DTL

DTL O&M deptt. has proposed the planned shutdowns for the month of Dec-2017 as per enclosed Annexure.

After deliberations the shutdowns were approved subject to real time loading conditions.

4. SLDC Agenda

4.1 System restoration Procedure for Delhi state :

A. Recovery procedure for restoration of grid:

Reform in power sector was carried out in July 2002 and power demand of Delhi has grown. To cater the growing demand new power system elements have added. After the grid incidence of 30-31 July 2012 Islanding scheme was implemented in Delhi. Indian Electricity Grid Code also state that each state has to maintain their own system restoration procedure to deal with contingencies. Relevant portion of IEGC is reproduced hereunder:

As per IEGC Clause 5.8

a. Detailed plans and procedures for restoration of the regional grid under partial/total blackout shall be developed by RLDC in consultation with NLDC, all Users, STU, SLDC, CTU and RPC Secretariat and shall be reviewed / updated annually.

b. Detailed plans and procedures for restoration after partial/total blackout of each User's/STU/CTU system within a Region will be finalized by the concerned User's/STU/CTU in coordination with the RLDC. The procedure will be reviewed, confirmed and/or revised once every subsequent year. Mock trial runs of the procedure for different subsystems shall be carried out by the Users/CTU/STU at least once every six months under intimation to the RLDC. Diesel Generator sets for black start would be tested on weekly basis and test report shall be sent to RLDC on quarterly basis.

SLDC is updating the existing document.

Following information may please be updated:

1. DG set capacity at IPGCL (GT) at the power station having Black start facility.
2. Traction (Indian railways / Delhi metro) supply details.
3. Start up power requirement details and start power path for generating stations.
4. Bus reactor details.
5. Synchronizing facilities in DTL system / Genco system.
6. List of captive power plants in delhi control area.
7. Discom Wise critical load.
8. Contact details (mobile/landline no./ email-Id) of the nodal officers identified for crisis management during Grid disturbance.
9. Any other relevant information for further improving the system restoration Procedure.

The matter was deliberated and following information was updated by IPGCL(GTPS):-

S.No.	Description of information required	Reply
1	DG set capacity at IPGCL (GT) at the power station having Black start facility	500KVA
2	Traction (Indian railways / Delhi metro) supply details	Two nos. 66kV radial feeders are supplying power to Delhi Metro through DMRC Ckt.-I & II
3	Start up power requirement details and start power path for generating stations.	110KW power required to start GT
4	Bus reactor details	Not applicable
5	Synchronizing facilities in DTL system / Genco system	GT is synchronized at 11kV and steam turbine at 66kV. Synchronization with grid at 66kV.
6	List of captive power plants in delhi control area	Not applicable
7	Discom wise critical load	Not applicable
8	Contact details (mobile/landline no./ email-Id) of the nodal officers identified for crisis management during Grid disturbance	Shift Incharge Control Room,GTPS Tel. Nos.-011-23379093/261 E-mail: controlroomgtps@gmail.com
9	Any other relevant information for further improving the system restoration Procedure	Not applicable

OCC advised that similar information be updated by all the utilities/discoms to SLDC. SLDC to follow up for the same for finalization of recovery procedure for restoration of grid.

(Action by Gencos/Discoms/DMRC/SLDC)

B. Mock trial of Black-start Exercise of GT (IPGCL):

IPGCL (GT) may please give schedule to SLDC and OS Department of DTL so that a mock start exercise can be done accordingly.

The matter was deliberated wherein representative of GTPS informed that their DG set is tested on daily basis for black start. They confirmed that mock trial can be done on any day with prior intimation to Sr. Mgr.(O&E)GTPS, Mob. No.-9717694821/ AGM(Oprn)GTPS, Mob. No.-9717694989.

It was further advised that GTPS(IPGCL) to give presentation on mock trial of black start exercise in the next OCC meeting.

(Action by GTPS)

4.2(a) RGMO/FGMO compliance by generators in the region (Agenda based on letter by CERC).

CERC (IEGC) 5th amendment of IEGC dated 12.04.2017 provides that all Coal/lignite based thermal generating units of 200 MW and above, Open Cycle Gas Turbine/Combined Cycle generating stations having gas turbines of capacity more than 50 MW each and all hydro units of 25 MW and above should provide RGMO/FGMO response. Further, it has been provided at Regulation 5.2(h) that 'RLDCs/SLDCs should not schedule the generating station or unit(s) thereof beyond ex-bus generation corresponding to 100% of the installed capacity of the generating station or unit(s) thereof and that the generating station shall not resort to Valve Wide Open operation of units' so that primary response is ensured. CERC in its letter dated 05.06.2017 has directed to obtain the status of availability of RGMO/FGMO response from the generators (ISGS as well as intra-state generators) in the region.

The latest status of RGMO/FGMO available with NRPC is given below in Table -1. All the Utilities are requested to check and update this status.

Table -1

S.No.	Power Station	Unit size	No of units	Installed Capacity	Status of RGMO/FGMO						Reason for seeking exemption/ extension	Status not available	Remarks
					Units required to operate under RGMO/ FGMO as per IEGC	Units operating under RGMO	Units operating under FGMO with manual control to achieve RGMO	Units operating with inoperative governor /locked governor	Units exempted from RGMO/ FGMO by CERC	Units applied to CERC for exemption/ extension			
CENTRAL SECTOR													
NTPC (Thermal)													
1	Badarpur TPS	3x95 + 2x210	5	705	2	0	0	2	0	2	Mechanical governors		
Delhi													
4	Indra Prastha Gas station	6x30+3x34	9	282.00	0	0	0	0	0				
5	Pragati Gas Turbines	2x104+1x122	3	330	3	0	0	0	0				
6	Bawana	4x216+2x253	6	1370	6	0	0	0	0				
7	Rajghat TPS	2x67.5	2	135	0	0	0	0	0				
8	Rithala GPS	3x36	3	108	0								

BTPS representative intimated that as per CERC order, Nashik scheme has been implemented in Unit#4 & Unit#5 in Feb'17 & Dec'16 respectively for RGMO. But As Units were not in service till 31.3.2017, as per DPCC order, RGMO couldn't put into service in Unit#4&5. Subsequently when it was tried in Unit#4, severe load hunting was observed with very little change in frequency. So, Units were kept in "FGMO with Manual Intervention". As both Unit no#4&5 are taken under shutdown from 17.10.2017 as per DPCC order this problem is being sorted out.

PPCL representative intimated that they are pursuing the matter with their OEM regarding details of RGMO / FGMO of PPCL-I & PPCL -III. The same is likely to be implemented by Dec 2017 end.

Representative of GTPS informed that RGMO/FGMO is not applicable for their plant as each of the gas turbine unit is of 30 MW capacity.

4.2 (b) SCADA mapping of RGMO/FGMO signal by the respective utilities of Northern Region .

The matter was discussed and decided in 138th NRPC- OCC Meetings for SCADA Mapping of RGMO/FGMO signals in respective control area.

Gencos may provide the analog/digital signal regarding operational status of RGMO/FGMO to SLDC before next OCC meeting so that the mapping can be done in Delhi SCADA system .

The matter was deliberated and OCC advised PPCL (Pragati and Bawana) to provide the relevant signal in coordination with DTL SCADA Deptt.

DTL SCADA deptt. to follow up for the same.

(Action by PPCL-Pragati,Bawana)

4.3 Observance of High Voltage in the Grid:

The matter was also discussed in the OCC meeting held on 30.10.17 wherein OCC took serious view on this and decided to implement all necessary actions to curb reactive injections in grid.

- A. Switching off the capacitors at all the Substations of Delhi, but during winter season proper monitoring of the same is yet to be put in place.
- B. Transformer taps optimization by DTL and DISCOM. DTL has changed Taps positions of most of the transformers at 220kV S/Stns. (list of Tx. taps details of DTL as on 16.11.17 is enclosed in Annexure-III).
- C. Monitoring of all 400/220 kV ICTs and taking actions wherein Var flows are observed from 220 kV to 400 kV side. In this respect reactive energy accounts could also be monitored.
- D. Opening of lightly loaded transmission cables/ transmission lines keeping reliability in focus.
- E. Absorption of reactive power by generating units.
As decided in the last OCC Meeting no. of steps have been taken by SLDC, Delhi and Discoms to control the high voltage conditions and reactive power injection by Delhi system to the grid particularly during off peak time.

Opening of feeders at 220kV Level by SLDC .

The following feeders have been identified and being opened during the period 22.00hrs. to 06.00hrs.

Sr. No.	Name of Stn.	Name of Ckt.	Elements to be opened
1	Maharani Bagh	Trauma Centre ckts	Single Ckt. at both ends
2	Trauma Centre	Ridge Valley Ckt.	Single ckt. at both ends
3	Mundka	Peeragarhi	Single Ckt. at both ends
4	Peeragarhi	Wazirpur	Single ckt. at both ends
5	Shalimarbagh	Wazirpur	Single ckt. at both ends
6	Pragati	Park street	Single ckt. at both ends
7	Maharani Bagh	Masjid moth ckts.	Single Ckt. at both ends
8		Electric Lane	Single Ckt. at both ends
9	Harsh Vihar	Preet Vihar	Single Ckt. at both ends
10	Preet Vihar	Patparganj	Single Ckt. at both ends
11	Patparganj	Gazipur	Single Ckt. at both ends

- ## (I) Switching OFF lines to be initiated by 20.00hrs positively.
(II) While charging the lines during normalization, it should be ensured that line be charged from low voltage end.

The details of NRPC reactive account bill for last three weeks i.e. from 16.10.17 to 05.11.17 is given below and NRPC account for Week 32. (30.10.10 to 05.11.17) is enclosed as Annexure –IV.

Sr. No.	Weeks	Delhi payable (in Lakhs)	Delhi receivable (in Lakhs)
1	16.10.17 to 22.10.17	--	0.76038
2	23.10.17to 29.10.17	2.21401	--
3	30.10.10 to 05.11.17	7.36426	--

The matter was viewed seriously by the OCC members. Chair advised all the Utilities/Gencos/Discoms to take appropriate steps at their level to curb the injection of

reactive power flow in the grid specially during the winter season for which necessary guidelines have already been issued by the OCC platform. OCC noted the same. SLDC to monitor the MVAR flow and to instruct DTL/Discoms for necessary operation as deemed fit.

OCC advised that the Discoms should provide the list of 66kV/33kV feeders which are being opened during the night hours to control the high voltage.

DTL/SLDC advised that Discoms should control the MVAR injection from their end into DTL system.

(Action by DTL/Discoms/Gencos/SLDC)

4.4 As per NRPC 141st OCC meeting, NRPC is going ahead for capacitor study for 2019-20 in respect of 66/33/11 kv level. The study shall be carried out from CPRI. Accordingly all Discoms are requested to provide the relevant details, format of which shall shortly be provided.

The matter was deliberated and the discoms agreed to submit the details as desired.

(Action by BRPL,BYPL,TPDDL,NDMC,MES)

5. Long/Recent Outage/Breakdown of Elements in Delhi power system.

Members updated the status of following Long/Recent Outage/Breakdowns of elements in Delhi Power system as on 16.11.2017:

S.N	Element's Name	Discom/ DTL	Date and Time of outage	Updated Status of outage as on 16.11.2017
1.	33kV BAY -3 (IP – KILOKARI)	BRPL	22.02.2011	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. During the OCC meeting dt.-28.11.2016, It was deliberated that the above work shall be started after joint inspection with Railways.
2.	33kV RIDGE VALLEY - KHEBAR LINE CKT.-II	BRPL	31.01.2016	R-PHASE SINGLE CABLE FAULTY.
3.	66kV VASANT KUNJ INSTL.AREA-RIDGE VALLEY CKT.-I	BRPL	26.03.2017	UNDER SHUTDOWN.
4.	66kV MOHAN COOPERATIVE-MATHURA ROAD CKT.-I	BRPL	03.11.2017	UNDER SHUTDOWN. Energized on 17.11.17
5.	33kV LODHI ROAD - EXHIBITION GROUND -II	BRPL	10.11.2017	B-Ph SINGLE CABLE FAULTY.
6.	33/11 KV 20 MVA TR.-II AT SHIVALIK	BRPL	03.11.2017	UNDER PLANNED SHUTDOWN Energized on 18.11.17
7.	66/11 KV 20 MVA TR.-III AT BATRA	BRPL	06.11.2017	UNDER PLANNED SHUTDOWN Expected by 26.11.17
8.	33KV OKHLA-NEHRU PLACE CKT-IV	BRPL	13.11.2017	B-Ph SINGLE CABLE FAULTY. Expected by 26.11.17
9.	66KV MUNDKA-NANGLOI WATER WORKS CKT.	BRPL	24.10.2017	R PHASE CABLE FAULTY Expected by 21.11.17
10.	33kV REWARI LINE-METAL FORGING CKT.	BRPL	05.11.2017	R & B PHASE CABLE FAULTY Expected by 05.12.17

11.	66kV NAJAFGARH-NANGLOI CKT.	BRPL	08.11.2017	CABLE FAULTY Expected by 22.11.17
12.	66kV SAGARPUR - REWARI LINE CKT.	BRPL	30.07.2016	'B'PH. CABLE FAULTY. RE-ROUTING BEING DONE. Expected by end of Nov 2017
13.	66kV MUNDKA - NANGLOI CKT.	BRPL	08.05.2017	'B' & 'Y'PH. CABLE FAULTY Expected by 05.12.17
14.	33kV NARAINA(220kV)-MAYA PURI CKT.-II	BRPL	29.09.2017	SINGLE CABLE FAULTY Expected by 05.12.17
15.	33kV PASCHIM VIHAR - MUKHERJEE PARK CKT-III	BRPL	08.10.2017	UNDER SHUT DOWN Expected by 20.11.17
16.	66kV PPG - AKSHARDHAM CKT	BYPL	06.08.2017	CABLE FAULTY. Under clearance procedure by NHAI.
17.	66kV KHICHRIPUR - PPG INDL. AREA CKT.-I	BYPL	05.09.2017	R, Y & B-PHASE CABLE FAULTY. Expected by 30.11.17
18.	66kV KHICHRIPUR - PPG INDL. AREA CKT.-II	BYPL	05.09.2017	R, Y & B-PHASE CABLE FAULTY. Expected by 30.11.17
19.	33KV PANDAV NAGAR - DMS CKT.	TPDDL		CABLE FAULTY. Expected by 25.11.17
20.	66KV ROHINI II – MANGOLPURI CKT.-I	TPDDL	10.11.2017	B-PH CABLE FAULTY. Expected by 30.11.17
21.	33KV JAHANGIRPURI-SANJAY GANDHI TRANSPORT NAGAR	TPDDL		SINGLE CABLE FAULTY Expected by 30.11.17
22.	33kV BAY -28 (IP - CONNAUGHT PLACE) CKT	NDMC	20.08.2017	CABLE FAULTY. Expected by 27.11.17
23.	400kV BAWANA - MUNDKA CKT.- I&II	DTL	14.05.2017	Legs of tower no.-116 twisted due to fire beneath the line. Ckt.- I & II energized upto tower no. 115 from Bawana end. Jumper opened at tower no. 115.Order placed and completion of work expected by 31.12.2017.
24.	220/33kV 100MVA PR.TR.-I AT 220kV NARAINA	DTL	26.07.2017	Transformer damaged due to fire. Another Transformer to be supplied by PGCIL against MOU-II by 31.12.2017.
25.	220KV M.BAGH-LODHI ROAD CKT.-I ALONGWITH 100 MVA TR.- I AT LODHI ROAD	DTL	06.11.2017	SHUTDOWN FOR 30 DAYS FOR SHIFTING FROM AIS TO GIS.
26.	220/33 KV 100 MVA TR-III ALONGWITH 33KV I/C-III AT OKHLA	DTL	03.11.2017	SHUTDOWN FOR 30 DAYS FOR COMPLETE OVERHAULING

The meeting ended with vote of thanks to the Chair.

NOTE:-The MOM of OCC meeting can also be seen on DTL website (www.dtl.gov.in) under the Tab “News and Information – OCC Meeting”.
