Agenda

for

40th TCC Meeting

of

EASTERN REGIONAL POWER COMMITTEE

Date: 15th March, 2019

Venue: Jodhpur

Index

EASTERN REGIONAL POWER COMMITTEE, KOLKATA

AGENDA FOR 40TH TCC MEETING

Date: 15th March, 2019 (Friday) **Place: Jodhpur**

ITEM NO.A1:	CONFIRMATION OF THE MINUTES OF 39TH TCC MEETING

The minutes of the 39th TCC meeting held on 16th November, 2018 at Jaipur were circulated vide letter no. ERPC/TCC&Committee/14/2018/6731-6800 dated 18th December, 2018.

No comments have been received from constituent members on the minutes of the meeting.

Members may confirm the minutes of 39th TCC meeting.

PART B: ITEMS FOR DISCUSSION

ITEM NO. B1:	Implementation of DSM (4th amendment) Regulations, 2018 – Concerns raised by various utilities of Eastern Region

NHPC: As per CERC DSM Regulation, (4th Amendment issued by CERC vide order no. L-1/132/2013-CERC dated 20/11/2018) in the event of sustained deviation from schedule in one direction by any regional entity, such Regional entity shall have to change sign of their deviation from schedule at least once after every 6 time blocks. The violation under this clause attracts additional charges of 20% on the daily DSM payable/receivable.

For Rangit Power Station (3X20MW), NHPC vide letter no. NH/O&M/GMC/223 dated 24.01.2019 (Copy enclosed at Annexure – B1a), have intimated that when machines are not operational (Off peak hour in lean season) and schedules is zero the actual transmission figures are non-zero resulting in deviation from schedule. In this scenario, when there is no injection of power from Rangit, the actual transmission figures are beyond control of Power Station, therefore it is not possible to do the sign reversal of deviation from schedule as stipulated in the above said regulations resulting in additional deviation charges to NHPC.

Similar case also existed in Northern Region, which was taken up with NRPC in the 155th OCC Meeting of NRPC held on 17th January 2019, wherein it was decided that "where injection schedule given to the generator is zero and the power from the grid is being drawn by the generator for their auxiliary consumption, in such scenario, no "additional Charge" for sustained deviation shall be imposed".

Accordingly, the Deviation Settlement Account for the week 31st December 2018 to 06th January 2019 has also been issued by NRPC on above assumptions.

In view of above, NHPC requested that when there is no injection from Rangit Power House or in such cases, the additional charge as Penalty on sign change may not be considered.

TUL: The generation schedule of Teesta-III HEP is 'zero', only grid power is flowing through Teesta-III HEP bus-bar. During such period additional deviation charges have been imposed on Teesta-III HEP, due to no sign change. We have been penalized to the tune of ₹1.75 lacs as DSM charges for the period of 01-Jan-2019 to 20-Jan-2019 by ERPC.

Since our generation schedule is zero, we should not be penalized due to flow of grid power through Teesta-III bus bar. (Copy of email enclosed at Annexure – B1b)

CHUZACHEN: When the generation schedule for Chuzachen HEP is zero, Chuzachen HEP acts as a LILO for the 132 KV Rangpo-Chuzachen-Gangtok Circuit. The direction of power flow on this circuit is dependent on the grid conditions due to which Chuzachen HEP should be exempted from the sign change rule as we have no role to play in the import or export of power under this condition on this circuit.

Chuzachen is a run-of -river plant with restricted pondage. During the transitional months of May to June; there are sudden increases of hydrology in the Himalayan region and a 1% cap for additional generation is not enough to utilize the water potential available then as reservoir storage will be exceeded. Hence for transitional months; additional generation cap should be sufficiently increased as loss of water is a loss of revenue for the company as well as the nation.

DANS ENERGY: DANS Energy vide letter no. DEPL/JLHEP/O&M/18-19/ERLDC/001, dated 12.02.2019 informed that Additional Deviation Charges have been imposed on DEPL in respect of Jorethang Loop HEP for the period from 01.01.2019 to 27.01.2019 due to Sign Change violation penalty. This is on account of negative power being captured by Special Energy Meters at New Melli Grid Pooling Station, which has been installed by PGCIL during zero schedule power by Jorethang Loop HEP and without any import/start up power from grid to DEPL during the plant shut down period.

KBUNL: KBUNL vide letter no. KBUNL/COMML/1584 dated 14.02.2019 (Copy enclosed at Annexure – B1c) has requested that Additional Deviation Charges for over-injection by a Central Sector Generating Station, whose tariff is determined by Hon'ble CERC, when grid frequency is 50.05Hz & above, the rate of DSM applicable should be ACP or ECR (lesser of the two).

HVDC PUSAULI & ALIPURDUAR: Powergrid has submitted that quantum of auxiliary power consumption at any point of time through HVDC depends on the load flow through the system which is dependent on demand and supply situation of the grid and is beyond their control. Hence, Powergrid has requested that deviation from schedule on account of auxiliary power drawn for their HVDC stations should be exempted from sign change violation penalty.

In 39th CCM, Members unanimously decided the followings:

i) Power drawn by a generator against "ZERO" schedule shall exempted from penalty due to sign change violation.

ii) Power injected by a generator against "ZERO" schedule shall NOT be exempted from penalty due to sign change violation.

iii) If the drawal schedule of a utility is equal to or less than 3 MW, no penalty shall be imposed against the sign change violation.

iv) Regarding the issue raised by KBUNL, it was decided that for any over-injection by Generators at grid frequency 50.05Hz or above, ADC shall be applicable at ACP.

v) The above decisions shall be placed in the TCC and ERPC meeting for concurrence.

vi) On receipt of the concurrence, the same shall be implemented retrospectively w.e.f. 01.01.2019.

vii) However, the decision of CERC, if any, on this issue shall prevail.

In 154th OCC, it was observed that the % of time of frequency remaining within the IEGC had been decreased to 70% in January, 19 w.r.t. 78% in January, 18. Similarly % of time of grid frequency greater than 50.05 Hz had been increased to 19% in January, 19 w.r.t. 11% in January, 18. This trend was contrary to the expectation as amended DSM Regulation has come into force from 01.01.2019.

ER constituents opined that the frequency shown by the ERLDC is 15 min average frequency which is deviating from IEGC band whereas the instantaneous frequency is much fluctuating after implementation of new DSM regulation.

Member Secretary, ERPC highlighted the issue of imposition of penalty based on sign change on the generator against "ZERO" schedule. He also highlighted the issue of imposition of sign change penalty for marginal drawal schedule. He informed the OCC members regarding the decision taken in the last commercial Sub-Committee meeting to resolve the issue.

ERLDC added that BSPTCL and Odisha are perfectly maintaining their drawal as per the schedule whereas Jharkhand and Sikkim are paying huge amount of DSM charges.

OCC advised Jharkhand and Sikkim to maintain the drawl as per the schedule.

TCC may discuss.

ITEM NO. B2:	**Implementation of Fast Response Ancillary Service (FRAS)**

CERC in its Suo-Motu order dated 16.07.2018 in petition No.07/SM/2018/Suo-Motu directed the implementation of Fast Response Ancillary Service (FRAS) on pilot basis w.e.f 26.11.2018. ERPC Secretariat has accordingly prepared and issued FRAS accounts along with RRAS accounts since implementation. As per CERC order, total energy dispatched during a day for hydro stations under FRAS shall be made zero and hence, no energy charges shall be payable to the hydro stations. Incentive shall be paid on mileage basis from DSM pool at the rate of 10 paisa/KWH for both "up" & "down" Energy to FRAS provider. It has been observed that in some days the net energy dispatch under FRAS ("up" & "down") is not zero for hydro stations like Teesta V & Rangit. This may result in significant financial implication for FRAS providers in the event of large quantum of dispatch under FRAS.

In 39th CCM, ERPC Secretariat gave a detailed presentation on the implementation of FRAS in the Eastern Region. The implication of unbalanced FRAS schedule was also highlighted during the presentation.

NHPC gave a presentation highlighting operational challenges faced by operators of NHPC plants participating in FRAS.

It was decided to bring this issue before upcoming TCC meeting.

TCC may guide.

ITEM NO. B3:	**Security Constrained Economic Dispatch (SCED) of Inter-State Generating Stations Pan-India**

Hon'ble Commission, vide Order in Petition No. 02/SM/2019 (Suo-Motu) dtd. 31st January, 2019, directed for Pilot on Security Constrained Economic Dispatch (SCED) of Inter-State Generating Stations (ISGS) Pan India "http://cercind.gov.in/2019/orders/02-SM-2019.pdf"

The Central Commission observed that there is an overarching objective to optimize the scheduling and dispatch of the generation resources and reduce the overall cost of production of electricity without major structural changes in the existing system/framework. Accordingly, the Commission directed for pilot of SCED for the Inter-State Generating Stations, on pilot basis, w.e.f. 01st April, 2019.

The SCED optimization model is for all the thermal Inter State Generating Stations (ISGS) that are regional entities and whose tariff is determined or adopted by the Commission for their full capacity without violating grid security and honoring the existing scheduling practices prescribed in the Indian Electricity Grid Code.

A draft procedure circulated by NLDC is attached in **Annexure-B3**.

In 154th OCC and 39th CCM, NLDC/ERLDC gave a brief presentation highlighting the objective, the basic principle and the methodologies to be followed in its implementation. It emerged from the discussion that the overall system cost shall be reduced to a great extent.

It was suggested by the members that a detailed procedure is needed to be developed by CERC for equitable distribution of fund accumulated in the pool among the beneficiaries and the generators before full-scale implementation of SCED.

OCC advised NLDC/ERLDC to give a presentation in TCC Meeting.

ERLDC/NLDC may give a presentation.

TCC may discuss.

ITEM NO. B4:	Implementation of Automatic Generation Control (AGC) in India (at Inter-State level)

CERC in its order dated 13.10.2015 in Petition No. 11/SM/2015 reiterated the need for mandating Primary Reserves as well as enabling Secondary Reserves, through Automatic Generation Control (AGC) as follows:

"(a) All generating stations that are regional entities must plan to operationalise AGC along with reliable telemetry and communication by 1st April, 2017. This would entail a one-time expense for the generators to install requisite software and firmware, which could be compensated for Communication infrastructure must be planned by the CTU and developed in parallel, in a cost-effective manner.
(b) On the other hand, National/Regional/State Load Dispatch Centres (NLDC/RLDCs/SLDCs) would need technical upgrades as well as operational procedures to be able to send automated signals to these generators. NLDC /RLDCs and SLDCs should plan to be ready with requisite software and procedures by the same date.
(c) The Central Commission advises the State Commissions to issue orders for intra-state generators in line with this timeline as AGC is essential for reliable operation of India's large inter-connected grid."

The issue was discussed in 8th NPC Meeting held on 30th November 2018, it was decided that each RPC would submit the status of implementation of AGC to NPC.

In 154th OCC, It was informed that ISGS generators at Barh STPS and Teesta V HEP are in the process of implementation of the AGC as a pilot project. However, the exact status of implementation could not be ascertained in the meeting.

It was informed by Member Secretary, ERPC that, during the deliberation in the 8th NPC meeting on 30.11.2019, it emerged that states in the other regions had already taken initiative for implementation of AGC. ERPC was advised to sensitize this issue in the ERPC forum.

OCC advised Odisha, West Bengal and DVC to identify one generator in their system for implementation of AGC as a pilot project and place the detailed implementation plan in coming TCC Meeting.

NTPC and NHPC may update.

Odisha, West Bengal and DVC may place the details.

TCC may decide.

ITEM NO. B5:	Repeated Uncoordinated Trippings at 220 / 132 kV Lalmatia S/stn vis – a – vis Handing over of O&M Services and Assets of 220 kV Farakka – Lalmatia(FLTS) of ECL from NTPC to JUSNL

In view of uncoordinated trippings and frequent interruption of Power Supply at 220 / 132 kV Lalmatia S/stn, there is immediate need to replace old, obsolete equipment which are outlived their utility (still in service since 1991) . Protection Audit was carried out by ERPC team on 16.08.2018, which recommended considerable investment for replacement of equipment to dovetail with modern Protection System. Moreover, NTPC is insisting not to continue with O&M Services of FLTS and agreeable with upgradation of the substation which is now much

needed. However, JUSNL informed that the upgradation work of the substation on their part has been awarded to M/s SIEMENS for expediting on priority basis.

ERPC in its 39th meeting advised Secretariat to convene a meeting among the concerned utilities to resolve the issues.

Accordingly, ERPC convened a Special meeting on 13.12.2018 (MoM is enclosed at **Annexure –B5a**), wherein JUSNL expressed that they are agreeable to take the maintenance of FLTS as per the present terms and conditions that ECL is having with NTPC and also to take over the assets from ECL to ensure reliable supply of power to ECL coal mines and its consumers. ECL, in principle, agreed to handover the maintenance of FLTS to JUSNL with the same terms and conditions with NTPC provided JUSNL agrees to bear the Transmission Charges of FLTS to the extent of the use including arrears.

It was decided that ECL, JUSNL and NTPC shall bring the decisions of the meeting to their respective higher authorities and shall convey the consent in writing to ERPC Secretariat within 14.02.2019. If necessary, Jharkhand and ECL shall sit together to develop greater clarity in resolving the issues. If both ECL and Jharkhand agree on the above mentioned points in writing, a Committee of experts may be constituted by ERPC for necessary computation.

ECL vide its communication dated 11.02.2019 informed that (letter is enclosed at **Annexure-B5b**) a meeting was held on 28.01.2019 at JUSNL, Ranchi among JUSNL, ECL and NTPC in which ECL agreed to hand over the entire assets of 220 kV FLTS to JUSNL at some mutually agreed cost taking into consideration the depreciation of assets and increased utilisation of Farakka – Lalmatia System (FLTS) by Jharkhand over the years for meeting its distribution loads.

JUSNL vide mail submitted the minutes of the meeting, which is enclosed at **Annexure-B5c**.

JUSNL may elaborate.

ITEM NO. B6:	**Import of Power by Bhutan in 2019**

DGPC Bhutan vide letter no. DGPC/O&MD/23/2018/437 dated 04.02.2019 intimated that 1st unit of 720MW Mangdechhu HEP, which was supposed to be commissioned in 2018, is still not commissioned due to unavoidable circumstances. It is expected to be commissioned by end of February 2019 if all the works get executed as per the planned schedule.

Due to this, Bhutan has imported a net energy of 11.291923MU from India in the month of January 2019. This net import of power by Bhutan from India may continue during the months of February & March 2019 as well till the 1st unit of MHEP is commissioned.

ERPC Secretariat had convened a meeting on 13.07.2018 to finalize the treatment of import of power by Bhutan during February and March 2018. In the meeting ERPC Secretariat and Director (O&M), DGPC Bhutan gave detailed presentations. It was observed that the entire anomaly has arisen due to non-existence of any suitable tariff between India and Bhutan for import of power by Bhutan. ERPC Secretariat had first adjusted the import of power by Bhutan during Feb-2018 and Mar-2018 from the export of power to India during Apr-2018 and thereafter segregated the balance power into Tala & Chukha components. However, Bhutan has prepared the accounting based on segregation of export of power to India during April

2018 into Tala & Chukha components first and thereafter made the adjustment of import of power during the months of Feb-2018 and Mar-2018.

In the meeting, it was unanimously decided that financial liability arising out of the methodology adopted by ERPC Secretariat for treatment of import of power by Bhutan shall be shared between India and Bhutan on 50:50 basis as a one-time settlement. The same methodology may be adopted for accounting and financial settlement of import of power by Bhutan during 2019 as well.

In 39th Commercial Sub-Committee Meeting, members recommended that, as a special case, the issue of import of power by Bhutan this year should be resolved in line with the methodology adopted in the previous year. This shall be put up to TCC for approval.

In 154th OCC, Member Secretary, ERPC outlined the issues involved in accounting the power imported by Bhutan during winter this year due to delay in commissioning of Mangdechhu Hydroelectric Project in Bhutan. He also informed that the issue was discussed in details in the Commercial Sub-Committee meeting. The decision of Commercial sub-Committee in this regards was also conveyed in the meeting.

In line with the decision taken in the Commercial sub-Committee meeting, OCC also decided to refer this issue to TCC for further guidance.

TCC may guide.

ITEM NO. B7:	**Implementation of differential protection for short distance lines in different substations connected to Powergrid ER-II**

The Lines where line differential protection are to be implemented are as follows:

Sl. No.	Substation name	Name of the Line	Line length in km	Line owned by
1	Durgapur	220KV DGP (PG) - DVC Ckt.-I	1	DVC
2		220KV DGP (PG) - DVC Ckt.-II	1	DVC
3		220KV DGP (PG) - Bidhan Nagar (WBSETCL) Ckt.-I	11	WBSETCL
4		220KV DGP (PG) - Bidhan Nagar (WBSETCL) Ckt.-II	11	WBSETCL
5	Malda	132KV MLD (PG) - MLD (WBSETCL) Ckt.-I	5.94	WBSETCL
6		132KV MLD (PG) - MLD (WBSETCL) Ckt.-II	5.94	WBSETCL
7	Alipurduar	220KV ALPD (PG)- ALPD (WBSETCL) Ckt-I	6.377	WBSETCL
8		220KV ALPD (PG) - ALPD (WBSETCL) Ckt.-II	6.377	WBSETCL
9	Birpara	132KV BRP (PG) - BRP (WBSETCL) Ckt.-I	0.3	WBSETCL
10		132KV BRP (PG) - BRP (WBSETCL) Ckt.-II	0.3	WBSETCL
11	Siliguri	132KV SLG (PG) - NJP (WBSETCL) Ckt.	10	WBSETCL
12		132KV SLG (PG) - NBU (WBSETCL) Ckt.	10	WBSETCL

In 68th PCC meeting, it was opined that differential protection should be implemented for all short lines (<20KM) to overcome relay co-ordination issues with respect to distance and over-current protection.

PCC in principle agreed and opined that differential protection at both the ends could be implemented by one entity to maintain the relay and communication compatibility.

PCC advised Powergrid to implement differential protection at both ends for the above lines.

In 38th TCC Meeting, it was decided that the cost relating to implementation of fiber based differential protection scheme for both ends shall be borne by concerned utilities owning the line.

Therefore, for retrofitting of the old relays budgetary offer has been collected from M/s GE ltd. Vide ref. no.-SPT001/PGCIL dated 22.05.2018. A BOQ has been prepared and the total financial implication comes to Rs. 1,30,27,200/- (One crore thirty lacs twenty seven thousands two hundreds only) including GST and other terms & conditions. Powergrid placed the proposal for

- Technical & administrative approval,
- Financial concurrence for Rs. 1,30,27,200/- (inclusive of GST),
- Execution of work through open tender basis

In 75th PCC, members agreed to the proposal and referred to Commercial Sub-Committee Meeting for discussion.

In 39th Commercial Sub-Committee Meeting, members recommended for implementation of Differential protection for short distance lines in different substations of Powergrid ER-II at cost of Rs. 1,30,27,200/- (One crore thirty lacs twenty seven thousands two hundred only). This shall be put up to TCC for concurrence.

TCC may approve.

ITEM NO. B8:	**Use of Polymer Insulators in the transmission lines**

In 30th ERPC Meeting, Powergrid representative delivered a brief presentation highlighting the benefits of Polymer insulators vis-à-vis porcelain/anti-fog disc type insulators mainly on account of high number of trippings of transmission lines due to flashover of insulators.

ERPC agreed for installation of polymer insulators in new transmission lines and replacement of porcelain insulators with polymer insulators in existing transmission lines.

CEA vide letter dated 28th November 2018 informed that many representations have been received in CEA as well as VIP references from Ministry of Power from various manufacturers and associations highlighting the issue of use indiscriminate use of polymer insulators which are mostly imported from China leading to closure of indigenous porcelain manufacturing industry. To resolve the issue, a meeting was held in CEA on 25.5.2018 with various stakeholders to deliberate on the issue.

PGCIL vide letter no . C/CTU/E/02/TBCB dated 24.10.2018, indicated that on the directions of RPC's, only polymer type insulators are being used in the new transmission lines of PGCIL traversing through states in Northern and eastern Regions. Moreover, PGCIL is replacing the porcelain insulators with polymer insulators in the existing transmission lines of the region. PGCIL has categorically mentioned that the same has been done in accordance with the decision taken in the meetings with Regional Power Committees.

It is to mention that CEA has issued the Regulations and there are specific provisions regarding use of porcelain (disc type/long rod) and polymer insulators . Regulation Clause No. 89(1)(f)(i) of CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations 2010, may be referred in this regard.

It may be clarified whether decision of use of polymer insulation in place of porcelain insulator was taken for some particular lines or locations. Considering the sensitiveness of issue, the same may also be discussed in respective RPC meetings and a balanced approach may be adopted for all future lines.

In 152nd OCC, Powergrid informed that they are following the "Regulation Clause No. 89(1)(f)(i) of CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations 2010".

After detailed deliberation, OCC decided the following:

- *Powergrid should submit the details of the progress made towards insulator replacement work and quantity of polymer insulators received till date*
- *Powergrid should submit the details of order placed for the polymer insulators, which are scheduled to be delivered in near future*
- *The issue would be placed in TCC/ERPC Meeting for detailed discussion*
- *Powergrid should not place any fresh order for polymer insulators till further decision by TCC/ERPC*

Details received from Powergrid is enclosed at **Annexure-B8**.

In 154th OCC, Powergrid informed that the installed polymer insulators were mostly purchased from Indian Vendors.

OCC decided that the details submitted by the Powergrid would be placed in TCC Meeting. Further, a Report would be submitted to CEA based on the deliberation in TCC.

TCC may decide.

ITEM NO. B9:	**National Energy Accounting**

In 8th Meeting of NPC (National Power Committee) held on 30.11.2018 at Guwahati, an agenda note as circulated by NLDC vide letter dated 09.11.2018 (Copy enclosed at **Annexure-B9**) on National Energy Account & National Deviation Pool Account was taken up for discussion. Summary of the proposed methodology is as follows:

1) <u>Scheduling</u>: Scheduling inter-regional transactions on a net basis for each region. NLDC shall communicate the net inter-regional schedules to the NPC for accounting.

2) <u>Metering</u>: SEM data shall be collected by the RLDCs, processed meter data shall be made available to NPC through NLDC.

3) <u>Accounting & Settlement</u>: Based on the scheduling and meter data provided, NPC shall prepare the National Energy Account (NEA) including the National Deviation Account for the inter-regional and trans-national transactions. The NEA will reflect the payables/receivables for each region on a net-basis and this amount shall be payable/receivable to the National Deviation Pool Account which shall be operated by NLDC. The NEA shall also reflect the cross-border or trans-national transactions and the neighbouring countries shall be paying/receiving to/from the National Deviation Pool Account operated by NLDC. Payment to the National DSM Pool shall have the highest priority.

4) <u>Handling Surplus/Deficit in Regional Pool Accounts and transfer of residual to PSDF</u>: Once the National DSM Pool becomes operational, all residual/surplus amount in the regional DSM pools shall be transferred to the National DSM Pool Account. The NPC accounts would also facilitate the transfer of funds from the surplus available in the National DSM pool to the deficit regional DSM pool accounts as a single transaction thereby simplifying the process. Once all liabilities have been met, any residual in National DSM Pool shall be transferred periodically to the PSDF in accordance with the extant CERC Regulations.

In 8th NPC Meeting, it was decided that the proposal on NEA & National Deviation Pool Account may be discussed in all the RPCs and the observations of RPCs may be furnished to NPC Secretariat.

In 39th CCM, it was decided that the constituent would go through the agenda item in detail & give their comments for deliberation in the upcoming TCC meeting.

TCC may discuss.

ITEM NO. B10:	**Certification of non-ISTS lines of OPTCL system carrying ISTS power**

OPTCL vide letter no. RT&C-NON-ISTS/2017-497 dated 02.02.2019, has requested ERPC Secretariat to expedite the process of certification of their 9 nos. of 220KV & 132KV transmission lines as non-ISTS lines carrying ISTS power as follows:

1. 220kV Kuchei-Balasore D/C line
2. 220kV Atri-Pandiabil D/C line
3. 220kV Samagara-Pandiabil D/C line
4. 220kV New Bolangir-Bolangir(PG) S/c line
5. 220kV Bargarh- New Bolangir S/C line
6. 132kV Kuchei-Bangiriposhi S/C line
7. 132kV Kuchei-Baripada S/C line
8. 132kV Kuchei-Jaleswar S/C line
9. 132kV Kuchei-Bhograi S/C line

This is necessary to enable OPTCL to file before CERC for determination of transmission charges.

Accordingly, ERPC Secretariat issued a letter to ERLDC (vide letter no ERPC/COM-I/non-

ISTS/2019/8986-87 dated 11.02.2019 as enclosed at Annexure – B10) requesting to carry out necessary system studies and forward the same to ERPC.

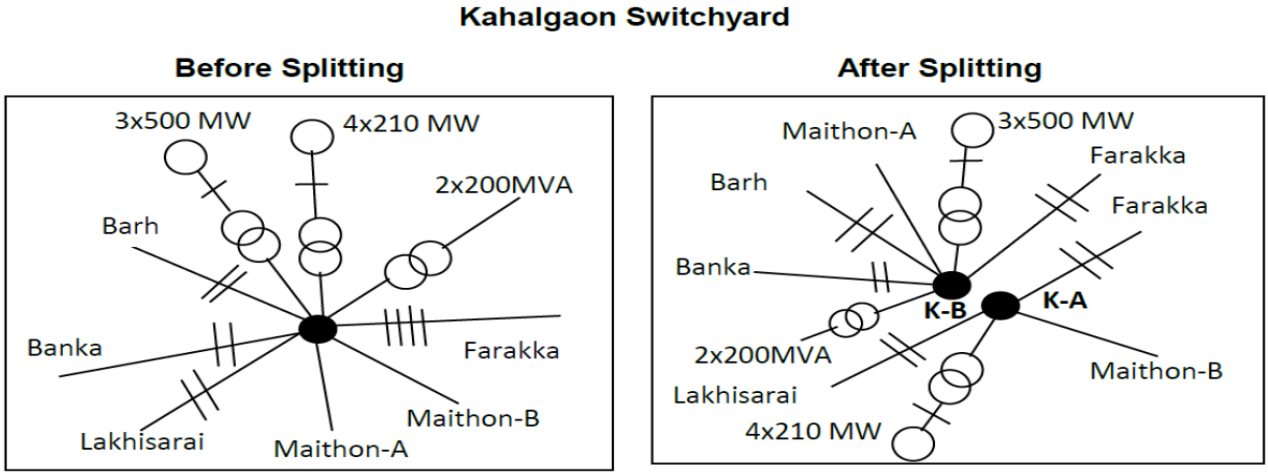
In 39th CCM, ERLDC presented quarter-wise study result for the year 2018-19. It was decided that another quarter-wise study for the year 2017-18 shall also be carried out by ERLDC. Both the results shall be put up to TCC for deliberation.

ERLDC may give a presentation.

TCC may discuss.

ITEM NO. B11:	**Actual Generation Segregation methodology of NTPC Kahalgaon Stage-I & II after Bus Splitting Scheme**

The bus splitting scheme of 400kV Kahalgaon (NTPC) was discussed and agreed in principle in 11th Standing Committee meeting of Eastern region held on 20th Sep 2010 and completion of Bus splitting scheme is expected during Feb 2019. The bus splitting scheme is as follows:



As per the decision taken in 16th Commercial Sub Committee Meeting held on 23.02.2011, Kahalgaon NTPC Stage wise AG computation has to be done by apportioning AG (summation of all outgoing feeders) in proportion to stage wise GT. It was also decided to adopt this proposal as an interim measure. Accordingly, segregation of STG-I & STG-II generation of Kahalgaon (NTPC) as per above methodology was started w.e.f 01.04.2011 and the same is being followed till date.

Post bus splitting of Kahalgaon, the above methodology may be reviewed. Further, after implementation of Bus Sectionaliser, Meter (Main & Check) may be installed at both end of Bus Sectionaliser.

In 39th CCM, it was decided to constitute a Committee with the following members to finalise the methodology to be adopted for segregation of actual generation of NTPC Kahalgaon Stage-I & II after implementation of bus splitting scheme:

1. Sh. Shyam Kejriwal, SE, ERPC – Convenor
2. Sh. N. Ahmed, Manager, ERLDC
3. Sh. R.K. Mondal, AGM, NTPC-Kahalgaon
4. Sh. S.K. Singh, GM(AM), Powergrid (ER-I)

A meeting of the Committee shall be convened at ERPC Secretariat and report shall be submitted to the upcoming TCC.

In line with 39th CCM, the Committee meeting was held on 4th March 2019. Minutes of the meeting are enclosed at **Annexure-B11**.

NTPC may update the latest status.

TCC may guide.

ITEM NO. B12:	**COD of U#4 (660MW) of Barh STPS –II of NTPC**

Hon'ble CERC in its order dated 20th September, 2017 in Petition No. 130/MP/2015 along with IA No. 67/2017 had revised the COD date of U-4 (660MW) of Barh STPS-II as 08/03/2016 in place of 15/11/2014 (Relevant page of CERC order is enclosed at **Annexure-B12a**).

Accordingly, in line with the above decision of CERC, ERPC had revised and issued the REA, DSM & RTA Accounts vide letter dated 12.01.2018 and RTDA Account vide letter dated 02.02.2018 respectively for the period from 15.11.2014 to 07.03.2016 (Copy enclosed at **Annexure-B12b**).

Subsequently, NTPC vide letter dated 18.10.2018 informed that they have filed an appeal before APTEL bearing Appeal No. 330 of 2017 against the above CERC order dated 20.09.2017. Along with the appeal NTPC vide IA No. 840 of 2017 also filed for stay of implementation of the CERC order dated 20.09.2017. In view of above NTPC requested ERPC to keep the revised Accounts in abeyance till the application of stay is decided by Hon'ble Tribunal. In reply, ERPC vide letter dated 19.01.2018 clarified that no stay order has been received till date.

Recently, APTEL has given its judgement for IA No. 840 of 2017 in Appeal No. 330 of 2017. APTEL in its order dated 25th January, 2019 has dismissed the Appeal of NTPC and upheld the impugned order dated 20/09/2017 passed by CERC in petition no. 130/MP/2015 stating that they are of the considered view that the issues raised in the appeal being Appeal No. 330 of 2017 are devoid of merits. (Relevant page of APTEL order is enclosed at **Annexure-B12c**)

Therefore, all the affected beneficiaries of Barh STPS-II along with NTPC and CTU/PGCIL are to initiate action towards settlement of the Accounts as issued by ERPC for the period from 15.11.2014 to 07.03.2016 for implementation of CERC order dated 20/09/2017.

As per the revised statement, beneficiary wise Deviation Charges receivable by NTPC Barh Stg-II Unit IV from the pool for infirm power injection for the period from 15.11.2014 to 07.03.2016 is ₹ 636.86 Cr as per the table below:

Beneficiary	**₹ (Crore)**
BSPHCL	564.8512231
JUVNL	41.0085656
GRIDCO	25.5745384
SIKKIM	2.7492379
MP(WR)	2.6757824
Total	636.8593474

Moreover, apart from the above, Deviation Charges also receivable by Barh STPS from the DSM pool for the above period is ₹ 63.1484181 Crores.

However, the beneficiaries will get refund of Energy Charges, Capacity Charges and Transmission Charges on account of BARH St-II Unit 4 Infirm for the period 15.11.2014-07.03.2016 which is also reflected in the revised statement.

In 39th CCM, Member Secretary, ERPC informed that the power generated by U-IV (660MW) of Barh STPS-II during the period from 15/11/2014 to 07/03/2016 had been treated as infirm generation due to revision of COD date by the Hon'ble CERC vide order dated 20th September,2017 in Petition no. 130/MP/2015. Accordingly, revised accounts were issued by ERPC Secretariat.

NTPC submitted that, as per the Order of CERC, excess payment, if any, received by NTPC during the above period shall be adjusted by NTPC against the capital cost. A letter in this respect has also been received from NTPC (Copy enclosed at **Annexure-B12d***). As and when the revised tariff order is issued by the Hon'ble Commission, NTPC shall revise the bills accordingly.*

There were detailed deliberation on this issue. During deliberation, it emerged that there was no convergence on the interpretation of CERC order regarding treatment of excess payment received by NTPC during the period from 15/11/2014 to 07/03/2016.

It was decided to refer this issue to TCC.

Subsequently, GRIDCO wrote a letter to GM (Commercial), NTPC wherein GRIDCO has informed that they had provisionally estimated the refundable amount along with interest and adjusted in the monthly bill payable during the month of December 2018 and January 2019. Copy of the letter is enclosed at **Annexure-B12e**.

TCC may guide.

ITEM NO. B13:	**Coal requirement for thermal power plants**

MoP vide letter dated 7th February 2019 informed that, it has been decided that in view of expected increased power demand in the next few months up to monsoons, all power plants be advised to be watchful, and do maintain plant availability and adequate coal stocks as per norms, in this period.

All the thermal plants are advised to take effective steps for immediate implementation of the decision. The action taken report may also be forwarded to the Ministry at the earliest.

In 154th OCC, all the thermal generators were advised to assess the requirement of coal in the coming few months and take the necessary action to build up adequate stock to ensure uninterrupted supply of power. Power stations were advised to inform ERPC Secretariat any hurdle being faced by them in this respect, so that, if required, a separate meeting would be convened by ERPC Secretariat with the thermal generators, coal companies and the Railways.

TCC may note.

ITEM NO. B14:	Automatic Under Frequency Load Shedding (AUFLS) Scheme and Mapping of Feeders

(A) Review of AUFLS Settings

In 8th NPC held on 30th November 2018, it was agreed for the AUFLS scheme with 4 stages and **raising the frequency by 0.2 Hz viz. 49.4, 49.2, 49.0 & 48.8 Hz**. It was also decided that, NRPC may appoint a Consultant from their own resources as proposed by MS (NRPC) for studying the AUFLS scheme for Indian grid and submit the study report to NPC Secretariat within a time of six months.

The revised load relief for AUFLS computed by NPC Secretariat would be discussed along with the report of Consultant appointed by NRPC (if available), in the next meeting of NPC which would be held in the month of May, 2019.

TCC may note.

(B) Mapping of Feeders in SCADA

In 8th NPC held on 30th November 2018, NPC emphasized the need of mapping of feeders identified for operation under AUFLS in SCADA system. It was decided that each RPC would submit the details /progress of feeder mapping to NPC Secretariat on a regular basis (quarterly).

In 154th OCC, DVC informed that mapping of the UFR feeders had already been implemented in DVC system.

OCC advised all the other States to submit the latest status to ERPC.

OCC decided to discuss the issue also in SCADA O&M Meeting scheduled to be held on 6th March 2019.

West Bengal, Bihar, Odisha and Jharkhand may update.

TCC may guide.

ITEM NO. B15:	STATCOM PROJECT IN EASTERN REGION

In the 15th meeting of SCM held on 27-08-2013, it was agreed to install STATCOM in combination with mechanically switched Reactors (MSR) and Capacitors (MSC) and co-ordinated control mechanism of MSCs and MSRs at Ranchi, Rourkela, Jeypore and Kishanganj substations in Eastern Region.

The matter was again discussed in the 28th ERPC/TCC meeting held on 12th -13th September, 2014 at Goa, wherein, it was decided that POWERGRID may go ahead with implementation of the STATCOM project in Eastern Region with debt – equity ratio of 70:30 funding. The debt part should be funded through PSDF and Equity Component (30%) to be funded by POWERGRID, which was to be recovered through regulated tariff mechanism.

1. Status of STATCOMS installed in Eastern Region

Out of four STATCOMs, three STATCOMs at Rourkela, Jeypore, and New Ranchi were already commissioned. The latest status as updated in 154th OCC Meeting is as follows:

Sl No	Location of PGCIL Sub-Station	Dynamic Shunt Controller (MVAr)	Mechanically Switched Compensation (MVAr)		Latest status
			Reactor (MSR)	Capacitor (MSC)	
1	Rourkela	±300	2x125		*In service from March 2018.*
2	Ranchi(New)	±300	2x125		*Commissioned on 12th July 2018*
3	Jeypore	±200	2x125	2x125	*Commissioned on 30th June 2018*
4	Kishanganj	±200	2x125		*Expected to be commissioned by end of February, 2019*

Powergrid may update

2. Installation of PMUs for observation of the dynamic performance of STATCOMS

In 39th ERPC Meeting, it was decided that,

i. Power Grid shall immediately place an order on M/s GE for supply and installation of 4 nos. PMUs for 4 STATCOMs in the Eastern Region at an estimated cost of Rs. 40 Lakh.
ii. The cost of the above should be included within the quantity variation clause under the URTDSM Project funded from PSDF.
iii. Powergrid shall approach the PSDF Appraisal Committee for inclusion of the above under the quantity variation clause under the URTDSM Project.
iv. In case PSDF funding for this addition supply and installation is not available, then the cost of PMUs including the installation cost (approx. Rs.40 Lakh) shall be included under the project "Upgradation of SCADA / RTUs / SAS in the Central Sector Stations and strengthening of OPGW network".

In 153rd OCC, Powergrid informed that M/s GE had agreed to supply and install of 4 nos PMUs for 4 STATCOMs in the Eastern Region within the quantity variation clause under the existing URTDSM Project.

Powergrid may update

ITEM NO. B16:	IMPLEMENTATION OF 4TH PHASE AMR INCLUDING REQUIREMENT OF AMR DATA FOR SCADA DATA COMPARISON

In 39th ERPC Meeting, ERPC accorded the approval for procurement and installation of AMRs under 4th phase in the Eastern Region at an estimated cost of **Rs. 1.75 Crore** in place of Rs. 93.56 Lakh as approved earlier in the 37th ERPC Meeting. ERPC suggested that Power Grid should ensure reliability in data transmission by implementing LAN connectivity through OPGW Network wherever feasible.

In 153rd OCC, Powergrid informed that the works had been awarded to M/s TCS on 23rd December 2018 at a cost of **Rs.1.69 Cr** after negotiation.

Powergrid added that the work would be completed by October 2019.

In 39th CCM, Powergrid informed that LOA for 4th phase has been placed.

ERLDC informed about the expiry of phase wise AMC of AMR for existing location and meters from April 2019 onwards. Powergrid further informed that Phase wise expiry of AMC is commencing from June 2019 onward and Comprehensive AMC plan is being prepared and the same shall be put up separately.

Thereafter, Powergrid vide mail dated 1st March 2019 submitted that as per 1st phase LOA, AMC for 656 SEM's which are integrated in Phase-I of AMR implementation, will be start expiring from Jun-2019 & will be completely finished in Jun-2020. As off now it is observed that there are some teething problem faced during the entire span of the operation & having AMC will be prudent to counter any deficiency faced in the installed system. Details of the first phase details are as follows:-

- Total Number of Meters connected: 656
- Total DCU Installed: 129

As per the above mentioned LOAs of AMR Phase-1, total 656 no of meters have been integrated with AMR system. As per the LOA, the contract was for one year warranty and 4 years AMC after receiving TOC from ERLDC.

As per discussion held in 39th CCM, PGCIL already requested TCS to submit a new proposal for renewing the AMC. The new AMC will be till Nov-2024. It may be noted that, in AMC price there are some component considered which has already passed useful life & replacement also envisaged in the package.

Comprehensive AMC Ballpark Value: 4,16,68,201.00 INR (Excluding GST).

Scope of work is enclosed at **Annexure-B16**.

However, the proposal is at initial stage only, further deliberation & discussions will be held with the vendor for finalizing the value and scope.

In view of above, PGCIL is requested to review the same proposal & provide in principle approval for further processing of the renewal of AMC (First Phase).

TCC may approve.

ITEM NO. B17:	**REPLACEMENT OF OLD RTUS IN EASTERN REGION FOR REPORTING OF RTU/SAS TO BACKUP CONTROL CENTRES**

The detailed scope of the project as approved in 39th ERPC Meeting is enclosed in **Annexure-B17.**

In 39th ERPC Meeting, it was decided that,

i) ERPC approved the proposal of Power Grid for replacement of the old RTUs in the Eastern Region for reporting of RTU / SAS to backup control centres at an estimated cost of Rs. 88.57 Crore with an implementation time of 36 months.

ii) Power Grid shall place a proposal before PSDF Committee for financing the above project from PSDF.

iii) In case of non- availability of required funding from PSDF, the project shall be implemented by Power Grid and the cost shall be recovered by Power Grid through tariff.

iv) Member Secretary, ERPC shall coordinate with Power Grid for implementation of the above project.

Powergrid may update.

ITEM NO. B18:	**ALTERNATE PATH FOR MALDA-FARAKKA OPGW LINK**

On 6th December 2017 at 17:26Hrs due to OPGW communication link failure between Malda - Farakka, data and voice communication interrupted between ERLDC and 17 nos of stations located in North Bengal and Sikkim area for 16 Hrs 23 minutes. It was envisaged to form protection path using Purnea – Biharshariff OPGW link but due to recent tower collapse, the formation of protection path yet to be completed. As per information received from M/s ENICL in 150th OCC meeting held on 10th October 2018, it would take approximately Six (6) month to restore the line which was out since 10th August 2018 due to tower collapse.

In 22nd SCADA O & M meeting held on 30th October 2018, ERLDC requested POWERGRID to provide another alternate protection path for Malda – Farakka OPGW link till the restoration of 400 kV Purnea – Biharsharif line.

POWERGRID informed that they would explore the possibility of providing protection path using POWERTEL link / other service provider as an interim arrangement.

Member Secretary, ERPC advised POWERGRID to give a presentation on implementation of interim alternate path for Malda – Farakka OPGW link in 39th TCC meeting.

In 152nd OCC, Powergrid gave a detailed presentation on alternate path for Malda–Farakka OPGW link.

Thereafter, Powergrid informed that the tentative cost implication for providing alternate connectivity between Siliguri 220kV and Muzaffarpur S/s with one STM-4 bandwidth connectivity comes to Rs. 26 Lakhs per annum.

Parallelly the Kishanganj-Darbhanga-Muzaffarpur OPGW link shall be utilized provisionally subsequent to commissioning of 400kV Kishanganj-Darbhanga line by M/s KPTL.

In 153rd OCC, Powergrid was advised to implement alternate OPGW link through 400 kV Kishenganj- Darbhanga-Muzaffarpur lines.

OCC advised Powergrid to coordinate with Kalpatru Power Transmission Ltd. and DMTCL for implementation of the scheme.

In 154th OCC, Powergrid informed that a letter had been sent to Kalpatru Power Transmission Ltd. and DMTCL for necessary support to implement the scheme but no reply had been received from them.

OCC decided to discuss the issue in SCADA O&M meeting scheduled to be held on 6th March 2019 at ERLDC.

Powergrid may update.

ITEM NO. B19:	**IMPLEMENTATION OF AUTOMATIC DEMAND MANAGEMENT SCHEME (ADMS)**

The latest status along with proposed logic as follows:

Sl No	**State/Utility**	**Logic for ADMS operation**	**Implementation status/target**	**Proposed logic (if different from under implementation logic)**
1	West Bengal	F <49.7 AND deviation > 12 % or 150 MW	Implemented on 25.11.16	F <49.9 AND deviation > 12 % or 150 MW
2	DVC	F <49.7 AND deviation > 12 % or 150 MW	Implemented on 17.06.2016	
3	Bihar	F <49.7 AND deviation > 12 % or 150 MW	They would place the order to Chemtrol for implementation.	F <49.9 AND deviation > 12 % or 150 MW
4	Jharkhand	1. System Frequency < 49.9 Hz AND deviation > 12 % or 25 MW 2. System Frequency < 49.9 Hz AND deviation > 12 % or 50 MW 3. System Frequency < 49.9 Hz AND deviation > 12 % or 75 MW	9 Months Tendering for RTU installation is in progress. Offer received from Chemtrol for implementation.	Condition 1: Block I feeders will be selected for load shedding Condition 2: Block I & II feeders will be selected for load shedding Condition 3: Block I, II & III feeders will be selected for load shedding
5	Odisha	1. System Frequency < 49.9 Hz 2. Odisha over-drawl > 150 MW 3. DISCOM over-drawl > (40 MW)	10 Months Sent for PSDF approval.	Logic 2 and 3 is AND or OR, in case it is AND then ADMS may not operated when discom are in schedule but GRIDCO is overdrawing due to less generation at state embedded generators

6.	Sikkim		Sikkim informed that they have submitted a proposal to PSDF Committee for installation of OPGW cables which is under approval stage. Sikkim added that ADMS scheme would be implemented after installation of OPGW.	

In 142nd OCC, members opined that uniform logic should be implemented for all the states. OCC decided to review the logic of ADMS after implementation of the scheme by all the states.

In 154th OCC, Bihar and JUSNL informed that Chemtrol was not responding. As a result, there had been no progress in the implementation of ADMS.

OCC decided to discuss the issue in SCADA O&M Meeting scheduled to be held on 6th March 2019 at ERLDC. OCC advised Bihar and JUSNL send a suitable representative to the meeting with all the relevant details for fruitful discussion.

BSPTCL, OPTCL, JUSNL and Sikkim may update.

TCC may discuss.

ITEM NO. B20:	**FLEXIBLE OPERATION OF THERMAL POWER STATIONS-IDENTIFICATION OF PILOT PROJECTS**

Central Electricity Authority vide letter dated 16th February 2018 informed that a special Task Force was constituted under IGEF Sub-Group-I for enhancing the flexible operation of existing coal-fired power plants. The Committee has recommended for implementation of measures for 50%, 40% and 25% minimum load in thermal power stations. The measures for 50% minimum load operation require no investment or minimal investment. (Report is available on CEA website under TRM division)

Subsequently, a meeting was held under the Chairmanship of Member (Thermal) on 8th February 2018 wherein it was decided that 55% minimum load operation would be implemented nationwide in first phase. Further, six units, comprising of two units of NTPC and one unit each from DVC, GSECL, APGENCO, MSPGCL, would be taken up for 55% minimum load operation on pilot basis as 55% minimum load operation in line with the CERC notification dated 6th April 2016 and 5th May 2017 (IEGC 4th Amendment).

In 142nd OCC Meeting, NTPC informed all the units of NTPC were capable of 55% minimum load operation.

In 37th TCC meeting, DVC informed that they would demonstrate the capability of 55% minimum load operation for one unit of DSTPS.

In 39th TCC, TCC advised DVC to make a plan for demonstration of capability testing with the available grade of coal and the limitations in achieving the 55% of technical minimum, if any may be brought in the report to be submitted in the upcoming OCC Meeting.

In 154th OCC, DVC informed that they could not demonstrate the capability of 55% minimum load operation of DSTPS units due to poor coal quality issues. However, DVC had achieved the 55% of technical minimum operation for units at Chandrapura TPS and Koderma TPS.

OCC advised DVC to submit a report to ERPC within two days to place the details in TCC Meeting.

DVC may update.

ITEM NO. B21:	**STATUS OF CONSTRUCTION OF CHUZACHEN 132 kV BAYS AT RANGPO S/S OF POWERGRID**

Construction of 132 kV bays at Rangpo S/s meant for evacuation of power from Chuzachen HPS was undertaken by Department of Power, Govt of Sikkim, under consultancy with POWERGRID.

In 35th TCC, Sikkim informed that retendering work was in progress.

Sikkim assured that they would commission the bays within the target date i.e. December, 2017.

In 36th TCC, Sikkim informed that the work has been awarded and commissioning is expected by March, 2018.

In 37th TCC, Sikkim assured that they would resolve the issue in coordination with PGCIL ER-II.

In 38th TCC, Sikkim informed that work is in progress and it will be completed by September 2018.

In 39th TCC, Sikkim informed that the work was delayed due to unavoidable circumstances and assured that the work will be completed by February 2019.

Sikkim may update.

ITEM NO. B22:	**REPAIR/RECTIFICATION OF TOWER AT LOCATION 79 OF 132KV RANGPO-MELLI D/C LINE AND CHUZACHEN (RANGPO) -GANGTOK TRANSMISSION LINES**

POWERGRID had informed that their patrolling team had observed bent in part of tower no. 79 of 132kV Rangpo-Melli D/c line and 132 kV Chuzachen(Rangpo)-Gangtok transmission lines which might further degrade the condition of tower.

In 137th OCC, POWERGRID informed that tower no. 79 of 132kV Rangpo-Melli D/c line and Chuzachen(Rangpo)-Gangtok transmission lines falls under the jurisdiction of Energy & Power Department, Govt. of Sikkim.

In 37th TCC, it was decided that Sikkim would give a comprehensive proposal to PGCIL within one week regarding handing over of the relevant segments of the line to PGCIL. Thereafter, PGCIL and Sikkim would sit together and resolve the issues involved therein.

In 145th OCC, Sikkim informed that the proposal had been sent to State Govt. for approval.

In 148th OCC, Sikkim informed that State Govt. for approval is pending.

OCC took serious note of delay in tower rectification and referred to TCC for further guidance.

In 39th TCC, Sikkim informed that the proposal for handing over the line to PGCIL is under consideration with the state Government. They are under the process of preparation of cost estimate of part of the line, which is under Sikkim jurisdiction.

Sikkim may update.

TCC may deliberate.

ITEM NO. B23:	**LOAD TRIMMING SCHEME FOR 400/132 KV MOTIHARI ICTs**

400/132 kV Motihari substation in Bihar is having a two ICTs each with 200 MVA capacity. It has been observed that, due to higher load catering of Bihar along with Nepal, the ICTs are running without N-1 reliability. On 22nd August 2018 at 14:59 Hrs, the ICTs combined load increased to 280 MW and one ICT got tripped on mal-operation of OSR relay due to moisture ingress. This led to overloading of other ICT, which tripped in over-current protection. This led to the loss of 280 MW of Bihar and Nepal.

Such unreliable operation of ICTs due to higher load is not desirable and following action point may be desired:

1. Implementation of Load Trimming Scheme (LTS) on Motihari ICTs.
2. BSPTCL long term plan to ensure the meeting such high demand in the areas.
3. Prevention of Tripping of Motihari ICT on OSR relay mal-operation during moisture ingress in rainy season.
4. Capacity augmentation as long term measures may be planned.

In 149th OCC, it was informed that one more ICT of 315 MVA, 400/132 kV had been planned in 13th Plan, which would be commissioned by May 2020.

OCC advised Bihar to plan a load-trimming scheme till the availability of 3rd ICT at Motihari S/s.

In 39th TCC, BSPTCL requested Powergrid to expedite the installation of 3rd ICT at Motihari S/s. BSPTCL would draw up a plan for load trimming at Motihari to take care of the eventualities arising out of tripping of any of the existing two ICTs. The plan will be finalized within a month and the same will be shared with ERPC and ERLDC.

In 152nd OCC, BSPTCL explained the load trimming scheme.

OCC advised BSPTCL to trip radial loads instead of tripping 132kV lines. OCC also advised to ensure reliable communication for transferring trip signal to respective CBs for successful operation of load shedding scheme.

OCC advised BSPTCL to revise the scheme accordingly and submit the details to ERPC and ERLDC.

BSPTCL may update.

ITEM NO. B24:	**Shutdown of unit-2 of MPL**

WBSEDCL vide letter dated 8th February 2019 informed that shutdown of unit-2 (525 MW) of MPL may be shifted from 06.04.2019 -30.05.2019 to coming winter in view of peak summer and Loksabha elections.

In 154th OCC, no consensus was arrived at regarding the proposal of WBSEDCL for rescheduling of MPL Unit-2 shutdown, OCC referred the issue to TCC for further decision.

TCC may guide.

ITEM NO. B25:	**Maintenance Schedule of MTPS Unit #4 (195 MW) of KBUNL**

KBUNL vide letter dated 1st March 2019 requested to allow the overhauling of unit #4 between June 2019 to Aug 2019 due to following constraints:

- As per OEM recommendation, there is mandatory inspection of generator at first 10000 running hours of generator, which is already due.
- Poor Condenser vacuum, which affects the performance of machine badly.
- Unit 3 (195MW) First overhauling after CoD is also planned between 15.11.2019 to 19.12.2019 (approved as per LGBR 2019-2020).

The issue was already discussed in 154th OCC, no consensus was arrived at regarding the proposal of KBUNL, OCC referred the issue to TCC for further decision.

TCC may guide.

ITEM NO. B26:	**PAYMENT/RECEIPT STATUS FROM VARIOUS POOL ACCOUNTS IN ER**

1) PAYMENT OF DEVIATION CHARGE – PRESENT STATUS

Deviation Pool Account Fund of ER is being maintained & operated by ERLDC, in accordance with the CERC Regulations. As per Regulations 10 (1) of "Deviation Settlement Mechanism and related matters". The payment of charges for Deviation shall have a high priority and the concerned constituents shall pay the indicated amounts within 10 days of issue of statement of

Charges for Deviation including Additional Charges for Deviation by the Secretariat of the respective Regional Power Committee in to the "Regional Deviation Pool Account Fund" of the concern region.

The status of Deviation Charge payment as on 06.02.2019 is enclosed at **Annexure – B26.1.** The current principal outstanding Deviation Charge of JUVNL & BSPHCL is **₹ 55.14 Cr & ₹ 9.83 Cr** respectively considering bill up to 20.01.2019. ERLDC is regularly giving reminders to BSPHCL & JUVNL to liquidate the outstanding Deviation charges.

Further SIKKIM is not paying DSM charges in Pool since last few years and waiting for adjustment with the receivable amount.

SIKKIM may please pay the Payable amount as per bill within due date instead of waiting for adjustment.

In 39th CCM, ERLDC informed that JUVNL has liquidated Rs. 13.88 Cr. JUVNL was asked to clear the pending dues at the earliest. BSPHCL & SIKKIM representative were absent in the Meeting.

BSPHCL, JUVNL & SIKKIM may update.

2) INTEREST DUE TO DELAYED PAYMENT OF DEVIATION CHARGES.

Due to delayed payment of deviation charges in DSM Pool in FY 2017-18, Interest was computed for all the DSM Pool Member. ERLDC vide letter No. संदर्भ:पूक्षेभारप्रेके./एम.ओ/यू-11/2126 dated 26.06.18 was issued the interest statement for FY 2017-18.

The statement of interest amount is enclosed in **Annexure-B26.2.** Settlement of delayed payment Interest for 2017-18 for the recipient constituents has been done on 01.06.18. SIKKIM & IBEUL are yet to clear the outstanding interest amount of 2017-18. In 38th CCM, it was decided that ERPC Secretariat would write a letter to the concerned utilities to release the outstanding amount at the earliest. However concerned utilities are yet to make the payment.

Sikkim may update.

3) REACTIVE ENERGY CHARGES – PRESENT STATUS.

The updated position of Receipt/Payment of Reactive Energy Charges in the pool as on 06.02.2019 (considering bill up to 20.01.2019) is indicated in **Annexure –B26.3**. The total outstanding receivable on account of Reactive charges from West Bengal is **₹ 1.84 Cr** & from BSPHCL is **₹ 0.46 Cr**. Reactive Charge receivable from SIKKIM is **₹ 3.1 Lac.** SIKKIM has not paid the Reactive energy Charges since more than last one year. JUVNL has also the outstanding of **₹ 0.32 Cr** payable to Reactive Pool.

In 39th CCM, JUVNL informed that outstanding dues will be cleared at the earliest. BSPHCL, WBSETCL/WBSEDCL, SIKKIM representative were not present in the Meeting. It was decided that ERPC Secretariat would write Letter to above constituents for resolving their pending issues.

WBSETCL/WBSEDCL, SIKKIM & JUVNL may respond.

4) Outstanding reactive energy charge against WBSEDCL

Reactive Energy charges amount receivable from WBSEDCL prior to 04.01.2016 was ₹ 1.82 Cr (prior to Suo-moto order dated 21.07.2016 of the Hon'ble WBERC in the matter of case no: SM-14/16-17) which was long pending.

However, WBSEDCL has started liquidating the payment in EMI and so far WBSEDCL has paid ₹ 0.91 Cr in 3 installments (3 X 3025688 = 9077064) and 3 more installments amounting to ₹ 0.91 Cr are pending.

WBSETCL/WBSEDCL may update.

ITEM NO. B27:	**Agenda items by NHPC**

1. Signing of reconciliation statement

The 3rd quarter of F.Y 2018-19 reconciliation statements are required to be signed on priority in respect of GRIDCO, WBSEDCL, Sikkim & Jharkhand besides II and III qtrs. in case of DVC.

In 39th CCM, it was informed that the reconciliation between NHPC & GRIDCO is going to be sorted out shortly. JUVNL intimated that they would sign the reconciliation statement within one week. WBSEDCL, DVC, SIKKIM representatives were not present in the meeting.

GRIDCO, WBSEDCL, DVC, SIKKIM & Jharkhand may please update the plan for signing the reconciliation statements.

2. Payment of Late Payment Surcharge by WBSEDCL

The total amount of LPS **₹ 28.78 Crs.** against energy of TLDP-III has been adjusted from the payment received dated 06.12.2018 as per new NHPC payment and rebate scheme dated 10.07.2018 and accepted by WBSEDCL vide their letter No. CE/PTP/NHPC/293 dated 25.09.2018. Thus surcharge amount of **₹ 28.78 Crs** is more than 60 days on balance principal amount as on 31.01.2019.

3. Extension of PPA in respect of TLDP-III & IV Power Stations:

The PPA of TLDP-III Power station has already expired on 31.03.2018 while PPA for TLDP IV project is valid for 05 years period from COD and the same will be expiring on 10.03.2021. Only the formal supplementary agreement is required to regularize extension of these PPA's which has been already confirmed by WBSEDCL vide letter dated 26.07.2012. It is pertinent to mention here that as per minutes of meeting of 103rd ERE Board held on 27.04.2002 at Chalsa and circulated by EREB vide their letter no. EREB/PSD/BOARD/2002/2970-3033 dated 24.05.2002, Principal Secretary (Power), Govt. of West Bengal have confirmed that the entire power from TLDP-III & TLDP-IV H.E. Projects would be absorbed by WBSEB as per the commitment of WBSEB to absorb entire power generated by both the power stations.

4. Selling power from upcoming 500MW Teesta VI Project:

NHPC is envisaging to sell power from its upcoming 500MW, Teesta-VI project in Sikkim. Therefore, in principle consent for the entire period of life i.e 35 years is required from the beneficiaries of Eastern region except for BSPHCL & JBVNL who have already given their consent.

In 39th CCM, it was decided to place the agenda in the upcoming TCC meeting.

TCC may discuss.

ITEM NO. B28:	**Agenda items by Powergrid**

a) Non Opening of LC requisite amount of LC :

1) Following constituents are required to enhance/ extend LC towards Payment Security Mechanism, as per CERC Regulations:

Amount(in Cr.)

Sl No	**Name of DIC's**	**Present Value of LC**	**Value of LC Required**
(i)	North Bihar Power Distribution Company Limited(NBPDCL)	9.73	34.50
(ii)	South Bihar Power Distribution Company Limited(SBPDCL)	14.50	51.83
(iii)	Ind-Barath Energy (Utkal) Limited	--	17.50
(iv)	South Eastern Railway(SER)	--	3.15
(v)	East Central Railway(ECR)	--	43.07
(vi)	Damodar Valley Corporation(DVC)	6.99	21.12

2) Following constituents are required to open new LC towards grant of LTA from Kanti Bijlee Utpadan Nigam Limited Stage –II (2x195 MW) :

Amount(in Cr.)

Sl No	**Name of DIC's**	**Value of LC to be open**
(i)	DVC	0.42
(ii)	GRIDCO	0.92
(iii)	Jharkhand Bijli Vitran Nigam Limited(JBVNL)	0.22
(iv)	Power Deptt. Govt. of Sikkim	0.03
(v)	West Bengal State Electricity Distribution Company Ltd.(WBSEDCL)	0.83
	Total	2.42

The above LC for requisite value and validity required as per CERC Regulations, non availability causing serious problem for POWERGRID to comply with the provisions of CERC Regulations and Loan Covenants.

b) Payment of Outstanding dues more than 60 days :

Amount (in Cr.)

Sl No	Name of DIC's	Total Outstanding dues	Outstanding due more than 60 days
(i)	Vedanta Ltd.	11.59	11.59
(ii)	GMR Kamalanga Energy Ltd.	52.50	38.62
(iii)	Jindal India Thermal Power Limited	2.55	2.55
(iv)	Ind-Bharat Energy (Utkal) Limited	208.61	205.74
(v)	Dans Energy Pvt. Limited	70.76	64.60
(vi)	Jal Power Corporation Limited	45.84	43.95
(vii)	Damodar Valley Corporation(DVC)	177.61	163.14
(viii)	West Bengal State Electricity Distribution Company Ltd.(WBSEDCL)	85.35	7.78
(ix)	GRIDCO Ltd	99.58	23.26
(x)	TeestaValley Power Transmission Ltd(TPTL)	5.75	5.75
(xi)	Teesta Urja Limited(TUL)	8.50	8.50
(xii)	Power Deptt. Govt. of Sikkim	3.30	1.63
(xiii)	Jharkhand Bijli Vitran Nigam Limited(JBVNL)	34.66	15.91
(xiv)	North Bihar Power Distribution Company Limited(NBPDCL)	105.44	42.10
(xv)	South Bihar Power Distribution Company Limited(SBPDCL)	107.80	16.05
	Total	1019.84	651.17

(viii) The outstanding pertaining to WBSEDCL (Surcharge @ 6.7 Cr & Bill # 4 @ 1.89 Cr). WBSEDCL has agreed to pay Surcharge bill in 24 monthly installment & started making payment in the month of August'18. Till date they had paid Sixth (6) installments. However, WBSEDCL has not admitted 1.89 Cr towards Bill # 4.

(ix) The outstanding pertaining to GRIDCO (Surcharge @ 23.26 Cr)

TCC may note.

ITEM NO. B29:	**Approval for the bay swapping arrangement for Commissioning of 1 no 125 MVAR Bus Reactor and 1 no 400 kV line bay at Baharampur under ERSS-XV**

Under ERSS-XV, apart from 400 KV Berhampur-Farakka-D/C (Twin HTLS), one no, 125 MVAR Bus Reactor also envisaged to control persistent over voltage at Berhampur S/S.

In 138th OCC meeting, it was decided to commission above reactor on urgent basis to control voltage problem around Berhampur. Accordingly, Powergrid commissioned above reactor at the allotted Bay 406 as per the scheme ERSS-XV on priority basis to resolve voltage problem issue (DOCO: 30.03.2018).

For commissioning of the above reactor at the allotted Bay 406, one ckt of existing line (400 KV Farakka-Berhampur-S/C) which was connected at bay 406 was shifted to newly

constructed 412 Bay as an interim arrangement till the line was shifted to Sagardhigi on 28th July 2018.

Thereafter, 400 KV Farakka-Berhampur-D/C line (twin HTLS) was charged at bay 409 & 412 on 1st September 2018.

Therefore, commissioning of one no 125 MVAR Bus Reactor and utilization of one no new 400 kV line bay at Berhampur from 30.03.2018 under ERSS-XV may please be agreed.

Powergrid may explain.

PART C: ITEMS FOR INFORMATION

The following items are placed before TCC for noting and compliance:

ITEM NO. C1 :	STATUS OF PROJECTS FUNDED UNDER PSDF SCHEMES

Latest status as updated in 154th OCC Meeting is as follows:

A. Projects approved:

SN	Name of Constituent	Name of Project	Date of approval from PSDF	Target Date of Completion	PSDF grant approved (in Rs.)	Amount drawn till date (inRs.)	Latest status
1	WBSETCL	Renovation & up-gradation of protection system of 220 kV & 400 kV Substations in W. Bengal	31-12-14	April 2018 Extended till March 2019	108.6 Cr	37 Cr.	100 % Supply and Erection is Completed. Compilation of final bills is in progress.
2		Renovation & modernisation of transmission system for relieving congestion in Intra-State Transmission System.	22-05-17	25 months from date of release of 1st instalment	70.13	21.03 Cr	Order has been placed . Work is in progress.
3		Installation of switchable reactor at 400kV & shunt capacitors at 33kV	22-05-17	19 months from date of release of 1st instalment	43.37	6.59 Cr	Order had been placed and work is in progress.
4	WBPDCL	Implementation of Islanding scheme at Bandel Thermal Power Station	*10.04.17*	*March 2018*	1.39 Cr	1.25 Cr	*The islanding scheme had been implemented and in operation wef**15.11.2018***
5		Upgradation of Protection and SAS		April 2020	23.48	2.348 Cr	Bid opened and order has been placed. Work started.
6	OPTCL	Renovation & Up-gradation of protection and control systems of Sub-stations in the State of Odisha in order to rectify protection related deficiencies.	10.05.15	30.11.18	162.5 Cr.	37.79 Cr	Total contract awarded for Rs. 51.35 Cr
7		Implementation of OPGW based reliable communication at 132kV and above substations	15.11.17		25.61 Cr.		Agreement signed on 03.01.2018
8		Installation of 125 MVAR Bus Reactor along with construction of associated bay each at 400kV Grid S/S of Mendhasal, Meramundali& New Duburi for VAR control &stabilisation of system voltage	27.07.18		27.23 Cr		
9	OHPC	Renovation and up-gradation of protection and control system of 4 nos.OHPC substations.		*U.Kolab, Balimela, U.Indravati, Burla, Chiplima March 2019*	*22.35 Cr.*	2.235 Cr	Placed work order.
10	BSPTCL	Renovation and up-gradation of 220/132/33 KV GSS Biharshariff, Bodhgaya, Fatuha, Khagaul, Dehri -on-sone& 132/33 kV GSS Kataiya	11/5/15	31.07.2018	64.02 crore	56.04 crore	85% of work has been completed. Contract awarded for Rs.71.37 Cr till date. The work would be completed by Feb 2019.
11		Installation of capacitor bank at different 35 nos. of GSS under BSPTCL	5/9/2016	31st March 2019	18.88 crore	Nil	Work awarded for all GSS. 90% supply and 60% of erection had been completed.

12		Renovation & up-gradation of protection and control system of 12 nos. 132/33 KV GSS under BSPTCL.	02.01.17	31st March 2018	49.22 Cr.		75% work completed for seven no. GSS as part of R & M work. Revised DPR is to be submitted for rest 5 no. GSS.
13	JUSNL	Renovation and up-gradation of protection system	*September 2017*	*15 Months*	*138.13 crores*		LOA placed to Siemens on 28th Sep 2018.
14	DVC	Renovation and upgradation of control & protection system and replacement of Substation Equipment of 220/132/33 kV Ramgarh Substation	02.01.17	01.06.2019	25.96 Cr	2.596 Crore on 01.06.2017	Work awarded for 28.07 Cr. Work would be completed by May 2019.
15		Renovation and upgradation of control & protection system including replacement of substation equipment at Parulia, Durgapur, Kalyaneshwari, Jamshedpur, Giridih, Barjora, Burnpur, Dhanbad and Burdwan Substation of DVC	27.11.17	24 Months from the date of release of fund.	140.5 Cr.	1st installment of 14.05 Cr. received on 21.12.2017	Work awarded for 77.97 Cr.
16	POWERGRID	Installation of STATCOM in ER		June 2018	*160.28 Cr*	*16.028 Cr*	Work is in progress, expected to complete by June 2018. STATCOM at Rourkela has been commissioned.
17	ERPC	Creation & Maintenance of web based protection database and desktop based protection calculation tool for Eastern Regional Grid	17.03.16	Project is alive from 30th October 2017	20 Cr.	4.94 Cr. + 9.88 Cr.	1) Protection Database Project has been declared 'Go live' w.e.f. 31.10.17. 2) Pending training on PDMS at Sikkim and 3rd training on PSCT has been also completed at ERPC Kolkata.
18a	ERPC	Training for Power System Engineers	*27.07.18*		0.61 Cr.	Nil	Approved
18b		Training on Power market trading at NORD POOL Academy for Power System Engineers of Eastern Regional Constituents	*27.07.18*		5.46 Cr.	Nil	

B. Projects under process of approval:

SN	Name of Constituent	Name of Project	Date of Submission	Estimated cost (in Rs.)	Latest status
1	Sikkim	Renovation &Upgradation of Protection System of Energy and Power Department, Sikkim.	09-08-17	68.95 Cr	The proposal requires third party protection audit. Issue was discussed in the Monitoring Group meeting in Siliguri on 8.6.2018. Sikkim was asked to coordinate with ERPC.
2		Drawing of optical ground wire (OPGW) cables on existing 132kV & 66kV transmission lines and integration of leftover substations with State Load Despatch Centre, Sikkim	09-08-17	25.36 Cr	Scheme was approved by Appraisal Committee. It was sent to CERC for concurrence.
3	JUSNL	Reliable Communication & Data Acquisition System upto 132kV Substations.	23-08-17	102.31 Cr	Scheme was approved by Appraisal Committee. It was sent to CERC for concurrence.
4	OPTCL	Implementation of Automatic Demand Management System (ADMS) in SLDC, Odisha	22-12-17	3.26 Cr	Scheme was approved by Appraisal Committee. It was sent to CERC for concurrence.
5		Protection upgradation and installation of SAS for seven	12-03-18	41.1 Cr.	Scheme examined by TSEG on 20.03.2018. Inputs sought from the

		numbers of 220/132/33kV Grid substations (Balasore, Bidanasi, Budhipadar, Katapalli, Narendrapur, New-Bolangir&Paradeep).			entity are awaited.
6	WBSETCL	Implementation of Integated system for Scheduling, Accounting, Metering and Settlement of Transactions (SAMAST) system in West Bengal	22-12-17	25.96 Cr	Proposal recommended by Appraisal committee as communicated on 16.11.2018.
7		Installation of Bus Reactors at different 400kV Substation within the state of West Bengal for reactive power management of the Grid	12-03-18	78.75 Cr.	Proposal recommended by Appraisal committee as communicated on 16.11.2018.
8		Project for establishment of reliable communication and data acquisition at different substation at WBSETCL.	10-05-18	80.39 Cr.	Proposal recommended by Appraisal committee as communicated on 16.11.2018.
9	BSPTCL	Implementation of Schedulling, Accounting, Metering and settlement of Transcation in Electricity (SAMAST)in SLDC Bihar.	27-02-18	93.76 Cr.	Scheme examined by TSEG on 20.03.2018 & 31.05.2018. Further inputs furnished by BSPTCL on 1.8.2018. Shall be examined in the next meeting of TESG.

In 154th OCC, it was informed that, in PSDF review Committee meeting held on 18th February 2019, it was decided that all the constituents are to submit their fund requisition by 15th March 2019 to the nodal agency for all the approved schemes.

Regarding sl no 12 in approved projects, BSPTCL was advised to submit the latest status to the nodal agency.

ITEM NO. C2 :	**Islanding Scheme of IB-TPS**

Special Meeting on Islanding Scheme of IB-TPS held at ERPC, Kolkata on 12th December 2018 at 11:00hrs. After detailed discussion, the following were decided:

- The alarm for islanding scheme shall be initiated at 49.2 Hz at both Budhipadar and IB TPS to alert the operators
- Islanding of one unit (210 MW) of IBTPS with the selected loads of 149 MW connected through 132 kV level at Budhipadar substation will be initiated at 47.8 Hz of grid frequency with 250 msec time delay.
- The islanding relay Micom P341 at Budhipadar will give trip command to all 220KV feeders connected to Bus-I and Bus II along with Bus coupler except Auto transformer-I & II and selected islanding IB TPS ckts either (IB -1 & 3) or (IB-2 & 4).
- Give trip command to circuit breakers of 132kV Budhipadar-Lapanga S/c line, 132kV Budhipadar-Jharsuguda D/C line and 132kV Budhipadar-Rajgangpur S/C lines at Budhipadar end.
- It will send carrier command to both Kalunga and Tarkera end to trip 132kV Kalunga-Tarkera S/c line from both the ends to make radial load at Kalunga.

- It will send carrier signal to IB TPS to start ramping and adjust IB TPS (one unit) generation to match the load.

In 153rd OCC, OPTCL and OPGC were advised to implement the islanding scheme.

OPTCL and OPGC informed that the islanding scheme would be implemented by June 2019.

ITEM NO. C3 :	RGMO/FGMO and PSS Tuning of Generators in Eastern Region

In line with 148th OCC decision, a separate meeting on Restricted Governor /Free Governor Mode Operation and PSS Tuning of generators with the power station authorities in the Eastern Region was held on 31st January 2019. All the station representatives stated that the gap in understanding the provisions of the grid code had been addressed through the deliberations in the meeting. The minutes of the meeting are enclosed at **Annexure-C3**.

ITEM NO. C4 :	Constitution of Committee for analysing the major outages of ISTS elements of Eastern Region

ERPC Secretariat is issuing certificate for availability of Transmission elements of all ISTS licensee of Eastern Region. ERPC Secretariat has to certify various types of outages based on the reasons specified with reasonable restoration time. Recently, in few cases of major outages, it becomes difficult to ascertain all the facts to arrive at the reasonability of the outage and reasonable time of restoration. Therefore a Committee with members from ERPC, OPTCL, Powergrid, WBSETCL and Sterlite was constituted for **Analysing the major outages of ISTS elements of ER** to identify the category of outage and reasonable restoration time.

The committee will function as per the following guidelines:

i) The Committee shall meet from time to time to analyse the various outages as referred by Member Secretary, ERPC.

ii) The Convener of the committee shall coordinate with all the members to organize meetings.

iii) The Committee shall look into the various details of causes for outage of transmission elements and suggest the category of outage and reasonable restoration time period for of the transmission element.

iv) The committee in its report/minute shall indicate the category and reasonable time period to be considered for each category for all outages as per the prevailing CERC regulations and CERC/CEA/CTU standards.

v) ERLDC may be invited on case to case basis as and when felt by the committee members for verifying the outage time, log, record etc. as available with ERLDC.

vi) The other concerned transmission licensee may be invited on case to case basis for explaining the details of outages of their respective elements.

vii) The above members from Powergrid and Sterlite Power shall not take part in the decision making while analyzing outages of their respective elements. However, in

such cases their function shall be restricted to represent or explain their cases of outages to the Committee.

viii) If required, the committee shall undertake site visit for assessing the actual position in case of major failure of transmission elements which require higher restoration time beyond the standard allowable restoration period.

ITEM NO. C5 :	STATUS OF 400KV TEESTA III-RANGPO-KISHANGANJ D/C LINE

A. STATUS OF 400KV TEESTA III- KISHANGANJ LINE

ERLDC vide letter dated 10.01.2019 informed that 400kV Teesta_III-Kishanganj (from Kishanganj end to Rangpo LILO point) along with associated bays (410) & 63MVAR LR at Kishanganj has charged on 04.01.2019.

B. STATUS OF 400KV RANGPO-KISHANGANJ LINE

TPTL vide letter dated 20th February 2019 informed that 400kV Rangpo-Kishanganj line (upto Rangpo LILO point) along with 63 MVAR line reactor and associated bays (no. 411) at Kishanganj have been put under commercial operation with effect from 00:00 hrs of 13th February 2019.

C. STATUS OF 400KV DIKCHU-RANGPO LINE

TPTL vide letter dated 29th November, 2018 informed that The District Collector of East District, Sikkim vide letter dated 28.11.18 has accorded the permission for charging the 400kV Dikchu- Rangpo line. Subsequently, the line was charged on 30.11.2018.

ITEM NO. C6 :	ESTABLISHMENT OF RENEWABLE ENERGY MANAGEMENT CENTRE (REMC) IN EASTERN REGION

The Government of India has taken up an ambitious programme for capacity addition from Renewable Energy Sources (RES). The all India installed capacity of RES is expected to touch 175 GW by March, 2022. This comprises of 100 GW of Solar, 60 GW of Wind, 10 GW of Biomass and 5 GW of Small Hydro.

The tentative State wise break-up of renewable energy target to be achieved by March, 2022 by Eastern Region are as follows:

(ALL FIGURES IN MW)

State / UTs	Solar Power	Wind Power	Small Hydro Power + Biomass Power	TOTAL
Bihar	2,493	Nil	269	2,762
Jharkhand	1,995	Nil	10	2,005
Orissa	2,377	Nil	115	2,492
West Bengal	5,336	Nil	398.5	5,735
Sikkim	36	Nil	52.11	88
Eastern Region	**12,237**	Nil	**845**	**13,082**

The present installed capacity of Renewable Energy Sources in Eastern Region is 1083.64 MW.

The potential of the Renewable Energy Sources in the Eastern Region is considerably lower than that of Northern, Western & Southern Region.

The generation from the Renewable Energy Sources is characterised by variability and uncertainty. Therefore, integration of the RES into the grid is considered to be a challenging work. The aspect of variability and uncertainty associated with the Renewable Energy Sources requires implementation of the state-of-art, renewable energy forecasting and monitoring system.

Keeping this in view, Ministry of Power, Government of India, has decided to establish Renewable Energy Management Centre at Western, Northern and Southern Region as a part of Green Energy Corridor Scheme.

Further, in order to facilitate integration of the targeted 175 GW of Renewable capacity by 2022, a comprehensive transmission plan is chalked out comprising of intra-state and inter-state transmission system strengthening infrastructure as well as Control infrastructure i.e. establishment of REMC at SLDC/RLDC/NLDC level.

The REMC scheme would help the grid operator to effectively manage power system operations with economy, reliability & security. REMC would also forecast RE generation on different levels such as state/ region/ aggregated pooling station wise etc. based on information from Forecast Service Provider (FSP) as well as Weather Service Provider (WSP). REMC would also help in Renewable Generation Scheduling, real time tracking of generation of RE sources, integration with REMC SCADA & its Visualization & close coordination with respective LDC for RE generation & integration with existing SCADA. Owner of REMC will be the existing SLDCs, RLDCs & NLDC.

At present, the REMC scheme is proposed for the Renewable rich States / regions i.e. Tamil Nadu, Andhra Pradesh & Karnataka in Southern Region. Gujrat, Madhya Pradesh & Maharashtra in Western Region and Rajasthan in Northern Region co-located with SRLDC, WRLDC, NRLDC& NLDC. **No REMC has been decided yet for Eastern Region & North Eastern Region.** The Scheme is proposed to be financed from 100 % Gross Budgetary Support. No financial component / support is involved from the State Govts. / State Discoms.

PGCIL, the CTU will be implementing the scheme and will hand over the REMC to respective states / POSOCO upon commissioning.

To address the issues of RE power integration, commissioning of REMC is a necessary step. GRIDCO is proposing REMC under the 'Green Energy Corridor scheme' for Eastern Region States (to be established in ER state LDCs & at ERLDC).

In the 150th OCC Meeting members felt that REMC is required to be established in Eastern Region also.

In 39th TCC, All the states in Eastern region felt the necessity of establishment of REMC in the eastern region for better forecasting and smooth integration of RES into the regional grid. Since West Bengal, Bihar, Odisha and Jharkhand will be having substantial addition of renewable power, REMC should be established at SLDCs of respective states and at ERLDC as well.

In 39th ERPC, Odisha informed that they are planning for total 3GW renewable energy capacity to be achieved by March 2022 wherein Solar Power addition would be 2200 MW, Wind Power would be 150 MW and Small Hydro including Biomass would be 600 MW.

ERPC agreed with the TCC recommendation regarding the necessity of establishment of REMC in the states of West Bengal, Bihar, Odisha and Jharkhand and at ERLDC as well, considering substantial addition of renewable power in the Eastern Region, the necessity of better forecasting of RE power and smooth integration of RES in the Regional Grid.

ERPC authorised Member Secretary to take up with MoP & MNRE, GOI for implementation of the same.

ERPC Secretariat communicated the ERPC decision to Ministry of Power and MNRE vide letter dated 19th December 2018. (Copy enclosed at Annexure-C6).

ITEM NO. C7 :	**Inclusion of Sikkim in NER Region**

Ministry of Power, Govt. of India vide letter dated 31.10.2018 had desired comments of ERPC on "*whether Sikkim can be included in NER Region in place of Eastern Region, where it is currently included*" keeping **in view of the Grid Operation**.

In 39th TCC/ERPC Meeting the following observations were made:

i. *Sikkim is directly not connected electrically with the North Eastern Region. It is connected geographically and electrically with ER only.*
ii. *Power generated in the Sikkim are exported to Eastern and other regions of the country.(not to NE region)*
iii. *Surplus power available in Sikkim are utilised by ER, SR, NR, WR.*
iv. *Any disturbance originating in Sikkim system will be automatically directly transmitted to ER first and as such ER is susceptible to be affected due to this disturbances. For this regular protection coordination is required to be maintained between Sikkim and rest of the ER for operational purpose.*
v. *Inclusion of Sikkim in NER would have financial implication for transaction of power between ISGS of ER and Sikkim as well as between the Sikkim ISGSs and the rest of the beneficiaries of ER. Further, the allocation of ISGS power of ER allotted to Sikkim and the ISGS power from the station located in Sikkim need to be relooked at. This will create considerable complexity.*

ERPC unanimously decided that, taking into consideration the reliability and security of the Eastern Regional grid and the interest of Sikkim for evacuation of surplus power, Sikkim should continue to remain as an integral part of the Eastern Regional Grid.

In the ERPC Meeting, Sikkim also favoured to remain as a part of the Eastern Grid.

ERPC authorised Member Secretary to convey the views of the ERPC forum to Ministry of Power, Government of India.

ERPC Secretariat communicated the ERPC decision to Ministry of Power vide letter no. ERPC/COM-I/Corres/2018-19/6637-41 dated 12th December 2018. (Copy enclosed at Annexure-C7).

ITEM NO. C8 :	OPERATIONALIZING BLACK START FACILITY AT PURULIA PUMP STORAGE PROJECT (PPSP) OF WBSEDCL

The issue was discussed in last several OCC meetings. However, till date, no progress has been achieved for operationalising the black-start capability. As the orders passed by honorable CERC and APTEL for operationalization of black start facility at PPSP is already in force, under this condition, only two options are available before WBSEDCL: either to perform mock black start test or to obtain an exemption from CERC/APTEL.

The ER grid is already deprived of the reliability benefits that could have been made available by PPSP.

In 38th TCC/ERPC meeting WBSEDCL/WBSETCL informed that they were taking necessary steps regarding the study. They would take expeditious steps depending on the outcome of the study.

WBSEDCL please share the study and explain in detail the actions taken by them during the last two years for operationalizing the black-start facility at PPSP.

In 39th TCC Meeting, it was informed by West Bengal that the necessary study results are not yet received from OEM. However, a study group is being constituted by WEST BENGAL for carrying out the study for operationalisation of Black Start at PPSP. On request from West Bengal in the meeting, ERPC Secretariat and ERLDC agreed to be associated with the study group.

ITEM NO. C9 :	STATUS OF THIRD PARTY PROTECTION AUDIT

The compliance status of 1st Third Party Protection Audit observations is as follows:

Name of Constituents	Total Observations	Complied	% of Compliance
Powergrid	54	46	85.19
NTPC	16	14	87.50
NHPC	1	1	100.00
DVC	40	26	65.00
WB	68	49	72.06
Odisha	59	42	71.19
JUSNL	34	25	73.53
BSPTCL	16	5	31.25
IPP (GMR, Sterlite and MPL)	5	5	100.00

** Pending observations of POWERGRID are related to PLCC problems at other end.*

The substation wise status of compliance are available on ERPC website (Observations include PLCC rectification/activation which needs a comprehensive plan).

ITEM NO. C10 :	Third Party Protection Audit in Sikkim for 20 nos. 132 / 66 kV and 66 /11 kV Substations during March / April, 2019

After persuasions with ENPD, Govt. of Sikkim there are 20 nos. substations (132 / 66 kV and 66 /11 kV) of ENPD, Govt. of Sikkim requiring 3rd Party Protection Audit by ERPC team to be carried out for the purpose of PSDF funding. Out of the 20 nos. substations, only 08 nos. substations located in west & south Sikkim has been finalised for Protection Audit by ERPC team during 12/03/2019 to 16/03/2019 as decided in the 76th Protection Sub-Committee Meeting held on 14.02.2019. The remaining substations in Sikkim has been proposed to be completed during March / April, 2019.

ITEM NO. C11 :	REFUND OF STOA WITHDRAWL POC CHARGES TO DICs PAID BY EMBEDDED CUSTOMERS TO PGCIL TOWARDS THEIR DRAWL IN STOA

As per the 3rd proviso of regulation 11.9 of sharing regulation 2010,

"the injection PoC charge/Withdrawal PoC charges for short term open access given to a DIC shall be offset against the corresponding injection PoC charges or withdrawal PoC charges to be paid by the DICs for approved injection/Approved withdrawal corresponding to net withdrawal (load minus own injection) considered in base case."

and the 4th proviso of regulation 11.9 of sharing regulation 2010, states that

"For withdrawal DIC, this adjustment is given only for STOA transaction by DIC and not applicable to other intra-state entity embedded in state and engages in STOA"

Gridco is taking up matter with PGCIL with respect to adjustment is given only for STOA transaction by directly availed by itself for one to one correspondence. Regarding the short term drawls by intra-state entity embedded in state, it is of the same nature i.e., such STOA transaction by intra-state entity embedded in state is also captured/accounted for while determining the POC charge calculation of the state /DICs for the respective quarters. Surprisingly there is no provision in the extant regulation for adjustment of total STOA charges availed by intra-state embedded entities in the bill #1, the reason being cited by NLDC is the difficulty & complexity involved in calculation keeping in view the no of entities embedded in DIC. Gridco submits that the calculation modalities may be difficult but not impossible.

Hence, in absence of any such modality, for the same drawl quantum, entities are doubly charged which violated the purpose of 3rd amendment regulation 11.9 as existing returns do not have to one to one correspondence since these transactions are paid back to these DICs in proportion to POC charges. Moreover, since such scenario is prevalent in most of the DICs, necessary modalities may be prescribed at ERPC level in absence of regulations towards such adjustment.

The PoC charges of Odisha amounts to ₹ 38.46 Cr per month in 2018-19 in Q1, which has gone up to ₹ 56.26 Cr per month in 2018-19 in Q2. Although the YTC has increased and the total LTA of all the DICs has been decreased due to relinquishment of LTA by some DICs, the major impact on Odisha is due to high STOA drawl of M/s. Vedanta Ltd. in 2018-19 Q2. Ultimately, the consumers of the state shall suffer due to such differential PoC charges which is attributable due to drawl of an embedded Entity like M/S. Vedanta.

In 38th CCM, after detailed deliberation the committee advised GRIDCO to prepare a resolution for considering the refund of STOA withdrawl charges to DICs (i.e. GRIDCO), paid by embedded customers of GRIDCO to PGCIL. The same would be placed before forthcoming TCC and ERPC for discussion and further course of action.

In 39th TCC Meeting, GRIDCO gave a detailed presentation highlighting the issue relating to non-refund of STOA charges corresponding to the state embedded utility. After detailed deliberation, TCC felt that the issue raised by the GRIDCO has a merit and needs to be addressed.

All the utilities of the Eastern Region also supported the views of GRIDCO.

It was decided that on behalf of the Eastern Region constituents this issue would be placed by ERPC Secretariat before the PoC Review Committee constituted by CERC. The necessary inputs with details illustration would be prepared by GRIDCO and submitted to ERPC Secretariat.

In order to develop greater clarity regarding PoC charges all the utilities of ER requested that a practical session for computation of the PoC charges for any quarter should be organized in coordination with CERC and NLDC preferably in Kolkata.

TCC authorized MS ERPC to take up this issue with NLDC and CERC.

Further it was requested to organise a workshop regarding the computation methodology adopted by Powergrid in the bill #4 of the PoC. Powergrid should demonstrate the methodology adopted for arriving the charges shown against each of the utilities of ER in bill #4 in a particular month. This will help the utilities to develop a broad and better understanding and will help them to process the bill expeditiously.

In 39th ERPC Meeting, ERPC authorised Member Secretary to take up the issue with PoC Review Committee constituted by CERC. Necessary draft proposal for the above shall be prepared by GRIDCO and submitted to Member Secretary.

In line with 39th TCC/ERPC decision, ERPC Secretariat had organised the following workshops:

1. *A workshop on "Calculation of Point of Connection (PoC) charges bills" on 29th January 2019 wherein Powergrid gave a detailed presentation on billing of PoC Charges especially bill #3 & 4.*
2. *A practical session on "Computation of PoC Charges for a quarter" on 30th January 2019 wherein NLDC gave a detailed presentation and explained queries of ER Constituents.*

ERPC Secretariat had communicated the issues of GRIDCO to CERC vide letter dated 28th December 2018 (copy enclosed at Annexure-C11).

ITEM NO. C12 :	PAYMENT/RECEIPT STATUS FROM VARIOUS POOL ACCOUNTS IN ER

1) DSM Account Mismatch between ER & NR

A huge mismatch between DSM accounts for ER-NR Link published by ERPC & NRPC has been observed since April 2018. Prior to April 2018 such mismatch was not significant. Actual Meter data of ER-NR Inter regional link, published in NRPC DSM Bill is matching with ERPC/ERLDC/NRLDC Actual SEM data. However, Schedule energy data of ER-NR Inter regional link published in NRPC DSM statement is not matching with ERPC data. It was gathered that some software related issue at NRPC is the main reason for this mismatch. DSM statement for ER-NR Link prepared by ERPC secretariat is correct.

Present statement of ER-NR Inter regional DSM Bill issued by NRPC & ERPC is given in **Annexure-C12.1** for reference. ERLDC had taken up the issue with NRPC through NRLDC for sorting out the issue and for the revision of respective accounts prior to 03.09.2018. However so far revision for period up to 01.07.2018 is done by NRPC and still revision of account for 2 more months are pending. Such huge mismatch in two DSM account is causing problem in settlement of DSM as well RRAS account. The current principal outstanding Deviation receivable by ER Pool from NR Pool for ER-NR is **₹ 330 Cr.**

In 39th CCM, ERLDC informed that NRPC has revised the Deviation Bill for ER-NR up to 1st July 2018. Remaining Period of Revision is pending to be done at NRPC end.

2) Non-payment of Deviation Charges by IBEUL

IBEUL is not paying Deviation charges in ER DSM Pool since 12.04.2017 (almost 2 years) and present outstanding amount payable by M/s IBEUL towards principal deviation charges is ₹ 112.50429 Lac considering bill up to 20.01.2019 and ₹ 21.35362 Lac against the delayed payment interest of deviation charges till 31.01.19. A petition in CERC had been filed in July 2018 by ERLDC against M/s IBEUL for violation of Regulation 10 of DSM regulations 2014. Petition was heard for admission on 13.12.18 and next hearing is due on 28.02.2019.

In 39th CCM, IBEUL representative was not present in the meeting. ERLDC informed that Petition in CERC against IBEUL has been filed and it will be heard on 27.02.19.

3) RRAS ACCOUNT ----PRESENT STATUS.

The updated position of payments to the RRAS Provider(s) from the DSM pool and payments by the RRAS Provider(s) to the DSM pool as on 06.02.2019 (considering bill up to 20.01.2019) is indicated in **Annexure-C12.3**. So far **₹ 227.3 Cr** have been settled under RRAS in ER during FY 2018-19.

4) CONGESTION ACCOUNT - PRESENT STATUS

No Congestion in ER is imposed since 06.12.2012.The status of congestion charge payment after full settlement is enclosed at **Annexure-C12.4.**

5) STATUS OF PSDF

An amount of **₹ 6.86 Cr** from Reactive account have been transferred to PSDF after 38th Commercial sub-committee meeting held on 12.10.18. With this the total amount of **₹ 956.6 Cr**

has been transferred to PSDF so far. No amount from Deviation pool has been transferred to PSDF A/c since 29.06.16 and surplus amount in deviation pool is being utilized for settlement of RRAS & FRAS Bill. The break up details of fund transferred to PSDF (till 06.02.19) is enclosed in **Annexure-C12.5.**

ITEM NO. C13 :	**RECONCILIATION OF COMMERCIAL ACCOUNTS**

1) RECONCILIATION OF DEVIATION ACCOUNTS.

At the end of 3rd quarter of 2018-19, the reconciliation statement (Period: 01.10.18 to 31.12.18) has been issued by ERLDC on 09.01.19 and statements have been sent to the respective constituents. The same has also been uploaded at ERLDC website at https://erldc.in/market-operation/dsmreconcilation/. The constituents were requested to verify /check the same & comments, if any, on the same were to be reported to ERLDC by 31.01.2019. The status of reconciliation is enclosed in **Annexure-C13.1.**

IBEUL has not reconciled the statement for last 2 years.

OPGC has not signed reconciliation statement for last 2 quarter.

BSPHCL, JUVNL, DVC, WBSETCL, SIKKIM, NHPC, KBUNL, GMR, JLHEP, DICKCHU, TASHIDING, Powergrid (ER-I & II) & NPGC have not signed reconciliation statement for 3rd quarter of 2018-19.

In 39th CCM, ERLDC informed that BSPHCL, DVC, KBUNL, Powergrid ER-II have reconciled the statement.

2) RECONCILIATION OF REACTIVE ACCOUNT

At the end of 3rd quarter of 2018-19, the reconciliation statement (Period: 01.10.18 to 31.12.18) has been issued by ERLDC on 09.01.19 and statements have been sent to the respective constituents. The same has also been uploaded at ERLDC website at https://erldc.in/market-operation/reactivereconcilation/ Constituents were requested to verify /check the same & comments if any on the same were to be reported to ERLDC.

SIKKIM & JUVNL have not reconciled the Account since last 2 quarters.

BSPHCL, DVC, GRIDCO & WBSETCL have not reconciled the account of last one quarter.

In 39th CCM, ERLDC informed that GRIDCO has reconciled the statement. BSPHCL, DVC & WBSETCL representatives were not present in the meeting.

3) RECONCILIATION OF RRAS ACCOUNT

At the end of 3rd quarter of 2018-19, the reconciliation statement (Period: 01.10.18 to 31.12.18) has been issued by ERLDC on 09.01.19 and statements have been sent to the respective constituents (i.e. NTPC, KBUNL and BRBCL). The same has also been uploaded at ERLDC website at https://erldc.in/market-operation/rrasreconcilation/ NTPC & BRBCL has reconciled the RRAS Account.

KBUNL may please reconcile the RRAS account.

4) Reconciliation of FRAS Account.

At the end of 3rd quarter of 2018-19, the reconciliation statement (Period: 01.10.18 to 31.12.18) has been issued by ERLDC on 09.01.19 and statements have been sent to the respective constituents (i.e. NHPC). The same has also been uploaded at ERLDC website at https://erldc.in/market-operation/fras-reconciliation/ NHPC has not reconciled the account.

In 39th CCM, NHPC agreed to reconcile the statement shortly.

5) RECONCILIATION FOR STOA PAYMENTS MADE TO SLDC / STU:

The reconciliation statements of STOA payments for the period of Apr'18 to Dec'18 have been sent to the DVC, OPTCL and WBSETCL for checking at their end and confirmation from their side. WBSETCL and OPTCL are yet to confirm for the period from Jul'18 to Sep-18 and DVC is yet to confirm for the period from Oct'18 to Dec'18

In 39th CCM, ERLDC has informed that DVC & OPTCL has reconciled the statement for remaining period respectively.

6) RECONCILIATION FOR PAYMENTS RECEIVED FROM STOA APPLICANTS:

The reconciliation statements of STOA payments for the period from Apr'18 to Jun'18 have been sent to CESC, JITPL, JUVNL and WBSEDCL for checking at their end and confirmation.

CESC has confirmed for the above period. WBSEDCL is yet to confirm for the period Jul'18 to Dec'18. JITPL is yet to confirm for the period Jul'18 to Sep'18. JBVNL has not confirmed for the entire period.

As per clause 15.1 of CERC approved STOA bilateral procedure, since the confirmations have not been received within 2 weeks from the date of issuance of the letters, the statement issued by ERLDC have been deemed to be reconciled. The details are attached in the **Annexure-C13.5.**

Since there is a serious audit objection on non-signing of DSM, Congestion and STOA reconciliation statement it is once again requested that all regional pool members may check and sign the statement sent by ERLDC.

In 39th CCM, ERLDC informed that JBVNL has reconciled. WBSEDCL representative was not present in the meeting. It was decided that ERPC Secretariat would write a letter to concerned utilities to reconcile the statements at the earliest.

7) Opening of LC by ER constituents for DSM payments

Clause 10 (4) of CERC Deviation Settlement Mechanism and related matters Regulations, 2014 vide notification No. L-1/132/2013/CERC dated 6th January, 2014 to be implemented from 17.02.2014 is reproduced below:

Quote
All regional entities which had at any time during the previous financial year failed to make payment of Charges for Deviation including Additional Deviation Charges for Deviation

within the time specified in this regulations shall be required to open a Letter of Credit (LC) equal to 110% of its average payable weekly liability for Deviations in the previous financial year, in favor of the concerned RLDC within a fortnight from the date these Regulations come into force.……..
…….Provided further that LC amount shall be increased to 110% of the payable weekly liability in any week during the year, if it exceeds the previous LC amount by more than 50%.
Unquote

The details of LC amount required to be opened in 2018-19 by ER constituents is given in **Annexure – C13.7**. Letters to this effect has been issued by ERLDC to the defaulting entities.

IBEUL & Tashiding (SHIGA) have to open fresh LC but they have not opened the LC till date.

BSPHCL, JUVNL, SIKKIM & APNRL have not been renewed after expiry of their LC. In 39th TCC/ERPC Meeting, JUVNL had assured to open the LC with requisite amount shortly. Rest of the constituents who have to open the LC have opened LC.

In 39th CCM, ERLDC informed that the letters had been sent to the defaulting entities to open the required LC but there was no response from their end.

BSPHCL, SIKKIM, IBEUL & TASHIDING representative were not available in the meeting.

It was decided that ERPC Secretariat would write a letter to concerned utilities to open the requisite LCs at the earliest.

ITEM NO. C14 :	**REPLACEMENT OF GPRS COMMUNICATION WITH OPTICAL FIBER FOR AMR**

In ER, 80% meters are connected through Automated Meter Reading (AMR). At present the communication system used for data transfer from each location is GPRS. It has been observed that many locations are not communicating with AMR system due to poor/no GPRS signal. Many substations have their own optical fiber which is also used for the LAN network of respective stations. TCS has successfully connected 03 locations (Malda-PG, Subhasgram-PG and Binaguri-PG) in ER-II with PGCIL intranet and these two locations are smoothly reporting to AMR system after connecting with PGCIL LAN. The proposed network will not only provide better communication but also reduce the cost of GSM. The above matter was last discussed in 145th OCC meeting also.

In 38th CCM, POWERGRID informed that the replacement of GPRS communication for the remaining 38 locations would be completed by December 2018.

The committee also advised to other utilities to explore possibilities of using their own optical fiber network, wherever it is available, for communicating with AMR for smooth functioning of AMR.

In 39th CCM, Powergrid informed that 32 locations out of 38 have been completed and remaining 6 locations would be completed by April 2019.

Powergrid requested other utilities to share their Fibre details to explore possibilities of using their own optical fiber network, wherever it is available, for communicating with AMR for smooth functioning of AMR.

ITEM NO. C15 :	PROCUREMENT OF NEW SEMS

In 30th ERPC meeting procurement of 965 no of SEM's and 110 nos of Laptop/DCD (in 111th OCC meeting) was approved. Further 31st TCC/ERPC approved the cost sharing mechanism of expenditure on SEM's and DCD/Laptops along with POWERGRID overhead charges @ 15% to be shared by the beneficiaries constituents of Eastern Region in proportional to the share allocation for the month in which the proposal was approved in the ERPC meeting.

In 35th CCM held at ERPC on 02.08.17, PGCIL informed that in 1st phase, 300 meters and 40 laptops with software had been supplied by M/s Genus so far.

In 145th OCC, PGCIL informed that meter of 2nd lot has been supplied. Time drifted meters/Elster meters are being replaced by Genus meters phase wise.

In 38th CCM, POWERGRID informed that 364 nos. (approx.) of SEMs would be delivered in 3rd phase and the inspection of the same is scheduled by December, 2018.

In 39th CCM, Powergrid informed that remaining 364 nos. of meters have been delivered.

ITEM NO. C16 :	ISSUES RELATED TO ASSOCIATED / DOWNSTREAM SYSTEMS

WEST BENGAL

1. **2 nos. 220 KV line bays at Subhashgram (PG) s/s**: Bays are ready and idle charged under ERSS-VIII due to non readiness of 220 KV D/C Subhashgram – Baruipur Tr. line and associated bays at Baruipur.

2. **6 nos. 220 KV bays at Rajarhat GIS substation under ERSS-V -** 02 no. bays of 220 KV will be utilized through LILO of 01ckt of 220 KV Jeerat - New Town Tr. line (WBSETCL) at Rajarhat. Construction activity of 220 kV line bays was completed. Due to public agitation, work was stopped from January' 2017 and during the agitation miscreants have damaged several panels, cables etc. Work for commissioning of the station has commenced from Sept 18 and expected to be completed by Dec 18.

In 154th OCC, WBSETCL updated the completion schedule of inter-connecting system as follows:

Sl. No.	Name of the transmission line	Completion schedule
1.	**2x500MVA, 400/220kV Rajarhat---**	
a.	Rajarhat-N. Town-3 (WBSETCL) 220 kV D/C line	The line commissioned on 1st February 2019.
b.	Rajarhat-N. Town-2 (WBSETCL) 220 kV D/C line	ROW problem, December 2019
c.	Rajarhat- Barasat (WBSETCL) 220 kV D/C line	The line is charged from Rajathat and Jeerat. The line would be charged from Barasat end after completion of rest of

		the work by March 2020.
2	**Subashgram400/220kVS/s**	
a	Subashgram–Baruipur220kVD/cline	Sep 2019, 80% of work has been completed.

ODISHA

1. **6 nos. 220 KV bays at Pandiabil GIS: 06 nos.** 220 kV bays at Pandiabil (PG) substation are ready for commissioning since July '16. Utilisation of the bay is held up due to non-readiness of 220 KV lines of OPTCL. Readiness of 220 KV Feeders by OPTCL is critical for downstream power flow from Pandiabil (PG) S/S.

In 154th OCC, OPTCL updated the completion schedule of inter-connecting system as follows:

Sl. No.	Name of the transmission line	Completion schedule
1.	400/220kV Pandiabil Grid S/s:	
a.	Pratapsasan(OPTCL)-Pandiabil(PG) 220 kV D/C line	*By March, 2019.*

JHARKHAND

The following downstream network is being constructed by JUSNL to draw power from 220kV & 132kV level from Daltonganj (PG) :

220 kV Level :
- Daltonganj (POWERGRID) – Latehar 220 kV D/C
- Daltonganj (POWERGRID) – Garhwa 220 kV D/C

132 kV Level :
- Daltonganj (POWERGRID) – Daltonganj (JUSNL) 132 kV D/C
- Daltonganj (POWERGRID) – Chatarpur/Lesliganj 132 kV D/C

In 154th OCC, JUSNL updated the latest status as follows:

Sl. No.	Name of the transmission line	Completion schedule
1.	**Daltonganj 400/220/132kV S/s:**	
a.	Daltonganj(POWERGRID)–Latehar220kVD/c	By Dec, 2019.
b.	Daltonganj (POWERGRID) – Garhwa 220kV D/c	The line expected to be completed by May, 2018 but – Garhwa 220kV is expected to be completed by June 2019.
c	Daltonganj (POWERGRID) – Chatarpur/Lesliganj 132kV D/c	Tendering is in progress. Expected to be completed by October 2019
2	**Chaibasa400/220kVS/s**	
a	Chaibasa(POWERGRID)–Noamundi220kVD/c	Not yet started
3	**Dhanbad400/220kVS/s**	
a	LILO of Govindpur–Jainamore/TTPS 220kVD/c at Dhanbad	ROW issues.Target date November 2018.

****

ANNEXURES

एनएचपीसी लिमिटेड
(भारत सरकार का उद्यम)
NHPC Limited
(A Government of India Enterprise)

स्वच्छ भारत
एक कदम स्वच्छता की ओर

फोन/Phone :_____
दिनांक/Date : 24/01/2019

संदर्भ सं./Ref. No. एनएच/ओ&एम/जीएमसी/223

Member Secretary,
Eastern Regional Power Committee (ERPC)
14, Golf Club Road,
Tolleyganj,
Kolkata-700033

Sub: 39th Commercial Sub-Committee Meeting to be held on 18th February 2019: Agenda thereof.
Ref.: ERPC Letter No. ERPC/COM-I/CCM/2018-19/8046-79 Dated 22/01/2019.

महोदय,

This is in reference to your referred letter on the captioned subject. The Agenda Point of NHPC is attached herewith as Annexure-I for inclusion in 39th Commercial Meeting of ERPC to be held on 18th February 2019.

Thanking You.

Encl.: As above.

भवदीय,

24.1.19
(V K Sinha)
General Manager (O&M)-I

39th Commercial Sub-Committee Meeting of ERPC to be held 18th February 2019.

Agenda: CERC DSM Regulation, (4th Amendment)- Discrepancy in Actual Transmission data of Rangit Power Station, NHPC.

As per CERC DSM Regulation, (4th Amendment issued by CERC vide order No. L-1/132/2013-CERC dated 20/11/2018) in the event of sustained deviation from schedule in one direction by any regional entity, such Regional entity shall have to change sign of their deviation from schedule at least once after every 6 time blocks. The violation under this clause attracts additional charges of 20% on the daily DSM payable/receivable. In case of Rangit Power Station (3X20MW) of NHPC when machines are not operational (Off peak hour in lean season) and schedules is zero the actual transmission figures are non-zero resulting in deviation from schedule. In this scenario, when there is no injection of Power from Rangit, the actual transmission figures are beyond control of Power Station, therefore it is not possible to do the sign reversal of deviation from schedule as stipulated in the above said regulations resulting in additional charges to NHPC.

Similar case also existed in Northern Region, which was taken up with NRPC in the 155th OCC Meeting of NRPC held on 17th January 2019, wherein it was decided that ***"where injection schedule given to the generator is zero and the power from the grid is being drawn by the generator for their auxiliary consumption, in such scenario, no "additional Charge" for sustained deviation shall be imposed***".

Accordingly, the Deviation Settlement Account for the week 31st December 2018 to 06th January 2019 has also been issued by NRPC on above assumptions (Copy attached).

In view of above, it is requested that in above condition when there is no injection from Rangit Power House or in such cases, the additional charge as Penalty on sign change may not be considered.

It is also requested that the supporting file of Deviation Settlement Account may also be provided to the utilities so that the data considered for calculation of deviation charges can be verified by the utilities. The same is being provided by NRPC/NERPC.

Annexure-B1b

Subject: **REG: Additional deviation charges imposed on TUL by ERPC during zero schedule**

Date: 02/08/19 06:35 PM

From: DP Bhargava <dpbhargava@teestaurja.com>

To: "mserpc-power@nic.in" <mserpc-power@nic.in>,
"dk.jain@posco.in" <dk.jain@posco.in>

Cc: BD Kumar <devendra.b@teestaurja.com>,
Yogendra Kumar <ykumar@teestaurja.com>,
Jaideep Lakhtakia <jaideep.l@teestaurja.com>

Sir,

Subject: Additional deviation charges imposed on TUL by ERPC during zero schedule

We would like to highlight that when the generation schedule of Teesta-III HEP is '0', only grid power is flowing through Teesta-III HEP bus-bar. During such period additional deviation charges has been imposed on Teesta-III HEP ,due to no sign change. We have been penalized to the tune of Rs. 1.75 lacs as DSM charges for the the period of 01-Jan-2019 to 20-Jan-2018 by ERPC. Summary of the same is given below:

Additional deviation charges (ADC) during 01-Jan-19 to 20-Jan-19							
Sl.No	Description		**1-Jan-19 to 6-Jan-19**	**7-Jan-19 to 13-Jan-19**	**14-Jan-19 to 20-Jan-19**	Total value(Rs)	Remarks
1	During Machine Idle Condition (Generation SCH-Zero)	ADC due to sign change when Machine is Idle	-200578.45	-96807.53	-66992.29	-364378.27	**By considering both ADC due to sign change and revenue during machine was in idle condition ,Penalty of Rs 1.75 Lakhs was paid from TUL to ERPC for the period of 1-Jan-19 to 20-Jan-19**
		ADC due to volume limit when machine is Idle	-42128.82	-31731.31	-35419.15	-109279.28	
2	Total revenue earned when Machine is in Idle Condition(Generation SCH-Zero)		105189.02	147299.89	45189.66	297678.57	

Since our generation schedule is zero, we should not be penalized due to flow of grid power through Teesta-III bus bar. Therefore, it is requested that above issue may kindly be included as an agenda item for the following meetings

39th Commercial Sub committee on 18th Feb-2019 at ERPC, Kolkata
154th OCC Meeting on 21-Feb-2019 at MejiaTPS, DVC, Mejia, WB

With Regards,
D.P. Bhargava
Chief Consultant (Operations & Maintenance)
Teesta Urja Limited

Kanti Bijlee Utpadan Nigam Limited
(A Wholly Owned Subsidiary of NTPC Ltd.)

Muzaffarpur Thermal Power Station

Ref. No. KBUNL/COMML/1584 Date: 14-02-2019

To,
The Member Secretary
Eastern Regional Power Committee (ERPC)
14, Gilf Club Road, Tollygunge
Kolkata – 700033

Subject: Methodology for Calculation of Additional Deviation Charge for Over Injection by CGS when Grid Frequency is 50.05 Hz & above.

Dear Sir,

This is with reference to the Weekly DSM Account, being issued by ERPC w.e.f 01.01.2019, on the basis of Amended DSM Regulations dated 20th November, 2018.

It has been observed that while calculating the ADC for over injection by Central Generating Station (CGS) when grid frequency is 50.05 Hz & above, the Rate of DSM is being taken as ACP but in our views it should be ACP or ECR (lesser of the two). In this regards please refer the following references:

"Quote"

DSM Principal Regulations, Dated 6th January, 2014

7. Limits on Deviation volume and consequences of crossing limits

(4) In addition to Charges for Deviation as stipulated under Regulation 5 of these regulations, Additional Charge for Deviation shall be applicable for over-injection/under drawal of electricity for each time block by a seller/buyer as the case may be when grid frequency is „"50.10 Hz and above" at the rates equivalent to charges of deviation corresponding to the grid frequency of "below 50.01 Hz but not below 50.0 Hz" (page-9).

DSM Amended Regulations, Dated 20th November, 2018

3.7 Clause (3) of Regulation 5 of the Principal Regulations shall be substituted as under :-

"(3) The Cap rate for the charges for deviation for the generating stations whose tariff is determined by the Commission shall be equal to its energy charges as billed for the previous month (page-5).

4.12 In clause (4) of Regulation 7 of the Principal Regulations, the words "50.10 Hz and above" shall be substituted by the words "50.05 Hz and above" (page-7).

Page 1/2

पो0–काँटी थर्मल, जिला–मुजफ्फरपुर पिन–843130 बिहार। टेलिफोन न0 06223-267307 फैक्स 06223-267310
PO - Kanti Thermal, Dist.- Muzaffarpur , PIN- 843130 Bihar . Telephone 06223-267307, Fax 06223- 267310
पंजीकृत कार्यालय : एन्टीपीसी भवन, स्कोप कम्प्लेक्स, 7, इन्स्टीयूशनल एरिया, लोधी रोड, नई दिल्ली – 110003
Regd. Office: NTPC Bhawan, SCOPE Complex, 7, Institutional Area, Lodhi Road, New Delhi - 110003

"Unquote"

So in our views, while calculating the ADC for over injection by a Generating Station, whose Tariff is determined by the Hon'ble CERC, when grid frequency is 50.05 Hz & above, the Rate of DSM at freq. 50 Hz should be applicable and the rate of DSM at 50.00 Hz in our case is ACP or ECR (lesser of the two).

It is, therefore, requested that the necessary corrections may please be done while calculating the ADC on the above case.

Matter may be taken as Additional Agenda Point for discussion in 39th Commercial Sub-committee Meeting (CCM) of ERPC to be held on 18th February, 2019, if required.

With Regards,

14/02/2019

(R P Singh)
AGM (Commercial)

Copy:

1. Chief Executive Officer, KBUNL: for Kind information Please.

पो०-कांटी थर्मल, जिला-मुजफ्फरपुर पिन-843130 बिहार। टेलिफोन न0 06223-267307 फैक्स 06223-267310
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Regd. Office: NTPC Bhawan, SCOPE Complex, 7, Institutional Area, Lodhi Road, New Delhi - 110003

Power System Operation Corporation Ltd.

National Load Despatch Centre (NLDC)

Procedure for Pilot

on

Security Constrained Economic Despatch

for

Inter State Generating Stations pan India

Prepared in Compliance

to

CERC Order dated 31st January 2019

in

Petition No. 02 /SM/2019 (Suo-Motu)

February 2019

Table of Contents

1. Preamble

1.1. This Procedure is issued in compliance to CERC order dated 31st January 2019 in Petition No. 02/SM/2019 (Suo-Motu) in the matter of Pilot on Security Constrained Economic Dispatch (SCED) of Inter-State Generating Stations (ISGS) Pan India, hereinafter referred to as "SCED Pilot".

1.2. The objective of SCED is to optimize the despatch of the generation resources at inter-state level which are participating in the SCED Pilot and reduce the overall cost of production of electricity. The implementation of SCED is a step towards implementation of optimization techniques in the despatch processes at inter-state level in the Indian Power System..

1.3. All the words and expressions used in the Procedure shall have the same meaning as assigned to them in various CERC Regulations.

1.4. This procedure would be implemented w.e.f 01st April 2019.

2. Objective

2.1. The objective of the procedure is to lay down the roles, responsibilities, scheduling, despatch, accounting and settlement methodologies to be followed by the National Load Despatch Centre (NLDC), Regional Load Despatch Centres (RLDCs), State Load Despatch Centres (SLDCs), Regional Power Committees (RPCs), National Power Committee (NPC), ISGS in the implementation of the SCED.

3. Scope

3.1. The Procedure shall be applicable to all the thermal ISGS that are regional entities and whose tariff is determined or adopted by the CERC for their full capacity, hereinafter, referred to as ***"SCED Generators"***. The SCED Generators would exclude gas based and nuclear based ISGS To begin with, Gas stations are being excluded in the pilot project as one physical station is using multiple fuel types as

complexity on account of unit commitment/open or closed cycle operation is to be factored in real time.

3.2. The Procedure shall also apply to CTU, SLDCs, RLDCs, NLDC and RPCs.

4. Role of National Load Despatch Centre (NLDC)

4.1. NLDC would implement requisite software applications for the SCED Pilot and update it from time to time for all the SCED Generators without compromising grid security and honouring the existing scheduling practices prescribed in the Indian Electricity Grid Code.

4.2. NLDC shall run the SCED application to generate the SCED / optimized schedules for the participating generators and communicate the same to the RLDCs for incorporation in the schedules.

4.3. NLDC would maintain and operate a bank account in the name of "National Pool Account (SCED)" for payments to/from the SCED Generators.

4.4. NLDC would prepare a consolidated all India statement, week wise and month-wise, indicating the schedules on account of SCED.

4.5. NLDC would issue a consolidated "National SCED Weekly Statement" indicating the payment and receipts to/from all SCED generators.

4.6. NLDC would send the consolidated "National SCED Weekly Statement" to RPCs and NPC..

5. Role of Regional Load Despatch Centres (RLDCs)

5.1. The respective RLDCs would incorporate the SCED schedules as received from NLDC and maintain the relevant data during the operation of the pilot including but not limited to generating station-wise installed capacity, declared capacity, schedule (including all revisions), URS, generator wise Variable cost, SCED optimized schedules for up/down, , and requisition from the generating stations.

5.2. The scheduling details related to SCED as implemented would be provided by RLDCs to NLDC. The reconciliation of schedules on account of SCED would be done by RLDCs with the data provided by NLDC before forwarding to RPCs.

6. Role of Regional Power Committees (RPCs)

6.1. The RPCs would issue weekly SCED accounts along with the DSM, RRAS, FRAS and AGC accounts based on the data provided to them by RLDCs.

6.2. The RPCs would certify the compensation towards heat rate degradation, if any, due to SCED separately in its accounts for all SCED generators.

7. Scheduling & Despatch of ISGS under SCED

7.1. The existing schedule & despatch procedure in accordance with IEGC *(Part 6 - Scheduling and Despatch Code)* would continue for all entities.

7.2. The revisions on account of DC, Requisition, URS, RRAS, LTA/MTOA/STOA etc. for SCED Generators by the utilities and schedule revisions of the SCED Generators by RLDCS would continue as per existing practices in IEGC *(Section 6.5 - Scheduling and Despatch procedure for long-term access, Medium –term and short-term open access)*

7.3. NLDC would run the SCED procedure to prepare the SCED schedule based on the following data of SCED Generators:

7.3.1. Normative On bar declared capability
7.3.2. Injection schedule (latest revision)
7.3.3. Ramp Rates (as declared in RRAS)
7.3.4. Variable Charges (as declared in RRAS)
7.3.5. Technical Minimum (as per IEGC provisions)
7.3.6. Inter-Regional Transfer Capability

The Mathematical Formulation of the Economic Despatch Model used for SCED procedure is enclosed at **Annexure - I.**

7.4. A schematic of scheduling under SCED Procedure is placed at **Annexure - II** for better clarity and understanding.

7.5. The SCED algorithm would not do unit commitment.

7.6. The SCED schedules, with the increment/decrement values, for each SCED Generator in a particular time block would be intimated by NLDC to respective RLDCs, normally, one-time block in advance.

7.7. RLDCs, would incorporate the SCED optimized schedule in the respective SCED Generator's schedule and provide a net injection schedule. The information exchange between RLDCs and NLDC would be as per ***Format SCED1.***

7.8. SCED schedules shall be treated as deemed delivered. There would be no retrospective changes in the SCED schedules.

7.9. The schedules of the states/beneficiaries would not be changed under SCED and the beneficiaries would continue to be scheduled based on their requisitions from different power plants as per the existing practices.

7.10. A virtual SCED entity, VSCED-[Region] shall be created in the scheduling process of the RLDCs which shall act as a counter-party to the SCED schedules for all SCED generators. For example, in the Northern Region, VSCED-NR shall be created. The virtual SCED entity, by its very nature, is not a physical entity bounded by meters and hence, shall not form a part of the Regional DSM Pool.

7.11. Applicable injection and withdrawal loss will be applied to SCED schedules as per the existing scheduling practice.

7.12. The URS available due to Regulation of Power Supply provisions as per the CERC Regulations would also be used for SCED procedure similar to RRAS.

7.13. The SCED Generator whose scheduling has been restricted due to transmission constraints shall not be considered in the SCED optimization algorithm for despatch. The concerned RLDC shall inform NLDC about such generators. .

7.14. In case of any interruption in the SCED procedure (e.g. failure of optimization algorithm to converge, loss of data, communication failure, failure to update schedules, etc.), the schedules prepared through existing scheduling framework shall become applicable. NLDC/RLDCs shall notify the same. In such a case, the SCED Generators shall change its generation to come back to the schedule without SCED as per its declared ramp rate. After an interruption, SCED algorithm shall be restarted taking the existing schedule as a starting point for the SCED algorithm.

8. Data and Voice Communication

8.1. All SCED Generators would ensure the availability of real time updated data to the RLDCs. CTU would ensure reliable communication between the respective SCED Generators and RLDCs and between RLDCs and NLDC.

8.2. RLDCs would provide information related to SCED optimized schedules of SCED Generators on their websites. The data display on NLDC/RLDCs Website (for each SCED Generator) would be as per ***Format SCED2.***

9. Energy Accounting & Settlement

9.1. Energy Accounting for SCED optimized schedules shall be done by the respective RPC on weekly basis along with the DSM, RRAS, FRAS and AGC accounts based on the data provided to them by RLDCs.

9.2. NLDC would prepare a consolidated all India statement, week wise and month-wise, indicating the SCED optimized schedules.

9.3. The variable charges (paise/kWh) declared by the generators for the purpose of Reserve Regulation Ancillary Services (RRAS) shall be considered in the SCED procedure.

9.4. NLDC would maintain and operate a bank account in the name of "National Pool Account (SCED)" for payments to/receipts from the SCED Generators.

9.5. For any increment in the injection schedule of a SCED Generator due to SCED procedure, the SCED generator would be paid from the National Pool Account (SCED) for the incremental generation at the rate of its variable charges.

9.6. For any decrement in the schedule of a SCED provider due to optimization, the SCED provider shall pay to the aforesaid National Pool Account (SCED) for the decremental generation at the rate of its variable charges.

9.7. The payments to/receipts from the SCED Generators would be based on the statement of SCED issued by the Secretariat of the respective RPC. No separate bills shall be raised for this purpose.

9.8. NLDC would issue a consolidated "National SCED Weekly Statement" comprising of payment and receipts to/from all SCED generators. NLDC would send the same to RPCs and NPC. The NLDC "National SCED Weekly Statement" (for each SCED Generator) would be as per ***Format SCED3.***

9.9. The concerned SCED Generator would pay the indicated charges for SCED decrement within seven (07) working days of the issue of statement of SCED by the RPC to the National Pool Account (SCED). Payments against SCED shall not be adjusted against any other payments by the SCED Generator.

9.10. The concerned SCED Generator shall be paid the indicated charges for SCED increment within ten (10) working days of the issue of statement of SCED by the RPC from the National Pool Account (SCED).

9.11. The RPCs would certify the compensation to be paid to the SCED Generator for heat rate degradation, if any, due to SCED separately in its accounts for all SCED generators. A statement in this regard shall be issued by the RPCs on a monthly basis as per format given as ***Format SCED4*** in this procedure. NLDC shall pay compensation for heat rate degradation to the SCED generators as per the statement issued by the RPCs from the National Pool Account (SCED) within seven (07) working days of the issue of the monthly statement by the RPC.

9.12. NLDC shall maintain a record of all savings on accrual basis in the National Pool Account (SCED) on a weekly basis. As mentioned in the CERC Order, the methodology of sharing of the savings accrued in the National Pool Account (SCED) would be decided by CERC in due course.

10. Removal of Difficulties

10.1. Notwithstanding anything contained in this Procedure, NLDC/RLDCs may take appropriate decisions in the interest of System Operation. Such decisions shall be taken under intimation to CERC and the procedure shall be modified/amended, as necessary.

10.2. In case of any difficulty in implementation of this procedure, this procedure shall be reviewed or revised by POSOCO and submit to the CERC for information.

Annexure – I

Mathematical Formulation – Security Constrained Economic Despatch

Objective Function

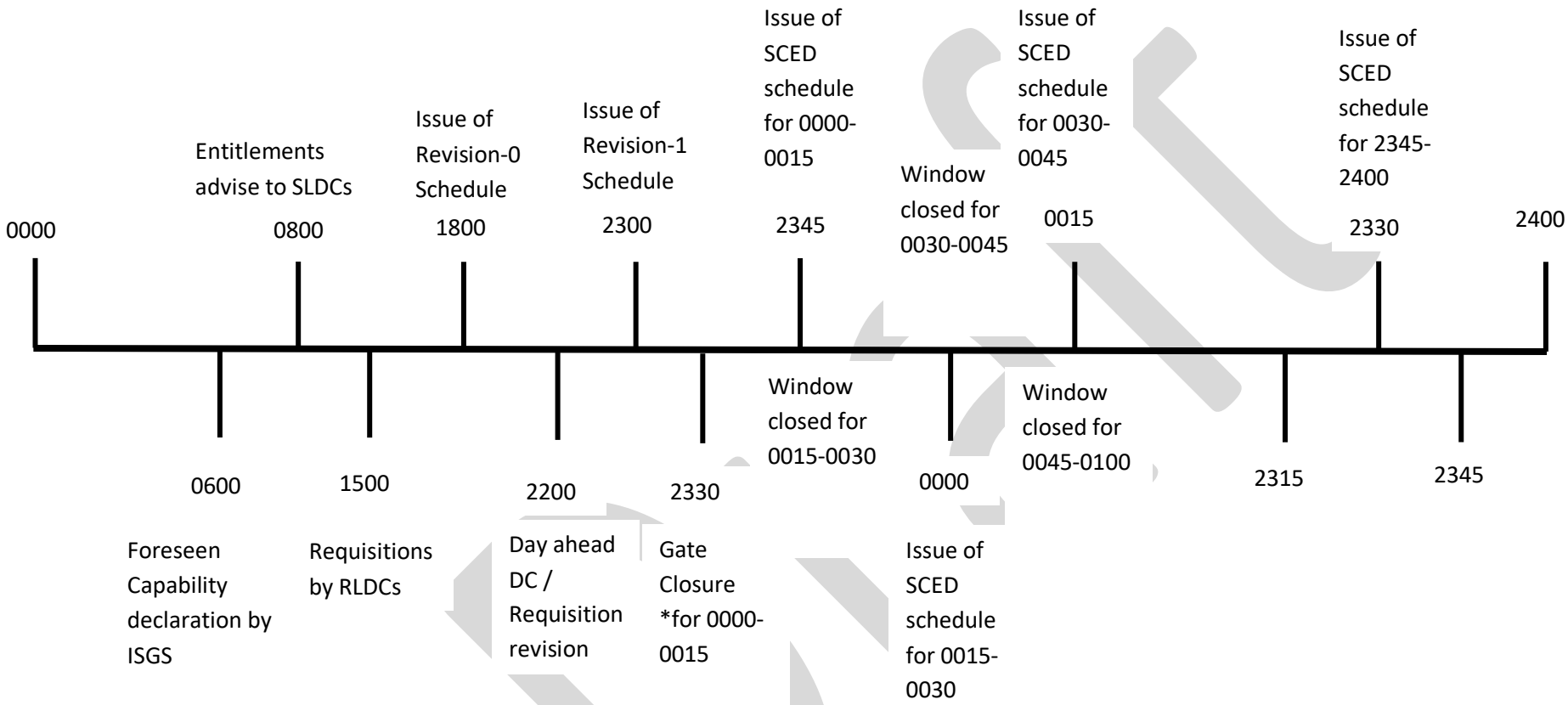
- Minimize Pan India ISGS Variable Cost

Subject to Constraints

- Meeting Total Requisition by States from ISGS
- Transmission Constraints (ATC)
- Technical Minimum of Plants
- Maximum Generation (DC-on-bar)
- Ramp up/down rates

- Minimise $\sum_{i=1}^{k} C_i P_i$
  - k = *total number of Plants*
  - *Where* C_i *is the variable per unit cost of the* i^{th} *Plant*
  - P_i *is the optimised scheduled power of the* i^{th} *Plant*
- Subject to
  - $\sum_{i=1}^{k} P_i = \sum_{i=1}^{k} S_i$
  - $P_i \leq (DC\ on\ bar)$
  - $P_i \geq P_{i,min}$
  - $P_{i,t} \leq P_{i,t-1} + Ramp\ up\ rate$
  - $P_{i,t} \geq P_{i,t-1} - Ramp\ down\ rate$
  - $\forall r \in R,\ \sum_r (P_{i,r} - S_{i,r}) \geq (SCHIR_r - ATC_r)$
    - S -is the scheduled power
    - t -represents current time of execution
    - R -represents each of the regions viz., North, East, West, South and North East
    - ATC -is the Available Transmission Capability of each region R
    - $SCHIR$ -is the Scheduled Net Interchange of the region R
    - $P_{i,min}$ is the *technical minimum* for thermal power plants, considered 55% of *DC on bar*

Annexure II: Schematic of Scheduling under SCED Procedure



**As per IEGC, no further changes to DC, Requisition or schedule would be allowed after the window is closed for an identified delivery period*

Format SCED1: Information Exchange between RLDCs and NLDC

A. Data from RLDCs to NLDC (for each SCED Generator)

SCED Generator Name: xxxxxxxxx

Time block	On bar DC	Normative DC on Bar	Injection schedule	Ramp Up	Ramp Down	Technical Minimum	Net Inter-regional schedule of each region	Implemented SCED schedule as incorporated in WBES by RLDC
1								
2								
…….								
96								

B. Data from NLDC to RLDCs (for each SCED Generator)

SCED Generator Name: xxxxxxxxx

Time block	Scheduled Generation (MW) **(a)**	Incremental increase or decrease in generation (MW) of SCED Generator (Increase (+)/Decrease(-)) **(b)**	Final SCED Optimized Scheduled Generation (MW) **(c) = (a) + (b)**
1			
2			
…….			
96			

Format SCED2: Data Display on RLDCs Website (for each SCED Generator)

SCED Generator Name: xxxxxxxxx

Time Block	ISGS	MTOA	STOA	LTA	Power Exchange	URS	RRAS	**SCED**	Net Total
1									
2									
.									
.									
96									
Average									
Maximum									
Minimum									
MWHR									

Format SCED3: NLDC "National SCED Weekly Statement" (for each SCED Generator)

SCED Generator Name: xxxxxxxxx

For Week <<from date>> <<to date>>

Date of the Week	Increment due to SCED (MWHr) **(A)**	Decrement due to SCED (MWHr) **(B)**	Charges To be Paid to SCED Generator from National Pool (SCED) (in ₹) **(C) = (A) x V.C.**	Charges To be Refunded by SCED Generator to National Pool (SCED) (in ₹) **(D) = (B) x V.C.**	Net Charges Payable (+) / Receivable (-) (in ₹) **(E) = (C) – (D)**
Day 1					
Day 2					
….					
Day 7					

Format SCED4: RPC "Statement of Regional/National Compensation due to Part Load Operation on Account of SCED" (for each SCED Generator)

SCED Generator Name: xxxxxxxxx

For Month <<from date>> <<to date>>

Date of the Week	Decrement due to SCED **(MWHr)**	Compensation to be Paid to SCED Generator as certified by respective RPCs **(in ₹)**
Day 1		
Day 2		
…..		
Day 7		
Total		

Annexure-B5a By Speed Post

सत्यमेव जयते

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
पूर्वी क्षेत्रीय विद्युत समिति
Eastern Regional Power Committee
14, गोल्फ क्लब रोड, टालीगंज, कोलकाता-700033
14 Golf Club Road, Tollygunj, Kolkata-700033

ISO 9001:2008

Tel No.:033-24235199, 24235005 FAX No.:033-24221802, 24221358 Web: **www.erpc.gov.in**

No: ERPC/MS/Lalmatia/ 2018/ 6661-67 **Date: 14.12.2018**

To:

1. Director (Operation), ECL, Sanctoria, Dishergarh, WB, Pin - 713333.
2. General Manager (E&M) I/C, ECL, Sanctoria, Dishergarh, WB, Pin - 713333.
3. CGM, FSTPS, NTPC Limited, Farakka.
4. GM (OS), ER – I (HQ), NTPC, Patna
5. Chief Engineer (Trans.), JUSNL, Ranchi.
6. GM cum CE, Transmission Zone, Dumka.
7. Executive Director, ERLDC, Kolkata.

Sub: Special Meeting on "Implementation of Protection Audit Report of ERPC in connection with Repeated interruption of Power Supply from 220/132 kV Lalmatia S/ S" held on 13.12.2018 - Minutes of Meeting (MoM) - regarding

Dear Sir,

The minutes of the meeting (MoM) **"Implementation of Protection Audit Report of ERPC in connection with Repeated interruption of Power Supply from 220/132 kV Lalmatia S/ Stn"** held at **ERPC, Kolkata** on **13.12.2018 Thursday)** is enclosed for kind information and necessary action **within 14.02.219** which will facilitate ERPC for further action in this regard.

Thanking you,

Yours faithfully,

14/12/18

(J.Bandyopadhyay)
Member Secretary

ERPC:: KOLKATA

Minutes of the Special meeting on "Implementation of Protection Audit Report of ERPC in connection with Repeated Interruption of Power Supply from 220/132/33 kV Lalmatia S/S" held on 13.12.2018 at ERPC, Kolkata

ECL, NTPC, JUSNL, ERLDC and ERPC participated in the meeting. List of the participants is attached in Annexure-A.

Member Secretary welcomed the participants. He informed that the meeting has been convened in compliance with the decision in the 39th ERPC meeting held on 17th November, 2018. He pointed out that repeated uncoordinated trippings and maloperation of relays at 220/132/33 kV Lalmatia S/S in the recent past. A Committee constituted by the protection coordination committee visited Lalmatia S/S on 16th August, 2018 for onsite inspection and for third party protection audit. The audit observations were forwarded to JUSNL and NTPC for compliance.

In the 39th TCC meeting, JUSNL informed that the upgradation work of substation in Jharkhand system has been awarded to M/s Siemens. JUSNL had already taken up with Siemens for expediting the work at Lalmatia on priority basis.

In the above TCC meeting NTPC informed that many of the equipment at Lalmatia S/S are very old, obsolete and have outlived their utility. Since the Farakka-Lalmatia system is owned by ECL, this needs to be replaced by ECL to ensure compliance of the audit observations.

In the meeting today (13-12-2018), NTPC reiterated that they are a generating company and has neither the expertise nor the license to maintain the transmission line. The 220 kV Farakka-Lalmatia S/C line and Lalmatia S/S is at present maintained by NTPC. NTPC is being essentially a power generator has genuine difficulty for continuance of the existing maintenance. NTPC appealed that the maintenance entrusted to NTPC be handed over to some other authorised transmission licensee.

ECL informed that the 220 kV Farakka-Lalmatia system was commissioned in 1990 by ECL. However the system is also being used by Jharkhand to meet a major part of its distribution load at Lalmatia. ECL further informed that at present no mechanism is in place to recover the transmission charges from Jharkhand to the extent of utilisation of Farakka-Lalmatia system by Jharkhand. As a result ECL has incurred huge losses to maintain this line and the substation. Before making any fresh investment to comply with the audit observations, the decisions regarding sharing of the investment based on extent of utilisation between ECL and Jharkhand should be finalized.

ERLDC on query from JUSNL, clarified that cost of Farakka-Lalmatia transmission system has not been factored into the YTC for PoC calculation.

Member Secretary, ERPC highlighted the seriousness of the issue arising out of the repeated tripping of the Farakka-Lalmatia system. He pointed out that, in case of any major failure in the system, not only Jharkhand and ECL would be affected, the security of the national grid would be at stake. As such the issue needs to be expeditiously resolved with all seriousness.

Thereafter detailed deliberation took place and the following decisions were arrived at.

13/12/18

1. NTPC would implement on urgent basis the recommendations of the third party protection audit team pertaining to the points where equipment replacement/capital investment is not involved.
2. JUSNL ensured that the recommendations of the audit team would be implemented by June, 2019 pertaining to the system owned by JUSNL. Monthly progress in this respect shall be submitted by JUSNL to ERPC secretariat for deliberation in monthly PCC meetings.
3. ECL, in principle, agreed to hand over the maintenance of Farakka-Lalmatia system to Jharkhand with the same terms and conditions as they are having now with NTPC, provided Jharkhand agrees to bear the transmission charges of the Farakka-Lalmatia system to the extent of the use including arrears to the ECL.
4. It was suggested by Member Secretary ERPC that, since the core competency of ECL lies in mining activities, ECL should explore the possibility of handing over the entire Farakka-Lalmatia system to Jharkhand at some mutually agreed cost taking into consideration the depreciation of the assets and the increased utilisation of the Farakka-Lalmatia system by Jharkhand over the years for meeting its distribution load.
5. ECL also in principle agreed to the above proposal of Member Secretary ERPC.
6. JUSNL expressed that they are agreeable to take the maintenance of the Farakka-Lalmatia system as per the present terms and conditions that ECL is having with NTPC. JUSNL is also agreeable to take over the asset from ECL. JUSNL informed that as per the transmission planning of the Jharkhand system, a second 220 kV Farakka-Lalmatia line is programmed to be commissioned by Jharkhand in immediate future. Owning the existing infrastructure of Farakka-Lalmatia system would be an added advantage for JUSNL and to ECL as well, as this will ensure reliable supply to ECL coal mines. However the financial modalities and intricacies for transfer of the asset needs to be worked out in details and should be mutually agreed upon.
7. ECL, JUSNL and NTPC shall bring the decisions of this meeting to their respective higher authorities and shall convey the consent in writing to ERPC Secretariat within 14.02.2019. If necessary, Jharkhand and ECL shall sit together to develop greater clarity in resolving the issues.
8. Member Secretary ERPC informed that, if ECL and Jharkhand agree on above mentioned points in writing, a committee of experts may be constituted by ERPC for necessary computation.

The meeting ended with vote of thanks to the chair.

13/12/2018
(Dr. M. K. Mishra)
GM(E &M), ECL

(H. P. Joshi)
GM(OS), NTPC

13/12/18
(A. Nayak)
GM(C &M), JUSNL

Tuhar Rajan Mohapatra 13/12/18
(T.R. Mohapatra)
Chief Manager, ERLDC

Jayadev Bandyopadhyay 13/12/18
(J. Bandyopadhyay)
MS, ERPC

Annexure-B5b

ईस्टर्न कोलफील्ड्स लिमिटेड
(कोल इंडिया का एक अभिन्न अंग)
अध्यक्ष-सह-प्रबंध निदेशक का कार्यालय
सांकतोड़िया, पत्रालय -डिसेरगढ़,
जिला -पश्चिम बर्धमान, पश्चिम बंगाल713333-
ई एंड एम विभाग
सी .आइ .एन -.U10101WB1975GOI030295
वेबसाइट -www.easterncoal.nic.in

EASTERN COALFIELDS LIMITED
(A subsidiary of Coal India Limited)
Office of the Chairman-cum-Managing Director
Sanctoria, P.O.: Dishergarh,
Dist.-Paschim Bardhman, West Bengal-713333
E&M Department
CIN-U10101WB1975GOI030295
Website- www.easterncoal.nic.in

Ref: ECL/HQ/E&M/Power/ HOD/877

Dated: 11.02.2019

To,
The Member Secretary,
Eastern Regional Power Committee
14,Golg Club Road, Tollygunj
Kolkata – 700038
Fax No. 033- 24239652, 24239663
e-mail: mserpc-power@nic.in

Sub: Handing over the Assets of 220 kV FLTS to JUSNL

Ref : (i)Your Letter No. ERPC/MS2018/6015-23 Dt. 29.11.2018
(ii) Minutes of the Special Meeting held on 13.12.2018 at ERPC, Kolkata
(iii) Our Letter No. ECL/HQ/E&M/HOD/Power/12-704 Dt. 18/19.12.2018

Dear Sir,

With reference to the Special Meeting held on 13.12.2018 at ERPC, Kolkata with regard to 220 kV Farakka-Lalmatia Transmission Line (FLTS), it is to convey that, the competent authority of ECL has agreed to hand over the entire assets of 220 kV FLTS to JUSNL at some mutually agreed cost taking into consideration the depreciation of the assets (AS IS WHERE IS basis) and the increased utilization of the Farakka- Lalmatia system by Jharkhand over the years for meeting its distribution load.

Vide letter ref. no. (iii), ECL had requested ERPC for computation of cost payable by JUSNL for asset of 220 kV FLTS and for utilization of 220 kV FLTS with arrear.

In this connection, ECL vide letter ref. nos. ECL/HQ/E&M/HOD/Power/12-705 Dt. 18/19.12.2018 to JUSNL and vide letter ref. no. ECL/HQ/E&M/HOD/Power/12-706 Dt. 18/19.12.2018 to JBVNL requested for arranging meeting on the said issue as advised by ERPC.

A meeting was held on 28.01.2019 at JUSNL, Ranchi among JUSNL, ECL and NTPC in which ECL has intimated to JUSNL to hand over the entire assets of 220 kV FLTS to JUSNL at some mutually agreed cost taking into consideration the depreciation of the assets and the increased utilization of the Farakka- Lalmatia system by Jharkhand over the years for meeting its distribution load.

Thanking you.

11/02/19

(H C Ojha),
GM(E&M)-HOD

Cc: The Managing Director, JBVNL- Engineer's Building, HEC, Dhurwa, Ranchi- 834004.
Cc: The Managing Director, JUSNL- JUSNL Building, Kusai Colony, Doranda, Ranchi, PIN-834002.
Cc: DT (OP)- ECL, for kind information
Cc: DT (P&P) – ECL, for kind information
Cc: DF-ECL, for kind information
Cc: GM (Operation) – NTPC
Cc: GM (T&MS)/ TS to CMD, ECL
Cc: GM (I/C) - Rajmahal Area, ECL

Record notes of discussions held on 28.01.2019 with M/s ECL and NTPC under chairmanship of Managing Director, JUSNL, Ranchi in the Conference Hall of SLDC Building, Ranchi in respect of transfer of Assets of 220 KV Farakka-Lalmatia System.

Members Present:

JUSNL

1. Sri Niranjan Kumar, IP & TAFS, Managing Director, JUSNL, Ranchi
2. Sri Atul Kumar, Director(Project), JUSNL
3. Sri Jai Prakash, ED, JUSNL, Ranchi
4. Sri Amar Nayak, General Manager (C&M,NWBP),JUSNL

M/s ECL & M/s NTPC

1. Sri Malay Khunti Jana, DGM/FSTPS
2. Sri Sumit Kumar, AGM/ NTPC
3. Dr. M.K.Mishra, GM (E&M),M/s ECL
4. Sri S.Jana , Dy. Manager (E&M), M/s ECL.

Managing Director, JUSNL welcomedthe representative of M/s ECL & M/s NTPC.

Sl.No.	Point Discussed	Discussion held on 28.01.2019
1.	**Assets of Farkka-Lalmatia system for handing over to JUSNL**	M/s ECL in principle agreed to hand over the assets of Farkka-Lalmatia system to JUSNL based on necessary cost computation by ERPC and mutually agreed upon taking into consideration the depreciation of assests and the increased utilization of the 220 kV Farkka- Lalmatia system by Jharkhand for meeting its distribution Load over the years. M/s NTPC informed that they are neither having the expertise to operate & maintain the transmission line nor the transmission license. NTPC reiterated for relieving from O&M responsibility of 220 kV Farkka- Lalmatia system. **JUSNL expressed that the proposal of M/sECLis not agreeable. Being state transmission utility JUSNL is ready for O&M of FLTS system considering the importance of Grid security in the Eastern region on the following two options:-** **(i) M/s ECL agrees to handover the O&M part of the system on the same term & condition as exists with M/S NTPC.** **(ii) If M/s ECL wants to hand over the entire assets, the cost required for up gradation of the system will have to borne by M/s ECL.** **If the above proposal is not accepted by M/s ECL, they may explore for another option as early to avoid system failure in the eastern region due to pathetic condition of the system as observed by protection audit team of ERPC.**

The meeting was concluded with vote of thanks.

Sd/-
General Manager, C&M (Non WB Project)

Memo No. 183 / Ranchi dated 12-02-19

Copy forwarded M/s ECL& M/s NTPC information and necessary action.

14/02/2019

General Manager, C&M (Non WB Project)

स्वच्छ भारत
एक कदम स्वच्छता की ओर

पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
POWER GRID CORPORATION OF INDIA LIMITED
(A Government of India Enterprise)
पावरग्रिड

पूर्वी क्षेत्र -I क्षेत्रीय मुख्यालय : बोर्ड कॉलोनी, शास्त्री नगर, पटना- 800023 (बिहार), दूरभाष : 0612-2283002 (इपीएबीक्स)
Eastern Region -I RHQ. : Board Colony, Shastri Nagar, Patna - 800023 (Bihar),Tel. : 0612-2283002 (EPABX)
CIN : L40101 DL 1989 GOI 038121

Ref: ER-1/PAT/CGM/AM/ \ 6333

Date: 12.02.2019

To,

The Member Secretary,
Eastern Regional Power Committee,
14, Golf Club Tollygunj, Kol – 700033.

Sub: **Use of Polymer Insulator in Transmission Lines.**

Sir,

You may kindly recall that the subject matter was discussed in the 153rd OCC meeting held at Kolkata. As desired, we are hereby giving the status of utilization/awards of Polymer Insulator in the Eastern Region-I :-

1) Porcelain Insulator already replaced with Polymer Type:

Sl no	Name of Transmission line	No. of Strings
1	400 kV Patna-Balia-III & IV	5916
2	220 kV Dalkhola Purnea	756
3	400 kV Kahalgaon- Barh-I (M/C Portion)	1152
4	400 kV Barh-Patna-III & IV	5664

2) Replacement expected in future: Depending upon availability of shutdown from time to time.

3) Polymer Insulator presently lying in stocks.

Item description	Nos. of Strings
400 kV /120 kN	650
400 kV/160 kN	650

4) Polymer Insulator awarded and supply expected in next 6 months: Following Polymer Insulator are under procurement in ER-I.

Item description	Nos. of Strings
400 kV /120 kN	4000
400 kV/160 kN	4000

Contd.....P/2

In addition to this, following nos. of strings are under procurement at our corporate level, which shall utilized as spares in the transmission lines of Eastern Region-I

400 kV		765 kV		800 kV
120 kN	160 kN	120 kN	210 kN	420 kN
9140	20264	500	500	800

Any updates on the above shall be given to you from time to time.

Thanking you,

Yours faithfully,

12.2.19

(Avinash M. Pavgi)
Chief General Manager (AM)

Powergrid ER-II in a communication dated 29/01/2019 informed that in order to avoid frequent de-capping incidents of insulators in the following transmission lines, the replacement works of porcelain insulators by polymer insulators would be undertaken:

a) 400 kV Malda – Purnea D/C (167 Km)
b) 400 kV Binaguri – Purnea D/C (168 Km)
c) 400 kV Andal – Jamshedpur D/C (157 Km)
d) 400 kV Jeerat – Subhasgram S/C (64 Km)
e) 400 kV Maithon – Jamshedpur S/C (152 Km)

Extensive Puncture Insulation Detection (PID) test have been carried out in order to assess the condition of the Porcelain Insulators. It has been found that more than 40% Porcelain Insulator discs are defective. Further to the above, replacement works, Powergrid ER – II is also planning to replace insulators already installed by Long Rod Polymer Insulators in all major crossings like Railways / State – National Highways / Power line crossing of 132 kV and above / River Crossing etc. for all the lines under Powergrid ER – II. The stock of Polymer Insulators are available and further, requirement would be expected to be available from the already ordered from Corporate Centre.

पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
POWER GRID CORPORATION OF INDIA LIMITED
(A Government of India Enterprise)
पावरग्रिड

प्लाट नं.- 4, युनिट - 41, निलाद्री विहार, चंन्द्रसेखरपुर - 751021
दुरभाष : 0674 - 2720754
Plot. No. 4, Unit - 41, Niladri Vihar, Chandrasekharpur,
Bhubaneswar-751021, Tel: 0674-2720754

Ref: ODP/BB/AM/TLM /2517

Date:24th Dec 2018

To

The Member Secretary

Eastern Regional Power Committee

14, Golf Club Road

Tollygunge, Kolkata-700033

Sub: Intimation regarding replacement of Porcelain insulator by Long Rod Polymer Insulator in transmission line of POWERGRID in Odisha

Dear Sir,

During Insulator de-capping, Conductor is grounded and if such incident occurs in crossing span of other transmission line/Railway line/Road/River, consequential effects are much higher. To minimize consequential effects in case of de-Capping the following lines will be provided with Composite Long Road Polymer Insulator for which no incident of de-capping has been reported. Few insulator strings will also be changed in these lines where insulator strings found defective during PID test and also de-capping of porcelain insulator incidents occurred in the past.

The list of the lines for which Long Rod polymer insulators has already been procured and contract has been awarded for replacement work is mentioned as below:

Sl NO	Name of the line	Remark
1	400KV Rourkela-Talcher ckt-1&2	Material has already been procured and contract has been awarded for Installation of Long Rod Polymer insulators. Insulators will be replaced from Jan 2019 to May 2019 in stages after taking due shutdown approval of the lines in OCC.
2	400KV Bolangir-Angul	
3	400KV Jeypore-Bolangir	
4	400KV Jeypore-Indravati	
5	400KV Jeypore-Gazuwaka ckt-1 &2	

This is for your kind information.

Regards.

24/12/18

(R.P. RATH)
Chief General Manager(AM)
POWERGRID, Odisha Projects

CC: For kind information
1.ED, Odisha Projects
2.ED, ERLDC, POSOCO, Kolkata

पावर सिस्टम ऑपरेशन कॉर्पोरेशन लिमिटेड
(भारत सरकार का उद्यम)
POWER SYSTEM OPERATION CORPORATION LIMITED
(A Govt. of India Enterprise)

पंजीकृत एवं केन्द्रीय कार्यालय : प्रथम तल, बी-9, कुतुब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली-110016
Registered & Corporate Office : Ist Floor, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi -110016
CIN : U40105DL2009GOI188682, Website : www.posoco.in, E-mail : posococc@posoco.in, Tel.: 011- 41035696, Fax : 011- 26536901

संदर्भ संख्या: पोसोको/एनएलडीसी/2018/ दिनाँक: **09th November, 2018**

सेवा मे,

Director,
National Power Committee,
NRPC Building,
3rd Floor, Katwaria Sarai,
New Delhi-110016

(Kind Attn: Sh. Irfan Ahmad)

विषय: Agenda Note on National Energy Account & National Deviation Pool Account for 8th Meeting of National Power Committee.

संदर्भ: NPC letter no: 4/MTGS/NPC/CEA/2018/1122-1123 dtd. 01st Nov, 2018

महोदय,

With reference to the above mentioned NPC communication dated 01st November 2018, an Agenda note on National Energy Account & National Deviation Pool Account for the forthcoming 8th Meeting of National Power Committee is enclosed.

सादर धन्यवाद,

भवदीय,

समीर सक्सेना
09/11/18.

(एस. सी. सक्सेना)
उप महाप्रबंधक (एन एल डी सी)

Encl: As above

Copy to: Chief Engineer, National Power Committee, NRPC Building, 3rd Floor, Katwaria Sarai, New Delhi-110016

National Energy Account & National Deviation Pool Account

Agenda Note for 8th Meeting of the National Power Committee (NPC)
30th November 2018, Guwahati

1. Establishment of National Grid

In the sixties, the country's electricity grid was demarcated into five electrical regions and Regional Electricity Boards were formed. In order to facilitate inter-state power transactions and the development of regional grids, Govt. of India funded construction of a number of inter-state lines. Subsequently multi-beneficiary Central Sector generating stations were developed by utilities like NTPC, NHPC etc. along with associated transmission system for evacuation of power. The concept of regional energy accounting (earlier known as global accounting) was developed with boundary metering of all control areas.

Till late nineties, power system was planned on regional self-sufficiency basis and there were very few inter-regional links. With more and more inter-regional inter-connections coming up, the focus now shifted to formation of a strong National Grid. Initially, HVDC was used to interconnect two regions, e.g., NR-WR, NR-ER, WR-SR, etc. Gradually, AC interconnections also came up and by August 2006, all regional grids except SR were interconnected synchronously into two synchronous systems known as NEW and SR Grids. The strong HVDC links connecting the NEW grid to Southern region are extensively used for optimizing power flows in the NEW grid. With strong AC connections between the regions constituting the NEW grid as well as extensive use of HVDC links in real time operation, inter-regional schedules lost any physical relevance. All the five regional grids in the country were progressively interconnected using AC links and these are now operating as one synchronism system since December 2013. The situation has become more complicated with direct HVDC connections between NER and NR.

2. Existing Scheduling, Metering, Accounting and Settlement Systems

Availability Based Tariff (ABT) was implemented in stages, starting with Western Region in July 2002. With implementation of ABT, the concept of Unscheduled Interchange (UI) pool came up and all RLDCs started operating regional UI pool accounts, which were subsequently known as the "Regional Deviation Accounts". Deviations from the schedules are computed using the net injection/drawal for using boundary metering for each control area. Based on deviations from schedule, utilities pay UI charges to or receive UI charges from the regional UI pool account.

Short-term open access in inter-state transmission was introduced in May 2006 and with this, scheduling of market-based trades/transactions also commenced. Further, in 2008, multiple Power Exchanges were also implemented. Corridor wise margin declaration for market-based transactions was carried out along with net import/export capability for regions for administering the short-term open access transactions. Later from 2009 onwards, long-term and medium-term transactions also commenced within one region and between different regions. Corresponding scheduling on the inter-regional links was carried out for these transactions on a corridor-wise basis e.g., WR-NR, ER-SR, etc. Presently, while corridor wise TTC/ATC are being declared, net import/export margins for the region are being used for administration of short-term transactions.

Special energy meters have been installed at both ends of inter-regional / inter-state tie lines and all inter-connections of CTU system with ISGS as well as states / other entities whose accounting is done at regional level. As specified in the IEGC, meter readings are sent to respective RLDCs by different sub-stations of CTU / ISGS / states. The meter readings are processed at RLDCs and forwarded to respective RPC secretariat for preparation of weekly deviation account. The RPC secretariats issue deviation accounts based on which different utilities pay /receive deviation charges to / from deviation pool account. These also included settlement of inter-regional deviations between neighboring regions. The regional UI pools are being operated satisfactorily and have successfully served the purpose for the last many years.

The deviation rate vector is declared upfront by the CERC from time to time. Prior to 2008, with uniform rates for deviation, the total payable and receivables were supposed to be equal making it a zero-sum game. However, due to difference in estimated loss and actual loss as well as metering errors, total UI/deviation charges payable did not match with total UI/deviation charges receivable. Based on methodology decided in RPC forum, suitable adjustment is done to make total UI charges payable equal to the UI charges receivable. Thus, the UI pool accounts had been zero balance accounts traditionally since introduction of ABT up to 2008.

Regional UI pool accounts became a non-zero sum game since 7th January 2008 with introduction of UI rate cap for Central generating stations with coal or lignite firing and stations burning only APM gas. UI rate cap was retained in the UI regulations, 2009. Further, as per the UI regulations, 2009, additional UI charge is payable by over-drawing or under-injecting utilities based on specified volume limits and frequency bands. Thus a surplus is generated in the UI/deviation pool.

An important feature of the UI accounts issued by RPCs is treatment of inter-regional transactions. The following methodology is followed by the RPCs in this regard:

- No adjustment is done in UI charges payable to / receivable from other regions (otherwise this may lead to an iterative process)
- UI charges payable to other regions has highest priority i.e. UI charges received in UI pool account is used first to clear dues to other regions.

Schedules are reconciled between RLDCs and thereafter final schedules are issued. Moreover, same meter readings are used by both connected regions for computation of UI/deviations. Hence it is expected that normally there should not be any mismatch between UI charges payable / receivable by adjacent regions connected through AC links.

At present, RPCs of each region prepare and issue UI/deviation accounts considering neighboring region as control areas (similar to states within the region). Sometimes, there are cases of mismatch between UI/deviation payable/receivable as per accounts issued by two RPCs of adjacent Regions and reconciliation of accounts by RPCs prior to issuance is required to be done.

Settlement of UI/deviation charges is done between the regions on one to one basis. For example, UI/deviation pool of ER has to pay to or receive from 4 different UI pools (NER, NR, SR, WR). This leads to multiple financial transactions in terms of money flow between regions. There are

instances of circular flows of funds between regions which needs to be avoided. An example of such circular flow of funds between the regions is illustrated in Annex – 1.

The above methodology is gradually losing its relevance with the five regions connected synchronously as power can flow from one region to another via a third region leading to circular and multiple fund transactions. These 'tandem' money transactions between the regions at times also leads to issues in disbursal within the regions.

3. Mandate for NLDC

Section 26 of Electricity Act, 2003 mandates the following:

"Section 26. (National Load Despatch Centre): --- (1) The Central Government may establish a centre at the national level, to be known as the National Load Despatch Centre for optimum scheduling and despatch of electricity among the Regional Load Despatch Centres.

(2) The constitution and functions of the National Load Despatch Centre shall be such as may be prescribed by the Central Government:

Provided that the National Load Despatch Centre shall not engage in the business of trading in electricity.

(3) The National Load Despatch Centre shall be operated by a Government company or any authority or corporation established or constituted by or under any Central Act, as may be notified by the Central Government."

Subsequently vide notification dated 2nd March 2005, the Central Government has notified National Load Despatch Centre Rules 2004, which prescribes functions of NLDC. The functions include following (relevant extracts):

- *Scheduling and dispatch of electricity over inter-regional links in accordance with grid standards specified by the Authority and Grid Code specified by the Central Commission in coordination with Regional Load Despatch Centres.*
- *Coordination with Regional Load Despatch Centres for achieving maximum economy and efficiency in the operation of National Grid.*
- *Supervision and control over the inter-regional links as may be required for ensuring stability of the power system under its control*
- *Coordination with Regional Load Despatch Centres for the energy accounting of inter-regional exchange of power*
- *Coordination for trans-national exchange of power*

From the above mandate it is evident that just as the RLDCs/RPCs are responsible for scheduling, metering, accounting and settlement at the Regional level, NLDC has been made responsible at the inter-regional and trans-national levels. The corresponding roles pertaining to inter-regional and trans-national transactions accounting and settlement need to be taken up at the National level by the NLDC and NPC.

4. Trans-National/Cross-Border Interconnections

At present, India has cross-border interconnections with Nepal, Bhutan, Bangladesh and Myanmar. Briefly, the connectivity of these countries with various regional grids in India is as follows:

- Nepal: With Northern region and Eastern Region
- Bhutan: With Eastern region
- Bangladesh: With Eastern region and North-Eastern region
- Myanmar: With North-Eastern region

In future, other neighboring SAARC countries like Bangladesh and Pakistan may have connectivity with two different regions of India. For the purpose of cross-border interconnections, the country needs to be treated as a single control area for the purpose of transnational exchanges and transactions have to be reconciled on National basis. Further, in line with the mandate provided, NLDC is responsible for all trans-national exchanges.

5. Changing Scenario & Increasing Complexities

A vibrant electricity market is functioning in the country and many regulatory changes have been implemented to address new challenges from the changing scenario which is also leading to increased complexities. Some of the significant changes that have already been implemented at the National level and some future challenges are briefly discussed below.

(a) **Collective Transactions through Power Exchanges:** Open Access Regulations, 2008 issued by CERC paved the way for functioning of power exchanges. As per the Regulations and procedures issued pursuant to the Regulations, collective (i.e. power exchange) transactions are coordinated by NLDC. Two Power Exchanges are functioning at present and another is in the offing. NLDC accepts scheduling request for collective transactions after checking for congestions, and forwards the same to RLDCs for scheduling. Curtailment, if any, has to be done by NLDC in coordination with RLDCs. Accounting and settlement of the Collective Transactions is carried out by NLDC.

(b) **Ancillary Services (RRAS):** The Regulatory Framework for implementation of Ancillary Services has been provided by the Hon'ble CERC in August 2015 and these have been implemented from April 2016. As per the present framework for ancillary services, available generation (thermal) reserves are dispatched by NLDC across regions on a pan-India basis. In the scheduling process, a virtual entity has been created in each regional pool to act as a counterparty to the ancillary schedules (beneficiaries schedules are not disturbed in the ancillary despatch process). Settlement of ancillary transactions is carried out on a regional basis from the DSM Pool. There are times, when the regional DSM pool faces shortfall and NLDC facilitates transfer of funds from a surplus regional pool to the deficit regional pool as per the provisions of the relevant CERC regulations. Again, this involves multiple fund transfers at times.

(c) **Fast Response Ancillary Services (FRAS):** CERC vide suo-motu order dated 16th July 2018 has directed the implementation of FRAS and pilot project for 5-minute metering. The framework for FRAS provides for fast response ancillary services using the flexibility of hydro generation. The dispatch under FRAS is with the primary objective of obtaining regulation services from hydro while at the same time honoring all the hydro constraints. Scheduling, accounting and settlement of FRAS is to be carried out by NLDC across multiple regions (NR, ER and NER).

(d) **Secondary Frequency Control through Automatic Generation Control (AGC):** Based on the directions of CERC a pilot project for AGC has been implemented at Dadri – Stage II in January 2018. The AGC signals are being sent to the generating station from NLDC and the accounting and settlement for the AGC is being facilitated by NLDC. Based on the experience gained by this pilot project, AGC implementation is being taken up at one generating station in each of the other regions. A second pilot implementation of AGC is expected to be commissioned at Simhadri in November 2018. Implementations in other regions are also coming up progressively. Accounting and settlement of all such implementations have to be facilitated at the national level.

(e) **Proposals under various stages of implementation/deliberations:** Some of the other proposals which are under various stages of deliberations or implementation are as follows:

- Replacement of thermal generation by RE generation (Ministry of Power, April 2018)
- Real Time Markets (CERC, July 2018) for facilitating balancing closer to the time of delivery
- Flexibility in scheduling of thermal generation (Ministry of Power, August 2018) to achieve economy in despatch at the national level
- Security Constrained Economic Despatch (POSOCO, September 2018) to achieve economy in despatch at the national level

Almost all of the above-mentioned proposals are intended for scheduling, despatch, accounting and settlement at the national level. The complexity in settlement needs to be streamlined at the national level keeping in view the changing paradigm and new challenges.

6. National Energy Account and National Deviation Pool Account

In order to streamline the accounting and settlement at the national level there is a need for implementing a National Deviation Pool based on the National Energy Account. In this regard, the following methodology is proposed.

(a) **Scheduling:** Corridor-wise (e.g., ER-NR, etc.) scheduling of inter-regional transactions is presently being carried out. However, actual power flows as per the laws of physics. In case of collective transactions, one to one correspondence of source and sink is not there and scheduling on a particular inter-regional corridor may at best be notional. Hence, there is a need to migrate to scheduling inter-regional transactions on a net basis for each region. However, while accepting the transactions for scheduling, corridor-wise TTC/ATC/available margin etc. may be duly taken care of. Inter-regional corridor-wise schedules may also be continued based on the physical power flow patterns as the same is useful for grid security monitoring and checking for any discrepancies. NLDC shall communicate the net inter-regional schedules to the NPC for the purpose of accounting.

Schedules for cross-border transactions shall also be prepared by NLDC on a net-basis to facilitate accounting of cross-border transactions by the NPC. However, individual schedules of

the concerned neighboring country with different region regions shall also be continued at RLDC level for the purpose of grid security monitoring and checking for discrepancies.

(b) **Metering:** The existing practice for metering of the inter-regional points shall continue as per the IEGC and the SEM data shall be collected by the RLDCs, processed and made available to the RPCs. In addition, the processed meter data shall also be made available to the NPC through NLDC. A similar practice shall be adopted for the cross-border metering locations, where the processed meter data shall be provided by the respected RLDCs to the RPCs and NPC (through NLDC).

(c) **Accounting & Settlement:** Based on the scheduling and meter data provided, NPC shall prepare the National Energy Account (NEA) including the National Deviation Account for the inter-regional and trans-national transactions. The NEA will reflect the payables/receivables for each region on a net-basis and this amount shall be payable/receivable to the National Deviation Pool Account which shall be operated by NLDC. The NEA shall also reflect the cross-border or trans-national transactions and the neighboring countries shall be paying/receiving to/from the National Deviation Pool Account operated by NLDC. Payment to the National DSM Pool shall have the highest priority.

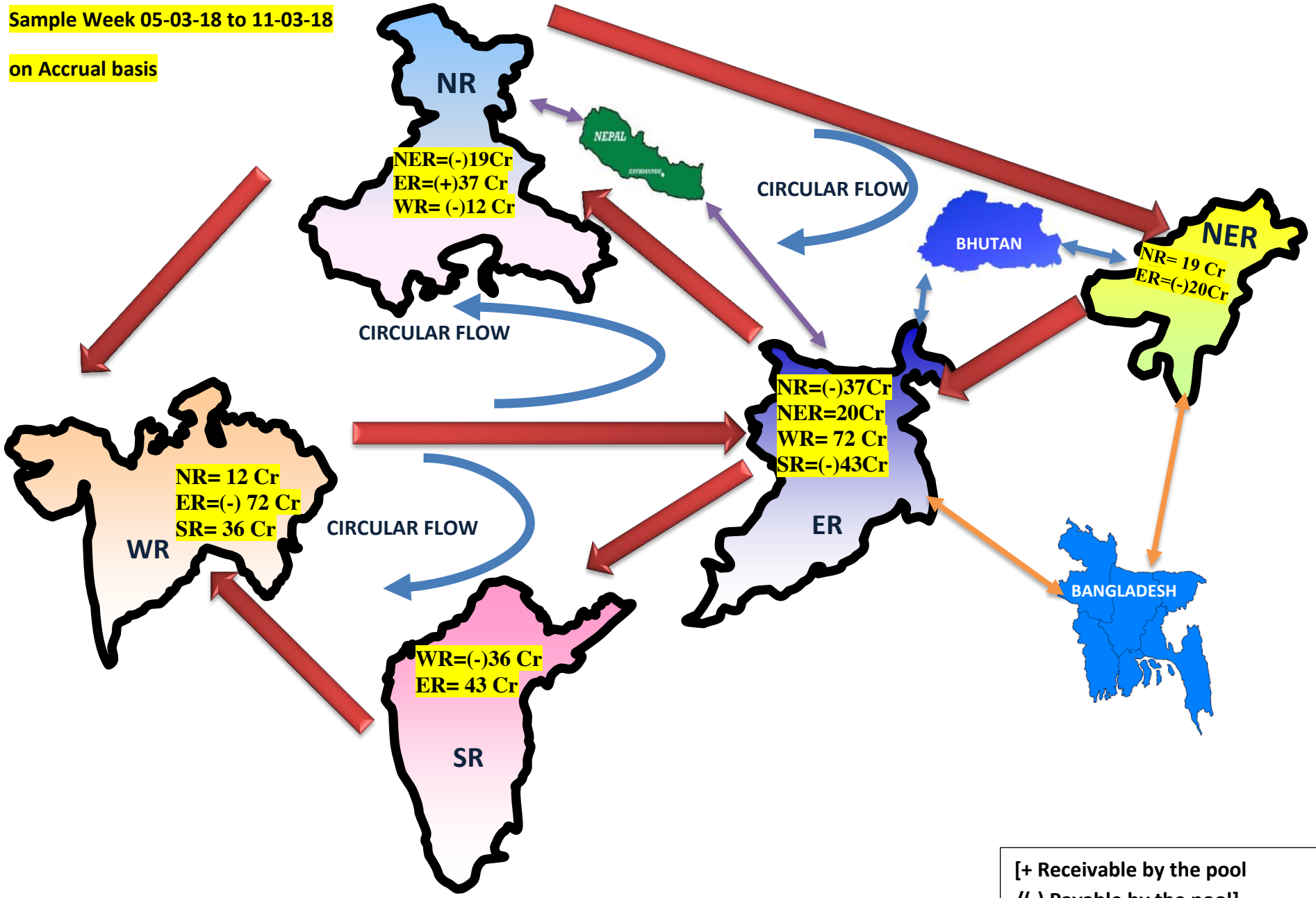
In the future, multi-lateral transaction between neighboring countries are also envisaged under the SAARC framework e.g., Bangladesh may purchase power from Nepal or Bhutan through India. Neighboring countries may also participate in a designated Power Exchange for cross-border transactions in the future. For scheduling and settlement of such transactions, the all-India loss figures would need to be declared upfront by NLDC.

(d) **Handling Surplus/Deficit in Regional Pool Accounts and transfer of residual to PSDF:** As has already been mentioned above, sometimes the regional DSM pool may face shortfalls on account of disbursals for reliability support such as RRAS, FRAS, AGC, etc. in accordance with the relevant regulations of CERC. Once the National DSM Pool becomes operational, all residual/surplus amount in the regional DSM pools shall be transferred to the National DSM pool account. The NPC accounts would also facilitate the transfer of funds from the surplus available in the National DSM pool to the deficit regional DSM pool accounts as a single transaction thereby simplifying the process. Once all liabilities have been met, any residual in National DSM Pool shall be transferred periodically to the PSDF in accordance with the extant CERC Regulations.

A sample illustration of the flow of funds between different regional DSM pool accounts to the national DSM pool account and that with the neighboring countries is shown at Annex – II.

Suitable changes/modifications are required to be carried out in the IEGC and DSM Regulations and the functions of NPC also need to be recognized in the regulatory framework.

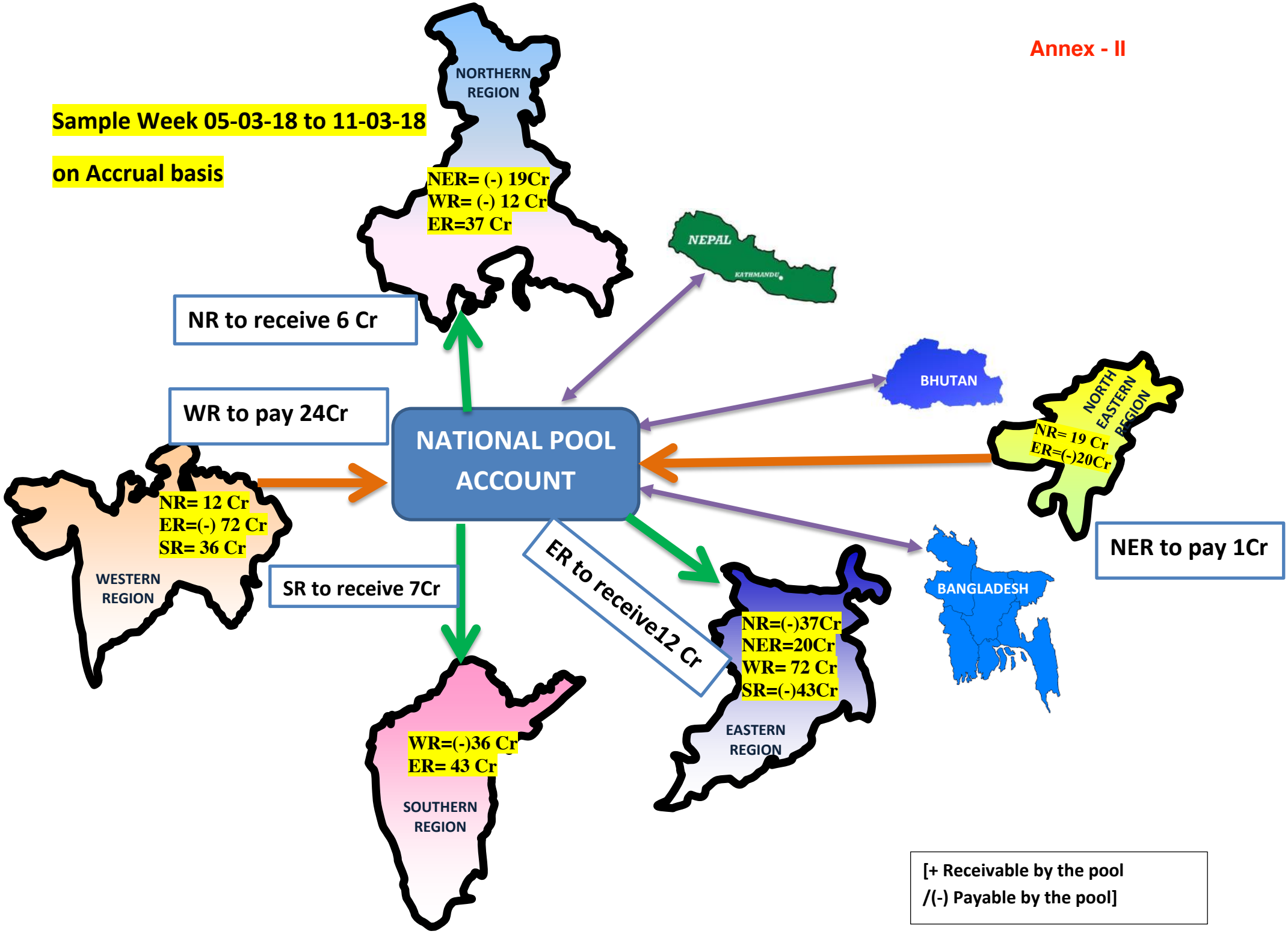
Annex - I


Sample Week 05-03-18 to 11-03-18
on Accrual basis
NR
NER=(-)19Cr
ER=(+)37 Cr
WR= (-)12 Cr
NEPAL
CIRCULAR FLOW
CIRCULAR FLOW
BHUTAN
NER
NR= 19 Cr
ER=(-)20Cr
NR=(-)37Cr
NER=20Cr
WR= 72 Cr
SR=(-)43Cr
ER
NR= 12 Cr
ER=(-) 72 Cr
SR= 36 Cr
WR
CIRCULAR FLOW
BANGLADESH
WR=(-)36 Cr
ER= 43 Cr
SR
[+ Receivable by the pool
/(-) Payable by the pool]

Annex - II

Sample Week 05-03-18 to 11-03-18

on Accrual basis



[+ Receivable by the pool
/(-) Payable by the pool]

Annexure-B10

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
पूर्वी क्षेत्रीय विद्युत समिति
Eastern Regional Power Committee
14, गोल्फ क्लब रोड, टालीगंज, कोलकाता-700033
14 Golf Club Road, Tollygunj, Kolkata-700033
Tel No.:033-24239651, 24239657 FAX No.:033-24239652, 24239653 Web: **www.erpc.gov.in**

No: ERPC/COM - I/non – ISTS/2019/ 8986-87 Date: 11.02.2019.

To
The Executive Director,
Eastern Region Load Despatch Centre,
14, Golf Club Road,
Tollygunge,
Kolkata – 700033.

Sub: Certification of non –ISTS lines of OPTCL System carrying ISTS Power – Reg.

Ref: This office letter No. : ERPC/COM - I/non – ISTS/2018/6809-10 dated 19.12.2018.

Dear Sir,

With above subject and reference, it is intimated that this office has received a reminder from OPTCL regarding the certification of the non – ISTS lines of OPTCL System carrying ISTS power. A copy of the letter received from OPTCL is attached. It is requested that necessary studies may please be got carried out at your end and forwarded to ERPC Secretariat, so that the same can be put up in the coming Commercial Committee Meeting and OCC Meeting.

Thanking you,

Yours faithfully,

Encl: As above.

11/2/19
(J.Bandyopadhyay)
Member Secretary

Copy to: Sr. General Manager (RT&C), OPTCL, Janpath, Bhubaneshwar – 751022.

ERPC:: KOLKATA

Minutes of the Special meeting on "Issue of Methodology of segregation of Actual Generation of NTPC Kahalgaon stage-I & II after Bus Splitting Scheme" held on 04.03.2019 at ERPC, Kolkata

NTPC, POWERGRID, ERLDC and ERPC participated in the meeting. List of the participants is attached in Annexure-A.

SE, ERPC welcomed the participants. He informed that the meeting has been convened in compliance with the decision in the 39th Commercial Committee meeting held on 18th February, 2019 at ERPC, Kolkata. He informed that the existing methodology of calculation of actual generations of Kahalgaon Stage-I & II need to be reviewed on account of bus splitting operation of the Kahalgaon STPS.

As per existing methodology, all the outgoing feeders from 400 kV Kahalgaon station including the 132 kV feeders are summed up and then apportioned on the basis of GT ratio to determine the actual generation of stage I & II. It was informed by ERLDC that the auxiliary consumptions of both the stages are supplied from 132 kV Bus of 2X200 MVA 400/132 kV ICTs. NTPC informed that both the 400/132 kV ICTs are connected to the stage-I after bus splitting operation.

The methodology to determine the actual generation for both the stages was discussed and the methodology as finalised is given below:

1. NTPC informed that the Station auxiliaries for both the Stages are met from five(5) nos. of Station transformers. Apart from this, there are other loads like Make up water &colony load.All these loads including Station auxiliaries are being met through Transformers on the Stage-I side.
2. NTPC representative further added that ST- 1& 2are dedicated for meeting station auxiliary loads of Stage-I whereas ST-3, ST-4 & ST-5 are dedicatedfor meeting station auxiliary loads of Stage-II. He alsoconfirmed that there is no interconnectivity between the Station Transformers of both the stages.
3. ERLDC informed that for calculation of actual generation four (4) more meters will be required at either side of bus sectionalizer i.e. two for Bus-I & two for Bus-II and the polarity needs to be taken care of. NTPC& PGCIL was advised to ensure that meters are in place.
4. Bus sectionalizer shall act as tie between the stages and the power exchange between two stages shall be accounted for by takings readings of the meters installed at either side of bus sectionalizer into consideration.
5. Taking above submissions of NTPC& ERLDC into consideration, it is decided to first calculate ex-Bus sent out from all the outgoing feeders from both the stages including power flow through bus sectionalizerseparately.
6. Next, the readings of ST-3, 4 & 5 would be added to the ex-bus sent out energy of Stage-I and subsequently the same will be subtracted from ex-bus sent out energy of Stage-II.
7. Other loads i.e make up water, colony loads, etc would be apportioned in the ratio of GT readings and the same shall be calculated for Stage-II. Finally, this would be added to the ex-bus sent out energy of Stage-I to give the actual ex-bus sent out of Stage-I and the same will be subtracted from ex-bus sent out energy of Stage-IIto give the actual ex-bus sent out of Stage-II.

NTPC was advised to submit the following:

- Approved SLDs of downstream network of 132 kV side.
- Details (including CT,PT, Sl. no.) of meters installed at either side of bus sectionalizer and HV side of Transformers feeding make up water loads

04.03.19	04.03.19	4/3/19	04/03/2019
(S. K. Singh)	(R. K. Mandal)	(Nadim Ahmad)	(S. Kejriwal)
Sr.GM(AM), PGCIL, ER-I	AGM(EEMG), NTPC	Chief Manager, ERLDC	SE, ERPC

24. Despite the fact that other Respondents have not raised objection to COD claimed by the Respondents, it is clear (paragraph 16) that trial run of the Unit did not comply with provisions of the 2014 Tariff Regulations. Subsequent trial run of 3-5 November, 2014 too could not demonstrate compliance with the 2014 Tariff Regulations. Neither could it be possible for trial run during 11-15 November, 2014. Thus, even though other Respondents have accepted COD as stated by the Respondent No. 1, it is not fully correct.

Issue No. 4: What should be the COD for unit of the generating station:

25. In the light of above discussion, it is evident that the unit has successfully run on full load for 72 hours in March, 2016 for the first time though the Petitioner declared the date of the commercial operation as 15.11.2014. However, the beneficiaries have been scheduling and making payment since declaration of the COD of the unit. Except GRIDCO (share of 15%), other beneficiary have not raised their objections to the declaration of COD of the unit as 15.11.2014. However, it is clear that though the unit of the generating station demonstrated the super critical parameters, it could attain the full load only in 29 time blocks and more than 95% load only in 183 time blocks out of total 258 time blocks, during August, 2014. Similarly, during trial run for synchronization during 3-5 November, 2014 for 179 time blocks, the Unit could run on full load or above for only 46 time blocks (discontinuous pattern) and more than 95% load for only 111 time blocks.

26. It is also observed from the data submitted by NTPC that the unit operated at an average load of 615 MW (93.22% PLF) including the extended trial run after the brief

outage on account of spurious tripping and excluding the outage period and ramp up period as stated by Respondent No. 1. Post COD, as declared by Respondent No. 1, the Unit couldn't be operated at full load continuously for 2-3 days due to less power requisition from the beneficiaries. However, the unit demonstrated successful trial run at MCR during the period from 4.3.2016 to 7.3.2016. Though it is a fact that various beneficiaries have scheduled and availed the power generated by the unit, the Unit had not demonstrated its capacity to run at required capacity as required under provisions of the 2014 Tariff Regulations. It is possible that the unit was capable of delivering rated capacity since it was able to achieve normative availability of 83% in the financial year 2014-15 and more than 90% in 2015-16 (till February, 2016). Since, trial run did not achieve required capacity, we are not inclined to accept COD of 15.11.2014 as claimed by the Respondent No. 1. We are also not inclined to exercise our powers to relax the provisions under Regulation 54 of the 2014 Tariff Regulations as there is no case made out for the same. Accordingly, COD of 15.11.2014 as declared by Respondent No. 1 is set aside.

27. The Hon'ble Supreme Court vide its judgment dated 8.12.2016 in Civil Appeal Nos. 5881-5882 of 2016 (AIPEF & Ors. Vs. Sasan Power Limited & Ors.) had expressed concerns on waiver of condition of achieving 95% of capacity for COD declaration.

28. Power injected by Respondent No. 1 in respect of the Unit before 8.3.2016 shall be treated as infirm power even though power was scheduled by the beneficiaries

during the period. The revenue earned over and above fuel cost from sale of infirm power from 15.11.2014 to 7.3.2016 shall be adjusted in the capital cost.

29. The Petition No. 130/MP/2015 along with IA No. 67 of 2017 is disposed of in terms of the above.

Sd/-	sd/-	sd/-	sd/-
(Dr. M.K. Iyer)	**(A.S. Bakshi)**	**(A.K. Singhal)**	**(Gireesh B. Pradhan)**
Member	**Member**	**Member**	**Chairperson**

Annexure-B12b

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
पूर्वी क्षेत्रीय विद्युत समिति
Eastern Regional Power Committee
14, गोल्फ क्लब रोड, टालीगंज, कोलकाता-700033
14 Golf Club Road, Tollygunj, Kolkata-700033
Tel No.:033-24239651, 24239657 FAX No.:033-24239652, 24239652 Web: **www.erpc.gov.in**

No: ERPC/COM - I/REA/ 2018/ 3682-3700 Date: 11.01.2018.
12

FAX MESSAGE NO. – 17

From: Member Secretary, ERPC, Kolkata.

To: (As per list.)

CERC in its order dated 20.09.2016 in the Petition No. 130/MP/2015 along with I.A. No. 67/2017 has set aside the COD of 15/11/2014 in respect of unit – IV of Barh Super Thermal Power Station Stage – II (660 MW) and has fixed 08/03/2016 as the revised date of COD.

Accordingly, the REA, DSM and RTA for the period from 15.11.2014 to 07.03.2016 has been revised and given in Annexure – I, II & III respectively for kind information and necessary action by all concerned.

Regards,

Jayadev Bandyopadhyay 11/01/18

(J.Bandyopadhyay)
Member Secretary

DISTRIBUTION LIST:

BIHAR

1. Chief Engineer, Transmission (O&M), BSPTCL, Vidyut Bhavan, Bailey Road, Patna-800021 (Fax 0612-2504557/2227557)
2. ESE (Interstate), BSEB, Vidyut Bhavan,3rd Floor, Bailey Road, Patna-800 021. (Fax 0612-2504557)

JHARKHAND

1. CE (Comml & Revenue), JBVNL, Engineering Building, H.E.C. Township, Dhurva, Ranchi-834004, Jharkhand . (Fax : 0651-2490486 / 2400799)
2. GM-cum-CE (Trans), JSEB,Kusai Colony,Duranda, Ranchi, Jharkhand (Fax:0651-2490486)

ODISHA

1. Sr. GM(PP),GRIDCO,4th floor, Vidyut Bhawan, Janpath, Bhubaneswar-22. (Fax : 0674-2547180/2547261)
2. Sr. GM (PS), OPTCL, SLDC Bldg, PO Mancheswar Rly Colony, Bhubaneswar-17. (Fax: 0674-2748509)
3. Regional Executive Director (East-II), 3rd Floor, OCHC Building (New), 24, Janpath, Bhubaneswar - 751001
   (Fax No. 0674-2394857)
4. Chief General Manager (RT & C), OPTCL, Janpath, Bhubaneswar-751022.(Tel FAX-0674 2542 120)

SIKKIM

1. CE (Trans.), Deptt. Of Power, Govt. of Sikkim, Gangtok.-737 101 (Fax: 03592-201148 / 202927)
2. Addl. Chief Engineer (SLDC/EHV), Deptt. of Power,Govt. of Sikkim, Kazi Road, Gangtok-737101 (FAX:03592 202927/209199)

WR (MP)

1. Chief Engineer (Commercial), M.P. Power Management Co. Ltd., Shakti Bhawan, Vidyut Nagar, Rampur, Jabalpur-482008 (Fax No. 0761-2661884)
2. Member Secretary, WRPC, MIDC Area, Marol, Andheri(E), Mumbai-400093 (Fax : 022 2837 0193).

NTPC

1. GM (Comml), NTPC Ltd, 7 Institutional Area, Lodhi Road, New Delhi-3 (Fax: 011-24360318 / 24368417)
2. AGM (Comml), NTPC Ltd, Loknayak Jaiprakash Bhawan, 2nd floor, Dak Banglow Chowk, Fraser Road, Patna-800 001. (Fax : 0612-2230035 / 2224287,2211807)

PGCIL

1. AGM (Comml.), PGCIL, "Saudamini", Plot No.2, Sector -29, Gurgaon-122001, Haryana (Fax : 0124-2571760)
2. Addl. General Manager (Commercial), ERTS-I, POWERGRID, Boring Road, Alankar Place, Patna-800001.
   (FAX: 0612 2234097/2228984)

NLDC/RLDC

1. ED-NLDC, POSOCO, B-9,Qutab Institutional Area, Katwaria Sarai, New Delhi-16 (Fax:01126524525)
2. GM, WRLDC, MIDC Area, Marol, Andheri (E), Mumbai-490093 (Fax: 022-28235434)
3. ED, ERLDC, 14 Golf Club Road, Tollygunge, Kolkata-33 (Fax: 033-24235809, 2423 3648)

Annexure-I

REVISED REGIONAL ENERGY ACCOUNTING FOR BARH STPS STAGE-II FROM NOVEMBER,2014 TO MARCH,2016
(CAPACITY CHARGES, INCENTIVE, IF ANY & ENERGY CHARGES BILLING)

Month	Beneficiaries	Share Allocation	Previous Capacity Charges Payable(As per REA published)	Current capacity charges payable (Revised REA)	Capacity Charges to be Refunded to Beneficiaries	Previous Drawal Schedule (As Per REA published)	Current Drawal Schedule(Revised REA)	Diffrence in Drawal Schedule(Enegy Charges to be Refunded to Beneficiaries)
		(%)	(Rs.)	(Rs.)	(Rs)	(MWH)	(MWH)	(MWH)
Nov,14	BIHAR	65.080000	225527082	0.0000	225527082	106978.08200	0.00000	106978.08200
	JHARKHAND	6.060000	21000217	0.0000	21000217	10548.73900	0.00000	10548.73900
	ODISHA	12.570000	43559856	0.0000	43559856	15552.25800	0.00000	15552.25800
	SIKKIM	1.290000	4470343	0.0000	4470343	2264.68200	0.00000	2264.68200
	MADHYA PRADESH	15.000000	51980735	0.0000	51980735	0.00000	0.00000	0.00000
Dec,14	BIHAR	67.673321	299089017	0.0000	299089017	157074.69700	0.00000	157074.69700
	JHARKHAND	6.301480	27850022	0.0000	27850022	14923.57000	0.00000	14923.57000
	ODISHA	13.070892	57768116	0.0000	57768116	20654.45400	0.00000	20654.45400
	SIKKIM	1.341404	5928469	0.0000	5928469	3083.04400	0.00000	3083.04400
	MADHYA PRADESH	11.612903	51324387	0.0000	51324387	0.00000	0.00000	0.00000
Jan,15	BIHAR	76.564706	587142025	0.0000	587142025	275636.55500	0.00000	275636.55500
	JHARKHAND	7.129412	54672415	0.0000	54672415	28149.72400	0.00000	28149.72400
	ODISHA	14.788235	113404657	0.0000	113404657	7737.11300	0.00000	7737.11300
	SIKKIM	1.517647	11638187	0.0000	11638187	4854.72500	0.00000	4854.72500
Feb,15	BIHAR	76.564706	651831026	0.0000	651831026	269763.03800	0.00000	269763.03800
	JHARKHAND	7.129412	60696007	0.0000	60696007	18116.13700	0.00000	18116.13700
	ODISHA	14.788235	125899137	0.0000	125899137	8317.27400	0.00000	8317.27400
	SIKKIM	1.517647	12920436	0.0000	12920436	184.72000	0.00000	184.72000
.15	BIHAR	76.564706	704084000	0.0000	704084000	332094.87900	0.00000	332094.87900
	JHARKHAND	7.129412	65561604	0.0000	65561604	17647.25000	0.00000	17647.25000
	ODISHA	14.788235	135991636	0.0000	135991636	7049.18600	0.00000	7049.18600
	SIKKIM	1.517647	13956182	0.0000	13956182	285.94200	0.00000	285.94200
Apr,15	BIHAR	76.564706	306012356	0.0000	306012356	146310.18177	0.00000	146310.18177
	JHARKHAND	7.129412	28494698	0.0000	28494698	3875.54942	0.00000	3875.54942
	ODISHA	14.788235	59105335	0.0000	59105335	5613.95731	0.00000	5613.95731
	SIKKIM	1.517647	6065703	0.0000	6065703	705.78294	0.00000	705.78294
May,15	BIHAR	76.564706	618956902	0.0000	618956902	302179.75226	0.00000	302179.75226
	JHARKHAND	7.129412	57634895	0.0000	57634895	2768.03184	0.00000	2768.03184
	ODISHA	14.788235	119549602	0.0000	119549602	6428.57607	0.00000	6428.57607
	SIKKIM	1.517647	12268813	0.0000	12268813	708.85497	0.00000	708.85497
June,15	BIHAR	76.564706	642378699	0.0000	642378699	284145.32830	0.00000	284145.32830
	JHARKHAND	7.129412	59815843	0.0000	59815843	7931.49725	0.00000	7931.49725
	ODISHA	14.788235	124073449	0.0000	124073449	13798.58945	0.00000	13798.58945
	SIKKIM	1.517647	12733074	0.0000	12733074	363.76322	0.00000	363.76322
July,15	BIHAR	76.564706	652884624	0.0000	652884624	279450.47652	0.00000	279450.47652
	JHARKHAND	7.129412	60794114	0.0000	60794114	13771.79637	0.00000	13771.79637
	ODISHA	14.788235	126102636	0.0000	126102636	29863.79205	0.00000	29863.79205
	SIKKIM	1.517647	12941320	0.0000	12941320	1368.73657	0.00000	1368.73657
Aug,15	BIHAR	76.564706	588703170	0.0000	588703170	301499.63595	0.00000	301499.63595
	JHARKHAND	7.129412	54817783	0.0000	54817783	20565.44646	0.00000	20565.44646
	ODISHA	14.788235	113706188	0.0000	113706188	23329.86771	0.00000	23329.86771
	SIKKIM	1.517647	11669131	0.0000	11669131	1102.13943	0.00000	1102.13943
Sept,15	BIHAR	76.564706	561787150	0.0000	561787150	323481.50868	0.00000	323481.50868
	JHARKHAND	7.129412	52311466	0.0000	52311466	29015.61987	0.00000	29015.61987
	ODISHA	14.788235	108507442	0.0000	108507442	6961.22535	0.00000	6961.22535
	SIKKIM	1.517647	11135608	0.0000	11135608	1668.06700	0.00000	1668.06700
Oct,15	BIHAR	76.564706	561787150	0.0000	561787150	313121.95818	0.00000	313121.95818
	JHARKHAND	7.129412	52311466	0.0000	52311466	21728.43208	0.00000	21728.43208
	ODISHA	14.788235	108507442	0.0000	108507442	6956.55040	0.00000	6956.55040
	SIKKIM	1.517647	11135608	0.0000	11135608	1565.94612	0.00000	1565.94612
Nov,15	BIHAR	76.564706	561787150	0.0000	561787150	273379.99962	0.00000	273379.99962
	JHARKHAND	7.129412	52311466	0.0000	52311466	24521.74265	0.00000	24521.74265
	ODISHA	14.788235	108507442	0.0000	108507442	21516.18991	0.00000	21516.18991
	SIKKIM	1.517647	11135608	0.0000	11135608	1248.75789	0.00000	1248.75789
Dec,15	BIHAR	76.564706	561787150	0.0000	561787150	285465.33450	0.00000	285465.33450
	JHARKHAND	7.129412	52311466	0.0000	52311466	26047.77536	0.00000	26047.77536
	ODISHA	14.788235	108507442	0.0000	108507442	10837.82772	0.00000	10837.82772
	SIKKIM	1.517647	11135608	0.0000	11135608	862.40432	0.00000	862.40432
Jan,16	BIHAR	76.564706	561787150	0.0000	561787150	308084.99415	0.00000	308084.99415
	JHARKHAND	7.129412	52311466	0.0000	52311466	33458.15994	0.00000	33458.15994
	ODISHA	14.788235	108507442	0.0000	108507442	2819.17963	0.00000	2819.17963
	SIKKIM	1.517647	11135608	0.0000	11135608	212.12911	0.00000	212.12911
Feb,16	BIHAR	76.564706	6741445799	168529117	6572916682	348494.74386	76963.27402	271531.46985
	JHARKHAND	7.129412	627737597	15692785	612044812	35174.22811	7592.11450	27582.11361
	ODISHA	14.788235	1302089304	32550875	1269538428	11487.85161	3151.13132	8336.72028
	SIKKIM	1.517647	133627301	3340543	130286757	1004.52314	185.06747	819.45567
Mar,16	BIHAR	76.564706	1123574300	1120634193	2940106	594862.16673	527100.32574	67761.84099
	JHARKHAND	7.129412	104622933	104349161	273771	53685.81868	47041.08008	6644.73860
	ODISHA	14.788235	217014884	216447012	567872	83393.81805	82428.33243	965.48563
	SIKKIM	1.517647	22271217	22212939	58278	3722.91709	3706.72220	16.19489
				Total	19252338930			4825310

ANNEXURE-III

Revised RTA on account of change of COD of unit#4 of BARH St-II during the period of November-14 to March-16 as per CERC Order dated 20.09.17 in petition no. 130/MP/2015 with IA No. 67/2017

Month	Beneficiaries	As per RTA already issued by ERPC		Revised figure		Transmission Charges to be refunded to benefeciaries	
		MW share in Barh-II	Transmission Charges(in Rs.)	MW share in Barh-II	Transmission Charges(in Rs.)		
Nov-14	BIHAR	404.83	19014494	0	0	19014494	Transmission charges = station PoC charges
	JHARKHAND	37.7	1770557	0	0	1770557	
	ODISHA	78.19	3672590	0	0	3672590	
	SIKKIM	8.02	376901	0	0	376901	
	WR(M.P.)	93.31	4382566	0	0	4382566	
Dec-14	BIHAR	420.96	37072851	0	0	37072851	
	JHARKHAND	39.2	3452082	0	0	3452082	
	ODISHA	81.31	7160506	0	0	7160506	
	SIKKIM	8.34	734849	0	0	734849	
	WR(M.P.)	72.24	6361790	0	0	6361790	
Jan-15	BIHAR	476.27	58187427	0	0	58187427	
	JHARKHAND	44.35	5418190	0	0	5418190	
	ODISHA	91.99	11238721	0	0	11238721	
	SIKKIM	9.44	1153377	0	0	1153377	
Feb-15	BIHAR	476.27	58187427	0	0	58187427	
	JHARKHAND	44.35	5418190	0	0	5418190	
	ODISHA	91.99	11238721	0	0	11238721	
	SIKKIM	9.44	1153377	0	0	1153377	
Mar-15	BIHAR	476.27	58187427	0	0	58187427	
	JHARKHAND	44.35	5418190	0	0	5418190	
	ODISHA	91.99	11238721	0	0	11238721	
	SIKKIM	9.44	1153377	0	0	1153377	
Apr-15	BIHAR	476.27	58187427	0	0	58187427	
	JHARKHAND	44.35	5418190	0	0	5418190	
	ODISHA	91.99	11238721	0	0	11238721	
	SIKKIM	9.44	1153377	0	0	1153377	
May-15	BIHAR	476.27	78183531	0	0	78183531	Transmission charges = PoC charges+ Relaibility Support Charges
	JHARKHAND	44.35	5826171	0	0	5826171	
	ODISHA	91.99	15100894	0	0	15100894	
	SIKKIM	9.44	621039	0	0	621039	
Jun-15	BIHAR	476.27	78183531	0	0	78183531	
	JHARKHAND	44.35	5826171	0	0	5826171	
	ODISHA	91.99	15100894	0	0	15100894	
	SIKKIM	9.44	621039	0	0	621039	
Jul-15	BIHAR	476.27	124118343	0	0	124118343	
	JHARKHAND	44.35	10212031	0	0	10212031	
	ODISHA	91.99	15598836	0	0	15598836	
	SIKKIM	9.44	741389	0	0	741389	
Aug-15	BIHAR	476.27	124118343	0	0	124118343	
	JHARKHAND	44.35	10212031	0	0	10212031	
	ODISHA	91.99	15598836	0	0	15598836	
	SIKKIM	9.44	741389	0	0	741389	
Sep-15	BIHAR	476.27	124118343	0	0	124118343	
	JHARKHAND	44.35	10212031	0	0	10212031	
	ODISHA	91.99	15598836	0	0	15598836	
	SIKKIM	9.44	741389	0	0	741389	
Oct-15	BIHAR	476.27	142750502	0	0	142750502	
	JHARKHAND	44.35	9028063	0	0	9028063	
	ODISHA	91.99	12828557	0	0	12828557	
	SIKKIM	9.44	711276	0	0	711276	
Nov-15	BIHAR	476.27	142750502	0	0	142750502	
	JHARKHAND	44.35	9028063	0	0	9028063	
	ODISHA	91.99	12828557	0	0	12828557	
	SIKKIM	9.44	711276	0	0	711276	
Dec-15	BIHAR	476.27	142750502	0	0	142750502	
	JHARKHAND	44.35	9028063	0	0	9028063	
	ODISHA	91.99	12828557	0	0	12828557	
	SIKKIM	9.44	711276	0	0	711276	
Jan-16	BIHAR	476.27	144563662	0	0	144563662	Transmission charges= PoC Charges+ Reliability Support Charges+HVDC Charges
	JHARKHAND	44.35	7220579	0	0	7220579	
	ODISHA	91.99	18213100	0	0	18213100	
	SIKKIM	9.44	872700	0	0	872700	
Feb-16	BIHAR	476.27	144563662	0	0	144563662	
	JHARKHAND	44.35	7220579	0	0	7220579	
	ODISHA	91.99	18213100	0	0	18213100	
	SIKKIM	9.44	872700	0	0	872700	
Mar-16	BIHAR	107.54	32642784	0	0	32642784	
	JHARKHAND	10.01	1630365	0	0	1630365	
	ODISHA	20.77	4112560	0	0	4112560	
	SIKKIM	2.13	197068	0	0	197068	

Annexure-II

Revised DSM Statement on account of change of COD of Unit 4 of Barh Stage-II in the period 15.11.14-07.03.16 as per CERC order dated 20.09.17 in Petition No. 130/MP/2015

I. Calculation of Deviation Charge of Barh St-II Unit 4 INFIRM for the period 15.11.2014-07.03.2016

Deviation Charges receivable by Barh St-II Unit 4 INFIRM from the pool for the period 15.11.14-07.03.16 = **Rs. 636.8593474 Crore**

Charges to be paid by beneficiaries to the pool for the above period **

Beneficiary	Rs. (Crore)
BSPHCL	564.8512231
JUVNL	41.0085656
GRIDCO	25.5745384
SIKKIM	2.7492379
MP(WR)	2.6757824
Total	**636.8593474**

** However the beneficiaries will get refund of Energy Charges, Capacity Charges and Transmission Charges on account of Barh St-II Unit 4 INFIRM for the period 15.11.2014-07.03.2016 which are shown in different sheets.

II. Adjustment of Deviation Charge of Barh St-II Unit 4 for the period 15.11.2014-07.03.2016

Period	Prerevised		Revised		Adjustment	
	Payable (Rs. in Crore)	Receivable (Rs. in crore)	Payable (Rs. in Crore)	Receivable (Rs. in crore)	Payable (Rs. in Crore)	Receivable (Rs. in crore)
15.11.14-17.02.16	63.1112737 **(Unit-4)**		0 **(Unit-4)**			63.1112737
18.02.16-07.03.16		0.0814222 **(Unit-4 + Unit-5)**		0.1185666 **(Unit-5)**		0.0371444

So Deviation Charges receivable by Barh from the Pool for the above period is =Rs. 63.1112737 Crore + RS. 0.037144 Crore = **Rs. 63.1484181 Crore**

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
पूर्वी क्षेत्रीय विद्युत समिति
Eastern Regional Power Committee
14, गोल्फ क्लब रोड, टालीगंज, कोलकाता-700033
14 Golf Club Road, Tollygunj, Kolkata-700033
Tel No.:033-24239651, 24239657 FAX No.:033-24239652, 24239652 Web: **www.erpc.gov.in**

No: ERPC/COM- I/REA/ 2018/ 3780 - 3798 Date: 02.02.2018

FAX MESSAGE NO.- 48

From: Member Secretary, ERPC, Kolkata.

To: As per list

In continuation to even No. letter dated 11/12.01.2018, RTDA statement for the period from 15.11.2014 to 07.03.2016 has been revised and given in Annexure-I for kind information and necessary action by all concerned. The revision has been done on account of change in COD date of Unit 4 of Barh Stage-II to 08.03.16 as per CERC order dated 20.09.17 in Petition No. 130/MP/2015.

Regards,

02/02/2018
(J.Bandyopadhyay)
Member Secretary

Fax sent 5/2/18

Annexure-I

Revised RTDA Statement on account of change of COD of Unit 4 of Barh Stage-II in the period 15.11.14-07.03.16 as per CERC order dated 20.09.17 in Petition No. 130/MP/2015

I. Calculation of Transmission Deviation Charge of Barh St-II Unit 4 INFIRM for the period 15.11.2014-07.03.2016

Month	BARH_INFRIM	
	Energy(MWh)	Transmission Deviation Charges (Rs)
Nov-14	147838.6881	18198942.51
	-1001.672875	143339.3884
Dec-14	185896.4635	22883854.66
	-4998.82931	715332.4743
Jan-15	301117.2253	38814010.34
	-1930.76482	248875.5853
Feb-15	279582.4229	36038174.31
	-524.3484	67588.50876
Mar-15	328251.9161	42311671.99
	-268.27705	34580.91175
Apr-15	139435.3898	7613172.283
	-3961.351271	512994.9896
May-15	278920.8592	15229078.91
	-1521.841383	197078.4591
Jun-15	275556.5576	15045388.04
	-1027.89	133111.755
Jul-15	292565.5964	18753454.73
	-461.969	87173.5503
Aug-15	327311.3917	20980660.21
	-275.5693	51999.92691
Sep-15	339057.6225	21733593.6
	-750.76544	141669.4385
Oct-15	332389.3181	17649872.79
	0	0
Nov-15	303141.9391	16096836.97
	0	0
Dec-15	320102.028	16997417.69
	-729.599	159417.3815
Jan-16	343280.8588	21317741.33
	0	0
Feb-16	302312.54	18773608.73
	-1263.956	261386.1008
Mar-16	95940.83569	5957925.896
	0	0
Total Rs		35.715 Crore

(+)→ Injection of Energy
(-)→ Drawl of Energy

So Transmission Deviation Charges payable by Barh St-II Unit 4 INFIRM for the period 15.11.14-07.03.16 = **Rs. 35.715 Crore**

II. Adjustment of Transmission Deviation Charge of Barh St-II Unit 4 for the period 15.11.2014-07.03.2016

Month	TRANSMISSION DEVIATION CHARGE UPTO PERMITTED LIMIT (Rs.)	TRANSMISSION DEVIATION CHARGE BEYOND PERMITTED LIMIT (Rs.)
Nov-14	154.01	204216
Dec-14	0	1019136
Jan-15	0	407633
Feb-15	0	110702
Mar-15	0	172998
Apr-15	0	836340
May-15	0	376275
Jun-15	0	246261
Jul-15	0	85002
Aug-15	0	68135
Sep-15	0	138141
Oct-15	0	0
Nov-15	0	0
Dec-15	0	180393
Jan-16	1723.04	0
Feb-16	1046.74	402886
Mar-16	263099.2	0
Total Rs.	**2.660 Lakhs**	**42.48118 Lakhs**

So the following adjustments have to be done

A) Rs 2.66 Lakhs to be refunded to the beneficiaries for the above period

Month	BSPHCL	JUVNL	GRIDCO	SIKKIM	WR(MP)
Nov-14	100.229708	9.333006	19.359057	1.986729	23.1015
Jan-16	1319.228346	122.8355216	254.837616	26.190208	0
Feb-16	801.4260136	74.6220946	154.812846	15.910448	0
Mar-16	201439.2715	18756.34197	38912.37168	3999.10784	0
Total Rs	**203660**	**18963**	**39341**	**4043**	**23**

B) Rs 42.48118 Lakhs to be refunded to Barh for the above period

requirement. Learned counsel for the Respondent No.3 brought out that while adopting the final Tariff Regulations, 2014, CERC clarified that the trial run is to ensure that plants run reliably at normative levels and the rationale for a plant to demonstrate continuous maximum output during trial run is to verify the performance of the plant guaranteed by manufacturer.

9.12 Learned counsel for the Respondent No.3 further submitted that the 4th amendment to IEGC which became effective from 06.04.2016 can apply only prospectively and it has no application in the facts of the present case which relates to the trial test of the year 2014. To substantiate his submissions, learned counsel placed reliance on the judgment of the Apex Court in ***Hitendra V. Mathur vs. State of Maharashtra 1994 (4) SCC 602*** which held that a statute which affects substantive right is presumed to be prospective in operation unless made retrospective either expressly or by necessary intendment.

OUR FINDINGS:-

9.13 We have gone through the contentions of the learned counsel for the Appellant as well as the learned counsel for the Respondents and also took note of the decisions of various courts on the subject as placed reliance by the learned counsels. After critical evaluation of the

submissions of both the parties, what emerges is that the reference generating unit could not run at its full load/MCR for continuous 72 hours as required under the Tariff Regulations, 2014. Besides, it is also noted that despite several trial runs, the unit could not attain the requisite parameters of the regulations and developed several defects which were to be rectified by the Appellant after the trial run. It is noticed from the findings of the Central Commission that in spite of machine not passing through the trial test, the Appellant irrationally declared the COD from 15.11.2014 and billed the beneficiaries at provisional tariff considering the machine to have attained the COD.

9.14 Accordingly, the Central Commission after careful evaluation of all the material placed before it found that there does not appear sufficient ground which necessitates the exercise of its power under Section 54 of the Tariff Regulation, 2014 to relax the prerequisite conditions of Trial Run before declaration of COD. Having regard to submissions and pleadings of both the parties and taking note of the findings of the Central Commission, we are of the considered opinion that the instant case of the Appellant does not qualify for exercising the regulatory powers of the Commission to relax the conditions which are required to be fulfilled before decelerating COD of a generating unit. Hence, we do not consider

necessary to interfere in the decision of the Central Commission in this regard.

ORDER

In the light of above, we are of the considered view that the issues raised in the present appeal being Appeal No. 330 2017 are devoid of merits. Hence the Appeal filed by the Appellant is dismissed. Needless to say that IA No. 840 of 2017 does not survive, hence stand disposed of.

The impugned order passed by the Central Electricity Regulatory Commission dated 20.09.2017 in Petition No. 130/MP/2015 is hereby upheld.

No order as to costs.

Pronounced in the Open Court on this **25th day of January, 2019.**

S.D. Dubey
[Technical Member]

Justice Manjula Chellur
[Chairperson]

√ **REPORTABLE/~~NON-REPORTABLE~~**

एनटीपीसी NTPC
A Maharatna Company

एन टी पी सी लिमिटेड
(भारत सरकार का उद्यम)
NTPC Limited
(A Govt. of India Enterprise)

केन्द्रीय कार्यालय / Corporate Centre

To,
Member Secretary
ERPC
Tollygunje, Kolkatta-700033

Subject: Regarding Agenda item B1 of Commercial Sub-committee Regarding: COD of U#4 (660MW) of Barh STPS –II of NTPC – APTEL Order (copy attached).

Sir,

This has reference to Agenda item B1 of 39th Commercial Subcommittee to be held on 18.02.2019. In this regard NTPC would like to submit that

Hon'ble CERC in its order dtd 20.09.2017 in Pet No. 130/MP/2015 had held that:
Quote
"28. Power injected by Respondent No. 1 in respect of the Unit before 8.3.2016 shall be treated as infirm power even though power was scheduled by the beneficiaries during the period. ***The revenue earned over and above fuel cost from sale of infirm power from 15.11.2014 to 7.3.2016 shall be adjusted in the capital cost****."*
Unquote

(emphasis applied)

The Hon'ble Tribunal in its judgment has upheld Hon'ble CERC order dtd 20.09.2017 and disallowed NTPC appeal against the above order. Accordingly the capital cost of Barh-II and consequently the Annual Fixed Charges are pending for determination by Hon'ble CERC.

Further NTPC is presently billing beneficiaries of Barh-II provisionally at 85% of initial tariff petition filed before Hon'ble CERC. The fixed charges billed provisionally will be revised along with applicable interest after issue of tariff by Hon'ble CERC in Pet No 130/GT/2014 based on above order. Once, the tariff is determined by Hon'ble CERC, NTPC shall issue revised bills.

There is no direction either from CERC or Hon'ble APTEL regarding refund of energy charges and fixed charges, as recorded in agenda item.

In view of above it is requested that NTPC comments on above item may be taken on record and any discussion if required on above agenda may only be taken-up after determination of revised tariff by Hon'ble CERC.

Yours faithfully

(A. Basu Roy)

GM (Commercial), CC

Annexure-B12e

GRIDCO LIMITED

POWER PROCUREMENT BRANCH

P.O.: BHOINAGAR, BHUBANESWAR – 751 022.
TELE PHONE NO.: 2542308, FAX: 0674 – 2547180, E-mail: srgmppgridco

CIN: L401090R1995SGC003960

By Fax/Speed Post

Sr.GM-PP-08/2018 811 (3) Dtd 23/02/19

To

The General Manager (Commercial),
NTPC Bhawan, SCOPE Complex,
7 Institutional Area, Lodhi Road,
New Delhi-110003
Fax:-011-24361018

Sub: - Adjustment of dues to be received from NTPC in view of APTEL order dtd 25.01.2019 towards declaration of CoD of Barh-II (Unit-IV).

Ref: - 1) APTEL judgement dtd 25.01.2019 in IA No 840 of 2017 in Appeal No 330 of 2017.
2) This office letter no Sr.GM-PP-08/2018/588 (3) Dtd 11.2.2019
3) Your Letter no CC/Comml Dtd 15.02.2019
4) Your Letter no ER-II Comml/02/2019 Dtd 15.02.2019 from AGM (Comml), NTPC,ER-II,BBSR

Sir,

Hon'ble CERC in its order dtd 20.09.2017 in petition no 130/MP/2015 along with IA No.67/2017 had revised the COD date of Unit-IV (660 MW) of Barh STPS-II as 08/03/2016 in place of 15/11/2014;

Accordingly, in line with the above decision of CERC, ERPC had revised and issued REA, DSM & RTA accounts vide letter dtd 12.01.2018 and RTDA Account vide letter dtd 02.02.2018 respectively for the period from 15.11.2014 to 07.03.2016 (Copy enclosed). However, an appeal was filed by NTPC before APTEL bearing No 330 of 2017 along with the IA no 840 of 2017 for stay of implementation of the CERC order dtd 20.09.2017

Recently, Hon'ble APTEL has given its judgement, dismissing the above Appeal of NTPC in its order dtd 25.01.2019 upholding order dtd 20.09.2017 passed by CERC in petition no 130/MP/2015 and has also clearly ordered that IA No. 840 of 2017 does not survive, hence disposed of.

In view of the aforesaid order of APTEL and as per the revised REA which have been already issued by ERPC vide letter dtd12.01.2018 in line with the Order dtd 20.09.17 of CERC (where in it is clearly mentioned that beneficiary will get refund of Energy Charges, Capacity Charges and Transmission Charges on account of infirm power of Barh-II Unit-IV for the period 15.11.2014 to 07.03.2016), GRIDCO have provisionally estimated the refundable amount along with the interest for the concerned period up to the date of the order and adjusted in the monthly bill of the amount payable during the month of Dec'18 and Jan'19 which have been already detailed in GRIDCO's letter

As per Hon'ble CERC order dtd 20.09.2017, the revenue earned over and above fuel cost from sale of infirm power from 15.11.2014 to 07.03.2016 shall be adjusted in the capital cost which is also mentioned in the CERC (Terms and Conditions of Tariff Regulation),2014. Further, it is evident that the tariff is computed by CERC from the date of commercial operation based on the capital cost incurred up to the COD and the projected capital expenditure from the date of COD in line with the CERC (Terms and Conditions of Tariff Regulation), 2014. In this regard Clause 7 of CERC (Terms and Conditions of Tariff Regulation), 2014 may be referred. This is to further clarify that, as the CoD has been considered by Hon'ble CERC from 08.03.2016, any power injected by NTPC before 08.03.2016 is to be considered as Infirm Power as per CERC (Terms and Conditions of Tariff Regulation), 2014. Hence any billing by NTPC prior to 08.03.2016 stands to be withdrawn in deference to the Regulation, Order of Hon'ble CERC & judgement of Hon'ble APTEL.

Hence, in the instant case, Generation Tariff will be determined by CERC from the COD i.e. 08.03.2016 and retention of the amount, paid by GRIDCO to NTPC prior to the COD date i.e. the period from 15.11.2014 to 07.03.2016 towards capacity charge, energy charge, RLDC charge or incentive is not justified and has to be refunded back along with interest by NTPC. Since the amount arising out of the above order has not been refunded back by NTPC,GRIDCO was constrained to adjust the amount from NTPC dues pertaining to the month Dec'18 and Jan'19 which otherwise would have been a violation to the above judgement of Hon'ble APTEL. Hence, the claim made by NTPC for release of deducted amount as per your letter dtd 15.02.2019 is against Law as it is tantamount to violation of Regulations, Order of Hon'ble CERC & judgement of Hon'ble APTEL.

This is for your information and further necessary action.

Thanking You.

Yours Faithfully,

Encl: As above

Nayak
23/02/19
CGM (PP) I/C

CC:-

1) Addl. General Manager (Commercial) I/C, Eastern Region-II Headquarters, NTPC Limited, Plot No N-17/2, OLIC Building, 3rd &4th Floor, Nayapalli, Bhubaneswar-751012, Fax:- 0674-2501919 for kind information and necessary action.

2) Member Secretary, ERPC, Kolkata, 14 Golf Club Road, Tollygunj, Kolkata, Fax-033-24239652 for kind information.

Scope of Work

- Annual Maintenance of existing AMR system (656 meters).

Exclusions

- Any civil work required at substations.
- If any hardware which is installed at Data Center (H/W like : Server , Gateway , Router , Firewall , Switch) reaches its End of Support Life time , then the cost for procuring new Hardware asset is not included in this proposal .

Handling of any new type of SEM meters (of New OEM/ having different parameters/ 5 minutes scheduling meters etc) for which new DCU firmware needs to be developed, or Changes required in the Data Center H/W are not included in this scope.

As , the original AMC is over , so all the H/W at filed level will be completed more than 05 years(After installation, 01 year warranty and 04 years AMC) . So, major Hardware replacement have been considered.

- As per the OEM of DCU, the standard life of DCU is 5-6 years. As the new AMC will be valid till Nov-2024 , that's why 100 no. of DCUs replacement have been considered , which is approx. 80% of the total DCU installed in AMR Phase-1.(Total DCU in AMR Phase-1: 129).
- 50 no of MOXA converter replacement have been considered.
- Other required meter accessories items have been considered.

Below points have been considered in the Service part:

- One dedicated TCS resource for AMR Maintenance.
- One dedicated TCS DBA resource (Database Administrator)
- TCS vendor effort at Sub Station Level.
- TCS vendor effort for Data Center Support of the existing H/W.

Annexure-B17

Scope of work of the project'Upgradation of SCADA/RTUs/SAS in Central Sector stations and strengthening of OPGW network in Eastern Region'

A. Replacement of RTUs/SAS and Upgradation of SAS:

Replacement of existing S-900 and C264 RTUs installed in ULDC phase-I along with upgradation of RTU/SAS/ Remote Operation RTUs for dual reporting to both Main ERLDC & Backup ERLDC over IEC 60870-5-104 Protocol and lack of maintenance support due to non-availability of spares.

S.no	Region	Name of Substations	Remarks
1	ER-II	Durgapur	RTU to be replaced
2	ER-II	Malda	RTU to be replaced
3	ER-II	Binaguri	RTU to be replaced
4	ER-II	Siliguri220	RTU to be replaced
5	ER-II	Birpara	RTU to be replaced
6	ER-II	Subhasgram	RTU to be replaced
7	ER-II	Dalkhola	RTU to be replaced
8	ER-II	Gangtok	RTU to be replaced
9	ER-II	Maithon	RTU to be replaced
10	ER-II	Newmelli	Hardware/License upgradation
11	ER-II	Berhampore	Hardware/License upgradation
12	ER-II	Rangpo	Hardware/License upgradation
13	ER-I	Biharsharif	RTU to be replaced
14	ER-I	Jamshedpur	RTU to be replaced
15	ER-I	Purnea 400	RTU to be replaced
16	ER-I	Purnea 220	RTU to be replaced
17	ER-I	Sasaram HVDC	RTU to be replaced
18	ER-I	Muzaffarpur	RTU to be replaced
19	ER-I	Patna	SAS to be replaced
20	ER-I	Banka	Hardware/License upgradation
21	ER-I	Lakhisarai	Hardware/License upgradation
22	ER-I	Ranchi	SAS to be replaced
23	ER-I	New Ranchi	Hardware/License upgradation
24	ER-I	Chaibasa	Hardware/License upgradation
25	ER-I	Gaya	Hardware/License upgradation
26	ER-I	Sasaram 765	Hardware/License upgradation
27	ER-I	Ara	Hardware/License upgradation
28	Odisha Projects	Jeypore	RTU to be replaced
29	Odisha Projects	Baripada	RTU to be replaced
30	Odisha Projects	Indravati	RTU to be replaced
31	Odisha Projects	Rourkela	RTU to be replaced
32	Odisha Projects	Rengali	RTU to be replaced
33	Odisha Projects	Angul	Hardware/License upgradation
34	Odisha Projects	Jharsuguda	Hardware/License upgradation
35	Odisha Projects	Bolangir	Hardware/License upgradation
36	Odisha Projects	Pandiabili	Hardware/License upgradation
37	Odisha Projects	Keonjhar	Hardware/License upgradation
38	Odisha Projects	Talcher HVDC	Hardware/License upgradation

In 39th ERPC Meeting, ERPC agreed to include 400kV Chandwa , Kishenganj & Daltonganj Substations in the project

B. Implementation of BCU based Substation Automation System at Purnea 220 KV, Ara 220 KV, Birpara220KV, Siliguri220KV, Sasaram S/s in addition to the replacement of RTUs for data reporting to ERLDC through single RTU/SAS as per advice of ERLDC.

C. Replacement of DCPS for replacement of old DCPS commissioned in ULDC phase-I:
Following old DCPS & UPS in 18 nos.Central Sector locations is decided to be replaced:

Sr. No.	Location	Item
1	Durgapur	UPS
2	ERLDC, Kolkata	2x4 kw DCPS with parallel operation
3	Durgapur	DCPS
4	Kanchanpur	
5	Barkot	
6	Jamui	
7	Maldah	
8	Siliguri 400	
9	Jamshedpur	
10	Siliguri 220	
11	Rengali	
12	Birpara	
13	Rourkela	
14	Purnea 220	
15	Indravati	
16	Muzaffarpur	
17	Biharsharif	
18	Sasaram HVDC	

D. Laying of OPGW in the second circuit of following links commissioned in ULDC Phase-I:

S/n	**Name of links**	**Length (Km)**
1	Rourkela-Talcher	171
2	Durgapur-Jamshedpur	175
3	Durgapur-Farakka	150
4	Biharsharif-Sasaram	193
5	Biharsharif-Kahalgaon	202
6	LILO portion of Biharsharif-Balia at Ara	12
	Total	**903**

ISGS	S No	Name of Station	Distance between the nearest communication node to the unit control room	Nearest communication node	Remarks	Length of OPGW considered in km
NTPC	1	Farraka STPS	2500M	NA	**Not considered** as it is distance between switchyard Control Room and unit Control room. This is not to be done by POWERGRID as recorded in 38th ERPC meeting.	0
	2	Barh STPS	2000M			0
	3	Kahalgaon TPS	1500M			0
	4	BRBCL Nabinagar	81.65Km+1000M	Sasaram-PGCIL	**Considered** only OPGW portion i.e. 81.65Km. 1000M not considered as it is distance between switchyard Control Room and unit Control room. This is not to be done by POWERGRID as recorded in 38th ERPC meeting.	81.65
	5	Talchar STPS	660M	NA	**Not considered** as it is distance between switchyard Control Room and unit Control room. This is not to be done by POWERGRID as recorded in 38th ERPC meeting.	0
	6	Darlipally STPS	810M	Jharsuguda- PGCIL		0
NHPC	7	Rangit HPS	600M	NA		0
	8	Teesta - V HPS	520M	NA		0
IPP Hydro	9	Dikchu HPS	32.67Km+550M	Rangpo	**Considered** only OPGW portion i.e. 32.67Km. 550M not considered as it is distance between switchyard Control Room and unit Control room. This is not to be done by POWERGRID as recorded in 38th ERPC meeting.	32.67
	10	Teesta - III HPS	46.28Km+1800M	Rangpo	**Considered** only OPGW portion i.e. 46.28Km. 1800M not considered as it is distance between switchyard Control Room and unit Control room. This is not to be done by POWERGRID as recorded in 38th ERPC meeting.	46.28
	11	Joherthang HPS	27Km+300M	Rangpo	**Considered** only OPGW portion i.e. 27Km. 300M not considered as it is distance between switchyard Control Room and unit Control room. This is not to be done by POWERGRID as recorded in 38th ERPC meeting.	27
	12	Chuzachen HPS	21Km+350M	Rangpo	Considered only OPGW portion i.e. 21Km under ER FO Expansion(Additional requirement) project awarded in Sept'2018. 350M not considered as it is distance between switchyard Control Room and unit Control room. This is not to be done by POWERGRID as recorded in 38th ERPC meeting.	0
	13	Tashiding HEP	8Km	New Melly	**Considered**	8
IPP Thermal	14	Jindal ITPL	85Km+1000M	Angul	Considered only OPGW portion i.e. 85Km under ER Reliable Communication project for which award expected by Nov'2018 end. 1000M not considered as it is distance between switchyard Control Room and unit Control room. This is not to be done by POWERGRID as recorded in 38th ERPC meeting.	0
	15	GMR TPS	30Km+800M	Angul	Considered only OPGW portion i.e. 30Km under ER Reliable Communication project for which award expected by Nov'2018 end. 800M not considered as it is distance between switchyard Control Room and unit Control room. This is not to be done by POWERGRID as recorded in 38th ERPC meeting.	0
	16	Ind Bharat EUL	65Km+700M	Jharsuguda- PGCIL	Considered only OPGW portion i.e. 65Km under ER FO Expansion(Additional requirement) project awarded in Sept'2018. 700M not considered as it is distance between switchyard Control Room and unit Control room. This is not to be done by POWERGRID as recorded in 38th ERPC meeting.	0
	17	Adhunik PNRL	300M	NA	Not considered as it is distance between switchyard Control Room and unit Control room. This is not to be done by POWERGRID as recorded in 38th ERPC meeting.	0
	18	MPL	31.5Km+1500M	Maithon	OPGW portion i.e. 31.5Km implemented under ER Fo Expansion project. 1500M not considered as it is distance between switchyard Control Room and unit Control room. This is not to be done by POWERGRID as recorded in 38th ERPC meeting.	0
	19	OPGCL	220M	NA	Not considered as it is distance between switchyard Control Room and unit Control room. This is not to be done by POWERGRID as recorded in 38th ERPC meeting.	0
NTPC/JUSNL	20	Lalmatia	79Km	Farraka	**Considered**	79
					Total	274.6

Annexure - B26.1

SUMMARY OF DEVIATION CHARGE RECEIPT AND PAYMENT STATUS

BILL upto 20.01.19 (upto Week -42 of 2018 - 19)

Last Payment Disbursement Date - 26.09.18

Figures in Rs. Lakhs

CONSTITUENTS	Receivable	Received	Payable	Paid	Outstanding
WR	15.21672	12.62733	514971.96558	492833.58344	-22135.79275
SR	226050.45324	222954.03553	3889.51850	3939.17284	3146.07205
NER	154366.53195	153325.82633	28944.41500	13579.97506	-14323.73432
NR	99477.31488	54337.11958	53948.24243	41798.49845	32990.45132
BSPHCL	17925.89708	15847.38225	1095.72657	0.00000	982.78826
JUVNL	20828.66090	15300.07751	14.63752	0.00000	5513.94587
DVC	26935.58121	26821.90722	4182.61110	4182.61110	113.67399
GRIDCO	47207.53003	48002.77067	499.59727	1390.00265	95.16474
WBSETCL	49587.93073	49400.77632	0.00000	19.31179	206.46620
SIKKIM	948.66984	154.38587	1311.63493	496.60429	-20.74667
NTPC	12465.60635	12262.81141	70.96887	87.68291	219.50898
NHPC	6.13288	6.13288	4867.32258	4862.54183	-4.78075
MPL	354.47693	355.45400	810.76604	818.02805	6.28494
MTPS STG-II(KBUNL)	1504.70052	1446.34484	0.00000	0.00000	58.35568
APNRL	718.29612	247.44648	511.00554	132.90648	92.75058
CHUZACHEN (GATI)	135.98794	132.68095	729.90338	729.90332	3.30693
NVVN(IND-BNG)	1062.15902	1018.85267	425.02081	427.89872	46.18426
JITPL	928.96698	909.43894	1117.00383	1117.01502	19.53923
GMR	1455.33387	1360.44049	1634.82974	1587.70921	47.77285
IND BARATH	112.50429	0.00000	0.00000	0.00000	112.50429
TPTCL(DAGACHU)	6508.85901	6381.02693	36.08101	36.24336	127.99443
JLHEP(DANS ENERGY)	896.47807	888.05815	485.11323	485.08963	8.39632
BRBCL(Nabinagar)	308.02212	297.07594	1188.72627	1198.81027	21.03018
NVVN (IND-NEPAL)	5932.83022	5753.66577	560.57529	574.69080	193.27996
HVDC SASARAM	39.21356	27.15153	263.94644	263.94644	12.06203
HVDC ALIPURDUAR	66.65713	67.61607	363.62337	364.58231	0.00000
TEESTA-III	1231.78908	1230.03951	2649.17225	2649.15225	1.72957
DIKCHU(Sneha Kinetic)	157.42733	172.55679	962.05498	976.42339	-0.76105
TASHIDING(Shiga Energy)	449.99719	422.56633	507.61915	507.61917	27.43088
OPGC	546.04602	498.97962	0.00000	0.00000	47.06640
NPGC	829.19644	799.76270	0.00000	0.00000	29.43374
Pool Balance	0.00000	822.45081	-8101.19490	0.00000	7278.74409
Addl Deviation charge	35316.66089	48459.88063	0.00000	0.00000	-13143.21974
IRE	0.00000	0.00000	-124.71065	0.00000	124.71065
VAE	32.97914	0.00000	26039.78722	0.00000	-26006.80808
TOTAL	679054.46764	620435.01061	643855.96334	575060.00278	

	% Realization	**91.37**	**As on**	**06.02.19**
Receivable:	Receivable by ER POOL		Payable	Payable by ER POOL
Received	Received by ER POOL		Paid	Paid by ER POOL
"- ve" Payable by ER pool		"+ ve" Receivable by ER pool		

Deviation Interest Bill due to delay payment during FY 2017-18

As on 06.02.19

Annexure-B26.2

Sl No.	Name of Constituents	Interest amt Payable by Party(in Rs)	Amount Paid/ recovered by Party(in Rs)	Interest amt receivable by Party(in Rs)	Amount paid to the Party(in Rs)	Outstanding Interest as on 06.02.19 (in Rs)
1	BSPHCL	16974993	16974993			**0**
2	JUVNL	15419205	15419205			**0**
3	DVC			14278	14278	**0**
4	GRIDCO			25776	25776	**0**
5	WBSETCL	0				**0**
6	SIKKIM	1143998				**1143998**
7	NTPC	0				**0**
8	NHPC			5860	5860	**0**
9	MPL	1443	1443			**0**
10	APNRL			57900	57900	**0**
11	CHUZACHEN	8617	8617			**0**
12	NVVN(IND-BD)	765	765			**0**
13	JITPL	38619	38619			**0**
14	GMR	56974	56974			**0**
15	IND BARATH	2135362				**2135362**
16	TPTCL(DAGACHU)	304143	304143			**0**
17	JLHEP	230359	230359			**0**
18	BRBCL	5315	5315			**0**
19	NVVN(IND-NEP)	5268	5268			**0**
20	TUL(TEESTA-III)			5772	5772	**0**
21	DIKCHU			9475	9475	**0**
22	HVDC-PSL			127	127	**0**
23	HVDC-ALPD			355	355	**0**
24	TASHIDING	138753	138753			**0**
25	OPGC	0				**0**
	Total	**36463813**	**33184453**	**119543**	**119543**	**3279360**

Annexure - B26.3

STATUS OF REACTIVE CHARGES

RECEIVABLE IN ER POOL AS PER PUBLISHED A/C UPTO 20.01.19 (2018 -19)
AS ON 06.02.19

CONSTITUENT	AMOUNT RECEIVABLE IN THE POOL (Rs.)	AMOUNT RECEIVED IN THE POOL (Rs.)	TOTAL OUTSTANDING(Rs.)
BSPHCL	5010087	378537	4631550
JUVNL	4285714	1137688	3148026
DVC	660320	660320	0
GRIDCO	245987789	245987789	0
WBSETCL	676708817	658345891	18362926
SIKKIM	635432	325817	309615
TOTAL	933288159	906836042	26452117

Note: (+ve) means payable by utility & (-ve) means receivable by utility

Eastern Regional Power Committee, Kolkata

Minutes of Special Meeting on "RGMO/FGMO and PSS Tuning of Generators in Eastern Region" held at ERPC, Kolkata on 31.01.2019 at 11:00 hrs

List of participants is enclosed at **Annexure-A**.

Member Secretary, ERPC chaired the meeting. He welcomed all the participants in the meeting. He informed that the issue of RGMO/FGMO and PSS Tuning is being reviewed in every OCC Meeting. But there was no significant improvement in the performance of the generators. In order to discuss the issue in detail, in 148th OCC Meeting held on 20.08.2018, it was decided that a separate meeting on Restricted Governor /Free Governor Mode Operation and PSS Tuning of generators with the power station authorities in the Eastern Region shall be convened for detailed deliberation.

He informed that vide CERC order dated 31st July 2017 in Petition No. 84/MP/2015, the Commission directed the following:

Section 23 "

a) Considering the fact that further measures have been put in place to facilitate desirable primary response, the Commission, starting from the month of September, 2017 shall be closely watching the primary response of ISGSs as reported by POSOCO/NLDCs. At the State level, SLDCs shall report the frequency response of intra-State generators to the concerned SERCs.
b) NLDCs and SLDCs through the assistance of POSOCO shall start the process of selecting independent third parties capable of undertaking periodic checkups to monitor the RGMO/FGMO response. To start with, selected independent third parties shall be sent to the generating stations which are not providing the desired RGMO/FGMO response. Independent Third Parties shall ensure that the generator has not, in any way, prevented/disabled the governor from providing the desired response. In case, even after enabling the governors, units are not able to provide the desired response as per the provisions of the Grid Code, third parties, based on the submissions of the generators, shall bring out the technical constraints, if any, which limit the primary response of the units.
c) All ISGSs are directed to provide primary response compulsorily in terms of Regulation 5.2 (f), (g), (h) and (i) of the Grid Code failing which we would not hesitate in initiating action under Section 142 of Electricity Act, 2003 for not providing desired RGMO/FGMO response without any valid reasons. "

Section 24

"….. The Committee (on implementation of FGMO / primary response) has also recommended that there is no requirement for granting any exemption even to LMZ units from operation under RGMO/FGMO with manual intervention."

"… has the option of either expediting the R&M of old units which shall include installation of new EHG governors capable of providing adequate primary response or to go in for retrofit of mechanical governors for adopting RGMO features or to operate on FGMO with manual intervention…"

He advised all the power stations to take the necessary action to improve the performance of the generators.

I. RGMO/FGMO performance of Generators

ERLDC gave detailed presentation on Primary Response of Generators in the Eastern Regions. The presentation is enclosed at **Annexure-I**.

During the meeting, the generating stations raised queries pertaining to the following:

1. Regulatory requirement from the IEGC, CERC orders and Expert Committee recommendations
2. Exemption to old units from providing FGMO / RGMO response

3. Triggering criteria for frequency response, rate/quantum/duration of response
4. Data logging (resolution) and assessment of response

The queries raised by the generating stations were clarified by ERLDC/ERPC as under:

1. Primary frequency control is automatic and it aims to arrest the grid frequency variations by automatically varying generator output as per its droop characteristics. Restoration of frequency to the nominal i.e. 50 Hz in case of India is achieved through secondary and tertiary controls ranging from few minutes to hours.
2. Time frame for primary governor control action is of the order of a few seconds i.e. 5- 30 seconds and should last for at least 3-4 minutes to enable secondary control to take over which will allow the primary reserves to be restored. **(Ref: 17.2 of Report of the Committee on Free Governor Mode Operation of Generating Units, Ref: Chapter 4, Page 34 of Report of Expert Group to review and suggest measures for bringing power system operation closer to National Reference Frequency).**
3. IEGC permits a ripple filter of 0.03 Hz. This implies that the unit shall provide primary response whenever the change in frequency is more than 0.03 Hz. The time between two successive frequency measurements shall be suitably tuned to provide primary response within 5-30 seconds of the grid event causing the change in frequency. **(Ref : IEGC 5.2(f))**
4. After the automatic primary response the unit may be brought back to its scheduled load at the rate of 1% per minute though local supplementary control. (**Ref: IEGC 5.2(i))**
5. The ex-bus schedule shall be restricted to MCR less normative auxiliary consumption. Operation in Valve wide-open mode is prohibited. The control valves shall be kept throttled to provide governor response at all times. (**Ref: IEGC 5.2(h))**
6. No exemption has been granted by CEC to LMZ units for operation under RGMO/FGMO. In case of difficulty to operate in RGMO, generators may operate under FGMO with manual intervention for providing mandated response as per the provisions of the Grid Code. (**Ref: CERC order in Petition No. 65/MP/2014, Ref: CERC order in Petition No. 84/MP/2015,Ref: 19.9 of Report of the Committee on Free Governor Mode Operation of Generating Units)**.
7. The methodology used for computing the Frequency Response Characteristics shall be as per the procedure approved by Hon'ble CERC vides order dated 3rd May 2013. All generators as well HVDC were advised to calculate their response as per the described procedure during the meeting.(**Ref: CERC order in Petition No. 47/MP/2012**). SLDCs were advisedto report the frequencyresponse of intra-State generators to the concerned SERCs. (**Ref: CERC order in Petition No. 84/MP/2015).**
8. A generator response which is minimum 40% of ideal FRC is to be considered as adequate response. **(Ref: 9.6 (b) of Report of Expert Group to review and suggest measures for bringing power system operation closer to National Reference Frequency).**
9. The MW and frequency data available at station DCS shall be archived at a resolution of at least 1 second, for post-facto analysis of the adequacy of the response.

All the station representatives stated that the gap in understanding the provisions of the grid code had been addressed through the deliberations in the meeting. They assured that the governor settings would be re-tuned in the next few days to provide the response expected as per the IEGC 5th amendment. All the generating utilities updated the latest status and their action plan which is enclosed at **Annexure-IA**.

The two frequency response events, which occurred in the month of January 2019, were also informed by ERLDC to all generators. It was decided that all generators would submit high resolution (1 sec) data of MW output, Frequency (Hz), and RGMO influence in MW (if available) along with FRC calculation and suitable explanation of response by 4th Feb 2019 to erldcprotection@posoco.in and erpcprotection@gmail.com.

Events Date and Time:

Date and Time	Time period for required data	Event	Frequency Drop
16-01-2019 12:25 hrs	12:24 hrs to 12:29 hrs	Solar Generation loss in Northern region of 1400 MW	0.107 Hz
23-01-2019 06:37 Hrs	06:36 hrs to 06:41 hrs	Loss of generation at Rampur & NJPC in Northern region	0.08 Hz

After detailed deliberation, the following decisions were taken in the meeting:

1. All the generators would take necessary tuning of their units along with the Boiler logic to provide adequate RGMO/FGMO response
2. Generator which cannot provide automatic response should operate on FGMO with manual intervention
3. All the generators would address the issues related to implementation of RGMO/FGMO during R & M works immediately.
4. All the generators shall calculate the RGMO/FGMO response for the events informed by ERLDC.
5. All the generators shall submit the high resolution data to SLDC and ERLDC for computation of the response.
6. The status of implementation of RGMO/FGMO and the performance of the generators shall be reviewed in monthly OCC Meetings.

II. **PSS Tuning of Generators**

ERLDC gave a detailed presentation on role of Power System Stabilizer and the importance of its tuning. Presentation is enclosed at **Annexure-II**. ERLDC explained the following during the PSS Tuning Session:

1. Low frequency oscillation and its adverse effect on the grid as well generating plants
2. Basics of PSS tuning, PSS Tuning Requirement as per Regulation/Standards
3. Criteria for PSS tuning and analysis of PSS tuning.
4. Exciter, PSS Data and its tuning details as received from various generators **(Annexure-II A)**
5. Analysis of PSS tuning field reports submitted by the various generators **(Annexure-II B)**
6. Need for Model data submission from generators and its utilization

After detailed deliberation, the following decisions were taken in the meeting:

1. Generators who had already done the PSS tuning shall submit the details of the Excitation System, PSS tuning and its report as per the list attached at **Annexure-II A**. The generators shall submit the Generator terminal voltage, Field voltage, Real power, Reactive Power, Generator Speed, and PSS output in excel/.csv format for better analysis of the result.
2. Generators for which PSS tuning was not carried out shall take up the PSS Tuning with OEM immediately
3. Generators for which PSS was not in service shall take up the issue with OEM immediately to bring the PSS into service.
4. For any future tuning, it was recommended to all generators to collect the response along with data in .csv/excel format.
5. All the generators where the PSS tuning was done and PSS not in service shall submit their action plan for PSS Tuning in line with IEGC and CEA standards before the next OCC meeting to ERPC/ERLDC.

Meeting ended with vote of thanks to the chair.

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Annexure-C6

By SPeed Post

भारत सरकार
विद्युत मंत्रालय
पूर्वी क्षेत्रीय विद्युत समिति
GOVERNMENT OF INDIA
MINISTRY OF POWER
EASTERN REGIONAL POWER COMMITTEE

NO. ERPC/COM-I/Corres/2018-19/ 6802-03 Date: 19.12.2018

To,

The Joint Secretary (Transmission)
Ministry of Power
Government of India
Shram Shakti Bhavan
Rafi Ahmed Kiwai Marg
New Delhi-110001

Sub: Establishment of Renewable Energy Management Centre (REMC) in Eastern Region - reg.

Ref: Deliberations of 39th TCC & ERPC meetings held on 16th & 17th November, 2018

Sir,

The present installed capacity of Renewable Energy Sources in Eastern Region is 1083.64 MW. The tentative State wise break-up of renewable energy target to be achieved by March, 2022 by Eastern Region are as follows:

(ALL FIGURES IN MW)

State / UTs	Solar Power	Wind Power	Small Hydro Power + Biomass Power	TOTAL
Bihar	2,493	Nil	269	2,762
Jharkhand	1,995	Nil	10	2,005
Orissa*	2,377	Nil	115	2,492
West Bengal	5,336	Nil	398.5	5,735
Sikkim	36	Nil	52.11	88
Eastern Region	**12,237**	Nil	**845**	**13,082**

** Odisha has informed that they are planning for total 3127 MW renewable energy to be achieved by March 2022 (Solar Power – 2377 MW, Wind-150 MW, and Small Hydro including Biomass - 600 MW)*

The generation from the Renewable Energy Sources is characterised by variability and uncertainty. Therefore, seamless integration of the RES into the grid is considered to be a challenging work. The aspect of variability and uncertainty associated with the Renewable Energy Sources requires implementation of the state-of-art, renewable energy forecasting and monitoring system. Keeping this in view, Ministry of Power, Government of India, has decided to establish Renewable Energy Management Centres at Western, Northern and Southern Region as a part of Green Energy Corridor Scheme. At present no REMC has been planned yet for Eastern Region & North Eastern Region.

14 गोल्फ क्लब रोड, टालीगंज, कोलकाता-700033 I 14 Golf Club Road, Tollygunge, Kolkata 700033
Telephone : 24239657, 24239651, 24239650 I Fax : 24239652, 24239653 I www.erpc.gov.in, E-mail: mserpc-power@nic.in

This issue was deliberated in the 39th Technical Coordination Committee & Eastern Regional Power Committee meetings held on 16th & 17th November, 2018. All the states in Eastern Region felt the necessity of establishment of REMC in the states of West Bengal, Bihar, Odisha and Jharkhand and at ERLDC as well, considering substantial addition of renewable power in the Eastern Region, the necessity of better forecasting and smooth integration of RES in the Regional Grid.

I would request you to please consider the request of the Eastern Regional States regarding establishment of REMC in the states of West Bengal, Bihar, Odisha and Jharkhand and at ERLDC as well.

Thanking You.

Yours faithfully,

19/12/18

(J. Bandyopadhyay)
Member Secretary

Copy to: **Chairperson, ERPC & Chairman-cum-Managing Director, GRIDCO & OPTCL, Janpath, Bhubaneshwar-751022.**

Annexure-C7 BY SPEED POST

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
पूर्वी क्षेत्रीय विद्युत समिति
Eastern Regional Power Committee
14, गोल्फ क्लब रोड, टालीगंज, कोलकाता-700033
14 Golf Club Road, Tollygunj, Kolkata-700033
Tel No.:033-24239651, 24239659 FAX No.:033-24239652, 24239653 Web: **www.erpc.gov.in**

NO. ERPC/COM-I/Corres/2018-19/ 6637-41 Date: 12.12.2018

To,

The Under Secretary,
Ministry of Power,
Shram Shakti Bhawan, Rafi Marg,
New Delhi- 110001.

Sub: Submission of ERPC on inclusion of Sikkim in NER Region - reg.

Ref: 1) Your letter No. 6/5/2017-Trans-Pt (1) dated 31.10.2018
2) Deliberations of 39th TCC & ERPC meetings held on 16th & 17th November, 2018 at Jaipur

Sir,

With above subject and reference, the views of the Eastern Region in respect of the proposal of inclusion of Sikkim in NER are as follows:

1. Sikkim is an integral part of the Eastern Regional Grid since its inception. Sikkim is a constituent member of ERPC (erstwhile EREB). It is geographically and electrically connected with Eastern Region (ER) only. Sikkim has no direct electrical connection with the North Eastern Region.

2. Sikkim is directly connected with Eastern Regional utilities (WBSETCL/ WBSEDCL, PGCIL- ER-II) as well as ER Central Generating Stations (NHPC) through inter-state and ISTS lines. So smooth and reliable grid operation and better visibility of ER Grid require continuous co-ordination among Sikkim, other intra-regional utilities and ERPC/ERLDC.

3. As all the inter-connecting lines of Sikkim are passing through ER, any disturbance originating in Sikkim system will be automatically directly transmitted to ER first. As such, ER is susceptible to the disturbances. For this, regular operational and protection coordination is required to be maintained between Sikkim and rest of the ER. Therefore, for the sake of stability, reliability and smooth operation of ER grid, NER should continue to an integral part of ER grid.

4. From the point of view of transmission planning also, it would a definite advantage for Sikkim to remain as integral part of in the Eastern Region because of its complex inter-connection with Eastern Region.

5. Surplus power generated in the Sikkim are exported to Eastern Region and to other regions of the country (not to NE region) through Eastern Region. Power allocated from ISGS stations of Teesta-V and Rangit to the Eastern Regional States is also transmitted from Sikkim to the rest of Eastern Region.

6. Any ISTS line connected with Sikkim would be treated as inter-regional line in the event of Sikkim becoming a part of NER grid. As such, shut down required, even for emergency purpose, for such line would require the consent of both ER and NER regions. Consequently this would involve lengthy process and would be time consuming as well.

7. Inclusion of Sikkim in NER would have financial implication for transaction of power between ISGS of ER and Sikkim as well as between the Sikkim ISGSs and the rest of the ER beneficiaries. The additional burden of transmission loss would be loaded because of inter-regional transaction of power.

8. Inclusion of Sikkim in NER might lead to claim of reallocation of ISGS power of Teesta-V and Rangit of NHPC among the NER states as the firm power of ISGS is allocated among the states of the region as per the existing methodology of allocation of power from Central Generating Stations. Presently the firm power of Teesta-V and Rangit is allocated among the states of the Eastern Region. This would lead to unnecessary dispute and complexity.

9. Most of the techno-commercial issues between Sikkim and other ER utilities are presently being sorted out smoothly in the forums of ERPC. On the other hand, if Sikkim is treated as NER constituent, the techno-commercial issues involving Sikkim and other ER states would need to be discussed in both ER and NER forum. This would add unnecessary complexities towards resolving the issues.

The proposal of inclusion of Sikkim in NER was also deliberated at length in the 39th Technical Coordination Committee & Eastern Regional Power Committee meetings held on 16th & 17th November, 2018 respectively. The Technical Coordination Committee (TCC) of ERPC strongly objected to the proposal of inclusion of Sikkim in NER keeping in view the operational expediency, security and reliability of the ER grid.

ERPC forum unanimously decided that, taking into consideration the reliability and security of the Eastern Regional grid and the interest of Sikkim for evacuation of surplus power, Sikkim should continue to remain as an integral part of the Eastern Regional Grid. In the ERPC Meeting, Sikkim expressed that it also favoured to remain as an integral part of the Eastern Grid.

Thanking You.

Yours faithfully,

12/12/18

(J. Bandyopadhyay)
Member Secretary

Copy to:

1. Chairperson, ERPC & Chairman-cum-Managing Director, GRIDCO & OPTCL, Janpath, Bhubaneshwar-751022.
2. Member (PS), Central Electricity Authority, Sewa Bhawan, R.K.Puram, Sector – I, New Delhi – 110066.
3. The Member Secretary, North Eastern Regional Power Committee, NERPC Complex, Dong Parmaw, Lapalang, Shillong – 793006, Meghalaya.
4. Principal Chief Engineer cum Secretary, Energy & Power Department, Govt. of Sikkim, Kazi Road, Gangtok – 737101, Sikkim.

भारत सरकार
विद्युत मंत्रालय
पूर्वी क्षेत्रीय विद्युत समिति
GOVERNMENT OF INDIA
MINISTRY OF POWER
EASTERN REGIONAL POWER COMMITTEE

NO. ERPC/COM-I/Corres/2018-19/6976-78 **Date: 28.12.2018**

To,

The Secretary,
Central Electricity Regulatory Commission,
3rd & 4th Floor, Chanderlok building,
36 Janpath,
New Delhi-110001.

Sub: Refund of STOA withdrawl PoC charges to DICs paid by embedded customers to PGCIL towards their drawl in STOA - reg.

Ref: Minutes of 39th TCC & ERPC meetings held on 16th & 17th November, 2018 at Jaipur

Sir,

In various fora of ERPC, the constituents of the Eastern Region have been raising the issue of non-refund of STOA withdrawal PoC charges to DICs paid by embedded customers to PGCIL towards their drawl in STOA. A detailed deliberations on this issue was held in 39th TCC & ERPC meeting held on 16th November, 2018 and 17th November, 2018 respectively. As per the decision of 39th ERPC Meeting, on behalf of ERPC forum, the followings are placed before appropriate Committee for review of PoC Charges for kind consideration:

1. The payment of transmission charges for use of Inter-State Transmission System is governed by the provisions of the CERC (Sharing of Inter State Transmission Charges and Losses) Regulation, 2010 (Sharing Regulations). In order to capture the market changes & in the light of bringing more rationality & refinement, the Sharing Regulations has undergone several amendments as below:
   - i. 1st Amendment Regulations 2011
   - ii. 2nd Amendment Regulations 2012
   - iii. 3rd Amendment Regulations 2015
   - iv. 4th Amendment Regulations 2015
   - v. 5th Amendment Regulations 2017

   Out of the above amendments the 3rd amendment is the major one which encapsulated the major changes to the sharing methodology.

2. The process for Billing in sharing of Transmission charges & Losses has been laid down in Regulation 11 of the Sharing Regulations which inter alia provides modalities of the sharing of ISTS transmission charges between DICs raised by CTU in three parts. More specifically Regulation 11.9 deals with the governance of offsetting transmission charges on account of STOA availed by DICs and the embedded customers therein. The related provisions of Regulation 11.9 is extracted below:

   i) As per 3rd provision of Regulation 11.9 of Sharing regulation 2010,

" The injection PoC charge/withdrawal PoC charges for Short Term Open Access given to a DIC shall be offset against the corresponding injection PoC charges or Withdrawal PoC charges to be paid by the DICs for Approved injection /Approved withdrawal corresponding to Net withdrawal(load minus own injection) considered in base case."

ii) And the 4th proviso of Regulation 11.9 of Sharing regulation 2010 states that

"For withdrawal DIC, this adjustment is given only for STOA transaction by DIC and not applicable to other intra-state entity embedded in State and engaged in STOA."

3. As far as the STOA transactions are concerned, these are being captured / accounted for while determining the PoC rate calculation of states / DICs for the respective quarters. Regarding the Short Term drawls by intra-State entity embedded in State, it is of the same nature i.e. such STOA transactions by intra-State entities embedded in State are also captured / accounted for while determining the PoC charge calculation of the states/ DICs for the respective quarters.

4. Presently there is no provision in the extant regulation for adjustment of total STOA charges availed by intra-State embedded entities.

5. As a case study, the following example is produced for calculation methodology towards refund to DICs:

- Assumptions taken in the example:

Base Case Net Withdrawal considered for DIC "X"= 2000 MW
Approved withdrawal as per RTA for "X" = 1500 MW
No. of Days in Month (NDM) = 31
No. of STOA Embedded customers of "X" = 2
(Customer-1 drawing 300 MW of power through STOA by using ISTS & Customer-2 drawing 400 MW of power through STOA by using ISTS)
STOA Rate for a quarter = Rs. 300 / MWH
STOA quantum procured by DIC X = 100 MW

- With the aforesaid assumptions the Calculation Methodology towards refund of PoC charges corresponding to STOA transactions by embedded entities to DICs is framed as below:

a. Base Case Net Withdrawal for DIC X (MW) = 2000
b. Approved withdrawal as per RTA for DIC X (MW) = 1500
c. Difference i.e. the STOA entitlement of DIC X (MW)= 500
d. STOA Rate (determined by CERC for a quarter) = Rs.300 /MWH
e. Total STOA quantum procured by DIC X (MW) = 100
f. STOA charges Paid by DIC X towards such direct procurement (Cr) = 100x300x24x31/10^7=2.23
g. Total STOA quantum procured by Embedded customers of state (MW) = 300+400=700
h. STOA charges Paid by Embedded customers towards such STOA procurement (Cr) = 700x300x24x31/10^7=15.62
i. Double Charges paid by DIC X (Cr) = 500x300x24x31/10^7=11.16
j. Amount already reimbursed by PGCIL / CTU

	through STOA Offset (Cr) =	2.23
k.	Unpaid Quantum towards double charges (MW)=	400
l.	Unpaid STOA charges (towards double charges) to be refunded to DIC X (Cr) =	11.16-2.23 =8.93

The tabular representation for the calculation is attached at Annexure-I.

6. In view of the above, the constituents of Eastern Region have submitted that the issue of refund/adjustment of PoC charges for STOA transactions by embedded entities of the states/DIC to the extent it is being captured while calculation of PoC charges should be referred to appropriate Committee for review of PoC Charges.

I would request you to kindly consider the above and take necessary action in this regard.

Thanking You.

Yours faithfully,

28/12/18

(J. Bandyopadhyay)
Member Secretary

Copy to:

1. Chairperson, ERPC & Chairman-cum-Managing Director, GRIDCO & OPTCL, Janpath, Bhubaneshwar-751022.

2. Chairperson, TCC and Director (Commercial), GRIDCO Ltd., Janpath, Bhubaneshwar-751022.

Annexure-I

Calculation Methodology towards refund of PoC charges corresponding to STOA transactions by Embedded entities

No. of Days in Month (NDM) = 31

Base Case Net Withdrawal for DIC X (MW)	Approved withdrawal as per RTA for DIC X (MW)	Difference i.e. the STOA entitlement of DIC X (MW)	STOA Rate (Rs./MWH)	Total STOA quantum procured by DIC X (MW)	STOA charges Paid by DIC X towards such direct procurement (Cr)	Total STOA quantum procured by Embedded customers of state(MW)		STOA charges Paid by Embedded customers towards such STOA procurement (Cr)	Double Charges paid by DIC X (Cr)	Amount being reimbursed by PGCIL /CTU through STOA Offset (Cr)	Unpaid Quantum towards double charges (MW)	Unpaid STOA charges (towards double charges) to be refunded to DIC X (Cr)
A	B	C=A-B	D	E	F	G		H	I=C*D	J	K=C-E	L=I-J
2000	1500	500	300	100	2.23	Customer 1-300 MW	700	15.62	11.16	2.23	400	8.93
						Customer 2-400 MW						

Annexure-C12.1

Difference in DSM account for ERPC & NRPC

All figs Rupees in Lacs

Week No.	Financial Year	Bill Period	As per ERPC Fig	As per NRPC Fig	Diff	Remarks
42	2017-18	15-Jan-18 to 21-Jan-18	38.97137	39.29811	-0.32674	ERPC - NRPC account almost matched
43		22-Jan-18 to 28-Jan-18	1818.71461	1819.54751	-0.83290	
44		29-Jan-18 to 04-Feb-18	487.19714	487.57902	-0.38188	
45		05-Feb-18 to 11-Feb-18	-646.59265	-646.02624	-0.56641	
46		12-Feb-18 to 18-Feb-18	1584.50023	1585.10833	-0.60810	
47		19-Feb-18 to 25-Feb-18	476.0878	476.43103	-0.34323	
48		26-Feb-18 to 04-Mar-18	1031.32822	1031.76241	-0.43419	
49		05-Mar-18 to 11-Mar-18	3770.82179	3769.44801	1.37378	
50		12-Mar-18 to 18-Mar-18	747.61039	748.42405	-0.81366	
51		19-Mar-18 to 25-Mar-18	1375.16618	1368.40764	6.75854	
52		26-Mar-18 to 01-Apr-18	210.04301	210.42000	-0.37699	
1	2018-19	02-Apr-18 to 08-Apr-18	1009.60994	1278.46919	-268.85925	NRPC Revision Done
2		09-Apr-18 to 15-Apr-18	-654.32388	-692.66860	38.34472	NRPC Revision Done
3		16-Apr-18 to 22-Apr-18	-1284.45597	-1390.85092	106.39495	NRPC Revision Done
4		23-Apr-18 to 29-Apr-18	-2159.58592	-2257.12707	97.54115	NRPC Revision Done
5		30-Apr-18 to 06-May-18	353.29802	180.20509	173.09293	NRPC Revision Done
6		07-May-18 to 13-May-18	146.92212	-599.83702	746.75914	NRPC Revision Done
7		14-May-18 to 20-May-18	-3368.88035	-4112.30688	743.42653	NRPC Revision Done
8		21-May-18 to 27-May-18	-2796.00937	-3900.47619	1104.46682	NRPC Revision Done
9		28-May-18 to 03-Jun-18	-2591.71233	-3203.81689	612.10456	NRPC Revision Done
10		04-Jun-18 to 10-Jun-18	-3967.18649	-4640.58132	673.39483	NRPC Revision Done
11		11-Jun-18 to 17-Jun-18	-5122.51604	-6386.98958	1264.47354	NRPC Revision Done
12		18-Jun-18 to 24-Jun-18	-6473.51666	-7954.42305	1480.90639	NRPC Revision Done
13		25-Jun-18 to 01-Jul-18	-1685.53423	-2975.43419	1289.89996	NRPC Revision Done
14		02-Jul-18 to 08-Jul-18	-385.14665	-2663.69127	2278.54462	**NRPC Revision Pending**
15		09-Jul-18 to 15-Jul-18	-2801.19246	-5350.27882	2549.08636	**NRPC Revision Pending**
16		16-Jul-18 to 22-Jul-18	-1799.16426	-4037.75088	2238.58662	**NRPC Revision Pending**
17		23-Jul-18 to 29-Jul-18	1118.66298	1109.37759	9.28539	**NRPC Revision Pending**
18		30-Jul-18 to 05-Aug-18	766.69794	-1644.61889	2411.31683	**NRPC Revision Pending**
19		06-Aug-18 to 12-Aug-18	-86.22433	-2601.46292	2515.23859	**NRPC Revision Pending**
20		13-Aug-18 to 19-Aug-18	-2350.19739	-4349.83849	1999.64110	**NRPC Revision Pending**
21		20-Aug-18 to 26-Aug-18	-1551.02649	-3609.48205	2058.45556	**NRPC Revision Pending**
22		27-Aug-18 to 02-Sep-18	-2337.21583	-4670.94369	2333.72786	**NRPC Revision Pending**

Annexure - C12.3

SUMMARY OF RRAS CHARGE RECEIPT AND PAYMENT STATUS

BILL from 02.04.18 to 20.01.19 (upto Week - 42 of 2018 - 19)

Last Payment Disbursement Date -06.02.19

Figures in Rs. Lakhs

CONSTITUENTS	Receivable	Received	Payable	Paid	Outstanding
FSTPP STG-I & II	384.35530	352.14982	3955.59911	3927.33109	**3.93746**
FSTPP STG-III	105.01552	95.84101	2163.99108	2151.74448	**-3.07208**
KhSTPP STG-I	151.18304	143.46901	4581.19033	4568.78183	**-4.69447**
KhSTPP STG-II	39.34237	38.80175	6459.55857	6444.32326	**-14.69469**
TSTPP STG-I	37.46264	37.04840	116.06508	116.06508	**0.41425**
BARH STG-II	224.29320	221.52636	3427.09073	3417.68153	**-6.64236**
BRBCL (Nabinagar)	18.32129	18.03804	1793.64906	1791.12600	**-2.23981**
KBUNL (MTPS-II)	53.82299	47.01378	1244.67313	1150.39113	**-87.47279**
TOTAL	**1013.79634**	**953.88816**	**23741.81709**	**23567.44440**	**-114.46448**

As on **06.02.19**

Receivable: Receivable by ER POOL Payable Payable by ER POOL

Received Received by ER POOL Paid Paid by ER POOL

"- ve" Payable by ER pool "+ ve" Receivable by ER pool

Annexure - C12.4

SUMMARY OF CONGESTION CHARGE RECEIPT AND PAYMENT STATUS

Bill upto 07.01.2013
Last Payment Disbursement Date - 13.05.2013

Figures in Rs. Lakhs

CONSTITUENTS	Receivable	Received	Payable	Paid	Outstanding
BSEB	0.67823	0.67823	0.39118	0.39118	0.00000
JSEB	16.37889	16.37889	2.61323	2.61323	0.00000
DVC	0.00000	0.00000	6.24040	6.24040	0.00000
GRIDCO	5.34488	5.34488	0.00000	0.00000	0.00000
WBSETCL	0.00000	7.42249	4.32834	11.75083	0.00000
SIKKIM	0.65609	6.20909	0.00000	5.55300	0.00000
NTPC	6.93152	6.93152	7.42249	7.42249	0.00000
NHPC	0.70445	0.70445	0.05875	0.05875	0.00000
MPL	4.81694	4.81694	0.85169	0.85169	0.00000
STERLITE	7.70504	7.70504	0.00000	0.00000	0.00000
Pool Balance	0.00000	0.00000	21.30996	21.30996	0.00000
TOTAL	**43.21604**	**56.19153**	**43.21604**	**56.19153**	0.00000

% Realization **As on 31.05.2015**

Receivable:	Receivable by ER POOL	Payable	Payable by ER POOL
Received	Received by ER POOL	Paid	Paid by ER POOL

"- ve" Payable by ER pool "+ ve" Receivable by ER pool

Annexure - C12.5

DETAILS OF DISBURSEMENT TO POWER SYSTEM DEVELOPMENT FUND

Sl No	Nature of Amount	Amount transferred to PSDF (Rs in Lac)	Date of Disbursement	Remarks
1	**Opening Balance (upto 31.03.16)**	**86464.58111**		
2	Addl. Dev	83.33978	01.04.16	Addl Dev Charge 15-16
3	Addl. Dev	43.77416	05.04.16	Addl Dev Charge 15-16
4	Addl. Dev	31.83984	07.04.16	Addl Dev Charge 15-16
5	Addl. Dev	52.08622	11.04.16	Addl Dev Charge 15-16
6	Addl. Dev	107.23773	13.04.16	Addl Dev Charge 15-16
7	Addl. Dev	220.15330	19.04.16	Addl Dev Charge 15-16
8	Addl. Dev	76.84824	21.04.16	Addl Dev Charge 15-16
9	Addl. Dev	20.84026	26.04.16	DSM Interest 2014-15(Paid by APNRL)
10	Addl. Dev	10.01920	26.04.16	Addl Dev Charge 16-17
11	Addl. Dev	432.25696	28.04.16	Addl Dev Charge 16-17
12	Addl. Dev	117.08707	02.05.16	Addl Dev Charge 16-17
13	Addl. Dev	41.65418	04.05.16	Addl Dev Charge 16-17
14	Addl. Dev	9.17422	06.05.16	Addl Dev Charge 16-17
15	Addl. Dev	105.15627	06.05.16	Addl Dev Charge 15-16
16	Deviation Interest	38.50018	06.05.16	Deviation Interest
17	Addl. Dev	35.54178	10.05.16	Addl Dev Charge 16-17
18	Addl. Dev	448.87953	31.05.16	Addl Dev Charge 16-17
19	Addl. Dev	170.51274	29.06.16	Addl Dev Charge 16-17
20	Reactive Energy Charge	530.57497	28.09.16	Reactive Charges_15-16
21	Reactive Energy Charge	1000.00000	26.12.16	Reactive Charges_16-17
27	Reactive Energy Charge	248.26904	31.07.17	Reactive Charges_17-18
28	Reactive Energy Charge	128.44284	29.08.17	Reactive Charges_17-18
29	Reactive Energy Charge	103.22685	26.09.17	Reactive Charges_17-18
30	Reactive Energy Charge	249.14078	31.10.17	Reactive Charges_17-18
31	Reactive Energy Charge	172.20693	30.11.17	Reactive Charges_17-18
32	Reactive Energy Charge	200.00000	15.12.17	Reactive Charges_17-18
33	Reactive Energy Charge	100.00000	05.01.18	Reactive Charges_17-18
34	Reactive Energy Charge	558.45339	06.02.18	Reactive Charges_17-18
35	Reactive Energy Charge	171.95546	06.03.18	Reactive Charges_17-18
36	Reactive Energy Charge	129.35497	04.04.18	Reactive Charges_17-18
37	Reactive Energy Charge	126.21494	07.05.18	Reactive Charges_18-19
38	Reactive Energy Charge	183.31081	06.06.18	Reactive Charges_18-19
39	Reactive Energy Charge	215.58816	05.07.18	Reactive Charges_18-19
40	Reactive Energy Charge	176.54245	03.08.18	Reactive Charges_18-19
41	Reactive Energy Charge	39.54556	06.09.18	Reactive Charges_18-19
42	Reactive Energy Charge	34.03973	01.10.18	Reactive Charges_18-19
43	Reactive Energy Charge	74.57236	05.11.18	Reactive Charges_18-19
44	Reactive Energy Charge	40.66623	04.12.18	Reactive Charges_18-19
45	Reactive Energy Charge	236.89035	02.01.19	Reactive Charges_18-19 & 15-16
46	Reactive Energy Charge	300.04546	05.02.19	Reactive Charges_18-19 & 15-16
	Total	**95662.88682**		

Annexure-C13.1

	2017-18				2018-19		
DSM account Reconciliation Status of ER constituents and Inter Regional							
Name of The Utility	**Q1(04.07.17)**	**Q2(09.10.17)**	**Q3(08.01.18)**	**Q4(09.04.18)**	**Q1(19.07.18)**	**Q2(08.10.18)**	**Q3(09.01.19)**
Inter Regional							
WR	NO	NO	NO	NO	NO	NO	NO
SR	YES	NO	NO	NO	YES	YES	NO
NER	YES	NO	YES	NO	YES	NO	NO
NR	NO	NO	YES	NO	NO	NO	NO
Intra Regional							
BSPHCL	YES	YES	YES	YES	YES	YES	NO
JUVNL	YES	YES	YES	YES	YES	YES	NO
DVC	YES	YES	YES	YES	YES	YES	NO
GRIDCO	YES	YES	YES	YES	YES	YES	YES
WBSETCL	YES	YES	YES	YES	YES	YES	NO
SIKKIM	YES	YES	YES	YES	YES	YES	NO
NTPC	YES	YES	YES	YES	YES	YES	YES
NHPC	YES	YES	YES	YES	YES	YES	NO
MPL	YES	YES	YES	YES	YES	YES	YES
KBUNL	N/A	N/A	N/A	N/A	YES	YES	NO
APNRL	YES	YES	YES	YES	YES	YES	YES
CHUZACHEN(GATI)	YES	YES	YES	YES	YES	YES	YES
NVVN(Ind-Bng)	YES	YES	YES	YES	YES	YES	YES
NVVN(Ind-Nep)	YES	YES	YES	YES	YES	YES	YES
GMR	YES	YES	YES	YES	YES	YES	NO
JITPL	YES	YES	YES	YES	YES	YES	YES
INBEUL	NO	NO	NO	NO	NO	NO	NO
TPTCL (DAGACHU)	YES	YES	YES	YES	YES	YES	YES
JLHEP(DANS ENERGY)	YES	YES	YES	YES	YES	YES	NO
BRBCL	YES	YES	YES	YES	YES	YES	YES
POWERGRID (ER-I)	YES	YES	YES	YES	YES	YES	NO
POWERGRID (ER-II)	N/A	N/A	YES	YES	YES	YES	NO
TUL (TEESTA-III)	YES	YES	YES	YES	YES	YES	YES
DIKCHU	YES	YES	YES	YES	YES	YES	NO
SHIGA (TASHIDING)	N/A	N/A	YES	YES	YES	YES	NO
OPGC	N/A	N/A	N/A	YES	YES	NO	NO
NPGC	N/A	N/A	N/A	N/A	YES	YES	NO

Note:
(1)The dates in the bracket indicates the date of sending the Reconciliation statements by ERLDC to utilities.
(2) YES Indicates that signed reconciliation statement received by ERLDC
(3) NO Indicates that signed reconciliation statement is not received by ERLDC

Annexure-C13.5

Reconciliation Between Open Access department of ERLDC and SLDCs, STUs

Sl. No.	STUs / SLDCs Name	Quarter-I	Quarter-II	Quarter-III
	Date of Issuance	16-07-2018	15-10-2018	18-01-2019
1	West Bengal - SLDC and STU	YES	NO	YES
2	DVC - SLDC	YES	YES	NO
3	OPTCL-SLDC and STU	YES	NO	YES

Reconciliation Between Open Access department of ERLDC and Applicants				
Sl. No.	**Applicants Name**	**Quarter-I**	**Quarter-II**	**Quarter-III**
	Date of Issuance	25-07-2018	15-10-2018	17-01-2019
1	Calcutta Electric Supply Company	YES	NA	NA
2	Jindal India Thermal Power Limited	YES	NO	YES
3	Jharkhand Urja Vitaran Nigam Limited	NO	NO	NO
4	West Bengal State Distribution Company Limited	YES	NO	NO

Annexure - C13.7

Current Status of Letter of Credit (LC) amount against DSM charges for ER constituents

Figures in Lacs of Rupees

Sl No	ER Constituents	No. of weeks in which Deviation Charge payable	No of times payment was delayed during 2017-18	Total Deviation charges payable to pool during 2017-18	Average weekly Deviation Charge liability	LC Amount	Due date of expiry	Remarks
					(C)/52 weeks	110% of (B)		
		(A)	(B)	(C)	(D)	(E)	(F)	(G)
1	JUVNL	50	50	10486.92151	201.67157	221.83872	Expired on 31.01.2018	Letter Issued but Not Renewed
2	SIKKIM	26	26	577.40815	11.10400	12.21440	Expired on 07.03.2018	Letter Issued but Not Renewed
3	BSPHCL	48	48	12297.15842	236.48382	260.13220	Expired on 16.11.2018	Letter Issued but Not Renewed
4	NVVN(IND-NEP)	36	7	2742.53984	52.74115	58.01527	Expired on 26.09.2018	Letter Issued but Not Renewed
5	APNRL	18	16	307.81318	5.91948	6.51143	Expired on 31.12.2018	Letter Issued but Not Renewed
6	IND-BARATH	47	47	107.23938	2.06230	2.26853	Not Opened	Not Opened
7	SHIGA ENERGY(TASHIDING)	25	15	148.94874	2.86440	3.15084	Not Opened	Not Opened
8	JLHEP (DANS ENERGY)	37	24	652.25964	12.54345	13.79780	30.11.2019	Opened for 13.79780 Lacs
9	JITPL	18	3	656.5622	12.62620	13.88882	31.03.2019	Opened for 13.88882 Lac
10	GMR	21	10	257.62983	4.95442	5.44986	18.04.2019	Opened for 7.62525 Lacs
11	MPL	12	2	148.83104	2.86214	3.14835	31.03.2019	Opened for 3.14835 Lac
12	CHUZACHEN	9	4	43.51171	0.83676	0.92044	31.03.2019	Opened for 0.92044
13	TPTCL	49	7	2092.89162	40.24792	44.27271	31.03.2019	Opened for 112.03686 Lacs
14	BRBCL	21	4	198.25119	3.81252	4.19378	30.04.2019	Opened for 4.19378 Lacs
15	TEESTA-III(TUL)	12	2	1039.16725	19.98399	21.98238	05.06.2019	Opened for 21.98238 Lacs
16	SNEHA KINETIC(DIKCHU)	9	7	53.96014	1.03770	1.14146	20.05.2019	Opened for 1.14146 Lacs