|  |  |  |
| --- | --- | --- |
|  | **पंजीकृत कार्यालय :शक्ति सदन, कोटला रोड़, न्यू दिल्ली-110002**  (Regd. Office Shakti Sadan, Kotla Road, New Delhi-110002)  **कार्यालय उपमहाप्रबंधक (एस.ओ.)**  **Office of Dy. General Manager (SO)**  **एस एल डी सी बिल्डिंग, मिंटो रोड़, न्यू दिल्ली-110002**  SLDC Building, Minto Road, New Delhi-110002  Ph: 23221149 FAX No.23221012 | |
| **No. F./DTL/207/13-14/DGM(SO)/116** | | **Dated : 25.09.2013** | |

**Subject : Minutes of the 9th meeting of Grid Coordination Committee held on 06.08.2013 at 10.30hrs. at Amaltas Habitat World, at IHC, Lodhi Road, New Delhi-110003**

Dear Sir, / महोदय

The Minutes of the 9th meeting of Grid Coordination Committee held on 06.08.2013 at 10.30hrs. at Amaltas Habitat World, at IHC, Lodhi Road, New Delhi-110003 is enclosed for ready reference and further necessary action please.

Thanking you,

Yours faithfully

Encl. as above

(V. VENUGOPAL)

Dy. G. M. (System Operation)

List of addresses

1. General Manager, NRLDC, 18A- SJSM, Katwaria Sarai, New Delhi-110016
2. Executive Director (Engg. and Tariff), DERC, Viniyamak Bhawan, C-Block, Shivalik, New Delhi-110017
3. General Manager (Planning), DTL, Shakti Deep Building, Jhandewalan, New Delhi
4. Executive Director (Engineering), NTPC, Corporate Centre, EOC Noida, Sector-24, UP-201301-Fax No.0120-2410200
5. Chief Executive Officer, Aravali Power Company Pvt. Ltd. 5th Floor, Engineering Office Complex, A-8A, Sec. 24, Noida, 201301 (U.P.)-fax no. 0120-2410361
6. Chief Engineer (SO), Punjab SLDC, PSTCL, SLDC Complex, Near 220kV Grid S/Stn Ablowal, Patiala, Punjab-147001, Fax No. 0175-2365340, 0175-2367490
7. Chief Engineer (System Operation), Haryana SLDC, HVPNL, Shakti Bhawan, Sector-6, Panchkula-134109, Fax No. 0172-2560622
8. General Manager, Bawana CCGT Plant, Sector 5, DSIIDC Indl. Area, Bawana, New Delhi-110039
9. General Manager,Indira Gandhi Super Thermal Power Station Jhajjar, Jhajjar Distt. Haryana Pin-124141, Fax no. 01251-266202, Ph. 01251-266265
10. C.E., Haryana Power Procurement Centre, Panchkula, Haryana, Fax No.0172-3019169
11. G.M. (O&M)-I, DTL, Park Street 220kV Grid S/Stn. New Delhi-110001
12. G.M. (SLDC), SLDC Building, Minto Road, New Delhi 110002.
13. G.M. (C&RA), DTL, IP Estate, New Delhi-110002
14. G.M. (Civil), DTL, Lodhi Road 220kV S/Stn, CGO Complex, New Delhi-110003
15. G.M. (O&M)-II, DTL Shakti Deep Building, Jhandewalan, Delhi
16. G. M., Badarpur Thermal Power Stn., Badarpur, New Delhi-44
17. General Manager, RPH
18. CWE (Utilities), MES, Delhi Cantt, New Delhi-110010
19. Garrison Engineer (Utilities), MES, Delhi Cantt., New Delhi-110010
20. Sh. Chandramohan, Senior Consultant, BRPL, BSES Bhawan, Nehru Place, New Delhi
21. Sh. Mukesh Dadhich, Dy.G.M.(SO), BYPL, Balaji Estate, Kalkaji, New Delhi-110019
22. Sh. Ajay Kumar, Vice President (PMG), BRPL, BSES Bhawan, Nehru Place**,** New Delhi–110019. Off. 39996052 Fax: 011- 3999605
23. Sh. A.K. Sharma, Head (O&M), BYPL, Shakti Kiran Building, Karkardooma, Delhi
24. Chief Engineer (Electrical), NDMC, Palika Kendra, New Delhi-110001
25. Chief Engineer (Transmission System),BBMB, SLDC Complex, Sector-28, Industrial Area Phase-I, Chandigarh.
26. Director (Comml.), NDMC, Palika Kendra, New Delhi-110001
27. General Manager, GT Station
28. General Manager, Pragati Power Corporation Ltd, Pragati Power Station New Delhi
29. Sr. G. M. (PMG), TPDDL, Grid S/stn Bldg., Hudson Lane, Kingsway Camp, Delhi-9
30. Dy.G.M.(Metering & Prot), Delhi Transco Ltd., Parkstreet,220kV S/Stn, New Delhi-1
31. Dy.G.M (Fin)-I, DTL, Shakti Sadan, New Delhi-110002
32. Dy. G. M. (Fin-II), DTL, Shakti Sadan, New Delhi-110002
33. HOG (Power System and Trading), TPDDL, Cennet Building, Adjacent to 66/11kV Pitampura-3 Grid Building, Near PP Jewellers, Pitampura, Delhi-34.
34. Sh. Sanjay Banga, Sr. General Manager (PSC & A), TPDDL, Scada Building, Near Netati Subhash Place Metro Station, Pitampura, Delhi-110034
35. CEO, Timarpur – Okhla Waste Management Company Ltd Jindal ITF Center, 28 Shivaji Marg New Delhi-110015
36. General Manager (Project), Timarpur – Okhla Waste Management Company Ltd Jindal ITF Center, 28 Shivaji Marg New Delhi-110015, Ph. 45021983, Fax 45021982
37. G.M. (Project)-I, DTL, Shakti Deep Building, Jhandewalan, Delhi-110055
38. G.M. (Project)-I, DTL, Shakti Deep Building, Jhandewalan, Delhi-110055
39. Dy.G.M.(O&M)-III, DTL, 220kV S/Stn Lodhi Road, CGO Complex, New Delhi-03
40. Dy. G.M.(O&M)-I, DTL, 220kV Park Street Grid S/Stn, near RML Hospital, Park Street, New Delhi-110001
41. Dy. G.M. (O&M)-II, DTL, Shakti Deep Building, Jhandewalan, Delhi
42. Dy. G.M.(OS), DTL, 220kV Naraina Grid S/Stn, New Delhi-110010
43. Dy.G.M. (400kV O&M S/Stn), DTL, 220kV Naraina Grid Sub-Station, New Delhi-10
44. Sh. Sunil Kakkar, Head (PMG), BYPL, 2nd Floor, Shakti Kiran Building, Karkardooma, Delhi-110092
45. Sh. Sanjay Srivastava, AVP(PMG), BRPL, Bldg. No.20, Nehru Place, New Delhi - 19
46. General Manager (Commercial), National Thermal Power Corporation, NTPC NCR Headquarter, Sector-24, Noida, UP-201301
47. General Manager (Commercial), Aravali Power Company Pvt Ltd, 1st Floor, Pawan Hans Towers, C-14, Sector-1, Noida-201301
48. Chief Engineer, DMRC, Inderlok Metro Station, Delhi
49. DGM(SCADA), Delhi SLDC
50. Manager (SO)-Shift, Delhi SLDC
51. Executive Engineer (SO), NDMC
52. Dy. Manager (Finance), SLDC

Copy for favour of kind information to :-

* 1. Secretary, CERC, 3rd & 4th Floor, Chanderlok Building, 36, Janpath, New Delhi- 110001, Ph: 011-23353503 Fax: 011-23753923
  2. Secretary, DERC, Viniyamak Bhawan, C-Block, Shivalik, New Delhi-110017
  3. Chairman and Managing Director, DTL
  4. Chairperson, New Delhi Municipal Council, Palika Kendra, Sansad Marg, New Delhi
  5. Member Secretary, NRPC, Katwaria Sarai, New Delhi-110016
  6. Member (Power Regulations), BBMB, Sector-19B, Madhya Marg, Chandigarh
  7. Director (Operations), NTPC, Scope Complex, 7 Institutional Area, Lodhi Road, New Delhi-110003
  8. Director (Commercial), NTPC, Scope Complex, 7 Institutional Area, Lodhi Road, New Delhi-110003
  9. Managing Director, Indraprastha Power Generation Company Ltd (IPGCL) / Pragati Power Corporation Ltd (PPCL), Himadri, Rajghat Power House, New Delhi-110002
  10. Director (Operations), DMRC, Metro Bhawan, Fire Brigade Lane, Barakhamba Road, New Delhi-110001.
  11. Director (Operations), DTL
  12. Director (HR), DTL
  13. Director (Finance) DTL
  14. CEO, BSES Rajdhani Power Ltd, BSES Bhawan, Nehru Place, New Delhi-110019
  15. CEO, BSES Yamuna Power Ltd, Shakti Kiran Building, Karkardooma, New Delhi-92
  16. CEO, Power System Operation Corporation (POSOCO), B-9, Qutub Institutional Area, Katwaria Sarai, New Delhi-110016
  17. CEO, TPDDL, 33kV Grid S/Stn, Hudson Lane, Kingsway Camp, Delhi-110009
  18. Chief Engineer(Utilities),CWE, MES, Kotwali Road, Near Gopi Nath Bazar, Delhi Cantt New Delhi-110010
  19. Special Secretary (Power), Govt. of NCT of Delhi, Delhi Secretariat, New Delhi

****

**DELHI TRANSCO LTD.**

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

**[Office of General Manager (SLDC)]**

SLDC Building, Minto Road, New Delhi – 110 002

Phone No.23221091, Fax 23221012, 59

**Subject : Summary Record of discussions held in the 9th Meeting of the Grid Coordination Committee (GCC) of Delhi, held on 06.08.2013 at Amaltas” Habitat World, at IHC, Lodhi Road, New Delhi-110003**

The list of participants is enclosed at **Annexure.**

**WELCOME**

Sh. A.K. Haldar, Director (Operations), DTL, Chairman GCC welcomed all participants to the 9th GCC meeting. He thanked Tata Power Delhi Distribution Ltd. for hosting this meeting in such a good ambiance.

He mentioned that when we last met on 08.03.2013, it was decided to meet peak of 6000MW in a best coordinated manner in view of the delay in commissioning of the 400kV Harsh Vihar S/Stn. and 220kV Maharani Bagh – Gazipur Double Ckt. Line etc. He further informed that the existing Transmission System further overburdened due to outage of 220kV Maharani Bagh – AIIMS double ckt. line on 31.05.2013 during HDD drilling by Delhi Jal Board. 220kV BTPS – Gazipur line being maintained by UPPCL, also gone under outage on 11.06.2013 due to cable fault. This also put additional burden on the Transmission system. Most part of the summer period the 66kV cables emanating from 400kV Mundka S/Stn. also remained out due to their inherent problem of sheath current. Despite all the odds, Delhi System could meet all time high demand of 5653MW on 06.06.2013. However, due to comparatively mild summer and good monsoon, the crisis like situation never erupted during the season. During the month of June 2013 and July 13 the power consumption was about 6% and 0.5% less than previous year.

The peak demand during July 2013 was about 4.5% less than the previous year whereas it was about 5% more than the previous year during June 2013. He also lauded the role of Delhi Procurement Group (DPPG) to ensure sufficient availability of power during summer season and also appreciated the efforts of the group to dispose off the surplus power in a best possible manner to reduce the burden on the consumers to the extent possible for holding surplus power during off peak period of the day.

To brace up situation, before next summer i.e. 2014 the utilities, particularly, DTL has to complete works identified to meet the demand of 2013 and 2014 which are listed in the agenda.

He further cautiously mentioned about the need for paying the dues to the generation and transmission utilities particularly those of operating in the state to ensure the availability of power and to maintain the transmission system effectively to deliver power to the end consumers. He highlighted the alarming situation of generating utilities of Delhi which are facing huge financial crunch and is likely to proceed for defaulting the fuel charges bill to gas supply utilities which may bring the generation to zero level causing severe availability crunch besides transmission constraints to meet power demand of promptly paying utilities also. He also mentioned about the severe financial crisis faced by the transmission utility (DTL) and presented the difficult situation to meet even the responsibility of disbursal of salary to the staff. Under such conditions, if the payments dues are not cleared, he feared the stalling of on going development projects which may not only destabilize the targets of commissioning of transmission projects but also put pressure on existing transmission network to meet future power demand. He requested all the utilities to ensure the timely payment as the non payment issues have reached in such a level of even questioning the prospects of the privatizing the power sector in Delhi as the part of the power reforms undertaken through out the country.

With above remarks, he advised the Convener to take up the agenda of the meeting. Subsequently the agenda was taken up and gist of the discussions and decision are as under:-

**1 Confirmation of the minutes of 8th meeting of GCC held on 08.03.2013.**

The minutes of the 8TH meeting of GCC held on 08.03.2013 have been circulated vide letter no. F.DTL/207/13-14/GM(SLDC)/F-35/16 dated 17.04.2013. No comments have been received. As such, the minutes were confirmed by GCC.

**2 FOLLOWUP ACTION ON THE DECISIONS TAKEN IN THE PREVIOUS GCC MEETINGS**

**2.1 ENHANCEMENT OF GRID SECURITY AT BTPS**

SLDC representative intimated that at present, the BTPS has the connectivity through 220kV Ballabhgarh – BTPS double circuit line and 220kV BTPS – Mehrauli – Bamnauli links. Only due to the additional connectivity of BTPS through BTPS – Mehrauli – Bamnauli links, BTPS could sustain the 2-3 Grid Disturbances occurred in the recent past. He further informed that the matter has been under the active consideration of NRPC forum and NRPC Operation Coordination Committee has advised DTL to submit the detailed report by 31st July 2013 after conducting proper system study with regard to enhancement of Grid connectivity of BTPS.

G.M. (Planning), DTL informed that the Grid connectivity could be established through 220kV Maharani Bagh – Gazipur – BTPS Ckts. and 220kV Maharani Bagh - Sarita Vihar – BTPS apart from 220kV Maharani Bagh – Masjid Moth – Okhla – BTPS (after the establishment of link between 220kV Okhla and Masjid Moth).

SLDC representative also pointed out that as per NRPC proceedings, it was found the CEA has already carried out comprehensive study for the Transmission System Planning upto the year 2022. It was also found from the proceedings that CTU (Powergrid), CEA and DTL has to draw out plan combinedly.

BTPS representatives also emphasized the need of detailed study in view of the impending system configuration changes following the establishment of the new lines and sub-stations with regard to enhancement of Grid connectivity at BTPS. The advise of Powergrid and CEA may also be obtained in view of the study conducted for Transmission Scheme upto year 2022.

**After the detailed discussions, it was decided to refer the matter to CPRI for conducting the detailed study for enhancement of Grid security of BTPS. Planning Department of DTL was advised to get the study done through CPRI at the earliest as the firm has already been entrusted with the responsibility of simulation of the Islanding Scheme of Delhi and Reactive Power compensation. The advise of Power Grid and CEA may also be obtained for conducting the study.**

**2.2. PROVSIONS OF HOT RESRVE TRANSFORMERS CAPACITY.**

The updated status of hot reserve of transformers at various voltage ratio was informed as under :-

**Table-1**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S.N | Capacity | Present population in nos. | Status of the hot reserve | Acton plan and responsibility |
| 1 | 440/220kV, 315MVA ICT, | 12 | One Tx at 400kV Mundka would be hot reserve. | The original planning was 2X315MVA Txs at Mundka. The 3rd Tx. available at present which has been brought after repairs. The same is planned as hot reserve at present.  In near future, the load of the S/Stn is likely to be increased with the commissioning of 220kV Wazirpur and 220kV Peera Garhi and LILO of 220kV Najafgarh – Kanjhawala Ckt at Mundka. The provision of 220kV feed to Rohtak Road is also being explored. After the load of the sub-station is attained as envisaged in the scheme would be prepared for provison of 4th transformer as hot reserve and implemented after obtaining the regulatory approval from DERC. |
| 2 | 220/66 kV, 160MVA Tx | 9 | 160MVA Tx earmerked for 220kV Pappan Kalan-II would be the hot reserve. | At Papankalan-II the third transformer which was envisaged as hot reserve would be put in use to meet the load demand. New scheme would be prepared for a hot reserve of 220/66kV 160MVA Tx looking into the increasing population. |
| 3 | 220/66kV, 100MVA Tx | 42 | New Tx. is required to be purchased The scheme for one 220/66/ 33kV 100MVA Tx as hot reserve has been approved and the same would be placed at Patparganj before summer 2014 for hot reserve | Would be in place before summer 2014. |
| 4 | 220/33kV, 100MVA Tx, | 33 |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.N** | **Capacity** | **Present population in nos.** | **Status of the hot reserve** | **Acton plan and responsibility** |
| 5 | 66/33kV 30MVA Tx, | 3 | After the commissioning of 66kV IFC Grid, the 33kV Narela – Khampur feeder become redundant and then the transformer could be spared for hot reserve purpose. However, the 66kV bay being utilized for 66/33kV Tx at Narela would be used for IFC Grid. As such, the transformer would have to be shifted to some other place for hot reserve.  GCC advised Planning Department of DTL to decide the location. | Planning Department of DTL to identify the location to shift 66/33kV 30MVA Tx from Narela after the commissioning of 66kV IFC Grid which is being established as a deposit work of DDA. Further DDA has not so far deposited the amount. The establishement of the S/stn would take another two years as approval of DERC also requried. The scheme would be submitted after the agreement woth DDA. |
| 6 | 66/11kV 20MVA Tx | 23 | The scheme for a 66/11kV Tx as a hot reserve has been approved and transformer is under procurement. | The transformer would be in place before next summer at Kanjhawala. |
|  | 33/11kV 20/16MVA Tx | 16 | The hot reserve 33/11kV Tx would be placed at Shalimar Bagh before summer 2014. | Would be in place before summer 2014. |

**2.3 AUGMENTATION OF TRANSFORMATION CAPACITY OF 66/11KV AND 33/11KV TRANSFORMERS AT DTL SUB-STATIONS.**

Planning Department representative informed that the issue of enhancement of transformation capacity of 66/11kV and 33/11kV transformers to meet the increased load of 11kV feeders emanating from DTL Sub-Stations was taken up with DERC vide letter no.DTL/202/2013/Opr.(Plg)/GM(Plg)/F-8/109 dated 29.07.2013. The approval has not yet been received sofar.

SLDC representative presented the need of enhancement of transformation capacity of 66/11kV and 33/11kV transformers at DTL S/Stns based on the load demand of these transformers at the time of occurrence of Delhi peak i.e. 5653MW on 06.06.2013 at 15:38hrs. The details are as under :-

**LOADING AT THE TIME OF MAXIMUM LOAD OCCURRED IN DELHI SYSTEM ON 06.06.2013 AT 15:38HRS (5653MW).**

**Table-2**

**66/11kV Transformers**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.  No.** | **Name of the Element** | **MVA rating of Tx** | **Load on 11kV I/C** | **Capacity** | **Capacity utilization in %age** |
| MVA | in Amps | in Amps | Hrs |
| (1) | (2) | (3) | (4) | (5) | (6) |
|  | **220kV Narela S/S** |  |  |  |  |
| 1 | 66/11kV, 20MVA Tx-I | 20 | 695 | 1050 | 66 |
| 2 | 66/11kV, 20MVA Tx-II | 20 | 286 | 1050 | 27 |
|  | **Total** | **40** | **981** | **2100** | **47** |
|  | **220kV Rohini S/S** |  |  |  |  |
| 3 | 66/11kV, 20MVA Tx-I | 20 | 204 | 1050 | 19 |
| 4 | 66/11kV, 20MVA Tx-II | 20 | 126 | 1050 | 12 |
|  | **Total** | **40** | **330** | **2100** | **16** |
|  | **220kV Gazipur S/S** |  |  |  |  |
| 5 | 66/11kV, 20MVA Tx-I | 20 | 173 | 1050 | 16 |
| 6 | 66/11kV, 20MVA Tx-II | 20 | 96 | 1050 | 9 |
|  | **Total** | **40** | **269** | **2100** | **13** |
|  | **220kV Wazirabad S/S** |  |  |  |  |
| 7 | 66/11kV, 20MVA Tx-III | 20 | 600 | 1050 | 57 |
| 8 | 66/11kV, 20MVA Tx-IV | 20 | 600 | 1050 | 57 |
|  | **Total** | **40** | **1200** | **2100** | **57** |
|  | **220kV Okhla S/S** |  |  |  |  |
| 9 | 66/11kV, 20MVA Tx-I | 20 | 555 | 1050 | 53 |
| 10 | 66/11kV, 20MVA Tx-II | 20 | 625 | 1050 | 60 |
|  | **Total** | **40** | **1180** | **2100** | **56** |
|  | **220kV Sarita Vihar S/S** |  |  |  |  |
| 11 | 66/11kV, 20MVA Tx-I | 20 | 680 | 1050 | 65 |
| 12 | 66/11kV, 20MVA Tx-II | 20 | 720 | 1050 | 69 |
|  | **Total** | **40** | **1400** | **2100** | **67** |
|  | **220kV Mehrauli S/S** |  |  |  |  |
| 13 | 66/11kV, 20MVA Tx-I | 20 | 530 | 1050 | 50 |
| 14 | 66/11kV, 20MVA Tx-II | 20 | 320 | 1050 | 30 |
|  | **Total** | **40** | **850** | **2100** | **40** |
|  | **220kV Vasant Kunj S/S** |  |  |  |  |
| 15 | 66/11kV, 20MVA Tx-I | 20 | 440 | 1050 | 42 |
| 16 | 66/11kV, 20MVA Tx-II | 20 | 375 | 1050 | 36 |
|  | **Total** | **40** | **815** | **2100** | **39** |
|  | **220kV Najafgarh S/S** |  |  |  |  |
| 17 | 66/11kV, 20MVA Tx-I | 20 | 704 | 1050 | 67 |
| 18 | 66/11kV, 20MVA Tx-II | 20 | 495 | 1050 | 47 |
| 19 | 66/11kV, 20MVA Tx-III | 20 | 840 | 1050 | 80 |
|  | **Total** | **60** | **2039** | **3150** | 65 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.  No.** | **Name of the Element** | **MVA rating of Tx** | **Load on 11kV I/C** | **Capacity** | **Capacity utilization in %age** |
| MVA | in Amps | in Amps | Hrs |
| (1) | (2) | (3) | (4) | (5) | (6) |
|  | **220kV Kanjhawala S/S** |  |  |  |  |
| 20 | 66/11kV, 20MVA Tx-I | 20 | 660 | 1050 | 63 |
| 21 | 66/11kV, 20MVA Tx-II | 20 | 595 | 1050 | 57 |
|  | **Total** | **40** | **1255** | **2100** | **60** |
|  | **220kVPappankalan-I S/S** |  |  |  |  |
| 22 | 66/11kV, 20MVA Tx-I | 20 | 630 | 1050 | 60 |
| 23 | 66/11kV, 20MVA Tx-II | 20 | 530 | 1050 | 50 |
| 24 | 66/11kV, 20MVA Tx-III | 20 | 610 | 1050 | 58 |
|  | **Total** | **60** | **1770** | **3150** | **56** |
|  | **Total 66/11kV Txs** | **480** | **12089** | **25200** | **48** |

**Table-3**

**33/11kV Transformers**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.  No.** | **Name of the Element** | **MVA rating of Tx** | **Load on 11kV I/C** | **Capacity** | **Capacity utilization in %age** |
| MVA | in Amps | in Amps | Hrs |
| (1) | (2) | (3) | (4) | (5) | (6) |
|  | **220kV Gopalpur S/S** |  |  |  |  |
| 1 | 33/11kV, 16MVA Tx-I | 16 | 675 | 840 | 80 |
| 2 | 33/11kV, 16MVA Tx-II | 16 | 543 | 840 | 65 |
|  | **Total** | **32** | **1218** | **1680** | **73** |
|  | **220kV Subzi Mandi S/S** |  |  |  |  |
| 3 | 33/11kV, 16MVA Tx-I | 16 | 745 | 840 | 89 |
| 4 | 33/11kV, 16MVA Tx-II | 16 | 510 | 840 | 61 |
|  | **Total** | **32** | **1255** | **1680** | **75** |
|  | **220kV Patparganj S/S** |  |  |  |  |
| 5 | 33/11kV, 20MVA Tx | 20 | 650 | 1050 | 62 |
| 6 | 33/11kV, 16MVA Tx | 16 | 315 | 840 | 38 |
|  | **Total** | **36** | **965** | **1890** | **51** |
|  | **220kV Kashmere Gate S/S** |  |  |  |  |
| 7 | 33/11kV, 20MVA Tx | 20 | 530 | 1050 | 50 |
| 8 | 33/11kV, 16MVA Tx | 16 | 510 | 840 | 61 |
|  | **Total** | **36** | **1040** | **1890** | **55** |
|  | **220kV Lodhi Road S/S** |  |  |  |  |
| 9 | 33/11kV, 20MVA Tx-I | 20 | 600 | 1050 | 57 |
| 10 | 33/11kV, 20MVA Tx-II | 20 | 520 | 1050 | 50 |
| 11 | 33/11kV, 16MVA Tx-III | 16 | 570 | 840 | 68 |
| 12 | 33/11kV, 16MVA Tx-iV | 16 | 570 | 840 | 68 |
|  | **Total** | **72** | **2260** | **3780** | **60** |
|  | **220kV Naraina S/S** |  |  |  |  |
| 13 | 33/11kV, 16MVA Tx-I | 16 | 470 | 840 | 56 |
| 14 | 33/11kV, 16MVA Tx-II | 16 | 550 | 840 | 65 |
|  | **Total** | **32** | **1020** | **1680** | **61** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.  No.** | **Name of the Element** | **MVA rating of Tx** | **Load on 11kV I/C** | **Capacity** | **Capacity utilization in %age** |
| **MVA** | **in Amps** | **in Amps** | **Hrs** |
| (1) | **(2)** | (3) | (4) | (5) | (6) |
|  | **220kV Shalimarbagh S/S** |  |  |  |  |
| 15 | 33/11kV, 20MVA Tx | 20 | 505 | 1050 | 48 |
| 16 | 33/11kV, 16MVA Tx-I | 16 | 543 | 840 | 65 |
|  | **Total** | 36 | 1048 | 1890 | 55 |
|  | **Total 33/11kV Txs** | 276 | 8806 | 14490 | 61 |
|  | **Total 66/11kV and 33/11 Txs** | 756 | 20895 | 39690 | 53 |
|  | **Total load on 66/11kV and 33/11kV Txs installed at DTL’s Sub-Station in MW** | 348 | | | 6% of the total load of Delhi |

It was further explained that the sub-stations namely Najafgarh, Pappankalan-I, Gopalpur, Subzi Mandi, Sarita Vihar and Naraina where the total capacity utilization of 66/11kV or 33/11kV is more than 60% and hence in case of shut-down or break-down of any of the transformer, load shedding is necessitated. As such, an immediate enhancement of transformation capacity is required to be undertaken in these sub-stations to ensure stability of supply to the areas fed from these sub-stations.

The representatives of the Distribution Companies reiterated their stand that the critically loaded transformers should be augmented for supply stability of the areas fed from those sub-stations. It was also informed by them that no additional load at 11kV side is put by them but is was the natural load growth of the areas fed from already laid 11kV feeders emanating from these sub-stations. They also referred the decision of the 8th GCC meeting held on 08.03.2013 in this regard as under:-

Distribution Licensees were of the view that the existing 66/11kV or 33/11kV 16/20MVA transformers at 220kV sub-stations should be augmented to meet the increasing load demand of the areas fed from these transformers as there is a legal hurdle to transfer these assets to Distribution Licensees as these assets were inherited by DTL at the time of unbundling of erstwhile DVB. Due to severe space constraints, the chances for the establishment of new substations in nearby areas are remote. As such, to shift the 11kV load from 220kV sub-stations also is remote. Since 220kV sub-stations have enough space to accommodate new transformers / enhanced capacity transformer, DTL should moot the proposal to enhance the transformation capacities of 66/11kV and 33/11kV transformers which would be economically viable than establishment of new sub-stations in nearby areas for catering the 11kV loads. It was also emphasized that by doing so, reliability of supply would also be enhanced. These augmentations should immediately be carried out at critically loaded substations such as 220kV Najafgarh, 220kV Pappakalan-I, 220kV Shalimar Bagh, 220kV Wazirabad substations etc. Distribution Licensees requested DTL to carryout these augmentation before summer 2014. Planning Department of DTL intimated that DERC has not agreed to augment the transformation capacities of 66/11kV and 33/11kV at 220kV sub-stations on the plea that DTL can only maintain but not to enhance the transformation capacities as these are Distribution elements.

After deliberation, GCC advised Planning Department of DTL to moot the proposal again in the light of discussions in this meeting and draw out plans for augmentation of the 66/11kV and 33/11kV transformers in the above mentioned critically loaded sub-stations before summer 2014 after obtaining the approval from DERC.

**After discussions, GCC decided that the matter be taken up with DERC by Chairperson, GCC for expediting the earlier in principle approval of enhancement of transformation capacity of critically loaded 66/11kV and 33/11kV transformers of Delhi Transco Ltd’s s/Stns suggested by SLDC based on the analysis of the loading pattern at the time of occurrence of system peak of Delhi i.e. on 06.06.2013 at 15:38hrs (5653MW) i.e. Najafgarh, Pappankalan-I, Gopalpur, Subzi Mandi, Sarita Vihar and Naraina sub-Station where the existing 66/11kV and 33/11kV transformer capacities need to be upgraded appropriately subject to technical feasibility.**

**2.4 IMPLEMENTATION OF STATE-OF-THE–ART–LOAD MANAGEMENT SCHEME & INSTALLATION OF UNDER FREQUENCY RELAYS BY DISCOMS.**

The State-Of-The-Art Load Management System is in place at TPDDL, BRPL & BYPL. NDMC had earlier undertaken that the scheme is envisaged in the SCADA system being implemented by PGCIL. It was mentioned that the SCADA system has been formally inaugurated.

In the last meeting, NDMC representative informed that the scheme is inbuilt in SCADA system. However, due to cabling hurdle, the scheme could not be gone live. The cable hurdles are likely to be rectified by end of May 2013.

NDMC representative informed in the meeting that PGCIL has already been sounded the need of implementation of the scheme at the earliest. It was further informed that the relays have been installed and testing work is under progress. The scheme was expected by 30.09.2013.

**GCC felt it very serious that despite repeated assurances given at various forums and even before CERC, the mandatory requirement of establishment the State-Of-the-Art-Load Management scheme has not been done by the utility. It was further decided that the Chairperson GCC may bring the matter in the notice of Chairperson, NDMC to implement the scheme without further delay as it is a mandatory provision as envisaged in the Indian Electricity Grid Code and Delhi Grid Code.**

**2.5 EXECUTION OF CONNECTION AGREEMENT BY PPCL FOR BAWANA CCGT (1371MW).**

PPCL representative intimated that inspite of providing all informations, the Connection Agreement could not be executed with DTL sofar. DTL representative informed that full Protection Details have not been provided by PPCL sofar which is the only impediment in executing the agreement.

G.M. (PPCL) assured that all clarification would be provided in one to one meeting so that no ambiguity persists further.

**Director (Operations), DTL advised the Protection wing of DTL to resolve the issue as quick as possible as the issue was hanging long, though the system is operating since October 2010 without the execution of the mandated Connection Agreement with STU.**

**2.6 OUTSTANDING DUES**

DTL, IPGCL and APCPL have provided the details of outstanding dues as under :-

**Table-4**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Utility** | **Paying utilities** | | **(Rs. in Crore)** | **Remarks** |
| BRPL | BYPL | Total |
| DTL | **710.14** | **489.26** | **1199.40** | **Including Surcharge upto 30.06.2013 for BYPL of Rs. 63.19 Crores and BRPL of Rs. 94.67 Crores.** |
| IPGCL | **635.84** | **491.11** | **1126.95** | **Surcharge as on 31.07.2013**  **BRPL : Rs. 134.99 Crores**  **BYPL : Rs. 101.79 Crores** |
| PPCL | **626.71** | **538.56** | **1165.27** | **Surcharge as on 31.07.2013**  **BRPL : Rs. 118.17 Crores**  **BYPL : Rs. 86.11 Crores** |
| APCPL | **177.0** | **103.29** | **280.29** | **Principal amount upto 24.07.2013.**  **Surcharge as on 31.03.2013**  **BRPL : Rs. 3.84 Crores**  **BYPL : Rs. 6.98 Crores** |

DTL further indicated that the outstanding dues on account of Pension Trust, Income tax, Power purchase Liability in respect of TPDDL and NDMC as under:

**Table-5**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Utility** | **Paying utilities** | | **(Rs. in Crore)** | **Remarks** |
| TPDDL | NDMC | Total |
| DTL | **101.65** | **32.35** | **134.00** | **Including Surcharge upto 30.06.2013 also** |

IPGCL/PPCL representative informed that the situation has reached in such an alarming level that they are not in a position to clear the bills of gas supply for the 1st fortnight of August 2013 which may lead to stoppage of gas supply to Bawana CCGT, IPGCL’s GT and Pragati CCGT Stations after 15th August 2013. It was also informed that if default occurs, it would be the first time in history. They expressed their tight finance position that even they are finding it very difficult to discharge the responsibility for paying the salary to the employees.

DTL representative also expressed their tight financial position due to non payment of dues by BRPL and BYPL. It was further explained that as per the recent tariff order announced, if the past dues are not cleared by BRPL and BYPL, even the day to day operation of DTL would not be possible. The details of the tariff approved by DERC for 2013-14 as given under would clarify the position:-

Table:67 Approved ARR for FY 2013-14 (Rs. Crores)

**Table-6**

|  |  |  |
| --- | --- | --- |
| **Sr.No.** | **Particulars** | **FY 2013-14** |
| 1 | Net ARR for Transmission Business | 593.22 |
| 2 | Impact of provisional True up including carrying cost | (1035.42) |
| 3 | Payment to Pension Trust | 400 |
| 4 | Payment to Public Grievance Cell for meter testing and consumer advocacy | 0.70 |
| **5** | **Sub-Total (1+2+3+4)** | **(41.50)** |
| 6 | ARR allowed for FY 2013-14 including impact of partial past DVB arrears | 500.00 |

Out Rs. 500 Crores to be collected by DTL from the Distribution Licensees, Rs. 400 Crores is required to be paid to Pension Trust leaving the net amount of only Rs. 100 Crores for one year. Apart from this, the Commission directed DTL to return the additional Income Tax reimbursed from Discoms for the year 2007-08 to 2011-12. It was also explained that even the monthly salary of DTL was about Rs. 9 Crores and hence with the above projected finance situation, if BRPL and BYPL do not clear the outstanding dues, the running of transmission business would become standstill.

TPDDL and NDMC have indicated that as far as they were concerned, their outstanding dues are NIL. They further indicated that DTL has taken the amount claimed including those elements which are already under sub-judice either before DERC or before Appellate Tribunal. .

BYPL and BRPL representatives intimated that the precarious financial position has already brought under the notice of highest level of the State Govt. The nominal tariff increase made effective from 01.08.13 is not going to ease their financial position. As such, they could not provide any assurance for clearing the outstanding dues and paying the current dues of the generating and transmission utilities within Delhi. They further informed that they owe dues to other power supply and transmission utilities also.

TPDDL representatives warned that if their supply is disrupted due to stoppage of generating system or transmission system due to non payment dues of other utilities, they should not be pressed for arranging additional power and they are not liable to pay the fixed charges for non supply of power from the station which could be stopped due to non payment of dues by other utilities.

SLDC representative enquired about the outcome of the petition already filed by IPGCL / PPCL before DERC on the issue of non payment of dues by BRPL and BYPL. It was informed that the case is listed for next date of hearing on 13.08.2013 (subsequently, the matter was heard by the Commission on 03.09.2013 and passed the interim order on 05.09.2013 as under

INTERIM ORDER

(Date of Hearing: 03.09.2013)

(Date of Order: 05.09.2013)

1. The Ld. Counsel Ms. Swapna Sheshadri for the Petitioner submitted that till date Rs.2,794.00 Crores (Aprox.) are the outstanding dues from BRPL and BYPL. No payment has been made by the Respondents to the Petitioner from September 2011 onwards. She has further submitted that the said outstanding amount is more than the Annual Revenue Requirement of FY 2013-14 of the Petitioner.

2. The Ld. Counsel further submitted that it is noticed that BRPL and BYPL have made payment to all other generating and transmission companies.

3. The Ld. Counsel further submitted that the Commission in its order dated 24.11.2011 directed these DISCOMs “to clear the current outstanding dues for the month of September and October, 2011 within 10 days from the date of the order. Subsequently, DISCOMs will submit the compliance report within a week”. Till date there is no compliance of the Commission’s said order.

4. The Ld. Counsel further submitted that due to nonpayment of the said dues the Petitioners are facing acute financial crisis and if some amount out of the total outstanding dues of Rs. 2,794.00 crores (approx.) is not paid immediately then they will not be left with any option but to start Regulation of Power.

5. The Ld. Counsel for the Respondents submitted that they have received a copy of the PWC Report only on 27.08.2013. He made a request for one weeks time to peruse the PWC Report and further requested the Commission to fix another date for hearing in

these matters.

6. The Ld. Counsel for the Petitioners vehemently opposed any further adjournment. She further submitted that the said report of PWC has no connection with the payment of outstanding dues by the Respondents.

7. The Ld. Counsel for the Petitioners also stated that in the present circumstances and to obviate any delays she wants to withdraw the rejoinder filed in this matter.

8. Mr. Ankur Garg, Special Secretary of Power, Govt. of Delhi submitted that the PWC report is an outcome of a study got conducted by Govt. of Delhi and it should not be treated as part of the proceedings; since the Govt. of Delhi is at the liberty to accept/reject this report partially or fully at any stage. He further submitted that not only the Govt of NCT of Delhi has given the petitioners a loan of Rs. 800 cr which has not yet been returned but the govt. had to release the advance subsidy for the month of October to December or otherwise generation would have shut down.

9. Mr. Garg further submitted that even after exhausting all resources the generating companies have defaulted in all kinds of payments and if there is no cash flow within the next seven days then the Govt. will have no other option but to go for Regulation and shut down at least three out of four generating plants of IPGCL and PPCL.

10. Mr. Rakesh Sehgal, Director (Fin.) IPGCL and PPCL submitted that they have defaulted in making payment to GAIL which has led to a threat of encashment of their Letter of Credit (LC) amounting to Rs. 100 cr. If this LC gets enchased due to non payment then the petitioner will lose its credibility in the banking system and Petitioner will be required to deposit full 100 cr even more than Rs. 100 cr with any bank to get the LC restored.

11. The Commission heard the arguments made by Ld. Counsel for the Petitioner, Mr. Ankur Garg, Special Secretary Govt. of NCT of Delhi and Mr. Rakesh Sehgal, Director (Fin.) IPGCL and PPCL at length. The Commission also heard pleas raised by Ld. Counsel for BRPL and BYPL. The Commission has considered the arguments raised by both the parties. The Commission fails to understand why no payment at all has been made by BRPL and BYPL even though they have paid dues of other generating stations. The Commission is of the view that BRPL and BYPL should make some payment to the Petitioners immediately to enable them to continue generation at their plants so that citizens of Delhi are not put to undue hardships in case these plants shut down.

12. The Commission directs BRPL and BYPL to make payment of current bills raised for the month of August, 2013 immediately and current bill for September, 2013 before the next date of hearing.

13. The Commission has accepted the request of Ld. Counsel for the Petitioners to withdraw rejoinder filed before the Commission on 21.08.2013.

14. The matter is listed for further hearing on 22.10.2013.

15. Ordered accordingly.)

Special Secretary (Power), GNCTD very categorically told that the State Govt. is not going to bail the defaulting utilities (BRPL and BYPL) out in paying the outstanding dues to the generating and transmission utilities. He also especially mentioned that other Distribution Company operating in Delhi is paying the entire dues with the same tariff applicable for BRPL and BYPL. He reminded that the findings of PWC wherein the reasons of financial health of these utilities are not mainly attributable to the

difference in ARR and approved tariff but also mentioned the functional problems of these organizations also contributed for the same. He told the representatives that their management should be properly apprised about the alarming situation of non payment of dues and their management should come up with a concrete steps failing which if the power disruptions occur due to stoppage of generation owing to non payment of dues to the fuel supply agencies and interruption of transmission system due to lack of maintenance and up-gradation which are stalled due to fund crunch, the responsibility of would squarely be with these utilities.

**Concluding discussions, GCC advised defaulting utilities to apprise their management about the gist of the discussions and draw out concrete steps to pay the current dues and wiping out the arrears for overall interest of the power system of Delhi and thereby the consumers.**

2.7 **STATUS OF IMPLEMENTATION OF RECOMMENDATIONS OF EXPERT COMMITTEE ON GRID DISTURBANCES OCCURRED ON 30.07.2012 AND 31.07.2012 IN THE GRID.**

**In the updated position is as under :**

**Table-7**

|  |  |  |
| --- | --- | --- |
| Clause | RECOMMENDATIONS | STATUS AS ON DATE |
| 9.1.1 | Periodical 3RD Party Protection Audit  **– Time frame – within one year** | The Protection Audit was completed before CWG-2010. The deficiencies pointed out and the latest status on the issue of removal of deficiencies is as under :-   |  |  |  |  | | --- | --- | --- | --- | | Sl.  No | Description of Issue | Sub-station | Action taken/proposed (As on 31.07.2013) | | 1 | Replacement of Static Distance Relays by Numerical Relays | Bamnauli | Work will be completed by 31.03.2014. | | 2 | Earth fault in DC system to be rectified | Bamnauli | Work will be completed by 31st August 2013 | | 3 | Time Synchronization to be provided or rectified | Bamnauli | No issue | | 4 | DR and Event Logger to be provided or to be kept in order | Bamnauli | The 400 kV EL is in place. EL for 220 kV and DR (inbuilt function with Numerical Relays) will be completed by 30th Nov. 2013. | | 5 | Bus Bar Protection to be provided/made functional | Bamnauli | Bus Bar Protection made functional | | 6 | LBB Protection to be  provided/made functional | Bamnauli | No issue | | 7 | PLCC problems | Bamnauli | PLCC of all 400 kV lines with new Protection Coupler are installed and functional. PLCC Tele protection coupler for 220kV lines will be installed after stringing of OPGW by POWERGRID by July 2014. | | 8 | DG Set | Bamnauli | No issue |   (Basic Protection Audit carried out on 400kV S/Stn Bamnauli before CWG)  It was also advised by NRPC that DTL should go for fresh third party protection audit of entire DTL system and it was also decided that the protection expert of Rajasthan STU would carry out the protection audit of Delhi system for which necessary action would be taken very soon. |

|  |  |  |
| --- | --- | --- |
| **Clause** | **RECOMMENDATIONS** | **STATUS AS ON DATE** |
| 9.1.2 | Philosophy of Zone-3 trippings to be reviewed to avoid indiscriminate and load encroachment and faults  **– Time Frame - immediate** | As per the CEA status report of the recommendations on the issues as on 31.07.2013 the position is as under:  Powergrid, has reviewed the zone-3 settings in coordination with STUs, generators and POSOCO and put them in order in accordance with load ability. The status of implementation of the above by the States was discussed at the meeting of National Power Committee (NPC) held on 15.04.2013 wherein the States were asked to furnish the details. The responses were awaited.  As far Delhi is concerned, the details have been submitted to PGCIL through NRPC as under :-   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | **Sl No** | **Name of substation** | **Voltage level(kV)** | **Name of transmission line** | **Voltage (kV) for MVA calculation** | **Make of relay** | **CT primary** | **Zone-3 setting (X) Secondary Ohms** | | Main-I | 1 | Bamnauli | 400kV | Ballabhrgarh-I | 380kV | Micromho | 2000/1 | 13.9 | | Main-II |  |  |  |  | 380kV | Micromho | 2000/1 | 3.36 | | Main-I | 2 | Bamnauli | 400kV | Ballabhrgarh-II | 380kV | Micromho | 2000/1 | 13.9 | | Main-II |  |  |  |  | 380kV | Micromho | 2000/1 | 3.36 | | Main-I | 3 | Bamnauli | 400kV | Mundka-I | 380kV | Micromho | 2000/1 | 13.4 | | Main-II |  |  |  |  | 380kV | Micromho | 2000/1 | 2 | | Main-I | 4 | Bamnauli | 400kV | Mundka-II | 380kV | Micromho | 2000/1 | 13.4 | | Main-II |  |  |  |  | 380kV | Micromho | 2000/1 | 2 | | Main-I | 5 | Mundka | 400kV | Bamnauli-I | 380kV | P442 | 2000/1 | 10.27 | | Main-II |  |  |  |  | 380kV | D60 | 2000/1 | 10.27 | | Main-I | 6 | Mundka | 400kV | Bamnauli-II | 380kV | P442 | 2000/1 | 10.27 | | Main-II |  |  |  |  | 380kV | D60 | 2000/1 | 10.27 | | Main-I | 7 | Mundka | 400kV | Bawana-I | 380kV | P442 | 2000/1 | 28.4 | | Main-II |  |  |  |  | 380kV | D60 | 2000/1 | 28.4 | | Main-I | 8 | Mundka | 400kV | Bawana-II | 380kV | P442 | 2000/1 | 28.4 | | Main-II |  |  |  |  | 380kV | D60 | 2000/1 | 28.4 | | Main-I | 9 | Mundka | 400kV | Jhajjar-I | 380kV | P442 | 2000/1 | 20.14 | | Main-II |  |  |  |  | 380kV | D60 | 2000/1 | 20.14 | | Main-I | 10 | Mundka | 400kV | Jhajjar-II | 380kV | P442 | 2000/1 | 20.14 | | Main-II |  |  |  |  | 380kV | D60 | 2000/1 | 20.14 | | Main-I | 9 | Bawana | 400kV | Mundka-I | 380kV | Micromho | 2000/1 | 13.4 | | Main-II |  |  |  |  | 380kV | Micromho | 2000/1 | 2 | | Main-I | 10 | Bawana | 400kV | Mundka-II | 380kV | Micromho | 2000/1 | 13.4 | | Main-II |  |  |  |  | 380kV | Micromho | 2000/1 | 2 | | Main-I | 11 | Bawana | 400kV | Mandola-I | 380kV | Micromho | 2000/1 | 11.7 | | Main-II |  |  |  |  | 380kV | Micromho | 2000/1 | 3.12 | | Main-I | 12 | Bawana | 400kV | Mandola-II | 380kV | Micromho | 2000/1 | 11.7 | | Main-II |  |  |  |  | 380kV | Micromho | 2000/1 | 3.12 | |  | 13 | Bawana | 400kV | Abdullapur |  | Settings done by PGCIL | | | |  | 14 | Bawana | 400kV | Bahdurgarh |  | Settings done by PGCIL | | | |  | 15 | Bawana | 400kV | Hisar (Now Mahendergarh) |  | Settings done by PGCIL | | | |  | 16 | Bawana | 400kV | Dipalpur | Settings done by PGCIL | | | |   Note  1) Zone setting for main-I & main-II distance relays to be provided for each line.  2) Voltage kV for MVA calculation may be taken as 380 kV for 400kV lines and 727kV for 765kV line.  REMARKS  1. MAIN-II PROTECTION OD DTL LINES IN THE DELHI RING MAIN LINES IS IN BLOCKING SCHEME  2. ZONE 3 IS SET REVERSE LOOKING FOR MICROMHO RELAYS USED AS MAIN-II.  3. CALCULATED MAX LOADING LIMIT IS AS PER THE FORMULA GIVEN IN THE MINUTES WHERE X IS THE REACTANCE OF LINE  4. THE OTHER END DETAILS IN RESPECT OF JHAJJAR LINE ALSO NEED TO BE CONFIRMED FROM NTPC/PGCIL/APCL |

|  |  |  |
| --- | --- | --- |
| **Clause** | **RECOMMENDATIONS** | **STATUS AS ON DATE** |
| 9.1.4 | Complete independent audit of time synchronization of DRs, EL and PMs should be carried out  **- Time frame – within one month** | At all inter state points the time synchronization have been done. Others will follow. DR is available at all 400kV Grids. ELs for all 220kV S/Stns have been planned. DR is not required at 220kV Sub-stations as *Numerical Relays* have this inbuilt feature.  As far as IPGCL and PPCL are concerned, they informed that DR is available at CCGT Bawana and Pragati. EL is not required at generating stations as generators have inbuilt features of EL. |
| 9.2.1 | Tightening of Frequency band and be brought very close to 50Hz. | CERC has already proposed the tightening of frequency band from the present level of 49.7Hz - 50.2Hz to 49.95Hz-50.05Hz. Stringent provision to deal over drawal has also been proposed by way of charging 100% penalty for over drawal beyond 49.95Hz i.e. 1110.40Ps/unit. The restrictions have also been proposed for under drawal in which no payment would be made for under drawal above 150MW. These measures are proposed to ensure lesser transaction in UI mechanism.  GCC advised the distribution utilities to properly address the issue before CERC with regard to restriction of under drawal more than 150MW due to the typical load pattern of Delhi which is varying about 1500MW during winter off peak to 6000MW during summer peak. The allocation of Delhi is predominantly from thermal sources which can not be backed down beyond 70% of the capacity due to technical limitations leaving the substantial quantum of surplus power during off peak hours. Inspite of repeated efforts for disposal of surplus power by way of reallocation of power from various sources to needy states have also not been successful sofar. |
| 9.2.2 | Review of UI mechanism. Frequency control through UI maybe faced out in a time bound manner and generation reserves and ancillary services may be used for frequency control  **Time frame – 3 months** | Regarding the Generation Reserves / Ancillary services, the petition for introducing these services in the country was filed by NLDC with CERC on 29.11.2010. Against this, CERC in its order issued on dated 20.07.2012 has directed its staff for formulation of draft Regulations for Ancillary Services. CERC has circulated the staff paper in the matter in April 2013 for inviting comments from stakeholders upto 15.05.2013. However, no decision in this regard has been taken by the Commission. |

|  |  |  |
| --- | --- | --- |
| **Clause** | **RECOMMENDATIONS** | **STATUS AS ON DATE** |
| 9.3 | All STUs should immediately enable Under Frequency and df/dt under frequency scheme. Central Commission should explore ways and means for implementation of various regulations issued under the Electricity Act 2003. Any violation of these regulations can prove to be costly  **- Time frame - immediate** | In Delhi all 24 UFRs and 13 df/dt relays are functional. Additional relays are also being procured as per the decision of NRPC meetings. Further all UFRs are being replaced with new *Numerical Relay* along with the implementation of *Islanding Scheme of Delhi* expected to the completed soon.  The National Power Committee (NPC) in its 2nd meeting held on 16.07.2013 has decided to adopt four stages automatic load shedding scheme for NEW Grid. The scheme was decided to be implemented within 3 months i.e. by the end of October 2013. The details are as under :-  Scheme for the NEW Grid   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Freq (Hz) | Required Load Relief (MW) (based on max load on feeders) | | | | | | NR | WR | ER | NER | Total | | 49.2 | 2160 | 2060 | 820 | 100 | 5140 | | 49.0 | 2170 | 2070 | 830 | 100 | 5170 | | 48.8 | 2190 | 2080 | 830 | 100 | 5200 | | 48.6 | 2200 | 2100 | 840 | 100 | 5240 | | Total | 8720 | 8310 | 3320 | 400 | 20750 |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | S.N | State | Peak met during 2012-13 (MW | Load Shedding target for four stages (MW) – Based on maximum load on the feeders | | | | | 49.2 | 49.0 | 48.8 | 48.6 | | 1 | Chandigarh | 340 | 16 | 16 | 16 | 16 | | 2 | Delhi | 5642 | 258 | 259 | 262 | 263 | | 3 | Haryana | 6725 | 308 | 309 | 312 | 314 | | 4 | HP | 1672 | 77 | 77 | 78 | 78 | | 5 | J&K | 1817 | 83 | 84 | 84 | 85 | | 6 | Punjab | 8751 | 400 | 402 | 406 | 408 | | 7 | Rajasthan | 8515 | 390 | 392 | 395 | 397 | | 8 | UP | 12048 | 551 | 554 | 559 | 561 | | 9 | Uttrakhand | 1674 | 77 | 77 | 78 | 78 | |  | Total | 47184 | 2160 | 2170 | 2190 | 2200 |   O&M Department of DTL has informed the revised settings for Grid Security and Islanding for Delhi have been implemented in Delhi as per the advise of NRPC. The details are as under:-   |  |  | | --- | --- | | Frequency set at | Load relief in MW | | 49.2Hz | 297 | | 49.0Hz | 353 | | 48.8Hz. | 428 | | 48.6Hz | 1048 | | Total | 2126 | | df/dt |  | | 49.9Hz. with slope 0.1Hz. | 261 | | 49.9Hz with slope 0.2Hz | 282 | | 49.9Hz with slope 0.3Hz | 290 | | Total df/dt | 833 | |

|  |  |  |
| --- | --- | --- |
| **Clause** | **RECOMMENDATIONS** | **STATUS AS ON DATE** |
|  |  | With regard to the suggestion of providing under frequency relay’s at Discoms end, it was advised that to ensure proper load relief and to avoid confusion in operation of relays in coordinated ways, the relays be installed in DTL’s Grid S/Stns. |
| 9.4 | All out efforts should be made to implement the provisions of IEGC with regard to Governor Action - POSOCO to take up the matter with Central Commission  **- Time frame – 3 months** | CERC in its order dated 31.12.2012 reiterated the need for compliance by generators and directed as to why they may not be held responsible for non-implementation of RGMO / FGMO mode of operation. A task force has been constituted by CEA under Member (Thermal), CEA to develop a procedure for testing of primary response of Generating units. **Activity in progress.**  As far Delhi Gencos are concerned, PPCL informed that the generating stations in Delhi mainly gas based stations are exempted from FGMO/RGMO. They quoted section 5.2(f)(iii) of IEGC indicating “*all other generating units including the pondage upto 3 hours gas turbine / combined cycle power plants, wind and solar generators, and nuclear power plants are exempted from operation of RGMO / FGMO till the Commission review the situation. However, all the 200MW and above thermal machines, should have the RGMO / FGMO*.”  BTPS representative informed that clause is applicable to the capacity above 200MW units. As far as BTPS is concerned, the units are fitted with mechanical governors as BTPS has old LMZ make Russian turbines with no electro hydro governing system. However to meet the grid code stipulations, 210MW machines would be provided with RGMO facilities in the proposed R&M activities to be started from 2014-15 onwards.  **GCC advised BTPS authorities to get the exemption from CERC in this regard.** |
| 9.5.1 | POSOCO should take up with Central Commission the issue of inconsistency between congestion regulation and detailed procedure framed there under so that congestion due to forced outage UI can be handled effectively.  **Action : Posoco within one month** | CERC vide order dated 22.04.2013 has approved amendment to the detailed procedure for relieving congestion in real time operation under Regulation 4(2) of the Central Electricity Regulatory Commission (Measures to relieve congestion in Real Time Operation) Regulation 2009. The revised procedure is available in NRLDC’s website homepage. |

|  |  |  |
| --- | --- | --- |
| **Clause** | **RECOMMENDATIONS** | **STATUS AS ON DATE** |
| 9.6 | Outage planning should be in coordinated manner | NRPC OCC has already decided all Interstate Transmission Element shut-down should be planned and forwarded to RPC by STUs by 5th of every month for the next month. In addition to above annual outage plan should also be drawn out.  DTL is adhering the procedure with regard to shutdown of Transmission lines. |
| 9.7 | In order to avoid frequent outages / opening of lines under over voltages and also providing voltage support under steady state and dynamic conditions, installation of adequate reactive power compensators should be planned.  **Action : CTU/STUs and CEA**  **– Time frame 6 months** | The order for Dynamic Simulation Study and Reactive Power compensation have been placed to CPRI. The study is expected to be completed soon. |
| 9.8 | *The powers of load dispatch centers, regulatory commissions related to non compliance to statutory / regulatory provision including that for non compliance for direction for non payment of UI charges needs review . Appropriate amendments need to be carried out in Electricity Act 2003 after such review.*  ***Action MoP, GoI Time frame : 6 months.*** | Under the consideration of Ministry of Power, GoI. |
| 9.9.1 | Regulatory provisions regarding absorption of Reactive Power by generating units needs to be implemented :  **Posoco Time frame : immediate** | In 79th NRPC’s OCC meeting, NRLDC informed that they have taken up the matter with Regional Generators to absorb reactive power as per the capability during high frequency conditions. They advised SLDCs to do the same. In 84th Operation Coordination Committee meeting of NRPC held on 19.02.2013. It was decided to monitor the reactive power generation on real time basis at RLDC / SLDC level through SCADA. The relevant portion of the MoM is reproduced hereunder :- |

|  |  |  |
| --- | --- | --- |
| **Clause** | **RECOMMENDATIONS** | **STATUS AS ON DATE** |
|  |  | **Monitoring of reactive support from generating units.**  Representative of NRLDC stated that critical high voltage is being experienced in the Northern Grid during night off peak hours. Available shunt reactors at the substations are being taken into service, power order on HVDC bi-pole is being reduced, instructions are being given to generators to absorb reactive power to the extent possible and under exceptional conditions under-loaded/redundant EHV transmission lines are being manually opened for voltage regulation. Para 13.6 of the revised Transmission Planning Criteria envisages that during operation, following the instructions of the System Operator, the generating units shall operate at leading power factor as per their respective capability curves. Further as per regulation 5.2 (k) of the Indian Electricity Grid Code, all generating units shall normally have their automatic voltage regulators (AVR) in operation. It is proposed that the reactive power absorption/injection by the generating units may be monitored in the format given under   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | GENERATOR REACTIVE POWER MONITORING TEMPLATE | | | | | | | Name of the Power Station | | |  | | | | Date | | |  | | | | Generating unit | Time | MW at Generator terminals | MVAr Lead/Lag at Generator terminals | Generator transformer Tap Position | Voltage at the HV Bus | | #1 | hh.mm |  |  |  |  | | hh.mm |  |  |  |  | | …. |  |  |  |  | | #2 | hh.mm |  |  |  |  | | hh.mm |  |  |  |  | | …. |  |  |  |  | | #3 | hh.mm |  |  |  |  | | hh.mm |  |  |  |  | | …. |  |  |  |  | | …. |  |  |  |  |  | |  |  |  |  |  |  | |  |  |  |  |  |  | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Clause** | **RECOMMENDATIONS** | **STATUS AS ON DATE** | |
|  |  | All generating utilities have assured to facilitate the provision of real time gross generation of active and reactive power generation and other parameters as decided in the 84th OCC of NRPC so that the reactive power generation can be monitored by SLDC and NRLDC.  GCC advised SLDC to immediately initiate steps to provide the real time monitoring facility of reactive power generation of generating units within Delhi. | |
| 9.12 | Efforts should be made to design islanding scheme based on frequency sensing relays so that in case of imminent Grid failure, electrical island can be formed. These electrical islands not only help in maintaining essential services but would also help in faster restoration of Grid.  **Action : CEA, RPCs, CTU, STUs, SLDCs and generators Time Frame : six months** | Scheme has been finalized.  PGCIL is the implementing agency. Expected to be in place soon. |
| 9.13.1 | System Operation needs to be entrusted to independent system operator. In addition, SLDCs should be reinforced for ring fences for ensuring function autonomy.  **Action : Govt. of India, time frame : one year** | Though Delhi SLDC is operated by DTL it has full autonomy with regard to grid operation. Further it has separate ARR approved by DERC for financial autonomy. Further a committee constituted for creation for SLDC as a separate company has already given its report to State Government. Decision is likely in line with the decision of Govt. of India on Independent System Operator (ISO). |
| 9.13.2 | Training and certification of system operators need to be given focused attention. Sufficient financial incentives need to be given to certified system operators so that system operation gets recognized as specialized activity.  **Action : Govt. of India State Govt. Time frame : 3 months** | Discussed in the 1st meeting of the National Power Committee held on 15.04.2013. Maharashtra has already started an incentive scheme for System Operators in the State. Gujarat has also trained its system operators. States were requested to expedite training of system operators and it was recommended that only certified operators should man the Load Despatch Centers. |

|  |  |  |
| --- | --- | --- |
| **Clause** | **RECOMMENDATIONS** | **STATUS AS ON DATE** |
|  |  | As far as Delhi is concerned the officers of SLDC are being sent regularly for training to upgrade the knowledge. So far 19 Engineers have obtained basic certificate and one Engineer got the certification in specialist course in Regulatory affairs.  Incentive schemes are proposed for certified operators which are under the active consideration of the DTL management.  Distribution utilities also proposed to include their Load Despatch Engineers in the certification programs.  **GCC advised SLDC to take up the matter with NPTI/PSTI for including the load dispatch engineers of Distribution Licensees in the certification courses.** |
| 9.14 | Intrastate transmission system needs to be planned and strengthened in a better way to avoid problems of frequent congestion.  **Action : STU**  **Time Frame : 2 Years** | In the meeting chaired by Director (Operations) on 05.02.2013 the transmission system and distribution system constrains have been identified and remedial measures have been suggested to overcome the constraints on long term and short term basis. It is expected that the major constraints would be resolved with in two years. In this regard, another meeting held on 05.06.2013 in which status and projections were monitored and updated by concerned authorities. |
| 9.15.1 | Appropriate amendments should be carried out in Grid connectivity standards to restrain connectivity of a generating station or a transmission element without required communication and telemetry facilities | GCC advised all utilities that efforts should be made to ensure the data flow to the control centers w.r.t. new installations as per the relevant provisions of connectivity conditions of CEA and relevant provisions of IEGC.  GCC also decided not to issue energization certificate without data connectivity to SLDC / RLDC. |
| 9.15.2 | The communication network should be strengthened by putting fiber optic communication system. Further, the communication network should be maintained properly to ensure reliability of data at Load Despatch Centers. | PGCIL have informed that requirement of Fibre Optic link for effective communication is being worked out by them with STUs through different RPCs and its implementation is being done in a progressive manner. The work of laying Fibre Optic cables in all the regions is being awarded progressively from December 2012 and is likely to be completed by the year 2014.  DTL has also given the requisition to PGCIL for laying of 286 Kms of OPGW for strengthening of communication system across Delhi under the above contract. |

|  |  |  |  |
| --- | --- | --- | --- |
| **Clause** | | **RECOMMENDATIONS** | **STATUS AS ON DATE** |
| 9.15.3 | | RTUs and communication equipment should have uninterrupted power supply with proper battery backup so that in case of total power failure, supervisory control and data acquisition channels do not fail. | PGCIL has intimated that at all locations batteries have been replaced except 6 locations in NR to be done by DTL. It was informed that these batteries would be replaced by November 2013. |
| 9.18 | There is need to reinforce system study groups in power sector organizations to analyze the system behavior under different network status / tripping of lines /outage of generators. Where these do no exist, these should be created.  **Action by : CEA, STU, CTU**  **Time frame : one year** | | As far as Delhi is concerned it was informed by Planning Deptt. that they are under the process of reviving the system study group consisting members of all stake holders and 1st meeting is expected to be conducted in the 2nd week of September 2013. |
| 9.20 | For smooth operation of Grid system, it is absolutely important that all the power generating and distribution stations are connected on a very reliable telecom network.   1. A proper network may be built up preferably using MPLS (Multi Protocol Label Switching) which is simple, cost effective and reliable. In remote place where connectivity is a problem, the stations can use dedicated fiber cable from the nearest node. 2. Since POWER GRID has its own fiber optic cables, practically covering all major nodes and power stations, a proper communication / IT network may be built using dedicated fibres to avoid any cyber attack on the power system. | | CTU have informed that they already have a dedicated independent communication network in place. Further, they are in the process of developing a Grid Security Expert System (GSES) at an estimated cost of about Rs.1300 Crore which involves laying of optical fiber network costing about Rs.1100 Crore for reliable communication and control of under-frequency & df/dt relay based load shedding, etc. System will include substations of 132kV level and above. | |

**NEW ISSUES**

**3 OPERATIONAL ISSUES**

**3.1 POWER SUPPLY POSITION**

The power supply position for summer 2013 and the anticipated power supply position for winter 2014 has been presented by SLDC.

The salient features are as under :

**Summer 2013**

The power demand has not peaked up to the anticipated level due to harsh summer and good monsoon. The position of anticipated and actual demand during the period April-August 2013 are as under :

**Table-8**

All figures in MW

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **MONTH** | **1st Fortnight** | | | | | **2nd fortnight** | | | | |
| **APRIL 2013** | 00-03 | 03-09 | 09-12 | 12-18 | 18-24 | 00-03 | 03-09 | 09-12 | 12-18 | 18-24 |
| DEMAND ANTICIPATED | 3350 | 3100 | 3900 | 4200 | 3800 | 3200 | 3100 | 4000 | 4400 | 4200 |
| ACTUAL DEMAND MET | **2800** | **2905** | **3500** | **3600** | **3561** | **3400** | **3125** | **3900** | **4200** | **4000** |
| **MAY 2013** |  |  |  |  |  |  |  |  |  |  |
| DEMAND ANTICIPATED | 4200 | 3650 | 4500 | 5000 | 4600 | 4750 | 4450 | 5000 | 5500 | 5200 |
| ACTUAL DEMAND MET | **4200** | **3600** | **4156** | **4613** | **4526** | **4729** | **4268** | **4767** | **5350** | **5050** |
| **JUNE 2013** |  |  |  |  |  |  |  |  |  |  |
| DEMAND ANTICIPATED | 5000 | 4500 | 5000 | 5700 | 5200 | 5200 | 4750 | 5400 | 5900 | 5400 |
| ACTUAL DEMAND MET | **4915** | **4550** | **5181** | **5653** | **5212** | **4820** | **4393** | **4762** | **5375** | **4965** |
| **JULY 13** |  |  |  |  |  |  |  |  |  |  |
| DEMAND ANTICIPATED | **5200** | **4800** | **5600** | **6000** | **5500** | **5200** | **4800** | **5600** | **5750** | **5500** |
| ACTUAL DEMAND MET | **4800** | **4232** | **4821** | **5398** | **5227** | **4392** | **3926** | **4652** | **5069** | **4806** |
| **AUGUST 13** |  |  |  |  |  |  |  |  |  |  |
| DEMAND ANTICIPATED | **5000** | **4600** | **5600** | **5760** | **5500** | **4500** | **3900** | **4800** | **5200** | **4900** |
| ACTUAL DEMAND MET | **4570** | **4146** | **4651** | **4783** | **4883** | **4421** | **3897** | **4472** | **4988** | **4937** |
| Sept 2013 |  |  |  |  |  |  |  |  |  |  |
| DEMAND ANTICIPATED | **4600** | **4200** | **4600** | **5000** | **4900** | **4200** | **3800** | **4200** | **4500** | **4300** |
| ACTUAL DEMAND MET | **4383** | **3933** | **4561** | **4750** | **4788** | **4110** | **3769** | **4352** | **4451** | **4557** |

The energy consumption and load shedding is as under :

**Table-9**

All figures in MUs

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Month** | **Energy Consumption in Mus** | **Load shedding due to T&D Constraints** | | | | | |
| **DTL** | **BRPL** | **BYPL** | **TPDDL** | **NDMC** | **Total** |
| Apr-13 | 2075.841 | 0.451 | 0.184 | 0.326 | 0.066 | 0.000 | 1.027 |
| May-13 | 2674.535 | 3.907 | 1.673 | 0.680 | 0.341 | 0.000 | 6.601 |
| Jun-13 | 2762.186 | 4.210 | 5.340 | 0.873 | 0.667 | 0.008 | 11.098 |
| Jul-13 | 2874.022 | 4.404 | 1.735 | 0.376 | 0.492 | 0.000 | 7.007 |
| Aug-13 | 2655.918 | 1.982 | 1.114 | 0.115 | 0.102 | 0.003 | 3.316 |
| **Total** | **13042.502** | **14.954** | **10.046** | **2.370** | **1.668** | **0.011** | **29.049** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Months** | **Energy Consumption in Mus** | **Load shedding due to shortage of power** | | | | |
| **BRPL** | **BYPL** | **TPDDL** | **NDMC** | **Total** |
| Apr-13 | 2075.841 | 2.072 | 1.845 | 2.112 | 0.104 | 6.133 |
| May-13 | 2674.535 | 0.760 | 0.101 | 0.206 | 0.007 | 1.074 |
| Jun-13 | 2762.186 | 0.699 | 0.141 | 0.368 | 0.000 | 1.208 |
| Jul-13 | 2874.022 | 0.498 | 0.401 | 0.795 | 0.004 | 1.698 |
| Aug-13 | 2655.918 | 0.687 | 0.213 | 0.068 | 0.000 | 0.968 |
| **Total** | **13042.502** | **4.716** | **2.701** | **3.549** | **0.115** | **11.081** |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Month** | **Load shedding due to constraints in the system of other agencies** | | | | | **Total Load**  **shedding** | **Load shedding in percentage of consumption** |
| **BRPL** | **BYPL** | **TPDDL** | **NDMC** | **Total** |
| Apr-13 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 7.160 | 0.34 |
| May-13 | 0.204 | 0.364 | 0.007 | 0.000 | 0.575 | 8.250 | 0.31 |
| Jun-13 | 1.122 | 1.130 | 0.728 | 0.011 | 2.991 | 15.297 | 0.55 |
| Jul-13 | 0.036 | 0.984 | 0.210 | 0.000 | 1.230 | 9.935 | 0.35 |
| Aug-13 | 0.000 | 0.000 | 0.011 | 0.000 | 0.011 | 4.295 | 0.16 |
| **Total** | **1.362** | **2.478** | **0.956** | **0.011** | **4.807** | **44.937** | **0.34** |

**Table-10**

Energy consumption Vs Load shedding during previous year

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Month** | **Energy Consumption in Mus** | **Load shedding due to T&D Constraints** | | | | | |
| **DTL** | **BRPL** | **BYPL** | **TPDDL** | **NDMC** | **Total** |
| Apr-12 | 2053.099 | 1.911 | 0.152 | 0.194 | 0.818 | 0.000 | 3.075 |
| May-12 | 2659.082 | 3.950 | 1.775 | 0.497 | 1.135 | 0.000 | 7.357 |
| Jun-12 | 2945.912 | 2.077 | 4.642 | 0.880 | 1.198 | 0.000 | 8.797 |
| Jul-12 | 2888.449 | 2.425 | 2.946 | 1.332 | 0.976 | 0.003 | 7.682 |
| Aug-12 | 2540.839 | 0.696 | 0.803 | 0.965 | 0.237 | 0.000 | 2.701 |
| **Total** | 13087.381 | 11.059 | 10.318 | 3.868 | 4.364 | 0.003 | 29.612 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Months** | **Energy Consumption in Mus** | **Load shedding due to shortage of power** | | | | |
| **BRPL** | **BYPL** | **TPDDL** | **NDMC** | **Total** |
| Apr-12 | 2053.099 | 0.102 | 0.027 | 0.000 | 0.009 | 0.138 |
| May-12 | 2659.082 | 1.075 | 0.838 | 1.648 | 0.000 | 3.561 |
| Jun-12 | 2945.912 | 3.194 | 0.173 | 2.162 | 0.000 | 5.529 |
| Jul-12 | 2888.449 | 2.925 | 1.346 | 6.379 | 0.017 | 10.667 |
| Aug-12 | 2540.839 | 0.407 | 0.392 | 0.641 | 0.000 | 1.440 |
| **Total** | 13087.381 | 7.703 | 2.776 | 10.830 | 0.026 | 21.335 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Month** | **Load shedding due to constraints in the system of other agencies** | | | | | **Total Load**  **shedding** | **Load shedding in percentage of consumption** |
| **BRPL** | **BYPL** | **TPDDL** | **NDMC** | **Total** |
| Apr-12 | 0.000 | 0.000 | 0.002 | 0.000 | 0.002 | 3.215 | 0.16 |
| May-12 | 0.197 | 0.143 | 0.028 | 0.000 | 0.368 | 11.286 | 0.42 |
| Jun-12 | 0.032 | 0.822 | 0.005 | 0.000 | 0.859 | 15.185 | 0.52 |
| Jul-12 | 18.075 | 8.491 | 9.263 | 1.034 | 36.863 | 55.212 | 1.91 |
| Aug-12 | 0.339 | 0.177 | 0.282 | 0.000 | 0.798 | 4.939 | 0.19 |
| **Total** | 18.643 | 9.633 | 9.580 | 1.034 | 38.890 | 89.837 | 0.69 |

Table-11

Comparison of peak demand met during April to August during the year 2012 & 2013

|  |  |  |
| --- | --- | --- |
| Month | Peak demand met during 2013 (MW) | Peak demand met during 2012 (MW) |
| April | 4190 | 3779 |
| May | 5315 | 5155 |
| June | 5653 | 5389 |
| July | 5384 | 5642 |
| August | 4988 | 4652 |
| Sept. | 4803 (upto 18.09.13) | 4621 |

The anticipated power demand – availability during winter 2013-14 is as under :

**Table-12**

All figures in MW

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **MONTH** | **1st Fortnight** | | | | | **2nd fortnight** | | | | |
| **OCT 2013** | 00-10 | 10-18 | 18-22 | 22-24 |  | 00-10 | 10-18 | 18-22 | 22-24 |  |
| DEMAND | 3800 | 3900 | 4000 | 3700 |  | 3050 | 3450 | 3650 | 3150 |  |
| AVAILABILITY | 3908 | 4052 | 4268 | 4115 |  | 3946 | 4090 | 4306 | 4153 |  |
| SURPLUS (+) / SHORTAGE (-) | **108** | **152** | **268** | **415** |  | **896** | **640** | **656** | **1003** |  |
| **NOV 2013** | 00-06 | 06-12 | 12-18 | 18-22 | 22-24 | 00-06 | 06-12 | 12-18 | 18-22 | 22-24 |
| DEMAND | 2050 | 3200 | 3350 | 3250 | 2750 | 1800 | 3000 | 3200 | 3250 | 2600 |
| AVAILABILITY | 3508 | 4008 | 3736 | 4146 | 3603 | 3458 | 3951 | 3686 | 4121 | 3563 |
| SURPLUS (+) / SHORTAGE (-) | **1458** | **808** | **386** | **896** | **853** | **1658** | **951** | **486** | **871** | **963** |
| **DEC 2013** | 00-06 | 06-12 | 12-18 | 18-22 | 22-24 | 00-06 | 06-12 | 12-18 | 18-22 | 22-24 |
| DEMAND | 2100 | 3200 | 3300 | 3200 | 2600 | 2000 | 4000 | 3550 | 3600 | 3300 |
| AVAILABILITY | 3599 | 4332 | 4044 | 4314 | 3689 | 3599 | 4332 | 4044 | 4314 | 3689 |
| SURPLUS (+) / SHORTAGE (-) | **1499** | **1132** | **744** | **1114** | **1089** | **1599** | **332** | **494** | **714** | **389** |
| **JANUARY 2014** | 00-06 | 06-12 | 12-18 | 18-22 | 22-24 | 00-06 | 06-12 | 12-18 | 18-22 | 22-24 |
| DEMAND | 2200 | 4500 | 4000 | 4000 | 3000 | 2100 | 4000 | 3700 | 3600 | 3000 |
| AVAILABILITY | 3804 | 4347 | 4079 | 4319 | 3844 | 3804 | 4347 | 4079 | 4319 | 3844 |
| SURPLUS (+) / SHORTAGE (-) | **1604** | **-154** | **79** | **319** | **844** | **1704** | **347** | **379** | **719** | **844** |
| **FEB. 2014** | 00-06 | 06-12 | 12-18 | 18-22 | 22-24 | 00-06 | 06-12 | 12-18 | 18-22 | 22-24 |
| DEMAND | 2000 | 3750 | 3500 | 3400 | 2700 | 1800 | 3400 | 3100 | 3150 | 2500 |
| AVAILABILITY | 3546 | 4000 | 3765 | 3990 | 3546 | 3421 | 3990 | 3745 | 3865 | 3421 |
| SURPLUS (+) / SHORTAGE (-) | **1546** | **250** | **265** | **590** | **846** | **1621** | **590** | **645** | **715** | **921** |
| **MARCH 2014** | 00-10 | 10-18 | 18-22 | 22-24 |  | 00-10 | 10-18 | 18-22 | 22-24 |  |
| DEMAND | 3300 | 3300 | 3250 | 2600 |  | 3200 | 3300 | 3400 | 3000 |  |
| AVAILABILITY | 3799 | 3921 | 4074 | 3921 |  | 3660 | 3782 | 3935 | 3782 |  |
| SURPLUS (+) / SHORTAGE (-) | **499** | **621** | **824** | **1321** |  | **460** | **482** | **535** | **782** |  |

Assumptions made in computing the availability for the period are as under :-

|  |  |
| --- | --- |
| A | Availability from Un-allocated quota of Central Sector has been considered as NIL |
| B | Availability from DVC has been considered as 375 MW |
| C | Availability from Hydro stations has been considered as 0% during Night hours (00.00hrs. to 06.00hrs), 75% during Morning and Evening Peak Hours and 30% during rest of the period for November to February. |
| D | Availability from Hydro stations has been considered as 30% during Morning Hours (00.00hrs. to 10.00hrs), 50% during Day time (10.00hrs. -18.00hrs), 75% during Evening Peak Hours (18.00-22.00hrs) and 50% during rest of the period (22.00hrs.-24.00hrs) for Oct. & March |
| E | Unit-1 (95MW) at BTPS is planned for boiler over-hauling during 01.10.2013 to 20.10.2013, Unit-4 (210MW) during 15.02.2014 to 26.03.2014 for Capital Over-hauling and R&M Work, Unit-5 (210MW) during 25.10.2013 to 03.12.2013 for Capital Overhauling and R & M Work. |
| F | Dadri (Th)-II Unit No. 2 (490MW capacity) is planned for maintenance during 21.03.2014 to 14.04.2014 for Boiler Over-hauling. |
| G | Dadri (Th)-I Unit No. 3 (210MW capacity) is planned for maintenance during 15.09.2013 to 10.10.2013 for Boiler Over-hauling. |
| H | Pragati Unit-I (104MW) is planned for maintenance during 01.02.14 to 28.02.14, Unit-II (104MW) during 01.03.2014 to 10.03.2014 for AFR and Major Inspection and STG (122MW) during 01.02.2014 to 15.02.2013 for bearing inspection. |
| I | Allocation of Aravali Jhajjar has been considered as NIL though upto 376MW capacity is available upto 30.09.2013 and 462MW from 01.10.2013 as per present allocation. |

The distribution companies have been advised to dispose off the surplus power in a coordinated manner through DPPG particularly in view of the stringent provisions envisaged in the proposed Deviation Settlement Mechanism Regulations 2013 contemplated by CERC wherein the overdrawal below frequency 49.95Hz is proposed as the penalty rate of 1111.40Ps/unit and under drawal above 150MW is proposed to be paid at nil rate.

**3.2 SUGGESTIONS TO OVERCOME THE TRANSMISSION CONSTRAINTS.**

The transmission and distribution constraints are monitored on regular basis in various meetings held in SLDC Chaired by Director (Operations), DTL. The details are as under :-

**Transmission Constraints and suggestions to remove the same**

**Table-13**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Details of transmission constraints** | **Suggestions drawn out as per discussions held on 05.02.13 and 8th GCC meeting held on 08.03.13** | **Target fixed** | **Discussion and decision in the meeting (present status)** |
| **To meet Summer 2013 Demand** | | | | |
| 1 | Outage of 220/66kV 100MVA Tx-II at Okhla since 14.28hrs. on 16.10.12 due to damage of the Tx. | The Tx should be revived before onset of summer | 30.04.2013 | Tx. Commissioned on 10.05.2013 at 12.32hrs. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Details of transmission constraints** | **Suggestions drawn out as per discussions held on 05.02.13 and 8th GCC meeting held on 08.03.13** | **Target fixed** | **Discussion and decision in the meeting (present status)** |
| **To meet Summer 2013 Demand** | | | | |
| 2 | Augmentation of 220/33kV 50MVA Tx to 220/33kV 100MVA Tx at Okhla - out since 19.36hrs. on 05.06.2010 | The Tx should be augmented before onset of summer | 31.05.2013 | Representative of Project Department of DTL informed that the civil foundation of transformer needs to be modified. The Tx for which foundation was designed for CGL make Tx has been diverted to RPH to replace the damaged 100MVA Tx. The new Tx of CGL make received in the month of June 2013 at Okhla. However, design of Tx is different from earlier CGL make Tx. The foundation for the new transformer is required to be modified. After the completion of civil works, one month time is needed for commissioning of transformer. The transformer is expected to be commissioned by the end of October 2013. |
| 3 | Outage of 220/33kV 100MVA Tx-III at IP 220kV since 06.25hrs on 24.07.12 (Tx damaged) | The Tx should be revived before onset of summer | 30.04.2013 | Representative of O&M Department of DTL informed that the commissioning is delayed in execution of work by the contractor. Finally, the transformer got energized and load taken on 06.09.13 at 19.10hrs. |
| 4 | Outage of 220/33kV 100MVA Tx-II at Electric Lane – out since 20.09.2012 | Even though the present load is only 50MW. To have redundancy, the Tx. should be energized during the summer season | 31.07.2013 | The transformer was expected to reach at site on 08.08.2013 and expected to be commissioned by 10.09.2013.  In the meanwhile, the Diaphram of OLTC of the running transformer damaged. For early revival of the running transformer, the diaphrame of the transformer no.2 was used. The Transformer no.2 is now expected by 31.10.2013 |
| 5 | 220kV Naraina – Ridge Valley Ckt.- out since 15.45hrs. on 17.09.2012 in the digging process of DMRC | To be energized before summer | 31.03.2013 | Cable energized on 12.04.2013 at 17.11hrs. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Details of transmission constraints** | **Suggestions drawn out as per discussions held on 05.02.13 and 8th GCC meeting held on 08.03.13** | **Target fixed** | **Discussion and decision in the meeting (present status)** |
| 6 | Delay in commissioning of 220kV AIIMs – Ridge Valley D/C | For ensuring maximum evacuation from Maharani Bagh S/Stn and to give relief to 400/220kV ICTs at Bamnauli, the link should be established to meet the summer load demand. | 31.05.2013 | One of the cables (Ckt-II) commissioned on 15.04.13 at 18.38hrs. The other circuit’s cable is being rerouted duee to the upcoming DMRC Station at Bhikaji Cama Place. |
| 7 | Revival of 220kV Maha Rani Bagh – AIIMS D/C which is out since 31.05.13 due to drilling process by Delhi Jal Board | Procurement process of 400 meter 1200MM Sq cable has been initiated for the supply from sole supplier i.e. M/s L S Cables. The cables are expected to be revived by end of November 2013. | | |
| 8 | To ensure maximum evacuation from Mundka 400kV S/Stn. | 220kV Najafgarh – Kanjhawala Ckt. to be LILO at Mundka | Tower cast completion by 30.06.2013 and 15 days shut-down for LILO after that | It is explained that 5.5 Kms of the circuit are converted into under ground cable in the Loop in portion and 5.5 Kms for Loop out portion. Towers are required to be erected in 35 locations. The route approval was received from DDA in January 2010. For erection of towers, interruptions occurred due to agitation by farmers. The foundation casting is done under police protection. Towers are also erected in 19 locations. The clearance for erection for 5 nos. of tower is yet to be obtained from DDA. Court cases are also hampering the work. As per the present conditions, the work might be completed by 31st Dec. 2013. |
| 9 | Stability of supply of West Delhi / North Delhi areas | LILO of 220kV Bawana – Najafgarh Ckt. at Kanjhawala | Route length of the line for Loop In is 3.2Kms for and for Loop Out, length is 3.3Kms. Towers and foundation casting have been erected at 30 locations. Stringing work has been completed for loop out portion. Due to non availability of stringing material, the work is held up and tower foundation at three locations is also held up. The work is expected to be completed by 31.12.2013. | |
| 10 | The transmission constraints in North Delhi areas | Commissioning of 220kV Wazirpur S/Stn. | 31.05.13 | It was explained that due to reasons beyond the control of DTL, the sub-station could not be commissioned before 31.10.2013. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Details of transmission constraints** | **Suggestions drawn out as per discussions held on 05.02.13 and 8th GCC meeting held on 08.03.13** | **Target fixed** | **Discussion and decision in the meeting (present status)** |
| 11 | The transmission constraints in West and North Delhi areas | Commissioning of 220kV Peera Garhi S/tn. | Though it was expected to be commissioned by 30.06.13, due to delay in getting RBI approval for opening Project Account for Rupees payment to the successful Chinese Bidder, the project is expected to be commissioned only by 31.12.013 | The Project Department informed that the high density ethylene pipe (HDD) has been laid. More than 60% cable laying work has been completed. The project is expected to be completed by 31.10.13. |
| 12 | The over loading of Mandola ICTs and 220kV Wazirabad – Geeta Colony – Patparganj – IP D/C line. | Commissioning of 220kV Maharani Bagh – Gazipur D/C line | UP Irrigation Deptt has not given the clearance sofar to erect five towers on the route in their territory. In the 84th OCC meeting of NRPC held on 19.02.13, UPPCL requested 100MW power from Gazipur during the shut-down period of one of the 315MVA ICTs at Greater Noida S/Stn. DTL agreed to provide the power to Noida after the completion of Gazipur – Maharani Bagh D/C line. The 87th meeting held 17.05.2013, the matter was again raised by DTL’s representatives in the meeting wherein UPPCL authorities assured their help in getting the clearance of erecting towers provided DTL giving 150MW power to UP. | Route length is 9Kms and number of location is 42. Foundation cast for 34 numbers of towers has been done and at 32 locations, towers have also been erected. NOC for 5 numbers of towers has not been given by the UP Irrigation Department. The matter is being pursued at Govt. and DTL level. It is hopeful that the permission would be granted by UP Irrigation Department. The work is expected to be completed by 31.12.2013.  Head (O&M), BYPL intimated that all out efforts should be made to establish the link. He mentioned that the East Delhi and Central Delhi areas get affected due to any disturbance occurs at 220kV Wazirabad and beyond transmission system on 03.08.2013 at about 11.00hrs. He mentioned the instance of power interruption lasting about 3 hours on due to fault at Wazirabad 220kV Sub-station. He wanted to know reasons for abnormal delay in restoration of the system. G.M (O&M)-I, DTL explained the details of the incident.  . |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Details of transmission constraints** | **Suggestions drawn out as per discussions held on 05.02.13 and 8th GCC meeting held on 08.03.13** | **Target fixed** | **Discussion and decision in the meeting (present status)** |
|  |  |  |  | While normalizing the shut-down of 220kV Mandola – Wazirabad Ckt-II and 220kV Bus-II which was taken to attend hot spot at Wazirabad. LBB Protection operated and all I/C and outgoing feeders tripped. The Central Delhi areas normalized in 15-20 minutes through 220kV Maharani Bagh – Pragati – IP – RPH link. However Patparganj, Geeta Colony and Wazirabad areas could be normalized only by 13.41hrs.  It was further explained that when the load was transferred from bus-I to bus-II in the normalization process, the 220kV bus coupler was put ON and the DC supply of the bus coupler was put OFF to avoid tripping of bus coupler due to imbalance due to change over process.  The bus coupler sensed the imbalance but did not trip as this DC supply was switched off. Hence, the LBB relay of bus coupler operated causing all elements connected to bus-I & II tripped.  It was found that the DC control of circuit breaker of the bus coupler was switched off but the DC of the protection circuited was remained ON for the operation of O/C, E/F, LBB Protection etc. The staff of the sub-station could not identify the operation of LBB and feeders were tried to switch ON but tripped. Finally the problem could be identified and rectified and feeders normalized and hence the inordinate delay occurred. It was assured that such type of happening would not recur in future. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Details of transmission constraints** | **Suggestions drawn out as per discussions held on 05.02.13 and 8th GCC meeting held on 08.03.13** | **Target fixed** | **Discussion and decision in the meeting (present status)** |
|  |  |  |  | Head (O&M), BYPL informed that only possible way out to provide the stable supply to East and Central Delhi areas is the early commissioning of 400kV Harsh Vihar S/Stn with inter connection to Wazirabad sub-station and alternate path to Wazirabad – Kashmiri Gate – RPH.  He suggested that for getting permission for completion of 220kV Maharani Bagh – Gaizpur double circuit line from UP irrigation authorities, a group of higher level comprising representative of Govt. Of Delhi, DTL and Discoms may visit Lucknow to convince the concerned authorities for the importance of the link.  GCC agreed the suggestion of Head (O&M), BYPL and requested Director (Operation), DTL and Special Secretary (Power) to persue the matter with UPPCL irrigation department for permission of ROW for completing the crucial Maharani Bagh – Gazipur 220kV double circuit line at the earliest.  The need for earlier commissioning of 400kV Dadri – Harsh double circuit line was also stressed along with the stressing the need of completion of parallel path namely Harsh Vihar – Wazirabd – Kashmiri Gate – RPH for stability of supply East Delhi and Central Delhi areas |
| 11 | Over loading at Mandola and transmission line between Mandola and IP, the commissioning of the S/Stn to be expedited before summer 2013 | Commissioning of 400kV Harsh Vihar S/Stn. | Due to delay in commissioning of 400kV Dadri – Harsh Vihar D/C line by PGCIL, the target could not be fixed. | It was informed that the total length of the circuit is 56Kms. There are 161 nos of Towers and at 142 locations, foundation have been cast. At 128 locations, towers have been erected. Stringing work has been started on 29th July 2013 and about 2½ kilometre stringing work has been completed.  Right of Way permission awaited for 12 nos. of towers (approximately 3 km distance). The issue is being taken up at higher level for early permission of ROW. Work is expected to be completed by 31.12.2013. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Details of transmission constraints** | **Suggestions drawn out as per discussions held on 05.02.13 and 8th GCC meeting held on 08.03.13** | **Target fixed** | **Discussion and decision in the meeting (present status)** |
| 12 | Overloading of 220/66kV 100MVA Txs at Mehrauli during peak hours | 160MVA Tx available at site to be energized before summer 2013. | 31.03.2013. | The Tx has not yet been energized. G.M. Project-I informed that the material like availability of C&R panel LV side CT etc. have been arranged. Civil Department of DTL has obtained permission of tree cutting. Information has been received that the trees have been removed and work has been started by Project Department. Now, it is expected to commission the transformer by 30.09.2013 |
| 13 | Overloading of 220/66kV 100MVA Txs at Wazirabad | 160MVA Tx available at site to be energized before summer 2013. | 31.05.2013. | In tendering process, the parties quoted abnormally high prices than estimated which are under scrutiny and process. The tender has been dropped. Re-tendering has been done by CMM Deptt. of DTL |
| 14 | Stability of supply at Gazipur | 160MVA Tx available at Gazipur to be energized as quick as possible | 30.06.13 | In tendering process, the parties quoted abnormally high prices than estimated which are under scrutiny and process. The tender has been dropped. Re-tendering has been done by CMM Deptt. of DTL |
| 15 | Overloading of 220/66kV 100MVA Txs at Pappankalan-II | 160MVA Tx available at site to be energized before summer 2013. | 31.05.13. | Transformer has been erected and Protection Testing is under way. The Electrical Inspector clearance is awaited. The transformer is expected to be commissioned by 30.09.2013 |
| 16 | 220kV Maharani Bagh – Masjid Moth Ckt-I is out since 22.50hrs. on 26.04.13 due to excavation process of Delhi Metro | To meet the ongoing summer peak, the cable must be energized as quick as possible. | -- | Circuit has been energized on 06.06.2013 at 20.25hs. |

|  |  |
| --- | --- |
| **17** | **Revival of Long outage capacitors** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sl. No.** | **Name of S/stn** | **Capacity down in MVAR** | **Date of outage** | **Reason** | **Target** |
| 1 | 220kV Patparganj | 10 | 09.07.08 | Damage of Reactor and NCT | The orders of the capacitors cells have been placed on M/s Shreen Capacitor during end of July 2013. The delivery and commissioning is 6month. As such, the capacitors are expected by 31.12.2013 |
| 2 | 220kV Gazipur | 5.04 | 20.05.12 | Damage of cells |
| 3 | 220kV Mehrauli | 20 | 10.09.09 | Energized on 29.04.2013 at 10.45hrs. The capacitor was out due to sparing of bay to DMRC feeder. |
| 4 | 220kV Narela | 20 | 26.05.12 | Damage of cells |
| 5 | 220kV Shalimarbagh | 10 | 05.01.10 | Damage of cells |
| 6 | 220kV Pappankalan-I | 20 | 08.10.10 | Damage of cells |
| 7 | 220kV Naraina | 10 | 29.06.12 | Damage of cells & Reactor |
| 8 | 220kV IP | 20 | 04.03.13 | 10MVAR CB-II revived on 11.07.13 at 15.50hrs.  10MVAR CB-III revived on 15.06.13 at 12.45hrs. |
|  | **Total** | **115.04** |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sr. No.** | **Details of transmission constraints** | | **Suggestions drawn out** | **Target fixed** | **Present status and Target fixed** |
| **Summer 2014 and onwards** | | | | | |
| 1 | Overloading of 220kV Ckts. from Mandola to BTPS namely 220kV Mandola – Wazirabad (4 Ckts), 220kV Wazirabad – Geeta Colony (Two Ckts), 220kV Geeta Colony – Patparganj (2 Ckts), 220kV Patparganj – IP (2Ckts), 220kV IP – Pragati Ckt (2 Ckts), 220kV Pragati – Sarita Vihar (2 Ckts.) after removal of present LILO, 220kV Sarita Vihar Ckt (2 Ckts) | Capacity enhancement of transmission lines should be carried out in phased manner  **In 1st phase**  220kV Wazirabad – Geeta colony D/C line, 220kV Geeta colony – Patparganj D/C line  **Second Phase**  220kV Mandola–Wazirabad Ckt-I, II, III & IV  220kV Pragati – Sarita Vihar Ckt-I & II  220kV Sarita Vihar – BTPS Ckt-I & II  **Third phase**  Enhancement of the capacity of switchgears at Wazirabad, Geeta Colony, Patparganj, IP and Sarita Vihar S/Stns. | | Planning Deptt to prepare the scheme so that the augmentation can be done before summer 2014  To be augmented by summer 2015  Subsequently | It was decided to process the case for enhancement of transmission line capacity as under before summer 2014  220kV Wazirabad – Geeta Colony Ckt D/C 220kV Geeta Colony – Patparganj D/Cs and 220kV Bamnauli – Pappankalan-I Ckt-I & II to be enhanced.  By Summer 2015, 220kV Patparganj – IP, 220kV IP – IP Ext, 220kV IP Ext – Sarita Vihar and 220kV Sarita Vihar – BTPS lines to be upgraded. The upgradation of the bus bars and switch gears would be taken up subsequently.  Planning Department was accordingly advised by GCC. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Details of transmission constraints** | **Suggestions drawn out in the meeting 05.02.2013 and 8th GCC meeting held on 08.03.2013** | **Target fixed** | **Present status** |
| 2 | Overloading of Transformers at Pappankalan-I and 220kV Line between Bamnauli and Pappankalan-I | Two transformers to be augmented to 160MVA Txs along with 66kV bus bars at Pappankalan-I. Lines capacity of 220kV Bamnauli - Pappankalan-I should also be augmented to handle the enhanced transformation capacity. | Planning Department to prepare the scheme so that that the system to be in place before summer 2014 | The capacity of 220kV Bamnauli – Pappankalan-I ckt-I & II should be enhanced before summer 2014 to avoid the power crisis in the areas fed from 220kV Pappankalan-I. During this summer season, long power cuts were experienced due to the outage of any one of the 220kV Bamnauli – Pappankalan-I Ckts. The details of such break-downs are as under :   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Date | Ckt | Duration of break-down (hrs. | | Load shedding details | | From | To | | 09.04.13 | I | 08.40 | 09.34 | 200MW load shedding during 09.12hrs. to 09.34hrs | | II | 09.12 | 09.34 | | 18.05.13 | I | 16.44 | 18.15 | 100MW load shedding during the period 16.44hrs. to 18.15hrs. | | 01.07.13 | II | 18.20 | 18.43 |  | | 11.07.13 | I | 23.01 | 01.18  12.07 | 250MW load shedding during 23.01hrs. to 01.18hrs. and 50-150MW load shedding during 01.18hrs. to 04.00hrs. | | II | 23.01 | 09.57  Of  12.07. | | 29.07.13 | I | 00.56 | 01.18 | 250MW load shedding during 00.56hrs. to 01.18hrs. and 50-100MW load shedding during 01.18hrs. to 13.51hrs | | II | 00.56 | 13.51 |   To avoid such instances in future, the line capacity should be enhanced. The augmentation of transformers capacity of two 220/66kV 100MVA to two 220/66kV 160MVA transformers should also be contemplated before summer 2014. The augmentation of 66kV bus bars are also needed to be done before summer 2014. |
| 3 | Over-loading of 400/220kV 315MVA transformers at Mandola. | 31st Standing Committee Meeting of Power System Planning held on 02.01.2013 at CEA, has approved the augmentation of all four 315MVA Txs to 500MVA capacity. | To be implemented by PGCIL. It is understood that two Txs would be augmented before summer 2014 and others before summer 2015. | No change in status |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Details of transmission constraints** | **Suggestions drawn out in the meeting 05.02.2013 and 8th GCC meeting held on 08.03.2013** | **Target fixed** | **Present status** |
| 4 | Over-loading of 400/220kV 315MVA ICTs at Ballabhgarh | 31st Standing Committee meeting of Power System Planning held on 02.01.2013 at CEA has approved the augmentation of all four 315MVA Txs to 500MVA | To be implemented by PGCIL. It is understood that all Txs would be augmented before summer 2015. | No change in status |
| 5 | Alternate source to RPH | The establishment of link between 220kV Kashmiri Gate to RPH to be established so that reliable link between 220kV Harsh Vihar – Wazirabad – Kashmiri Gate – RPH could be established for ensuring reliability of power supply of Central and East Delhi areas. | Planning Department intimated that the scheme for GIS has already been prepared and is under finance scrutiny. At Kashmiri Gate, 3 nos. of new bays to be erected by ABB Engineering has already visited the site. | |
| 6 | Reliability of supply of East Delhi areas | DTL should plan and implement the sub-station being established in East Delhi for which land has recently been taken over by DTL as quick as possible and alternate link should be established namely 220kV Harsh Vihar – Wazirabad – Anand Vihar (New S/Stn) - Patparganj | Planning Department representative intimated that the scheme should be realigned with the recommendations of CEA who are about to submit the report of comprehensive transmission planning of Delhi upto 2021-22. Representative of Planning Department informed that the scheme for Anand vihar is under approval. | |
| 7 | Overloading of Najafgarh and Pappankalan-I Grids | To ensure maximum evacuation from Mundka and to reduce loading on Txs at 220kV Najafgarh, BRPL be allowed to connect the Paschim Vihar feeder from Nangloi to utilize maximum capacity of Nangloi cables emanating from Mundka. TPDDL is of the view that the T-off portion of Mangolpuri - Nangloi Ckt-I is required to be disconnected at Nangloi Grid so that TPDDL could directly feed Mangol Puri Grid from Mundka. The disconnection issue was to be resolved in the Planning Steering Committee meeting to be held on 11.03.2013 wherein it was decided to resolve issue mutually. | TPDDL & BRPL representative intimated that the mutual agreement has already been entered into the resolve the issue. It was further clarified that the proposal could be implemented once the reliability of supply to Nangloi and Nangloi Water Works from Mundka is achieved. To ensure the reliability of the supply from Mundka to Nangloi, the cross bonding of cables are being planned at joints which is expected to be completed within 4 months.  It was informed that about 84 joints each of 66kV Nangloi and Nangloi Water feeder cable emanating from 400kV Mundka Sub-station. The cost involved about Rs. 2 Crores. The process is already under way.  With regard to 66kV Mundka– Mangolpuri Ckt which is out since 05.06.13, it was informed that the cross bonding of cables are planned at joint to eliminate the problem of sheath voltage. They have approached DERC for budget approval as the cost involved is high. It is expected to be revived by end of December 2013. | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Details of transmission constraints** | **Suggestions drawn out in the meeting 05.02.2013 and 8th GCC meeting held on 08.03.13** | **Target fixed** | **Present status** |
| 8 | Overloading of 66/11kV at Najafgarh, Pappankalan-I, and Wazirabad and 33/11kV Txs at Shalimar Bagh 220kV Sub-Stations | Due to problem of getting space near 220kV S/Stns. Distribution Licensees requested DTL to enhance the capacities of the 66/11kV and 33/11kV transformers at critically loaded sub-stations namely Najafgarh, Pappankalan-I, Shalimar Bagh and Wazirabad before summer 2014. GCC approved the request and advised Planning Department of DTL to get the DERC approval for enhancement of transformation capacity of 66/11kV and 33/11kV so that the transformers are placed before summer 2014. | As already mentioned at point no.2.3, GCC requested Chairperson to take up the matter with DERC for expediting the approval of enhancement of transformation capacity based on the loading figures at the time of peak demand of Delhi i.e. on 06.06.2013 at 15:38hrs i.e. GCC felt that the transformation capacities of 66/11kV and 33/11kV level at Najafgarh, Pappankalan-I, Gopalpur, Subzi Mandi, Sarita Vihar and Naraina need to be enhanced subject to the technical feasibility. | |
| 9 | In adequate transmission capacity at Masjid Moth | Planning Deptt. to prepare scheme so that additional 220/33kV Tx is in place at Masjid Moth before summer 2014. | The plan has already been prepared and the 3rd transformer would be in place by summer 2014. | |
| 10 | Enhancement of transformation capacity from existing 2X100MVA (220/33kV) Txs. At Lodhi Road | At present both the transformers are running at full capacity and occasional load shedding also taking place due to over loading. | Due to space constraint the 3rd Tx is possible only after the conversion of existing conventional Grid S/Stn to GIS which is expected to be in place by Summer 2014 (June 2014 end). | |

**3.3 NON USAGE OF BAYS ALLOTTD TO VARIOUS UTILITIES FROM DTL SUB-STATIONS.**

The details of plans to utilize the unutilized bays of recently commissioned sub-stations are as under:-

**Table-14**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **S N.** | **Name of 400/220kV S.Stns.** | **Details of non utilization of bays** | | | | |
| **Voltage level** | **Name of bay** | **Name of the utility to whom the bay is allocated** | **Original allocation date** | **Present status** |
| 1 | 220kV Trauma Center | 33kV | 1. Sanjay Camp,  2. Kidwai Ngar-II,  3 Jor Bagh  4.IIT  5. Bhicaji cama  **Total = 5 Bays** | NDMC  BRPL  BRPL | 19.11.09  17.06.11 | 1. As per the information provided by NDMC, the nomenclature has been changed to Race Course. Work is held up due to monsoon. However, expected by Dec. 13.  2. Energized on 30.11.12 at 12.47Hrs.  3. ½ cable laid, expected by sept.13. However, Sub-station would be ready by Dec. 2013. Work is held up due to monsoon.  4. 40% Cabling work completed. Matter is subjudice due to ROW issue.  5. 90% Cabling work completed. Matter is subjudice due to ROW issue. |
| 2 | 220kV Electric Lane | 33kV | 1. Vidyut Bhawan  2 Connaught Place  3. Hanuman road  4. Mandi House  5 Janpath Lane  6 Church Road  7 Delhi High Court  **Total = 7 Bays** | NDMC | 19.11.09 | 1.50% cable laid. Work is held up due to permission of digging.  2. Energized on 24.05.13 at 19.30hrs.  3. The work for laying of cable has been awarded. The cable laying activities would be started after monsoon. Expected by December 2013.  4. Energized on 01.10.12 at 17.00Hrs.  5. Land allocation for Janpath Sub-station is still awaited. However, it has been proposed by NDMC to use this Bay for new proposed 33kV Sub-station at Parliament Annexure for which land has been allocated.  6. Bay allocated to DMRC by NDMC for their upcoming project in Phase-3  7. The land allocation fro the S/stn at Delhi High Court premises has not been obtained so far. However, NDMC is planning to terminate the cable at some other S/stn which is under planning stage. |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **S N.** | **Name of 400/220kV S.Stns.** | **Details of non utilization of bays** | | | | |
| **Voltage level** | **Name of bay** | **Name of the utility to whom the bay is allocated** | **Original allocation date** | **Present status** |
| 3 | 220kV DSIDC  Bawana | 66kV | 1 Bawana-I  2 Bawana-I  3 Bawana-7  4 Bawana-7  **Total = 4 Bays** | TPDDL | 19.11.09 | For 1&2 the cable work is under progress. Expected by Sept.13  For 3&4 it is a deposit work of DSIIDC. The scheme has been approved by DERC and expected by Feb. 2014. Further, DSIDC has yet to deposit the amount for which demand note has already been raised. One of the Bays allotted for Bawana-7 S/stn is now allotted to the upcoming MSW plant. This bay would be established by the time commissioning of Bawana-7 S/stn. |
| 4 | 220kV Rohini-II | 66kV | 1 RG-30-I  2 RG-30-II  3 RG-28-I  4 RG-28-II  **Total = 4 Bays** | TPDDL | 31.05.12 | Scheme has been submitted to DERC for approval. Both the circuits would be energized after the establishment of Rohini-30 Grid S/Stn.  RG-28 Ckt-I & II is already under charged position since 28.03.2013 |
| 5 | 400kV Mundka | 66kV | 1. 66kV Mundka ckt-I  2. 66kV Mundka ckt-II  3.66kV Bakarwala ckt-I  4.66kV Bakarwala ckt-II  5. 66kV Pashim Vihar | BRPL | 19.11.09 | 1 &2. Work for construction of 66kV Mundka S/Stn. Has been awarded in June 2013 and S/Stn. Is expected by March 2014. The total length of Cable is 400 mtrs.  3&4. The scheme for the establishment of the Bakkarwala S/Stn. was approved by DERC in 2007. However, the scheme was not implemented due to inadequate load requirement. Now, DERC has again been approched for approval as price has been increased significantly.  5. The cable length is more than 18 Kms. To avoid the sheath voltage inducement problem has been encounter on 66kV Nangloi, Nangloi Water Works and Mangolpuri Feeders, it was decided to take out the Paschim Vihar feeder from the upcoming 220kV Bodella S/Stn. The planning steering Committee for re-allocation of Paschim Vihar Bay allotted to BRPL from Mundka to upcoming Dichau Kalan S/Stn. |
| **TPDDL**  1.66kV Mangol Puri-II  2.66kV Kirari Sultan Puri Ckt.-I  3.66kV Kirari Sultan Puri Ckt.-II | TPDDL | 19.11.09 | 1.For Mangolpuri Ckt-II, though the scheme has been prepared but has not been submitted to DERC due to pending resolution of T-Off to Nangloi on Mangolpuri ckt.  For 2&3 the Sub-stn is envisaged in 2015-16 and by the time the Ckt would be readied. The matter has been taken up with Delhi Govt for allocation of land for establishment of 66kV Grid S/Stn. |

**3.4 ISSUE REFERRED FROM STEERING COMMITTEE OF PLANNING.**

**3.4.1 LILO of 66kV Park Street –Ridge Valley Ckts at DMRC and Bapu Dham S/Stns.**

In the Steering Committee meeting held on 08.05.2013, the matter was discussed. The proposal is the LILO of 66kV Park Street – Ridge Valley at DMRC S/Stn and the other circuit at Bapu Dham.

DMRC was of the opinion that the decision of allocation of two 66kV bays to DMRC from 220kV Ridge Valley S/Stn was taken in the meeting held in the office of Director (Opr.) on 22.08.12 and 14.09.12. DMRC has planned a system accordingly and tender is in advance stage and hence the revised proposal is not accepted to DMRC.

Since, the proposal could not be cleared in Planning Steering Committee due to lack of consensus among the parties involved i.e. BRPL, BYPL and NDMC, the matter was referred to GCC for resolution.

Planning Deptt. of DTL also informed that the bays could be allocated only to the licensees as per the transmission license conditions.

**Considering the revised proposal as more suitable to DMRC for the stability of power supply to DMRC being very important public transport system, GCC approved the revised proposal. DMRC was accordingly advised to take necessary after in this regard based on the above proposal. With regard to assign the responsibility of maintenance of cables, Director (Operations), DTL would decide separately in consultation with all stakeholders and Planning Department of DTL.**

**3.5 AUGMENTATION OF 66kV CIRCUITS EMENATING FROM GT STATION.**

The issue was discussed in Delhi Operation Coordination Committee held on 30.07.2013.

BYPL raised the issue of load constraints faced on 66 KV O/G feeders from GTPS. Due to long outage of 220KV BTPS - Gazipur line, it is required to take maximum load on 66 KV GTPS - Akshardham feeder (to be further distributed to MVR-1&2 areas). This arrangement can reduce the loading on 220 KV Patparganj Transformers thereby load-shedding in East Delhi area. However, due to under-sized conductor used at O/G bays at GTPS, loading above 300-350 Amps is not allowed, while the capacity of the Akshardham feeder is about 550 Amps. (630 sq.mm.cable).

GTPS informed that a complete shutdown of 66 KV half-bus is required to augment the conductor of O/G bays. During shutdown, both the stations auxiliary transformers will remain affected as these are installed on the same half-bus vicinity. This will require complete shutdown of the station as there will be no-supply to the station auxiliaries and it may take around 72 Hrs. to restart the station after the shut-down.

In order to avoid complete shut-down of the station, it was suggested to explore the possibility to arrange auxiliary supply through 11kV sources by BYPL so that the shut-down of the complete station can be obviated. BYPL agreed to provide 11kV supply for auxiliary needs on temporary basis.

SLDC suggested to do the augmentation work after second week of October 2013 during Saturday and Sunday.

**GCC advised IPGCL to plan the work during Saturday and Sunday after second week of October 2013 provided auxiliary needs are arranged through 11kV BYPL sources.**

**3.5** **CAPACITOR INSTALLATION PLAN**

The present capacitor position in Delhi is as under :-

**Table-15**

|  |  |  |  |
| --- | --- | --- | --- |
| **Utility** | **Installed capacity in MVAR (HT)** | **Installed in capacity in MVAR (LT)** | **Total** |
| BYPL | 863.8 | 102 | 965.8 |
| TPDDL | 657.4 | 119 | 776.4 |
| NDMC | 209.8 | 24 | 233.8 |
| DTL | 753.5 | 0 | 753.5 |
| BRPL | 1178.78 | 242 | 1420.78 |
| RPH | 20 | 0 | 20 |
| MES | 20.1 | 0 | 20.1 |
| Total | 3703.38 | 487 | 4190.38 |
| Requirement as per NRPC Study | 4594 as on 31.03.2013 |  |  |

The utilities have informed that they have planned the installation of additional capacitors are as under :-

**Table-16**

|  |  |  |  |
| --- | --- | --- | --- |
| Utility | Planning for installation of additional capacity in MVAR | Installed so far | Remarks |
| 2013-14 |
| TPDDL | 72.2 | 10.08 | 10.08MVAR installed at RG-28 S/Stn but not yet energized. |
| BRPL | 167.4 | 10.8 | Additional 256.4MVAr capacity is planned to be added at LT level in 2013-14. Further 10.8MVAR added at GGSH S/stn on 13.02.2013 |
| BYPL | 108 | 5.4 | Approval for 32.4MVAr has already been accorded by DERC. 5.4MVAR added at Jama Masjid S/stn on 12.06.12 |
| NDMC | 126 | 30.24 | 5.04MVAr capacitor is also planned for Ali Ganj, Jorbagh for which building is yet to be constructed. Further 30.24MVAR capacity added at Keventry Diary, Sanjay Camp and Raisina Rd S/stn. 10.08MVAR each during May 2013. |
| MES | -- | -- | The installed capacity 21.1MVAR is sufficient to meet the load of MES. However for voltage regulation they have planned additional capacity at LT level for 2013-14. |
| Total | **473.6** | **56.52** |  |

Discoms requested Planning Department of DTL to complete the study of capacitor requirement without which DERC will not allow for capitalization of any additional capacitors

**General Manager (Planning), DTL informed that all data requirement of CPRI to conduct the study has been fulfilled and the study is expected to be completed soon. It was also informed that the simulation for Islanding of Delhi has also been entrusted to CPRI for which also, study of reactive power requirement is essential.**

**3.6 WORK OF REPLACEMENT OF PORECELAIN INSULATORS WITH POLYMER AND REPLACEMENT OF CONDUCTORS OF 220KV NARELA–ROHTAK ROAD TRANSMISSION LINES OWNED BY BBMB.**

As discussed in the earlier GCC meetings, a meeting of representative of DTL and Discoms was held at BBMB, Chandigarh on 23.01.2013. In that meeting, it was decided to explore the possibility of providing additional feed to Rohtak Road preferably from 400kV Mundka S/Stn. BBMB authorities agreed to consider the proposal once it is received from DTL.

The issue of augmentation of conductors of 220kV Narela – Rohtak Road Ckt-I & II and thereby improving the stability of power supply of areas fed from Rohtak Road S/Stn has been in the list of agenda of Delhi OCC since long.

TPDDL representative was of the view that the process of getting approval from BBMB is considered too long as Delhi is not the participant states of BBMB. As such, there was a general consensus that DTL should draw out plan for creating a 220kV GIS S/Stn at Rohtak Road and should take proper infeed from a 400kV nearby S/Stn. preferably Mundka. If the space is constraint, TPDDL may provide the space in the existing 33kV Rohtak Road S/Stn for establishing a 220kV GIS S/Stn. TPDDL representative agreed the suggestion for providing the space for establishment of 220kV GIS.

DTL’s Planning Department was accordingly advised to draw out the schemes immediately so that the stability of power supply of the areas fed from Rohtak Road is ensured. The existing supply through 220kV Narela – Rohtak Road transmission system can be used as standby source to the proposed GIS.

**4 COMMERCIAL ISSUES.**

**4.1 INTRASTATE UI ACCOUNT**

SLDC informed that a substantial amount of UI is pending on NRLDC and BRPL due to which the entire UI Pool Accounts transactions get disturbed.

NRLDC representative intimated the latest UI pool account and informed that a substantial amount is due from UPPCL. Significant dues are also on behalf of J&K.

Other utilities are receivable from U pool account being operated by NRLDC. The details are as under (as on 31.07.2013):-

**Table-17**

Amount in Rs. Lacs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No.** | **Utility** | **Principal UI Charges**  **(+) Payable / (-) Receivable** | **Interest on UI Charges(+) Payable / (-) Receivable** | **Total (+) Payable / (-) Receivable** |
| 1 | Chandigarh | -525.16070 | 0.00000 | -525.16070 |
| 2 | Delhi | -34894.04160 | 0.00000 | -34894.04160 |
| 3 | Haryana | -6774.48832 | 0.00000 | -6774.48832 |
| 4 | Himachal Pradesh | -4204.26580 | 0.00000 | -4204.26580 |
| 5 | J&K | 3486.69184 | 4291.43381 | 7778.12565 |
| 6 | PTC Nepal | -365.80425 | 0.00000 | -365.80425 |
| 7 | Punjab | -805.67282 | 173.20059 | -632.47223 |
| 8 | Railways | -431.10072 | 0.00000 | -431.10072 |
| 9 | Rajasthan | -5972.99127 | 0.00000 | -5972.99127 |
| 10 | Uttar Pradesh | 257106.69180 | 11422.31328 | 268529.00508 |
| 11 | Uttrakhand | -70.62125 | 0.00000 | -70.62125 |
| 12 | ADHPL | -474.69578 | 0.00000 | -474.69578 |
| 13 | APCPL | -2141.15102 | 0.00000 | -2141.15102 |
| 14 | EPPL | -1053.48092 | 0.00000 | -1053.48092 |
| 15 | JKHCL | -710.22789 | 2.33361 | -707.89428 |
| 16 | LANCO | -424.54036 | 0.00000 | -424.54036 |
| 17 | NHPC | -8659.96675 | 0.00000 | -8659.96675 |
| 18 | NTPC | -5678.41734 | 0.00000 | -5678.41734 |
| 19 | SCL | -1109.73192 | 0.00000 | -1109.73192 |
| 20 | SJVN Ltd | -1853.28657 | 0.00000 | -1853.28657 |
| 21 | THDC India Ltd | -1547.51063 | 0.00000 | -1547.51063 |
| 22 | ER | -16691.05625 | 0.00000 | -16691.05625 |
| 23 | WR | -16161.87531 | 0.00000 | -16161.87531 |
| 24 | Pool Balance | -150326.55741 | -20582.86675 | -170909.42416 |

He further informed that as per the directions of the Central Commission, the regular payment position is being apprised the Commission. He also referred the CERC order dated 14.01.2013 in petition no. 239/SM/2012 wherein MD, UPPCL and Director (Finance), UPPCL had submitted the payment plan i.e. to pay Rs. 100 Crores per month starting from January 2013 and liquidate the same by April 2013 but the payment dues as on 31.07.2013 is Rs. 2685.29 Croress including interest. The dues against J&K are also Rs. 77.78 Crores. With regard to the J&K, the Central Commission has already seized of the situation through petition no. 136/SM/2013.

He also explained that whatever payment received in the pool was being disbursed as per the procedures adopted in this regard.

TPDDL representative intimated that they have already filed a petition before CERC to get the payment dues which is to the tune of about Rs.120 Crores. The huge outstanding dues have further tightened their already tight financial position as they have discharged all the liability for scheduled energy to power supply and transmission agencies. He also mentioned about the outstanding dues of BRPL which is also running about more than Rs. 100 Crores to the pool. He reminded that DERC in a petition no. 49/2007 in the matter of ‘ Non payment of UI dues by BSES Rajdhani Power’ has categorically directed that the current dues shall be paid on weekly basis as and when raised by SLDC to avoid accumulation of outstanding dues (refer order 10.10.2007 Clause no.13).

He further referred the order of DERC dated 22.08.2008 in the same petition wherein it was categorically directed ……………………..*It is further observed by the Commission that timely payment of UI charges is essential to keep the entire UI mechanism intact and fully operational. In future, due care must be taken to avoid accumulation of dues towards UI Charges*

He pointed out the non payment of UI amount by BRPL is the violation of the said order. They have further informed that they were not being paid whatever amount received in the UI pool account being operated by Delhi SLDC. He also requested for reconciliation of UI pool account upto 30.06.2013 which is mandatory requirement.

BRPL representatives could not give any firm commitment for clearing their dues.

SLDC representative intimated that non payment of UI amount by BRPL has already been brought in the knowledge of DERC vide SLDC’s letter’s dated 11.06.2012, 19.06.2012 and 12.12.2012. The copies of the communication have already been communicated to all Stakeholders also. The latest position would also be placed before the Commission soon. With regard to the available payment due to TPDDL from Intrastate UI pool account, the same would be released by the weekend. With regard to reconciliation of UI pool account, the Finance Wing of SLDC has already emailed the statements to all utilities giving 15 days time for comments.

He further requested all utilities to cooperate with SLDC and in case of any discrepancy found, the same can be addressed if the reconciliation is done in person with SLDC. It was also informed that after the reconciliation is done, the interest payment received in the pool from NRLDC would be released as per the procedures already adopted. The interest received from NRLDC pending for disbursal is as under :-

**Table-18**

|  |  |  |  |
| --- | --- | --- | --- |
| Sr. No. | Date of payment by NRLDC | Amount in Rs. Crores | Interest pertaining to |
| 1 | 25.04.2012 | 3.59 | 3rd Quarter of 2011-12 |
| 2 | 16.05.2012 | 7.52 | 4th Quarter of 2011-12 |
| 3 | 28.01.2013 | 40.23 | Upto 3rd Quarter upto 2012-13. |
|  | Total | 51.34 |  |

All utilities agreed the suggestion of SLDC for reconciliation of UI Pool Account.

**GCC advised BRPL to release the outstanding dues at the earliest for smooth operation of intrastate UI pool account. For getting the dues from Interstate UI pool account, all utilities were advised to take the legal recourse as done by TPDDL.**

BRPL representatives could not give any firm commitment for clearing their dues.

**4.2 LESS GENERATION OF BTPS AT THE TIME OF NEED WHEN FULL SCHEDULE IS GIVEN**

It has consistently been observed that BTPS generates less than the schedule when frequency remains less than the range the variable cost of BTPS. In an integrated large system, frequency remains normally within normal range but inter regional, inter state and intrastate tie lines are getting over loaded due to one reason or other oftenly. In such conditions, the costliest generation like BTPS is being scheduled to control such parameters. As per the decision taken in the Delhi Operation Coordination Committee meeting held on 30.07.2013, a detailed study has been carried out by SLDC with regard to the generation pattern for the month of April 2013 on day wise in 15 minutes time blocks wherein it was revealed that BTPS gained about Rs 1.23 Crores in UI by carrying out under generation. The details are as under:-

**Table-19**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Date** | **Under generation in Mus** | **Addit-ional UI Amount in Rs Lacs** | **UI amount in Rs Lacs** | **Total Amount in Rs Lacs** | **Avg rate of Under Generation in Ps/unit (Avg UI rate)** | **Variable Charge in Ps/unit billed by BTPS** | **Difference of UI & Variable in Ps/unit** | **Net Gain in Rs Lacs** | |
| 1-Apr-13 | -0.29 | 0.00 | 7.06 | 7.06 | 240.46 | 361.00 | 120.54 | 3.54 | |
| 2-Apr-13 | -0.46 | 0.03 | 6.21 | 6.24 | 134.64 | 361.00 | 226.36 | 10.49 | |
| 3-Apr-13 | -0.26 | 0.00 | 5.20 | 5.20 | 200.29 | 361.00 | 160.71 | 4.17 | |
| 4-Apr-13 | -0.02 | 0.00 | 0.21 | 0.21 | 124.95 | 361.00 | 236.05 | 0.40 | |
| 5-Apr-13 | -0.07 | 0.00 | 0.75 | 0.75 | 111.42 | 361.00 | 249.58 | 1.67 | |
| 6-Apr-13 | -0.05 | 0.00 | 0.89 | 0.89 | 167.18 | 361.00 | 193.82 | 1.03 | |
| 7-Apr-13 | -0.27 | 0.00 | 4.24 | 4.24 | 154.68 | 361.00 | 206.32 | 5.66 | |
| 8-Apr-13 | -0.19 | 0.00 | 3.60 | 3.60 | 191.06 | 361.00 | 169.94 | 3.21 | |
| 8-Apr-13 | -0.42 | 0.46 | 13.19 | 13.65 | 324.11 | 361.00 | 36.89 | 1.55 | |
| 9-Apr-13 | -0.45 | 0.44 | 15.73 | 16.17 | 360.64 | 361.00 | 0.36 | 0.02 | |
| 10-Apr-13 | -0.16 | 0.00 | 2.84 | 2.84 | 181.87 | 361.00 | 179.13 | 2.80 | |
| 11-Apr-13 | -0.22 | 0.00 | 4.56 | 4.56 | 203.39 | 361.00 | 157.61 | 3.53 | |
| 12-Apr-13 | -0.18 | 0.00 | 1.24 | 1.24 | 70.08 | 361.00 | 290.92 | 5.14 | |
| 13-Apr-13 | -0.18 | 0.00 | 2.50 | 2.50 | 137.09 | 361.00 | 223.91 | 4.09 | |
| 15-Apr-13 | -0.07 | 0.00 | 0.37 | 0.37 | 55.15 | 361.00 | 305.85 | 2.08 | |
| 16-Apr-13 | -0.23 | 0.00 | 1.63 | 1.63 | 72.35 | 361.00 | 288.65 | 6.50 | |
| 17-Apr-13 | -0.16 | 0.00 | 1.88 | 1.88 | 115.06 | 361.00 | 245.94 | 4.02 | |
| 18-Apr-13 | -0.14 | 0.00 | 2.04 | 2.04 | 147.88 | 361.00 | 213.12 | 2.94 | |
| 19-Apr-13 | -0.07 | 0.00 | 0.81 | 0.81 | 113.72 | 361.00 | 247.28 | 1.75 | |
| 20-Apr-13 | -0.25 | 0.00 | 2.42 | 2.42 | 95.82 | 361.00 | 265.18 | 6.69 | |
| 21-Apr-13 | -0.16 | 0.00 | 0.79 | 0.79 | 48.64 | 361.00 | 312.36 | 5.09 | |
| 22-Apr-13 | -0.13 | 0.00 | 1.78 | 1.78 | 134.41 | 361.00 | 226.59 | 2.99 | |
| 23-Apr-13 | -0.05 | 0.00 | 0.88 | 0.88 | 181.77 | 361.00 | 179.23 | 0.87 | |
| 24-Apr-13 | -0.04 | 0.00 | 0.79 | 0.79 | 183.63 | 361.00 | 177.37 | 0.76 | |
| 25-Apr-13 | -0.33 | 0.00 | 4.43 | 4.43 | 132.66 | 361.00 | 228.34 | 7.63 | |
| 26-Apr-13 | -0.38 | 0.00 | 4.73 | 4.73 | 126.01 | 361.00 | 234.99 | 8.82 | |
| 27-Apr-13 | -1.02 | 0.00 | 18.02 | 18.02 | 176.22 | 361.00 | 184.78 | 18.89 | |
| 28-Apr-13 | -0.16 | 0.00 | 1.49 | 1.49 | 95.94 | 361.00 | 265.06 | 4.13 | |
| 29-Apr-13 | -0.09 | 0.00 | 1.41 | 1.41 | 158.57 | 361.00 | 202.43 | 1.80 | |
| 30-Apr-13 | -0.05 | 0.00 | 0.80 | 0.80 | 163.30 | 361.00 | 197.70 | 0.97 | |
| Total | -6.56 | 0.93 | 112.50 | 113.42 | 173.03 | 361.00 | 187.97 | 123.2201 | |
| **Note: (-) sign in case of Energy shown Under Generation** | | | | | | | | |

Monthwise analysis was also done for the months of April 2013 to July 2013. The details are emerged out as under :-

**Table-20**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Month | Scheduled energy in MUs | Actual generation in MUs | Under Generation in MUs | Average UI rate in Ps/Unit | Average variable charges of BTPS in Ps/Unit | Net gain in Rs. Lacs by BTPS for under generation |
| April 2013 | 376.291 | 373.337 | 2.954 | 193.5 | 361 | 49.47 |
| May 2013 | 397.531 | 392.321 | 5.211 | 132 | 339 | 107.87 |
| June 213 | 365.813 | 361.491 | 4.322 | 115.5 | 328 | 91.84 |
| **Total** | **1139.635** | **1127.149** | **12.487** |  |  | **249.18** |

SLDC reminded that BTPS is a costliest source whose variable cost is 350Ps/Unit and Delhi has quite surplus through out the day and the average UI rate is much less than these rates i.e. 150-200Ps/Unit but the source is being scheduled to maintain the loading on inter regional, inter state and intrastate tie lines to normal limits. As such, generating stations should adhere to the generation schedules fixed by SLDC in view of the system stability. If such attitude continues, it tantamounts to the respective Grid Code violation (IEGC & DGC). The relevant portions of Indian Electricity Grid Code and Delhi Grid were also mentioned as under :-

IEGC

**6.4 Demarcation of responsibilities:**

25. RLDC shall periodically review the actual deviation from the dispatch and net drawal schedules being issued, to check whether any of the regional entities are indulging in unfair gaming or collusion. In case any such practice is detected, the matter shall be reported to the Member Secretary, RPC for further investigation/action.

Delhi Electricity Grid Code

*32.2 The SLDC shall periodically review the actual deviation from the dispatch and net drawal schedules being issued, to check whether any of the constituents are indulging in unfair gaming or collusion. In case any such practice is detected, the matter shall be investigated and reported to the Commission*

It was further informed that BTPS generation is scheduled to the full capacity under grave exigencies like containing load of 220kV BTPS – Ballabhgarh D/C line. 400/220kV 315MVA Txs at Bamnauli etc. Load sheding also occurs irrespective of frequency conditions.

BTPS representatives informed that the variation of generation was not intentional and hence it should not be treated in the category of ‘Gaming’. They informed that the machines are old and outlived their useful life as the units were commissioned in 1970s as under :

**Table-21**

|  |  |  |  |
| --- | --- | --- | --- |
| Name of the unit | Capacity in MW | Date of commissioning | Ages as on 30th June 2013 |
| 1 | 95 (Derated from 100MW) | 26.07.1973 | 40 years |
| 2 | 95 (Derated from 100MW) | 05.08.1974 | 39 years |
| 3 | 95 (Derated from 100MW) | 29.03.1975 | 38 years |
| 4 | 210 | 02.12.1978 | 34 years |
| 5 | 210 | 25.12.1981 | 31 years |

In views of the old age of machines, it would be very difficult to frequently change the scheduled generation and hence occasional variations occurred in actual generation.

The representatives of Discoms were of the view that since BTPS is being scheduled most of the time for system security. As such, when full schedule is given, it should be kept out of the ambit of ABT and must be treated as ‘Must Run’ station.

IPGCL & PPCL representatives further supported the views of Discoms and opined that the BTPS be kept out of the ambit of ABT as, if it is kept in the ambit of ABT it can vary generation as per frequency.

The views of IPGCL / PPCL representatives was negated by SLDC saying that if generation can be reduced depending upon frequency, the Discoms can also over draw from the Grid by backing down costly source of generation under high frequency conditions. But it is not allowed in the interest of Grid security and reminded that when the most part of the country was plunged into darkness owing to the Grid Disturbances occurred on 30/31.07.2012, the frequency was quite good. The heavy under drawal by other regional constituents except NR and heavy over drawal by NR constituents was one of the major reasons for the Grid collapse found by the Enquiry Committee constituted in this regard. As such, the utility should not vary drawal and generation depending upon frequency conditions unilaterally without considering the Grid parameters and if continues with such practice, that will lead into dire consequences like occurring of major Grid disturbance occurred on 30-31.07.2012.

BTPS representatives further assured that they would try to maintain scheduled generation to the extent possible and in case, it can not be possible due to unavoidable technical reasons, the declared capacities would be revised to the actual level.

**After detailed discussions, GCC decided to treat the actual generation as the scheduled generation if the station can not maintain the scheduled generation in case it is asked to increase generation and advised SLDC to draw out UI accounts accordingly in future.**

**4.3 OUTSTANDING DUES**

**NDMC’s agenda**

NDMC intimated that a sum of Rs. 72.40503 Lacs is pending as Reactive Energy Charges as on 30.06.2013 including interest. The details are as under :-

**Table-22**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sr. No** | **Invoice No** | **Date** | **Billing Period** | **Due Date** | **Balance in Rs.** |
| 6 | DTL/NDMC/RE/24 | 07.10.11 | 01.08.11 to 31.08.11 | 17.10.11 | 126683 |
| 7 | DTL/NDMC/RE/29 | 09.11.11 | 01.09.11 to 30.09.11 | 19.11.11 | 178815 |
| 8 | DTL/NDMC/RE/34 | 14.12.11 | 01.10.11 to 31.10.11 | 24.12.11 | 401510 |
| 9 | DTL/NDMC/RE/39 | 27.12.11 | 01.11.11 to 30.11.11 | 06.01.12 | 643482 |
| 10 | DTL/NDMC/RE/44 | 21.02.12 | 01.12.11 to 31.12.11 | 01.03.12 | 59210 |
| 11 | DTL/NDMC/RE/49 | 19.03.12 | 01.01.12 to 31.01.12 | 29.03.12 | 421386 |
| 12 | DTL/NDMC/RE/54 | 10.04.12 | 01.02.12 to 29.02.12 | 20.04.12 | 832692 |
| 13 | DTL/NDMC/RE/59 | 25.04.12 | 01.03.12 to 31.03.12 | 05.05.12 | 832115 |
| 14 | DTL/NDMC/12-13/04 | 30.05.12 | 01.04.12 to 30.04.12 | 09.06.12 | 623414 |
| 15 | DTL/NDMC/12-13/29 | 05.11.12 | 01.09.12 to 30.09.12 | 15.11.12 | 436315 |
| 16 | DTL/NDMC/12-13/34 | 19.12.12 | 01.10.12 to 31.10.12 | 29.12.12 | 480744 |
| 17 | DTL/NDMC/12-13/39 | 08.01.13 | 01.11.12 to 30.11.12 | 18.01.13 | 628243 |
| 18 | DTL/NDMC/12-13/44 | 04.02.13 | 01.12.12 to 31.12.12 | 14.02.13 | 191488 |
| 19 | DTL/NDMC/12-13/49 | 13.03.13 | 01.01.13 to 31.01.13 | 23.03.13 | 277376 |
| 20 | DTL/NDMC/12-13/54 | 09.04.13 | 01.02.13 to 28.02.13 | 19.04.13 | 272514 |
| 21 | DTL/NDMC/12-13/59 | 25.04.13 | 01.03.13 to 31.03.13 | 04.05.13 | 337612 |
| 22 | DTL/NDMC/13-14/04 | 04.06.13 | 01.04.13 to 30.04.13 | 14.06.13 | 496904 |
|  |  |  | Total in Rs. |  | 7240503 |

GM (Commercial), DTL intimated that the reconciliation would be done with NDMC soon.

**4.4 DISCOM WISE SCHEDULING OF VARIOUS SOURCES**

**(BRPL agenda)**

BRPL informed that at present, SLDC Delhi aggregates requirement for all Discom then carry out common schedule of power plants. Since availability of power is different for all Discom and then shortage/surplus are also different. It is causing uncertainty in prudent management of resources by them.

They further informed that distribution licensees of Delhi are representing on the issue of Discomwise Scheduling of Central Sector Stations for quite some time. TPDDL has taken up the issue at NRPC level at 77th OCC meeting on 20.07.12 where in it was decided to take up the matter in Commercial Sub-Committee meeting of NRPC.

Then the MOM were amended in 79th meeting of NRPC OCC held on 14.09.12 wherein it was mentioned that NRLDC and Delhi SLDC along with Delhi Discoms were advised to arrange a meeting at the earliest to find out an amicable solution for Discomwise Scheduling of Central Sector Sttions and other ISGS and it was decided that for the time being, till the issue is resolved, detailed sheet containing Discom wise allocation/ schedule energy in the ratio given by State Govt./ SERC would be continued in the monthly REA issued by NRPC. Further the matter was also put up in 7th GCC meeting of Delhi held on 31.10.12

In previous MOM dated 07.12.12 held at SLDC on the issue under the Chairmanship of Director (Operations), DTL wherein Director (Operations) DTL requested NRLDC to provide logistics support for Discom wise requirement based on Web Based real time scheduling to SLDC so that trial run of Discom wise scheduling can be started from 01.01.13 and the regular scheduling can be started from 01.04.13. In case any commercial arrangement is required he assured that the same can also be done for success of the system. The distribution licences and SLDC Delhi also supported the request of the Chair to NRLDC. NRLDC representatives agreed to take up the matter with their management in this regard and revert back.

However, the Discomwise Scheduling has not been done sofar.

BRPL informed that due to common scheduling, the Discom does not have any control on power being scheduled and billed to them although it has major financial impact on functioning of the Discom.

BRPL further informed that as the power plants are shared and in case any Discom is in surplus and other Discom is having shortage then SLDC finds it difficult to back down the power plant. UI rates are negligible and exchange rates are also much lower than variable rates of costly plants.

Further load profile and power arrangements of each Discoms are different which cannot be efficiently managed by common scheduling.

BRPL representative requested for Discom-wise Scheduling of all sources as per the requirement of individual discoms.

SLDC representative informed that the discom wise scheduling has already been implemented for Delhi Gencos. As far as, ISGSs are concerned, it has already been implemented in case of Aravali Jhajjar, but informed that the discomwise scheduling will not alter much in case of costly sources as the generation backing down is contemplated in merit order when frequency of the system is much more and UI charges are less compared to the variable charges subject to Grid security.

However, SLDC has already initiated steps for discom wise scheduling for Central Sector Stations and would take further 8 months for complete implementation. It was again stressed by SLDC that since NRLDC does the scheduling based on Delhi as a one control area and even if there is no requirement, power is being scheduled from various sources due to bare minimum technical level etc. As such, even if, any discom does not require any power from any source, power is being scheduled by NRLDC which is required to be apportioned among the discoms based on their allocation fixed by DERC.

He cited the example of scheduling of Aravali Jhajjar. The details of scheduled by SLDC as per the requirement of Discoms and Scheduled by NRLDC for the month of April 2013 to August 2013 are as under :-

**Table-23**

|  |  |  |  |
| --- | --- | --- | --- |
| Month | Energy scheduled by Delhi SLDC in MUs | Energy booked by NRLDC in MUs | Remarks |
| April 2013 | 10.075165 | 11.920030 | Energy requisitioned only by BRPL |
| May 2013 | 9.308977 | 12.333038 |
| June 2013 | 7.504405 | 9.942243 |
| July 2013 | 16.160985 | 21.410950 |
| August 2013 | 16.868762 | 37.592175 |
| Total | 59.918294 | 93.198436 |  |

In such cases, the Discomwise Scheduling by Delhi SLDC for the stations being scheduled by NRLDC has no relevance unless otherwise discomwise scheduling is done by NRLDC. SLDC further stressed that no fault can be found sofar in scheduling of ISGS in the present scheduling philosophy as Delhi is considered as one utility. However, SLDC was firm that since there is a multi buyer system in the state, the RLDC who schedules power from ISGSs should scheduled power according to the requirement of each buyers based on PPAs entered into by them.

TPDDL representative expressed the same views of the SLDC.

NRLDC representative informed that as per the provisions of Indian Electricity Grid Code, they would have to schedule to Delhi as a whole as one control area.

BRPL representative further expressed difficulties in getting the costly generation backing down at ER Stations at NR States are given least preference by ERLDC in respect of backing down.

NRLDC representative advised Delhi Discoms to place the requisition well in time in day ahead scheduling so that backing down of ER generation can also be made effective in respect of NR constituents. He explained that due to lesser demand in ER

States, most of the time, the requisition from ER ISGSs namely Farakka, Kahalgaon-I & II, are very less and hence to maintain technical level generation, full schedule is given to NR constituents. Further for ER Stations, the scheduling responsibility lies with the ERLDC. With regard to the backing down of DVC Stations, NRLDC representative advised Delhi Discoms to mutually agree the schedule with DVC as RLDCs have no role in respect of bilateral arrangements.

**Finally, it was decided to carry out the backing down of Eastern Region ISGS during off peak time i.e. 00.00hrs. to 09.00hrs. on regular basis. For DVC, SLDC will coordinate with Discoms and DVC so that maximum backing down can be carried out in best manner.**

**5 RESTRUCTURING OF DELHI OCC**

**AGENDA BY DTL**

As per the decision taken in the 2nd Grid Coordination Committee meeting held on 25.11.2008, the present OCC was formed as a sub-committee of GCC. After the passage of time and restructuring of technical wing of DTL, the following change was suggested as the representation of DTL in the committee :

**Table-24**

|  |  |  |
| --- | --- | --- |
| Sr. No. | Proposed nomination | Remarks |
| 1 | G.M. (O&M)-I, DTL | Chairperson of the sub-committee |
| 2 | G.M. (O&M)-II, DTL | Member. In case, G.M. (O&M)-II is senior, he would chair the meeting. |
| 3 | DGM(400kV)-O&M, DTL | Member |
| 4 | DGM(Metering/Prot),DTL | Member |
| 5 | DGM(220kV)O&M-I, DTL | Member |
| 6 | DGM(220kV)O&M-II, DTL | Member |
| 7 | DGM(220kV)O&M-III, DTL | Member |
| 8 | Dy.G.M.(OS&Lines), DTL | Convener |
| 9 | DGM(Planning), DTL | Member |

GCC accepted the proposal.

**6 HOSTING OF NEXT MEETING OF GCC**

Convener GCC requested NDMC to host the 10th meeting of GCC expected to be held during December 2013. NDMC representative agreed to consider the request.

**7** **CONCLUSION**

Convener GCC thanked all participants for fruitful discussions and decisions arrived in consensus manner. He further thanked TPDDL to host the meeting.

**Annexure**

**The list of the officers attended 9th Grid Coordination Committee meeting held on 06.08.2013 at IHB, Lodhi Road, New Delhi**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S. N.** | **Name** | **Designation** | **Utility** | **Mobile no.** |
| **1** | Sh. A.K. Haldar | Dir (O), Chairperson, GCC | DTL | 9650992550 |
| **2** | Sh. V. Venugopal | DGM, SO – Convener GCC | SLDC | 9871093902 |
| **3** | Ms Kiran Saini | G.M. (C&RA) | DTL | 9999533639 |
| **4** | Sh. Mumesh Kr. Sharma | G.M. (O&M)-I | DTL | 9999533637 |
| **5** | Sh. Prem Prakash | GM(O&M)-I | DTL | 9999533630 |
| **6** | Sh. S.K. Mishra | G.M. (Civil) | DTL | 9999533510 |
| **7** | Sh. Roop Kumar | G.M. (Planning) | DTL | 9999533629 |
| **8** | Sh. V.K. Gupta | G.M. (Project)-I | DTL | 9999533625 |
| **9** | Sh. H. Vyas | G.M. (Project)-I | DTL | 9999533631 |
| **10** | Sh. Loveleen Singh | DGM (OS) | DTL | 9999533659 |
| **11** | Sh. S.K. Sharma | DGM (Prot/Metering) | DTL | 9999533630 |
| **12** | Sh. Ashok Kumar | DGM(T) | DTL | 9999533661 |
| **13** | Sh. M.A. Khan | DGM (Project) | DTL | 9999533670 |
| **14** | Sh.A.C. Agrawal | DGM (Plg)-I | DTL | 9999533636 |
| **15** | Sh. A. K. Rathore | Dy.G.M. (Project)-IIB | DTL | 9540040669 |
| **16** | Sh. Pankaj Vijay | Manager (T)-Planning | DTL | 9999533929 |
| **17** | Sh. B.L. Gujar | Manager (T), Prot. | DTL | 9999533985 |
| **18** | Sh.P.K.Gupta | G.M. (SLDC) | SLDC | 9999533626 |
| **19** | Sh. Sunder Singh | DGM(SCADA) | SLDC | 9999533667 |
| **20** | Sh. Susheel Gupta | Manager (SO) | SLDC | 9999533926 |
| **21** | Sh. Sanjeev Kumar | AM(T)-SO | SLDC | 9999533917 |
| **22** | Sh. Deepak Sharma | AM(SO/EA) | SLDC | 9999535008 |
| **23** | Sh. H.K. Chawla | DGM | NRLDC | 9650074803 |
| **24** | Sh. S.K. Banga | Sr.G.M. | TPDDL | 9818100660 |
| **25** | Sh. P. Devanand | AGM (PSC) | TPDDL | 9871800506 |
| **26** | Sh. Ashish Dutta | HoG(PMG) | TPDDL | 9871798566 |
| **27** | Sh. S. S. Sondhi | AVP (SO) | BRPL | 9312147009 |
| **28** | Sh. Sanjay Srivastava | AVP (PMG) | BRPL | 9312147045 |
| **29** | Sh. A.K.Janghu | CEE | DMRC | 8527222442 |
| **30** | Sh. Ved Mitra | CEE | DMRC | 9871165812 |
| **31** | Sh. Ashish Bhatia | Dy. CEE | DMRC | 9650574448 |
| **32** | Sh.S.K. Maheshwari | AGM(EEMG) | NTPC-BTPS | 9650993817 |
| **33** | P.K. Dass | AGM(O&M) | NTPC\_BTPS | 9650992225 |
| **34** | Sh. S. M. Verma | GM | PPCL/IPGCL | 9717694896 |
| **35** | Sh. R.K. Yadav | DGM (Commercial) | IPGCL/PPCL | 9717694845 |
| **36** | Sh. A.K. Sharma | Head (O&M) | BYPL | 8010618256 |
| **37** | Sh. Sunil Kakkar | Head (PMG) | BYPL | 9312147042 |
| **38** | Sh. Sunil Kumar | DGM | BYPL | 9312667430 |
| **39** | Sh. Haridas Maiti | Sr. Manager | BYPL | 9350110156 |
| **40** | Sh. K. S. Meena | XEN, System Operation | NDMC | 9811203020 |