

ADDITIONAL AGENDA FOR 151ST OCC MEETING

1. Confirmation of Minutes:

DTL has submitted letter dated 04.09.2018 regarding the Amendment in item No. 6.2 of MOM of 150th OCC meeting (ANNEXURE AA1).

The Sub-Committee may kindly discuss and confirm the minutes.

2. Agenda from POWERGRID:

Switching of Bus Reactor and Switchable Line Reactors for voltage regulation:

As per Indian Electricity Grid Code (IEGC) issued by CERC on Dt. 28/04/2010, Switching in/out of all 400kV bus and line Reactors throughout the grid shall be carried out as per instruction of RLDC.

However, as per operating procedure for Northern Region issued by NRLDC, the BUS reactors at 400kV shall be taken into service whenever bus voltage exceeds 405kV and they shall be taken out of service when voltage is below 395kV

The Bus Reactors are normally taken out of service during low voltage condition as per above guideline. Codes are being issued by RLDC for some cases only depending on system condition and the same needs to be ratified.

However, switching back the reactors in service is done strictly against RLDC instruction/ code. It is felt that RLDC should issue specific code for all such operation for taking back the reactors in service in the interest of safety as voltage excursion appear in smaller timelines also.



DELHI TRANSCO LIMITED

(Govt. of NCT of Delhi Undertaking)

[Office of GM (T)PM, DM & S]

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

Corporate Identification Number (CIN) – U40103DL2001SGC111529

No. . F.DTL/2018/GM(PMDMS)/F- / 76

Dt:04.9.2018

Member Secretary,
N.R.P.C.
18-A, Shaheed Jeet Singh Marg,
Katwaria Sarai
New Delhi.110016.

Sub: Amendment in Item No.6.2 of MOM of 150th OCC NRPC Meeting.

Sir,

Kindly refer MOM of 150th OCC NRPC Meeting held on 21.8.2018 at NRPC Secretariat, Delhi. Item No.6.2 of above Minutes needs some modifications as DTL's view, which was explained during the meeting, is yet to be incorporated. In item No.6.2, after para 4, the following may be introduced:

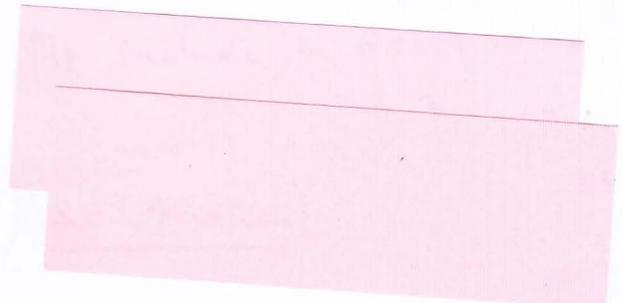
"DTL representative informed that there are some locations where the space for providing reactors are not available in the grids. The same has been discussed in 40th meeting of Standing Committee on Power System Planning of Northern Region in Central Electricity Authority and after deliberation, it was agreed that following reactors to be implemented by DTL:

Sl.No.	S/stn.	Voltage(Kv)	Rating
1.	Mundka	400	125
2.	Bamnauli	220	2x25
3.	Indraparstha	220	2x25
4.	Harsh Vihar	220	2x50
5.	Electric Lane	220	1x50
6.	Mundka	220	25
7.	Peeragarhi	220	1x50

Further, DTL has also decided that in future wherever new 220Kv s/Stn. will be installed and in-feeds are envisaged through 220kV cables, 2nos. 25MVA reactors should be considered in the scheme.

The NTPC plant at BTPS may be examined at CEA/NTPC level for its utilization for VAR management in NCR.

(Er. Loveleen Singh)
G. M. (T) PM, DM & S

Encl: As above.

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भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

केन्द्रीय विद्युत प्राधिकरण

Central Electricity Authority

विद्युत प्रणाली योजना एवं मूल्यांकन - I प्रभाग

Power System Planning & Appraisal - I Division

-As per list enclosed-

विषय: उत्तरी क्षेत्र की विद्युत प्रणाली योजना पर स्थायी समिति की 40 वीं बैठक
के कार्यवृत्त

Sub: 40th Meeting of Standing Committee on Power System Planning of Northern Region-Minutes of Meeting

Sir/ Madam,

40th meeting of the Standing Committee on Power System Planning of Northern Region was held on 22nd June, 2018 (Friday) in New Delhi. The Minutes of the meeting has been uploaded on CEA website: www.cea.nic.in (path to access – Home Page -Wing specific document/power system related reports/ Standing Committee on Power System Planning/ Northern region).

Signature Not Verified भवदीय /Yours faithfully,

Digitally signed by AWDHESH KR YADAV

Date: 2018.07.30 16:50:19 IST

;अवधेश कुमार यादव (Awdhesh Kr Yadav)

निदेशक/ Director

Copy to:

PPS to Member (PS), CEA

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- ii) LILO of both circuits of Biharshariff-Varanasi PG (765) 400kV D/C (Quad) lines at 400kV Sahupuri (GIS) - 30kms along with 63 MVAR line reactor at Sahupuri end on each line.
- iii) **Extension of 220kV bus of 400/220 kV Sahupuri (GIS) Substation for interconnection with Sahupuri 220/132kV Substation with U/G Cable - 2x0.7 km.**
- iv) **Shifting of 220kV Sahupuri (220)-Bhelupur (220) D/C line to 400/220 kV Chandauli with U/G cable- 2x0.7 km**
- v) 1x125 MVAR, 400kV bus reactor at 400/220 kV Sahupuri (Chandauli).

21.8.3 Members agreed with modification proposed by UPPTCL.

21.9 Augmentation of transformation capacity of 400/220kV UPPTCL Substations

21.9.1 UPPTCL informed that they have planned augmentation of transformation capacity at the following substations 400/220 kV sub-stations of UPPTCL:

- i) Replacement / Augmentation of Obra TPS 400/220kV S/S from 2x240 MVA to 2x315+1x240 MVA – under implementation (one 315MVA transformer has already been replaced and another 315MVA would be replaced in a week and one 240MVA transformer would be added in 6 month time after refurbishment)
- ii) Replacement / Augmentation of Moradabad 400/220kV substation from 1x315+1x500 MVA to 2x500 MVA - already completed.
- iii) Augmentation of Muradnagar-II (UP) 400/220kV S/S from 1x315+1x240 MVA to 1x315+2x240 MVA - under implementation
- iv) Replacement / Augmentation of Azamgarh 400/220kV S/S from 1x315+1x500 MVA to 2x500 MVA - under implementation
- v) Augmentation of Motiram Adda Gorakhpur (UPPTCL) 400/220kV S/S from 1x315+1x500 MVA to 1x315+1x500+1x240 MVA (1x240 MVA would be added in 6 months time)
- vi) Replacement of 2x240 MVA transformer at Panki 400/220kV substation with 2x315 MVA.
- vii) Augmentation of Unnao 400/220kV S/S from 2x315 MVA to 3x315 MVA – under implementation would be done in 6 months
- viii) Replacement / Augmentation of Sarnath 400/220kV S/S from 2x315+1x500 MVA to 1x315+2x500 MVA
- ix) Replacement / Augmentation of Math, Mathura 400/220kV S/S from 2x315 MVA to 1x315+1x500 MVA or 3x315 MVA

21.9.2 UPPTCL informed that after augmentation, the transformation capacity at Obra 400/220kV S/s would be 2x315+ 1x240 MVA. 1x315 MVA has already been added and other 315 MVA would be added in a week's time. Out of the replaced 2x240 MVA ICTs, one 240 MVA would added at Obra TPS itself and other would be shifted to Gorakhpur (UPPTCL) 400/220 kV substation. Augmentation at Moradabad S/s from 1x315+1x500 MVA to 2x500 MVA has already been completed.

21.9.3 Members noted the same.

22.0 DTL agenda regarding Reactive power Compensation in Delhi:

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- 22.1 CEA stated that in the 39th meeting of SCSPSNR installation of reactors at various 400kV and 220kV sub-stations were agreed in and around Delhi to control high voltage, particularly during winter off peak period. The installation of reactors were agreed subject to availability of space. DTL vide their letter no F.DTL/202/Opr(PIg)/DGM(PIg)/2018-19/F-20/50 dated 11.06.2018 has informed that there are some difficulty in installation of these reactors at some locations. The details are as under:

Table 1

S. No.	Bus Name	Voltage Level (kV)	Reactor agreed in 39 th meeting of SCSPSNR (MVAR)	Remarks
1.	Mundka	400	125	Space is available. 400kV bay is also required to be erected.
2.	Narela	220	25	No space is available
3.	R.K.Puram-I	220	25	No space is available
4.	Patparganj-II	220	2x25	No space is available
5.	Maharani Bagh	220	2x25	Could be considered after the erection of new GIS Stn.
6.	Bamnauli	220	25	Space is available. Considering the reactive power injection under high voltage conditions two no. reactors are proposed to be installed. Though the bays are available, some of the equipments are required to be erected.
7.	Subzi Mandi	220	2x25	At present, no space. Would be considered after the remodeling of the substation with GIS.
8.	Gopalpur	220	2x25	At present, no space. Would be considered at the time of establishment of 400kV S/Stn.
9.	Indrapastha	220	2x25	Space is available and 220kV bays are also required to be erected.
10.	Geeta Colony	220	2x25	No space.
11.	Harsh Vihar	220	2x25	Space and 220kV GIS bays are available at present. Due to space constraints at Patparganj and Preet Vihar Substations and to reduce the Reactive power injection two no. 50MVAR reactors are proposed.
12.	Wazirabad	220	2x25	No space.
13.	Electric Lane	220	2x25	Space constraint is there, so 1x50 MVAR is proposed. 220kV GIS bay is also required to be erected.
14.	Mandola	220	25	No space.

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15.	AIIMS	220	2x25	No space.
16.	Sarita Vihar	220	25	No space.
17.	Bawana	220	25	No space.
18.	Preet Vihar	220	25	No space.
19.	Mundka	220	25	Space is available. 220kV bay is also required to be erected.
20.	Masjid Moth	220	25	No space.
21.	Maharani Bagh (PG)	400	125	To be installed in under ISTS.
22.	Mandola (PG)	400	125	
TOTAL			1100	

22.2 CEA added that based on the above, DTL has decided that at present, reactors would be installed in Delhi system at the following locations. DTL has also decided that in future, wherever new 220kV sub station will be installed and in-feeds are envisaged through 220kV cables, two nos. 25 MVAR reactors should be considered in the scheme.

Table 2

S. N	Bus Name	Voltage Level (kV)	Reactor (MVAR)	Remarks
1.	Mundka	400	125	To be installed by DTL
2.	Bamnauli	220	2x25	
3.	Indrapastha	220	2x25	
4.	Harsh Vihar	220	2x50	
5.	Electric Lane	220	1x50	
6.	Mundka	220	25	
7.	Peeragarhi	220	1x50	One GIS 220kV bay is spare at Peeragarhi. The S/Stn. is connected with 1000sq.mm 220kV Mundka-Peeragarhi D/C (13KM) and 220kV Peeragarhi- Wazirpur D/C (8.3KM) cables. Due to these cables, during off-Peak hrs particularly during winter nights, voltage shoots up beyond the permissible limits. Therefore, during winter night's one ckt. is kept in operation out of the four 220kV cable circuits to control high voltage issue to some extent. This ckt. also trips on account of high voltage affecting the areas fed from Peeragarhi S/Stn. To overcome high voltage issue one 220kV, 50 MVAR Reactor is proposed to be installed at Peeragarhi S/Stn. considering the fact that one 220kV GIS bay is also available.
8.	Maharani Bagh (PG)	400	125	To be installed under ISTS.

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9.	Mandola (PG)	400	125	
TOTAL			700	

22.3 CEA further stated that DTL has forwarded the studies conducted by M/s Siemens in coordination with DTL, wherein following recommendations were made:

- 75MVAR (inductive) to 200MVAR (capacitive) SVC at 400kV Bamnauli S/Stn. with 125MVAR Fixed Reactor.
- 125MVAR Fixed Reactor at 400kV Level and 25 MVAR Fixed Reactor at 220kV Level at Mundka.
- 50MVAR Fixed Reactor at 220kV Maharani Bagh, Harsh Vihar and Electric Lane.

22.4 CEA stated that the SVC proposed needs to be studied in details. DTL stated that pending recommendation for the SVC, other fixed reactors as given in Table 2 above (slightly modified with respect to the recommendations made in the 39th SCSPNR, in view of availability of space and implementation feasibility) may be agreed, as severe overvoltage problem is being experienced in their system.

22.5 After deliberations the following fixed reactors were agreed to be implemented by DTL:

S. No.	Substation	Voltage (kV)	Rating
1	Mundka	400	125
2	Bamnauli	220	2x25
3	Indrapastha	220	2x25
4	Harsh Vihar	220	2x50
5	Electric Lane	220	1x50
6	Mundka	220	25
7	Peeragarhi	220	1x50

23.0 Proposal for conversion of 400kV D/c Bamnoli- Ballabgarh O/H line into cable in Global City Project Gurugram (a JV of Centre & State Govt.) by DMICDC

23.1 CEA stated that Delhi-Mumbai Industrial Corridor Development Corporation (DMICDC) and Haryana State Industrial and Infrastructure Development Corporation (HSIIDC) are jointly developing Global City in Gurugram (Haryana). The Global City is a joint venture of DMICDC and HSIIDC to develop a city of international standard all along Delhi-Mumbai Industrial Corridor, which is covering States viz. Maharashtra, Gujarat, Rajasthan, Haryana and Uttar Pradesh. The Global city, Gurugram project covers approx. 1004 Acres of land between NH-8 to Pataudi Road near Northern Peripheral Road (NPR) and Central Peripheral Road (CPR). The Global City is unique Project containing facilities like Metro connectivity, High way connectivity, etc. and all the utilities are underground (U/G) as per international standards. Therefore, section of various 400 kV, 220 kV and 66 kV overhead (O/H) lines passing through the proposed Global city area are proposed to be converted as underground sections.

23.2 CEA added that a section of the 400 kV Bamnauli-Ballabgarh D/C line of DTL is also passing across the Global City. DMICDC has earlier intimated that they had examined