

North Eastern Regional Power Committee

Agenda For

140th OCC Sub-Committee Meeting

Time of meeting : 10:00 Hrs.

Date of meeting : 19th January, 2018 (Friday)

Venue : "Hotel Nandan", Guwahati.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF 139th MEETING OF OPERATION SUB-COMMITTEE OF NERPC.

The minutes of 139th meeting of Operation Sub-committee held on 19th December, 2017 at Guwahati were circulated vide letter No. NERPC/SE (O)/OCC/2016/4556-4591 dated 28th December, 2017.

NERLDC vide mail dtd. 01.01.2018 sought the following modifications to item D.10:-

The following may please be added at the end of the item no. D-10.

Station wise daily declared MU for hydro ISGS would be as below.

1. KHANDONG:(2X25) and KOPILI —II(1X25)

- Energy content:25 MU(Current 15 MU and 10 MU expected from inflow)
- To run for 150 days till next monsoon.
- Daily energy=25/150=0.167 MU
- 40 MW for 4 hours daily evening peak.

2. KOPILI: (4X50=200 MW)

- Energy content:78.5 MU+(15X4=60MU)=138MU.
- To run for 150 days till next monsoon.
- Daily energy=138/150=0.92 MU
- NERLDC to schedule 0.92 MU, approx.1000MWH/day mainly during peak hours.

3. LOKTAK: (3X35=105 MW)

- Energy content:250 MU.
- 2.5 MU per day till 15.01.18 ie 2.5X15days=37.5 MU.
- Then 1 MU/day till May'18 ie(1X135 =135 MU).

4. DOYANG: (3X25=75 MW)

- Energy content: 21.5 MU.
- Can be scheduled as per present trend.(0.18 MU).

The Sub-committee may confirm the minutes of 139th OCCM of NERPC as no other comments/observations were received from the constituents.

ITEMS FOR DISCUSSION

B.1. ACTION TAKEN:

1. IMPLEMENTATION OF PROJECTS FUNDED FROM PSDF:

The status as informed in 139th OCC:

| State | Protection System | ADMS | Capacitor Installation | SAMAST** |
|-------------------|---|--|--|--|
| Arunachal Pradesh | No requisition of funds. | DPR preparation stage. | - | SLDC to apprise SERC of the project. |
| Nagaland | Work under execution. Completion by 31.12.17. | Under scrutiny of Techno-Economic Sub-group. | To re-submit proposal. | Documents and relevant papers have been furnished to Nagaland SERC as desired by Chairperson, SERC. SERC has requested for a presentation at Kohima/Nagaland by the SAMAST group |
| Mizoram | Main Equipment and Diagnostic Tools LOA issued. Civil Works LOA by 14.12.17 | To be further examined by Techno-Economic Sub-group after interaction with consultant. | Proposal on hold. To be considered upon funds being available. | To furnish action plan. |
| Manipur | By Dec'17 all LOAs' to be issued. | Pilot project under scrutiny of Techno-Economic Sub-group. To submit clarification. | - | NERPC/NERLDC members to meet SERC /MSPCL higher officials to enable take-off of the project. |
| Tripura | To submit UC by 31.01.18. | Submitted to NPC/NLDC. | Under Study stage** | NERPC/NERLDC members to meet TSERC /TSECL higher officials to enable take-off of the project. |
| Assam | Remaining tenders by Jan'18 and all LOAs' by Aug'18. | Under scrutiny of Techno-Economic Sub-group. | - | DPR to be submitted by Dec'17. |
| Meghalaya | MePTCL & MePGCL – LOA completed. | DPR submitted to CEA & NLDC | - | Draft DPR Estimates and BoQ of MePTCL submitted. |

The status of implementation of the above schemes (physical as well as financial progress) may please be reviewed and the entities are requested to expedite implementation of the schemes. The entities may also be advised to furnish status as per format by first week of every month on regular basis to Member Convener, PSDF Project Monitoring Group (AGM, NLDC, POSOCO) with a copy to NPC & NERPC. The LOAs of R&M Scheme are to be furnished to NERLDC/NERPC regularly.

States may please intimate the latest status.

2. Long Outage of Important Grid Elements:

| Name of the Element | Name of Utility | Status as informed in 139 th OCC | Latest status |
|--|----------------------|---|---------------|
| 63MVAR Reactor at Byrnihat to replaced with 80MVAR Reactor | MePTCL | DPR completed & already submitted to NLDC. | |
| 400KV 80MVAR Bus Reactor at Palatana | OTPC | Electrical Inspection done. By 31.01.2018 CoD. | |
| 132 kV Mariani (AEGCL) – Mokokchung (DoP, Nagaland) S/C | DoP Nagaland & AEGCL | Line cannot be charged due to low insulation. RCE of ₹ 43 lakhs to be sanctioned by Dec'17. | |
| 132 kV P K Bari – Silchar I & II | NERTS | Ckt#I on ERS w.e.f.16.11.2017. Both circuits on permanent structure by Dec'17. | |
| 132 kV Dimapur - Dimapur I | NERTS | By Jan'17 Bus Upgradation at Dimapur(NAG). | |
| 132 kV Hailakandi – Dullavcherra | AEGCL | By 15.02.2017. | |
| 132 kV RHEP Bus B | NEEPCO | <i>Out from 11-Nov-17 10:03 Hrs</i> | |
| DHEP Unit 2 | NEEPCO | <i>Out from 20-Nov-17 09:16 Hrs</i> | |
| 400/220 kV, 315 MVA ICT-II at BgTPP | NTPC | <i>Out from 27-Dec-17 20:35 Hrs</i> | |
| AGTCCPP Unit 4 | NEEPCO | <i>Out from 27-Dec-17 18:19 Hrs</i> | |

Utilities may please intimate the latest status.

3. Furnishing of various data for reliable grid operation:

| Data regarding | Status as of 139 th OCC | Latest Status |
|----------------|------------------------------------|---------------|
|----------------|------------------------------------|---------------|

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|--|---|------------------------------------|
| DAS output for FRC calculation | Data received from Ranganadi, Khandong, Kopili Stg II and OTPC. NHPC informed Loktak does not have DAS facility. BgTPP, Kopili, Doyang and Monarchak yet to submit the data | |
| Report on VDI/FDI | Submitted by SLDC of Assam (Daily Basis), Meghalaya (Monthly Basis), P & ED Mizoram and DoP, Nagaland | |
| DG healthiness report | Khandong, Kopili Stg-II, AGBPP, Kopili, DoP Nagaland, P&E, Mizoram, Loktak and OTPC submitted the data | |
| Auxiliary Supply details | To be reviewed after Third Party Protection Audit | |
| Technical & Commercial data for PoC (Q4 2017-18) | NTPC, NEEPCO, OTPC, NHPC, DoP Arunachal Pradesh, MSPCL, AEGCL, MePTCL, P & ED Mizoram, DoP, Nagaland submitted the data. TSECL submitted all except YTC data. | |
| Operating Procedures. | Items | Data submitted by |
| | OP of States | Submitted only by AEGCL and MePTCL |
| | OP of HVDC | Not Submitted |
| | OP of Transmission System | Not submitted by any constituents |
| | OP of Generating Stations | Not submitted by any generators |
| | OP of GIS | Not submitted by any constituents |
| Data related to Power Map. | Items | Data submitted by |
| | Communication (PLCC/OPGW/GPRSVSAT/Satellite) | Not submitted by any constituents |
| Data related to Single Line Diagram. | State SEM Location | Not submitted by any constituents |
| | | |

NERLDC has also requested that Water level, inflow details, discharge quantity & Number of Gate opening (in case of spillage) of Hydro Plants be recorded on a 12 hour basis (2 entries in a day) and to be submitted to NERPC & NERLDC on a monthly basis for proper operational planning.

NERLDC may please inform the status.

B.2. OPERATIONAL PERFORMANCE AND GRID DISCIPLINE DURING DECEMBER, 2017

As per the data made available by NERLDC, the grid performance parameters for December, 2017 are given below:

NER PERFORMANCE DURING DECEMBER, 2017

| States | Energy Met (MU) | | w.r.t. Nov, 17 % inc (+) /dec (-) | Energy Reqr. (MU) | | w.r.t. Nov, 17 % inc (+) /dec (-) | % inc (+) /dec (-) of energy reqr vs met. In Dec, 17 |
|---------------|-----------------|----------------|-----------------------------------|-------------------|----------------|-----------------------------------|--|
| | December-17 | November-17 | | December-17 | November-17 | | |
| Ar. Pradesh | 66.94 | 69.09 | -3.11 | 67.97 | 70.14 | -3.09 | -1.52 |
| Assam | 702.79 | 696.69 | 0.88 | 716.42 | 712.58 | 0.54 | -1.90 |
| Manipur | 79.23 | 68.84 | 15.09 | 80.44 | 69.89 | 15.10 | -1.50 |
| Meghalaya | 149.54 | 135.42 | 10.43 | 149.54 | 135.42 | 10.43 | 0.00 |
| Mizoram | 55.56 | 39.53 | 40.55 | 56.61 | 40.43 | 40.02 | -1.85 |
| Nagaland | 64.75 | 58.70 | 10.31 | 73.09 | 59.73 | 22.37 | -11.41 |
| Tripura | 107.32 | 104.60 | 2.60 | 108.21 | 105.56 | 2.51 | -0.82 |
| Region | 1226.13 | 1172.86 | 4.54 | 1252.28 | 1193.75 | 4.90 | -2.09 |

| States | Demand Met (MW) | | w.r.t. Nov, 17 % inc (+) /dec (-) | Demand in (MW) | | w.r.t. Nov, 17 % inc (+) /dec (-) | % inc (+) /dec (-) of Demand vs met. In Dec, 17 |
|---------------|-----------------|-------------|-----------------------------------|----------------|-------------|-----------------------------------|---|
| | Dec-17 | Nov-17 | | Dec-17 | Nov-17 | | |
| Ar. Pradesh | 136 | 136 | 0.00 | 138 | 144 | -4.17 | -1.45 |
| Assam | 1453 | 1478 | -1.69 | 1479 | 1515 | -2.38 | -1.76 |
| Manipur | 187 | 178 | 5.06 | 194 | 180 | 7.78 | -3.61 |
| Meghalaya | 368 | 339 | 8.55 | 369 | 339 | 8.85 | -0.27 |
| Mizoram | 95 | 90 | 5.56 | 104 | 95 | 9.47 | -8.65 |
| Nagaland | 127 | 132 | -3.79 | 155 | 132 | 17.42 | -18.06 |
| Tripura | 223 | 240 | -7.08 | 223 | 240 | -7.08 | 0.00 |
| Region | 2314 | 2380 | -2.77 | 2333 | 2443 | -4.50 | -0.81 |

REGIONAL GENERATION & INTER-REGIONAL EXCHANGE IN MU

AVERAGE FREQUENCY (Hz)

| Month----> | Dec-17 | Nov-17 |
|---|---------------|---------------|
| Total Generation in NER (Gross) | 1365.874 | 1362.689 |
| Total Central Sector Generation (Gross) | 1063.102 | 1043.830 |
| Total State Sector Generation (Gross) | 302.771 | 318.859 |
| Inter-Regional Energy Exchange | | |
| (a) NER-ER | 4.54 | 0.00 |
| (b) ER-NER | 483.02 | 335.56 |
| (c) NER-NR | 441.40 | 441.40 |
| (d) NR-NER | 0.00 | 0.00 |
| © Net Import | 37.08 | -105.84 |

| Month----> | Dec-17 | Nov-17 |
|--------------------------|-----------|-----------|
| | % of Time | % of Time |
| Below 49.9 Hz | 12.86 | 16.91 |
| Between 49.9 to 50.05 Hz | 73.86 | 73.53 |
| Above 50.05 Hz | 13.93 | 9.56 |
| Average | 49.98 | 49.97 |
| Maximum | 50.25 | 50.27 |
| Minimum | 49.70 | 49.62 |

C. OLD ITEMS

1. Status of Generating Units, Transmission Lines in NER:

During 138th OCC meeting, the status as informed by different beneficiaries is as follows:

| SN | Items | Status as given in 139 th OCC Meeting | Status as given in 140 th OCC Meeting |
|------------------------|--|---|--|
| a. New Elements | | | |
| 1 | 400/220kV, 315 MVA ICT-1 of NTPC at Bongaigaon | ICT-1 - Mar'18 | |
| 2 | Kameng HEP of NEEPCO two units (2 x 150 MW) Next two units (2x150 MW) | Delay in dam construction. First unit by early 2018. | |
| 3 | Pare HEP of NEEPCO (2 x 55 MW) | Delay in dam construction. First unit by early 2018. | |
| 4 | 400 kV D/C Silchar - Melriat line of PGCIL | March, 2018. | |
| 5 | 220kV Rangia - Salakati of AEGCL | March, 2018. | |
| 6 | 132kV Monarchak – Surjamaninagar D/C of TSECL | TSECL informed that letter for extension would be sent to NERPC soon. | |
| 7 | 400kV D/C Balipara – Kameng | To be matched with Kameng HEP. To be reviewed in next OCCM | |
| 8 | RHEP 80 MVAR Bus Reactor | Ar. Pradesh, Nagaland- Mar'18 Manipur, Mizoram - CoD | |
| 9 | SLDCs (Ar. Pradesh, Manipur, Mizoram, Nagaland) | Ar. Pradesh - Mar'18 Manipur, Mizoram, Nagaland - CoD | |
| 10 | 400/220 kV 315 MVA ICT-II at Bongaigaon | March, 2018. | |
| 11 | 220/132 kV, 2x160 MVA ICTs at Balipara | ICT#II - delayed | |
| 12 | 220/132 kV, 1x160 MVA ICT with GIS Bay at Kopili | March, 2018. | |
| 13 | 400/132 kV, 1x315 MVA ICT-III at Silchar | March, 2018. | |

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|--|--|--|--|
| 14 | Replacement of 2x315 MVA ICTs with 2x500 MVA ICTs at Misa (PG) | March, 2018. | |
| 15 | 400 kV Silchar – Misa D/C | 2019 | |
| 16 | 1x125 MVAR Bus Reactor at 400 kV at Balipara | March, 2018(LOA date). | |
| 17 | 1x125 MVAR Bus Reactor at 400 kV Bongaigoan | March, 2018(LOA date). | |
| 18 | Tuirial HEP of NEEPCO | Unit #I -CoD by Dec'17 Unit #II - Jan'18 | |
| 19 | 400 kV, 63 MVAR Bus Reactor #II at Biswanath Chariali | Charged on 09.12.17 | |
| 20 | 33kV bay at 220kV Mariani(AS) S/Sn | Metering issues to be taken up with APDCL by NERTS | |
| 21 | 33kV Tezu-Tezu(AP) | - | |
| 22 | 33kV bay for 132kV Badarpur(PG) S/Sn | APDCL to revert back with status. | |
| 23 | Completion of MW vacation OPGW project 1. Srikona – Pailapul – Jiribam 2. BTPS – Agia – (Boko – Mirza) – Sarasujai Aizwal – kolasib – badarpur | Target completion : Feb 2018 | |
| 24 | Dedicated 33kV feeder at Khliehriat Substation from Lumshnong. | Estimate Requested to Director Distribution, shillong and CEO, Jowai. Request submitted on: 07 th Feb 2017 Reminder Submitted on: 25 th Nov 2017 | |
| 25 | Dedicated 33kV feeder for Badarpur Substation from Panchgram upper SS | Old copy of estimate handed over to APDCL, Badarpur for submission of revised and corrected GST estimate. | |
| b. Elements under breakdown/upgradation | | | |
| 26 | Up-gradation of 132 kV Lumshnong-Panchgram line | DPR already submitted to NERPC/NLDC. | |
| 27 | Switchable line Reactors at 400kV Balipara & Bongaigoan | Jan'18 | |

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|----|---|--|--|
| 28 | PLCC Panels at Loktak end of Loktak – Ningthoukhong 132 kV feeder and Loktak - Rengpang 132 kV feeder | May'2018 | |
| 29 | LILO of 132kV Ranganadi – Nirjuli at Pare of NEEPCO by PGCIL | LILO completed. Two towers to be diverted. Complete by Dec'17. | |
| 30 | LILO of 132kV Ranganadi – Itanagar (Chimpu) at Pare of Ar. Pradesh | Bay 1 at RHEP for Pare: Jan'18 Bay 2 at RHEP for Itanagar: Mar'18 | |
| 31 | LILO portion of 132kV Ranganadi – Nirjuli(diversion work) at Lekhi by DoP Ar. Pradesh | Dec'17 | |
| 32 | Replacement of Main-I relay for 400kV Silchar-Byrnihat at Byrnihat S/Sn | By 21.12.2017. | |
| 33 | Re-conductoring of 132kV Umiam Stg#III - Umtru | DPR prepared. Submitted for approval. | |
| 34 | Upgradation of ULDC FO node | Target completion : June 2018 | |
| 35 | HTLS reconductoring of 132kV Agartala – RC Nagar – I & II | Ckt – I : Dec' 2017 Ckt – II : Jan ' 2017 | |

AEGCL may please provide time schedule for takeover of dismantled 220/132kV 50MVA ICT at Balipara.

Concerned constituents may kindly intimate the status.

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| D. NEW ITEMS |
|---------------------|

D.1 Generation Planning (ongoing and planned outages)

NEEPCO & NHPC may kindly intimate the availability for hydro stations:

| Generating Station | Units running | MW | MU | Reservoir |
|--------------------|---------------|----|-------------------|-----------|
| Khandong | | | | |
| Kopili | | | | |
| Kopili-II | | | | |
| Ranganadi | | | Subject to inflow | |
| Doyang | | | | |
| Loktak | | | | |
| AGBPP | - | - | - | - |
| AGTPP | - | - | - | - |

The outage of other generating stations may be approved considering the present water levels in reservoirs.

The Committee may discuss and approve the proposed shutdown by Generating Stations as given in Annexure – D.2 below.

D.2 Outage Planning Transmission elements

It was agreed in the 99th OCC meeting that shutdown will be availed only after approval is given by the OCC forum. It was also agreed that deferment/revision of outages elements other than already approved in OCC will be henceforth put/displayed in the website of NERPC (**under Operational Activities/OCC Approved shutdown**) as per CERC regulations/ CEA guidelines etc for ensuring smooth & secure grid operation.

Furnishing request of shut down of the element, which was approved by NERPC, by Indenting Agency (ISTS licensees/STUs/Generating Companies) to NERLDC: Planned shutdown approved by NERPC shall be considered for implementation by NERLDC on D-3 basis. If an outage is to be availed on say 10th of the month, the shutdown availing agency would reconfirm to NERLDC on 7th of the month by 10:00 Hr. This practice is necessary to ensure optimal capacity utilization and the time required for associated system study/coordination by/amongst RLDC/NLDC.

In 130th OCCM, Member Secretary opined strongly about non commitments of earlier decision by the constituents and stated that all proposed plan shutdowns and agenda for the next OCC meeting should be sent to NERPC Secretariat latest by 5th day of next month. He directed SE(C&O) that the decision should be strictly adhere to and no shutdowns or agenda will be entertained after that stipulated date.

In 134th OCCM, it was decided that all communication related shutdown be approved in OCC forum only.

In 139th OCCM, SE(C&O), NERPC clarified that all shutdown proposals must be sent at least 6 working days before date of OCC meeting. Any proposal received after D-6 working days would not be entertained. After detailed deliberation, it was decided that in case OCC approved shutdown is not granted by RLDC due to grid constraints NERLDC would reschedule the shutdown on a date mutually agreeable with the utility.

The sub-Committee may kindly discuss and approve the transmission line outages proposed by Constituents for January, 2017 - February, 2017 at Annexure- D.2., which is available in the website of NERPC.

D.3 Estimated Transmission Availability Certificate (TAC) for the month of August, 2017& September, 2017:

NETC and POWERGRID have submitted the outage data for the month of August 2017 & September 2017. So the attributability of outage of the said elements may please be finalized.

Members may please discuss.

D.4 Assessment of Total Transfer Capability (TTC), Transmission Reliability Margin (TRM) and Available Transfer Capability (ATC) by SLDC on respective Inter-State Transmission Corridor

Updated PSS/E Base Cases have been **mailed to all the SLDCs on 31.12.17**. All SLDCs are requested to assess the Total Transfer Capability (TTC), Transmission Reliability Margin (TRM) and Available Transfer Capability (ATC) for the month of Feb'18 using these cases, and submit the study cases and results to NERLDC by **24.01.18**.

NERLDC has assessed the state control area wise, state subsystem wise and group of control-area wise TTCs for NER Grid, on behalf of SLDCs of NER. The study results will be presented in the meeting. SLDCs are requested to check the TTC of their control areas as computed by NERLDC and **give comments, if any, by 24.01.18**.

If no comments received from any SLDCs of NER, TTC, ATC & TRM figures of State control area and group of control areas as assessed by NERLDC will be considered as final and may be uploaded on website.

As per discussions in 122nd OCC meeting of NERPC, all SLDCs of NER may host the assessed TTC / ATC / TRM figures on their website for information dissemination.

Members may discuss.

D.5. Implementation of SPS for transfer of 160 MW power to Bangladesh through Tripura-Bangladesh link:

In Special Meeting on SPS, UFR etc. held on 23.06.17, Chief Manager, NERTS, POWERGRID presented the draft scheme to implement the suggested SPS for transfer of 160 MW power to Bangladesh through Tripura-Bangladesh link. The Sub-Committee discussed the suggested schemes in detail and agreed in principle to implement the schemes.

The forum requested NERPC to take up the matter with CEA/CTU/NLDC for implementation at the earliest after vetting in OCC forum.

In 139th OCCM, S.E. (C&O), NERPC informed that a meeting in Bangladesh would be convened in Jan'18 or early Feb'18.

NERPC may please intimate the status.

D.6. Modus-Operandi for SPS mock testing:

The 138th OCC forum requested NERTS to prepare a draft sequence of operation for each SPS and present in next OCC for ratification. The date for SPS 2 and SPS 3 mock testing will also be finalized in next OCC Meeting.

In 139th OCC meeting, Sr. Engineer NERTS presented the modus-operandi (attached at **Annexure-D.6**) for mock testing of SPS-2&3. The forum requested OTPC to append the sequences at Palatana GBPP to the modus-operandi and submit at the earliest. The date for mock testing would be decided after that and with prior notice of at least 3 days to all concerned utilities. OTPC has since submitted the sequence of events to be recorded at Palatana GBPP.

NERPC may please intimate the status.

D.7. Submission of the Annual Load Generation Balance Report (LGBR) for Peak as well as Off-peak scenarios and the Annual outage plan for 2018-19 by 31.10.17 as per IEGC

- a) As per IEGC, each SLDC shall submit LGBR for its control area, for peak as well as off-peak scenario, **by 31st October for the next financial year**, to respective RPC Secretariat. The annual plans for managing deficits/surpluses in respective control areas shall clearly be indicated in the LGBR submitted by SLDCs.
- b) As per IEGC, all SEBs/STUs, Transmission Licensees, CTU, ISGS, IPPs, MPPs and other generating stations shall provide to the respective RPC Secretariat their proposed outage plan in writing for **the next financial year by 31st October of each year**. These shall contain identification of each generating unit/transmission line/ICT etc., the preferred date for each outage and its duration and where there is flexibility, the earliest start date and latest finishing date.

AEGCL & P&E, Mizoram already submitted the data.

In 138th OCCM, SE(C&O), NERPC requested all the utilities to submit data by 30.11.2017 so that LGBR may be prepared and finalized by Dec'17. The forum requested NERPC to consider only generation capacity that will be able to generate in FY17-18 rather than the entire Installed Capacity for accurate projections.

AEGCL informed the forum that Adamtilla and Baskhandi generating station have been decommissioned. TSECL informed that some units of Rokhia and Baramura have also been decommissioned. SE(C&O), NERPC directed AEGCL and TSECL to write letter to CEA regarding the same.

In 139th OCCM, SE(C&O), NERPC informed that almost all utilities had submitted the relevant data and the draft LGBR would be presented in the next OCC meeting.

NERPC/NERLDC may please intimate the status.

D.8. Voltage Deviation Index of PALATANA and BgTTP:

As per VDI reports issued by NERLDC and uploaded in website, the voltage at 400 kV BgTTP and 400 kV Palatana buses are found to be going out of IEGC band (above 420 kV) for considerable time on regular basis as shown below.

| Date | Time in Hrs | |
|------------|-------------|----------|
| | BGTTP | PALATANA |
| 10-12-2017 | 1.21 | 3.76 |
| 09-12-2017 | 0.42 | 7.28 |
| 08-12-2017 | 0.01 | 0.15 |
| 07-12-2017 | 0.07 | 2.66 |
| 06-12-2017 | 2.48 | 3.95 |
| 05-12-2017 | 0.15 | 5.51 |
| 04-12-2017 | 1.56 | 5.60 |

Being generator buses, the voltages are supposed to be controlled by varying the MVAR injection / drawal and maintaining the same inside IEGC band at all times.

In 139th OCCM, OTPC representative stated that voltage at Palatana bus remains high on a sustained basis as it is a global issue. NERLDC stated while system frequency is a global phenomenon, voltage is a local one and OTPC should make effort by absorbing reactive Power accordingly. It was agreed that in the next meeting, OTPC would make a presentation with evidence regarding reactive power absorption during high voltage period.

Manager, OTPC informed that AVR is functioning at Palatana GBPP and MVAR generation is as per capability curve and requirement of grid. DGM(MO),NERLDC stated that in the 138th OCC meeting RLDC had presented cases of high voltage and MVAR generation by Palatana & BgTPP. It was agreed that in the next meeting, OTPC and BgTPP would make a presentation with evidence regarding reactive power absorption during high voltage period.

NTPC/OTPC may please intimate the results.

D.9. Transformer Tap optimization:

System study was conducted by NERLDC considering load, generation and network pattern of November, 2017 during Peak & Off Peak periods. Suggested taps position of important transformers in NER for maintaining bus voltages within permissible limit as well as to minimize system losses.

In 138th OCCM, NERLDC informed that they are conducting tap optimisation studies on half yearly basis considering lean and high hydro scenario. NERLDC showed the study results of Tap optimization for transformers in NER Grid for February 2018 scenario which represents lean hydro period and suggested that voltage profile is improved most in Byrnihat after changing tap from their present setting. NERLDC also highlighted that due to the inter-connected system, tap has to be changed in other transformers as well to attain the voltage profile within IEGC band as highlighted in study result.

SE(C&O), NERPC once again re-iterated that NERLDC has to write to Director(Tech.), MePTCL. DGM(MO),NERLDC opined that changing tap position at present based on scenario for February, 2018 would be inappropriate. The forum requested NERLDC to present details of tap-position required for particular periods and also frequency of change.

In 139th OCCM, NERLDC informed the forum that tap changing studies are done considering high & lean hydro scenarios on half yearly basis. NERLDC also informed the forum about the letter issued by ED, NERLDC vide letter no. NERLDC/ED/SO-II/10693-95 dated 12.12.17 addressed to Director (Transmission), MeECL with a copy to MS, NERPC and SE, SLDC Meghalaya.

NERLDC may please intimate the status.

D.10. Revision of Restoration Procedures of NER 2017:

System Restoration procedure of NER Grid was last updated in December'2016. Since then changes have been taken place in the NER network and the procedure needs to be revised. As per discussion in the last OCC meeting and feedback received from Meghalaya we have revised the "RESTORATION PROCEDURE OF NER" and sent to all concerned utilities of NER.

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All concerned are requested to please go through the draft restoration procedure 2017 and give comments, if any, within 25th December'17 so that we can publish it by 31st December'17.

In 139th OCCM, NERLDC requested all utilities to send their feedback on draft 2017 version at the earliest.

NERLDC may please intimate the status.

D.11. Update on Real Time Energy Assessment for Effective Grid Management:

As decided in 137th. OCC meeting, the matter regarding visit of CDAC to NERLDC was pursued and CDAC representative visited NERLDC on 16.11.2017. Complete details of Meters pertaining to all NER States as sought by CDAC were handed over to them. There are total existing 76 SEMs which would cover computation of drawal by seven States. A list of projected future meters is also given in the statement for integration as and when commissioned.

CDAC would install the AMR system to compute net drawal by each State on every 15 minute time block basis and schedule vs actual as well as computed Deviation charges would be displayed in a server in each SLDC, NERLDC and NERPC secretariat.

As all required data has been handed over, CDAC was advised to start work on the project at the earliest. CDAC need to chalk out an action plan and intimate time bound plan to NERPC so that progress can be monitored in each OCC meeting. It was suggested that work on a particular State at a time may be commenced and completed in time bound target.

In 139th OCCM, CDAC representative stated that they would require the proprietary protocol from the meter manufacturer(s) to proceed further with the Project. DGM(MO), NERLDC explained that as per practice followed in other Regions like NR, ER etc., AMR provider, Meter manufacturer and Powergrid sign a tripartite agreement to enable passing of the protocol to AMR provider. A sample of draft agreement in ER (TCS is AMR provider) was provided to CDAC and it was advised that CDAC should initiate process and circulate a draft agreement for the present case. CDAC agreed to do the needful and stated that they would develop protocol converter accordingly.

CDAC was asked not to delay any further and complete the project in quickest possible time.

CDAC has furnished the draft tripartite agreement which is to be signed between CDAC, POWERGRID-NERTS and meter manufacturer(s).

NERPC may please intimate the status.

D.12. Restriction of OTPC Palatana DC:

Restriction of OTPC Palatana DC up to installed capacity as per provision of IEGC (5th Amendment) however OTPC unit is able to generate more than Declare Installed Capacity in winter session (As per Gas turbine characteristics) on dated 18/12/2017 and other consequent days.

IEGC 5th Amendment regulations Reg. 5.2(h) en proviso allows for modification in IC in case of gas stations based on ambient temperature & pressure: "*In case of gas/liquid fuel based unit s, suitable adjustment in Installed Capacity should be made by RLDCs/SLDCs for scheduling in due consideration of prevailing ambient conditions of temperature and pressure vis-à-vis site ambient conditions on which installed capacity of the generating station or unit (s) thereof have been specified*".

In 139th OCCM, Manager, OTPC gave a presentation on the gas turbine characteristics and generation limits for Palatana machines.

Accordingly, graph indicating Effect of Compressor Inlet Temperature on Output of OTPC-Palatana was shown circulated in earlier minutes. It was explained that 100% rated output is designed at 27 degree Celsius (80.6 degree F), the output would increase with lower ambient temperature and vice-versa.

After detailed discussion, following were agreed:

- a. OTPC, while making day-ahead declaration of DC, shall intimate hourly projected ambient temperature of next day based on authentic forecasted data (IMD). Till authentic forecasted weather data is available at Palatana, the IMD weather data of Agartala will be taken as basis. Further, in case IMD data at Agartala is also not available, NERLDC would use some other appropriate weather data.
- b. NERLDC, in line with clause 5.2(h) of IEGC would make suitable adjustment in installed capacity for scheduling purpose based on projected day ahead temperature and characteristics curve of Palatana. The correction would be both on higher and lower side.
- c. Accordingly, ex-bus generation corresponding to 100% of the computed Installed capacity of Palatana less aux consumption would be computed.
- d. Scheduling limit of OTPC would be set accordingly.
- e. OTPC would ensure instantaneously picking up to 105% of their computed Installed capacity when the frequency falls suddenly.
- f. The process has been made effective provisionally from 21.12.2017 and would be reviewed in next OCC.

NERLDC submitted the following observations during actual operation till now:

1. Hourly temperature is not available from reliable source such as IMD.
2. Gen. Vs Temp. Curve supplied by OTPC is for Gas Turbine only. For Steam Turbine, proportionate figure is considered which needs discussion.
3. Currently IC and DC are declared on D-1 basis, real time revision based on temperature is not to be entertained.
4. If it is implemented for OTPC, other gas based stations also need to be included in consultations with the stations.
5. During summer, computed installed capacity will be less than name plate rating when temperature is higher.

Members may please discuss.

AGENDA ITEMS FROM NERLDC:

D.13. Mis-declaration of DC by AGTCCPP:

It is seen that in absence of 132 kV AGTPP-Agartala-1 (under long S/D 26.12.2017) AGTPP declaring DC as 90-100 MW but whenever they are asked to generate as per declared DC, they revise their DC downwards (Please refer NERLDC instruction dated 05.01.18, 10:00 hrs to increase generation as per DC i.e 98 MW but RCN immediately revised their DC to 74 MW). As per IEGC regulation 6.4 mis-declaration of DC by a plant is an offence and they can be asked by RLDC to explain the reason with back up data.

(IEGC Cl 6.4.18:It shall be incumbent upon the ISGS to declare the plant capability faithfully, i.e. according to their best assessment. In case, it is suspected that they have deliberately over/under declare the plant capability contemplating to deviate from the schedules given on the basis of their capability declarations (and thus make money either as undue capacity charge or as the charge for deviations from schedule), the RLDC may ask the ISGS to explain the situation with necessary backup data).

Members may please discuss.

D.14. Revision of draft NER REACTIVE POWER MANAGEMENT MANUAL 2017.

NERLDC prepared NER REACTIVE POWER MANAGEMENT MANUAL 2017. and uploaded in the NERLDC website on 31st December'17. The manual and its annexure can be obtained from the following links:

<http://www.nerldc.in/Docs/webupload/NER%20REACTIVE%20POWER%20MANAGEMENT%20MANUAL%202017.pdf>

<http://www.nerldc.in/Docs/webupload/ANNEXURE%20OF%20NER%20REACTIVE%20POWER%20MANAGEMENT%20MANUAL%202017.pdf>

All concerned are requested to please go through the manual.

NERLDC may please deliberate.

D.15. Recording of operational instructions over VOIP in RLDC:

As per 139th OCC discussion establishment of recording system for all real time instructions and conversations thro' VOIP network was supposed to be established within Feb'18. It is very important to establish the recording system at the earliest as all verbal communication/ conversations among RLDCs, SLDCs and stations are getting lost. Recording status at SLDC also may be discussed.

POWERGRID may please intimate the latest status.

D.16. Telemetry & Voice Communication Problem:

Voice Communication problem:

Dedicated voice communication links and its availability is one of the key requirements for efficient grid management. But it is observed that non availability of adequate communication links with many stations affecting grid operation seriously.

VOIP system not installed.

1. NTPC, BgTPP (Even no BSNL or Mobile –not reliable)
2. OTPC, PALATANA
3. 400 kV BYRNIHAT/KILLING.
4. 400 kV AZARA.
5. 400 kV SILCHAR.
6. Zero, Roing, Tezu and Pasighat

VOIP phones are not working

1. Mariani(POWERGRID)
2. Mokokchung
3. Kumarghat.
4. Khandong.
5. Doyang
6. Nirjuli
7. Kohima
8. Kathalguri
9. Jiribam
10. Kolasib

Following SLDCs do not have ULDC phones:

1. SLDC Imphal
2. SLDC Aziwal
3. SLDC Itanagar

- b. Most of the POWERGRID stations are connected through only one dedicated voice link.

Minimum two nos of dedicated links need to be established at the earliest. In earlier (PUNWARE system) there were 2 nos of dedicated voice communication channel with every stations but in VOIP system only one no of link is established.

Members may please deliberate for resolution of the issue.

D.17. Ratification of projected demand and generation for Q1 of 2018-19 (Apr'18 to Jun'18):

In the 3rd Validation Committee meeting for PoC application period Oct'15-Dec'15, held on 30th September 2015, at NLDC conference Hall, CERC had proposed a methodology for ratification of projected data at RPC forum.

Projected demand and generation of NER constituents to be considered in the base case for POC transmission charge and loss calculations for Q1 (Apr'18-Jun'18) will be presented in the meeting for **ratification by the constituents.**

All Power Utilities are requested to furnish the **details of newly commissioned elements that are to be considered in the base case for Q1 of 2018-19 by 15th January, 2018.** Also, Power Utilities are requested to validate the .sav case file uploaded in NLDC website by 20th Feb'18.

Comparison of Q3 (October to December, 2017) projection and actual demand of state utilities are as follows:

| SI No | State | Projected Demand in MW | Actual Demand (Max. MW as per PSP report) | Percentage Deviation (%) |
|-------|-------------------|------------------------|---|--------------------------|
| 1 | Arunachal Pradesh | 135 | 139 | -2.88 |
| 2 | Assam | 1550 | 1745 | -11.17 |
| 3 | Manipur | 168 | 187 | -10.16 |
| 4 | Meghalaya | 290 | 368 | -21.20 |
| 5 | Mizoram | 93 | 95 | -2.11 |
| 6 | Nagaland | 130 | 135 | -3.70 |
| 7 | Tripura | 358 | 291 | 23.02 |

State Utilities are requested to intimate the reason for the deviation from projected demand so that feedback can be given to CERC in the next validation committee meeting.

This is for information & necessary action please.

D.18. Finalization of Installed Capacity of NER

In 129th OCCM, after detailed deliberation it was decided that NERLDC & NERPC will circulate final Installed Capacity Figures based on the data received from all constituents before next OCC Meeting and the same shall be finalized and validated in 130th OCC Meeting. Member Secretary, NERPC informed that de-commissioning of generating units will only recorded when communication is received from CEA. **It was requested to utilities to write to concerned division of CEA for de-commissioning of generating units.**

In 130th OCCM, it was decided to drop the agenda item in the meantime and review later on.

As per NERLDC records (**Annexure-D.18**), current installed capacity of NER is 3707 MW excluding the recently de-commissioned units. Present Installed Capacity of NER is attached as Annexure 3. However, this figure still includes capacity of some of the generating units of state utilities which are under long outage.

It is requested to state utilities to intimate the status of written communication to CEA for de-commissioning of generating units.

It is also observed that some of the units are not capable to generate up to it's installed capacity.

Members may please discuss and finalize the installed capacity and effective capacity of NER.

D.19. Utilization of Weather Data by State Utilities

Shri Piyush Goyal, then Union Minister of State (IC) for Power, Coal, New & Renewable Energy and Mines launched the Weather Portal for Power Sector in association with POSOCO and IMD at the meeting of the Forum of Regulators held at New Delhi on

23rd June'17. During a meeting held on 1st November, 2017, IMD has requested all the utilities to give their feedback on the usage of the Weather Portal. The matter was also discussed during 138th OCC Meeting.

Feedback from SLDC, Mizoram mentioning usefulness has been received but the areas where these are used are not mentioned. The portal is available at <http://amssdelhi.gov.in/NERLDC/MAIN.html>

It is requested to all power utilities to kindly share your feedback on the usage of the Weather Portal. Feedback shall also include the areas where the data of weather portal is used.

NERLDC may please deliberate.

D.20. Connectivity of 132 kV Balipara and 132 kV Sonabil:

As informed by AEGCL earlier, configuration of 132 kV Sonabil Sub-Station was changed due to loading of 220/132 kV, 50 MVA ICT-I at Balipara as 220/132 kV, 50 MVA ICT-II was under outage. Currently, there is no connectivity between 132 kV Balipara and 132 kV Sonabil substations.

Recently, 220/132 kV, 160 MVA ICT-II at Balipara has been commissioned. This newly commissioned 220/132 kV, 160 MVA ICT at Balipara will take care of the over loading of 220/132 kV, 50 MVA ICT at Balipara.

It is requested to AEGCL to restore the earlier configuration of Sonabil and charge 132 kV Balipara – Sonabil line.

NERLDC may please deliberate.

METERING RELATED ITEMS

D.21. Procurement of additional 70 Laptops:

Target as intimated by NERTS in 139th. OCC:

- i. e-RA : 26.12.2017
- ii. LOA : 29.01.2018
- iii. Material Dispatch : 15.03.2018

SE(C&O), NERPC expressed concern regarding the delay and stated that there should not be any further delay and the Laptops should be made available as per target date.

NERTS may intimate status.

D.22. Installation of new L&T SEMs in NER:

In 139th OCC, NERTS stated the following:

- 1. Replacement of Elster Meters at Azara and Agia : Being done on 19.12.2017
- 2. Installation of two SEMs at 400/220 KV ICT at Bongaigaon : Completed

3. Installation of SEMs at Pare HEP: NERLDC should issue a letter addressed to NERTS advising the installation.
4. Installation of check meters at Loktak and Ranganadi HEP: NERLDC should issue a letter addressed to NERTS advising the installation. Kopili-2 check meter installation would also be included in the advice.

DGM(MO), NERLDC stated that letters against sl nos 3 and 4 would be issued by 20.12.2017.

NERLDC issued letters on 20.12.2017 for sl. No. 3 and 4 above.

NERTS may intimate status.

D.23. AMR in NER:

The tender for AMR scheme could not be published as the cost estimate approved was of pre-GST regime. Finance Deptt recommended to frame fresh estimate with GST before tendering process. Accordingly for framing cost estimate offer from parties viz. Valiant Communications, AMI Tech, TCS were fetched. Out of these parties, received offer only from M/s Valiant communications amounting to Rs. 4.95 Crore. POWERGRID proposed to wait for 1 / 2 weeks time for receiving offer from other parties for finalization of cost estimate based on minimum offer of at least three different vendors (subject to availability).

In 138th OCC, NERTS intimated that no further offer has been received. OCC advised NERTS to proceed based on the single offer from M/s Valiant communications.

In the 139th OCC, NERTS stated the target as below:

- i. Tendering : Jan'18
- ii. Bid opening : Feb'18
- iii. LOA : Mar'18

As the project has already been delayed substantially, NERTS was advised to ensure that there is no further delay.

NERTS may intimate status.

D.24. Testing of SEMs at accredited laboratory:

NERTS stated that as per policy they do not proceed with cost estimate based on single offer. OCC discussed the matter and considering the fact that Testing has to be done as per CEA Metering Regulations, advised NERTS to proceed with single offer.

NERTS may update status.

D.25. Procurement of DCD:

In 139th OCC, DGM(MO), NERLDC explained that as there are only 6 DCDs in stock and new installations are in progress, additional DCDs would be required urgently.

Even after procurement of Laptops, DCDs would be needed for providing time correction command. OCC agreed to the suggestion and advised NERTS to initiate action for procurement of 25 DCDs on repeat order.

Regarding compatibility of new DCDs with old L&T SEMs, NERTS was advised to take-up the matter with L&T and resolve the issue at the earliest. L&T being the sole supplier, they must ensure compatibility of their newly supplied DCD with all their meters.

NERTS may intimate status.

D.26. Erratic reading of SEM:

| SL.NO | LOCATION | METER NO | FEEDER NAME | REMARKS |
|-------|--------------|-----------|-----------------------|-----------------------------|
| 1 | Dullavcherra | NP-6946-A | 132 KV Dullav-D'Nagar | Reading 10% Of other end |

NERTS may do the needful.

D.27. Issues with newly supplied L&T meters at KHEP:

Following were intimated by NEEPCO in 139th OCC meeting:

The installation of new L&T make special energy meter started at KHEP by PGCIL. The following issues are required to resolve before dis-connection of old L&T energy meters.

1. The old L&T meters data are collected through **Vincom** software but for new L&T meters Vincom plus software is required. The Software is not working properly in Windows 10 – 64 bit OS. Matter already communicated in NER Metering Group in WhatsApp.
2. The existing L&T meters data are directly collected through a central PC and thus requested to configure the new meters also so that shift engineers can directly collect the date in the same PC.
3. The Analogics DCD meter may be kept as standby in case of failure of direct connectivity from central PC.
4. We are calculating station Ex-bus through our SEMDBASE software. So, SEMDBASE software modification is required to facilitate the energy calculation for commercial purpose.

DGM(MO),NERLDC informed that current week data has not been received because 2 DCDs at Khandong are not working. He requested NERTS that official from Khliehriat (PG) may please be deputed to visit Khandong and collect the data. NERTS concurred and affirmed that the work would be completed by 20.12.2017.

A meeting took place on 09.01.2018 involving NERPC, NERLDC, NEEPCO and NERTS to address issues pertaining to SEMs and the minutes is attached (Annexure-D.27).

Discussion may please be done on action points in the MOM.

NERLDC may please deliberate.

Any other item:

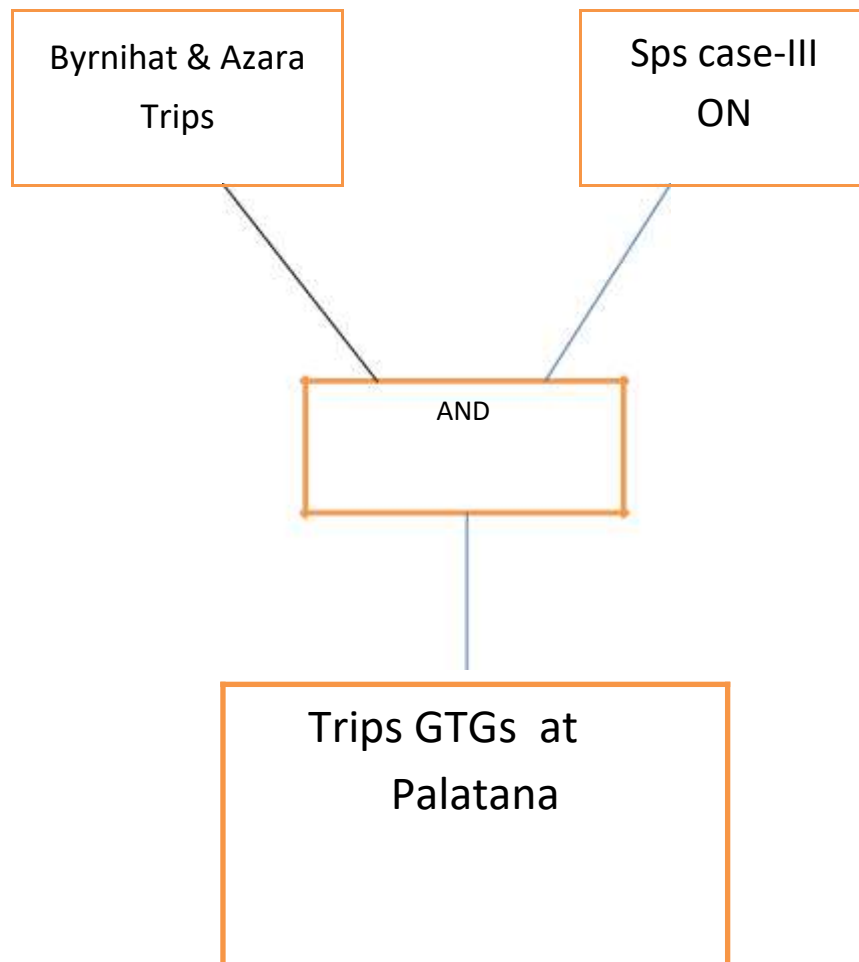
Date and Venue of next OCC

It is proposed to hold the 141st OCC meeting of NERPC on second week of February, 2018. The date & exact venue will be intimated in due course.

SEQUENCE OF OPERATION FOR MOCK TEST OF SPS 2 and SPS 3.

Before start of mock test , engineers of both substation shall confirms the GPS sync timing of their system.

Special Protection Scheme CASE-III (for actuation at silchar)

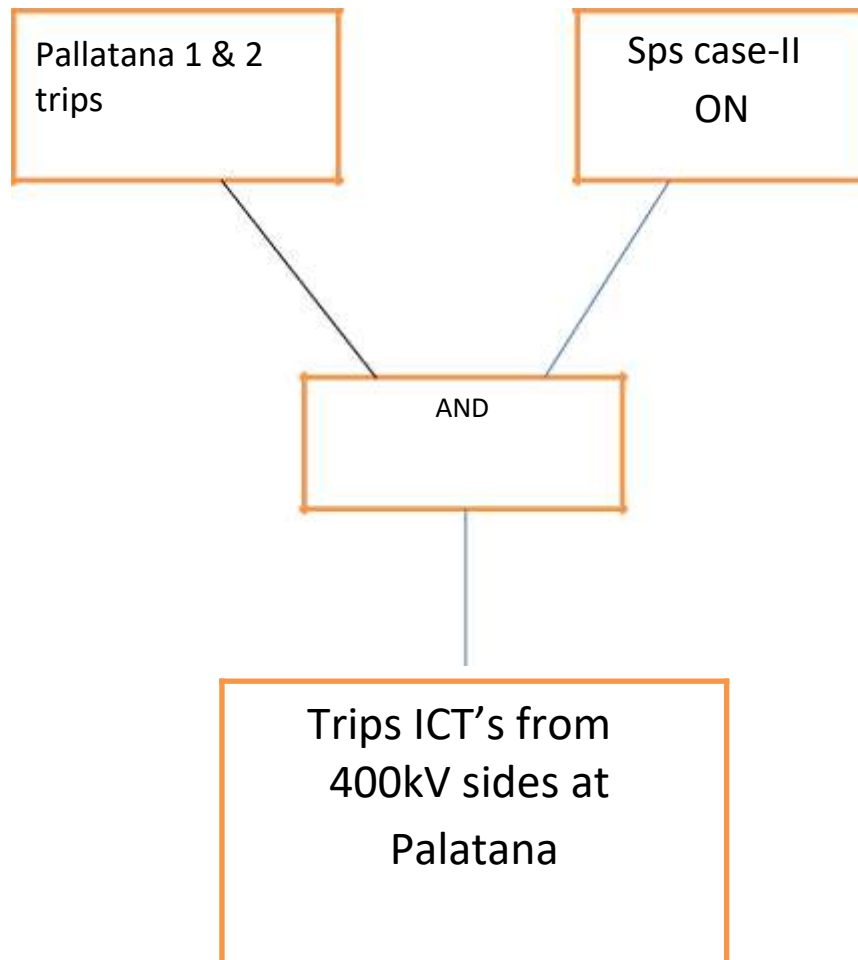


FOR SPS # 3 (Without Shutdown)

1. Both sides should confirm with each other the PLCC panel (TX and RX) and PLCC channel via which DT shall be extended for SPS # 3 operation.
2. Both end shall record the PLCC counter reading before testing.
3. All other PLCC panels which may result in spurious SPS DT send / Receive to be turned OFF.
4. Palatana shall confirm Opening trip output wires from BCU for each affected lines as per scheme.
5. All other SPS schemes except SPS # 3 should be turned OFF (in both stations)

6. Silchar shall forcefully make the status of main and tie breakers (Byrnihat and Azara) open in BCU. (Also 03 different condition to be subsequently tested for 86A optd , 86B optd and 85 LO (AR LO) optd.)
7. This should result in SPS # 3 events in the SCADA of Sichar Substation and Palatana.
8. The time of DT send signal generated (DTs) at sichar and DT received signal generated (DRs) at palatana to be recorded , and DT transmission delay (DTtd)= DTs – DRs should be calculated.
9. Record event of associated trip event at palatana end to be recorded and forwarded to NERLDC for verification.
10. SCADA events at silchar to be recorded.
11. PLCC counter increment for the effected channel to be recorded .
12. Repeat the step for different test condition as detailed in SI. No. 06.
13. Normalization / reconnection of trip output wires at palatana end.

Special Protection Scheme CASE-II (for actuation at silchar)



FOR SPS # 2 (Without Shutdown)

1. Both site should confirm with each other the PLCC panel (TX and RX) and PLCC channel via which DT shall be extended for SPS # 2 operation.
2. Both end shall record the PLCC counter reading before testing.
3. All other PLCC panels which may result in spurious SPS DT send / Receive to be turned OFF
4. Palatana shall confirm Opening trip output wires from BCU for each affected lines as per scheme.
5. All other SPS schemes except SPS # 2 should be turned OFF (in both stations)

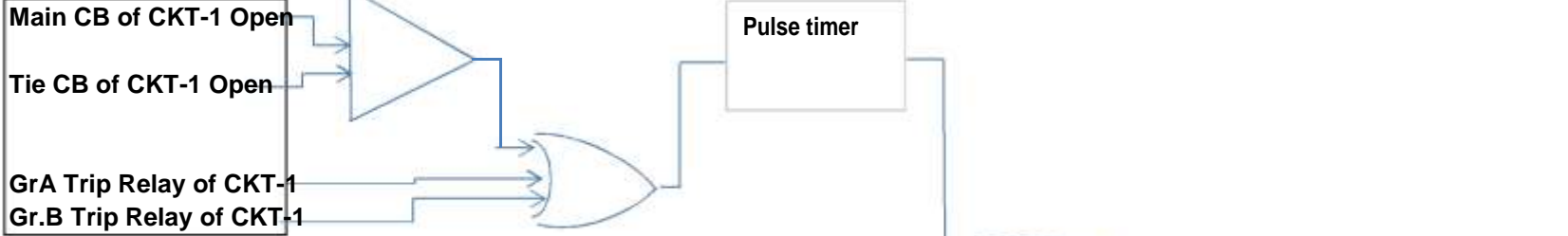
6. Silchar shall forcefully make the status of main and tie breakers (Palatana 1 & 2) high in BCU. (Also 03 different condition to be subsequently tested for 86A optd , 86B optd and 85 LO (AR LO) optd.)
7. This should result in SPS # 2 events in the SCADA of Schar Substation and Palatana.
8. The time of DT send signal generated (DTs) at sichar and DT received signal generated (DRs) at palatana to be recorded , and DT transmission delay (DTtd)= DTs – DRs should be calculated.
9. Record event of associated trip event at palatana end to be recorded and forwarded to NERLDC for verification.
14. SCADA events at silchar to be recorded.
10. PLCC counter increment for the effected channel to be recorded .
11. Repeat the step for different test condition as detailed in SI. No. 06.
12. Normalization / reconnection of trip output wires at palatana end.

SPS-2

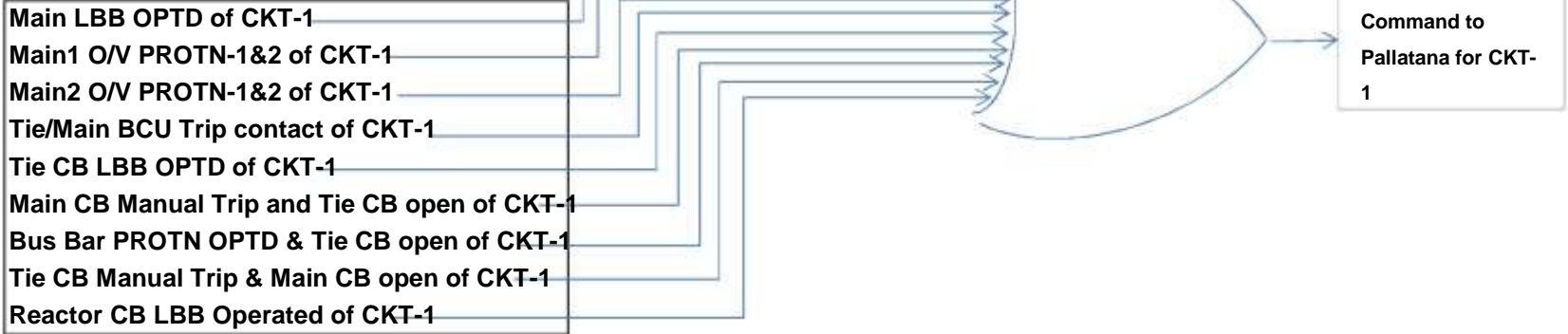
Station : Silchar

Line 400 kV Silchar-Pallatana-1

New Logics



Existing Logics



SPS-2

Station : Silchar

Line 400 kV Silchar-Pallatana-2

New Logics

Main CB of CKT-2 Open

Tie CB of CKT-2 Open

Gr.A Trip Relay of CKT-2

Gr.B Trip Relay of CKT-2

Pulse timer

Existing Logics

Main LBB OPTD of CKT-2

Main1 O/V PROTN-1&2 of CKT-2

Main2 O/V PROTN-1&2 of CKT-2

Tie/Main BCU Trip contact of CKT-2

Tie CB LBB OPTD of CKT-2

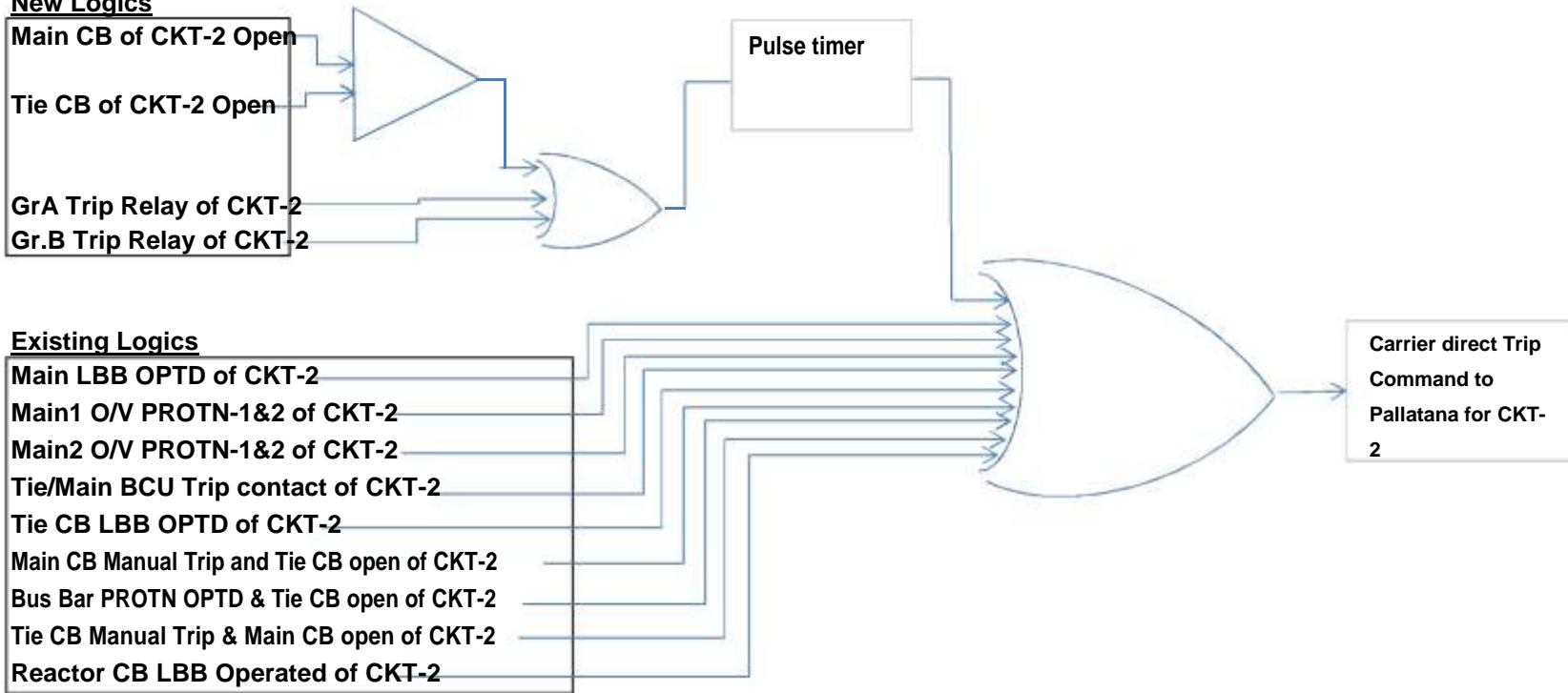
Main CB Manual Trip and Tie CB open of CKT-2

Bus Bar PROTN OPTD & Tie CB open of CKT-2

Tie CB Manual Trip & Main CB open of CKT-2

Reactor CB LBB Operated of CKT-2

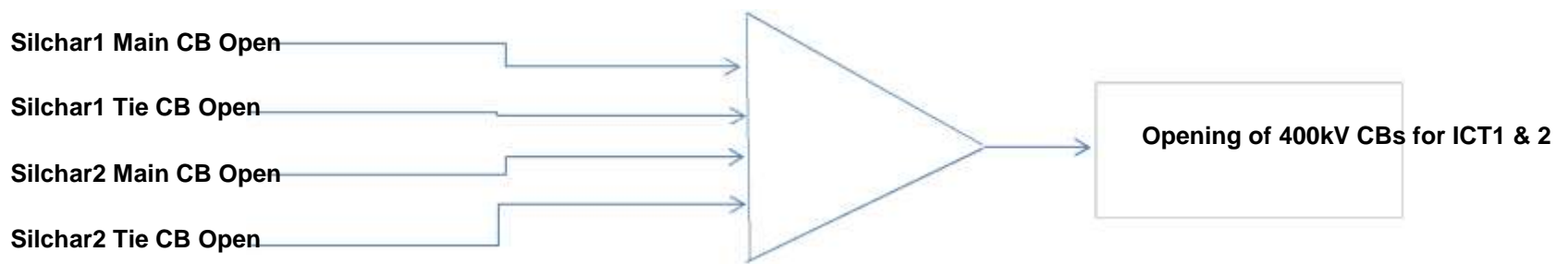
Carrier direct Trip
Command to
Pallatana for CKT-
2



SPS-2

Station : Pallatana

Line : 400 kV D/C Silchar-Pallatana

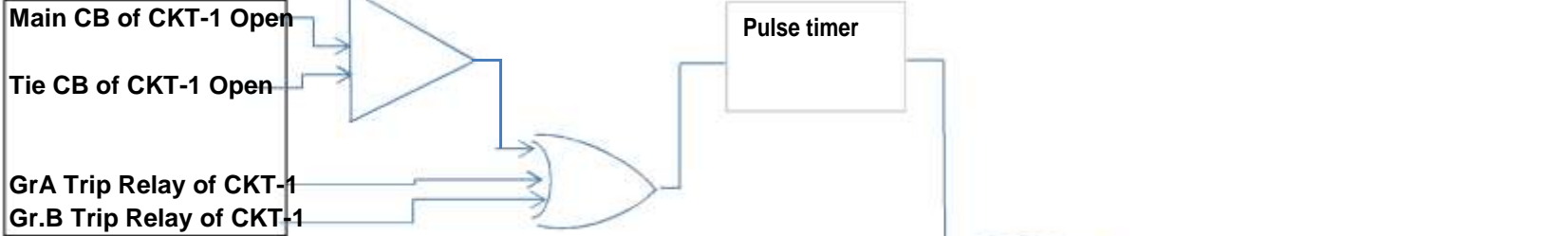


SPS-3

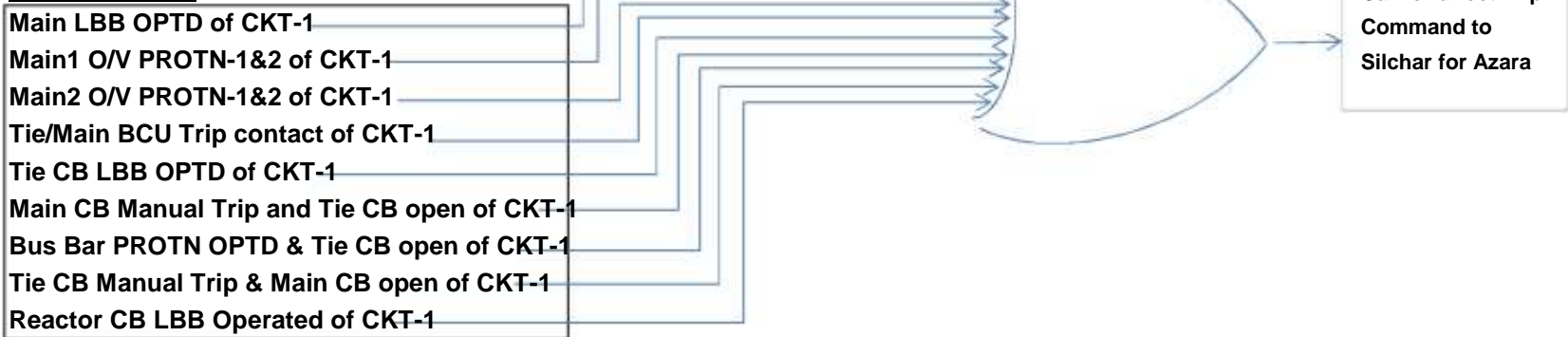
Station : Azara

Line 400 kV Silchar-Azara

New Logics



Existing Logics



SPS-3

Station : Byrnihat

Line 400 kV Silchar-Byrnihat

New Logics

Main CB of CKT-2 Open

Tie CB of CKT-2 Open

Gr.A Trip Relay of CKT-2

Gr.B Trip Relay of CKT-2

Pulse timer

Existing Logics

Main LBB OPTD of CKT-2

Main1 O/V PROTN-1&2 of CKT-2

Main2 O/V PROTN-1&2 of CKT-2

Tie/Main BCU Trip contact of CKT-2

Tie CB LBB OPTD of CKT-2

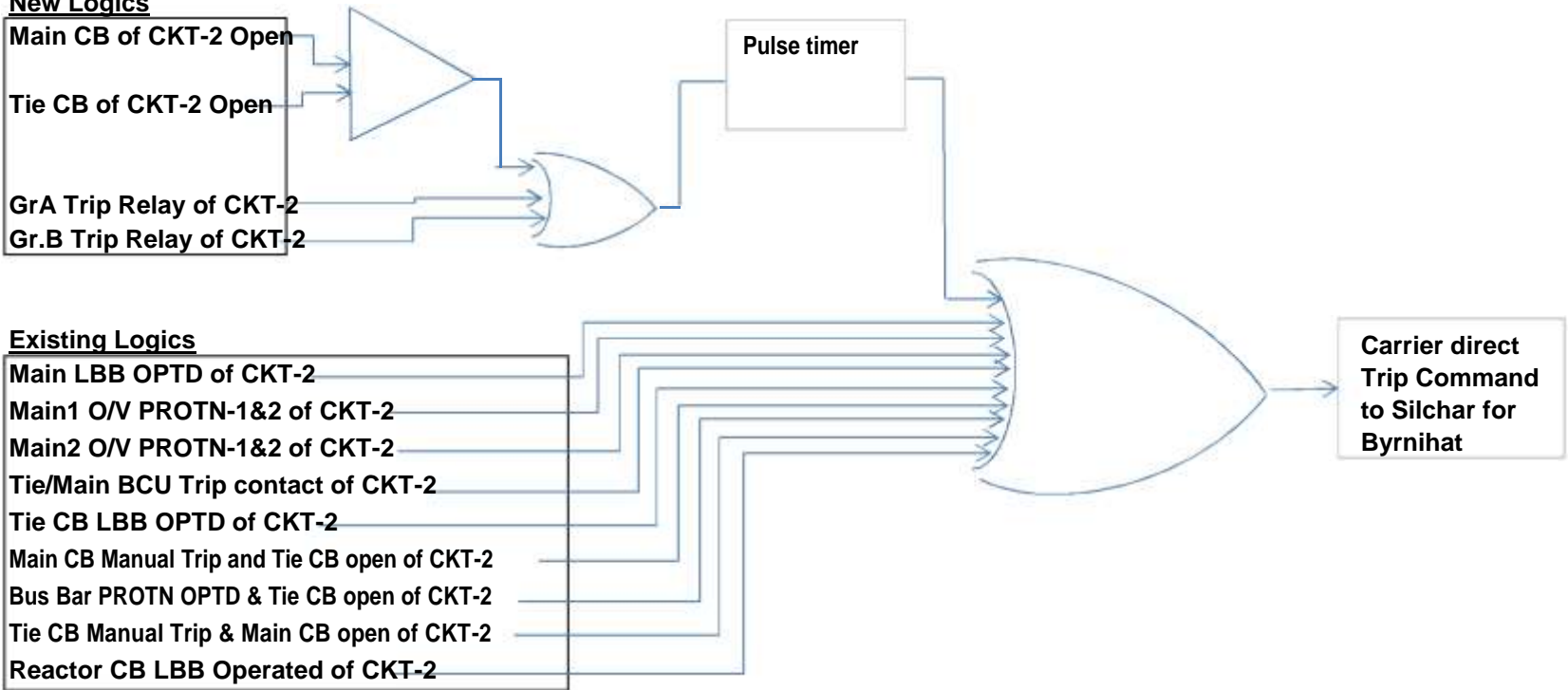
Main CB Manual Trip and Tie CB open of CKT-2

Bus Bar PROTN OPTD & Tie CB open of CKT-2

Tie CB Manual Trip & Main CB open of CKT-2

Reactor CB LBB Operated of CKT-2

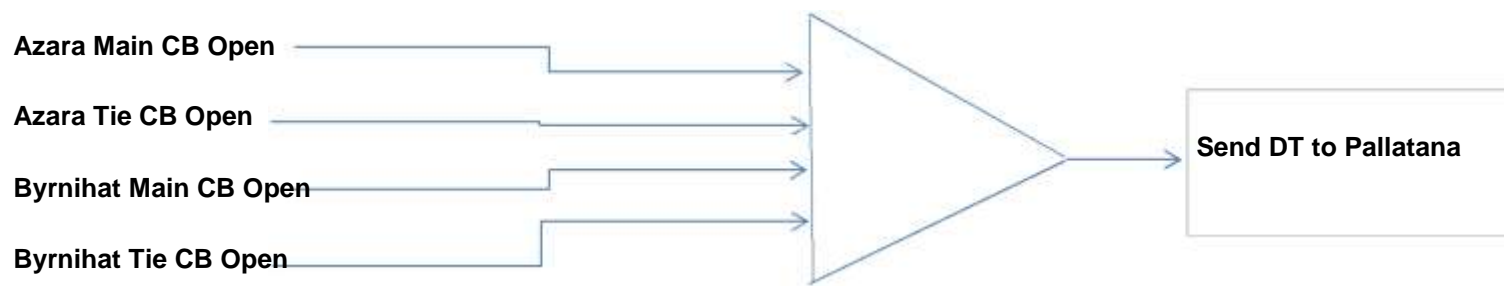
Carrier direct
Trip Command
to Silchar for
Byrnihat



SPS-3

Station : Silchar

Line : 400 kV D/C Silchar-Byrnihat & 400 kV D/C Silchar-Azara



Installed Capacity in NER (As on 31.12.17)

| Isolated Capacity | | Grid Capacity | | | | | | | | | | |
|--------------------------------|----------------|---|------|--------------|-----------|--------------|--|------|---|------------|------------|-------------|
| Utility / Mode | Capacity in MW | Utility / Station | Type | No. of Units | Size (MW) | Total (MW) | Utility / Station | Type | No. of Units | Size (MW) | Total (MW) | |
| State Sector | | Central Sector | | | | | Tripura | | | | | |
| Arunachal Pradesh | | Khandong | H | 3 | 25 | 75 | Baramura | G | 2 | 5 | 10.00 | |
| Micro Hydel | 63.00 | Kopili | H | 4 | 50 | 200 | | G | 1 | 7.0 | 7.00 | |
| Diesel | 16.00 | Doyang | H | 3 | 25 | 75 | | G | 2 | 21 | 42.00 | |
| Total Arunachal Pradesh | 79.00 | AGBPP | G | 6 | 34 | 201 | Gumti | H | 3 | 5 | 15.00 | |
| Assam | | | S | 3 | 30 | 90 | Rokhia | G | 6 | 8 | 48.00 | |
| Micro Hydel | 0.00 | AGTCCPP | G | 4 | 21 | 84 | | G | 3 | 21 | 63.00 | |
| Diesel | 0.00 | | S | 2 | 26 | 51 | Total Tripura (Including Monarchak) | | | 291 | | |
| Total Assam | 0.00 | Ranganadi | H | 3 | 135 | 405 | Assam | | | | | |
| Manipur | | Monarchak | G | 1 | 65 | 65.42 | Champabati | H | 2 | 2 | 4.00 | |
| Micro Hydel | 0.60 | | S | 1 | 36 | 35.58 | Namrup | G | 2x21+11+24+22.5 | | 99.50 | |
| Diesel/Heavy Fuel | 42.27 | Monarchak Solar PV | SO | 9 | 5 | 5 | Lakwa | G | 2x15+3x20+1x37.2 | | 127.20 | |
| Total Manipur | 42.87 | Total NEEPCO (Excluding Monarchak) | | | | 1181 | Adamtila (IPP-DLF) | G | 3 | 3 | 9.00 | |
| Mizoram | | Loktak | H | 3 | 35 | 105 | Baskandi (IPP-DLF) | G | 1x5+3x3.5 | | 15.50 | |
| Solar | 0.27 | Total NHPC | | | | 105 | Langpi HEP | H | 2 | 50 | 100.00 | |
| Diesel | 0.50 | Palatana | G | 2 | 232.3 | 464.6 | Myntreng | H | 2 | 1.5 | 3.00 | |
| Total Mizoram | 0.77 | | S | 2 | 131.0 | 262.0 | Suryatap | S | 1 | 5 | 5.00 | |
| Nagaland | | Total OTPC | | | | 726.6 | Total Assam | | | | | 363 |
| Micro Hydel | 1.50 | BgTTP | C | 2 | 250 | 500 | Mizoram | | | | | |
| Diesel | 0.00 | Total NTPC | | | | 500 | Bairabi | O | 4 | 6 | 22.92 | |
| Total Nagaland | 1.50 | Total (ISGS) | | | | 2513 | Micro Hydel | H | 2x1.5+3x0.35+2x1.5+3x1+2x1+2x1.5 | | 17.85 | |
| Tripura | | State Sector | | | | | | | 3x0.1+2x0.25+2x0.25+1x0.5+2x0.25+2x0.25 | | | |
| Diesel | 1.00 | Meghalaya | | | | | Serlui B | H | 3 | 4 | 12.00 | |
| Total Tripura | 1.00 | Umiam Stage I | H | 4 | 9 | 36.00 | Total Mizoram | | | | | 53 |
| Total Isolated | 125 | Umiam Stage II | H | 2 | 10 | 20.00 | Total (State Sector) | | | | | 1194 |
| | | Umiam Stage III | H | 2 | 30 | 60.00 | Regional Total | | | | | |
| | | Umiam Stage IV | H | 2 | 30 | 60.00 | Isolated | | | | 125 | |
| | | Umtru | H | 4 | 3 | 11.20 | Grid (Hydro) | | | | 1392 | |
| | | New Umtru | H | 2 | 20 | 40.00 | Grid (Gas) | | | | 1675 | |
| | | Myntdu Leshka | H | 3 | 42 | 126.00 | Grid (Coal) | | | | 607 | |
| | | Sonapani | H | 1 | 2 | 1.50 | Grid (Oil) | | | | 23 | |
| | | MPL | C | 8+45.15 | | 53.15 | Grid (SO) | | | | 10.0 | |
| | | Adhunik | C | 1 | 25 | 25.00 | Total Central Sector | | | | | 2513 |
| | | Shyam Century | C | 1 | 14 | 13.80 | Total Grid | | | | | 3707 |
| | | Maithan Alloys Ltd | C | 1 | 15 | 15.00 | Total NER Capacity | | | | | 3832 |
| | | Total Meghalaya | | | | 462 | Total Hydro - 1457 MW | | | | | |
| | | Nagaland | | | | | Total Thermal - 2364 MW | | | | | |
| | | Likimro | H | 3 | 8 | 24 | Total Solar : 10.3 MW | | | | | |
| | | Likhimro, Lang, Dulumroi Stage I | H | 1 | 1.5 | 1.5 | H=Hydro, G=Gas, C=Coal, O=Oil, S=Steam | | | | | |
| | | Total Nagaland | | | | 26 | Source: Data collected from Power Utilities | | | | | |

MINUTES OF MEETING ON ISSUES RELATED TO SPECIAL ENERGY METERS IN NER

DATE: 09-01-2018

PLACE: NERPC, SHILLONG

List of Participants:

1. **B. Lyngkhai, Director, NERPC**
2. **Rajib Sutradhar , DGM, NERLDC**
3. **S. Shadrudin, CM, NERLDC**
4. **S.K Singh, Manager, POWERGRID (NERTS)**
5. **Ashim Kr. Sarmah, DM (E/M), NEEPCO**
6. **Joypal Roy, Sr. Manager, NEEPCO**
7. **Kritika Debnath, AE, NERLDC**

The following were discussed and resolved:

1. Powergrid, NERTS team will visit KHEP on 13-01-2018 to resolve all the issues at Khandong & Kopili.
2. There will be all new LNT SEMs in Khandong and Kopili. RS-485 scheme would be made operational and compatibility of Windows-10 and Vinplus will be ensured. The required materials to implement RS-485 (twisted pair cable, converter) will be provided by NEEPCO. NEEPCO will associate their IT personnel during the activity to enable troubleshooting in future.
3. If new software cannot be installed by NERTS during the visit, two defective LNT SEMs will be replaced with available spares.
4. It would be required to implement RS-485 scheme in all ISGS and other locations with more than 5 SEMs of LNT make. NERTS will chalk out a programme for the same and intimate in next OCC meeting.
5. Compatibility of new DCD with old LNT SEMs will be ensured by NERTS through LNT at the earliest.
6. Installation of check meters at all remaining ISGS stations RHEP, LOKTAK, DOYANG, RC NAGAR, KHANDONG, NTPC, KOPILI ST-2 will be done at the earliest.
7. Procurement action of 25 DCDs as agreed in 139th OCC would be initiated by NERTS. NERLDC will intimate further requirement of Laptop to enable procurement along with DCD.
8. NERTS will intimate stock of SEM and DCD on monthly basis.
9. LNT will provide a detailed extensive training in an identified location of NER for all utilities. The utilities should nominate concerned personnel associated with metering activities.

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