फोन : 011-26521046 , 26868681
फैक्स : 011-26865206
ई मेल : seo-nrpc@nic.in
वेबसाईट : www.nrpc.gov.in

भारत सरकार
विद्युत् मंत्रालय
उत्तर क्षेत्रीय विद्युत समिति
18-ए,श.जीतसिंह मार्ग, कटवारिया सराय,
नई दिल्ली- 110016
Government of India
Ministry of Power
Northern Regional Power Committee
18-A, S. Jeet Singh Marg, Katwaria Sarai,
New Delhi-110016

स.उक्षेविस/ प्रचालन /108/04/ 2017 / 2994-3028 दिनांक : 13.04.2017
No. NRPC/OPR/108/04/2017/2994-3028 Date:13.04.2017

सेवा में **/ To,**

सूची के अनुसार संलग्न **/As per list attached**

विषय: दूरसंचार, स्काडा और टेलीमेटरी उप समिति की दसवीं बैठक

Subject: 10th meeting of Telecommunication, SCADA & Telemetry Sub-Committee

दूरसंचार, स्काडा और टेलीमेटरी (टेस्ट) की दसवीं बैठक 22.03.2017 को उ. क्षे. वि. समिति , नई दिल्ली में आयोजित की गई थी। इस बैठक का कार्यवृत्त उ. क्षे. वि. समिति की वेबसाइट (www.nrpc.gov.in) पर उपलब्ध है।

The 10th meeting of TeST sub-committee was held on 22nd March 2017 **at** NRPC, New Delhi. Minutes of this meeting have been hosted on NRPC website (www.nrpc.gov.in).

Sd/-
(Hemant Kumar Pandey)
(**अधी. अभि.** & सदस्य संयोजक टेस्ट उप समिति **/**
SE &Member Convener TeST sub-committee**)**

List of Members of TeST sub-committee :

1. Chief Engineer(SLDC), PTCUL, Dehradun-248001, (Fax-0135-2530336)
2. Dy Chief Engineer BBMB, Chandigarh-160019, (Fax-0172-2549548)
3. Chief Engineer (GM), CEA, R. K. Puram, New Delhi-110066, (Fax-011-26109750)
4. Chief Engineer, UT of Chandigarh, Chandigarh-160009, (Fax-0172-2740276)
5. General Manager (SLDC), DTL, New Delhi-110002, (Fax-011-23221012)
6. Chief Engineer ,HPGCL, Panchkula-134109, (Fax-0172-2560622 & 2565042)
7. Chief Engineer, HPPTC Ltd., Shimla-171004, (Fax-0177-2626284)
8. Superintending Engineer, SLDC, HP Load Dispatch Society, Totu, Shimla, (Fax-0177-2837543)
9. Chief Engineer HPSEB Ltd, Shimla-171004, (Fax-0177-26163554)
10. Chief Engineer (SLDC) PSTCL, Patiala, (Fax-0175-2304017)
11. Chief Engineer (Distribution), PSPCL, The Mall, Patiala, (Fax- 0175-2212069)
12. Dy. Chief Engineer(PLCC), RVPNL, Heerapura, Jaipur-302005, (Fax-0141-2250967)
13. Chief Engineer (TO), UPRVUNL, Lucknow-226001, (Fax-0522-2287861)
14. General Manager (RMU), UJVNL, Dehradun-248006, (Fax-0135-2530708)
15. Chief Engineer (O&M), NHPC, Faridabad-121003, (Fax-0129-2255706)
16. Addnl. General Manager I/c(OS)(NCR), NCR-HQ, NTPC, Noida-201301, (Fax-0120-2410052)
17. General Manager(ULDC) & General Manager (LD&C) PGCIL, New Delhi-110016, (Fax-011-26564849)
18. General Manager (C&SO), SJVNL, Sharma Niwas, Below BCS, New Shimla-171009 , (Fax-0177-2673283)
19. General Manager (Electrical Design),THDC, Rishikesh-249201, (Fax-0135-2438682)
20. Addl. Chief Engineer Jaiprakash PVL, Noida, (Fax-0120-4516101/4516201)
21. General Manager (Technical), IPGCL, New Delhi-110002, (Fax-011-23270590)
22. GM(O&M) DTL, New Delhi-110002, (Fax-011-23232721)
23. General Manager, NRLDC, New Delhi-110016, (Fax-011-26853082)
24. Chief Engineer (SO&C), SLDC, HVPNL, Sewah, Panipat , (Fax-0172-2560622)
25. Dy. General manager, Rosa PSCL , (Fax-05842-300003)
26. Chief Engineer(SLDC), UPPTCL, Lucknow.(Fax 0522-2287880)
27. Chief Engineer(Transmission), NPCIL, Mumbai-400094, (Fax-022-25993570/25991258)
28. DGM, Electrical, Jhajjar Power Ltd., Haryana, (Fax-01251-270155
29. Director, Lanco Anpara Power Ltd., (Fax-124-2341627
30. GM (Comml.), Aravali Power Company Pvt. Ltd., NOIDA, (Fax-0120-2425944)
31. Development Commissioner (P), PDD, Srinagar, J&K, (Fax-0194-2452173)
32. Managing Director, J&K State Power Dev. Corp., Srinagar, J&K, (Fax-0194- 2500145)
33. HOG power system control, TATA Power Delhi Distibution Limited, New Delhi, (Fax-011-66050601), CENNET building, Opp to PP Jewellers Netaji subhsh place,, New Delhi (Kind Attn Sh.P Devanand)
34. Sr. Vice President, JSW Energy Ltd., New Delhi-110066 (Fax: 46032343 / 26183546)
35. Managing Director, UPCL, Dehradun-248006, (Fax-0135-2768867)

Minutes of 10th meeting of Telecommunication, SCADA & Telemetry (TeST) Sub Committee held on 22.03.2017

1. Confirmation of Minutes

1. Confirmation of Minutes

The TesT, Sub-committee confirmed minutes, of the its 8th meeting held on 26.07.2016, and that of 9th (Special) meeting held on 16.11.2016, which were issued vide letter dated 08.11.2016 and 09.12.2016, respectively.

2. Telecommunication related issues

2.1 OPGW installation under central and state sectors:

2.1.1 Latest status of OPGW installation progress under central and state sectors

A. OPGW installation under Central sector: POWERGRID informed that out of 5203 Kms. of OPGW under central sector, OPGW of 5064 Kms have been completed. The details of balance 139 Kms. of OPGW, which is on under - construction lines are as under:

i) Abdullapur – Dehradun – 54/89 Kms (Balance 35 Kms)- Expected to be completed by April,2017
ii) Kishenpur – Dulhasti – 34/119 Kms (Balance 85 Kms)-Expected by May,2017
iii) Uri-II to Uri-I line - 10Kms. (scope deleted due to sever ROW)

Representative of POWERGRID, NR-II confirmed that transmission line work of Abdullapur-Dehradun line and Kishenpur-Dulhasti was hampered due to sever ROW problems and targeted for completion by April,17 and May,17, respectively. He informed that same time OPGW will also be laid on both lines.

Regarding, Uri-II to Uri-I line , it was informed that due to severe ROW problems , this part has been deleted from the scope.

It was also informed that Wagoora connectivity had been established with URI-I, having route length of 96.520 Kms., instead of connectivity of Wagoora with URI-II, having route length of 106.035 Kms., as per approved link. Now, final OPGW connectivity is Kishenpur - Wagoora - URI-I. Tejas communication equipment had been supplied at both URI-I & URI-II and URI-I link would be commissioned in April,17, which was delayed due to ongoing agitation and weather conditions in Kashmir Valley. It was further informed that equipment of URI-II will be diverted to other site as there is no fibre connectivity at Uri-II. OPGW procured for URI-I to URI-II link and balance Wagoora to URI-II link would be used as spare for maintenance purpose.

NHPC representative, requested to consider URI-II-Wagoora line for laying the OPGW keeping in view the ROW issue in URI-II - URI-I line. POWERGRID informed that due to similar ROW issues in some portion of URI-II-Wagoora Line the laying of OPGW in this line is also not possible in current scenario.

On a query by NHPC representative, POWERGRID representative informed that OPGW connectivity for Bairasul and Sewa-II station has been completed and after terminal equipment supply, link would commissioned by July, 2017.

NHPC representative requested PGCIL to consider OPGW connectivity of Parbati-III in current phase as OPGW work upto Banala had already been covered by PGCIL and Parbati-III Power Station is only approx. 7 Km. from Banala. POWERGRID representative stated that Parbati-III had not been covered in any existing package. However, he added that the work may be taken up by POWERGRID subject to approval by NRPC.

B. For state sector, POWERGRID informed that they had awarded 3 packages for implementation of OPGW in Northern Region with completion schedule of Mar/April'2017. The progress as updated in the meeting, by POWERGRID, are as under:

Sl. No.	Name of Package	Award Date	Completion schedule	Status
1	OPGW for State sector (Package-V) M/s ZTT/ECI/Steel Product	July, 2015	July'2017	• Out of total 1664 Kms, installation has been completed for 1560 Kms. Balance OPGW work would be completed shortly.

				• FAT of communication equipment had been done. • Equipment installation would be completed by July,17 for whole package.
2	OPGW for State sector additional requirement (Package-I a) M/s SDGI-Offshore contract	Oct, 2015	Apr,2017 (supply Pkg)	Out of 2922 Kms. Supply of 950 Kms. Completed. Balance supply would be done in April'17.
3	OPGW for Additional requirement for CS and SS (Package-III a) M/s Prem Power	Sept' 2015	Sep,17	Total scope 726 Kms under central sector lines only. Supply completed. Installation work would be completed by Sept, 2017.

Regarding Package-I a, POWERGRID representative stated that this is only off-shore supply. Installation package had been awarded by respective Region i.e New Delhi and Jammu. Member secretary suggested that OPGW installation may be taken up in Punjab at the earliest and should be completed before onset of paddy season i.e May,17 to avoid shutdown during this period . POWERGRID agreed for the same and informed that by Sept' 2017 works for all the states would be completed.

(Action: POWERGRID;
Time line: for Punjab, before onset of paddy season i.e. May,17 and for other states, by Sep,17)

2.1.2 Spare requirement for OPGW (Agenda by POWERGRID)

Representative of POWERGRID informed that POWERGRID is providing services on OPGW maintenance to constituents. He stated that spare is required for maintenance of

OPGW and associated hardware. He added that POWERGRID is ready to handover the spares to the constituents in case it is desired so. The matter was discussed in details and it was deliberated that as the responsibility of maintenance is with POWERGRID, the spares should be kept with them for easy mobilization as and when required. Except Haryana, all the states agreed to keep the spares with POWERGRID. Representative of Haryana expressed that they would like to keep spares with them.

POWERGRID informed that HVPNL had installed OPGW network on their own and only 4 kms. of OPGW spare was available with POWERGRID, out of which 1.5-2 Kms. had been utilized. POWERGRID representative suggested that since HVPNL have their OPGW network and they are maintaining their network, rest of HVPNL's OPGW network which are maintained by POWERGRID as of now, may also be maintained by HVPNL. He added that if HVPNL is agreed to maintain, the OPGW network , which is presently being maintained by POWERGRID, then balance OPGW spares & hardware may be handed over to HVPNL.

Representative of HVPNL stated that he would convey the final decision, in this regard by 31.03.17 , to POWERGRID and NRPC Secretariat.

(Action: HVPNL, Time line:31.03.2017)

2.1.3 OPGW cut due to diversion of Transmission Lines (Agenda by POWERGRID)

Representative of POWERGRID expressed serious concern to the unplanned activities being carried out at state level regarding line diversion and construction of LILO when the OPGW cable is being cut without any intimation to POWERGRID leading non-availability of wideband communication and serious maintenance problems.

Additional OPGW cable, joint box had to be provided for restoration with increase number of joints. He informed that this type of activity is more prominent in Rajasthan and requested all the members specially to the representative of Rajasthan to inform POWERGRID in advance, in case of any such activity to avoid such emergencies in future.

TesT sub-committee advised all the concerned transmission utilities especially RVPNL to inform POWERGRID in advance, in case any activity of diversion, LILO etc. is planned for a line, on which, OPGW is installed.

It was also agreed that in the PTW (Permission To Work) format , an item would be included regarding OPGW on the transmission line , for which permit is to be sought. Before issuing PTW, the concerned control centre would inform POWERGRID, in case any activity of diversion , LILO etc. is to be undertaken , which may affect the OPGW on the line.

(Action: All transmission Utilities; Timeline: Immediate)

2.1.4 Revised OPGW requirement

PSTCL representative stated that due to LILO of some lines covered under package 1(a) and addition of new sub-stations in Punjab, the scope of OPGW may be revised from 1197 KM to 1378 KM .

POWERGRID representative informed that the supply of the same has already been taken care of, however, amendment of contracts needs to be done to include the same in the installation package which would be done as per requirement.

(Action: POWERGRID; Time line: Sep,2017)

2.1.5 FO Connectivity between Sangrur & Barnala sites with BBMB SLDC Chandigarh:

BBMB representative informed that the Fibre Optic (FO) connectivity between Sangrur & Barnala sites of BBMB with BBMB SLDC Chandigarh was not established earlier due to non-laying of approach cable between Barnala (BBMB) and Barnala (PSTCL). He informed that the work of laying the approach cable between Barnala (BBMB) – Barnala (PSTCL) had been completed.

He requested POWERGRID to establish FO connectivity of Barnala & Sangrur sites of BBMB with BBMB SLDC Chandigarh and give the Ethernet Connectivity plan of these sites.

POWERGRID informed that to connect the SLDC Chandigarh, communication equipment at Malerkotla must be installed. FAT of the equipment is scheduled in March,17 and it would be commissioned by end of April,17. He added that the connectivity between SLDC Chandigarh and Sangrur & Barnala Sub-Stations of BBMB would be provided by May, 2017.

(**Action: POWERGRID; Timeline: May,2017**)

2.1.6 AMC of the 208.438 km of OPGW laid on BBMB Transmission lines :

BBMB representative informed that the warranty of the 208.438 km of OPGW & approach cables laid on the following BBMB Transmission lines had already expired:

OPGW:

i. Ganguwal – kotla
ii. Narela – Delhi RR
iii. Kurukshetra – Jagadhari
iv. Panipat – Kurukshetra
v. Hisar (BBMB) – Hisar (HVPNL)
vi. Hisar (HVPNL) – Hiasr (PG)
vii. Sangrur – Barnala

Approach Cables:

i. Panipat (HVPNL)-Panipat (BBMB)
ii. Dadri (HVPNL)-Dadri (BBMB)
iii. Ballabhgarh 220kV-Gantry
iv. Barnala (BBMB) – Barnala (PSTCL)
v. Narela (BBMB) – Narela (DTL)
vi. Samaypur (BBMB) – Ballabgarh (PG)

He informed that POWERGRID had been requested to cover all the above links in the ongoing AMC contract, so that any defect in the OPGW can be covered under AMC.

POWERGRID representative informed that above mentioned OPGW links would be included in the new AMC contract for which BOQ is under finalization. He added that if any fault occurs in these lines till finalization of new AMC contract, same would be rectified by existing AMC vendor.

(Action: POWERGRID; Time line: Award of New AMC)

2.1.7 Training program for STU personnel on OPGW related aspects:

In 33rd TCC & 37th NRPC Meetings held on 21st and 22nd March, 2016 it was decided that POWERGRID would conduct training on the skill development for maintenance aspects of OPGW at their training Centre at Manesar under the aegis of NRPC. NRPC had also approved for meeting the expenses of this training programme from NRPC fund.
The matter was again deliberated in 34th TCC/38th NRPC meeting held on 24th/25th October,2016. Accordingly, NRPC Sectt. had requested all STUs for nominations for this training. However, no nomination was received.

In this meeting NRPC secretariat informed the sub-committee that the training programme could not be conducted due to non-availability of nomination from the Constituents. Representative of HPSEBL informed that they had sent the nomination for the training. After deliberations, it was decided that the training program would be arranged in case the nominations are received by 31st March'17. It was also decided that 2 – 3 nominations could be sent for the training by each STU.

(Action: All STUs ; Time line: 31.03.2017)

In the meeting, POWERGRID was requested to provide estimated expenditure for the training, by 31.03.2017.

(Action: POWERGRID; Time line: 31.03.2017)

2.1.8 Utilization OPGW Spare fibres

RVPNL representative informed that RVPNL intended to utilize the OPGW network along with terminal equipment installed under ULDC for transmission of ERP and internal traffic of RVPN.

POWERGRID representative stated that in the OPGW network, installed under ULDC, 6 nos. of Fibres are exclusively used for grid operation purpose, balance fibres can be utilized by states for other purposes. However, he clarified that States have to use separate terminal equipment.

HVPNL representative informed that HVPNL may share OPGW network with other utilities , for which commercial arrangements may mutually be agreed.

2.2 Communication issues

2.2.1 Communication plan for channel redundancy and to back-up NRLDC

a) NRLDC representative informed that though the most of the stations had been placed on wideband network, only 21 stations were provided with working redundant channel. 62 stations were having intermittent redundant channel and 32 stations were provided with single channel. It was also informed that joint testing had to be done for all the stations to find out the issues which needed to be expedited as under the earlier joint testing only 26 stations were covered.

It was decided that this activity would be completed by April'17 and action would be taken based on the findings.

NRLDC informed that data on dual path should be reported with channel redundancy with path protection.

The sub-committee advised all concerned utilities to ensure that all the data should be reported on alternative path with redundant channel.

(Action: All Transmission and Generation Utilities; Time line : Immediate)

b) NRLDC representative informed that data from some of the generating stations viz. Karcham Wangtoo, Jhajjar and Sorang were either not available or data availability was intermittent since long.

POWERGRID representative informed that OPGW connectivity of these stations were not covered under the scope of work to be carried out by POWERGRID.

The TesT sub-committee suggested that since these stations are connected through ISTS/LILO of ISTS line and reliable data at NRLDC must be required for smooth

functioning of the grid, POWERGRID may install the OPGW on the lines connecting these generating stations. POWERGRID representative agreed for the same, subject to approval by NRPC.

NHPC representative requested POWERGRID to consider OPGW connectivity of Parbati-III in current phase, as OPGW work up to Banala had already been covered by PGCIL and Parbati-III Power Station is only approx. 7 Km. from Banala. POWERGRID representative stated that Parbati-III had not been covered in any existing package. However, this work may also be taken up by POWERGRID subject to approval by NRPC.

The sub-committee recommended that POWERGRID may provide OPGW connectivity to following generating also:

i. Karcham HEP
ii. Jhajjhar TPS
iii. Sorang HEP
iv. Parbati-III HEP

It was decided that proposal may be put up before NRPC for approval.

It was also decided that POWERGRID can use HVPNL's OPGW network for providing wide-band connectivity to ensure secure and reliable grid operation.

(Action: POWERGRID; Time line : After approval of NRPC)

c) NRLDC further informed that RTU data of Rampur HEP and Nathapa- Jhakri HEP was reporting on PLCC even though OPGW had been commissioned up to both stations.

POWERGRID informed that OPGW was installed for both Rampur and Nathapa- Jhakri under consultancy works. However, SJVNL had reservations in allowing use of these OPGW links for grid operation telemetry, as in the opinion of SJVNL, these links were commissioned only for facilitating tandem operation of these hydro stations.

It was deliberated that availability of data at control centre is sole responsibility of Generator and keeping in view present telemetry requirements, it should be ensured that the generating stations are connected on wideband through Optical fibre. It was opined that in the existing OPGW network connecting Rampur and Nathpa-Jhakri HEPs , some fibres can be used for tandem operation and two fibres can be utilized for RTU and Voice data.

Representative of SJVNL stated that he would discuss revert back to NRPC Sectt. and NRLDC within a week time.

(Action: SJVNL; Time line: 31.03.2017)

In the 10th meeting of Test Sub-committee, held on 22.03.2017, it was deliberated that under ULDC Phase-I, OPGW having 12 no. fibre was used. In several parts of the network all the fibres had already been used leaving no fibre for additional services and there would be RoW constraints for new OPGW laying. It was deliberated that some parts of the existing OPGW, used in trunk links may be upgraded with 24 or preferably 48 fibres. The decision for specific stretch of OPGW to be upgraded should be taken on the basis of requirements for additional fibres for numerical relays, PMU, centralised control centres, Video conferencing, tele-protection and LILO lines etc.

TesT sub- committee recommended for replacement of existing OPGW (12 no. fibre) with 24 or preferably, 48 fibres OPGW, which has nominal incremental cost, in some part of network, having additional fibre requirements.

The TesT sub-committee recommended the proposal for approval by TCC and NRPC.

(**Action: NRPC Sectt.; Time line: Next TCC/RPC meeting**)

2.2.2 Optical fibre connectivity from SLDC Dehradun to Rishikesh:

POWERGRID representative informed that Under ULDC scheme, communication equipment and EPABX at Dehradun, SLDC was supplied and installed. However, these equipment could not be commissioned due to non-availability of communication link.

ICCP link from Dehradun to Roorkee had been running on BSNL lease line and POWERTEL had provided channel from Roorkee to NRLDC on lease. Initially, this link was taken from POWERTEL for two months. However, as of now, it is working since more than a year.

He added that PTCUL was laying FO network where the fibre between Rishikesh and Dehradun Station was available. In case 6 fibre is shared with POWERGRID, then the communication could be made available up to SLDC, Dehradun. POWERGRID also confirmed that the end equipment were already installed at Rishikesh and Dehradun for necessary termination.

NRLDC representative informed that only one ICCP link was configured between PTCUL and NRLDC due to availability of only one channel. The integration of VCS,

VOIP, redundant channel for ICCP was still pending due to non-availability of communication channel.

As PTCUL representative was not present in the meeting, it was decided that NRPC Sectt., on behalf of the sub-committee, would take up the matter with PTCUL for sharing of the fibers , after getting requisite information in this regard from POWERGRID.

(**Action: POWERGRID , NRPC Sectt.; Time line : 20.04.2017**)

2.2.3 Remote control of SLDC at Maharani bagh:

DTL requested POWERGRID to provide Communication link between RRVPNL and Maharani bagh for multisite backup. It was informed that the terminal server will be shifted to Maharanibagh by DTL to achieve the redundancy.

POWERGRID agreed to configure 10mbps link within a couple of days.

(Action: POWERGRID; Timeline: 25.03.2017)

2.2.4 Communication issues in UP :

a) UPPTCL representative informed that connectivity of following communication links was still pending:

i) Backup SLDC to Backup NRLDC.
ii) Main SLDC to Back up NRLDC.
iii) Share folder link at Backup SLDC.

NRLDC representative informed that all the communication links between SLDCs and main & Back-up NRLDC had been provided and ICCP association had been tested with all the SLDCs except with UPPTCL due to some router configuration problem which was expected to be resolved in a weeks time. He further stated that once the ICCP association is tested, total failover between main and back-up NRLDC will be planned.

(Action: POWERGRID; Timeline: 31.03.2017)

b) UPPTCL requested to provide port details of links through Tejas, Fibrehome etc.. It was requested that monthly availability report of various links observed in NMS and details of Major alarms /outage may be shared with constituents.

POWERGRID representative informed that port details had been shared in August, 2016 and copy of the same was handed over to UPPTCL.

Further, POWERGRID agreed to provide weekly availability repo, generated through NMS, for various links provided on Tejas network, to NRLDC and NRLDC would share the report with all the concerned.

(Action: POWERGRID&NRLDC; Time line: Every week starting from first week of April,2017)

c) Regarding the issue raised by UPPTCL for delay in supply & installation of FOTE equipments procured in NR expansion scheme, POWERGRID representative informed that supply & installation of FOTE equipment would be done in April,17 and commissioning would be done by June, 2017 for all UPPTCL links.

(Action : POWERGRID; Time line: June,2017).

d) UPPTCL informed that they are facing serious latency issues in Telecom network from Main SLDC to Main NRLDC . POWERGRID representative informed that the reason of latency was still to be identified and the same was under investigation.

(**Action : POWERGRID; Time line: 15.04.2017)**

2.2.5 Implementation of state of the art PABX system:

Regarding the issue of EPABX System installed at BBMB, SLDC under Hot Line Speech Communication Project of POWERGRID , BBMB representative informed that the matter had been discussed with POWERGRID officials and the alternative arrangement provided by POWERGRID was under implementation.

2.2.6 Availability and Maintenance of VCS System:

BBMB representative raised the issue of award for AMC of Video Conferencing System (VCS) to its OEM and defective MIC.

POWERGRID representative informed that M/s Siemens had already awarded the AMC contract and the name of the contact person and his number had been shared with all the Utilities. He shared the contact details for logging the complaints as given below:

Name : Mrs. Alka Verma
Telephone No. : 1800 208 3131
Fax No. : 011 42885588
Email : helpdesk.delhi@progilitytech.com
alka.verma@progilitytech.com

2.2.7 Ethernet Connectivity between Bhiwani site with BBMB SLDC Chandigarh:

BBMB representative requested POWERGRID to arrange the Ethernet Connectivity between Bhiwani site of BBMB with BBMB, SLDC Chandigarh.

POWERGRID informed that Ethernet port had already been provided for PMU services through inter-patching between fibrehome and Tejas at Panipat SLDC. However, Ethernet connectivity for other services viz. 104 RTU and remote consoles from Bhiwani to Chandigarh, POWERGRID would explore the possibility for connectivity and revert back to BBMB and NRPC Sectt..

(Action: POWERGRID; Time line: 15.04.2017)

2.2.8 Incorporation of additional requirement of Valiant make PDH equipment at various sites of BBMB:

BBMB informed that additional Valiant make PDH is required at Bhakra, Jamalpur, Dehar & Ganguwal to facilitate establishing PDH to PDH communication network as the existing Fibrehome make PDH installed at these Stations is not compatible with Valiant make PDH installed at other Sub-Stations/Sub-LDC locations.

The matter was discussed in details and POWERGRID representative agreed to procure additional PDH equipment as required.

POWERGRID representative informed that supply of Valiant make PDH at Charkhi Dadri, Panipat, Dhulkote, Barnala & Chandigarh has been considered in this package. For checking exiting fibrehome Mux at BBMB site it was agreed that maintenance team would visit the site.

(Action: POWERGRID; Time line for maintenance: May'2017)

2.2.9 Disposal of old and obsolete SCADA equipment of ULDC Phase - I.

PSTCL and DTL representative informed that the matter regarding disposal of old/obsolete equipment dismantled after commissioning of ULDC Phase – 2 as well as the methodology for its cost adjustment was under discussion since first meetings of TeST sub-committee but no decision could be taken.

POWERGRID informed that the recovery of the charges against the ULDC-I package was expected to be completed by July,17 , after which constituents can dispose these equipment. It was agreed that POWERGRID would issue letters to constituents indicating the exact date after which the disposal action could be initiated by the Constituents.

(Action: POWERGRID; Time line: 30.06.2017)

2.3 <u>RTU issues</u>

2.3.1 Replacement of old S900 RTUs:

BBMB representative informed that the issue regarding replacement of existing S900 RTUs installed under ULDC Phase – I was discussed in the 9th Meeting of TeST Sub-Committee, wherein it was decided to constitute a group to short-list the RTU models compatible with new Siemens make SCADA system. The Group was to decide changes required to update ULDC-II RTU specifications and perform testing of the models from the interested RTU OEMs for compatibility with new SCADA System, at various control centres.

Shri Navin Gupta, Dy. Director, BBMB, heading the group, informed that the revision of RTU technical specifications had been finalized by the group. The same was shared with the sub-committee. The Sub-committee recommended this specifications for the testing the RTU models.

After detailed deliberations, it was decided to display RTU specification finalized by the group on NRPC website for feedback from any stakeholder. All constituents may inform interested RTU OEMs, to offer RTU model, as per this specification for testing to be witnessed by at least two members of the group.

Members suggested that NRPC Secretariat may issue the Expression of Interest (EoI) in 2 news papers from Delhi and Mumbai as decided by the sub-committee to expand the competitive RTU OEM vendor base through wide publicity.

(Action: NRPC Secretariat; Time line: 31.03.2017)

2.3.2 AMC of old RTUs

DTL informed that the MOU for AMC of RTU's would expire in October 2017. The Specifications / Vendor list is yet to be finalised by the committee, as such new RTU's cannot be installed before 2018, hence AMC of present RTU's should be extended by another one year .

POWERGRID representative informed that they had awarded the AMC for RTUs for 2 years which is valid up to July, 2018. However, since MOU with constituents had been signed only up to July, 2017, MOU needs to be signed with validity till July,2018. All members agreed on the same.

(Action: All STUs ; Time line: April,2017)

On a query regarding AMC for RTUs installed in Central Sector stations, POWERGRID representative clarified that AMC is valid till July,2018.

POWERGRID informed that all constituents including central sector utilities must replace their S900 RTUs by July, 2018, otherwise AMC would be done on their own by respective constituents after expiry of existing AMC.

The sub-committee advised all the concerned utilities to ensure that old S900 RTUs are replaced before expiry of AMC i.e. July,2018.

Constituents requested that new AMC contracts for APS, OPGW and Wideband, etc. may also be extended as per side letters of MOU. POWERGRID agreed for the same and informed that side letters may be signed before expire of AMC contract.

(Action: All Central and State Utilities ; Time line: July,2018)

2.3.3 GPRS connectivity for RTU installed under J&K:

POWERGRID representative informed that procurement of broadband connection with static IP at SLDC, Jammu and 20 nos. of data enabled SIM cards for RTU sites to enable reporting of these RTUs at Gladani SLDC as a standby channel, was pending since more than one & half year.

POWERGRID representative added that GPRS Modem and Server material were supplied at SLDC Jammu 17 months ago but without SIM and Static IP, the connection could not be established. Procurement of broadband connection with static IP at SLDC, Jammu and 20 nos. of data enabled SIM cards for RTU sites was under J&K PDD scope to enable reporting of these RTUs at Gladani SLDC as a standby channel. He informed that now POWERGRID have no other option to short close the contract.

As J&K representative was not present , the matter could not be discussed.

3.0 Issues in Unified Load Dispatch & Communication scheme of NR (Phase-II):

3.1 Operational issues in EMS / SCADA system

3.1.1 Proper database modeling

NRLDC informed that database synchronization is being carried out on monthly basis based on the philosophy discussed and agreed in previous meeting. However, the following problem is being faced :

i. The changes are being incorporated without proper connectivity of the elements ignoring the warning message while preparation. Hence on synchronization, the State estimator is not giving solution leading to errors in daily reporting.

ii. The models are not being prepared correctly i.e. elements are not being modeled. Only SCADA points are modeled as the SCADA telemetry does not need modeling of element.

iii. All the element available in the stations are not modeled.
iv. Changes are to be made in the ICCP database, also, in case of any changes done in the network model. Otherwise it will lead to non-availability of data on ICCP. It is observed that the changes are not carried out properly leading to mismatch and data non-availability.
v. Display changes are not shared leading to mismatch and non-availability of new element.

NRLDC also informed that the ICCP changes are incorporated when the associated changes are made in the data model leading non-availability of real time data at NRLDC. NRLDC requested all the members to check the data model validation alarms and error before sending the same to online.

(Action: All STUs; Time line : Immediate)

3.1.2 Monitoring of UFR, DF/DT and SPS feeder in SCADA

NRLDC representative informed that hon'ble Central Electricity Regulatory Commission (CERC), through its order dated 23rd December 2013 in petition no. 221/MP/2012 had ordered as follows:

"(c) UFRs and df/dt relays also be mapped on the SCADA system of each state so that they can be monitored from SLDC/NRLDC.
(d) All STUs and SLDCs to map/network the UFR and df/dt on their SCADA system."

NRLDC representative informed that the display from PTCUL was not available. It was informed also that though the display had been prepared by DTL and HVPNL, most of the data was not available. He requested all the members to look into the displays for further improvement w.r.t. availability of real time data. DTL representative informed that real time data is available now and NRLDC requested to share the display. HVPNL representative assured that action would be taken within a weeks time.

The sub-committee expressed concern over non-compliance of CERC order. All the concerned utilities were advised to complete the mapping at the earliest and send a compliance report for CERC order to NRLDC and NRPC Secretariat within one month.

(Action: All STUs; Time line: 30th April,2017)

3.1.3 Running of State Estimator

A. Representative of NRLDC informed that the state Estimator was running at NRLDC with acceptable performance. He also informed that the status of State Estimator in BBMB, DTL, UPPTCL and PSTCL was discussed during the 9th (special) TeST meeting and it was confirmed that the application was running with some minor issues.

Representatives of RRVPNL, HP and HVPNL requested to organise the training on EMS state estimator as agreed in 9th (special) TeST meeting.

B. Representative of BBMB requested for synchronization of the central TNA model being maintained by NRLDC as the changes of other Utilities being incorporated by NRLDC in the central TNA model is not being made available to BBMB. BBMB expressed concern that unless a proper procedure is put in place for periodic synchronization of common TNA model and ICCP database, it would not be possible to run the State Estimator successfully.

NRLDC representative informed that the changes are supposed to be made available by all the constituents in the respective central folder with change log taken from error free data model. Similar changes for ICCP Database are also to be made available so that all the constituents could import the changes. Hence, all the constituents should own the responsibility to create error free data model and to make available the changes in the shared folder. He requested all the members to follow the process as decided so that de-Centralised model concept adopted for State Estimator model could be a success and all the constituents are able to run State Estimator successfully.

All the Constituents expressed concern about non-availability of trained manpower for running the EMS application and requested for training.

It was decided that training of one week duration would be arranged by POWERGRID at each Constituent location. It was also decided that all the Constituents would nominate the officers who are responsible for running State Estimator, so that hands-on training could be imparted to them directly on their system. SE, NRPC requested the constituents to send nominations for EMS training in advance i.e. latest by 31st March 2017, which would help in assessment of expenditure and in planning the training, accordingly.

(Action: All STUs; Time line: 31.03.2017)

It was also decided that expenditure on this training may met from NRPC fund.

POWERGRID agreed to submit estimated cost for this training to NRPC Sectt. by 31.3.2017, so that the proposal may be put up before NRPC for approval.

(**Action: POWERGRID; Time line: 31.03.2017**)

3.2 Specific Issues

3.2.1 Insurance coverage (BOQ change)

POWERGRID representative informed that insurance for ULDC equipment supplied and installed under various ULDC schemes for all Constituent was taken by them. However, there would not be any insurance after July,2017. Thus,ULDC Phase-I equipment would not be covered from Aug'17 to July 18.

Members agreed to the proposal.

3.2.2 Delay in Payment

POWERGRID representative informed that POWERGRID was providing consultancy services on RTU/APS/Wideband/OPGW maintenance to constituents on overhead charges basis as per MOU signed with respective Constituents.

He stated that constituents are to pay in advance on quarterly or yearly basis. However, advance payments are being released with delay of 5-6 months which is not acceptable and POWERGRID have no other option than to deduct the overhead charges from advance 1% deposited with them.

Sub-committee advised all the concerned utilities to ensure timely payments.

3.3 SCADA Issues raised by SLDCs

3.3.1. Pending SCADA Issues

BBMB representative stated that Following issues in respect of SCADA/EMS System installed at BBMB SLDC under ULDC Phase – II were still pending:

a) Implementation of Multisite Configuration:

The implementation of Multisite Configuration between BBMB, SLDC and PSTCL, SLDC is still pending due to non-availability of requisite communication links. He stated that in this regard, a group was constituted by NRPC vide letter No. NRPC/OPR/108/04/2016/5328-40 dated 10.06.2016 and the report of the group was awaited. It was informed that some similar work was being taken up under the scheme for optical fibre connectivity of all electrical sub-stations down to 132 kV level. It was decided that the group should submit its report considering this aspect also.
It was also deliberated that due to transfer of some of the members of the group, the proceedings of the group was affected.SE, NRPC requested all the concerned utilities to send nomination of an alternate member in the group, latest by 31.03.2017, so that the group may be reconstituted and the task is completed.

POWERGRID representative informed that communication would be provided as per recommendation of the group after submission of the report.

b) Database Synchronisation:

After detailed deliberations it emerged that there were several similar issue, which needs proper coordination with concerned vendors. It was decided that a meeting would be arranged at NRPC, New Delhi with all the concerned vendors of ULDC scheme and the concerned State utilities to discuss and resolve the issues.

.

3.3.2 Issues of DELHI

i. DTL informed that DG set was not operational since April, 2016 as both the chargers were faulty. POWERGRID informed that one of the chargers had been repaired and was healthy now. They had agreed to take up the matter with Siemens for immediate restoration.

ii. POWERGRID informed that it was decided that the FRTU would be installed once the RTU vendor is shortlisted at NRPC level. However, they have decided to go ahead with the existing short listed vendors as the vendor finalization activity is delayed.

iii. POWERGRID informed that the gateway of Maharanibag had been rectified and real data was made available

3.3.3 SCADA Issues of H.P.

i) SOE's of the following Sub-Stations are not being generated in the SCADA:

1) Andhra HEP
2) Hamirpur-II Sub-station
3) Jeori Sub-station
4) Jutogh Sub-station
5) Kunihar Sub-station
6) Malana Sub-station
7) Palampur Sub-station
8) Phozal Sub-station

POWERGRID representative informed that the SOE had been tested for Kunihar and Hamirpur for Siemens make RTU and found OK. Regarding S900 stations, he stated that, the representative from RTU vendor would be sent to check the issues.

(Action: POWERGRID; Time line: 15.04.2017)

ii) Regarding preventive maintenance issue POWERGRID representative informed that HPSEBL may directly take up with AMC vendor of Siemens make RTU as AMC contract has been signed between Siemens and Constituents only.

iii) **LDMS Issues**

HP representative informed that Local Data Monitoring System(LDMS) was out of order at the following sites:

a) 220/132 KV Sub-Station Hamirpur-II

b) 220/132 KV Sub-Station Baddi
c) 220/132 KV Sub-Station Giri

POWERGRID informed that being a maintenance issue, the same may be taken up with the vendor directly.

iv) Pending activity in SCADA/EMS system

HP informed that some of the work of SCADA/EMS system was still pending which may be completed. POWERGRID informed that the same would be completed during the AMC period without any extra cost.

v) & vi) Regarding training to site Engineers and Delay in rectification of complaints POWERGRID informed that the same may be taken up directly with the SCADA/EMS service provider.

3.3.4 Issues of PSTCL:

i) **Problems in Custom Log Tool**:

PSTCL representative informed that the issue regarding proper functioning of Custom Log Tool was being taken up with M/s Siemens Ltd. since long time. M/s Siemens Ltd. tried to solve the issue in the past, but still errors in the Custom Log tool vis-à-vis EDNA had been observed for the month of January. As % availability report is being sent to CERC on monthly basis, therefore the report generated through custom log needs to be corrected in all respects, so that time & efforts put in by PSTCL for manually can be minimized. He requested that POWERGRID may once again take up the issue with M/s Siemens Ltd. in this regard.

He added that Guru Hargobind Thermal Plant was having a permanent problem in regards to % availability as there was a difference of around 20-25 % every month while computing the % availability in Custom Log Tool vis-a-vis EDNA..

POWERGRID representative opined that that the data archival technique was different in the two different systems and any one system should be used for reporting. Regarding GHTPS, NRLDC representative suggested that the data up-dation may be checked to avoid such huge error.

It was decided that the matter may be further discussed in the proposed vendor-utility meet.

ii) PSTCL representative informed that Multisite link was not functional and data was being transferred through ICCP.

POWERGRID informed that as decided the multisite implementation would be done after submission report by the group constituted for this purpose. POWERGRID representative requested SE, NRPC to reconstitute the group keeping in view transfer of some members. Accordingly, group has reconstituted with following member:

1) Sh. Ankur Gulati – NRLDC,
2) Sh. NK Meena- POWERGRID
3) Shamshad Hussain- UPPTCL
4) Sh.Naveen Gupta – BBMB
5) Sh. SP Singh- PSTCL
6) Sh Parvez Khan- DTL
7) Sh. KNM Rao – NRPC Secretariat

3.3.4 Issues of HVPNL:

i) HVPNL representative informed that Haryana SLDC website name is www.haryanasldc.org but it is open with the domain name www.haryanasldc.org/CorporateUI . He requested that M/s. Siemens may be asked that Corporate UI should not be added with the domain name, so that website can be accessed with domain name www.haryanasldc.org .

NRLDC representative assured that he would coordinate to resolve the issue.

(Action: NRLDC; Time line: 30 April,2017)

ii) Addition of Energy Point (MWH) in SCADA data base:- HVPNL representative informed that **i**n SLDC expansion project HVPN was integrating new 157 no. RTU's (Schinder make, C-264) with SCADA, in RTU there was a provision of MWH in MFT.

He informed that the issue had been taken up with M/s. Siemens for doing the needful in SCADA database etc. but the same could not be incorporated so far.

POWERGRID representative informed that this activity is not covered under the existing contract, as this facility was not available in FDS and HVPNL may take up with the vendor as an additional work. Sub-committee suggested HVPNL to take action accordingly, if desired.

iii) Wrong status depiction in eDNA

HVPNL representative informed that status depiction in eDNA was wrong. NRLDC informed that the same would be rectified in consultation with Siemens within a week time.

iv) Providing 10 Mbps links from 400 KV PGCIL stations to SLDC

HPVNL representative requested POWERGRID to increase the bandwidth for the links which have been provided for 400 kV sub-station.

POWERGRID representative informed that 2 mbps link is sufficed for the data transfer and enhancement is not required. HVPNL agreed.

v) EMS Training

It was decided that POWERGRID would coordinate the proposed training at Constituent Locations discussed under agenda point 3.1.3.

3.3.6 Pending SCADA issues of UPPTCL

UPPTCL representative informed that the following issues were being faced with the SCADA/EMS system:

i) Functionality testing including functional switchover of Main& Backup SLDC.
ii) Errors in historical data storages (values as well as messages)
iii) Switchover to NMS 2 is not taking place since shifting of Main SLDC.
iv) Commissioning of SMC due since shifting of main SLDC.
V) Commissioning of OTS & consoles and functioning of EMS pending since system of main SLDC.
vi) Non-submission of analysis reports of various incidents.
vii) Frequent core Dump on various servers at main &backup SLDCs.
viii) Non-attending of various issues reported since November'16 to February'17
ix) Automatic transfer of historical data from Main to Backup SLDC & vice versa is not taking place after restoration of Multisite even if the failure is for short duration. Process of manual transfer given by Siemens is also not useful for transfer of large data.

It was decided to convene a meeting with the SCADA vendors to discuss and resolve the issues.

3.3.7 Networking issues of SCADA in UP

UPPTCL representative informed that they were facing serious communication issues as and when both main and Backup SLDCs are made operational with RTUs reporting to both the control centre.

The matter was discussed and POWERGRID requested UPPTCL to inform them in advance regarding any anticipated changes in the communication network so that necessary precaution could be taken in this regard.

POWERGRID informed that the new Tajas equipment was installed at all Sub-LDCs except Sultanpur. Installation at Varanasi would be done with in April, 17 after that all sub-LDC to SLDC/ Back up SLDC connectivity may be shifted to Tejas. Then such problem may not be experienced and requested UPPTCL to

avoid using Fibre home equipment shifting to Tejas . UPPTCL representative agreed to this.

It was decided that POWERGRID and NRLDC would coordinate to resolve the issue by 15.04.2017.

(Action: POWERGRID & NLDC; Time line: 15 April,2017)

3.4 **Cyber Security**

HPSEB representative informed that Cyber security audit had been carried out by M/S SIEMENS through CERT-In auditors but the report was not submitted.

POWERGRID informed that report had been shared with constituents through e-mail and HP was requested to take up with the SCADA vendor directly.

4. Telemetry Related Issues

4.1. Non-Availability / Reliability of Telemetry

NRLDC shared the status of availability of telemetry of Central Sector Stations and State Sector stations and opined that further monitoring is required to improve the telemetry. It was informed that effort should be made so that all the stations are put on wide band for reliability of telemetry and redundant channel should be provided with Path redundancy.

NRLDC shared during presentation that 15 reactors in RRVPNL system were not modeled and integrated in SCADA which was creating lot of monitoring problem during high voltage periods. RRVPNL was requested to model these reactor and arrange telemetry for the same.

It was decided that the following stations would be put on wide band, for which necessary fibre would be laid by POWERGRID and necessary terminal equipment would be provided:

i. Karcham-Wangtoo HEP
ii. Jhajjhar TPS
iii. Sorang HEP
iv. Parbati-III HEP

It was informed that the wideband link was available between Nathpa- Jhakri and Rampur for tandem operation control and it was suggested that the same link may be used to integrate Rampur on wideband link. SJVNL representative informed that they would confirm the same within a week time.

It was also decided that all the utilities would prepare the channel details for each station integrated with SCADA and the type of links provided so that the same could be discussed in the next meeting for further improvement in data availability.

(Action: All generation and transmission Utilities; Time line: 30 April,2017)

NRLDC informed that the SVC installed at Ludhiana & Kankroli are being monitored in real time based on the data provided by POWERGRID. NRLDC requested POWERGRID to provide the following status from SVCs to facilitate better monitoring and analysis :

i. Mode of operation of SVC at Ludhiana
ii. Slope, Q set for voltage control mode of SVC at Ludhiana
iii. Vmax, Vmin, slope, Qset for Q control mode for SVCs for Kankroli & Ludhiana

Apart from above, a counter/signal during operation of PoD or stability module would also be explored.

POWERGRID representative agreed for the same.

(Action: POWERGRID; Time line: 30.04.2017)

4.2. Telemetry of digital status

NRLDC representative that a lot of improvement is required in telemetry of digital data so that State Estimator could be run properly. HVPNL representative informed that the very low availability is due to non-integration of major 220 kV stations. These stations are expected to be integrated shortly which will improve the status. RVPNL representative also informed that they are in the process of replacing the old RTUs and some new RTUs are also being procured for installation in the non-telemetered stations which will improve the status.

The sub-committee advised all the members to share the improvement done through installation of new RTUs in the next meeting.

(Action: All STUs; Time line: 31st May,2017)

4.3. Charging of new element

NRLDC representative informed that a procedure was approved wherein it was decided to furnish the details regarding new element at least three days before the proposed first time charging to facilitate preparation of database and checking the telemetry. However, it is observed that the same is not being followed and information is being received just before the charging of the element.

NRLDC representative informed that it will be difficult to issue charging code in future in case the details are not furnished in time.

The sub-committee expressed concern on the issue and advised all the concerned utilities to follow the agreed procedure.

4.4 Calculation of actual drawal in SCADA

NRLDC shared the plot of the SCADA & SEM for the drawal of all the constituents and informed that no report of discrepancy has been made available to NRLDC for correction except UPPTCL.

4.5 UPPTCL Telemetry issues

4.5.1 UPPTCL representative informed that there are difference which is beyond 3% in the following lines:

i) 220 kv Auraiya GAIL –I
ii) 220 kv Auraiya GAIL -II
iii) 400 /220 kv Allahabad PG ICT -I
iv) 400 /220 kv Allahabad PG ICT -II
v) 400 /220 kv Allahabad PG ICT III
vi) 400 /220 kv Lucknow PG ICT -I
vii) 400 /220 kv Lucknow PG ICT -II
viii) 400 /220 kv Mainpuri PG ICT –I
ix) 400 /220 kv Bhagpath PG ICT –II
x) 400 kv Mainpuri PG Orai
xi) 400 kv Mainpuri PG Parichha
xii) 400 kv Kanpur PG Orai

NRLDC representative informed that the same has been examined and action is required to be taken only for the following lines as the difference in other lines are within acceptable limit :

i. Shahjahanpur ICT I & II
ii. 220 kV Auraiya GAIL -II

4.5.2. Manual replacement of data in case of non-availability of telemetry

The issue was discussed and it was decided that the shift engineers should coordinate the manual replacement of data in case of failure in data telemetry.

4.5.3 Percentage acceptability of difference SCADA & SEM

The matter was discussed in detail and it was opined that the difference may be caused by number issues like time drifting, data update and accuracy of the transducers etc. and hence it is very difficult to prescribe a definite percentage

acceptability criteria. POWERGRID representative opined that the SCADA in real time facilitate the users to operate the grid and should not be used for commercial purposes.

Sub -committee advised all concerned utilities and SLDCs to monitor the difference between SCADA and SEM values to avoid any deviation in schedule on account of such factors. It was emphasised that the procedure as agreed in 32nd TCC and 36th NRPC meeting, held 23rd & 24th December,2015 should be followed to avoid discrepancy between SCADA and SEM data.

It was also decided that as per already approved procedure, in above mentioned TCC/NRPC meetings, the data points may be marked for further checking in case maximum % error is more than 3%.

4.6 HVPNL telemetry issues

Substitution of Suspected as per field value :

HVPNL representative informed that the data of ISTS points get suspected many times during the odd hours also. If MW value of these ISTS points are not replaced with actual one, then due to freeze value, it depicts the wrong drawl of Haryana Grid. It causes the huge mismatch in UI data of SEM & SCADA of Haryana. However, it should be got replaced by NRLDC till the RTU data is revived but the shift operator / Shift charge Engineers at NRLDC do not replace the suspected data as per actual field values.

He added that due to this Haryana drawl is affected. He further informed that in the 8th TeST Meeting ,it was agreed that SLDC & NRLDC shall replace suspected data of State & Central sector respectively but this practice has not been adopted by NRLDC .

The sub-committee advised NRLDC and SLDCs to manually override the non-current point in coordination with the respective control room.

(Action: NRLDC, SLDCs; time line: Immediate)

5. Unified Real Time Dynamic State Measurement (URTDSM) Scheme.

5.1 Status of the installation of URTDSM system

POWERGRID representative informed that FAT is scheduled in April,17 and the delivery is expected to be done in May,17.

NRLDC representative informed that the PMU data already made available could be used in case the visualization is provided by the vendor. POWERGRID representative

agreed to take up with the vendor for implementation of the visualization at NRLDC along with necessary archival of the data.

(Action: POWERGRID; Time line:15.04.2017)

5.2 URTDSM Project Status

POWERGRID representative informed that PMUs and associated materials for 109 nos of Sub-stations out of 115 stations in Northern Region had been received at Site and installation works had been competed for 90 Sub-stations and data had been reporting in PDS for 58 sub-stations which were installed in NRLDC and SLDCs.

POWERGRID representative, further, informed that Control centre FAT was planned in first week of April' 2017, subsequently installation work would start.

5.3 URTDSM Communication issues

UPPTCL representative requested for the port details and communication details to be provided under URTDSM system in UP system. POWERGRID agreed to provide the same after implementation.

5.4 Unified Real Time Dynamic State Measurement (URTDSM) Scheme.

DTL representative requested POWERGRID to arrange site visit by the M/s ALSTOM team to inspect the SLDC site for the new equipment installation under URTDSM Project as the earlier inspection was done 2-3 years back and since then new Siemens SCADA System have been implemented under ULDC Phase–II.

POWERGRID representative confirmed that site visit at DTL would be done within one week time by M/s ALSTOM for finalising the location for PDC servers.

(Action: POWERGRID; Time line : 31.03.2017)

5.5 **Unified Real Time Dynamic State Measurement (URTDSM) Scheme.**

BBMB representative stated that POWERGRID, in the 6th Meeting of TeST, intimated that the URTDSM Project was scheduled to be completed by January, 2017. He requested POWERGRID to provide activity wise PERT chart.

POWERGRID agreed to share the activity wise PERT chart for the project.

(Action: POWERGRID; Time line : 31.03.2017)

5.6 Space for installation of PDC under URTDSM Project

POWERGRID representative informed that the space in SLDC, PTCUL needs to finalized for installation of PDC which could not be discussed due to non-availability of Representative from Uttarakhand.

Annex-I

List of participants in the 10th meeting of Telecommunication, SCADA and Telemetry sub-committee held on 22.03.2017 in New Delhi

Organization	Shri/sh	DISIGNATION	Email ID
NRPC	Sh. P.S. Mhaske Sh. Hemant Kumar Pandey Sh.. K.N.M Rao Ms. Pooja Jain	Member Secretary SE(O) Asst. GM AEE(O)	ms-nrpc@nic.in seo-nrpc@nic.in knmrao2003@yahoo.com
POWER GRID	Sh. Y.K. Dixit Sh. NK Meena Sh. Y.S.SAI Prasad	AGM(ULDC) Sr.Engineer NR-I DGM,NR-II,Jammu	ykdixit@powergridindia.com nkmeena@powergridindia.com yssaiprasad@powergridindia.com
NRLDC	Sh. P K Agarwal Sh. Debasis De Sh. DevenderKumar Sh.Ankur Gulati Sh. P Pathak Sh. Abhishek Jain	GM DGM DGM Dy.Manager Engineer Engineer	pkagarwal@posoco.in de.debasis@gmail.com dkumarp@posoco.in ankurgulati@posoco.in paritosh@posoco.in abhishekjain@posoco,in
PSTCL	Sh.S.P.Singh Sh.Karan Bansal	Addl.SE/SLDC AE	sesldcprojects@punjabsldc.org karan.bansal.00@gmail.com
UPPTCL	Md. Irfan. Alam Shamshad Hussain Sh. AK Verma Sh.M.N Shukla	SE(SCADA&IT) SE AE(SCADA&IT) EE	uldclko@gmail.com emtclko@gmail.com akverma.kl@gmail.com mns6506@gmail.com
DTL	Sh. Pradeep Katiyar Parvez Khan Anjalee Das Sh. Daljit Singh Sh. Mukesh Kumar Parul Kapadia	DGM(SLDC) Manager(T) Manager(SCADA) Asst. Manager(T) AM Manager	pradeepkatiyar@dtl.gov.in parvez.khan@dtl.gov.in anjaleedas@gmail.com daljit1959@gmail.com mukeshdtlhw@gmail.com kapadiaparul@gmail.com
HVPNL	Sh. R K Koushik Sh. Munish Satija Sh. Rahul Singhal	SE EE AEE	sesldc@gmail.com xen.sldcdesign@gmail.com rahul5592@gmail.com
RVPNL	Arvind Agarwal	SE(comml.)	arvind1608@yahoo.com

BBMB	Sh. Naveen Gupta Anil Goutam	Dy. Director/SLDC Director	nkg.chd@gmail.com director@bbmb.nic.in
HPSEBL	Deepak Uppal	Dy. CE(ALDC)	pcshimla2003@gmail.com
PTCUL	Not attended	---	---
NTPC	B. L.Yadav Mohd.Zia	AGM AGM(OS)	blyadav@ntpc.co.in mohdzia@ntpc.co.in
NHPC	Sh. Rahul Ranjan Vijay Kumar	DM(E&C) Engineer(E&C)	rahulranjan@nhpc.nic.in vijay.kumar239@gmail.com
THDCIL	S. D. Basliyal	Manager	basliyalsd@yahoo.co.in
IPGCL	Sh. AK Chander	Sr. Mgr(T) protection	akchander.ipgpp@nic.in/ arvboy@gmail.com
SJVN	Sh.Rajeev Agarwal Sh.Sunil Parashar	Manager Sr.Engr	Rajeev_sjvnal@rediffmail.com sunil_parashar@sjvn.nic.in
TATA POWER	Amit Mazumdar	AM	amit.mazumdar@ tatapower-ddl.com