
# Agenda

# for

# 151st OCC Meeting

**Date: 27.11.2018**

**Eastern Regional Power Committee**

**14, Golf Club Road, Tollygunge**

**Kolkata: 700 033**

# Eastern Regional Power Committee

**Agenda for 151st OCC Meeting to be held on 27th November, 2018 at NTPC, Farakka**

**Item no. 1: Confirmation of minutes of 150th OCC meeting of ERPC held on 11.10.2018**

The minutes of 150th OCC meeting were uploaded in ERPC website and circulated vide letter dated 30.10.2018 to all the constituents.

**Members may confirm the minutes.**

## PART A : ER GRID PERFORMANCE

**Item no. A1: ER Grid performance during October, 2018**

The average consumption of Eastern Region for October- 2018 was 434 Mu. Eastern Region energy consumption reached an all-time high of 499Mu on 3rd October - 2018. Total Export schedule of Eastern Region for October - 2018 was 1645 Mu, whereas actual export was1279.2Mu. The under export of Eastern Region was mainly due to over drawl of DVC, West Bengal and Odisha.

**ERLDC may present the performance of Eastern Regional Grid covering the followings:**

1. **Frequency profile**
2. **Over drawal/under injection by ER Entities:**

Over drawl figure of West Bengal and Odisha from 01-11-2018 to 10-11-2018 are shown below:

| Dates | DVC | | | GRIDCO | | | West Bengal | | |
|---|---|---|---|---|---|---|---|---|---|
| | Schedule | Actual | Deviation | Schedule | Actual | Deviation | Schedule | Actual | Deviation |
| 01-11-2018 | -33.04 | -33.05 | -0.01 | 35.24 | 39.65 | 4.41 | 34.73 | 40.69 | 5.96 |
| 02-11-2018 | -31.20 | -29.09 | 2.11 | 32.53 | 36.42 | 3.90 | 42.53 | 44.15 | 1.62 |
| 03-11-2018 | -28.63 | -23.67 | 4.95 | 32.10 | 36.77 | 4.66 | 36.87 | 39.77 | 2.89 |
| 04-11-2018 | -27.25 | -20.70 | 6.54 | 36.63 | 40.75 | 4.12 | 28.03 | 33.24 | 5.21 |
| 05-11-2018 | -23.20 | -15.07 | 8.13 | 35.22 | 39.44 | 4.22 | 37.90 | 39.71 | 1.81 |
| 06-11-2018 | -15.93 | -8.66 | 7.27 | 38.68 | 43.64 | 4.96 | 31.09 | 33.25 | 2.16 |
| 07-11-2018 | -16.92 | -14.63 | 2.30 | 44.67 | 50.41 | 5.75 | 28.77 | 28.79 | 0.02 |
| 08-11-2018 | -17.11 | -15.88 | 1.23 | 47.30 | 50.30 | 3.00 | 32.15 | 31.62 | -0.53 |
| 09-11-2018 | -19.57 | -16.42 | 3.15 | 46.40 | 47.57 | 1.17 | 26.63 | 26.67 | 0.04 |
| 10-11-2018 | -12.74 | -11.18 | 1.56 | 42.35 | 45.40 | 3.05 | 20.58 | 21.76 | 1.18 |

It may be seen that for the month of the November till date,

- West Bengal over drawl was in the range of 1 to 5MU on daily basis while maximum over drawl touched 5.96MUon 01-11-18 and 555MW maximum on 01-11-18.
- Odishaover drawl was in the range of 3 to 6MU while maximum over drawl touched 5.75MU on 07-11-18 and 675MW maximum on 01-11-18.
- DVC over drawl was in the range of 1 to 8MU while maximum over drawl touched 8.13MU on 05-11-18 and 814MW maximumon 05-11-18.

In various past OCC meetings, persistent overdraw matter of West Bengal, Odisha and DVC was discussed, where in all parties were fully apprised of the risks associated with such persistent deviations w.r.t schedule. During such meetings, including the recently concluded 39th TCC meeting held on 16-11-18, beneficiaries agreed to take necessary corrective measures to avoid their overdrawl. However, for the month of October and till date in the month of November-2018 as shown above, appreciable reduction in over drawal was not observed, so far as West Bengal, DVC and Odisha are concerned.

ERLDC will present the over-drawal pattern of DVC, West Bengal and Odisha for October and November- 2018 during OCC meeting.

West Bengal, DVC and Odisha may please deliberate the reason of continuous overdrawal and future action plan to mitigate such contingency situation. DVC may please furnish action plan takenfor improvement of coal supply issues and schedule date for restoration of plants out on coal shortage.

Beneficiaries are also advised to maximize their internal generation and increase their power purchase quantum in STOA/Power Exchange or from any other source to maintain their drawl as per schedule.

In case of repetitive non-compliance of ERLDC instruction to curtail overdrawal during real time operation continues in future, ERLDC will have no other option but to approach appropriate commission with respect to erring entities.

3. **Performance of Hydro Power Stations during peak hours**
4. **Performance of ISGS during RRAS**
5. **Reactive Power performance of Generators**
6. **Restricted Governor /Free Governor Mode Operation of generators in ER**

On 30-10-18 at 19:23 hrs frequency dropped from 49.94 Hz to 49.75 Hz (0.19 Hz) due to tripping of 3 x 800 MW generation at Mundra UMPP. As per ERLDC SCADA data

1. Poor Governor and control response Frequency responsehas been observedin Eastern Region. FRC of Eastern region during this event was only 14.2% of the ideal response.
2. No generator except Talcher Stage II had provided a satisfactory response as per IEGC section 5.2 (f) and 5.2(i)

Details are enclosed at **Annexure-A1.6**.

**In view of the above Generating Power Plants of Eastern Region and SLDC may kindly explain the following to OCC:**

1. Inadequate RGMO/FGMO response for such critical Contingency and Large Frequency Drop in the grid in line with IEGC5.2.f to 5.2.i.
2. Non-submission of data for RGMO Response in line with IEGC 5.2.r , IEGC 5.9.4.b, CEA Technical standards for connectivity to the Grid Regulation6.4.d, CEA Grid Standard 15.3.
3. Non-Receipt of Computed FRC from SLDC for their Control Areas as per the Approved FRC procedure by CERC (In line with CERC order 47/MP/2012 dated 03-05-2013)

# PART B: ITEMS FOR DISCUSSION

### Item No. B.1: Status of projects funded under PSDF schemes

In the PSDF review meeting, it was advised to RPCs to monitor the status of all the projects funded by PSDF. Therefore, constituents are requested to update the status of projects which are being funded by PSDF in the desired format.

**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 | 108.6 Cr | 37 Cr. | 100 % Supply is Completed 98 % Erection is completed Work would be completed by October 2018 |
| 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 for 96.44 Cr. 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 has 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 implementation would be completed by July 2018.* |
| 5 | | Upgradation of Protection and SAS | | | 23.48 | 2.348 Cr | Bid opened and order has been placed. |
| 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-March 19 Balimela-Feb 2019 U.Indravati-Jan 19 Burla-Nov 2018, Chiplima Dec 2018* | *22.35 Cr.* | 2.235 Cr | Placed work order for Balimela. |
| 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 October 2018. |
| 11 | | Installation of capacitor bank at different 35 nos. of GSS under BSPTCL | 5/9/2016 | 12th March 2019 | 18.88 crore | Nil | Work awarded for all GSS. |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 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* | *2 years* | *138.13 crores* | | LOA placed 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 6.45 Cr. Price bid opened for West Bengal portion and technical bid opened for Jharkhand portion. |
| 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.<br>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 numbers of 220/132/33kV Grid substations (Balasore, Bidanasi, Budhipadar, Katapalli, Narendrapur, New-Bolangir&Paradeep). | 12-03-18 | 41.1 Cr. | Scheme examined by TSEG on 20.03.2018. Inputs sought from the entity are awaited. |
| 6 | WBSETCL | Implementation of Integated system for | 22-12-17 | 25.96 Cr | Scheme examined by TSEG on |

| | | | | | |
|---|---|---|---|---|---|
| | | Scheduling, Accounting, Metering and Settlement of Transactions (SAMAST) system in West Bengal | | | 20.03.2018. Inputs received on 24.05.2018. This scheme again reviewed by sub group meeting held on 24.07.2018.The entity was asked to provide the Interface meter details by depiction of interface points on grid network map with each intra-state entity. |
| 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. | Scheme examined by TSEG on 20.03.2018. Inputs received on 22.05.2018. Shall be examined in the next TESG meeting. |
| 8 | | Project for establishment of reliable communication and data acquisition at different substation at WBSETCL. | 10-05-18 | 80.39 Cr. | Scheme examined by TSEG on 24.07.2018. Inputs sought from entity. |
| 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. |

**Respective constituents may update the status.**

**Item No. B.2: Bypassing arrangement of LILO of 400kV Lines at Angul-OPTCL**

LILO of Meramundali-Bolangir/Jeypore 400 kV S/C line and LILO of one Ckt of Talcher-Meramundali 400 kV D/C line has been done at Angul 765/400kV Sub-station.

In 18th Standing Committee it was decided that Power grid would establish a switching arrangement at Angul substation such that, the above 400 kV LILO may be operated either by-passing Angul substation or terminating at Angul substation as and when required depending upon the power flow condition.

In 19th Standing Committee, it was inferred that LILOs of the above two lines needs to be by-passed to maintain the fault level at Meramundali S/S under normal operating conditions.

The necessary arrangement to be done by Powergrid for by-pass arrangement is under implementation and will be commissioned shortly.

The fault level at Meramundali will further increase after the commissionning of Meramundali- Mendhasal 2ndckt of D/C line.

Odisha wants for Normally closed arrangement at Angul so as to relieve the fault level problem at Meramundali. Odisha further agrees that as and when the situation demands the isolator may be put in open condition.

The following standard operating procedure may be approved by the OCC for implementation of bypass arrangement.

- The isolator will be normally closed so as to ensure the fault level at Meramundali stays within the permissible limits of 40 kA.
- Under severe contingencies like line outage or generator outage ERLDC in consultation with SLDC will open the isolator i.e. to restore the LILO of the above two lines.

*In 150th OCC, Powergrid informed that bypass arrangement would be completed by December 2018.*

*ERLDC observed that every time line shutdown is required for changing the configuration.*

**OPTCL may explain. Members may discuss.**

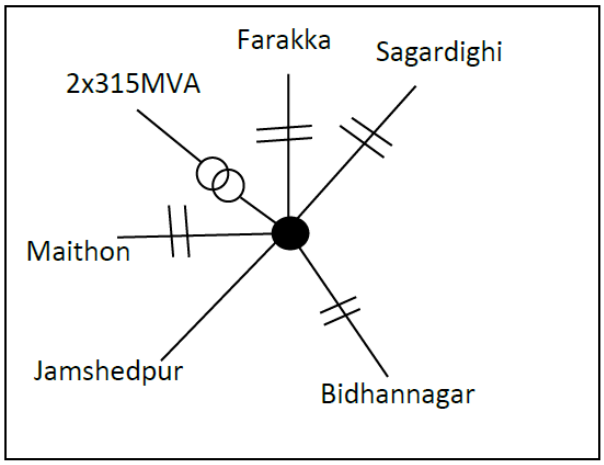
**Item No. B.3: Review of Operationalization of 400 kV Bus Splitting Arrangement at Durgapur Substation.**

As per the Minutes of 1st meeting of National Committee on Transmission (NCT) held on 27th July 2018 in CEA, New Delhi , CTU has stated the Farakka Bypass Arrangement is not giving substantial reduction of the fault level at Farakka substation and the scheme need to be reviewed which was agreed by the Committee members.

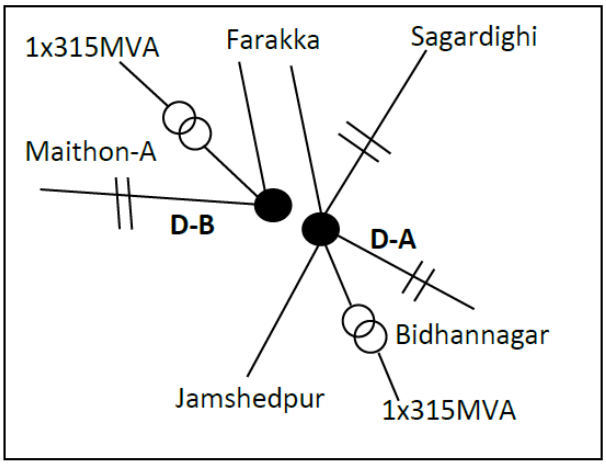
As per the available information from 138th OCC, the 400 kV Bus Splitting arrangement at Kahalgaon NTPC will be completed by Dec'2018. As the Bypass Araagnegemnt of 400 kV Lines at Farakka is presently under review as per the Decision in NCT, so there is a need to discuss whether to operationalize the Bus splitting of Durgapur substation or not.

**Durgapur S/s**

**Before Splitting**




**After Splitting**




In order to analyse the impact of operationalization of the existing 400 kV Durgapur Bus Split (Along with the existing 400 kV bus split of Maithon Substation), the study has been carried out by ERLDC and the summary of finding is presented below:

i. The Fault level of 400 kV Durgapur Bus is higher during high hydro season and crossing 40-43 kA while it is in the range of 40-35 kA during low hydro season.
ii. The Fault level of 400 kV Durgapur will significantly reduce from after the Bus Split Operation (37.6 kA to 26.9 kA and 18.6 kA).However it has no appreciable change in fault level of Farakka and Kahalgaon.
iii. Further, the 400 kV Bus Splitting at Kahalgaon NTPC and Bypass Arrangement at Farakka has no significant contribution in reducing the fault level of Durgapur.
iv. The 400 kV Durgapur Bus Split arrangement results in uneven loading of the 315 MVA 400/220 kV ICT 1 and 2. One ICT is loaded more than two times the other ICT. However, in the West Bengal and DVC, 220 kV network there is no significant impact except the increase in the loading of 220 kV Durgapur(PG) - Durgapur DVC D/C (Sensitivity is around 18 %). So, they may become N-1 non-compliant. Further, the sensitivity of one circuit outage of 220 kV Durgapur (PG) - Durgapur DVC is higher on the other circuit (Around 96 %). Therefore, this need to be further reviewed and there may be a need of SPS scheme to avoid damage to the 220 kV other circuit. The SPS may trip the higher loaded 315 MVA 400/220 kV ICT of Durgapur Substation.

v. For 400 kV Durgapur Bus Split, it was observed that during any tripping or prolonged outage tripping of 400 kV Durgapur-Maithon one circuit or 400/220 kV Durgapur ICT or 400 kV Farakka-Durgapur B ckt, the bus split may be closed for N-1 security.

vi. During the PPSP Pump Mode operation, N-1 contingency of higher loading 400/220 kV ICT at Durgapur,each circuit of 220 kV Kalyaneshwari –Maithon gets loaded to 200 MW from 164 MW (Sensitivity of around 12 % on each circuit) making it insecure for the next contingency and resulting in vulnerability in the DVC system. Therefore, this also may need a review from the DVC point of view.

vii. During the PPSP Pump Mode operation, the N-2 Contingency of 400 kV Durgapur(PG) A – Bidhanagar D/C leads to a full loading of the higher loaded315 MVA ICT at Durgapur and 220 kV Durgapur-Durgapur D/C. So under such condition also the split bus operation has to be avoided.

So, in view of the above, OCC Members of Eastern Region may examine the 400 kV Bus Splitting at Durgapur so that a judicious decision may be taken for operating the 400 kV buses in split /joined mode.

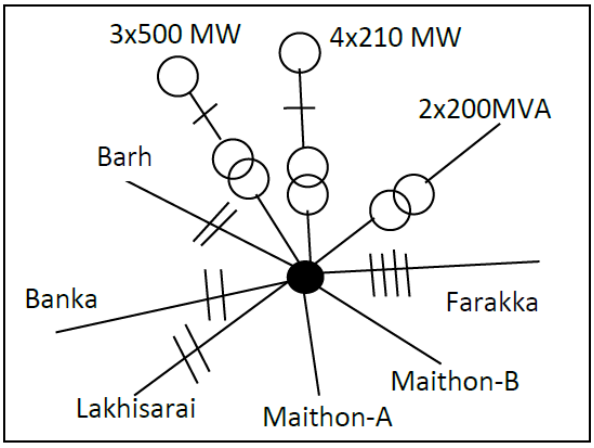
**Members may please discuss.**

**Item No. B.4: Operationalization of 400 kV Bus Splitting after Completion of Split Arrangement at Kahalgaon NTPC Substation.**

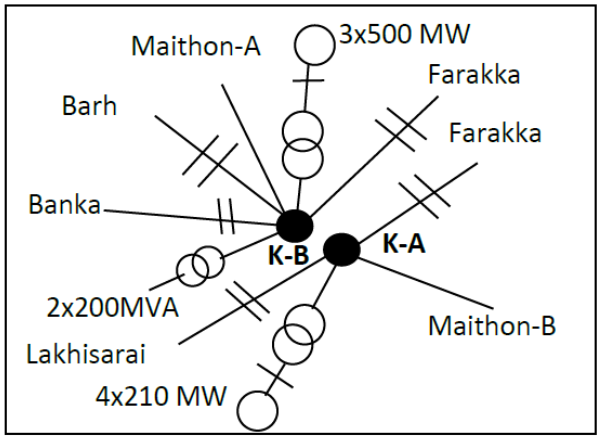
Pre and Post splitting bus arrangement at Kahalgaon is shown in below figure.

**Kahalgaon Switchyard**

**Before Splitting**




**After Splitting**




ERLDC has conducted the study on the Impact of 400 kV Bus Split of Kahalgaon NTPC on the Eastern regional power system. The observations from the study are as following:

i. The Fault level of 400 kV Kahalgaon substation significantly reduces after the Bus Split Operation. Fault level reduced from 50.9 kA to 25.5 kA and 35.5 kA.

ii. However, the bus splitting may also cause increase of 1-2 kA in fault level of 400 kV Farakka and Durgapur.

iii. The Bus Splitting operation at 400 kV Kahalgaon has no significant impact on the line loading from Split Buses of Durgapur as shown below:

| Element | Loading Before Bus Split (MW) | Loading after Bus Split (MW) |
|---|---|---|
| 400 kV Kahalgaon-Barh D/C | 616 | 584.4 |
| 400 kV Kahalgoan-Banka D/C | 806 | 764.4 |
| 400 kv Kahalgaon-Lakhisarai D/C | 700.6 | 755.4 |

| | | |
|---|---|---|
| 400 kV Kahalgaon A-Maithon B | -209 | -178 |
| 400 kV Kahalgaon B-Maithon A | 0.8 | 21 |
| 400 kV Kahalgaon A-Farakka 1st D/C | 21.4 | 138.2 |
| 400 kV Kahalgoan B-Farakka 2nd D/C | 21.4 | -81.4 |
| 2 X 315 MVA ICT Kahalgaon B | 98.6 | 94 |
| 400 kV Kahalgaon A-Kahalgaon B Breaker | 202 | 0 |

iv. With 400 kV Kahalgaon Bus Split and up to N-1 contingency, no issue has been observed in the system. For N-2 Outage of any two 400 kV Lines emanating from Kahalgaon (Especially 400 kV Kahalgaon-Lakhisarai D/ C, 400 kV Kahalgaon-Banka D/C, 400 kV Kahalgaon-Barh D/C, 400 kV Kahalgaon-Farakka D/C), it is desirable to close the Bus sectionaliser at Kahalgaon to ensure N-1 security of the system.

v. In case of complete outage of 3 X 500 MW or 4 X210 MW Units, it is desirable to close the bus sectionaliser to ensure N-1 security in the system.

**In order to operationalize the Bus splitting arrangement following may be required :**

i. Protection coordination of Kahalgaon and all remote end connected substation need to be reviewed.

ii. Further, based on study it is observed that during certain contingencies, there may be a requirement of closing bus sectionaliser so, two group setting for protection system also has to be kept wherever protection changes will be required on this arrangement.

**Item No. B.5: Enhancement of NOC to the extent not utilized by other generators while utilizing 400 kV D/C Rangpo – Siliguri Line –---Teesta Urja Ltd.**

TUL vide mail dated 19th November 2018 informed that

"It was decided in the meeting held at ERPC on 21.06.2017 and under the CERC Order dated 22.06.2017 in Petition No. 114/MP/2017 that evacuation quantum of Teesta III HEP could be enhanced if there is margin available in the transmission corridor due to less generation/ back down/ shutdown by any of the other generators utilizing 400 kV D/C Rangpo – Siliguri Line.

It is observed that since 01.11.2018, the line is loaded to a maximum of 1318 MW from 00.00 to 17:00 hrs.; 1586 MW from 17.00 hrs. to 21.00 hrs. and 1440 from 21.00 hrs. to 24.00 hrs.

It is therefore, requested to consider enhancement of the NOC of TUL by the left over capacity of the 400 kV D/C Rangpo – Siliguri line as below:

(a) 100 MW from 17.00 hrs to 21.00 hrs; and

(b) 200 MW from 00.00 hrs to 17.00 hrs and 21.00 hrs. 24.00 hrs."

**Members may discuss.**

**Item No. B.6: REDUNDANCY OF SPS SCHEME FOR 400 KV RANGPO-BINAGURI CIRCUIT--ERLDC**

On 13th June 2018, the Non-operation of 400 kV Rangpo-Binaguri SPS on 13th June 2018 during tripping of one circuit has led to loading of other circuit beyond 1600 MW for duration of 15 minutes. The unsafe operation of the line above its thermal limit due to lack of SPS redundancy is not desirable for safer system operation and may result in the permanent damage to the transmission line causing bottleneck in Sikkim Hydro evacuation for longer duration. Thus, the issue of Redundancy of SPS scheme at Rangpo as well Binaguri was discussed in the 148th OCC held on 20th August 2018.

Further, in the CERC order 114/MP/2017 on 400 kV Rangpo-Binaguri it is quoted that "*While commissioning of full-fledged SPS in coordination with ERLDC, Powergrid would implement the agreed modification in the existing SPS as suggested by ERLDC for increasing the effectiveness of the SPS in case the Rango-Siliguri line is tripped from Siliguri end only*".

In the Indian Power System, Major SPS Scheme like 765 kV Gwalior-Agra, 765 kV Sholapur-Raichur are having redundant SPS Scheme i.e. SPS are implemented at both ends of the line and the operation of either of the SPS will cause the desired relief operation. This is in view to avoid any detrimental effect on the line loading and system security.

However, as on date the full-fledged redundant SPS has not been implemented for the 400 kV Rangpo-Binaguri circuits. The SPS presently operate based on the local information of CB/Isolator/Analog value at Rangpo end and presently the information from Binaguri end is not integrated.

**In view of the above, OCC may discuss the following:**

1. Implementation of Binaguri Circuit Breaker logic in the Existing SPS Scheme at Rangpo.
2. DTPC Based SPS Scheme in place of PLCC to improve the reliability of SPS signals extension to generating station.
3. Redundancy of SPS Scheme by implementation of SPS Scheme at Binaguri end for these circuits and their exchange of signal with Rangpo.

**Item No. B.7: Technical Minimum Schedule for MTPS stage-II (2x195 MW) of KBUNL--KBUNL**

The control area of MTpS Stage-II (2x195 MW) of KBLTNL has shifted to ERLDC w.e.f. 01.04.2018 vide. CERC Order dated 09.03.2018 in Petition no. 20/MP/20l7. In line with the above Order, LTA was operationalized by CTU and scheduling related activities are being done by ERLDC w.e.f. 01.04.2018.

KBUNL had requested for technical minimum schedule for MTPS Stage-II in line with other NTPC stations of Eastern Region.

However, the web-portal for scheduling by ERLDC, under the tab "Declaration" does not provide for technical minimum schedule, as it still reflects a zero value under the tab "Technical Minimum".

**KBUNL may explain. ERLDC may respond.**

**Members may discuss.**

**Item No. B.8: Accounting of state drawl from Substation of PGCIL/ISTS Licensee in ER--ERLDC**

As per Clause 7(1) (C) of CEA (Installation and Operation of Meters) Regulations, 2006 &its subsequent amendments, Main Meters for drawl computation through ICT should be installed on HV side of ICT and meters installed on LV side of ICT should be considered as Standby meters .

In view of the above it is proposed that Sate drawl from PGCIL/ISTS Licensee S/S may be computed by using the meter installed on HV side of ICTs in line with CEA regulation.

In 146$^{th}$ OCC, Powergrid informed that the SEM installation in ER-I stations has been completed and the same at ER-II stations would be completed by June 2018. Powergrid(Odisha) informed they will complete the SEM installation by July,2018.

However locations in ER-I for ex, Purnea, Banka, Lakhisarai, and Ranchi are still pending.

A List of Time drifted Meters installed at ICTs at PGCIL S/station in ER was prepared by ERLDC from AMR system and vide letter dated 04.07.18, PGCIL was requested for replacement of the same.

*In 150th OCC, Powergrid informed that total work would be completed by November 2018.*

*As on date, all HV and LV side Meters at PGCIL/ISTS Licencee substation in ER-I, ER-II &Odhisa Project are completed and SEM data is being received at ERLDC.*

*In view of the above Accounting of States drawl from PGCIL/ISTS Licensee using HV side meters may be approved from 03/12/18 (Monday).*

**Members may discuss.**

**Item No. B.9: Review of Cyber Security Works/Activities- CEA**

CEA vide letter informed that Secretary (Power) is going to review the cyber security related works /activities being carried out in Power Sector. In this regard, it is requested to provide the State wise status on following action points pertaining to cyber security at the earliest:

1. Appointment of organization-wise Chief Information Security Officers and its status
2. Identification of organization-wise Critical Infrastructure and its status
3. Preparation of organization-wise Crisis Management Plan and its status
4. Status of Cyber Security Mock Drill activity in coordination with CERT-In
5. Status of Training / Workshops on Cyber Security organized / participated by power sector entities
6. Status of action taken on CERT-In / NCIIPC advisories

*In 148th OCC, all the constituents were advised to send the latest status to mserpc-power@nic.in within a week.*

*The same has been received from WBSETCL only.*

**Members may comply.**

**Item No. B.10: Data for preparation Load Generation Balance Report (LGBR) of ER for the year 2019-20**

As per the IEGC, RPC Secretariat is responsible for finalization of the Annual Load Generation Balance Report (LGBR) for Peak as well as Off-peak scenarios and the annual outage plan for the respective region

To facilitate the preparation of LGBR of Eastern Region by ERPC Secretariat within the schedule period, the following data/information for the year **2019-20** in respect of the constituents/utilities of Eastern Region is urgently required:

i) The unit wise and station wise monthly energy generation proposed from existing units during 2019-20 (thermal/hydro/RES).
ii) Annual maintenance programme for each of the generating units (thermal and hydro both).
iii) Generating units under R&M / long outage indicating date of outage and reasons of outage and expected date of return (thermal and hydro both).
iv) Partial and forced outage figures (in %) of generating units for the last 3 years.
v) Month wise peak demand (MW) – restricted and unrestricted peak demand.
vi) Month wise off-peak demand (MW).
vii) Month wise energy requirement (in MU).
viii) Month wise & source wise power (both MU & MW) purchase and/or sale plan.

ix) Schedule of commissioning of new generating units during 2019-20 and unit-wise monthly generation programme (in MU).
x) Allocation of power from new generating units.
xi) Month wise and annual planned outage of transmission system (Transmission lines 220kV and above / ICTs / Reactors/ other elements.

Information may please also be submitted in the form of soft copy through email (mail ID: **mserpc-power@nic.in / erpcjha@yahoo.co.in**).

In 149th OCC, all the constituents were advised to submit the relevant information in the form of soft copy through email (mail ID: mserpc-power@nic.in / erpcjha@yahoo.co.in) by 31st October 2018.

**Members may furnish the above data at the earliest.**

**Item No. B.11: Status of Emergency Restoration system (ERS) of respective Transmission Licencees**

CEA vide mail dated 28-09-2018 has requested to provide Status of Emergency Restoration system (ERS) of respective Transmission Licencees in respective Regions as per the format given below:

| State-wise Emergency Restoration system | | | | |
|---|---|---|---|---|
| **Transmission Licensee** | **Requirement of Total no of ERS in State** | **Number of ERS available in state** | **No of ERS to Be Procured** | **Remark if Any .** |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

*OCC advised all the transmission licensees to submit the requisite information as per the format in the form of soft copy through email (mail ID: mserpc-power@nic.in) within 7 days.*

**Transmission Licencees may submit the details as per the format.**

**Item No. B.12: Submission of static data for preparation of a report on coal fired stations in the country**

One internal committee has been formed by POSOCO to prepare a report on coal fired stations in the country, which will be submitted to the FOLD & FOR, at a later stage. Similar reports have already been prepared by POSOCO for hydro, gas and RES plants, which has been widely appreciated in different forums like FOLD & FOR.

To prepare this report, some static data (commercial, technical, environmental & general) in proper format for all coal fired stations (ISGS, IPP and State Generators) of capacity >= 200 MW need to be submitted to ERLDC so that the compilation and subsequent analysis of data of thermal generators on an all India basis could be made within stipulated time period.

The format for data submission was intimated to all generators and state SLDCs via email. Till date only GMR, Adhunik, MPL and Sagardighi have submitted their static data.

ISGS (NTPC), IPP and State Generators of Eastern Region are requested to kindly accord high priority for submitting the static data to ERLDC in erldcso@posoco.infor preparation of the report within stipulated period.

Nodal coordinators for this Process from ERLDC are:

1. Shri Biswajit Mondal, Sr. Engineer, Mob No: 9903329271
2. Shri Chandan Mallick, Sr. Engineer, Mob No: 9007059660

**All Thermal Generators may comply.**

**Item No. B.13: Delay in furnishing information to ERLDC/ERPC regarding of Commissioning of new Transmission Elements/ Generating Units within State**

The above matter was deliberated in various OCC meetings and data submission format was also circulated. All states and transmission licensees agreed to submit the list of transmissions elements synchronized for the first time during last month within 7th day of the current month to ERLDC through mail.

For the Month of October- 2018,states and transmission licensees did not submit their List of Transmission element and generators synchronised **in the previous Month** and List of Transmission element and generators expected to be synchronised during next Month.

**Members may please note.**

**Item No. B.14: Ratification of Demand and Generation for calculation of POC of Q-4 2018-19**

The projected Demand and Generation of ER constituents to be considered in the base case for POC transmission charge and loss calculations for Q4 (Jan 19-March 19) was circulated to all the concerned via email dated 6th August 2018 for comments and verification. Same is attached in **Annexure-B14** for ratification.

**Members may update.**

**Item No. B.15: Issues related to Integration of PMUs at NTPC Kaniha—Powergrid**

Under URTDSM Projects 10nos of feeders are to be integrated at NTPC Kaniha with the PMU. Out of 10 feeders 7 feeders are already integrated except digital points. Out 3 feeders two feeders (400KV Talcher-Rengali Ckt#2 and 400KV Talcher-Meramundali ckt#1) are integrated with the PMU installed under Pilot projects by ERLDC. So NTPC did not permit to integrate those feeders with the PMU installed under URTDSM Project. The vendor has already visited the site NTPC Kaniha 3 times for integration of the feeders. Hence, necessary guidance may be issued regarding the left-out feeder for integration with the PMU.

**Powergrid and NTPC may explain.**

**Item No. B.16: Additional agenda**

# PART C: ITEMS FOR UPDATE

**Item no. C.1: Status of UFRs healthiness installed in Eastern Region**

UFR Healthiness Certification for the month of October, 2018 has been received from CESC, WBSETCL, DVC, BSPTCL and JUSNL.

OPTCL informed that all UFRs healthy except Sadepalli feeder which would be replaced by 15th November 2018.

**OPTCL may update.**

**Item no. C.2: Status of Islanding Schemes healthiness installed in Eastern Region**

At present, the following islanding schemes are in service:

1. CESC as a whole Islanding Scheme, CESC
2. BkTPS Islanding Scheme, WBPDCL
3. Tata Power Islanding Scheme, Haldia
4. Chandrapura TPS Islanding Scheme, DVC
5. Farakka Islanding Scheme, NTPC

In 108th OCC meeting, respective constituents agreed to certify that the islanding schemes under their control area are in service on monthly basis.

The healthiness certificate for Islanding Scheme for October, 2018 has been received from CTPS, DVC, NTPC, West Bengal, JUSNL, WBPDCL and CESC.

**Members may note.**

**Item no. C.3: Status of Implementation of islanding schemes in ER**

**1. Islanding scheme at Bandel TPS-WBPDCL**

*WBPDCL vide mail dated 15th November 2018 informed that Bandel Islanding scheme has been put into service on 15/11/2018 at both BTPS & WBSETCL ends.*

**Members may note.**

**2. Islanding scheme at IbTPS- OPGC**

The islanding scheme was discussed in 68th PCC Meeting held on 18-06-2018. PCC opined that the draft scheme submitted by Odisha was three years old and the draft scheme is needed to be reviewed with existing network configuration.

*In 69th PCC Meeting, it was decided that ERLDC and ERPC would study and finalize the islanding scheme in next PCC Meeting.*

**Members may note.**

**Item no. C.4: Healthiness of SPS existing in Eastern Region**

The Status of healthiness certificate for August, 2018 is given below:

| Sl. No. | Name of the SPS | Healthiness certificate received from | Healthiness certificate not received from |
|---|---|---|---|
| *1.* | *Talcher HVDC* | *NTPC, GMR, & JITPL* | *Powergrid,* |
| *2.* | *Rangpo* | *Chuzachen,* | *Dikchu, Dansenergy,* |

| | | | |
|---|---|---|---|
| | | | *Powergrid, Teesta-III* |
| *3.* | SPS of 220 kV Muzaffarpur-Dhalkebar D/C | *Nil* | *Powergrid* |
| *4.* | SPS in CESC system | *CESC* | *Nil* |
| *5.* | SPS for Power Export to Bangladesh | *Nil* | *Powergrid* |
| *6.* | SPS at Chuzachen | *Chuzachen* | *Nil* |

**Members may update.**

**Item no. C.5: Implementation of Automatic Demand Management Scheme (ADMS)-ERLDC**

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 | 3 months Feeders identified. Implemented by June 2018 | F <49.9 AND deviation > 12 % or 150 MW |
| 4 | Jharkhand | 1. System Frequency < 49.9 Hz AND deviation > 12 % or 25 MW<br>2. System Frequency < 49.9 Hz AND deviation > 12 % or 50 MW<br>3. System Frequency < 49.9 Hz AND deviation > 12 % or 75 MW | 9 Months Tendering for RTU installation is in progress. Implemented by December 2018 | Condition 1: Block I feeders will be selected for load shedding<br>Condition 2: Block I & II feeders will be selected for load shedding<br>Condition 3: Block I, II & III feeders will be selected for load shedding |
| 5 | Odisha | 1. System Frequency < 49.9 Hz<br>2. Odisha over-drawl > 150 MW<br>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, it was 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.

During the Month of October'18, ADMS criteria got satisfied for following cases:

**A. West Bengal**

| Sl No | Date & Time | West Bengal O/D (MW) | Frequency (Hz) | ADMS Optd (Y/N) | Relief (MW) |
|---|---|---|---|---|---|
| 1 | 20-10-2018 17:24 | 261 | 49.69 | | |
| 2 | 22-10-2018 16:43 | 180 | 49.69 | | |

**B. DVC**

| Sl No | Date & Time | DVC O/D (MW) | Frequency (Hz) | ADMS Optd (Y/N) | Relief (MW) |
|---|---|---|---|---|---|
| 1 | 20-10-2018 17:24 | 224 | 49.69 | | |
| 2 | 22-10-2018 16:43 | 219 | 49.69 | | |

*In 39th TCC, Bihar informed that they are yet to receive the quotation from M/s Chemtrol for implementing the ADMS.*

*Jharkhand informed that 21 new RTUs are expected to be installed by December, 2018. They are in the process of getting the list of feeders from Discoms which would be disconnected through ADMS. They are collecting the quotation from Chemtrol. TCC advised Jharkhand for collecting the quotation from others also for speedy implementations.*

**Members may update.**

**Item no. C.6: Status of Installation of STATCOM in Eastern Region**

In the 15th meeting of SCM 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 refunded through PSDF and Equity Component (30%) to be funded by POWERGRID to be recovered through regulated tariff mechanism. CTU should initiate the process of availing fund from PSDF.

Powergrid updated the latest status as follows:

| Sl No | Location /Sub-Station of POWERGRID in ER | STATCOM - Dynamic Shunt Controller (MVAr) | Mechanically Switched Compensation Sl. (MVAr) | | Latest status |
|---|---|---|---|---|---|
| | | | Reactor (MSR) | Capacitor (MSC) | |
| 1 | Rourkela | ±300 | 2x125 | | *In service from March 2018.* |
| 2 | Kishanganj | ±200 | 2x125 | | *70% civil work completed. 30% switchyard equipment supplied. Expected to complete by December 2018* |
| 3 | Ranchi(New) | ±300 | 2x125 | | *Commissioned on 12th July 2018* |
| 4 | Jeypore | ±200 | 2x125 | 2x125 | *Commissioned on 30th June 2018* |

**Powergrid may update.**

**Item no. C.7: 220 kV inter-connecting lines of OPTCL with 400/220 kV Bolangir (PG), Keonjhar&Pandiabil S/s**

PGCIL has already commissioned the 2x315MVA 400/220kV Bolangir S/s by LILOing of 400kV Meramandali-Jeypore S/C line and 400/220 kV Keonjhar S/s with an objective of supplying power from ER grid to its adjoining areas in Odisha.

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

| Sl. No. | Name of the transmission line | Completion schedule |
|---|---|---|
| **1.** | **2x315MVA 400/220kV Bolangir S/s** | |
| a. | LILO of one circuit of Sadeipalli-Kesinga220 kV D/C line at Bolangir S/S | *Only 7 towers left (Severe ROW problem).**By December, 2018.*** |
| **2.** | **400/220kV Pandiabil Grid S/s:** | |
| a. | Pratapsasan(OPTCL)-Pandiabil(PG) 220 kV D/C line | By Dec, 2018. |
| **3.** | **400/220 kV Keonjhar S/S** | |
| a. | Keonjhar (PG)-Keonjhar (OPTCL) 220 kV D/C line | By end of Sep, 2018. |
| b. | Keonjhar (PG)-Turumunga(OPTCL) 220kV D/C line | By 2019. The work is yet to be started. |

**OPTCL may update.**

**Item no. C.8: 220 kV inter-connecting lines of JUSNL with 2x315 MVA, 400/220 kV sub-stations at Chaibasa, Daltonganj&Dhanbad**

In last 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 April, 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 Dec 2018. |
| C | Daltonganj (POWERGRID) – Daltonganj (JUSNL) 132kV D/c | The line charged as per original configuration on 26th July 2018. |
| D | 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. |

**JUSNL may update.**

**Item no. C.9: 220 kV inter-connecting lines of WBSETCL with 400/220 kV, 2x315 MVA Alipurduar & 2x500 MVA Rajarhat sub-stations**

In last OCC, *WBSETCL updated the latest status 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 | Matching, ROW problem |
| b. | Rajarhat-N. Town-2 (WBSETCL) 220 kV D/C line | ROW problem |
| c. | Rajarhat- Barasat (WBSETCL) 220 kV D/C line | ROW problem |
| 2 | **Subashgram400/220kVS/s** | |
| a | Subashgram–Baraipur220kVD/cline | Mar 2019, 50% of work has been completed. |

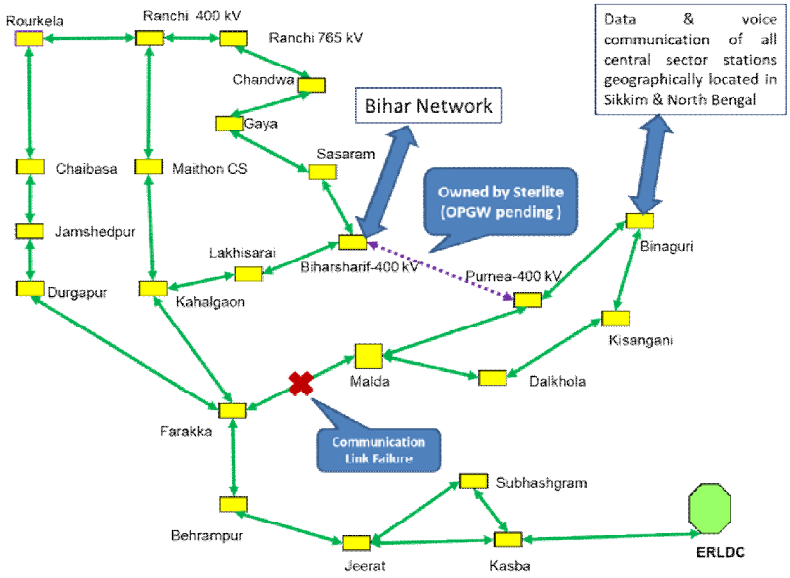
**WBSETCL may update.**

**Item no. C.10: Update on status of telemetry**

CERC vide order dated 28.02.2016 on Petition No. 007/SN/2014 directed NLDC and respective RLDCs to update the status of telemetry every month at their respective websites and take up the issue of persistent non-availability of data from Generating Stations/substations at RPC meetings for appropriate action.

Major issues are given below:

i. Non-availability of real time SCADA data from New Farakka STPS (1 x 500 MW) to ERLDC
ii. Frequent intermittent of real time SCADA data from Talcher STPS Stage 1 & 2 (6 x 500 MW) to ERLDC: same gateway is being used at Talcher end for reporting SCADA data to SRLDC & ERLDC as well through switch. Broadcasting has been observed and data hampered at both RLDCs. It is suggested to provide two separate ports for reporting of SCADA data to ERLDC Main CC & Backup CC also.
iii. Alternate path for Malda – Farakka OPGW link




**ERLDC may present. Members may update.**

**Item no. C.11: Non submission of SEM data to ERLDC from Gelephu and Malbase S/S in Bhutan--ERLDC**

Malbase end meter data of 220 KV Malbase-Birpara(PG) and 400 KV Malbae-Binaguri(PG) D/C Line is not being received by ERLDC since last 2 months. Malbase informed ERLDC that due to non-working of DCD they are not sending the data to ERLDC.

In 38th CCM, it was emphasized that these two locations are very crucial and requested PGCIL to resolve the matter at the earliest by adjusting DCDs from any of the other locations which remained unutilized. It was also advised to PGCIL to collect the unutilized DCD from Teesta –III (TUL) and to hand over to Malbase.

However the Malbase and Gelephu end meter data is not being sent to ERLDC.

**PGCIL/Bhutan may please respond.**

**Item no. C.12: Non receipt of Laukahi (BSPTCL) Meter data--ERLDC**

BSPTCL end meter data from Laukahi end of 220 KV DMTCL Darbhanga Line is not being sent by BSPTCL since charging of the Line. Due to non-availability of data from BSPTCL end on

regular basis, validation of power through the line is being affected. The matter was informed to BSPTCL for sending the data. However there is no improvement in the status.

In 38th CCM, BSPHCL representative informed that due to some software related issues they were not able to send the data from Laukhi end. BSPHCL assured that the problems would be resolved within a week.

However, the meter data of Laukahi end has not received till now.

**BSPTCL may please respond.**

**Item no. C.13: Bay swapping of feeders/reactors position of POWERGRID S/S in ER--ERLDC**

It has been observed several times that in some of the POWERGRID stations, bay swapping of feeders/reactors observed & due to such bay swapping, it is severely affecting the decisions taken by real time shift operator. The fault analysis in post-dispatch scenario would also be affected due to wrong SOE (sequence of event). This matter was just mentioned in the 22nd SCADA O&M meeting held at ERLDC, Kolkata on 30th October 2018 wherein ERLDC informed that a committee has been formed by competent authority to validate all the SLDs of POWERGRID stations with ERLDC SCADA display. The following is noticed while validating the SLD at ERLDC:-

| S No | Name of the S/S | Observation | SCADA Database & Display Modified | EMS Database Modified (Y/N) |
|---|---|---|---|---|
| 1 | Angul 765/400 kV | i. Bays of Jharsguda 3 & 4 was swapped several times. Presently, Jharsuguda-3 and Jharsuguda-4 bays are swapped. | Pending | Pending |
| 2 | Jeypore 400 kV | i. Bay number swapped in Bolangir and Gazuwaka Line.<br>ii. Bay of Bolangir and Gazuwaka connected to different bus. | SCADA database updated, Display Modified | Pending |
| 3 | Keonjhar 400 kV | No Discrepancy Observed | N. A. | N. A. |
| 4 | Rourkela 400 kV | i. Bay number swapped in Jharsuguda-3 and Jharsuguda-4.<br>ii. Jharsuguda-4 and associated B/R connected to wrong Bus.<br>iii. ICT-3 not shown in S/S SLD.<br>iv. L/R rating to be written in SCADA.<br>v. Bay number to be corrected for whole SCADA SLD.<br>vi. B/R & ICT number not written in S/S SLD. | Pending | Pending |
| 5 | Indravati 400 kV | i. Bay Number needs to changed for Jaypore and Rengali line.<br>ii. Rengali line reactor is switchable one. | SCADA database updated, Display Modified | Pending |
| 6 | Jharsuguda 765/400 kV | i. Multiple discrepancies observed mostly due to bay swapping(Angul line 3 & 4), change of names etc. | Display Modified | N. A. |
| 7 | Bolangir 400 kV | i. No bay number shown in SCADA SLD.<br>ii. Rating of Angul L/R to be written in SCADA SLD. | Pending | Pending |
| 8 | Baripada 400 kV | i. Bay number needs to change for 125 MVAR reactor 1 and ICT3.<br>ii. Line reactor of Duburi is switchable for which CB has to be added in SCADA and EMS database. | SCADA database updated, Display Modified | Pending |
| 9 | Rengali 400 kV | i. Bay number needs to be changed for ICT-1 ,&2 | Display Modified | N. A. |

**Member may deliberate**

**Item no. C.14: Transfer capability determination by the states**

In order to ensure, safe and secure operation of the grid, the states should carry out the power system study for operational planning and power transfer capability through their respective transmission links with the rest of the grid.

It was decided in the NPC meeting that to begin with, power system study for assessment of operational limits / power transfer capability for each state will be done by the concerned RLDC

in association with concerned SLDC. Monthly TTC /ATC will be uploaded by the SLDCs at their respective websites and also communicated to concerned RLDC & NLDC subsequently.

**Latest status of State ATC/TTC declared by states for the month of February -2019**

| Sl No | State/Utility | TTC import(MW) | | RM(MW) | | ATC (Import) MW | | Remark |
|---|---|---|---|---|---|---|---|---|
| | | Import | Export | Import | Export | Import | Export | |
| 1 | BSPTCL | 4750 | -- | 200 | -- | 4550 | -- | Nov-18 |
| 2 | JUSNL | 1164 | -- | 60 | -- | 1104 | -- | |
| 3 | DVC | 1359 | 3438 | 61 | 47 | 1298 | 3391 | Jan-19 |
| 4 | OPTCL | 1835 | -- | 82 | -- | 1753 | -- | Nov-18 |
| 5 | WBSETCL | 3820 | -- | 300 | -- | 3520 | -- | Nov-18 |
| 6 | Sikkim | -- | -- | -- | -- | -- | -- | |

**BSPTCL,OPTCL and WBSETCL are requested to calculate and submit the TTC for the month of December 2018, January and February 2019.**

**Item no. C.15: 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 02 locations (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 alsoreduce the cost of GSM.

*In 150$^{th}$ OCC, POWERGRID informed that the replacement of GPRS communication of the Remaining 34 locations would be completed by December 2018.*

**POWERGRID may please update the progress.**

**Item no. C.16: Mock Black start exercises in Eastern Region – ERLDC**

Tentative Schedule for mock black start exercise for FY 2018-19 is given below:

| Sl no | Name of Hydro Station | Schedule | Tentative Date | Schedule | Tentative Date |
|---|---|---|---|---|---|
| | | Test-I | | Test-II | |
| 1 | U.Kolab | Last week of May, 2018 | *Completed on 8$^{th}$ June,2018* | Last Week of January2019 | *In Sep 2018* |
| 2 | Maithon | 1stweek of June 2018 | *Completed on 6$^{th}$ June,2018* | 1stWeek of February2019 | |
| 3 | Rengali | 2ndweek of June 2018 | *Done on 18$^{th}$ August,2018.* | Last week of November 2018 | |
| 4 | U. Indarvati | 3rdweek ofJune 2018 | *Planned in Oct,2018.* | 2ndweek of February2019 | |
| 5 | Subarnarekha | 1stweek of October 2018 | *Done on 10$^{th}$ August,2018.* | 1stweek of January2019 | |
| 6 | Balimela | 3rdweek of October 2018 | | 1stweek of March 2019 | |

| | | | | | |
|---|---|---|---|---|---|
| 7 | Teesta-V | 2ndweek of Nov 2018 | Done on 3rd May 2018 | Last week of February2019 | |
| 8 | Chuzachen | Last Week of May2018 | In May 2018 | 2nd week of January2019 | |
| 9 | Burla | Last Week of June 2018 | *Completed on 7th June,2018* | Last week of February2019 | |
| 10 | TLDP-III | 1st Week of June 2018 | After Monsoon | 2ndWeek of January2019 | |
| 11 | TLDP-IV | Last Week of June 2018 | After Monsoon | 1st Week of February2019 | |
| 12 | Teesta-III | Last week of Oct 2018 | | First Week of March 2019 | |
| 13 | Jorthang | First Week of May 2018 | | First Week of Feb 2019 | |
| 14 | Tasheding | 2nd Week of May 2018 | | 2nd Week of Feb 2019 | |
| 15 | Dikchu | 3rd Week of May 2018 | | 3rd Week of Feb 2019 | |

**Schedule for demonstration of blackstart exercise as follows:**

i. Balimela HEP of OHPC: 21st December 2018
ii. Maithon HEP of DVC: January 2019
iii. Teesta-V of NHPC: February 2019.

**Members may update.**

**Item no. C.17: Irregularity of data punching to web based PSP portal--ERLDC**

ERLDC has successfully migrated to web based PSP reporting system since 9th September 2018 in which constituents have access to furnish their respective daily energy consumption/generation through web based portal using their own user ids. The report generated based on such punched data, is used by MOP, CEA, NLDC and other various organizations. The success of preparation and publication of error free Web PSP report in time is totally dependent on the active cooperation ofall the constituents filling the data during night hours. As per the recent practice for report preparation, data filled within 04:00 Hrs are considered for report preparation. In case data is not filled by the user for a particular field within 04:00 Hrs during night then SCADA data for that field is used for report preparation.

Some observations regarding submission of data in Web PSP are follows:

1. Users viz: Adhunik (APNRL), KBUNL. DMTCL, BRBCL, Tashiding, Barh and FSTPP are not filling data in Web PSP regularly.
2. Regular mismatch of 4 to 6 mu in 765kV Dharamjaigarh-Jharsuguda-Q/D energy data as declared by RTAMC ER – II and SCADA data of same link is observed. Same also verified from SEM data.

In this regard all the users are requested to kindly attach due seriousness to fill their own data in Web PSP portal by 04:00 Hrs. Powergrid RTAMC ER – II is requested to check the data of 765kV Dharamajaigarh-Jharsuguda-Q/Dbefore publishing during night hour.

**Members may please note and comply.**

**Item no. C.18: PSS tuning of Generators in Eastern region**

Based on the submitted details it can be observed that

1. Many of the generators were tuned quite long back of during commission and there is a need to review their tuning in order to enhance the small signal stability of Eastern regional grid.
2. Few generators PSS are enabled even without tuning which can cause oscillation during transient which may not be desirable.
3. Several regional and State Sector IPPs, State Sector SSGSs and Central Sector ISGSs have still not submitted the details even after sending reminder messages.

**In view of the above following may be discussed for ensuring the system security:**

1. A concrete plan needs to be formed for the PSS tuning of Generators by the Eastern Region OCC forum in line with relevant IEGC and CEA standard to ensure the system security. A separate meeting on PSS tuning action plan may immediately be initiated.
2. A small group of members may be formed to analyse the PSS tuning reports received from the various generators.
3. Further, generators who have not submitted the details of PSS tuning to ERLDC may submit it within a week on erldcprotection@posoco.in and erpcprotection@gmail.com

**Members may discuss.**

**Item no. C.19: Submission of Thermal Loading of Transmission line and associated terminal equipment by ISTS licensee**

In line with the MoM of 4th NRCE Meeting dt.03-11-14 and "Operational Guidelines for determination Of TTC, ATC and TRM for the Short-Term Horizon (0-3 Months)" published by NRCE dt.20-02-15, thermal limit for transmission line has to be used for calculation of ATC/TTC. However, the thermal loading of transmission line depend on the Maximum Conductor Temperature, End equipment thermal rating. This has to be submitted by the Owner of the equipment. Further, the equipment owner also has to confirm that relay setting has been aligned so that the line can be operated up to its thermal limit. In the absence of complete details, ERLDC is utilising the data from the CEA Planning Criteria for thermal rating as given below :

| Conductor Type | Ampacity per conductor(A)* | Thermal loading limit of line (MVA) |
|---|---|---|
| 765 kV Quad ACSR_Bersimis | 732 | 3880 |
| 765 kV HexaACSR_Zebra | 560 | 4452 |
| 400 kV Twin ACSR_Moose | 631 | 874 |
| 400 kV Quad ACSR_Moose | 631 | 1749 |
| 400 kV Quad ACSR_Bersimis | 732 | 2029 |
| 400 kV Triple Snowbird | 630 | 1309 |
| 400 kV Twin ACSR_Lapwing | 773 | 1071 |
| 220 kV Single AAAC_Zebra | 557 | 212 |
| 220 kV Single ACSR_Zebra | 560 | 213 |
| 220 kV Twin ACSR_Moose | 631 | 481 |
| 132 kV Single ACSR_Zebra | 560 | 128 |
| 132 kV Single ACSR_Panther | 366 | 84 |

*Ambient and Maximum conductor temperature are taken as 45°C and 75°C respectively.
Apart from above specifically mentioned in CEA transmission planning criteria following loading limit is considered for HTLS line while calculating ATC/TTC

| Conductor Type | Ampacity per conductor(A)* | Thermal loading limit of line (MVA) |
|---|---|---|
| 400 kV Twin HTLS | 1262 | 1750 |
| 220 kV Single HTLS | 1020 | 390 |
| 132 kV Single HTLS | 732 | 168 |

**In view of this, it is desired that all ISTS Licensee and STU(for 400 kV and important 220 kV lines) may kindly submit the following details to ERLDC for utilisation in ATC/TTC calculation:**

a) Transmission line wise Ampacity and Thermal loading along with Maximum Conductor Temperature and conductor type.
b) End Equipment Rating and
c) Confirmation whether the relay setting has been adopted in line with the thermal rating of the line
d) Any constraint during thermal loading of line

*OCC advised all the ISTS licensees and STUs to submit the relevant data to ERLDC and ERPC.*

**Members may note and comply.**

**Item no. C.20: Load Trimming Scheme on 400/132 kV Motihari ICTs.**

400/132 kV Motihari substation 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 overcurrent 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 mis-operation during moisture ingress in rainy season.
4. Capacity augmentation for long term measures may be planned.

*In 149th OCC, it was informed that one more ICT of 315 MVA 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.*

*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.*

**BSPTCL and DMTCL may update.**

**Item no. C.21: FLEXIBILITY IN GENERATION & SCHEDULING OF THERMAL POWER STATIONS TO REDUCE EMISSIONS-MOP, GOI ORDER**

CEA vide letter dated 18th July 2018 informed that a committee has been constituted in CEA under Chief Engineer (TPRM) to develop a road map to enable flexible operation of thermal power stations for smooth integration of intermittent RES generation.

CEA requested for plant performance data as per the format enclosed at **Annexure-C21**. CEA requested to submit the hard copy and softcopy (in excel) to cetrmcea@yahoo.com.

*OCC advised all the Generators to submit the plant performance data as per the format to CEA.*

**Members may note and comply.**

**Item no. C.22: Auto-Reclosure on Lines from PPSP Generating station.**

It has been observed that, no transmission lines from 400 kV PPSP Plant are having the auto-reclosure facility in enabled condition. Further, the auto-reclosure facilities are also not enabled at remote end substation.

| Element Name | Tripping Date | Tripping Time | Type of Fault |
|---|---|---|---|
| 400KV PPSP-BIDHANNAGAR-I | 05-08-16 | 21:43 | R Phase to E/F |
| 400KV PPSP-NEW PPSP-2 | 25-02-18 | 12:58 | R Phase to E/F |
| 400KV PPSP-BIDHANNAGAR-II | 11-03-18 | 23:45 | Y phase to E/F |
| 400KV PPSP-BIDHANNAGAR-II | 30-04-18 | 8:21 | Y phase to E/F |
| 400KV PPSP-BIDHANNAGAR-II | 10-05-18 | 6:15 | B phase to E/F |
| 400KV PPSP-BIDHANNAGAR-II | 20-05-18 | 16:39 | R Phase to E/F |
| 400KV PPSP-BIDHANNAGAR-I | 01-06-18 | 11:37 | Y phase to E/F |
| 400KV PPSP-BIDHANNAGAR-II | 08-06-18 | 2:32 | B phase to E/F |
| 400KV PPSP-BIDHANNAGAR-II | 08-06-18 | 23:50 | Y phase to E/F |
| 400KV PPSP-BIDHANNAGAR-II | 12-06-18 | 14:34 | R Phase to E/F |

***Non-Implementation of Auto-reclosure results in the non-compliance of CEA Technical Standard for Construction of Electrical Plants and Electric Lines 43.4.C.***

WBPDCL may kindly update on the status of healthiness and enabling of the auto-reclosure on the transmission lines from PPSP Power plant. It may kindly be noted that, most of the power plant (Thermal/Hydro/Gas) in the Indian Power System have no issue in enabling single-phase auto-reclosure for the line emanating from their plant. This has indeed increased their reliability during bad weather conditions during which transient fault occur on the lines.

The agenda could not be discussed in 70th & 71st PCC meeting as WBSEDCL representative was not present in the meeting.

**Members may discuss.**

# PART D:: OPERATIONAL PLANNING

**Item no. D.1: Anticipated power supply position during December 18**

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of December 18 were prepared by ERPC Secretariat on the basis of Provisional LGBR for 2015-16 and feedback of constituents, keeping in view that the units are available for generation and expected load growth etc. is at **Annexure-D.1**.

**Members may confirm.**

**Item no. D.2: Shutdown proposal of transmission lines and generating units for the month of December 18**

Members may finalize the Shutdown proposals of transmission lines and generating stations for the month of December 18.

Shutdown proposals of generating stations:

| System | Station | Unit | Size (MW) | Period | | No. of Days | Reason |
|---|---|---|---|---|---|---|---|
| | | | | From | To | | |
| ODISHA | TTPS | 1 | 60 | 01.12.18 | 30.12.18 | 30 | Capital Maintenance |
| | IB TPS | 2 | 210 | 01.12.18 | 21.12.18 | 21 | Minor AOH |
| WBPDCL | Sagarighi TPS | 1 | 300 | 01.12.18 | 10.12.18 | 10 | Boiler License |
| CESC | BUDGE-BUDGE | 1 | 250 | 02.12.18 | 16.12.18 | 15 | Not Specified |
| | | 2 | 250 | 19.12.18 | 23.12.18 | 5 | Not Specified |
| | TITAGARH | 3 | 60 | 14.12.18 | 17.12.18 | 5 | Not Specified |
| | | 4 | 60 | 29.12.18 | 12.01.19 | 15 | Not Specified |
| NTPC | Barh | 4 | 660 | 12.12.18 | 15.01.19 | 35 | Boiler Modification |
| IPP | APNRL | 2 | 270 | 17.012.19 | 10.02.19 | 25 | Not Specified |

Annual maintenance of Teesta-V HEP Units:

i. Unit-2 from 01-12-2018 to 21-12-2018
ii. Unit-3 from 23-12-2018 to 12-01-2019

**ERLDC may place the list transmission line shutdown. Members may confirm.**

**1. Shutdown of 400kV Main Bus Darbhanga**

Alipurduar Transmission Limited vide mail informed that ATL/KPTL is executing the bay extension work at 400 KV GIS Darbhanga S/S. To integrate the new system with the existing system require shut down as mentioned below:

1. 400KV Main bus I (DMTCL): – 5th Dec ’18 to 12th Dec’18 (1st day to 8th Day ) 8 days , 192 Hrs. For integration of Main Bus –I. Substation will remain charged on Main Bus – II
2. 400KV Main bus II (DMTCL): – 14th Dec ’18 to 21st Dec’18 (10th day to 18th day) 8 days, 192 Hrs. For integration of Main Bus –II. Substation will remain charged on Main Bus - I
3. 400KV Main bus I (DMTCL) & 400KV Main bus II (DMTCL) : - 22nd Dec’18 to 24th Dec’18 , 3 days , 10 Hrs on daily basis. For integration of Bus Bar protection.

**Alipurduar Transmission Limited may explain. Members may approve.**

**Item no. D.3: Prolonged outage of Power System elements in Eastern Region**

**(i) Thermal Generating units:**

| S.No | Station | Location | Owner | Unit No | Capacity | Reason(s) | Outage | |
|---|---|---|---|---|---|---|---|---|
| | | | | | (MW) | | Date | Time |
| 1 | KOLAGHAT | WEST BENGAL | WBPDCL | 1 | 210 | POLLUTION CONTROL PROBLEM | 10-May-18 | 23:05 |
| 2 | KOLAGHAT | WEST BENGAL | WBPDCL | 3 | 210 | POLLUTION CONTROL PROBLEM | 23-Feb-17 | 11:51 |
| 3 | CTPS | JHARKHAND | DVC | 3 | 130 | TURBINE BLADE DAMAGE | 30-Jul-17 | 00:00 |
| 4 | KODARMA | JHARKHAND | DVC | 2 | 500 | ANNUAL OVERHAULING | 9-Sep-18 | 19:47 |
| 5 | *SAGARDIGHI* | *WEST BENGAL* | *WBPDCL* | *1* | *300* | *SHORT MAINTENANCE* | *3-Nov-18* | *23:25* |
| 6 | VEDANTA | ODISHA | GRIDCO | 3 | 600 | OVERHAULING | 30-Oct-18 | 02:41 |
| 7 | BUDGE BUDGE | WEST BENGAL | WBPDCL | 1 | 250 | ANNUAL SURVEY | 13-Nov-18 | 00:07 |
| 8 | JITPL | ODISHA | JITPL | 2 | 600 | COAL SHORTAGE | 26-Jun-18 | 00:03 |
| 9 | RAGHUNATHPUR | WEST BENGAL | DVC | 2 | 600 | COAL SHORTAGE | 9-Nov-18 | 22:21 |
| 10 | MEJIA | WEST BENGAL | DVC | 4 | 210 | COAL SHORTAGE | 2-Nov-18 | 22:05 |
| 11 | MEJIA | WEST BENGAL | DVC | 1 | 210 | COAL SHORTAGE | 3-Nov-18 | 04:05 |
| 12 | DPL | WEST BENGAL | WBPDCL | 7 | 300 | COAL SHORTAGE | 20-Oct-18 | 23:58 |
| 13 | SAGARDIGHI | WEST BENGAL | WBPDCL | 4 | 500 | COAL SHORTAGE | 7-Nov-18 | 21:30 |
| 14 | KOLAGHAT | WEST BENGAL | WBPDCL | 4 | 210 | COAL SHORTAGE | 12-Nov-18 | 23:19 |
| 15 | SANTALDIH | WEST BENGAL | WBPDCL | 5 | 250 | HIGH FURNACE PRESSURE | 11-Nov-18 | 16:05 |

**(ii) Hydro Generating units:**

| S.No | Station | Location | Owner | Unit No | Capacity | Reason(s) | Outage |
|---|---|---|---|---|---|---|---|
| 1 | BURLA | ODISHA | OHPC | 1 | 37.5 | R & M WORK | 25.10.2016 |
| 2 | BURLA | ODISHA | OHPC | 5 | 37.5 | R & M WORK | 25.10.2016 |
| 3 | BURLA | ODISHA | OHPC | 6 | 37.5 | R & M WORK | 16.10.2015 |
| 4 | BURLA | ODISHA | OHPC | 4 | 37.5 | Annual Maintenance | |
| 5 | RENGALI | ODISHA | OHPC | 1 | 50 | Annual Maintenance | |
| 6 | BALIMELA | ODISHA | OHPC | 1 | 60 | R & M WORK | 05.08.2016 |
| 7 | BALIMELA | ODISHA | OHPC | 2 | 60 | R & M WORK | 20.11.2017 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 8 | BALIMELA | ODISHA | OHPC | 5 | 60 | Annual Maintenance | |
| 9 | U.KOLAB | ODISHA | OHPC | 2 | 80 | Repair of MIV & Draft tube gate leakage | 28.05.2017 |

It is therefore seen that about 460 MW hydro capacity in Odisha is under forced outage / planned outage and therefore not available for providing the much needed peaking support during evening peak. SLDC / OHPC may please indicate restoration plan of the units.

**(iii) Transmission elements**

| SL NO | Transmission Element / ICT | Agency | Outage From | | Reasons for Outage |
|---|---|---|---|---|---|
| 1 | 220 KV BALIMELA - U' SILERU | OPTCL / APSEB | 10-03-2018 | 22:45 | LINE ANTITHEFT CHARGED FROM UPPER SILERU ON 17-04-18 |
| 2 | 400 KV IBEUL JHARSAGUDAD/C | IBEUL | 29-04-2018 | 17:30 | TOWER COLLAPSE AT LOC 44,45 |
| 3 | 400 KV DIKCHU-RANGPO | TVTPL | 06-07-2018 | 08:11 | INITIALLY S/D AVAILED BY TVTPL/LINE COULD NOT BE CLOSED AFTER S/D DUE TO LOCAL ISSUES. |
| 4 | 400KV NEW PURNEA-BIHARSARIFF(PG)-D/C | ENICL | 10-08-2018 | 10:28 | TOWER COLLAPSE AT LOC 47/0 |
| 5 | 220 KV BUDHIPADAR - KORBA III | OPTCL/POWERGRID | 10-11-2018 | 09:43 | MGR DIVERSION WORK NEAR LARA NTPC |
| 6 | 400 KV PATNA KISHANGANJ D/C | POWERGRID | 01-09-2018 | 00:32 | TOWER COLLAPSE AT LOC 129. PILING DAMAGED |

(Reported as per Clause 5.2(e) of IEGC)

** Transmission licensees whose line were out due to tower collapse/ bend, may please update the detail restoration plan and as on date work progress status in OCC.

Also Monthly progress report to be submitted to ERLDC/ERPC till restoration of the element.

**Members may update.**

# PART E::ITEMS FOR INFORMATION

The following agenda items are placed for information and necessary compliance:

**Item No. E.1: Restricted Governor /Free Governor Mode Operation of generators in ER**

CERC vide their letter dated 05-06-2017 desired to know the present status of RGMO/FGMO response of all eligible thermal and hydro units. Accordingly ERLDC vide letter no.ERLDC/SS/FGMO/2017 dated 07-06-17 requested all concerned power stations and SLDCs to provide updated status of FGMO/ RGMO of units under their control.

The latest status of the RGMO/FGMO of ER generators is enclosed in **Annexure-E1**.

Generators may update.

**Item No. E.2: Preparation of crisis management plan for Cyber Security in Power Sector in line with CERT-IN.**

The activity of the preparation of Crisis Management Plan for countering the cyber attacks and its implementation including the Mock Drills, audits etc. is being monitored by CEA regularly in line with crisis management plant of Ministry of Power. Power Utilities (including generation, transmission & distribution utilities) of eastern region are to furnish regularly the updated status to on the same to Chief Engineer, Distribution Planning & Development Division, CEA.

In 142nd OCC, ERLDC informed that, in line with Enquiry Committee Recommendation, cyber security audit is being conducted on regular basis for SCADA system installed at ERLDC and SLDC as well but cyber security audit for telecom infrastructure installed in Eastern Region is not being carried out.

OCC advised all the constituents to conduct the cyber security audit on telecom infrastructure installed in Eastern Region. It is further advised that compliance / mitigation of the points observed during the audit should also be completed for improvement of the telecom infrastructure in ER.

In 37th TCC meeting, it was decided that a workshop would be conducted by CEA at ERPC for further benefit of ER Constituents.

*In 144th OCC, ERLDC informed that they have already conducted a workshop with the help of NPTI, Durgapur on 21st March 2018.*

A workshop on cyber security was conducted by CEA at ERPC, Kolkataon 09-05-2018.

As suggested by CEA, a format would be circulated among ER constituents for furnishing the information of the their respective systems for discussion in OCC Meeting. The format is enclosed at **Annexure-E2**.

OCC advised all the constituents to submit the information to ERPC as per Annexure-E2.

**Item No. E.3: Certification through BIS as per IS 18001:2007 to all generating/ transmission units.**

In 84th OCC meeting all constituents were requested to interact with BIS with intimation to ERPC and get certified as per CEA direction.

As per the information received from the constituents the following generators certified with IS 18001:

- All NTPC stations in Eastern Region
- Teesta, NHPC

- All OHPC generating units
- All CESC generating units
- All units of WBPDCL
- DGPC units

**Item No. E.4: Status of Disturbance Recorder, Stand alone Event Logger and Time Synchronization equipment.**

The status of DR/EL and GPS as updated in previous OCCs is enclosed at **Annexure-E.4**.

Constituents are also requested to furnish their list of new DR/EL which are not included in the list.

*TeestaUrja Limited vide letter dated 8th September 2017 informed that Disturbance Recorder, Stand alone Event Logger and Time Synchronization equipments are available at Teesta III HEP.*

**Item No. E.5: Status of Emergency Restoration System (ERS Towers) for Eastern Region constituents**

CEA vide letter dated 21.07.2017 requested to send the status of state-wise availability of ERS towers and requirement of ERS towers.

*In 136th OCC, MS, ERPC informed that CEA vide letter dated 21.07.2017 has sought the latest status on ERS. Therefore, OCC advised all constituents to send the updated status to ERPC secretariat vide mail (mserpc-power@nic.in).*

Latest status is enclosed at **Annexure- E.5**.

In 138th OCC, WBSETCL informed that they are having total 10 ERS towers, 5 at Arambagh and 5 at Gokharno.

In 139th OCC, JUSNL informed that they are having eight 220/132kV ERS towers at following locations:

- Hatia – 3 nos
- Ranchi – 2 nos
- Dumka – 3 nos

**Item No. E.6: Status of 1st 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 Powergridare related to PLCC problems at other end.*

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

In 118th OCC, all the constituents were advised to comply the pending observations at the earliest. All the STUs informed that most of the observations are related to funding from PSDF. DPRs have been submitted to PSDF committee.

Members may comply.

**Item No. E.7: DATA FOR GEOSPATIAL ENERGY PORTAL OF NEETI AAYOG--CEA**

NITI Aayog is developing a user friendly GIS based Energy Map of India, which would provide true locations of all energy resources in India including power plants, coal and oil reserves, transmission lines etc.

CEA sought the information of name, voltage level, capacity, longitude and latitude of 33kV and 66 kV substations and lines.

The information may be shared with CEA vide email: cedpd-cea@gov.in.

Members may comply.

**Item No. E.8: Providing relevant data by Power Utilities I Stations in National Power Portal.**

CEA vide letter dated 26th June 2018 informed that National Power Portal (NPP) (URL: npp.gov.in), has been launched by Hon'ble Minister of Power on 14th November, 2017. NPP is modified and more user-friendly data portal than the existing Information Management System (IMS) in CEA. Reports prepared from NPP are of vital importance for Power Sector data analytics in order to frame policies, regulations , future road-map for Power Sector etc. at Central as well as at State level. Accordingly, all power utilities have been issued user ID and password, either organisation-wise or station-wise, based on their request , for providing their data on NPP.

**NPP has replaced IMS since 1st June, 2018. A Circular (which is available in Circular Section of CEA Website, i.e. cea.nic.in)** has been issued by CEA to all power utilities/stations on 14.06.2018 for providing their data online in NPP only.

In this regard, letters/mails have been issued to Utilities to provide their data online through NPP. A letter dated 20.06.2018 was also issued to all SLDC, requesting them to direct the power utilities I stations under their purview for providing data on NPP.

Any issue/problem faced by utilities may kindly be communicated to itcea@nic.in, npp.support@gov.in, ceopm-cea@gov.in and if required, IT Division, CEA may be contacted on 011-26732368 or 011-26732303

CEA requested to pursue the power utilities *I* stations under their purview for providing data on NPP. Further, a workshop/presentation may be arranged if required in each region in which IT Division, CEA will provide a brief demonstration regarding data entering process and report generation into NPP.

**Item No. E.9: Checklist for submission of updated data for Protection Database**

The network data in Protection Database needs to be updated on regular basis on account of commissioning of new elements in the CTU as well as STU networks. Accordingly, a checklist has been prepared which is enclosed in **Annexure-E9**.

All the constituents are requested to submit the checklist on monthly bases in every OCC/PCC meetings.

In 139th OCC, all the constituents were advised to submit the data to ERPC vide mail (mserpc-power@nic.in) as per the checklist for last three months.

*OCC advised all the constituents to submit the data to ERPC vide mail (mserpc-power@nic.in) as per the checklist for last three months.*

**Item No. E.10: Commissioning of new transmission elements in Eastern Region**

The details of new units/transmission elements commissioned in the month of October - 2018 based on information furnished by the constituents are depicted below:

| Monthly commissioning List of Transmission element and generators: October 2018 | | | | | |
|---|---|---|---|---|---|
| **SL NO** | **Element Name** | **Owner** | **Charging Date** | **Charging Time** | **Remarks** |
| 1 | 80 MVAR Line Reactor of 400kV New_Purnea-Frakka at Purnea end | PGCIL | 26-10-2018 | 21:13 | Line is under construction, only switchable L/R was charged as B/R. |
| 2 | 80 MVAR Line Reactor of 400kV New_Purnea-Gokarna at Purnea end | PGCIL | 30-10-2018 | 12:53 | Line is under construction, only switchable L/R was charged as B/R. |
| 3 | 125 MVAR Bus Reactor-II at Keonjhar | PGCIL | 31-10-2018 | 17:17 | |
| 4 | 240MVAR line reactor of 765kV Angul-Jharsuguda-III at Angul end | PGCIL | 31-10-2018 | 20:59 | Only line reactor charged as B/R., Line is under construction now. Switable L/R |
| 5 | 765Kv Jharguda-Dharamjaigarh-III | PGCIL | 31-10-2018 | 23:35 | Voltage before/after charging at Jharsuguda: 786/789Kv; 354MW power flow towards Jharsuguda at the time of charging. |

The following schemes of OPTCL were charged:

1. Ib-Lapanga-400kV Ckt-I charged on 03.11.2018
2. Ib-Lapanga-400kV Ckt-II charged on 03.11.2018
3. Sterlite-Lapanga 400kV LILO Line on MCT Tower charged on 05.11.18
4. Lapanga 400kV Sub-station Bus charged on 03.11.18

**Item No. E.11: UFR operation during the month of October'18**

System frequency touched a maximum of 50.2 Hz at 13:03Hrs of 05/10/18 & 12:02hrs of 28/10/18 and a minimum of 49.69 Hz at 17:24Hrs of 20/10/18& 16:42hrs of 22/10/18. Hence, no report of operation of UFR has been received from any of the constituents.

**Item No. E.12: Non-compliance of directions issued by SLDC**

Vide clause no 5.5.1.(c)(h) of IEGC, non-compliance of SLDC directions by SEB/Distribution licenses/bulk consumers to curtail overdrawal are to be reported to ERLDC for incorporating the same in weekly report to be prepared and published by ERLDC.

All SLDCs are to inform ERLDC the instances of non–compliance of SLDC directions by SEB/Distribution licenses/bulk consumers to curtail overdrawal, within two days after the day of operation.

No report from any constituent has yet received. Hence, ERLDC would be considering 'Nil' report for all constituents for October18.

## Item No. E.13: Grid incidences during the month of October, 2018

| Sr No | GD/ GI | Date | Time | S/S involved | Summary | Load loss (MW) | Gen loss (MW) |
|---|---|---|---|---|---|---|---|
| 1 | GI-II | 01-10-2018 | 15:41 | Rangpo | At 15:41 hrs, 400 kV Binaguri - Rangpo - I tripped on R-N fault resulting generation loss at Teesta III, Jorethang, Dikchu, Chujachen and Tashiding due to operation of SPS - I at Rangpo. | 0 | 856 |
| 2 | GD-I | 03-10-2018 | 17:23 | Hatia | 220 kV PTPS - Hatia D/C were under shutdown. 220 kV Hatia - Ranchi D/C tripped from Hatia end due to suspected bus fault at Hatia | 200 | 52 |
| 3 | GD-I | 04-10-2018 | 00:18 | Hatia | 220 kV PTPS - Hatia D/C were under shutdown. 220 kV Hatia - Ranchi D/C tripped from Hatia end due to suspected bus fault at Hatia | 130 | 52 |
| 4 | GD-I | 07-10-2018 | 16:56 | Purnea | 220 kV Purnea - Purnea D/C and 220 kV Purnea - Dalkhola D/C tripped due to Y phase CVT failure of 220 KV Purnea - I at Purnea Old end | 160 | 0 |
| 5 | GD-I | 20-10-2018 | 09:48 | Madhepura | 220 KV New Purnea-Madhepura I was kept open due to high voltage condition. At 09:48 hrs 220 kV Purnea - Madhepura - II tripped on R-N fault resulting total power failure at Madhepura. | 62 | 0 |
| 6 | GD-I | 27-10-2018 | 10:24 | TLDP | At 10:24 Hrs, 220 KV TLDP-III – NJP tripped due to Y-B-N fault leading to tripping of all 4 units at TLDP III due to loss of evacuation path | 0 | 134 |
| 7 | GI-II | 31-10-2018 | 23:52 | Jharsuguda | During PLCC testing of new 765kV Sundargarh-Dharamjaygarh Ckt-4, 765KV Bus-2 along with following 765KV elements connected with the Bus were tripped at 23:52 hrs of 31.10.2018 due to mal-function of Tie LBB relay of 765KV Angul Ckt-1.<br>1. 765KV 240MVAR Bus reactor-1<br>2. 765KV 240MVAR Bus reactor-2<br>3. 765KV Sundargarh-Angul Ckt-1<br>4. 765KV Sundargarh-darlipali(NTPC) Ckt-1<br>5. 765KV Sundargarh-darlipali(NTPC) Ckt-2 | 0 | 0 |

**********

# Annexure-A1.6

## Response Based on SCADA Data:

| Generating Station | Percentage of ideal response (Assuming 5% droop setting) | Remarks |
|---|---|---|
| Kahalgaon STPS I | -6.70% | Non Satisfactory |
| Kahalgaon STPS II | 0.00% | Non Satisfactory |
| BARH | 2.90% | Non Satisfactory |
| Adhunik | 4.50% | Non Satisfactory |
| Teesta III | 2.20% | Non Satisfactory |
| JITPL | 2.80% | Non Satisfactory |
| BRBCL | 17.60% | Non Satisfactory |
| DIKCHU | 46.20% | Non Satisfactory |
| Bihar | -27.70% | Non Satisfactory |
| Jharkhand | -116.00% | Non Satisfactory |
| DVC | 5.00% | Non Satisfactory |
| OPTCL | -29.90% | Non Satisfactory |
| WB | 10.90% | Non Satisfactory |
| SIKKIM | 50.70% | Non Satisfactory |

***(*Based on ERLDC SCADA Data)***

## Response from High-Resolution Data:

| Generating Station | Responses observed |
|---|---|
| Farakka STPS | RGMO was **not in service for unit I, II & III**. Unit V was not in service. Response was **not satisfactory for unit IV and VI**. |
| Talcher STPS | Response was **satisfactory for unit IV, V and VI**. Unit I & III were not in service. Response from **unit II was not satisfactory**. |
| GMR | Response was **not satisfactory for unit I & II**. 8 MW generation increase observed for 0.13 Hz frequency change (ideal response 0.13/2.5*700 = 36MW). Increased generation did not last for more than 1 second. |
| MPL | Response was **not satisfactory for unit I**. Unit II was not in service. Around 10 MW generation increased in 1 min for frequency drop of 0.18 Hz. Ideal response is around 38 MW |
| Teesta V | **Data received not in proper format**; could not be analysed |

| | |
|---|---|
| WBPDCL | Response was **not satisfactory for Bakreswar, Kolaghat, Sagardighi, Santaldih and Bandel** |
| DPL | Response was **not satisfactory**. Around 2 MW generation increment observed; Increased generation lasted for 4 seconds only. |
| CESC | **Satisfactory response not observed for BBGS units; Response from HEL was less than satisfactory level.** |
| DVC generating stations | Response **was not satisfactory for Mejia, CTPS B, Koderma, DSTPS and Mejia B. In RTPS, RGMO was not in service.** |

***(*Rest of other generating stations and SLDC have not submitted the details to ERLDC and thus Non-compliance of relevant regulations on data submission for analysis of grid events)***

# Generation Projection (Jan 2019 - Mar 2019)

| | | | | Generation declared Commercial from 1st Apr'18 to 30th Sep'18 | | | | | Generation declared/expected to be declared Commercial from 1st Oct'18 to 31st Dec'18 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Entities | Region | Projections based on 3 Years Data | Bus Name | Unit No. | Installed Capacity | Gen. considered | Sub Total | Bus Name | Unit No. | Installed Capacity | Gen. considered | Sub Total | TOTAL | Comments From DICs /Others (if any) | Figure as per Comments/ PoC Data | Projected Generation before normalization w.r.t projected All India Peak Demand |
| | | | (MW) | | | (MW) | (MW) | (MW) | | | (MW) | (MW) | (MW) | (MW) | | | (MW) |
| 1 | West Bengal | ER | 5628 | | | | | | | | | | | 5628 | | | 5628 |
| 2 | Odisha | ER | 3173 | | | | | | | | | | | 3173 | As per data givrn by Odisha | 3107 | 3107 |
| 3 | Bihar | ER | 374 | | | | | | Brauni Extn | 8 | 250 | 164 | 164 | 537 | | | 537 |
| 4 | Jharkhand | ER | 422 | | | | | | | | | | | 422 | | | 422 |
| 5 | Sikkim | ER | 0 | | | | | | | | | | | 0 | | | 0 |
| 6 | Chujachan | ER | 87 | | | | | | | | | | | 87 | As per CERC order dated: 22.06.2017 | 99 | 99 |
| 7 | DVC | ER | 4259 | | | | | | | | | | | 4259 | As per data given by DVC | 4087 | 4087 |
| 8 | Durgapur Steel | ER | | | | | | | | | | | | | | | |
| 9 | Koderma TPP | ER | | | | | | | | | | | | | | | |
| 10 | Bokaro TPS | ER | | | | | | | | | | | | | | | |
| 11 | Raghunathpur | ER | | | | | | | | | | | | | | | |
| 12 | MPL | ER | 1017 | | | | | | | | | | | 1017 | | | 1017 |
| 13 | Teesta V | ER | 536 | | | | | | | | | | | 536 | As per data givrn by NHPC | | 536 |
| 14 | Kahalgaon | ER | 2196 | | | | | | | | | | | 2196 | As per NTPC | | 2196 |
| 15 | Farakka | ER | 1936 | | | | | | | | | | | 1936 | | | 1936 |
| 16 | Talcher | ER | 967 | | | | | | | | | | | 967 | Restricted to the generation(Installed Capacity-NAC) | 942 | 942 |
| 17 | Rangit | ER | 63 | | | | | | | | | | | 63 | As per data givrn by NHPC | | 63 |
| 18 | Adhunik Power | ER | 415 | | | | | | | | | | | 415 | | | 415 |
| 19 | Barh | ER | 1294 | | | | | | | | | | | 1294 | | | 1294 |
| 20 | Kamalanga TPP (GMR) | ER | 591 | | | | | | | | | | | 591 | | | 591 |
| 21 | JITPL | ER | 918 | | | | | | | | | | | 918 | | | 918 |
| 22 | Jorethang | ER | 62 | | | | | | | | | | | 62 | | | 62 |

# Generation Projection (Jan 2019 - Mar 2019)

| | | | | Generation declared Commercial from 1st Apr'18 to 30th Sep'18 | | | | | Generation declared/expected to be declared Commercial from 1st Oct'18 to 31st Dec'18 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sl. No.** | **Entities** | **Region** | **Projections based on 3 Years Data** | **Bus Name** | **Unit No.** | **Installed Capacity** | **Gen. considered** | **Sub Total** | **Bus Name** | **Unit No.** | **Installed Capacity** | **Gen. considered** | **Sub Total** | **TOTAL** | **Comments From DICs /Others (if any)** | **Figure as per Comments/ PoC Data** | **Projected Generation before normalization w.r.t projected All India Peak Demand** |
| | | | **(MW)** | | | **(MW)** | **(MW)** | **(MW)** | | | **(MW)** | **(MW)** | **(MW)** | **(MW)** | | | **(MW)** |
| 23 | **Bhutan** | **ER** | 287 | | | | | | | | | | | 287 | | | 287 |
| 24 | **Teesta-III** | **ER** | 975 | | | | | | | | | | | 975 | As per CERC order dated: 22.06.2017 | 782 | 782 |
| | | **ER** | | | | | | | | | | | | | | | |
| | | **ER** | | | | | | | | | | | | | | | |
| | | **ER** | | | | | | | | | | | | | | | |
| | | **ER** | | | | | | | | | | | | | | | |
| | | **ER** | | | | | | | | | | | | | | | |
| 25 | **Dikchu HEP** | **ER** | 70 | | | | | | | | | | | 70 | | | 70 |
| 26 | **Nabinagar BRBCL** | **ER** | 271 | Nabinagar BRBCL | 2 | 250 | 164 | 164 | | | | | | 434 | | | 434 |
| 27 | **Tashiding HEP** | **ER** | 66 | | | | | | | | | | | 66 | | | 66 |
| 28 | **Kanti Bijlee Stg-2 (KBUNL)** | **ER** | | | | | | | | | | | | | | | 0 |
| | **TOTAL** | | **25608** | | | | | **164** | | | | | **164** | **25935** | | | **25491** |

**Note:**

1. Projections are based on monthly maximum injection in the last 3 years from actual metered data.
2. Generation forecast has been done based on the following criteria
(i) If there is an increasing trend then last year average generation has been considered
(ii) Otherwise average of past three year average generation has been considered
3. In case of new generators where past data was not available following has been assumed
(i) 0.7 plf for hydro generators
(ii) 0.7 plf for thermal generators.
(iii) 0.3 plf for gas stations

## DEMAND FORECAST USING PAST 3 YEARS DATA (Jan 2019 - Mar 2019)

| | | | | | | | | | | 1 | 2 | 3 | 4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2015-16 | | | 2016-17 | | | 2017-18 | | | | | | | | |
| | Jan-16 | Feb-16 | Mar-16 | Jan-17 | Feb-17 | Mar-17 | Jan-18 | Feb-18 | Mar-18 | 2015-16 Average | 2016-17Average | 2017-18 Average | Projected Demand for (Jan 2019 - Mar 2019) before normalization | Data given by DICs | Comments |
| Bihar | 3,484 | 3,278 | 3,419 | 3,535 | 3,543 | 3,715 | 4,343 | 4,346 | 4,469 | 3,394 | 3,598 | 4,386 | 4,785 | | |
| DVC | 2,421 | 2,381 | 2,473 | 2,457 | 2,570 | 2,663 | 2,886 | 2,758 | 2,896 | 2,425 | 2,563 | 2,847 | 3,033 | 2979 | As per data given by DVC |
| Jharkhand | 1,117 | 1,102 | 1,153 | 1,121 | 1,165 | 1,148 | 1,192 | 1,175 | 1,162 | 1,124 | 1,145 | 1,176 | 1,201 | | |
| Odisha | 3,739 | 3,931 | 4,091 | 3,896 | 3,847 | 3,989 | 3,931 | 4,109 | 4,402 | 3,920 | 3,911 | 4,147 | 4,220 | 4114 | As per data given by Odisha |
| West Bengal | 6,240 | 6,858 | 7,443 | 6,078 | 7,036 | 7,840 | 6,357 | 6,879 | 8,083 | 6,847 | 6,985 | 7,106 | 7,239 | | |
| Sikkim | 109 | 109 | 109 | 91 | 91 | 91 | 94 | 96 | 88 | 109 | 91 | 93 | 81 | | |

**Notes**

1. Projections are based on the past 3 years' monthly Peak Demand Met data available on the website of CEA
2. The above projections are being done for financial year 2018-2019 (Q4) i.e Jan 2019- Mar 2019
3. Projections are being done based on the forecast function available in MS Office Excel
4. CEA Reports can be accessed from the following links:

http://www.cea.nic.in/reports/monthly/powersupply/2018/psp_peak-01.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2018/psp_peak-02.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2018/psp_peak-03.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2017/psp_peak-01.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2017/psp_peak-02.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2017/psp_peak-03.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2016/psp_peak-01.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2016/psp_peak-02.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2016/psp_peak-03.pdf

| S.No. | Name of Utility | Location | Name of Station | Unit No. | Capacity (MW) | COD Date (DD/MM/YYYY) | Boiler Make | Turbine Make | Mills Type | Coal Source (s) | Grade of Coal | ECR (Rs./kWh) | Average PLF of last one year | Average Heat Rate (kcal/kWh) | Average APC (%) | Minimum Load (MW) capability | Minimum Load (%) capability | Maximum Ramp Rate (MW/min) capability |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | |

**Annexure-D.1**

**Anticipated Power Supply Position for the month of**
**Dec-18**

| SL.NO | | PARTICULARS | PEAK DEMAND MW | ENERGY MU |
|---|---|---|---|---|
| 1 | | **BIHAR** | | |
| | i) | NET MAX DEMAND | 3800 | 2189 |
| | ii) | NET POWER AVAILABILITY- Own Source (including bilateral) | 380 | 251 |
| | | - Central Sector | 2763 | 1627 |
| | iii) | SURPLUS(+)/DEFICIT(-) | -657 | -311 |
| 2 | | **JHARKHAND** | | |
| | i) | NET MAX DEMAND | 1250 | 800 |
| | ii) | NET POWER AVAILABILITY- Own Source (including bilateral) | 341 | 167 |
| | | - Central Sector | 758 | 423 |
| | iii) | SURPLUS(+)/DEFICIT(-) | -151 | -210 |
| 3 | | **DVC** | | |
| | i) | NET MAX DEMAND (OWN) | 2800 | 1760 |
| | ii) | NET POWER AVAILABILITY- Own Source | 5146 | 2864 |
| | | - Central Sector | 298 | 170 |
| | | Long term Bi-lateral (Export) | 1384 | 1030 |
| | iii) | SURPLUS(+)/DEFICIT(-) | 1260 | 244 |
| 4 | | **ODISHA** | | |
| | i) | NET MAX DEMAND | 4100 | 2344 |
| | ii) | NET POWER AVAILABILITY- Own Source | 2981 | 1286 |
| | | - Central Sector | 1123 | 638 |
| | iii) | SURPLUS(+)/DEFICIT(-) | 4 | -420 |
| 5 | | **WEST BENGAL** | | |
| 5.1 | | **WBSEDCL** | | |
| | i) | NET MAX DEMAND (OWN) | 4777 | 2612 |
| | ii) | CESC's DRAWAL | 0 | 0 |
| | iii) | TOTAL WBSEDCL's DEMAND | 4777 | 2612 |
| | iv) | NET POWER AVAILABILITY- Own Source | 3610 | 2105 |
| | | - Import from DPL | 123 | 0 |
| | | - Central Sector | 1858 | 1005 |
| | v) | SURPLUS(+)/DEFICIT(-) | 813 | 498 |
| | vi) | EXPORT (TO B'DESH & SIKKIM) | 10 | 7 |
| 5.2 | | **DPL** | | |
| | i) | NET MAX DEMAND | 240 | 156 |
| | ii) | NET POWER AVAILABILITY | 363 | 187 |
| | iii) | SURPLUS(+)/DEFICIT(-) | 123 | 31 |
| 5.3 | | **CESC** | | |
| | i) | NET MAX DEMAND | 1500 | 694 |
| | ii) | NET POWER AVAILABILITY - OWN SOURCE | 450 | 400 |
| | | FROM HEL | 540 | 348 |
| | | FROM CPL/PCBL | 0 | 0 |
| | | Import Requirement | 510 | 0 |
| | iii) | TOTAL AVAILABILITY | 1500 | 748 |
| | iv) | SURPLUS(+)/DEFICIT(-) | 0 | 54 |
| 6 | | **WEST BENGAL (WBSEDCL+DPL+CESC)** **(excluding DVC's supply to WBSEDCL's command area)** | | |
| | i) | NET MAX DEMAND | 6517 | 3462 |
| | ii) | NET POWER AVAILABILITY- Own Source | 4423 | 2693 |
| | | - Central Sector+Others | 2908 | 1353 |
| | iii) | SURPLUS(+)/DEFICIT(-) | 813 | 584 |
| 7 | | **SIKKIM** | | |
| | i) | NET MAX DEMAND | 90 | 38 |
| | ii) | NET POWER AVAILABILITY- Own Source | 1 | 0 |
| | | - Central Sector+Others | 123 | 58 |
| | iii) | SURPLUS(+)/DEFICIT(-) | 34 | 20 |
| 8 | | **EASTERN REGION** **At 1.03 AS DIVERSITY FACTOR** | | |
| | **i)** | **NET MAX DEMAND** | 18017 | 10593 |
| | | **Long term Bi-lateral by DVC** | 1384 | 1030 |
| | | **EXPORT BY WBSEDCL** | 10 | 7 |
| | **ii)** | **NET TOTAL POWER AVAILABILITY OF ER (INCLUDING C/S ALLOCATION)** | 21244 | 11529 |
| | **iii)** | **PEAK SURPLUS(+)/DEFICIT(-) OF ER (ii)-(i)** | 1833 | -101 |

**Annexure-E1**

| Details of stations/Units required to operate under RGMO/FGMO as per IEGC | | | | | | | Whether operating under RGMO | indicate in case of status is not available |
|---|---|---|---|---|---|---|---|---|
| Name of State | Type | Name of Uitlity | Sector (CS/SS/Private) | Name of Station | Name of Stage/ Unit | Installed capacity (MW) | | |
| JHARKHAND | Thermal | TVNL | SS | Tenughat | 1 | 210 | No | Difficulties in implementing RGMO & exemption not |
| | | | SS | | 2 | 210 | No | |
| | Hydro | JSEB | SS | Subarnrekha | 1 | 65 | Yes | |
| | | | SS | | 2 | 65 | Yes | |
| WEST BENGAL | Termal | WBPDCL | SS | Bandel TPS | 1 | 82.5 | No | |
| | | | SS | | 2 | 82.5 | No | |
| | | | SS | | 3 | 82.5 | No | |
| | | | SS | | 4 | 82.5 | No | |
| | | | SS | | 5 | 210 | No | |
| | | | SS | Santaldih | 5 | 250 | No | Unit#6 could not be implemented because of some technical problem |
| | | | SS | | 6 | 250 | No | |
| | | | SS | Kolaghat | 1 | 210 | No | Nil |
| | | | SS | | 2 | 210 | No | Nil |
| | | | SS | | 3 | 210 | No | Nil |
| | | | SS | | 4 | 210 | No | Nil |
| | | | SS | | 5 | 210 | No | Nil |
| | | | SS | | 6 | 210 | No | Nil |
| | | | SS | Bakreshwar | 1 | 210 | Yes | |
| | | | SS | | 2 | 210 | Yes | |
| | | | SS | | 3 | 210 | Yes | |
| | | | SS | | 4 | 210 | Yes | |
| | | | SS | | 5 | 210 | Yes | |
| | | | SS | Sagardighi | 1 | 300 | No | Without OEM support it is not possible to put in FGMO/RGMO. At present OEM support is not |
| | | | SS | | 2 | 300 | No | |
| | Hydro | | SS | PPSP | 1 | 225 | Yes | In 134th OCC WBPDCL informed that the units are in RGMO/FGMO mode |
| | | | SS | | 2 | 225 | Yes | |
| | | | SS | | 3 | 225 | Yes | |
| | | | SS | | 4 | 225 | Yes | |
| | Thermal | CESC | SS | Budge-Budge | 1 | 250 | Yes | |
| | | | SS | | 2 | 250 | Yes | |
| | | | SS | | 3 | 250 | Yes | |
| | | | SS | Haldia | 1 | 300 | Yes | |
| | | | SS | | 2 | 300 | Yes | |
| | Thermal | DPL | SS | DPL | 7 | 300 | Yes | |
| Orissa | | OPGC | SS | IB TPS | 1 | 210 | No | Not adequate response in RGMO |
| | | | SS | | 2 | 210 | No | |
| | Hydro | OHPC | SS | Burla | 1 | 49.5 | No | |
| | | | SS | | 2 | 49.5 | No | |
| | | | SS | | 3 | 32 | No | |
| | | | SS | | 4 | 32 | No | |
| | | | SS | | 5 | 37.5 | No | |
| | | | SS | | 6 | 37.5 | No | |
| | | | SS | | 7 | 37.5 | No | |
| | | | SS | Balimela | 1 | 60 | No | |
| | | | SS | | 2 | 60 | No | |
| | | | SS | | 3 | 60 | No | |
| | | | SS | | 4 | 60 | No | |
| | | | SS | | 5 | 60 | No | |
| | | | SS | | 6 | 60 | No | |
| | | | SS | | 7 | 75 | No | |
| | | | SS | | 8 | 75 | No | |
| | | | SS | Rengali | 1 | 50 | No | |
| | | | SS | | 2 | 50 | No | |
| | | | SS | | 3 | 50 | No | |
| | | | SS | | 4 | 50 | No | |
| | | | SS | | 5 | 50 | No | |
| | | | SS | Upper Kolab | 1 | 80 | No | |
| | | | SS | | 2 | 80 | No | |
| | | | SS | | 3 | 80 | No | |
| | | | SS | | 4 | 80 | No | |
| | | | SS | Indravati | 1 | 150 | No | |
| | | | SS | | 2 | 150 | No | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | SS | Indravati | 3 | 150 | No | |
| | | | SS | | 4 | 150 | No | |
| | | | **64** | | | | | |
| Central Sector | Thermal | DVC | CS | Bokaro-A | 1 | 500 | Yes | |
| | | | CS | Bokaro-B | 3 | 210 | No | Not possible due to non availability of Electro hydraulic governing. The units will be decommissioned shortly. |
| | | | CS | CTPS | 3 | 130 | No | Not possible due to non availability of Electro hydraulic governing. The units will be decommissioned shortly. |
| | | | CS | | 7 | 250 | Yes | |
| | | | CS | | 8 | 250 | Yes | |
| | | | CS | DTPS | 4 | 210 | No | Not possible due to non availability of Electro hydraulic governing. The units will be decommissioned shortly. |
| | | | CS | Mejia | 1 | 210 | No | Not possible due to non availability of Electro |
| | | | CS | | 2 | 210 | No | |
| | | | CS | | 3 | 210 | No | Action has been initiated to put in RGMO, but testing is not yet completed. |
| | | | CS | | 4 | 210 | Yes | |
| | | | CS | | 5 | 250 | Yes | |
| | | | CS | | 6 | 250 | Yes | |
| | | | CS | Mejia - B | 7 | 500 | Yes | |
| | | | CS | | 8 | 500 | Yes | |
| | | | CS | DSTPS | 1 | 500 | Yes | |
| | | | CS | | 2 | 500 | Yes | |
| | | | CS | KODERMA | 1 | 500 | Yes | |
| | | | CS | | 2 | 500 | Yes | |
| | | | CS | RTPS | 1 | 600 | Yes | |
| | | | CS | | 2 | 600 | Yes | |
| | Hydro | | CS | Panchet | 1 | 40 | No | RGMO mode of operation would not be possible for |
| | | | CS | | 2 | 40 | No | |
| | Thermal | NTPC | CS | Farakka STPP-I | 1 | 200 | Yes | |
| | | | CS | | 2 | 200 | Yes | |
| | | | CS | | 3 | 200 | Yes | |
| | | | CS | Farakka STPP-II | 1 | 500 | Yes | |
| | | | CS | | 2 | 500 | Yes | |
| | | | CS | Farakka-U#6 | | 500 | Yes | Kept in RGMO mode from April, 2014 |
| | | | CS | Kahalgoan STPP | 1 | 210 | Yes | |
| | | | CS | | 2 | 210 | Yes | |
| | | | CS | | 3 | 210 | Yes | |
| | | | CS | | 4 | 210 | Yes | |
| | | | CS | | 5 | 500 | Yes | |
| | | | CS | | 6 | 500 | Yes | |
| | | | CS | | 7 | 500 | Yes | |
| | | | CS | Talcher STPP Stg-I | 1 | 500 | Yes | |
| | | | CS | | 2 | 500 | Yes | |
| | | | CS | Barh | 5 | 660 | Yes | |
| | | | CS | Barh | 6 | 660 | Yes | |
| | Hydro | NHPC | CS | Teesta HEP | 1 | 170 | Yes | |
| | | | CS | | 2 | 170 | Yes | |
| | | | CS | | 3 | 170 | Yes | |
| | | | **42** | | | | | |
| IPP | Thermal | IPP | PS | Maithon RB TPP | 1 | 525 | Yes | |
| | | | PS | | 2 | 525 | Yes | |
| | | | PS | Sterlite | 1 | 600 | Yes | |
| | | | PS | | 2 | 600 | Yes | |
| | | | PS | | 3 | 600 | Yes | |
| | | | PS | | 4 | 600 | Yes | |
| | | | PS | Adhunik Power | 1 | 270 | Yes | |
| | | | PS | | 2 | 270 | Yes | |
| | | | PS | JLHEP | 1 | 48 | No | (RoR project with 3 hours pondage) |
| | | | PS | | 2 | 48 | No | |
| | | | PS | Chujachen HEP | 1 | 49.5 | No | (RoR project with 3 hours pondage) |
| | | | PS | | 2 | 49.5 | No | |
| | | | PS | | 1 | 200 | No | could be put in RGMO |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Hydro | IPP | PS | Teesta Urja | 2 | 200 | No | could be put in RGMO mode but because of transmission evacuation constraint RGMO/FGMO is disabled |
| | | | PS | | 3 | 200 | No | |
| | | | PS | | 4 | 200 | No | |
| | | | PS | | 5 | 200 | No | |
| | | | PS | | 6 | 200 | No | |
| | | | PS | Dikchu | 1 | 48 | No | (RoR project with 3 hours pondage) |
| | | | PS | | 2 | 48 | No | |

# Quarterly Preparedness Monitoring -AGENDA

( Status as on : )

| S.No. | State | Sector ( G/T/D) | Utilities | Status of CISO Nomination | Critical Infra Identified | Crisis management Plan Prepared | Status of CS mock drill | Status of Training/ Workshops organized/ participated by utility | Action taken on CERT-In/NCIIPC Advisories |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Tamilnadu | T | TANGEDCO | Yes/No | Yes/No | Yes/No | Done on ____ | | |

# Annexure – E.4

## AVAILABILITY STATUS OF EVENT LOGGER, DISTURBANCE RECORDER & GPS

| Sl. NO | Substation | Protection & Control System | | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | Availability | | | Time Synchronization | | | |
| | | EL | DR | GPS | Relay | DR | EL | |
| 1 | Subhasgram | Yes | Yes | Yes | Yes | Yes | Yes | |
| 2 | Maithon | Yes | Yes | Yes | Yes | Yes | Yes | |
| 3 | Durgapur | Yes | Yes | Yes | Yes | Yes | Yes | |
| 4 | Malda | Yes | Yes | Yes | Yes | Yes | Yes | |
| 5 | Dalkhola | Yes | Yes | Yes | Yes | Yes | Yes | |
| 6 | Siliguri | Yes | Yes | Yes | Yes | Yes | Yes | |
| 7 | Binaguri | Yes | Yes | Yes | Yes | Yes | Yes | |
| 8 | Birpara | Yes | Yes | Yes | Yes | Yes | Yes | |
| 9 | Gangtok | Yes | Yes | Yes | Yes | Yes | Yes | |
| 10 | Baripada | Yes | Yes | Yes | Yes | Yes | Yes | |
| 11 | Rengali | Yes | Yes | Yes | Yes | Yes | No | New EL would be implemented in BCU under NTAMC project by March'2015 |
| 12 | Indravati (PGCIL) | Yes | Yes | Yes | Yes | Yes | No | EL is old one(model-PERM 200), provision for time synchronisation is not available. New EL would be implemented in BCU under NTAMC project by March'2015 |
| 13 | Jeypore | Yes | Yes | Yes | Yes | Yes | Yes | EL is old and not working satisfactorily. New EL would be implemented in BCU under NTAMC project by March, 2015 |
| 14 | Talcher | Yes | Yes | Yes | Yes | Yes | Yes | |
| 15 | Rourkela | Yes | Yes | Yes | Yes | Yes | Yes | |
| 16 | Bolangir | Yes | Yes | Yes | Yes | Yes | Yes | |
| 17 | Patna | Yes | Yes | Yes | Yes | Yes | Yes | |
| 18 | Ranchi | Yes | Yes | Yes | Yes | Yes | Yes | |
| 19 | Muzaffarpur | Yes | Yes | Yes | Yes | Yes | Yes | |
| 20 | Jamshedpur | Yes | Yes | Yes | Yes | Yes | Yes | |
| 21 | New Purnea | Yes | Yes | Yes | Yes | Yes | Yes | |
| 22 | Gaya | Yes | Yes | Yes | Yes | Yes | Yes | |
| 23 | Banka | Yes | Yes | Yes | Yes | Yes | Yes | |
| 24 | Biharsariif | Yes | Yes | Yes | Yes | Yes | Yes | |
| 25 | Barh | Yes | Yes | Yes | Yes | Yes | Yes | |
| 26 | Sagardighi | No | Yes | Yes | Yes | Yes | No | EL is under process of restoration with help from OEM, China |
| 27 | Kahalgaon | Yes | Yes | Yes | Yes | Yes | Yes | |
| 28 | Farakka | Yes | Yes | No | No | No | No | Time synchronization available for Farakka-Kahalgaon line-III & IV. The same will be implemented in rest of the lines by December, 2014. |
| 29 | Meramundali | Defunct | Yes | Yes | Yes | Yes | Yes | |
| 30 | Tisco | Yes | Yes | Yes | Yes | Yes | Yes | |
| 31 | Bidhannagar | No | Yes | Yes | No | No | No | Using DR & EL available in Numerical |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | relays. GPS will be put in service by January, 2015. |
| 32 | Indravati (OHPC) | Yes | Faulty | No | No | No | No | Time synchronization will be done by Feb, 2015. ICT-I feeders using DR & EL available in Numerical relays. 400 kV ICT-II feeder is being maintained by PGCIL, Mukhiguda.Status may confirm from PGCIL |
| 33 | Kharagpur | No | Yes | Yes | No | No | No | Using DR & EL available in Numerical relays. |
| 34 | DSTPS | Yes | Yes | Yes | Yes | Yes | Yes | |
| 35 | Sterlite | Yes | Yes | Yes | Yes | Yes | Yes | |
| 36 | Mejia 'B' | Yes | Yes | Yes | Yes | Yes | Yes | |
| 37 | Mendhasal | Defunct | Yes | Yes | Yes | Yes | No | EL will be restored by March, 2015. |
| 38 | Arambagh | No | Yes | Yes | No | No | No | Using DR & EL available in Numerical relays |
| 39 | Jeerat | No | Yes | No | No | No | No | Using DR & EL available in Numerical relays. Procurement of new GPS is in progress. |
| 40 | Bakreswar | Yes | Yes | Yes | Yes | Yes | Yes | |
| 41 | GMR | Yes | Yes | Yes | Yes | Yes | Yes | |
| 42 | Maithon RB | Yes | Yes | Yes | Yes | Yes | Yes | |
| 43 | Raghunathpur | Yes | Yes | Yes | Yes | Yes | Yes | |
| 44 | Kolaghat | Yes | Yes | Yes | Yes | Yes | Yes | |
| 45 | Teesta V | Yes | Yes | Yes | Yes | Yes | Yes | |
| 46 | Koderma | Yes | Yes | Yes | Yes | Yes | Yes | |
| 47 | Sasaram | Yes | Yes | Yes | Yes | Yes | Yes | |
| 48 | Rangpo | Yes | Yes | Yes | Yes | Yes | Yes | |
| 49 | Adhunik | Yes | Yes | Yes | Yes | Yes | Yes | |
| 50 | JITPL | ***Yes*** | ***Yes*** | ***Yes*** | ***Yes*** | ***Yes*** | ***Yes*** | |
| 51 | 765kV Angul | Yes | Yes | Yes | Yes | Yes | Yes | |
| 52 | Chuzachen | Yes | Yes | Yes | No | Yes | Yes | |
| 53 | New Ranchi 765kV | Yes | Yes | Yes | Yes | Yes | Yes | |
| 54 | Lakhisarai | Yes | Yes | Yes | Yes | Yes | Yes | |
| 55 | Chaibasa | | | | | | | |
| 56 | 765kV Jharsuguda | Yes | Yes | Yes | Yes | Yes | Yes | All are in working condition. However a dedicated DR for 765KV Lines; make TESLA is not working. M/s Siemens has assured to commission the same by 31.01.15 |
| 57 | Beharampur | Yes | Yes | Yes | Yes | Yes | Yes | |
| 58 | Keonjhar | Yes | Yes | Yes | Yes | Yes | Yes | |

# Eastern Regional Power Committee

**The status of ERS towers in Eastern Region as updated in OCC meetings is given below:**

1) ERS towers available in Powergrid S/s is as given below:

| Sl. No. | Name of S/S | No. of ERS towers available |
|---|---|---|
| 1 | Durgapur, ER-II | 1 Set (8 towers) |
| 2 | Rourkela, ER-II | 3 towers incomplete shape |
| 3 | Jamshedpur, ER-I | 15 towers (10 nos Tension tower and 5 nos suspension tower) |

2) The present status of ERS towers in OPTCL system is as follows:

| Sl. No. | Name of S/S | No. of ERS towers available |
|---|---|---|
| 1 | Mancheswar | 2 nos, 400 kV ERS towers |
| 2 | Mancheswar, Chatrapur & Budhipadar | 42 nos, 220 kV ERS towers |

- 12 nos. of new 400 kV ERS towers have been recieved.
- Another, 16 nos of 400 kV towers accompanied with 6 sets of T&P are required which is under process

3) The present status of ERS towers in WBSETCL system is as follows:

| Sl. No. | Name of S/S | No. of ERS towers available |
|---|---|---|
| 1 | Gokarna | 2 sets |
| 2 | Arambag | 2 sets |

4) The present status of ERS towers in BSPTCL system is as follows:

| Sl. No. | Type | Quantity | Remarks |
|---|---|---|---|
| 1 | Tension ERS Tower | 12 | New |
| 2 | Suspension ERS Tower | 20 | New |
| 3 | Old ERS Tower | 10 | 1 no. is defective |
| **Total** | | **42** | |

- As informed in ERS meeting held on 10-11-2014 taken by Member (Power System), CEA; 2 sets (12 tension & 20 suspension) of ERS towers had been procured and currently available in BSPTCL system (as mentioned in above table with remarks “New”).
- Same ERS tower is used in both 220 kV and 132 kV circuits.

5) In 25th ERPC meeting held on 21.09.2014, E R P C concurred to the proposal of procurement of four sets of ERS and it was also informed that, the proposed four sets of ERS will be kept at Sikkim, Siliguri, Ranchi and Gaya and will be used by all constituents of ER during emergencies.

   Powergrid informed that four sets of ERS for Eastern Region will be procured.

5) DVC informed that they are in process of procuring two (2) sets of 400 kV ERS towers.

## Checklist for Submission of new transmission elements for updation in Protection Database

**NAME OF ORGANISATION:**
**FOR THE MONTH OF:**

**SUBSTATION DETAIL:**

| Sl No | DETAILS OF ELEMENTS | DATA TYPE | Status of Submission (Y/N) | Remarks |
|---|---|---|---|---|
| 1 | TRANSMISSION LINE | LINE LENGTH, CONDUCTOR TYPE, VOLTAGE GRADE | | |
| 2 | POWER TRANSFORMER | NAMEPLATE DETAILS | | |
| 3 | GENERATOR | TECHNICAL PARAMETERS | | |
| 4 | CURRENT TRANSFORMER | NAMEPLATE DETAILS | | |
| 5 | VOLTAGE TRANSFORMER | NAMEPLATE DETAILS | | |
| 6 | RELAY DATA | MAKE, MODEL and FEEDER NAME | | |
| 7 | RELAY SETTINGS | NUMERICAL RELAYS: CSV or XML file extracted from Relay<br>ELECTROMECHANICAL RELAYS: SNAPSHOT of RELAY | | |
| 8 | REACTOR | NAMEPLATE DETAILS | | |
| 9 | CAPACITOR | NAMEPLATE DETAILS | | |
| 9 | UPDATED SLD | | | |

**SIGNATURE:**
**NAME OF REPRESENTATIVE:**
**DESIGNATION:**
**CONTACT:**
**E-MAIL ID:**