

Agenda for 138th OCC Meeting

Date: 30.10.2017 Eastern Regional Power Committee 14, Golf Club Road, Tollygunge Kolkata: 700 033

Eastern Regional Power Committee

Agenda for 138th OCC Meeting to be held on 30th October, 2017 at ERPC, Kolkata

<u>PART A</u>

Item no. 1: Confirmation of minutes of 137th OCC meeting of ERPC held on 21.09.2017

The minutes of 137th OCC meeting were uploaded in ERPC website and circulated vide letter dated 06.10.2017 to all the constituents.

Members may confirm the minutes.

PART B: ITEMS FOR DISCUSSION

Item No. B.1: Commissioning of new transmission elements in Eastern Region

In 118th OCC, it was informed that the network diagram of eastern region needs to be updated on regular basis on account of commissioning of new elements in the CTU as well as STU networks.

OCC advised all the constituents to update the list of newly commissioned power system elements to OCC on monthly basis so that ERLDC/ERPC can update the network diagram on regular basis.

New Generators/Transmission Elements commissioned/charged during **September**, **2017** as follows:

- 1. 400kV Kharagpur-New Chanditala-I & II Charged for the first time at 15:21 hrs. of 06.09.17 and at 15:33 hrs. of 07.09.17 respectively.
- 2. 315MVA, 400/220/33 kV ICT # II at New Chanditala charged for the first time at 17:05 hrs. Of 15.09.17.
- 3. 132kV Baripada Jaleswar charged for the First Time at 18:48 hrs. Of 23/09/17.
- 4. 132kV Baripada- Bhograi first time charged at 18:54 hrs. on 25/09/17.

Constituents may update.

Item No. B.2: 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.

SN	Name of Constituent	Name of Project	Date of approval	Target Date of	PSDF grant	Amount drawn till	Status as updated in 135 th OCC
			from PSDF	Completion	approved	date (in	
					(in Rs.)	Rs.)	
1	WBSETCL	Renovation & up-gradation of	31-12-14		120.67 Cr	11.04 Cr.	95 % Supply
		protection system of 220 kV &					Completed
		400 kV Substations in W. Bengal					
2		Transmission System	22-05-17				
		improvement of WBSETCL					
3		Renovation & modernisation of	22-05-17				
		transmission system for relieving					
		congestion in Intra-State					
		Transmission System.					

		1					
4		Installation of switchable reactor					
5	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	10.05.17	162.5 Cr.	16.25 Cr + 8.91 Cr	Total contract awarded for Rs. 51.35 Cr
6	ERPC	Creation & Maintenance of web based protection database and desktop based protection calculation tool for Eastern Regional Grid	17.03.16		20 Cr.	4.94 Cr. + 9.88 Cr.	 Hardware supplied and installed. SAT completed for pilot state Protection database management software (PDMS) put in live w.e.f. 30.03.17. Training on PDMS organised at ERPC, Odisha, Bihar, WBSETCL, Jharkhand and DVC.
7		Renovation and up-gradation of 220/132/33 KV GSS Biharsharif, Bodhgaya, Fatuha, Khagaul, Dehri -on-sone & 132/33 kV GSS Kataiya	11/5/2015	Feb'2017	64.22 crore	23.68 crore	Project is on going. Contract awarded for Rs.71.37 Cr till date.
8	BSPTCL	Installation of capacitor bank at different 35 nos. of GSS under BSPTCL	5/9/2016		18.88 crore		Approved (triparty agreement among NLDC, Govt. of Bihar & BSPTCL is in under process)
9		Renovation & up-gradation of protection and control system of 12 nos. 132/33 KV GSS under BSPTCL.					Recommendation of appraisal committee is awaited. Estimated cost 54.69 crore.
10	DVC	Renovation and upgradation of control & protection system and replacement of Substation Equipment of 220/132/33 kV Ramgarh Substation			25.96		Tendering in process.
11		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			140		Appraisal committee has recommended. It will be placed in next monitoring Committee meeting.
12	WBPDCL	Implementation of Islanding scheme at Bandel Thermal Power Station			1.39 Cr		Award placed to ABB. Material delivery by Dec, 17.
13		Upgradation of Protection and SAS			26.09		Approved by Ministry of Power
14	OHPC	Renovation and up-gradation of protection and control system of 4 nos OHPC substations.			22.35 Cr		Tendering unde progress.
15	Powergrid	Installation of STATCOM in ER			160.28 Cr	63.028 Cr	work is in progress, eexpected to complete by June 2018
16a 16b	ERPC	Training for Power System Engineers Training on Power market trading at NORD POOL Academy for Power System Engineers of Eastern Regional Constituents					The proposal was approved by Appraisal Committee. The approval from MoP, GOI is awaited.

Respective constituents may update.

Item No. B.3: Status of UFRs healthiness installed in Eastern Region

UFR Healthiness Certification for the month of September, 2017 has been received from OPTCL, CESC, JUSNL, WBSETCL, DVC, and BSPTCL.

Members may note.

Item No. B.4: Healthiness of SPS existing in Eastern Region

GMR, Vedanta, JITPL, CESC, Chuzachen, Powergrid(ER-II & Odisha) & NTPC (TSTPS) have submitted the healthiness certificate for the month of September, 2017.

In 136th OCC, members felt that healthiness certificate for SPS of 132 kV Muzaffarpur-Dhalkebar D/C line may also be submitted on monthly basis and advised Powergrid to submit the healthiness certificate in every OCC meeting.

Teesta-III, Jorethang & Dikchu may submit the healthiness certificate for Rangpo SPS as decided in special meeting of 21.06.2017.

Powergrid may submit the healthiness certificate for September 2017.

Item No. B.5: Electricity Generation Targets for the year 2018-19 – CEA

The annual exercise of assessment and finalization of the generation targets and the planned maintenance schedules of the generating units for the year 2018-19 is being initiated by CEA. Although the generation performance of the various stations and their planned & unscheduled outages are regularly monitored in CEA but it is felt that a more realistic projection of month-wise generation in the coming year could be made by the respective Station Authorities.

While monitoring the generation performance during the current financial year, it has been observed that power utilities are facing the problem of loss of generation due to no / low schedules, high fuel costs and other technical and commercial and transmission etc. issues. Accordingly, it is requested that the following inputs may kindly be submitted to this office as per the enclosed **formats (given at Annexure-B.6)**:

- The unit wise yearly generation (with unit -wise monthly breakup) proposed during 2018-19 as per the format given along with the fuel availability, the anticipated loss of generation on account of various reasons such as grid constraint, low schedule/ reserve shut down due to high cost, poor quality coal/lignite etc, if any, may also be furnished (Annex-I (1 to 5))
- ii) Utilities who have their Power Purchase Agreement (PPA) with various Discoms, Trader, States etc, details may be furnished in MW for Long, Medium and Short term to enable us to assess the expected generation for next year (**Annex –I (point no 6)**).
- iii) The details of coal linkage from coal agencies and availability of secondary fuel oil/gas/ liq fuel may also please be furnished (**Annex- I (point no 7 (a) and (b)**).
- iv) Production cost, Unit wise cost of generation and rate of sale of power may also be furnished. (Annex I (point 8))
- v) Details of unit-wise schedule of Planned Maintenance as approved by the respective RPCs (Regional Power Committees), unit-wise R&M planned to be carried out during 2018-19, may also be considered for deciding the generation targets (**Annex-II**).

The information may please be furnished electronically at the email address targetopmcea@gmail.com, prathamkumar@gmail.com with a copy to ERPC (e-mail: mserpc-power@nic.in).

For the convenience of the generating utilities, the input formats are also being made available at CEA website **http://www.cea.nic.in**. For any other query/ clarification any of the following officer may be approached.

1. Mr Pratham Kumar, Assistant Director, 011-26732666, Mob- 08252697842

CEA vide letter dated 25th October 2017 informed that desired information from many generating stations have not been received till now. The list of such stations is enclosed at **Annexure-B6A**. MoP vide letter no. 5/1/2017-OM informed that Annual generation targets for 2018-19 is to be finalized by 15th December, 2017 and to avert any coal supply crisis during 2018-19, plant wise detailed plan needs to be prepared.

In view of this, it is requested to furnish unit wise outage schedule of generating stations of your region for 2018-19 and month wise, state wise energy requirement for 2018-19 to this division by 15th November, 2017.

Members may furnish the above data by 15th November 2017.

Item No. B.6: Furnishing of data for Merit Order Web Portal – CEA

During the Power Minister's Conference held on 3rd and 4th May 2017, at New Delhi, it was decided to develop a web portal/mobile app in about a month's time with a view to having transparency in Merit order scheduling & dispatch and ensuring most economic system operation.

In the conference Hon'ble Union Minister for Power requested all the States/UTs to submit the requisite data to CEA immediately.

On this regard, it is to inform that POSOCO has developed the facility for online uploading of monthly & daily data related to Merit Order Dispatch Portal, by the SLDCs. NLDC (POSOCO) has already communicated via email to all the SLDCs, their respective User IDs & Passwords and the procedure for online filling & uploading of data. All the SLDCs to start submitting the above data to NLDC online immediately.

In case of any doubt / clarification, Shri Harish Kr Rathour (NLDC) may be contacted at his Mobile No.9873918443. The procedure for online uploading of data for the portal is available in ERPC website.

Subsequently, CEA vide mail dated 4th July 2017 informed that for the ease of user, import from excel (in a predefined format) facility have also been implemented. Users are requested to follow following steps to upload data through excel:

- 1) Login to MERIT web portal (<u>www.meritindia.in/login</u>).
- 2) Select any date and click on "GO" button. After this, list of all station will be visible for that date with other information's, if already filled.
- 3) Click on "Export Data in Excel" to export the file in excel. *This would be a template file which is to be used for uploading the data*.
 - a. Once you do not have any changes in the list of plants, this file can be used for data uploading and on daily basis user need not to download excel format again.
 - b. In case updation in list of station is required (State owned stations), same can be modified through monthly page. At present this feature is disabled and very shortly it will be enabled.
 - c. Initial two row has station ID and name of station, which should not be disturbed and data will be uploaded based on these only. Any changes in it may lead to wrong data uploading.
 - d. User can select any file name to save and upload the data.

- e. Once you filled data click on "If you have data ready in Excel, CICK HERE to upload", select date for which you want to upload data, browse for the desired file and click on UPLOAD.
- f. If entire file has not been uploaded, you will get the file which will show list of stations not uploaded.
- 4) If new station to be added for state, user can add through monthly data upload pages. Once, it has added new EXCEL template to be downloaded again in order to fill data for new station.
- 5) User who wants to fill data directly through web-portal, would now have option to sort based on the various fields, which will help in filling data. Users who wants to fill on-line need not to click on "If you have data ready in Excel, CICK HERE to upload", they only select the date and simply click on "GO" button.

After submission of data, user can check directly on <u>www.meritindia.in</u>. It is once again requested to all to fill the monthly data (variable and fixed cost) because all visualization in first page is based on variable costs of the plants. In case of any doubt / clarification, Shri Harish Kr Rathour (NLDC) may be contacted at his Mobile No.9873918443.

Members may comply.

Item No. B.7: Flexible jumpering arrangement for bypassing substations, prone to inundation during monsoon, for ensuring continuity of important corridors and power evacuation from power stations--ERLDC

During the current monsoon season, quite a few substations in Eastern Region viz. Alipurduar(PG), Kishanganj(PG), Dalkhola(PG) and Motihari(DMTCL) had to be completely shutdown, due to massive waterlogging. Outage of Kishanganj S/Stn posed constraint in power evacuation of Sikkim generators and surplus power of NER while outage of Alipurduar S/stn weakened the inter-regional connectivity between ER and NER. Such substations typically have 2 nos incoming and 2 nos outgoing lines and lie either along a major intra/inter-regional corridor or along the evacuation route of a major power station.

Under the above mentioned situation, it is desirable that continuity of the transmission corridor be maintained by directly connecting the incoming and outgoing lines, bypassing the inundated substation. However, such network re-configuration is possible only if facility for jumpering conductors at appropriate locations is already in place. This practice is already being followed at a number of locations in Western Region.

Members may please identify the substations where the above proposed arrangement can be utilised for maintaining grid security under flood situations.

In 136th OCC, ERLDC explained that the flexible jumpering arrangement may be done for 400 kV Binaguri-Kisheenganj-N.Purnea D/C and 400kV Binaguri-Alipurduar-Bongaigaon D/C lines for bypassing the LILO points i.e. 400kV Kishanganj(PG) and Alipurduar(PG) S/s so that the same lines may be directly connected during the emergencies like flood situations at LILO points. The possibility may be explored as these elements are very important in terms of hydro power evacuation and long outages of these elements may endanger the grid security. The other such elements (LILOed at Dalkhola, Motihari (DMTCL) etc) may also be explored which are under threat during flood and other emergencies.

OCC felt that such kind of bypassing arrangement will help the grid to improve the reliability during emergencies when substation is not available in service.

OCC advised Powergrid to explore the possibilities of implementing such bypassing arrangement for above elements and for other important elements, if any.

Powergrid agreed to do the survey and explore the possibilities.

In 137th OCC, Powergrid informed that first they will implement the flexible jumper arrangement at Alipurduar(PG) S/s then they will implement at Kishanganj(PG) and Dalkhola(PG).

Powergrid may update.

Item No. B.8: Status of Islanding Schemes of Eastern Region

B.8.1. Status of commissioned Islanding Schemes 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.

In 134th OCC, JUSNL was advised to submit the healthiness certificate of the UFR and PLCC system related to Farakka islanding scheme at their end.

The healthiness certificate for Islanding Scheme for September, 2017 has been received from CTPS, DVC, NTPC, JUSNL, BkTPS, Tata Power and CESC.

Members may note.

B.8.2. Bandel Islanding Scheme, WBPDCL

As per the latest status available in PSDF web site the scheme was approved for an amount of Rs.1.39 crore by the Monitoring Committee on 10.04.2017.

In 134th OCC, WBPDCL informed that MoP has issued the sanction letter for grant of PSDF.

In 135th OCC, WBPDCL informed that order has been placed to ABB for implementation of Bandel islanding scheme.

In 137th OCC, WBPDCL informed that the order has to be revised as per new GST guidelines.

WBPDCL may update the latest status.

Item No. B.9: Controlling overdrawal of states by disconnection of radial feeders - ERLDC

In accordance with IEGC sections 5.4.2 (c) and 5.4.2 (f), feeders for disconnecting demand of every state in the order of their priority for switching off, were identified in the past. List of these feeders is given in **Annexure-B9**. However, with growth of network interconnection and load as well as change of load distribution (if any) during the intervening period, it is felt that the list needs reviewing.

All constituents are requested to furnish views regarding their respective identified feeders and indicate the expected load (average and peak) that would be disconnected by switching off the feeders, so that the list can be finalized at the earliest.

Members may discuss.

Item No. B.10: Implementation of Automatic Demand Management Scheme (ADMS)-ERLDC

West Bengal SLDC vide letter dated 13-10-17 has informed that the scheme of automatic demand management within the control area, has been completed. The scheme is enclosed at **Annexure-B10**.

West Bengal SLDC may please elaborate. Jharkhand, Odisha and Bihar may share the status of implementation.

Item No. B.11: Concerned members may update the latest status.

B.11.1. Special Protection Scheme(SPS) of Sterlite (VAL) – ERLDC

Sterlite has installed capacity of 4X600MW (2400MW) with smelter load of More than 1000MW grid-connected plant. In case of loss of smelter load or evacuation path units might trip due to mismatch of load and generation. Sterlite had already implemented SPS to minimize the impact of such major load generation mismatch on the grid. In an earlier OCC meeting VAL agreed to share their presently implemented SPS details. But thereafter, VAL did not submit anything to ERLDC/ERPC.

In 135th OCC, OPTCL was advised to submit the present SPS settings to ERPC and ERLDC within a week.

OPTCL vide mail dated 20th September 2017 informed that as per the ref no ERLDC/MO/SS/2013/559, 13th May'2013 from M/s POSOCO, the internal SPS i.e., Composite Islanding & Load Management (CILMS) of Vedanta Limited Jharsuguda had been framed and complied as per specified planning criteria to restrict the Transmission line loading within steady state loading limit of 850MW. Details are enclosed at **Annexure-B11.1**.

Members may discuss.

B.11.2. Repeated tripping of 220kV Chuka-Birpara D/c line

In 60th PCC, meeting Powergrid explained that the line is in lightning prone area. The line is getting tripped due to Insulator failures. Powergrid added that line insulators of part of the line which is belongs to Powergrid have been replaced with polymer insulators. The insulator failures during lightning have been reduced. However, the line is getting tripped due to failure of porcelain insulators in 39.8 km stretch which is belongs to Bhutan.

DGPC may place their action plan.

B.11.3. Enabling of 3-Phase Auto Reclose at 132 kV North Bengal and Sikkim areas to minimize element outages due to transient faults -- Powergrid

During rainy season In North Bengal and Sikkim area, high element outages observed of 132 KV level. Mainly from past experience it is observed that 90% of the fault is of Single Phase to Ground fault and transient in nature. However as per general practice 132 KV level CB's are of mechanically ganged and any single phase fault also causing tripping of all three phases.

To make system more dynamic it is prudent to go for, three phase auto reclosure for any single phase Fault in the 132 KV lines. Only by introduction of A/R facility line availability may be increased in the tune of 90% i.r.o present situations. POWERGRID proposed to implement the same however other constituents as well as ERLDC may give respective views. Upon concurrence detailed road map for Implementation will be given.

In 132nd OCC, Powergrid informed that in North Bengal and Sikkim area most of the time the 132 kV lines were tripping on transient fault and the system can be saved by implementing 3-phase auto-reclosure scheme.

OCC discussed the matter in detail and agreed in principle for implementation of 3-pase autoreclosure scheme for 132 kV lines. Further, it was decided that the implementation would start with North Bengal and Sikkim area.

Further, OCC advised Powergrid to submit a report on the status of PLCC/telemetry, A/R facility etc. for both ends of each 132 kV lines of North Bengal and Sikkim area.

In 134th OCC, Powergrid informed that the 3-phase auto-reclosure scheme for 132kV Rangpo-Gangtok line will be implemented by July 2017.

In 136th OCC, Powergrid was advised to submit a report on the status of PLCC/telemetry, A/R facility etc. for both ends of each 132 kV lines of North Bengal and Sikkim area.

In 137th OCC, Powergrid informed that the 3-phase auto-reclosure scheme for 132kV Rangpo-Gangtok line will be implemented by December 2017.

Powergrid added that other 132kV lines except 132kV Siliguri-Melli line are radially connected where auto reclose scheme is not required. 3-phase auto-reclosure scheme for 132kV Siliguri-Melli line will be implemented after implementation of auto-reclosure scheme at 132kV Rangpo-Gangtok line.

Powergrid may update.

B.11.4. 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.

SI	Location /Sub- Station	-ocation /Sub- Station Dynamic Shunt		y Switched ation SI. Ar)	Latest status
NO	in ER	(MVAr)	Reactor (MSR)	Capacito r (MSC)	
1	Rourkela	±300	2x125		Expected to complete by Mar 2018
2	Kishanganj	±200	2x125		Expected to complete by June 2018
3	Ranchi(New)	±300	2x125		Expected to complete by April 2018
4	Jeypore	±200	2x125	2x125	Expected to complete by June 2018

In 137th OCC, Powergrid updated the status as follows:

Powergrid may update.

B.11.5. Bus Splitting of Powergrid Sub-stations

As per decision of Standing Committee of ER CTU was entrusted to do Bus splitting at Maithon, Durgapur & Biharsariff S/Ss or ER. The latest status on the same are:

- 400 kV Maithon ---Completed
- 400 kV Durgapur--Completed
- 400 kV Biharshariff— Completed in May, 2017.

In 134th OCC, it was informed that the bus splitting scheme at 400 kV Maithon & Biharshariff will be operationalized after the getting the consent from CTU.

CTU vide letter dated 11th September 2017 informed that they have carried out the study and the results suggested that bus splitting scheme at400 kV Maithon and Biharshariff may be operationalized at the earliest to limit the fault current. However, the bus sectionaliser may be kept closed or opened by POSOCO depending upon the system conditions and requirement.

CTU added that fault level at 400 kV Durgapur has almost reached the design limit, with the operationzation of split bus at 400kV Kahalgaon (expected by Dec 2018) and the Farakka bypass scheme (approved in 19th SCM), the fault current level at Durgapur reduces to 37 kA. Therefore, the bus splitting at Durgapur may be operationalized at a later date.

In 36th TCC/ERPC, ERLDC informed that they will carry out internal study and operationalize the bus splitting schemes at 400kV Maithon and Biharshariff one by one with close monitoring of the system behaviour.

In 137th OCC, ERLDC informed that they will carry out internal study and operationalize the bus splitting schemes at 400kV Maithon and Biharshariff.

Load flow studies were conducted by ERLDC considering four different scenarios viz. low-hydro peak & off-peak and high-hydro peak & off-peak, to examine the effect of operating Biharshariff and Maithon 400kV S/Stns in split bus mode, under normal as well as contingent conditions. The findings are summarized below:

Maithon :

- After bus splitting Maithon 400kV bus, flow in 400 kV Maithon-Parulia D/C increases significantly and its N-1 contingency may become critical in future. However, after splitting of Farakka 400kV bus, this flow is expected to reduce.
- There is a significant reduction in flow of 400 kV RTPS-Maithon which can assists in maintain good generation at Raghunathpur TPS without loading 400 kV RTPS-Maithon critically.
- Reduction of power flow in 400kV MPL-Maithon D/C line is also observed after splitting Maithon bus, which in turn helps in reducing the post-contingency line flow, on tripping of one of the circuits.
- Increase in loading of 400 kV New Ranchi-Chandwa D/C is observed. However, as this is strung with Quad Moose conductor, its N-1 contingency loading is well within the safe limit.

Biharshariff :

- With bus split arrangement at Biharsariff, the loading of the 400/220kV ICTs become uneven resulting in high loading of one 315 MVA ICT (Connected to Biharsariff-B section) and very less loading of other two ICTs (Connected to Biharsariff-A section). This condition does not change significantly whether Maithon 400kV bus operates in split mode or not.
- Even without any contingency, loading of the ICT connected to Biharsariff-B section may cross its continuous rating.

- Flow of 400 kV Khalgaon-Banka-Biharsariff-B D/C reduces somewhat while that of 400 kV Kahalgaon-Lakhisarai-Biharsariff-A D/C increases.
- There is slight increase in flow of 400 kV Farraka-Malda D/C
- As per final scheme, the 4th (500 MVA) ICT is supposed to get connected to 400kV Bus-B, in parallel with the single 315MVA ICT. Therefore till commissioning of the 500MVA ICT, operation of Biharsariff 400kV substation in split mode is not recommended.

Members may discuss.

B.11.6. Bus Splitting of Kahalgaon STPS Stage I&II, NTPC

In 24th ERPC meeting held on 27.04.2013, ERPC advised NTPC to go ahead with the bussplitting scheme as it is a technical requirement for safe, secure operation of the grid.

In 32nd TCC, NTPC informed that they are going ahead with the implementation of Bus Splitting of Kahalgaon STPS Stage I&II and the implementation is expected to be completed by December, 2018.

In 126th OCC, NTPC has given the present status as follows:

- > 400/132kV Switchyard package bid opened on 14.03.16. Awarded on 04.05.2016.
- > Site levelling Site levelling work has been completed.
- > Transformer package and Shunt reactor- have been awarded.

In 35th TCC, NTPC informed that the work is in progress as per the schedule and the bus splitting will be completed by December, 2018.

In 137th OCC, NTPC informed that the bus splitting will be implemented by December, 2018.

NTPC may update.

B.11.7. 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 136th OCC, OPTCL updated the completion schedule of inter-connecting system as follows:

SI. 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	Only 7 towers left (Severe ROW	
	line at Bolangir S/S	problem). By Mar, 2018.	
2.	400/220 kV Keonjhar S/S		
a.	Keonjhar (PG)-Keonjhar (OPTCL) 220 kV D/C line	By Dec, 2017.	
b.	Keonjhar (PG)-Turumunga(OPTCL) 220kV D/C line	By 2019.	
3.	400/220kV Pandiabil Grid S/s:		
a.	Pratapsasan(OPTCL)-Pandiabil(PG) 220 kV D/C line	Dec, 2017.	

OPTCL may update.

B.11.8. 220 kV inter-connecting lines of JUSNL with 2x315 MVA, 400/220 kV substations at Chaibasa, Daltonganj & Dhanbad

In 136th OCC, JUSNL updated the latest status as follows:

SI. No.	Name of the transmission line	Completion schedule
1.	Chaibasa 400/220kV S/s	
a.	Chaibasa (POWERGRID) – Ramchandrapur (JUSNL) 220kV D/c	commissioned on 25 th

		August, 2017
2.	Daltonganj 400/220/132kV S/s:	
a.	Daltonganj (POWERGRID) – Latehar 220kV D/c	By Dec, 2017.
b.	Daltonganj (POWERGRID) – Garhwa 220kV D/c	May, 2018
С	Daltonganj (POWERGRID) – Daltonganj (JUSNL) 132kV D/c	Dec, 2018
d	Daltonganj (POWERGRID) – Chatarpur/Lesliganj 132kV D/c	Matching with S/s
3.	Dhanbad 400/220 kV S/s: Awarded under TBCB	
a.	Dhanbad – Dhanbad (Govindpur) (JUSNL) 220kV D/c	Matching with S/s

JUSNL may update.

B.11.9. 220 kV inter-connecting lines of WBSETCL with 400/220 kV, 2x315 MVA Alipurduar & 2x500 MVA Rajarhat sub-stations

In 136th OCC, WBSETCL updated the latest status as follows:

SI. No.	Name of the transmission line	Completion schedule				
1.	1. 2x315MVA, 400/220kV Alipurduar sub-station					
a.	Alipurduar (POWERGRID) – Alipurduar (WBSETCL) 220kV D/c (<i>Twin moose</i>)	Nov, 2017				
2.	2x500MVA, 400/220kV Rajarhat					
a.	Rajarhat-N. Town-3 (WBSETCL) 220 kV D/C line	Matching				
b.	Rajarhat-N. Town-2 (WBSETCL) 220 kV D/C line	June, 2018				
С.	Rajarhat- Barasat (WBSETCL) 220 kV D/C line	June, 2018				

WBSETCL may update.

Item No. B.12: BSPTCL Agenda

1. Restoration of power supply at Patna

According to present load scenario, load of Patna is increasing very fast. Supply of power to Patna is mainly dependent on the grid sub-station Patna (Sampatchak) of PGCIL. In case of tripping of transformers (ICTs) or lines connected with grid substation of PGCIL sub-station, the power supply to Patna gets highly affected, causing blackout at Patna and connected Substations.

Due to infructous or mal operation of the relay it has been observed that, though the system has to be taken in service within 10-15 minutes, the same is delayed due to process of taking code from ERLDC for loading/off loading. In order to fastest restoration of power supply to Patna the approval is solicited to allow Power Grid and BSPTCL to restore power in close association with each other and to seek post facto approval from ERLDC.

This approval may be granted for the conditions when restoration would be possible within 10-15 minutes after resetting of relays, load isolation/load management etc.

Members may discuss.

2. Standard operating procedure during contingencies

As a contingency plan for operations/load management to be done during the tripping scenarios, mainly at Patna (PG) {source} or BSPTCL, a standard of procedure has been prepared in association with PGCIL, Patna for restoration of supply or to avoid outages due to cascading effects. Details are placed in **Annexure-B12**. BSPTCL intends that the same is to be adopted in case of the contingencies defined under various conditions/outages. The approval of the proposed SOP may kindly be granted so that actions/load managements/sheddings as per availability of power could be done within shortest possible time with an objective to reduce

restoration / outage time to bare minimum. Once approved, all operations shall be done by PGCIL/SLDC/Grid Sub Stations without waiting for further restrictions/codes either from SLDC/ERLDC. However all information shall be subsequently forwarded to ERLDC regarding the same event.

The matter has since been examined by ERLDC.

It is observed that at present the peak requirement of Bihar at Patna, Gaya, Sasaram, Muzaffarpur etc. ISTS interconnection points is such that security against (n-1) contingency of the respective 400/220kV ICTs is not ensured at all times. Peak loading of concerned 400/220kV ICTs observed during the current month are summarized below:

400/220kV ICT	Peak load (MW)
Patna (1X315 + 1X500) MVA	550
Gaya (1X315 + 1X500) MVA	700
Sasaram (1X315 + 1X500) MVA	≈ 550
Muzaffarpur (2X315 + 1X500) MVA	600
Biharshariff 3X315 MVA	≈ 700

Further, as some of the 220kV loops of BSPTCL such as Patna- Fatuah – Biharshariff(PG), Gaya(PG) –Dehri-Sasaram, Biharshariff(PG) - Begusarai –Ujiyarpur-MTPS-Muzaffarpur(PG) etc. usually remain closed thereby interconnecting the 220kV sides of these ICTs, opening of any such line to relieve ICT loading at one substation is likely to aggravate the ICT loading at another substation.

In view of the aforesaid difficulty, BSPTCL may identify suitable 132kV or 220kV radial feeders that may be automatically disconnected through relay actuated inter-tripping scheme, whenever one of the 400/220kV ICTs supplying the corresponding load trips.

For ease of identification of radial loads, BSPTCL may opt to supply the entire load of each of these 400/220kV S/Stns in radial mode, by keeping the 220kV loops open under normal conditions.

Members may discuss.

3. Erection and commissioning of 02 nos. of 220 kV line bays at KBUNL

Despite of several requests and reminders, KBUNL is not taking up this work seriously and it appears that the initiatives of KBUNL for construction of bay, which is essential for making available second circuit with Samastipur(New) and Motipur are far from satisfactory and the work is yet to start. Presently 220 KV KBUNL- Samastipur (new) (D/C) & 220 KV KBUNL - Motipur (D/C) tr. lines have only one 220 KV bays each at KBUNL end since long & due to this one circuit each from KBUNL to Samastipur (new) & KBUNL to Motipur remain unutilised. Due to unavailability of these bays at KBUNL end, BSPTCL is facing difficulties for synchronising 220 KV line at KBUNL and also unable to shift loading of Biharsharif(PG)-Begusarai D/C T/L on MTPS for off loading of Biharsharif(PG) ICTs and in case of any contingency occurs at DMTCL(D)-Motipur D/C T/L, MTPS-Motipur S/C T/L also tripped at overloading. It is evident that the transmission infrastructure developed by BSPTCL in North Bihar could not be fully utilized causing limitations in power flow as well as power interruption.

The unavailability of bays at KBUNL is affecting the evacuation of power from KBUNL (Generating Station 2*110 MW+2*195MW). So, keeping these lines in loop at KBUNL will enhance the quality, reliability and stability of system.

KBUNL may begin the construction and complete commissioning of 2nd bay in minimum possible time in order to avoid crisis arisen due to unforeseen outage of Biharsharif(PG) and DMTCL(Darbhanga).

As such target dates for the start and completion of the above works may kindly be got ensured from KBUNL.

KBUNL may update.

4. Utilisation of 220 KV Ara(PG)-Khagaul ckt-I for feeding 132 KV power to Ara GSS from Ara (PG)

BSPTCL informed that Ara GSS and Jagdishpur GSS are availing power from Ara (PG) through single source. Two nos. of new 132 kV transmission lines are under completion stage meant for connecting Ara GSS and Jagdishpur GSS under transmission line strengthening work. The existing 132 kV Ara (PG)-Ara T/L and newly constructed 132 kV Ara-Jagdishpur D/C T/L are proposed to emanate from Ara GSS through multi circuit towers, as Ara GSS is surrounded by residential buildings and has space constraints for transmission line emanation. Four (4) nos. of multi circuits towers has to be constructed on the existing foundations of the 132 kV Ara (PG)-Ara T/L. The anticipated time for construction of these multi circuit towers is approx. two (2) months during which 132 kV power availability through any alternative way even erecting ERS to Ara GSS for feeding power to Ara town and near by area is a challenging task for us. Keeping in viw the severe ROW issue due to thickly populated area around Ara GSS and no any other available corridor, only option which is feasible to utilize is:

a) Utilize 2nd unstrung circuit of railway tower.

b) Erection of ERS tower where ever required.

c) Avail 132 kV power through some section from location 6 to 1 of 220 kV Ara (PG)-Khagaul circuit-1 through 132 kV transfer bus at Ara (PG).

As per the study done by our field engineers, following arrangement at Ara (PG) may be considered and allowed for the above mentioned point "c":-

Dropping and connecting 132 KV Ara line on 132 KV Transfer Bus, from 132 KV Ara bay at PGCIL Ara & connecting 132 KV Transfer Bus to ckt-I of 220 KV D/C Ara(PG)-Khagaul line at tower no-01, through jumpering and disc insulators on Transfer Bus-Support gantry and availing 132 KV power from Ara bay through 132 KV Transfer-Bus(transfer bus will remain engaged for period of 2 months).

Members may discuss.

5. Loading of 220 kV Sasaram (PG)-Sahupuri (UP,NR) line

220 kV Sasaram (PG)-Sahupuri (NR,UP) line (completely owned by BSPTCL) is about 40 years old and its loading remains continuously more than 240 MW during peak hours and about 200 MW during off peak hours. Such loading may damage the line and also it causes low voltage problem in GSS connected to Sasaram (PG), hence causing load restriction in BSPTCL system.

SLDC, Patna daily requests RLDC to restrict the drawl maximum upto 180 MW only through the said transmission line. Also this agenda item was discussed In 133rd OCC meeting, OCC is hereby again requested to restrict the drawal upto 180 MW only in order to avoid overloading of ICTs at Gaya (PG) end by improving the sharing of 220 KV power to Dehri from Sasaram(PG) (especially during peak hours).

Agenda for 138th OCC Meeting

6. Trail operational certificate for underground fiber optic link from Jakkanpur to SLDC, Patna-BSPTCL

End to end testing of UGFO link between Jakkanpur to SLDC, Patna has been carried out on 03-10-16. Route survey with M/S KEC was carried out on 31-05-17. It was observed that no marking to identify route, location of splice chamber and pits. No provision of clause of standard technical specification of UGFO of PGCIL was followed either regarding the route markers, construction of manholes, warning bricks etc. BSPTCL repeatedly requested PGCIL authorities to furnish the technical specification and the SAT procedure of UGFO, but the same has not been provided yet. This may affect the maintenance of UGFO link further.

In 137th OCC, BSPTCL informed that issue is not yet resolved.

OCC advised Powergrid and BSPTCL to do the joint inspection as agreed in last OCC.

OCC advised Powergrid to provide the technical specification and SAT procedure of UGFO to BSPTCL.

BSPTCL and Powergrid may update.

7. Ethernet link for integration of Kishanganj SAS GSS with SLDC, Patna - BSPTCL

Synchronous Digital Hierarchy (SDH) has been installed in Kishanganj (PG)and approach cable laid out up to connecting SDH for integration of SDH of Kishanganj (New) GSS. Ethernet link for integration of SDH of Kishanganj SAS GSS with SLDC, Patna for monitoring of real time data and voice of 220/132/33 kV Kishanganj (New) GSS as well as connecting GSS for ULDC purpose is required on priority basis.

In 137th OCC, BSPTCL informed that there is no progress from Powergrid end.

OCC advised Powergrid to resolve the issue at the earliest.

BSPTCL and Powergrid may update.

Item No. B.13: Early commissioning of 220 kV Patna-Sipara third ckt.—ERLDC

Major load of Capital city Patna is fed from 220 kV Sipara Substation, Further Sipara is conneted with Khagaul as well as Fatuah at 220 kV level. These are also major load centers normally fed in radial mode from Patna (except Fatuah, which is usually supplied radially from Biharshariff). This causes very high loading of 220 kV Patna-Sipara D/C and it did not satisfy N-1 Contingeny criteria for most of the time in last quarter.

The third circuit of 220kV Patna-Sipara line is expected to be commissioned soon, which will help in relieving the loading on other two lines. Further with commissioning of 220 kV Patna-Sipara T/C 220 kV Khagul-Arrah-Pusauli loop may be kept close, which will help in improving system reliability and maintaining better voltage regulation in and around that area.

In view of above BSPTCL may expedite commissioning of 220 kV Patna-Sipara third ckt.

In 137th OCC, BSPTCL informed that the line will be commissioned within 20 days.

BSPTCL may update the latest status.

Item No. B.14: Issues related to energy accounting of MTPS stage-I & II of KBUNL-KBUNL

KBUNL vide letter dated 10th October 2017 informed that 100% power from MTPS Stage-I is allocated to Bihar and its scheduling is being done by SLDC, Patna since COD of Unit-1 i.e. 01.11.2013. MTPS Stage-II is an interstate generating station and 67.70/o (74.97% including unallocated share) power from Stage II is allocated to Bihar. In the special meeting held at ERPC, Kolkata on 25.01.2017, it was agreed that scheduling and other associated activities of MTPS Stage-II shall be performed by SLDC, Patna. Following issues, related to energy accounting and related matters of MTPS Stage-I & stage-II, are arising which needs to be addressed at the earliest:

1. Issuance of compensation schedule and certification of compensation amount in line with ERPC:

KBUNL is raising bills for compensation, (due to partial loading) amount as per its own calculations based on if RC Regulations and CERC approved detailed operating procedure. However it is understood that DISCOMs are not admitting and paying compensation bills due to non certification of same by SLDC, patna.

Therefore, SLDC, Patna needs to issue compensation schedule along with monthly energy account. Also SLDC, Patna to check and certify the calculations of compensation amount in line with ERPC.

2. Finalisation of methodology for accounting of actual generation of MTPS Stage I & II and issuance of weekly DSM account by SLDC, Patna

DSM is applicable for MTPS stage-I and stage-II. However presently DSM accounts are not being issued.

Therefore, methodology for accounting of actual generation of MTpS Stage-I and Stage-II may be finalised. Accordingly, SLDC, Patna needs to issue weekly DSM accounts in line with ERPC.

3. Methodology for scheduling of other beneticiaries of MTPS Stage-II:

Jharkhand has signed LTA Agreement with CTU. CTU is expected to operationalise the LTA shortly. Therefore, methodology for scheduling of power of MTPS Stage-II beneficiaries in coordination with ERLDC may please be discussed and decided

Members may discuss.

Item No. B.15: Third Party Protection Audit & Inspection of Under Frequency Relays (UFR)

1. 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	37	68.52
NTPC	16	14	87.50
NHPC	1	1	100.00
DVC	40	26	65.00
WB	68	27	39.71
Odisha	59	38	64.41
JUSNL	34	16	47.06
BSPTCL	16	5	31.25
IPP (GMR, Sterlite and MPL)	5	5	100.00

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.

OCC advised all specially JUSNL and BSPTCL to send the revised DPRs at the earliest after clarifying the queries if any.

Members may comply.

2. Schedule for 2nd Third Party Protection Audit:

The latest status of 2nd Third Party Protection audit is as follows:

1)	Jeerat (PG)	Completed on 15 th July 2015
2)	Subashgram (PG)	Completed on 16 th July 2015
3)	Kolaghat TPS (WBPDCL)-	Completed on 7 th August 2015
4)	Kharagpur (WBSETCL) 400/220kV -	Completed on 7 th August 2015
5)	Bidhannagar (WBSETCL) 400 &220kV	Completed on 8 th September, 2015
6)	Durgapur (PG) 400kV S/s	Completed on 10 th September, 2015
7)	DSTPS(DVC) 400/220kV	Completed on 9 th September, 2015
8)	Mejia (DVC) TPS 400/220kV	Completed on 11 th September, 2015
9)	400/220/132kV Mendhasal (OPTCL)	Completed on 2 nd November, 2015
10)	400/220kV Talcher STPS (NTPC)	Completed on 3 rd November, 2015
11)	765/400kV Angul (PG)	Completed on 4 th November, 2015
12)	400kV JITPL	Completed on 5 th November, 2015
13)	400kV GMR	Completed on 5 th November, 2015
14)	400kV Malda (PG)	Completed on 23 rd February, 2016
15)	400kV Farakka (NTPC)	Completed on 24 th February, 2016
16)	400kV Behrampur(PG)	Completed on 25 th February, 2016
17)	400kV Sagardighi (WBPDCL)	Completed on 25 th February, 2016
18)	400kV Bakreswar (WBPDCL)	Completed on 26 th February, 2016
19)	765kV Gaya(PG)	Completed on 1 st November, 2016
20)	400kV Biharshariff(PG)	Completed on 3 rd November, 2016
21)	220kV Biharshariff(BSPTCL)	Completed on 3 rd November, 2016
22) 4	400kV Maithon (PG)	Completed on 18 th May, 2017
23) ⁻	132kV Gola (DVC)	Completed on 17 th May, 2017
24) ⁻	132kV Barhi (DVC)	Completed on 18 th May, 2017
25) ⁻	132kV Koderma (DVC)	Completed on 18 th May, 2017
26) ⁻	132kV Kumardhubi (DVC)	Completed on 19 th May, 2017
27) ⁻	132kV Ramkanali (DVC)	Completed on 19 th May, 2017
28)	220kV Ramchandrapur (JUSNL)	Completed on 1 st June, 2017
29)	400kV Jamshedpur (PG)	Completed on 1 st June, 2017
30)	132kV Patherdih (DVC)	Completed on 31 st May, 2017
31)	132kV Kalipahari (DVC)	Completed on 30 th May, 2017
32)	132kV Putki (DVC)	Completed on 31 st May, 2017
33)	132kV ASP (DVC)	Completed on 30 th May, 2017
34)	132kV Mosabani (DVC)	Completed on 2 nd June, 2017
35)	132kV Purulia (DVC)	Completed on 1 st June, 2017

The list of observations for the above sub-stations is already available at ERPC website (www.erpc.gov.in). Respective constituents are requested to comply and submit the report to ERPC for regular update.

Members may note.

3. The proposed UFR audit schedule is placed below:

Sl No	Proposed Date	Substation/feeder inspected by the sub-group
1		220/132/33 KV Kalyaneswari of DVC
2	Nov, 2017	220/132/33 KV New Bishnupur of WBSETCL
3		132/33 KV Old Bishnupur of WBSETCL
4	Dec, 2017	BRS (Liluah S/Stn.) of CESC

Members may decide.

Item No. B.16: 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.

NTPC communicated their activity of the preparation of Crisis Management Plan for countering the cyber attacks vide letter dated 2nd August, 2013.

In 113th OCC, Member Secretary informed that during interaction with consultants of Grid Study Committee, NLDC agreed that they will plan for conducting workshops on crisis management plan for Cyber Security and few workshops will also be held in Eastern Region.

CESC vide letter dated 22.08.15 had furnished their status of the preparation of Crisis Management Plan (CMP) for Cyber attacks in their system.

Members may note.

Item No. B.17: 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

Members may note and update the status.

Item No. B.18: Data of Peak Demand – Submission of hourly power cut data

The peak demand met figure calculated by CEA is a part of the monthly Power Supply Postion Report prepared by CEA, based on the data provided by five Regional Power committee (RPCs), who in turn collect the data from State / UTs and RLDCs. As per the present methodology being adopted for calculation of States /Regional peak demand met, the figure of peak demand met at any time in the month is taken as peak demand met for the month. For all India monthly peak demand met, the sum of five regional peaks met, which may occur at different points of time is taken.

The above methodology has been reviewed and it has been decided with the approval of Chairperson, CEA that Peak demand Met and Peak Demand in the country should be based on hourly all India demand data. The matter was taken up with POSOCO for getting the hourly data of peak demand met for each month in respect of all the regions in the country in the first week of following month and they have assured to furnish the same. To calculate the demand, data of hourly scheduled and unscheduled power-cuts / load shedding is also required, which is not available with POSOCO.

It is, therefore, requested that hourly figures of scheduled/ unscheduled power cuts/load shedding data may be collected from States / UTs and the same may be sent to CEA every month as per above schedule in the enclosed format, in spread sheet, so that hourly figures of peak demand can be calculated and incorporated in Power Supply Position report.

This data for a month may kindly be sent in the first week of each month, along with PSP data, starting from the data for the month of February, 2015. The format for sending the data of hourly scheduled and unscheduled power-cuts / load shedding has already been circulated.

In 110th OCC meeting, OCC advised all the concerned utilities (BSPTCL, JUSNL, OPTCL, WBSETCL & Sikkim) to send the data of hourly scheduled and unscheduled power-cuts / load shedding by mail to mserpc-power@nic.in latest by first week of each month.

OCC advised all constituents to submit the data also to ERLDC (erldcprotection@gmail.com).

For the month of September, 2017 data has been received from OPTCL, CESC, DVC, WBSETCL, BSPTCL.

JUSNL may submit.

Item No. B.19: Long outage of important transmission elements

a) Non availability of Line Reactor of 400KV Malda-Purnea-I

In 123rd OCC, Powergrid informed that order has been placed for Reactor-1 and it will be commissioned by September, 2016.

In 137th OCC, Powergrid informed that they are replacing the protection relay of the reactor within 2-3 days and commission the reactor.

Powergrid may update.

b) 50MVAR Bus Reactor-I at Farakka (alongwith main and tie bays)

Under shutdown wef 31/05/16 for dismantling from old bay and re-installation in new bay in the dia of FSTPP GT#3.

In 133rd OCC, Powergrid informed that the reactor will be in service by second week of June, 2017.

In 137th OCC, Powergrid informed that the reactor would be brought into service after the rectification of the differential protection which is expected by5th October 2017.

Powergrid may update.

c) 400 kv Barh – Motihari D/C

400 kV Barh – Motihari – D/C were out since 14th Aug, 2017 as 24 numbers of towers were submerged in Gandak River due to flood like situation. Right Now Motihari is drawing radial power from Gorakhpur S/S of Northern region through 400 kV Gorakhpur – Motihari D/C. Due to outage of 400 kV Barh - Motihari D/C, one inter regional link between Eastern and Northern

region was out, which need to be restored with utmost priority to maintain all India reliable and safe power system operation.

DMTCL may update.

d) Bus Reactor at Jamshedpur

50 MVAR Bus Reactor at Jamshepur was out since 05th June, 2017 for commissioning and replacement of new 125 MVAR Bus Reactor-II. As per earlier communication expected date of commissioning of the 125 MVAR Bus Reactor-II was 30th Aug, 2017. In addition to this one more 125 MVAR Bus Reactor – III was also expected to commission during the month of September. Till date the status of the progress of commissioning work of new reactors is not updated from ER – I Power Grid side. Considering the voltage pattern at Jamshedpur S/s, which was on higher side most of the time during the day and would be deteriorate more with the onset of winter season, priority for the restoration of the Bus Reactors at Jamshedpur is utmost important.

Power Grid may update the status of commissioning of 125 MVAR Bus Reactor 2 & 3.

Item No. B.20: Failure of RTU data with the outage of ICTs of Patna and Biharshariff station --ERLDC

It has been observed on several occasions that with the tripping of all the ICTs at Patna and Biharshariff station, RTU stopped reporting to ERLDC, after restoring these ICTs, data again started reporting. It is to be appreciated that real time SCADA data should not be getting interrupted for any eventuality of the grid. The same was informed to POWERGRID several times but it is yet to be implemented and confirmed by them.

In 135th OCC, Powergrid informed that at Biharshariff the ULDC battery bank is under replacement. At Patna, the reason is yet to be identified.

ERLDC informed that the same problem has been observed in other substations also and requested Powergrid to ensure uninterrupted power supply to RTUs.

OCC advised ERLDC to submit the list of such substations to Powergrid. OCC advised Powergrid to ensure uninterrupted power supply to RTUs and send the updated status to ERPC.

In 136th OCC, ERLDC placed the details of substations where the communication and telemetry is getting effected due to power supply failures. The list is enclosed at **Annexure-B20**.

Powergrid agreed to look and resolve.

Members may update.

Item No. B.21: Shifting of communication links for PMUs reporting to ERLDC--ERLDC

Presently, PMUs locations at Farakka, Talcher, Jamshedpur, Ranchi, Binaguri, Durgapur, Rourkela & Jeypore are reporting through Alcatel Mux using E1 – Ethernet convertor at both end. In case of fibre cut between Kasba to ERLDC, all the 8 nos PMUs data stopped reporting to ERLDC (happened on 16/May/2017 from 04:25 Hrs to 12:49 Hrs). There is no redundant path provided for these communication links. So, it is requested POWERGRID to shift these PMUs' communication path / equipment so that the protection path of ULDC network would be used and this type of outage could be avoided. Communication link for Patna PMU is taken from PowerTel. It is also requested to POWERGRID that communication path may also be shifted for Patna PMU so that PowerTel communication could be removed.

In 134th OCC, ERLDC informed that work is not yet completed.

Powergrid informed that 8 PMUs communication system have been shifted to ULDC network.

OCC advised ERLDC to send the details of requirement to Powergrid.

Accordingly, ERLDC has sent the detailed requirement for shifting of communication link to POWERGRID ULDC on 14-07-2017.

In 135th OCC, Powergrid agreed to complete the work within a month.

In 137th OCC, ERLDC placed the updated status as follows:

S/N	Location	Station type	Commmunicatio channel
1	Binaguri	400/220KV Substation	Shifted to POWERGRID ULDC wideband on 16 June,2017
2	Biharshariff	400/220KV Substation	Shifted to POWERGRID ULDC wideband on 24th November ,2015
3	Patna (ER1)	400/220KV Substation	2 MBPS PDT link from Patna to ERLDC , Kolkata
4	Farakka (NTPC)	400 kV Generating Station.	E1 link
5	Ranchi (ER1)	400/220KV Substation	E1 link
6	Rourkela	400/220KV Substation	Shifted on 01-09-2017 (was in progress on 136 th OCC meeting).
7	Talcher (NTPC)	400 kV Generating Station.	E1 link
8	Jeypore (Odissa pj.)	400/220KV Substation	E1 link
9	Durgapur	400/220KV Substation	Shifted on 30-08-2017 (was in progress on 136 th OCC meeting).
10	Jamshedpur (ER1)	400/220KV Substation	E1 link
11	Sasaram	765/400/220 kV SubStation	Shifted to POWERGRID ULDC wideband on 24th November ,2015
12	Rengali	400/220KV Substation	Shifted to POWERGRID ULDC wideband on 17 April,2017

Powergrid agreed to complete the work at the earliest.

PGCIL may update.

Item No. B.22: 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.

In 120th OCC, ERLDC informed that every month they were updating the status and posting at ERLDC website.

137th OCC advised all the respective constituents to ensure the availability of telemetry data to ERLDC.

Members may update.

Agenda for 138th OCC Meeting

a) Frequent failure of JITPL data to ERLDC:

Real time SCADA data from JITPL is frequently failing (*May-17: 24% & June-17 (up to 18th): 62%*). It was observed that

- Microwave terminal equipment at Talcher HVDC end is getting hanged quite frequently causing failure of real time data to ERLDC.
- The direct line from JITPL to Angul 765/400 kV pooling station is available but real time SCADA data is yet to be diverted through this path.
- The voice connectivity from JITPL to ERLDC is yet to be provided / integrated with Hot Line Voice Communication installed by M/s Orange.

In 136th OCC, JITPL informed that presently they are communicating ERLDC with a radio link, which is an interim arrangement and is not reliable and they are trying hard to maintain it. However, they had planned to make PLCC system operational for uninterruptable communication to ERLDC. But Powergrid is not allowing them to shift NSK modem of PLCC system from Bolangir(PG) S/s which is the property of JITPL.

JITPL added that they were in process of settling the commercial issues with Powergrid and requested Powergrid to cooperate.

OCC took serious note of the issue and felt Powergrid should not interrupt in establishing the proper communication system for SCADA/telemetry data to ERLDC. OCC felt that Powergrid should not take up commercial issue by staking the grid security and advised Powergrid to take up the commercial issue separately.

In 36th TCC, Powergrid agreed to allow JITPL to shift their PLCC modem from Bolangir S/s within a week.

JITPL informed that they will shift the modem within a week and they will commission the communication system in another 10 days subject to availability of OEM (ABB) engineers.

TCC advised JITPL to shift the modem as decided and update the status in forthcoming OCC meeting scheduled to be held on 21st September 2017.

In 137th OCC, JITPL informed that they have shifted the PLCC modem from Bolangir to Angul and they will commission the communication system by 15th October 2017.

JITPL may update.

Item No. B.23: Sustain Under-injection by ISGS generators during RRAS—ERLDC

During July and August 2017, NLDC triggered RRAS UP for ISGSs generators of Easter Region on several occasions. However it is observed that some of the ISGS failed to maintain their generation as per schedule and continuous under-injection was observed during the above mentioned period.

As per section 5.4 of Detailed Operating procedure of RRAS, "The continuity of the RRAS shall be ensured by the RRAS provider over the period of the despatch". However, this was continuously violated by ISGS stations of ER.

As per clause 9.13 of Detailed Operating procedure of RRAS

Quote -

Sustained failure, i.e. failure to provide the RRAS (barring unit tripping) by RRAS Provider(s) more than three (3) times during a month shall be brought to the notice of the CERC

Unquote

Detailed performance of ER ISGS from RRAS point of view would be presented during the meeting.

ISGSs are therefore requested to exercise due care while declaring their respective DCs, so that actual generation as per the total schedule issued, can be maintained by them.

In 136th OCC, ERLDC presented the performance of the RRAS provider generators during July & August 2017 and informed that in real time Barh, FSTPP stage I & II and KhSTPP stage I & II generators were failed to maintain their generation as per schedule.

OCC advised NTPC to follow the RRAS schedule strictly.

OCC advised ERLDC to monitor the status for one week and even if there is no improvement, the acion may be initiated as per the provisions of IEGC. Further, OCC advised ERLDC to place the status in next OCC meeting.

In 137th OCC, ERLDC informed that in real time FSTPP stage I & II are not maintaining their generation as per schedule and continuously under generating. KhSTPP stage II generators need improvement.

OCC advised NTPC to strictly follow the RRAS schedule.

NTPC informed that they are implementing alarm system to alert the operator during RRAS initiation and it will improve the performance.

ERLDC may update.

Item No. B.24: Delineation of O&M responsibilities of various assets of the ISTS--ERLDC

With opening up of transmission sector for private participation and rapid addition of new ISTS elements through TBCB route, multiple transmission licensees are now involved, in so far as ownership and maintenance of the regional ISTS is concerned. A single transmission line may be partly owned by one licensee and partly by the other, while the bay equipment, panels etc. at each of the ends may be owned / maintained by two different transmission licensees. In the above backdrop, as the apex body to ensure integrated operation of the regional power system, it becomes essential for RLDCs to be accurately aware of the scope of responsibilities of each of the licensees, in order to discharge its responsibilities in a smooth and efficient manner.

A list of transmission elements in Eastern Region together with their ownerships as per information available with ERLDC is enclosed at **Annexure-B24.** It is requested to kindly go through the list and indicate the agencies responsible for maintenance of line, ensuring real time data, furnishing relay indication, DR etc. in respect of each of the elements and inform ERLDC wherever necessary updating / correction is required to be incorporated.

In 137th OCC, all the constituents were advised to update the status as given in the annexure and send it to ERPC and ERLDC within a week.

Powergrid ER-I has submitted the details.

Members may update.

Item No. B.25: Transfer capability determination by the states -- Agenda by NPC

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.

SI No	State/Utility	TTC import(MW)	RM(MW)	ATC (Import) MW
1	BSPTCL	4665	145	4520
2	JUSNL	755	100	655
3	DVC	386	52	334
4	OPTCL	1822	81	1741
5	WBSETCL	3880	300	3580
6	Sikkim			

ATC/TTC declared by states for the month of October-2017 is given below:

In 136th OCC, OCC advised WBSETCL to share the details of inter tripping schemes at other substations, if any.

In WBSETCL informed that they are having one more inter tripping scheme at Arambag the details of the same would be furnished to ERLDC.

Members may update.

Item No. B.26: Installation of PMUs in Eastern Region under URTDSM project

LOA for installation of PMUs in Eastern Region under URTDSM project was awarded to M/s Alstom on 15th January 2014. The contract has to be completed in all respect within 24 months from the award. The status of implementation may be informed since PMU data is very much important to real time shift operator for analyzing the security of the grid.

OCC advised Powergrid to submit a report on latest status of implementation and advised to update the status on every OCC.

In 131st OCC, Powergrid submitted the latest status of PMU installation.

The updated status as furnished in 132nd OCC by Powergrid is given at **Annexure-B.26**.

In 136th OCC, Powergrid informed that space provided for PMU installation at Farakka is already occupied and requested NTPC to allot space for installation of PMU.

NTPC agreed to look into.

Powergrid pointed that they are facing some problem at 400 kV FSTPS & Kolaghat S/s for installation of PMUs.

NTPC and WBPDCL agreed to co-operate with Powergrid for installation of PMUs.

POWERGRID may update the status.

Item No. B.27: 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-B.27.

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

Teesta Urja 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.

Members may update.

Item No. B.28: 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- B.28.

In 137th OCC, WBSETCL informed that they will send the updated status to ERPC mail.

Members may update the latest status.

Item No. B.29: Time correction of SEMs in Eastern Region – Replacement of heavily drifted SEMs

The issue was discussed in 35th TCC/ERPC meetings and it was felt that the meters with severe drift greater than 10 min need to be replaced first and if replacement is done with Genus then readings are to be collected manually using Laptop till interfacing with AMR is completed.

35th ERPC advised Powergrid to replace the 10% of the heavily drifted SEMs with new Genus make meters and monitor the performance of the Genus meters. Powergrid should present this performance before constituents and subsequently the decision on replacement of the other time drifted meters will be taken up.

Subsequently, ERLDC has prepared a list of such SEMs.

In 133rd OCC, Powergrid informed that 22 meters were replaced except Purnea.

ERLDC informed that the performance of 22 newly installed meters are satisfactory and suggested that all other meters can be replaced.

OCC advised Powergrid to replace next 10% of heavily drifted meters as per the list. The list as shared by ERLDC is attached at **Annexure-B.29**.

In 134th OCC, Powergrid informed that SEM at Purnea has been replaced and the replacement of SEMs as per the Annexure will be completed within 2 months.

OCC advised Powergrid to give the schedule for replacement of SEMs to ERPC and ERLDC.

In 137th OCC, Powergrid informed that out of 23 meters time correction has been done for 6 meters and 8 SEMS have been replaced. Rest will be replaced subjected to availability of shutdown.

Powergrid/ ERLDC may update.

Item No. B.30: Meter related Issues-ERLDC

Due to the meter related issues of following locations energy accounting and its validation is being affected.

Issue	Location	Meter No	Line	Responsibility	Problem Since	Present Status
Erroneous		NP-7436-				
data	1.Chandil	А	220 KV Chandil-Santaldih	JUVNL	19.07.17	Problem still persists
Non		NP-1282-				
receipt of		A NP-	132 KV Rihand &		More than 3	Not Received. Status is
Data	1. NPGC	1287-A	Sonnagar	BSPTCL	month	same
	1.Subhashgram(220 KV Subhasgram(PG)	WBSETCL/PG	Charging of	
Installatio	WB)		D/C	CIL	Line	
installatio	2. New		220 KV Subhasgram(PG)	WBSETCL/PG	Charging of	
n or Cheak/Sta	Town(CESC)		S/C	CIL	Line	
uneck/sta			220 KV Subhasgram(PG)	WBSETCL/PG	Charging of	
mator	3. Bantala(CESC)		S/C	CIL	Line	As informed by PGCIL
meter	4. EM		220 KV Subhasgram(PG)	WBSETCL/PG	Charging of	Meter is handed over
	Bypass(CESC)		D/C	CIL	Line	to CESC

The above issues were last discussed in 37th TCC/ERPC Meeting held on 13.09.17/14.09.17 at Bhubaneswar.

PGCIL/BSPTCL/WBSETCL/JUVNL may please further update the status.

Item No. B.31: Integration of Genus Make meter in AMR-- ERLDC

A. Integration issues:

In Eastern Region, order for procurement of 965 no of SEM's was placed with M/s Genus Power. First Lot of the meters have already been delivered by Genus and 24 meters of Genus make meter has been installed in different substation in ER. Issue of Integration of Genus make meters in AMR system was discussed in different fora of ERPC since March,17.In 36th ERPC meeting Powergrid informed that a meeting will be held on 20th September 2017 wherein the interfacing issues would be resolved by M/s TCS and M/s Genus.

In 137th OCC, Powergrid informed that a meeting will be held at RHQ Kolkata on 25th September 2017 wherein the interfacing issues would be discussed and resolved by M/s TCS and M/s Genus.

In 25th September 2017 meeting, it was agreed by all concerned that GENUS will implement the required changes at meter level within 15th October 2017 to resolve the pending issues related to Integration of Genus meter with AMR.

Powergrid may please update the status.

B. Compatibility with 5 min scheduling:

In order to accommodate intermittency and variability of around 175 GW Renewable energy, requirement of fast ramping of conventional generator is absolute necessity. In order to facilitate fast ramping of conventional generator, it is felt that ongoing 15 min scheduling, metering accounting and settlement methodology need to be shifted at 5 min interval level in near future. Keeping in view of Implementation of 5- Minute Scheduling, Metering, Accounting & Settlement, Technical specifications for "Interface Energy Meters (5-min compatibility) for Western region was approved by 34th TCC/WRPC on 27.07.17/28.07.17.

At present approximately 600 new meters are yet to be delivered by vendor M/s Genus for Eastern Region and inspection of those meters is not yet done. It is felt that the new meters should have the provision of giving data in parallel, in 5 min new coded format as well as old meters (present) coded format i.e in 15 min.

In 137th OCC, Powergrid informed that the issue has been referred to M/s TCS and Genus and it will be discussed in detail in 25th September 2017 meeting.

Powergrid added that M/s TCS and Genus will give the cost estimation for implementation of 5 min schedule. The cost is to be borne by the constituents.

In 25th September 2017 meeting, it was decided that every meter has to demonstrate its capability to operate with 05 min accounting standard. GENUS is yet to demonstrate its feasibility with 05 min accounting. GENUS will confirm for the same at the earliest.

Powergrid may update.

Item No. B.32: Accounting of Tertiary Loading Arrangement at PGCIL s/station in ER

Auxiliary consumption of PGCIL EHV AC sub stations are usually met from HT feeders of the state Discom. In few substations of PGCIL, auxiliary consumption is met through tertiary winding (as alternate supply for reliability).

In 35th CCM, It was decided that the drawal of auxiliary power from tertiary winding by Powergrid substations would be treated as state drawl for inter-regional accounting. Powergrid and the states would make back to back commercial arrangements for this power. ERLDC requested Powergrid to submit the requisite information such as meter no, CTR, PTR, etc in respect of those meters and also make meter readings available ontime.

Status of meter details and receipt of their data at ERLDC from Powergrid ER-I, ER-II and Odisha project is as below:

	List of PGCIL substation with Tertiary Loading in ER									
ER-I										
S. No	S/Station	Loc ID	Meter No	Make	CTR	PTR	Remarks	Data Receipt		
1	Banka	ES-88	NP-7458-A	L&T	50	33000/110		Yes		
2	Lakhisarai	ES-94	NP-8870-A	L&T	50	33000/110		Yes		
3	New Ranchi(765)	ES-87	NP-8752-A	L&T	50	33000/110		Yes		
4	New Purnea	ES-98	NP-5249-A	L&T	50	33000/110		Yes		
5	Patna	ES-89	ER-1285-A	Genus	50	33000/110		Yes		
6	Pusauli	ET-06	NP-8646-A	L&T	50	33000/110		Yes		
7	Muzaffarpur	ET-02	NP-5231-A	L&T	1000	415/110		Yes		
9	Kishanganj	ES-90	NP-8876-A	L&T	50	33000/110		Yes		
11	Ara(220)	ES-99	NP-8893-A	L&T	50	33000/110		Yes		
12	Chaibasa	ET-15	ER-1254-A	Genus	50	33000/110		Yes		
13	Ranchi(400/220)	ET-14	ER-1251-A	Genus	50	33000/110		Yes		
8	Gaya(765)	EM-99	NP-7472-A	L&T	50	33000/110		No		
10	Biharshariff	ET-01	NP-2355-A	SECURE	1000	415/110		No		
ER-II	& Odhisa Project									
1	Angul	ES-95	NP-5942-A	L&T	1000	415/110		Yes		
2	Pandiabili	ES-39	NP-7462-A	L&T	1000	415/110		Yes		
3	Rangpo (33 kv TRF)	ES-96	NP-7940-A	L&T	1000	415/110		Yes		
4	Rangpo (11 KV AUX TRF)	ES-97	NP-7941-A	L&T	1000	415/110		Yes		
5	Sundergarh	ES-93	ER-1019-A	Genus	50	33000/110		Yes		
6	Maithon	ET-07	NP-7934-A	L&T	1000	415/110		Yes		
7	Baripada	EM-69	NP-5909-A	L&T	1200	400/110		Yes		
8	Durgapur	ET-04	NP-6024-B	L&T	200	400/110		Yes		
9	Keonjhar	ET-11	NP-7921-A	L&T	50	33000/110		Yes		
10	Subhashgram	ET-12	ER-1105-A	Genus	1000	415/110		Yes		
13	Jeypore	ET-10	NP-5965-A	L&T	20	430/110		Yes		
11	Bolangir	ET-03	NP-7951-A	L&T	1000	415/110		No		
12	Rengali	ET-05	NP-0629-B	Secure	200	415/110		No		

ERLDC and Powergrid may update.

Item No. B.33: Requirement of data from AMR for SEM Vs SCADA Comparison -- ERLDC

In Eastern Region, AMR is already implemented and successfully running. Provision of getting various reports like Load Curve, NPC report, time drift report, maximum & minimum flow reports etc already exist.

However, report of 15 minute tie line data from AMR is also required to be made available so that the same could be utilised for developing comparison / error checking for SCADA. ERLDC is planning to develop SCADA Vs SEM comparison report which can identify the error in SCADA or time drift in SEM. The same is planned to develop considering the view for improvement of the system. Accordingly, the concern will take necessary action to validate the SCADA / SEM.

In view of the above, it is requested to POWERGRID to take up the matter with TCS for implementation of the same.

In 137th OCC, Powergrid requested ERLDC to share the format and they will interact with TCS for implementation.

Powergrid may update.

Item No. B.34: Mock Black start exercises in Eastern Region – ERLDC

i) The status of black start exercises

The tentative schedule of black-start exercises for F.Y 2017-18 is as follows :

SI no	Name of Hydro Station	Schedule	Tentative Date	Schedule	Tentative Date
		Test-I		Test-II	
1	U.Kolab	Last week of May, 2017	30 [™] May 2017	Last Week of January2018	
2	Maithon	1stweek of June 2017	Completed or 04.04.17	1stWeek of February2018	
3	Rengali	2ndweek of June 2017	Done or 29.06.2017	Last week of November 2017	
4	U. Indarvati	3rdweek ofJune 2017	November 2017	2ndweek of February2018	
5	Subarnarekha	1stweek of October 2017		1stweek of January2018	
6	Balimela	3rdweek of October 2017		1stweek of March 2018	
7	Teesta-V	2ndweek of Nov 2017		Last week of February2018	
8	Chuzachen	Last Week of May2017	May, 2017	January2018	
9	Burla	Last Week of June 2017	Oct, 2017	Last week of February2018	
10	TLDP-III	1stWeek of June 2017	After Mansoon	2ndWeek of January2018	
11	TLDP-IV	Last Week of June 2017	After Mansoon	1stWeek of February2018	
12	Teesta-III				

Members may update.

Testing of DG sets meant for Black start

Test run report of DG sets for blackstart has been received only from Odisha hydro units. The test run reports of other machines may be sent to erldc.cal@gmail.com and erldcoutage@gmail.com.

Constituents may kindly ensure compliance.

Agenda for 138th OCC Meeting

Item No. B.35: Restricted Governor /Free Governor Mode Operation of generators in ER

CERC vide their letter dated 05-06-17 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-B35.

Members may update.

Item No. B.36: Need for expediting commissioning of new 125 MVAR bus reactors at Subhashgram, Jamshedpur and Behrampur 400KV substations.

The duration for which voltage at these S/Stns was above the allowable upper limit of 420kV during the last quarter, is summarised below:

Sub-station	% Duration >420kV	% Duration >420kV	% Duration >420kV
	July-17	August-17	September-17
Jamshedpur	92	96	83
Baharampur	14	10	30
Subhasgram	0	2	7

With onset of winter from the 2nd fortnight of November, the power demand in ER is expected to reduce rapidly, particularly in the state of W. Bengal, causing most of the EHV lines to be lightly loaded.

To control over voltage conditions, commissioning of 125MVAR bus reactors already planned for the needs to be expedited on urgent basis. The short-circuit strength of Jamshedpur being more than 30kA, it is necessary to expedite commissioning of the 2nd 125MVAR reactor also. In WBSETCL, voltage of Arambagh S/Stn is observed to remain higher than 420kV for around 58% time in September-17. This is likely to increase further in the coming winter season. Voltage of this S/Stn rose as high as 437kV on 10-10-17.

West Bengal may please apprise actions being taken by them to control the voltage of Arambag.

Item No. B.37: Voltage control at Baharampur 400kV S/stn by reactive power absorption at FSTPS and SgTPS. –ERLDC

It is observed that on 01-10-17, for around 75% of the time voltage of Baharampur S/Stn persisted above the allowable upper limit of 420kV, which in turn forced ERLDC/NLDC to reduce the power export to Bangladesh by around 30 MW w.r.t the schedule. Though efforts were made to reduce the voltage by opening one circuit of 400kV Sagardighi – Durgapur 400kV line and one circuit of 400kV Kharagpur-N. Chanditala line, the effect was almost imperceptible. Similar high voltage condition was also experienced on 02-10-17, when the voltage remained above 420kV for around 42% of the time.

In this regard, several messages were issued to FSTPS and WBSLDC by ERLDC, requesting to enhance reactive power absorption at FSTPS and SgTPS. In this connection it may be readily appreciated that Farakka and Sagardighi power stations being located close to Baharampur and having direct connectivity with the S/Stn, can play a significant role by absorbing reactive power by their generating units.

Further, from the capability chart of Sagardighi 300MW and FSTPS 500MW units (Fig-4) it is observed that at rated active power generation, the under-excitation / stator core end heating limits are reached when these units absorb around 90MVAR and 120 MVAR respectively

Therefore it is apparent that except U-2 and U-4 of FSTPS, further scope for reactive power absorption was available in the other units of the two stations, which if utilized, could have helped in reducing the voltage of Baharampur. Utilization of leading power factor capability is particularly essential for avoiding reduction of power export to Bangladesh in the ensuing winter season when Baharampur is likely to experience high voltage during off-peak hours owing to drastic fall of the demand of W. Bengal.

Members may discuss.

Item No. B.38: Status of state owned units under long outage -- ERLDC

Numbers of units of state sector were decommissioned during recent days/months. As per the letter received from DVC on date 08th August, 2017, CTPC U#2, BTPS U#1&2 are under the process of de-commissioning as they have crossed their useful life and compliance of prevailing pollution norms is not feasible and CTPS U#1 is already de-commissioned.

In 136th OCC, It was informed that DVC has already furnished their status.

OCC advised West Bengal and Odisha generating units to submit their status to ERLDC and ERPC.

West Bengal and Odisha may update.

Item No. B.39: Reactive Power performance of Generators and optimisation of Transformer tap

Generating stations have been monitored for certain sample dates in the month of September, 17.

Power Plant	Max and Min Voltage	Date for monitoring (Sep 17)
	observed for Sep 17 (KV)	
Farakka STPS	422,407	18,29
Khalgaon STPS	421,405	18,29
Talcher STPS	412,400	18,19
Teesta	410,396	1,18
Bakreshwar TPS	418,389	18,30
Kolaghat TPS	427,397	18,30
Sagardighi TPS	422,401	20,29
MPL	420,409	29,30
Mejia-B	418,409	18,19
DSTPS	427,414	29,30
Adhunik TPS	427,408	18,30
Barh	434,415	1,27
JITPL	418,409	18,19
GMR	416,406	19,30
HEL	422,391	3,24
Kodarma	422,405	29,30

ERLDC may present the reactive performance.

a) Schedule for reactive capability tests

The following was status of regarding reactive capability testing:

- a. Adhunik TPS(both units) –Yet to be confirmed by Adhunik
- b. JITPL(both units) After the emergent inspection of OEM(BHEL)
- c. Barh TPS November 2017
- d. Raghunatpur by December 2017
- e. GMR (Three units)
- f. Haldia TPS Done in October 2017

The reactive capability test of HEL units were carried out on 6th September 2017 and 1st October 2017.

Members may update.

b) Transformer tap optimisation of Eastern Region :

- 1. Present tap position of 220/132KV, ICTs at Malda is 10(ten). Based on operational study, the voltage may be optimised by changing transformer tap from 10 to 8.
- 2. Tap position of 220/132KV, 160MVA ICT at Lalmatia is set to 5(five). For improvement of 132kV voltage, the tap position may be changed from 5 to 7(Seven).

In 136th OCC, it was decided to change the tap of 220/132 kV Malda ICTs from 10 to 8 and Lalmatia ICT tap on later stage.

Members may update.

PART C:: OPERATIONAL PLANNING

Item no. C.1: ER Grid performance during September, 2017

The average consumption of Eastern Region for September - 2017 was 429 Mu. Eastern Region has achieved record maximum energy consumption of 458 Mu on 25th Sptember-17. Total Export schedule of Eastern region for September - 2017 was 1701 Mu, whereas actual export was 1448 Mu.

ERLDC may present.

A. Persistent over drawl by West Bengal:

It has been observed for the last few days, West Bengal is over drawing continuously to the tune of 5 to 6 mu per day with maximum deviation respect to schedule was in tune of 600 to 1000 MW. Numbers of instructions/ violation messages/ Feeder opening intimations and warning messages for controlling over drawl were also issued to SLDC, West Bengal control room during real time operation to maintain their drawl within schedule. However, the response of West Bengal was not commensurate with criticality of the situation. Further some instances have also been observed, where WBSEDCL operated PPSP under PUMP mode during overdrawl situation.

As per IEGS clauses 5.4.2 (a), (b) and (c):

5.4.2 (a) SLDC/ SEB/distribution licensee and bulk consumer shall initiate action to restrict the drawal of its control area, from the grid, within the net drawal schedule. 5.4.2 (b) The SLDC/ SEB/distribution licensee and bulk consumer shall ensure that

requisite load shedding is carried out in its control area so that there is no overdraw.

5.4.2 (c) Each user/STU/SLDC shall formulate contingency procedures and make arrangements that will enable demand disconnection to take place, as instructed by the RLDC/SLDC, under normal and/or contingent conditions. These contingency procedures and arrangements shall regularly be/updated by User/STU and monitored by RLDC/SLDC. RLDC/SLDC may direct any User/STU to modify the above procedures/ arrangement, if required, in the interest of grid security and the concerned User/STU shall abide by these directions.

As per these clauses, for continuous over drawl by any entity, ERLDC issued warning messages and sometime also opens feeders (first level) as per the list approved in OCC for demand disconnection. Under the stated circumstances, henceforth in the event of violation of RLDC instruction or persistent failure to abide by the limits of deviation as specified in DSM regulation, ERLDC shall have no option but to disconnect feeders at identified points (Second level) that would result in net reduction of drawal by W. Bengal, as a corrective measure.

ERLDC may present. WBSETCL may explain.

Item no. C.2: OPERATION OF HYDRO POWER PROJECTS IN PEAKING MODE

CEA vide letter dated 18.07.17 informed that POSOCO has carried out operational analysis of various hydro stations in the country and observed that despite 40.6 GW of peaking hydro capacity only about 33 GW peak generation is carried out on all India basis. According to POSOCO, this is on account of a number of hydro stations, particularly in state sector, which are not being operated in peaking mode. In order to examine the above observation, a Sub-committee has been constituted by the MoP under Chiarperson, CEA with heads of POSOCO, NHPC, SJVN & THDC as members and Director (H), MoP as the Member Convenor. The Sub-Committee has held three meetings with the concerned hydro generating stations and concluded

that there is scope for about 2000 MW additional power generation from hydro stations during peak hours.

It has been desired by the Chairperson that the matter of utilization of hydro stations in peaking mode be made a regular agenda item for discussion at the monthly OCC meetings while discussing operational planning for the month ahead and analyzing the operation in the previous month.

In 135th OCC, ERLDC presented the performance in peaking mode for hydro generations in Eastern Region.

OCC decided to review the performance of hydro generators in peaking mode in monthly OCC meetings

As informed by ERLDC, during review it was observed numbers of hydro units of state sectors were under outage due to various reasons and also some units were running at de-rated capacity compare to their installed capacity.

In this regards, it is requested to all State (through SLDC), ISGS and IPP owned hydro generators to update the status of the hydro units on bar, hydro units under outage along with reason to ERLDC and ERPC on daily basis in the following format. Hydro units which are unable to generate as per installed capacity may be intimated to RLDC and RPC on monthly basis.

S.No	Station	Location	Owner	Unit No	Capacity	Reason(s) of Outage	Outage Date	Outage Time	Expected Revival Date
1.									
2.									
n.									

Hydro unit outage status:

Hydro Units running at De-rated Capacity:

S.No	Station	Location	Owner	Unit No	Capacity	De-Rated capacity	Reason of operation at De-rated
1.							
2.							
n.							

In 136th OCC, all the hydro generators were advised to submit the requisite data to ERLDC and ERPC in the prescribed format on regular basis.

ERLDC received daily hydro outage status report from SLDC, Odisha regularly. Daily outage reports from SLDC, WBSETCL & SLDC, JUSNL on daily basis to ERLDC is still pending. IPPs are also advised to send daily outage status report to ERLDC in case of outage of units at their respective stations.

In 137th OCC, WBSETCL and JUSNL informed that outage status will not be changed on daily basis and sending daily report may not be required.

ERLDC advised SLDCs and IPPs to update the outage status on regular basis for any changes/deviation.

SLDC, WBSETCL, JUSNL and IPPs may comply.

Item no. C.3: Anticipated power supply position during November'17

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of November'17 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-C.3**.

Members may confirm.

Item no. C.4: Shutdown proposal of transmission lines and generating units for the month of November'17

Members may finalize the Shutdown proposals of transmission lines and generating stations for the month of November 17 as placed at **Annexure-C.4**.

- TSTPS stage-I unit #1 shutdown from 5th November 2017 to 4th December 2017 30days for overhauling.
- Unit #2 (110MW) of MTPS stage-1 overhauling is scheduled from 16th November 2017 to 15th December 2017.

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

Item no. C.5: Prolonged outage of Power System elements in Eastern Region

Sr. No	Generating Station	Unit Number	Capacity(MW)	Reasons For Ouatge	Outage Date
1	JITPL	1	600	COAL SHORTAGE	5-May-17
2	GMR	1	350	COAL SHORTAGE	27-Sep-17
3	RAGHUNATHPUR	2	600	COAL SHORTAGE	9-Aug-17
4	RAGHUNATHPUR	1	600	COAL SHORTAGE	27-Sep-17
5	MEJIA	3	210	COAL SHORTAGE	22-Oct-17
6	BAKRESHWAR	4	210	COAL SHORTAGE	19-Oct-17
7	DSTPS	2	500	COAL SHORTAGE	12-Oct-17
8	BAKRESHWAR	3	210	COAL SHORTAGE	20-Oct-17
9	ADHUNIK	1	270	COAL BUNKERING PROBLEM	17-Oct-17
10	FSTPP	1	200	DRUM LEVEL HIGH	23-Oct-17
11	GMR	2	350	BOTTOM ASH PROBLEM	23-Oct-17
12	KOLAGHAT	6	210	STATOR EARTH FAULT	11-Jun-17
13	KOLAGHAT	2	210	AUXILARY FAILED	22-Oct-17
14	VEDANTA	2	600	HYDROGEN LEAKAGE	28-Jun-17
15	MEJIA	5	250	PROBLEM IS IN BARRING GEAR	22-Sep-17
16	SANTALDIH	5	210	ROTOR EARTH FAULT	30-Apr-17
17	GMR	3	350	DUE TO HEAVY EXPANSION BELLOW	15-Oct-17
18	SAGARDIGHI	1	300	MASTER FUEL TRIP	23-Oct-17
19	SAGARDIGHI	3	500	MAINTENANCE WORK	20-Oct-17
20	DPL	7	300	LOW SYSTEM DEMAND	20-Oct-17
21	SANTALDIH	6	250	ROTOR EARTH FAULT	23-Oct-17

(i) Thermal Generating units:

(ii) Hydro Generating units:

Sr. No	Generating Station	UNIT NO	CAP(MW)	REASONS FOR OUTAGE	OUTAGE DATE
1	BURLA	5	37.5	R & M WORK	25.10.2016
2	BURLA	6	37.5	R & M WORK	16.10.2015
3	CHIPLIMA	3	24	R & M WORK	15.10.2015
4	BALIMELA	1	60	R & M WORK	05.08.2016
5	U.KOLAB	2	80	Repair of MIV & Draft tube gate leakage	28.05.2017
6	RENGALI	5	50	Hoist gate problem	21.03.2017
7	RENGALI	1	50	Stator Earth fault	08.09.2017
	U.KOLAB	3	80	Generator stator problem & MIV tunnion	
8				leakage	19.04.2017

(iii) Transmission elements

Transmission Element / ICT	Agency	Outage Date	Reasons for Outage
220 KV BALIMELA - U' SILERU	OPTCL / APSEB	27.04.15	LINE IDLE CHARGED FROM UPPER SILERU END AT 12:42 HRS OF 25.01.17
400KV MOTIHARI-BARH-I & II	DMTCL	14.08.17	24 NO OF TOWERS IN GANDAK RIVER WHERE WATER LEVEL IS HIGH

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

Members may update.

Item no. C.6: Status of commissioning of generating station and transmission elements

New generating units:

S.No.	Power Plant	Plant Size	Expected date

New transmission elements:

SI No.	Name of Element	Expected date
1	400kV Rajarhat-Purnea D/C (with LILO of one circuit each at	
	Farakka and Gokarno)	
2	Augmentation of 400kV Farakka-Malda D/C with HTLS conductor	
3	400kV Ind-Bharath-Jharsuguda D/C	
4	400kV Talcher-Bramhapur-Gazuwaka D/C	
5	400kv Talcher-Rourkella(2 nd D/C-Quad)	
6	400kV Sterlite-Jharsuguda D/C	
7	765kv Anugul-Srikakulum D/C	
8	400kV Sasaram-Daltonganj D/C &Daltonganj S/Stn	
9	400 kV Ranchi-Raghunathpur D/C	
10	220 kV TLDP-IV – NJP ckt-2	
11	220 kV Bidhansai-Cuttack D/C	
12	220kV Gola- Ranchi	

Members may update.

PART D:: OTHER ISSUES

Item no. D.1: UFR operation during the month of September'17

System frequency touched a maximum of 50.32 Hz at 06:04 Hrs of 17/09/17 and a minimum of 49.62 Hz at 18:26 Hrs of 23/09/17. Hence, no report of operation of UFR has been received from any of the constituents.

Members may note.

Item no. D.2: 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 September'17.

Members may note.

Sr No	GD/ GI	Date	Time	S/S involve d	Affect ed Syste m	Summary	Load loss (MW)	Gen Ioss (MW)
1	GD-I	05/09/2 017	10:17	Motipur	BSPTC L	At 10:17 hrs, 220 kV Darbhanga (DMTCL) - Motipur D/C and 220 kV MTPS - Motipur D/C tripped from DMTCL & MTPS end only in B-N, Z-III due to fault in 220 kV Motipur - Musari section.	130	0
2	GD-I	06/09/2 017	09:52	Madhep ura	BSPTC L	Tripping of 220 kV Purnea - Madhepura D/C on Y-B-N fault at 09:52 hrs resulted power failure at Madhepura , Supaul, Saharsa and Lahan (Nepal load).	150	0
3	GD-I	07/09/2 017	18:57	Hazipur	BSPTC L	Tripping of 220 kV Muzaffarpur - Hazipur D/C from Hazipur on operation of Bus bar protection at Hazipur at 18:57 hrs resulted power failure at Hazipur which was radially fed from Muzaffarpur.	210	0
4	GD-I	09/09/2 017	10:42	Lakhisar ai	BSPTC L	Tripping of 132 kV Lakhisarai - Lakhisarai D/C at 10:42 hrs resulted total power failure at BSPTCL end which was radially fed from PG end.	80	0

Item no. D.3: Grid incidences during the month of September, 2017

5	GD-I	09/09/2 017	13:47	Aramba g	WBSET CL	Delayed clearance of Y-N fault of 400 kV Arambag - Kolaghat S/C due to stuck breaker at Arambag end resulted operation bus differential protection at 400 kV bus - II followed by tripping of all feeders and 400/220 kV ICTs connected to bus - II.	70	0
6	GD-I	15/09/2 017	19:25	Patna	BSPTC L	After tripping of ICT I (500 MVA) due to rebooting of differential relay other ICT at Patna (315 MVA) also tripped due to overloading resulting total power failure at Sipara and Khagul which was radially fed from Patna	530	0
7	GD-I	17/09/2 017	18:13	Madhep ura	BSPTC L	At 18:00 Hrs, 220 kv Purnea- Madhepura # I tripped from Madhepura end on B-N fault. At 18:13 Hrs, 220 kv Purnea- Madhepura # II tripped on Y-B-N fault causing power failure at Madhepura,Supaul,Kataiya, Sonbarsa and Udakishanganj (Total 140 MW).	140	0
8	GD-I	24/09/2 017	00:33	Chukha	ISTS	Due to three phase fault in 220 kV Chukha - Birpara D/C (during inclement weather condition) at Birpara S/S, 220 kV Chukha Birpara D/C and 220 kV Chukha - Malbase S/C tripped from Birpara end and 220 kV Birpara - Malbase S/C tripped from Malbase end.	0	290
9	GD-I	26/09/2 017	13:25	CTPS	DVC	Both the running units at CTPS B tripped due to tripping of bus II at CTPS B. ' 220KV CTPS(B)-CTPS(A)-I, 220KV CTPS-Dhanbad-I & 220KV CTPS-Bokaro-B-D/C also tripped at same time.	360	0

Multiple elements tripping without load loss

1	GI-I	16/09/2 017	01:27	Siliguri	WBSET CL	At 01:27 horsey ph conductor snapped of 220 KV Binaguri-Siliguri-II at location no. 6, 3 km from Siliguri- II. At same time, LBB operated at 220 KV main Bus of Siliguri resulted in tripping all outgoing elements. In PMU data, two more voltage dip observed in R phase.	0	0
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Members may note.

Item no. D.4: Reporting of voltage deviation indices (VDI) for select S/Stns in ER

ERLDC submitted the Voltage Deviation Index (VDI) of selected 400 kV Sub-stations for September, 2017 of Eastern Region which is enclosed at **Annexure- D.4**.

Members may note.

Item no. D.5: Additional agenda

Organisation

Station name

Annex-I (1 of 2)

Unit wise yearly generation Program for the year 2018-19

1 Contact Details			- 11	Phone no.	Fax. no.
Sr. no	Name	Designation	email	Flidie lid.	
1					
2				and the second	

2 Units A	isting on 31.	03.2017			it details (MU)	2018-1	9 generation deta	ils (MU)	Remarks
Unit No.	Capacity (MW)	Date of commissioni ng	Program for 2017 18	2017-18 gen Total Anticipated Gen for Sept 17 to March 18 (MU)	eration details (Total Anticipated Gen for 2017- 18 (MU)	MU) Reason for low generation (if any)	Anticipated maximum Generation capability (MU)	Anticipated Generation (MU)	Reason for variation from Maximum Capability	

Units Commissioned during 2017-18 Unit No. Capacity (MW) Date of commissioni ng 2017-18 generation details (MU) Reason for low generation (if 18 Reason for low Gen for Sept 17 to March 18 Gen for Sept 18 Gen for Sept 18 Gen for 2017- 18 18 (MU) any) c	2018-19 generation details (MU) Anticipated Reason for maximum Generation variation from Generation (MU) Maximum capability (MU) Capability Capability	Remarks
---	--	---------

A linits likely to be commissioned	А	Units likely to	be	commisioned	during	2018-19
------------------------------------	---	-----------------	----	-------------	--------	---------

4. Units like Unit No.	Capacity (MW)	Expected date of commissioni ng	Expected Generation 2018-19 (MU)	Remarks	
Note: Plea	se furnish t	he month-wis	se break-up of yearly ge	neration in a sep] parate Sheet keeping the similar format.

5. Loss of Generation due to Grid Constraints/ Low schedules /fuel related issues during 2017-18

Transmission Constraints/ power evacuation problems/ low schedule/high fuel c

S No.	Details of the	Loss so far (Apr'17- Aug'17)	during 2	2017-18
	Constraint		Anticipated Period of constraint	Anticipated loss of generation (MU)

6. PPA details

Capacity		With DISCOM			With State	e Trading Cos.			With PTC / oth	er trading cos.		Untied
(MW)	State of	Quantum	Duration	Quantum	b/b PPA with	quantum of	Duration of	Quantum (MW)	b/b PPA with	quantum of	Duration of b/b	(MW)
	Discom	(MW)	(Yrs)	(MW)	Discom (b/b PPA in	b/b PPA		Discom (name	b/b PPA in MW	PPA (Years)	
5 C					name of	MW	(Years)		of Discom)			
					Discom)				N			
							11					

7(a)Coal Linkage for coal based plants

linkage (MT)		this coal
		during
		the year (%)
	linkage (MT)	Inkage (MT)

7(b)Gas availibility for gas based stations

Varoius	Figures in	PLF from this
sources	MMSCMD	gas availibility during the year (%)

8. Cost of Generation:

Unit No	Cost of	Rate of Sale	
	Gen.	of Power	
	(Paise/kw h)	(Paise/kwh)	

Annex-I (2 of 2)

Planned maintenance Schedules including R&M activities

A)

R&M of Units likely to be completed during 2017-18 & 2018-19

Station name	Unit No.	Capacity (MW)	R&M Schedule	
			From date	To date
			×	

B) Annual Overhaul/ Boiler overhaul

Station name	Unit No.	Capacity (MW)	AOH Schedule	
			From date	To date
-				

C) **Capital Overhaul**

Station name	Unit No.	Capacity (MW)	COH Schedule	
			From date	To date
		~		

D)

Other maintenance if not included above such as PG tests (new units) and Boiler inspection

Station name	Unit No.	Capacity (MW)	Schedule		Reason
			From date	To date	
			4		
			~		

Annexure-B6.A

Generation Target 2018-19

Region	State	SECTOR	Fuel	Name of Utiity	NAME OF THE STATION	Monitored Capacity as on 31.07.2017 MW
ER	BIHAR	CENTRAL	COAL	BRBCL	NABI NAGAR TPP	500
ER	BIHAR	CENTRAL	COAL	K.B.U.N.L	MUZAFFARPUR TPS	610
ER	BIHAR	CENTRAL	COAL	NPGCPL	NEW NABI NAGAR TPP	0
ER	BIHAR	STATE	COAL	BSEB	BARAUNI TPS	210
ER	JHARKHAND	CENTRAL	COAL	PVUNL	PATRATU TPS	455
ER	JHARKHAND	PVT	COAL	ADHUNIK	MAHADEV PRASAD STPP	540
ER	ORISSA	PVT	COAL	IBPIL	UTKAL TPP(IND BARATH)	350
ER	ORISSA	PVT	COAL	ICCL	ICCL (IMFA) IMP	0
ER	ORISSA	PVT	COAL	JITPL	DERANG TPP	1200
ER	ORISSA	PVT	COAL	NALCO	NALCO IMP	0
ER	ORISSA	PVT	COAL	SEL	STERLITE TPP	600
ER	WEST BENGAL	PVT	COAL	IEL	INDIA POWER TPP (HALDIA)	150
ER	ANDAMAN NICOBAR	STATE	DIESEL	A&N ADM	AND. NICOBAR DG	40.05
ÊR	WEST BENGAL	STATE	HIGH SPEED DIESEL	WBPDC	KASBA GT (Liq.)	40

Bihar

Priority	Feeders/ICTs	Point of Disconnection
1	400/220 kV 315 MVA ICT at Biharsariff	400 kV Biharsariff PG
2	132 kV Arrah (PG)- Arrah (BSPHCL)	132 kV Arrah PG
3	132 kV Purnea(PG)-Purnea(BSPHCL)	132 kV Purnea PG

Jharkhand

Priority	Feeders/ICTs	Point of Disconnection
1	One 400/220 kV 315 MVA ICT	400 kV Jamsedpur
	Jamsedpur	
2	220 kV Ranchi(PG)-Chandil(JUVNL)	220 kV Ranchi-PG

DVC

Priority	Feeders/ICTs	Point of Disconnection
1	220 kV Maithon (PG)-Kalyaneswari	220 kV Maithon-PG
2	220 kV Parulia (PG)-Parulia (DVC)	220 kV Parulia PG
3	220 kV Maithon (PG)-Dhanbad (DVC)	220 kV Maithon-PG

Odisha

Priority	Feeders/ICTs	Point of Disconnection
1	220 kV Rengali(PG)-Rengali(OPTCL)	220 kV Rengali-PG
2	220/132 kV Baripada 160 MVA ICT	220 kV Baripada-PG
3	220 kV Baripada(PG)-Balsore (Odisha)	220 kV Baripada-PG

West Bengal

Priority	Feeders/ICTs	Point of Disconnection
1	220 kV Dalkohla (PG)-Dalkohla(WB)	220 kV Dalkohla-PG
2	132 kV Malda (PG)-Malda(WB)	132 kV Malda-PG
3	220 kV Subhasgram(PG)-	220 kV Subhasgram PG
	Subhashgram(WB)	

West Bengal State Electricity Transmission Company Limited

(A Government of West Bengal Enterprise) CIN: U40109WB2007S6C113474: Website: <u>www.wbsetcl.in</u>; Phone / Fax No. (033) 2334 9020 Registered Office : Vidyut Bhawan, Block-DJ, Sector-II, Bidhannagar, Kolkata – 700 091



OFFICE OF THE CHIEF ENGINEER State Load Despatch Centre

Memo. No: SLDC/HOW/18/ 10 90 To The Member Secretary, ERPC 14, Golf Club Road, Tollygange Kolkata-700033.

Dated: 13.10.17

Sub. Implementation of ADMS scheme in West Bengal system

Dear Sir,

As per Reg.5.4.2(d) of CERC (IEGC) Regulations,2010 (Grid Code), work of implementation of Automatic Demand Management Scheme in West Bengal system has been completed and kept in service at following S/S :-

SI.No	Name of Substn.	Summer Evening (MW)	Summer Morning (MW)	Winter Evening (MW)	Winter Morning (MW)	Remarks
1	BIGHATI	36	36	25	16	Block A
2	BARJORA	28	20	20	16	Block A
3	SUBHASGRAM	80	52	53	33	Block B
4	NEWBISHNUPUR	50	55	24	24	Block B
5	NEWTOWN A.A.III	35	40	24	20	Block C-implemented on 20.09.17
6	DHARAMPUR	85	65	55	45	Block C-implemented on 20.09.17

Maximum 50MW load will be interrupted by tripping of 33kv feeders in sub-stns. covered in each block. Thanking you,

13/10/2017 Yours faithfully (P.K.Kundu)

Chief Engineer SLDC, WBSETCL

SPS FOR STERLITE - Rev 3

Assumptions:-

- 1. Unit 1, 3 & 4 are connected to PGCIL bus (400 kV).
- 2. Unit 2 is connected to OPTCL bus (400 kV).
- 3. Both the buses are decoupled
- 4. Circuits 2 and 4 of 400 kV Raigarh-Rourkela line are LILOed at Sterlite.
- 5. Steady state and emergency line loading limits for different outgoing lines as per new planning criteria:-

Sl	Line	Steady-state	Emergency
1	400 kV Raigarh-Sterlite-I	852MW	937MW
2	400 kV Raigarh-Sterlite-II	852MW	937MW
3	400kV Rourkela-Sterlite-I	852 MW	937MW
4	400kV Rourkela-Sterlite-II	852MW	937MW

Inputs to the SPS :-

- 1. MW flow (with direction) of 400 kV Sterlite- Raigarh-I
- 2. MW flow (with direction) of 400 kV Sterlite- Raigarh-II
- 3. MW flow(with direction) of 400 kV Sterlite- Rourkella-I
- 4. MW flow (with direction) of 400 kV Sterlite- Rourkela-II
- 5. Number of units on bar at 400kVand their present generation
- 6. CB status of all 400KV lines emanating from SEL

Principle of operation

Case:-1

At least three 400KV lines in service from Sterlite.

The SPS should be activated if loading of any of the following lines exceeds 850MVA (Thermal line loading as per CEA Planning criteria)

- 1. 400 kV Sterlite- Raigarh-I
- 2. 400 kV Sterlite- Raigarh-II
- 3. 400 kV Sterlite- Rourkella-I
- 4. 400 kV Sterlite- Rourkela-II

Condition:- Line loading (A) > 850MVA

Action:- Rapid reduction of generation till line loading comes down to 750MVA (100MVA margin kept to avoid frequent operation of SPS on account of variation in WR-ER interchange)

Case:-2

Only two 400KV lines in service from Sterlite.

Condition: - Line loading (A) > 850MVA or SEL maximum generation limited by 900MW

Action:- Rapid reduction of generation till line loading comes down to 750MVA (100MVA margin kept due to reduced security and to avoid frequent operation of SPS)

Scanning time will be every 10 sec. and thresh hold value will be 10 MVA for reduction of generation

BIHAR STATE POWER TRANSMISSION COMPANY LTD: PATNA

Registered Office: 4th Floor, Vidyut Bhawan, Baily Road, Patna Corporate Identity No. (CIN) U40102BR2012SGC018889Web site- www.bsptcl.in

Standard Operating Procedure (S.O.P.)

<u>Case-I:</u> In case of outage of 315 MVA ICT of Patna (PG) & 500 MVA ICT remaining in service Action to be taken:

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- 1. Consultation as tripping of 220 kV Patna (PG) Fatuha T/L may be done to consultation with PSESCOC overloading of 500 MVA ICT, as recommended by PGCIL.
- (a) Khagaul GSS will shed Bihta & Digha GSS immediately to get instant relief of approx 150 MW.
 - (b) In case of synchronized state of 220 KV Patna(PG)-Khagaul-Ara (PG) loop, if 500 MVA ICT still gets overloaded after operation of (a) then incomer of 220 KV Patna (PG) & Sipara line will be isolated at Khagaul GSS (in anticipation to post facto approval of ERLDC).
 - (c) In case of Khagaul is not synchronised with Ara (PG), SLDC will reduce load of Sasaram(PG)-Ara(PG) both ckt, subsequently ERLDC shall be requested for extending power from Khagaul to Arrah(PG) for synchronization. Then incomer of 220 KV Patna (PG) & Sipara will be isolated at Khagaul GSS (in anticipation to post facto approval of ERLDC).
 - (d) Then Power to Khagaul will be available from Ara (PG)
- (e) SLDC will reschedule all connected GSS to ensure power availability at Khagaul GSS.
- 3. After stabilization of system at Khagaul, Khagaul will take action for reduction of rural load & restoration of PSS connected to Digha & Bihta etc. as per availability of power and in guidance of SLDC.

Case-II: In case of outage of 500 MVA ICT of Patna (PG) & 315 MVA ICT remaining in service Action to be taken:

- 1. Simultaneous tripping of 220 KV Patna (PG)-Khagaul, 220 KV Sipara-Khagaul & 220 KV Patna (PG)-Fatuha Trans. Lines may be done through relay, as recommended by PGCIL
- 2. Under this condition power to 220 KV Khagaul will remain zero from Patna (PG) and Sipara (BSPTCL).
- 3. 250 MW power will be available at Patna (PG) which will be used for 132KV power supply to Jakkanpur, Mithapur & Karbigahiya. All 33 KV feeders at Sipara GSS will be disconnected.
- 4. Since, Khagaul is not synchronized with Ara (PG), SLDC will reduce load of Sasaram(PG)-Ara(PG) both ckt, subsequently ERLDC shall be requested for extending power from Arrah (PG) to Khagaul.
- 5. After stabilization of system at Khagaul, Khagaul will take action for restoration of its own load along with that of Digha, Bihta GSS & Traction load, as per availability of power in accordance with guidance of SLDC.

Case-III: In case of outage of both 315MVA & 500MVA ICT at Patna (PG) Action to be taken:

- Simultaneous tripping of 220 KV Patna (PG)-Khagaul, 220 KV Sipara-Khagaul & 220 KV Patna (PG)-Fatuha Trans. Line may be done through relay, as recommended by PGCIL.
 Under this condition, power to 200 KV KI
- 2 Under this condition, power to 220 KV Khagaul will remain zero from Patna (PG) and Sipara (BSPTCL).
 3 Sipara will avail power from 220 KV Group 5 to the main zero from Patna (PG) and Sipara
- 3 Sipara will avail power from 220 KV Sipara- Fatuha line, then after transformation to 132KV it will be extended to Jakkanpur.
- 4 In case of unavailability of 220 kV Sipara-Fatuha line:

(a) Isolate Fatuha power which is being feed to Masaudhi via transfer bus of Sipara.

(b) Fatuha will extend power to Sipara (up to 125 MW) and subsequently Sipara will extend it to Mithapur, Karbigahia & Jakkanpur

- 5 The load allocation to Mithapur shall be done by SLDC considering the limit of loading of Biharsarif(PG) & associated 220KV Biharsarif(SG)-Fatuha transmission line.
- 6 Masaudhi & Jahanabad GSS will avail power from Gaya GSS (L-33) with suitable power allocation.
- 7 Isolation of rural load of Fatuha & Katra shall be done by respective GSS.

Case-IV: In case one ckt of 220 KV D/C Patna (PG)-Sipara goes under breakdown. Action to be taken:

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- 1. Simultaneous tripping of 220KV Patna (PG)-Khagaul & 220KV Sipara-Khagaul line may be done through Relay.
- 2. Power to Khagaul from Patna(PG) will then be zero to avoid bulk load & tripping on overloading.
- Then, Khagaul will avail power through 220 KV Patna (PG)-Khagaul line keeping Bihta and Digha GSS shaded.
- After stabilization of system at Khagaul, Khagaul will take action for reduction of rural load & restoration of PSS connected to Digha & Bihta etc. as per availability of power and in guidance of SLDC.

Case-V: In case of 220KV D/C Patna (PG)-Sipara both goes under breakdown.

Action to be taken:

- Simultaneous tripping of 220KV Patna (PG)-Khagaul & 220KV Sipara-Khagaul line may be done through Relay.
- Power to Khagaul from Patna (PG) will be zero to avoid tripping of line in overload due to bulk load and reverse power flow i.e. from Khgaul to Sipara (on single ckt of Patna(PG)-Khagaul).
- 3. Since, Sipara is powerless, it will avail power through 220 KV Sipara Fatuha line then after transformation to 132KV it will be extended to Jakkanpur. Simultaneously, rescheduling of load at Fatuha, Katra, Gaighat, Jakkanpur, Mithapur & Karbigahiya will be done.
- 4. In case of unavailability of 220 kV Sipara-Fatuha line:
 - (a) Isolate Fatuha power which is being feed to Masaudhi via transfer bus of Sipara.
 - (b) Fatuha will extend power to Sipara (up to 125 MW) subsequently Sipara will extend it to Mithapur, Karbigahia & Jakkanpur.
- 5. The load allocation to Mithapur shall be done by SLDC considering the limit of loading of Biharsarif(PG) & associated 220KV Biharsarif(SG)-Fatuha transmission line.
- 6. Masaudhi & Jahanabad GSS will avail power from Gaya GSS (L-33) with suitable power allocation.
- 7. Isolation of rural load of Fatuha & Katra shall be done by respective GSS.
- Then, Khagaul will avail power through 220 KV Patna (PG)-Khagaul line keeping Bihta and Digha GSS shaded.
- After stabilisation of system at Khagaul, Khagaul will take action for reduction of rural load & restoration of PSS connected to Digha & Bihta etc. as per availability of power and in guidance of SLDC.

<u>Case-VI</u>: <u>In case of 132KV D/C Sipara-Jakkanpur goes under breakdown</u>. <u>Action to be taken</u>:

1. Extend Mithapur Power to Jakkanpur via Karbigahia , The total load of Jakkanpur will be restricted to 70 MW only &33 kv Power for Karbigahia shall be regulated as per instruction of SLDC

Case-VII: In case of 220KV D/C Biharsarif-Fatuha line goes under breakdown.

Action to be taken:

- 1. Isolation of Masaudhi & Jahanabad from Fatuha and shall be shifted on Gaya GSS with suitable power allocation.
- 2. GSS Katra, Gaighat & Fatuha shall be rescheduled by SLDC as per availability of power at Patna (PG).

Case-VIII: In case of either 13KV Fatuha-Gaighat or Fatuha-Katra line goes under breakdown.

Gaighat GSS & Katra GSS are interconnected at 132 KV level as such these grids can share load available at other end.

- Case I:-In case 132 KV Fatuha-Gaighat lines goes under breakdown, Gaighat can draw full load from GSS Katra as the transmission line capacity of 132 Fatuha-Katra is 150 MW.
- Case II:-In case 132 KV Fatuha-Katra line goes under breakdown, GSS Katra may avail load up to the extent load of Katra & Gaighat is 120 MW. As soon as load reaches peak of 120 MW, some rural feeder of Katra may be shaded or Katra PSS may be shifted on Fatuha GSS.

(Perwez Alam) ESE, Telecom & ULDC

(H. R. Panday) CE (SO)

(A. K. Choudhary) ESE, TC, Patna

(S.B. Prasad)

CE, Trans (O &M)

Prenjeet Kunn

(Premjeet Kumar) ESE, SLDC

(R. K.Gopal) ESE,Tr.(O & M)

(J.P. Singh) GM-cum-CE Trans Zone, Patna

Item No:B20 Failure of RTU data with the outage of ICTs of Patna and Biharshariff station

- POWERGRID may update the status of extending UPS to RTUS for Patna and Biharshariff station.
- As per input from POWERGRID , for following listed 17 nos of stations (having communication equipments) DCPS need to be replaced.
 - 1. RSCC, Kolkata
 - 2. CPCC, Durgapur
 - 3. Kanchanpur
 - 4. Barkot
 - 5. Jamui
 - 6. Maldah
 - 7. Siliguri 400 kV
 - 8. Jamshedpur 400 kV
 - 9. Siliguri 220 kV
 - 10. Rengali
 - 11. Birpara
 - 12. Rourkela
 - 13. Purnea 220 kV
 - 14. Indravati
 - 15. Muzaffarpur 400 kV
 - 16. Biharsharif 400 kV
 - 17. Sasaram HVDC
 - The above list is also available in Report of RTU / SAS replacement in Eastern Region dated 10-08-2017.

		<u>OV</u>	VNERSHI	P DETAILS				A		
SL. NO	TIE-LINE		ΤΟ Ε	ND						
			Bay equip Ownership	Responsibility of maintaining bay eqp.	Responsibility of ensuring Real Time data	Responsibility of sending RI/DR/EL	Bay equip Ownership	Responsibility of maintaining bay eqp.	Responsibility of ensuring Real Time data	Responsibility of sending RI/DR/EL
			A) 765 KV	LINES						
1	GAYA-VARANASI	POWERGRID	POWERGRID(ER)				POWERGRID(NR)			
2	GAYA-BALIA	POWERGRID	POWERGRID(ER)				POWERGRID(NR)			
3	PUSAULI-FATEHPUR	POWERGRID	POWERGRID(ER)				POWERGRID(NR)			
4	RANCHI(NEW)-DHARAMJAYGARH	POWERGRID	POWERGRID(ER)				POWERGRID(WR)			
5	JHARSUGUDA-DHRAMJAYGARH	POWERGRID	POWERGRID(ER)				POWERGRID(WR)			
6	ANGUL-SRIKAKULAM	POWERGRID	POWERGRID(ER)				POWERGRID(SR)			
7	ANGUL-JHARSUGUDA	POWERGRID	POWERGRID				POWERGRID			

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			B) 400 KV LINES				
7	MUZZFARPUR-GOROKHPUR	POWERLINKS	POWERGRID(ER)		POWERGRID(NR)		
8	PATNA-BALIA	POWERGRID	POWERGRID(ER)		POWERGRID(NR)		i
9	BIHARSHARIFF-BALIA	POWERGRID	POWERGRID(ER)		POWERGRID(NR)		
10	BIHARSHARIFF-VARANASI	POWERGRID	POWERGRID(ER)		POWERGRID(NR)		
	BARH-MOTIHARI	L(LILO)	POWERGRID(ER)		DMTCL		
	MOTIHARI-GOROKHPUR	L(LILO)	DMTCL		POWERGRID(NR)		i
12	SASARAM(N) -SARNATH	POWERGRID	POWERGRID(ER)		POWERGRID(NR)		
14	SASARAM(N) -ALLAHABAD	POWERGRID	POWERGRID(ER)		POWERGRID(NR)		
15	BINAGURI-BONGAIGAON-I, II	POWERGRID	POWERGRID(ER)		POWERGRID(NER)		i
16	AILPURDUAR-BONGAIGAON-I, II	PGCIL(LILO)	POWERGRID(ER)		POWERGRID(NER)		i
20	TEESTA V-RANGPO	POWERGRID	NHPC		POWERGRID		
21	SEL-RAIGARH	POWERGRID & SEL	SEL		POWERGRID(WR)		i
22	JHRASUGUDA-IBEUL	IBEUL	POWERGRID		IBEUL		l
23	JHRASUGUDA-RAIGARH	IBEUL	POWERGRID(ER)		POWERGRID(WR)		ĺ
24	ROURKELA-RAIGARH	POWERGRID	POWERGRID(ER)		POWERGRID(WR)		i
25	ROURKELA-SEL	POWERGRID & SEL	POWERGRID		SEL		l
26	RANCHI -SIPAT	POWERGRID	POWERGRID(ER)		POWERGRID(WR)		l
28	FARAKKA-BEHRAMPUR	POWERGRID	NTPC		POWERGRID		ĺ
29	FARAKKA-SAGARDIGHI	POWERGRID	NTPC		WBPDCL		l
30	FARAKKA - MALDA	POWERGRID	NTPC		POWERGRID		l
31	FARAKKA - PARULIA	POWERGRID	NTPC		POWERGRID		1
32	KAHALGAON -BANKA	POWERGRID	NTPC		POWERGRID		ļ
34	SAGARDIGHI-BEHRAMPUR	POWERGRID	WBPDCL		POWERGRID		ļ
35	SAGARDIGHI-SUBHASGRAM	POWERGRID	WBPDCL		POWERGRID		l
36	SAGARDIGHI-PARULIA	WBSETCL	WBPDCL		POWERGRID(ER)		l
38	JEERAT-SUBHASGRAM	POWERGRID	WBSETCL		POWERGRID		ļ
39	SUBHASGRAM(PG)-HALDIA	HEL	POWERGRID		HEL		l
40	PARULIA-BIDHANAGAR	WBSETCL	POWERGRID		WBSETCL		l
41	KHARAGPUR-BARIPADA	WBSETCL & OPTCL	WBSETCL		POWERGRID(ER)		l
45	DSTPS - JAMSHEDPUR	POWERGRID	DVC		POWERGRID		l
46	KODERMA-BIHARSARIFF	POWERGRID	DVC		POWERGRID		l
51	RAGUNATHPUR-MAITHON	POWERGRID	DVC		POWERGRID	 	l
52	JAMSEDPUR-AHUNIK	APNRL	POWERGRID		APNRL	 	l
53	JAMSHEDPUR-TISCO	POWERGRID	DVC		POWERGRID		ł
55	JEYPORE-GAZUWAKA	POWERGRID	POWERGRID(ER)		POWERGRID(SR)		1

58	INDRAVATI-INDRAVATI	OPTCL	POWERGRID(ER)			OPTCL		
59	TSTPP-MERAMUNDALI	POWERGRID	NTPC			OPTCL		
61	BARIPADA-NEW DUBURI	POWERGRID	POWERGRID(FR)			OPTCL		
62	MENDHASAL-NEW DUBURI	OPTCI	POWERGRID(ER)			OPTCL		
64	TSTPP - RENGALL	POWFRGRID	NTPC			POWERGRID		
65	KHARAGPUR-CHAIBASA	PKTCI	WRSETCI			POWERGRID		
66	MENDHASAL-PANDIABILI	POWERGRID	OPTCI			POWERGRID		
67	BARIPADA PANDIABILI	POWERGRID	WBSETCI			POWERGRID		
07	NEW RANCHLNEW PPSP	PKTCI	POWERGRID			WESETCI		
71	FARAKKA-GOKARNO	POWERGRID	NTPC			WBSETCL		
72	DIKCHU TEESTA III	SKDDI TDTI	DIKCHU			TEESTA III		
72	DIRCHU-TEESTA III	SKFFL+1F1L DOWERCRID (TDTI	DIKCHU			TEESTA-III		
2	DANKA DILADSADIEE	POWERGRID	POWERGRID			DOWEDCDID		
2	LAVINGADAL DILLADGADIEE	POWERORID	POWERGRID			POWERORID		
3	LAKHISAKAI-BIHAKSAKIFF	POWERGRID	POWERGRID			POWERGRID		
4	KAHALGAUN -LAKHISAKAI	POWERGRID	NIPU			POWERGRID		
5	BIHARSHARIFF-PURNEA	ENICL	POWERGRID			POWERGRID		
7	MAILHON-GATA	POWERGRID	POWERGRID			FUWERGRID		
/	NARALUAUN -BAKH	POWERGRID	NTPC			NIPC		
8	DARN - PATNA	POWERGRID	NIPC			POWERGRID		
9	FATINA- KISHANUANJ DUDNEA DIMACUDI L & H	POWERGRID	POWERGRID			POWERGRID	 	
10	PURNEA - BINAGURI I & II	POWERGRID	POWERGRID			POWERGRID		
11	PUKNEA-KISHANGANJ	POWERGRID	POWERGRID			POWERGRID		
12	BINAGURI-KISHANGANJ	POWERGRID	POWERGRID			POWERGRID		
13	PUKNEA - MUZAFFARPUR	POWERLINKS	POWERGRID			POWERGRID		
14	BIHARSHARIFF- PUSALILI	POWERGRID	POWERGRID			POWERGRID		
16	FARAKKA - KAHAI GAON L& II	POWERGRID	NTPC			NTPC		
17	FARAKKA-KAHALGAON III & IV	POWERGRID	NTPC			NTPC		
18	BOKARO-KODERMA	POWERGRID	DVC			DVC		
19	MALDA - PURNEA	POWERGRID	POWERGRID			POWERGRID		
20	MERAMUNDALI - MENDASAL	OPTCL	OPTCL			OPTCL		
21	RENGALI-KEONJHAR	OPTCL	POWERGRID			OPTCL		
22	KEONJHAR- BARIPADA	OPTCL	POWERGRID			POWERGRID		
23	JEYPORE - INDRAVATI	POWERGRID	POWERGRID			POWERGRID		
24	INDRAVATI - RENGALI	POWERGRID	POWERGRID			POWERGRID		
25	TSTPP - ROURKELA	POWERGRID	NTPC			POWERGRID		
26	ROURKELA- JHARSIGUDA	POWERGRID	POWERGRID			POWERGRID		
27	JAMSHEDPUR - CHAIBASA	POWERGRID	POWERGRID			POWERGRID		
28	CHAIBASA- ROURKELA	POWERGRID	POWERGRID			POWERGRID		
29	KTPS - CHANDITALA	WBSETCL	WBPDCL			WBSETCL		
29	CHANDITALA - JEERAT	WBSETCL	WBSETCL			WBSETCL		
30	BAKRESWAR - JEERAT	WBSETCL	WBPDCL			WBSETCL		
31	BAKRESWAR - ARAMBAGH	WBSETCL	WBPDCL			WBSETCL		
	NEW PPSP - ARAMBAGH	WBSETCL	WBSETCL			WBSETCL		
	NEW PPSP - PPSP	WBSETCL	WBSETCL			WBSEDCL		
33	PPSP - BIDHANAGAR	WBSEDCL	WBPDCL			WBSETCL		
34	KTPS - ARAMBAGH	WBSETCL	WBPDCL			WBSETCL		
35	KTPS-KHARGPUR	WBSETCL	WBPDCL			WBSETCL		
36	KTPS-KHARGPUR	WBSETCL	WBPDCL			WBSETCL		
37	PARULIA - JAMSHEDPUR	POWERGRID	POWERGRID			POWERGRID		
38	MAITHON - JAMSHEDPUR	POWERGRID	POWERGRID			POWERGRID		
39	MAITHON - RANCHI	POWERGRID	POWERGRID			POWERGRID		
40	DSTPS-RAGHUNATHPUR I & II	DVC	DVC	 		DVC		
41	JAMSHEDPUR-BARIPADA	POWERGRID	POWERGRID			POWERGRID		
42	RANCHI-RANCHI NEW	POWERGRID	POWERGRID			POWERGRID		
45	KANCHI-KUUKKELA-I&II	POWERGRID	POWERGRID	 		POWERGRID		
44	BINAGURI-RANGPO	POWERGRID	POWERGRID			POWERGRID		

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45	NEW RANCHI-CHANDWA	POWERGRID	POWERGRID		POWERGRID			
46	GAYA- CHANDWA	POWERGRID	POWERGRID		POWERGRID			
47	AILPURDUAR-BINAGURI-I,II	PGCIL(LILO)	POWERGRID(ER)		POWERGRID(ER)			
48	MUZAFFARPUR-DARBHANGA	DMTCL	POWERGRID(ER)		DMTCL			
49	SEL- MEERAMANDALI	POWERLINKS	SEL		OPTCL			
50	BARIPADA-PANDIABILI	POWERGRID	POWERGRID		POWERGRID			
51		DOWERCRID	OPTCI		DOWERCRID			
51	MEERAMONDALI- NEW DUBURI	POWERGRID	OFICE		POWERGRID			
			C) 220 KV	LINES				
74	PATNA-SIPARA	BSPHCL	POWEGRID		BSPHCL			
76	PUSUALI-SAHUPURI	BSPHCL & UPPCL	POWERGRID		UPPCL			
78	PATNA-KHAGUAL	BSPHCL	POWERGRID		BSPHCL			
80	NEW SASARAM- ARRAH	POWERGRID	BSPHCL		POWERGRID			
81	BODHGAYA-GAYA(PG)	BSPHCL & PG	BSPHCL		POWERGRID			
82	DEHRI-GAYA(PG)	BSPHCL & PG	BSPHCL		POWERGRID			
83	MUZZFARPUR-KANTI	POWERLINKS	POWERGRID		BSPHCL			
84	MUZZAFFARPUR-HAZIPUR-I & II	BSPTCL	POWERGRID		BSPTCL			
87	BALIMELA-U SILLERU	APTRANSCO	OPTCI		APTRASCO			
07	INDAL IAMSHEDDUD	OPTCL & DVC	OPTCI		DVC			
80		OPTCL & HIGNI	OPTCI				l	
09		OPTCL & JUSINL	OFICE		 JUSINE			
90		DONIER CREB	OPTCL		 CHATTISGARH			
91	BUDHIPADAR-RAIGARH I	POWERGRID	OPICL		 CHATTISGARH			
92	TSTPP-MERAMUNDALI	OPTCL	NTPC		 OPTCL			
93	TSTPP-RENGALI HPS	OPTCL	NTPC		OPTCL			
94	BISRA(PG)-TARKERA(OPTCL)	OPTCL	POWERGRID		 OPTCL			
95	JEYPORE(PG)-JAYNAGAR(OPTCL)	OPTCL	POWERGRID		OPTCL			
96	TSTPP-TALCHER	OPTCL	NTPC		OPTCL			
97	FARAKKA-LALMATIA	ECL	NTPC		NTPC			
98	RENGALI-RENGALI	OPTCL	POWERGRID		OPTCL			
99	BARIPADA-BALASORE	OPTCL	POWERGRID		OPTCL			
100	MAITHON(PG)-K'SWARI(DVC)	DVC	POWERGRID		DVC			
102	CHANDIL-SANTALDIH	WBSETCL & JUSNL	JUSNL		WBSETCL			
103	RANCHI-HATIA	JUSNL	POWERGRID		JUSNL			
105	TENUGHAT-BIHARSHARIF	BSPHCL & IUSNL	IUSNI		BSPHCL			
106	IAMSHEDPUR-RAMCHANDRAPUR	-POWERGRID	POWERGRID		IUSNI			
107	MAITHON(PG)-DHANBAD(DVC)	DVC	POWERGRID		DVC			
107		DVC	POWERGRID		DVC			
100	WADIA DIDIIANNACAD	DVC & WDSETCI	DVC		WDSETCI			
109	WARIA-BIDHAINNAGAR	WDSETCL	DVC		 WDSETCL			
112	SUDFUCEDM(PC) - NEW IOWN	WBSEICL	POWERGRID		 WBSEICL			
115	SUBH GRM(PG) - SUBH GRM (WB)	WBSEICL	POWERGRID		WBSEICL			
114	SUBH GRM(PG) - EMSS(CESC)	CESC	POWERGRID		 CESC			
115	SUBH'GRM(PG) - BANTALA	WBSETCL	POWERGRID		 WBSETCL			
118	BIRPARA- CHUKHA	POWERGRID	POWERGRID		 POWERGRID			
119	BIRPARA-MALBASE	POWERGRID	POWERGRID		 POWERGRID			
120	ALIPURDUAR-SALAKATI	POWERGRID	POWERGRID(ER)		 POWERGRID(NER)			
122	NEW MELLI- JLHEP	DANS	POWERGRID		DANS			
124	DARBHANGA-MUTIPUK	BSPICL	DMTCL		BSPICL			
125	DARDHANGA-SAMASTIPUK(UJI I ARPUK)	OPTCI	DMICL		 OPTCL			
12/	DOLANGIR SADHEDALLI	OPTCL	POWERGRID		 OPTCL			
120	PANDIARII LATRI	OPTCI	POWERGRID		 OPTCI			
129	PANDIABILI-ATRI PANDIABII I.SAMANGARA	OPTCI	POWERGRID		 OPTCI			
52	BIHARSHARIFF-FATUAH	BSPHCI	BSPHCI		BSPHCI			
53	BIHARSHARIFF-BODHAGYA	BSPHCL	BSPHCL		BSPHCL			
54	BIHARSHARIFF-BEGUSARAI	BSPHCL	BSPHCL		BSPHCL			
55	MTPS-BEGUSARAI	BSPHCL	BSPHCL		BSPHCL			
56	MTPS-DARBHANGA	BSPHCL	BSPHCL		BSPHCL			
57	MTPS-GOPALGANJ	BSPHCL	BSPHCL		BSPHCL			

58	SASARAM-ARRAH	POWERGRID	POWERGRID			POWERGRID		
60	WARIA-PARULIA	DVC	DVC			DVC		
61	WARIA-MEJIA	DVC	DVC			DVC		
62	CTPS A-DHANBAD	DVC	DVC			DVC		
63	CTPS B-DHANBAD	DVC	DVC			DVC		
64	DHANBAD-GIRIDIH	DVC	DVC			DVC		
65	BOKARO-JAMSHEDPUR	DVC	DVC			DVC		
66	KASBA-EMBYPASS	CESC	WBSETCL			CESC		
67	KASBA-SUBHASGRAM(WB)	WBSETCL	WBSETCL			WBSETCL		
69	BOKARO-CTPS B	DVC	DVC			DVC		
70	KALYANESHWARI-MEIIA	DVC	DVC			DVC		
71	KALYANESHWARI-BURNPUR	DVC	DVC			DVC		
72	BURNPUR-MEIIA	DVC	DVC			DVC		
73	MEIIA-MUCHIPARA	DVC	DVC			DVC		
74		DVC	DVC			DVC		
75	PARI II IA-MUCHIPARA	DVC	DVC			DVC		
76	BOKARO-RAMGARH	DVC	DVC			DVC		
70		DVC	DVC			DVC		
//	PTPS -TENUGHAT	JUSNL	JUSNL			I VNL		
/8	PATRATU-HATIA	JUSNL	JUSNL			JUSNL		
79	CHANDIL-RAMCHANDRAPUR	JUSNL	JUSNL			JUSNL		
80	JEYANAGAR-U.KOLAB	OPICL	OPICL			OHPC		
81	MERAMANDALI-NALCO	OPICL	NTPC			NALCO		
82	MERAMUNDALI - BIDANASI	OPTCL	OPTCL			OPTCL		
83	MERAMUNDALI - DUBURI(OLD)	OPTCL	OPTCL			OPTCL		
84	KATAPALLI-BUDHIPADAR	OPTCL	OPTCL			OPTCL		
85	IBTPS - BUDHIPADAR	OPTCL	OPGC			OPTCL		
86	TARKERA-BUDHIPADAR	OPTCL	OPTCL			OPTCL		
87	TARKERA-CHANDIPOSH	OPTCL	OPTCL			OPTCL		
88	TARKERA-BARKOT	OPTCL	OPTCL			OPTCL		
89	RENGALI-CHANDIPOSH	OPTCL	OPTCL			OPTCL		
90	RENGALI-BARKOT	OPTCL	OPTCL			OPTCL		
91	U. KOLAB-THERUVALI	OPTCL	OHPC			OPTCL		
92	U. KOLAB-JAYANAGAR	OPTCL	OHPC			OPTCL		
93	BALIMELA-JEYNAGAR	OPTCL	OHPC			OPTCL		
94	TALCHER-MERAMUNDALI	OPTCL	NTPC			OPTCL		
95	MERAMUNDALI - BHANJNAGAR	OPTCL	OPTCL			OPTCL		
96	MENDHASAL -BHANINAGAR	OPTCL	OPTCL			OPTCL		
97	MENDHASAL - NAYAGARH	OPTCL	OPTCL			OPTCL		
98	NAYAGARH - BHANINAGAR	OPTCL	OPTCL			OPTCL		
99	THERIVALLL BHANINAGAR	OPTCL	OPTCL			OPTCL		
100	THERUVALLE LAXMIPUR	OPTCL	OPTCL			OPTCL		
101	THERUVALLE NARENDRAPUR	OPTCL	OPTCL			OPTCI		
101	MENDHASAL - NARENDRAFUR	OPTCI	OPTCL			OPTCL		
102	MENDHASAL - CHANDAKA	OPTCL	OPTCI			OPTCI		
104	IAYANAGAR - LAXMIPUR	OPTCL	OPTCI			OPTCI		
104	LIHEP_THERIVALI	OPTCL	OHPC			OPTCI		
105	KTPS-HOWRAH	WRSETCI	WBPDCI			WESETCI		
100		WRSETCI	WRSETCI			WBDDCI		
107	SANTAI DIU DIDUANNACD	WDSETCL	WPDPCI			WDSETCI		
100	DIDUANNAGAD DDI	WDSEICL	WDUTCL			DP		
109	DIDHANNAGAR-DEL	WDSETCL	WDSETCL			UPL		
110	DIDHANNAGAK-BAKKESWAK	WESEICL	WBSEICL			WBPDCL		
111	SATUAUTIA-BAKKESWAK	WBSEICL	WBSEICL			WBPDUL		
112	ADAMDACH MIDNAPORE	WDSETCL	WBSEICL			WESEICL		
113	ARAMBAGH- MIDNAPUKE	WDOETGL	WBSEICL			WBSEICL		
114	ARAMBAGH-N.BISHNUPUR	WDSEIGL	WBSETCL			WESETCL		
115	ARAMBAGH- DUMJUK	WBSEIGL	WBSEICL			WBSEICL		
116	AKAMBAGH- KISHKA	WESEICL	WBPDCL			WBSEICL		
117	JEERAT-NEWTOWN	WBSETCL	WBSETCL			WBSETCL		
118	JEERAT-SATGACHIA	WBSETCL	WBPDCL			WBSETCL		
119	SATGACHIA-KRISHNANAGAR	WBSETCL	WBPDCL			WBSETCL		
120	BAKRESWAR-SADAIPUR	WBSETCL	WBPDCL			WBSETCL		
120	SADAIPUR-GOKARNO	WBSETCL	WBPDCL			WBSETCL		

121	GOKARNO-SAGARDIGHI	WBSETCL	WBSETCL			WBPDCL		
122	GOKARNO-KRISHNANAGAR	WBSETCL	WBSETCL			WBPDCL		
123	SUBHASGRAM (WB)- LAKHIKANTPUR	WBSETCL	WBSETCL			WBSETCL		
124	DALKHOLA-PURNEA	POWERGRID	WBSETCL			WBSETCL		
125	BIRPARA-BINAGURI	POWERGRID	POWERGRID			POWERGRID		
	BINAGURI-SILIGURI	POWERGRID	POWERGRID			POWERGRID		
126	JEERAT-KASBA	WBSETCL	WBPDCL			WBSETCL		
127	JEERAT- DHARAMPUR	WBSETCL	WBPDCL			WBSETCL		
128	DHARAMPUR- RISHRA	WBSETCL	WBPDCL			WBSETCL		
	SILIGURI-KISHANGANJ	POWERGRID	POWERGRID			POWERGRID		
129	DALKHOLA-KISHANGANJ	POWERGRID	POWERGRID			POWERGRID		
130	DALKHOLA-MALDA	POWERGRID	POWERGRID			POWERGRID		
131	RANGPOO- NEW MELLI	POWERGRID	POWERGRID			POWERGRID		
132	ALIPURDUAR-BIRPARA	POWERGRID	POWERGRID(ER)			POWERGRID(ER)		
			C) 132 KV	LINES		 		
		Cross Border Power						
131	MUZZAFARPUR- DHALKEBAR	Trans. Ltd.	POWERGRID			 NEPAL		
132	BARHI - B'SHARIFF	BSPHCL & DVC	DVC			BSPHCL		
133	BARHI-RAJGIR	BSPHCL & DVC	DVC			BSPHCL		
134	DEOGHAR-SULTANGANJ	BSPTCL & JUSNL	JUSNL			BSPHCL		
135	KAHALGAON-KAHALGAON	POWERGRID	BSPHCL			NTPC		
136	ARRAH-ARRAH	POWERGRID	BSPHCL			POWERGRID		
137	DUMRAON-ARRAH	POWERGRID	BSPHCL			POWERGRID		
138	PURNEA(PG)-PURNEA(BS)	BSPHCL	BSPHCL			POWERGRID		
139	PURNEA(PG)-KISANGANJ	BSPHCL	BSPHCL			POWERGRID		
140	DEHRIPUSUALI	POWERGRID	BSPHCL			POWERGRID		
141	KARMANASAPUSUALI	POWERGRID	BSPHCL			POWERGRID		
142	KARMANASA-SAHUPURI	BSPHCL & UPPCL	BSPHCL			UPPCL		
143	KARMANASA-CHANDAULI	BSPHCL & UPPCL	BSPHCL			UPPCL		
144	SONENAGAR - RIHAND	BSPHCL & UPPCL	BSPHCL			UPPCL		
145	MAITHON-IAMTARA	DVC & IUSNL	DVC			IUSNL		
146	KHARAGPUR-KHARAGPUR	DVC	DVC			WBSETCI	-	
140	KOLAGHAT-KOLAGHAT	DVC	DVC			WBSETCL		
147	MACHVIND VIZAG	APTRANSCO	OPTCI			 APTPANSCO		
140	IODA KENDDOSI	OPTCL & USNI	OPTCL			HIGNI		
149	JODA-KENDFOSI	OPTCL&JUSNL	DOWEDCDID			 JUSINL		
150	BARIPADA-BANGIRIPOSI	OPICL	POWERGRID			 OPICL		
151	BARIPADA-BARIPADA	OPICL	POWERGRID			OPICL		
152	GARWA-SONENAGAR	BSPHCL & JUSNL	JUSNL			BSPHCL		
153	LALMATIA-SABOUR	BSPHCL & JUSNL	JUSNL			 BSPHCL		
154	CHANDIL-MANIQUE	JUSNL & DVC	JUSNL			DVC		
155	PATRATU-PATRATU	JUSNL & DVC	JUSNL			DVC		
156	GARWA-RIHAND	JUSNL & UPPCL	JUSNL			UPPCL		
157	RANGIT-RAMMAM	POWERGRID	NHPC			 WBSETCL		
158	KAHALGAON-SABOUR	POWERGRID	NTPC			 BSPHCL		
159	KAHALGAON-LALMATIA	POWERGRID	NTPC			JUSNL		
160	BIRPARA-BIRPARA	WBSETCL	POWERGRID			WBSETCL		
161	MALDA-MALDA	WBSETCL	POWERGRID			WBSETCL		
162	SILIGURI-NBU	WBSETCL	POWERGRID			WBSETCL		
	SILIGURI - NJP	WBSETCL	POWERGRID			WBSETCL		
163	RANGIT -SAGBARI	SIKKIM	NHPC		1	SIKKIM		
164	ARHA-JAGDISHPUR	BSPHCL	POWERGRID			BSPHCL		
165	RANGIT-RANGPO	POWERGRID	NHPC			POWERGRID		
166	RANGIT-KURSEONG	POWERGRID	NHPC			WBSETCL		
167	RANGIT-SAGBARI	SIKKIM	NHPC			SIKKIM		
168	CHUJACHEN-GANGTOK	POWERGRID & GATI	GATLINFRA		1	POWERGRID		
169	BANKA-SABOUR	BSPTCL	POWERGRID			 BSPTCL		
170	BANKA-BANKA	BSPTCL	POWERGRID			BSPTCL		

171	RANGPO-CHUJACHEN	GATI INFRA	POWERGRID		GATI INFRA		
172	NJP-MELLI	POWERGRID	POWERGRID		SIKKIM		
		POWERGRID+GATI					
173	RANGPO- MELLI	INFRA	POWERGRID		SIKKIM		
174	NJP-MELLI	POWERGRID	POWERGRID		SIKKIM		
175	LAKHISARAI - JAMAUI	BSPHCL	POWERGRID		BSPHCL		
176	RANGIT - RABANGLA	POWERGRID	NHPC		SIKKIM		
177	KALINGPONG-MELLI	WBSETCL & SIKKIM	WBSETCL		SIKKIM		
178	BANKA-SULTANGUNJ	BSPTCL	POWERGRID		BSPTCL		

PMU Installation and commissioning status of ER as on 20.04.2017

				Owner/			TOTAL	PMU	Cable		Cable		Commiss			
S.No	Region	State	Sub-Station		S/S type	PMU	PANEL	Delivery	Delivery	Erection	Lauine	tormination	ioning	Integration	SAT	Remarks
				ounty			QTY	status	status		layiliy	termination	loning			
			78			286	175	73	61	51	45	40	40	24	37	
1	ER-II	West Bengal	Arambagh	WBSETCL	CR	3	1	Yes	Yes	done	done	pending	pending	Pending	pending	CT/ PT/ DI interfacing pending due to permission issue.
2	ER-II	West Bengal	BAKRESHWAR TPS	WBSETCL	CR	4	1	Yes	Yes	done	pending	pending	pending	Pending	pending	Panel erected. Cable laying pending due to permission
																issue.
3	ER-II	West Bengal	Bidhannagar	WBSETCL	CR	3	1	Yes	Yes	done	done	pending	pending	Pending	pending	Panel erected. Cable laying and termination at PMU panel
																completed. CT/ PT/ DI interfacing pending due to
																permission issue.
4	ER-II	West Bengal	JEERAT	WBSETCL	CR	2	1	Yes	Yes	done	done	done	done	done	pending	SAT pending as customer didn't agree to witness SAT.
5	ER-II	West Bengal	Kolaghat TPS	WBSETCL	CR	4	1	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	
6	ER-II	West Bengal	KASBA	WBSETCL	CR	3	1	Yes	Yes	done	done	done	done	done	pending	SAT pending as customer didn't agree to witness SAT.
7	ER-II	DVC	DSTPS	DVC	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Communication Link not available.
8	ER-II	DVC	Kodarma TPS	DVC	CR	3	1	Yes	Yes	done	done	done	done	Pending	done	Communication panel does not exist.
9	ER-II	DVC	MEJIA-B	DVC	CR	2	1	Yes	Yes	done	done	done	done	done	done	Integrated on 07.12.2016
10	ER-II	DVC	Maithon RB TPS	DVC	CR	2	1	Yes	Yes	pending	pending	pending	pending	Pending	pending	
																Work started on 04.07.2016. Panel shifted. Team
																demobilised due to access issue and panel location issue.
11	ER-II	DVC	Raghunathpur TPS	DVC	CR	3	1	Yes	Yes	done	done	done	done	Pending	done	Communication link was not available during work.
12	ER-II	DVC	MEJIA	DVC	CR	5	2	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU
																panel and SDH is more than 100 mtrs. Will be integrated on
																Mar 2017.
13	ER-II	DVC	Bokaro	DVC	CR	2	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 24.06.2016
14	ER-II	DVC	CTPS(Chanderpura)	DVC	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU
																panel and SDH is more than 100 mtrs. Will be integrated on
						_	-									Mar 2017.
15	Odisha	Orissa	Budhipadar	OPTCL	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
16	Odisha	Orissa	MENDHASAL	OPICL	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	OPTCL is not providing CT/ PT connection for
						_										Meeramundali-2 feeder.
17	Odisha	Orissa	MERAMANDALI	OPTCL	CR	6	2	Yes	Yes	done	under	pending	pending	Pending	pending	
											progress					
18	Odisha	Orissa	RENGALI	OPTCL	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Integration delayed because CAT-6 cable is faulty.
19	Odisha	Orissa	U.KOLAB	OPTCL	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	
20	Odisha	Orissa	BALIMELA(H)	OPTCL	CR	3	1	Yes	Yes	done	done	partially done	pending	Pending	done	OPTCL denied to provide DC connection. CT/PT/DI
												-		-		interfacing pending due to permission issue.
21	ER-II	West Bengal	Durgapur	Powergrid	CR	5	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 30.05.2016.
22	ER-II	West Bengal	FARRAKA	NTPC	CR	5	2	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	
23	Odisha	Orissa	Indrawati	Powergrid	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Communication Link not available.
24	Odisha	Orissa	Indrawati HPS	OPTCL	CR	1	1	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	OPTCL denied to provide DC connection.
25	Odisha	Orissa	JEYPORE	Powergrid	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Communication Link not available.
26	ER-II	West Bengal	MAITHON	Powergrid	CR	/	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 21.06.2016.
27	ER-II	West Bengal	MALDA	Powergrid	CR	2	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 24.06.2016
28	Odisha	Orissa	Rengali	Powergrid	KIOSK	2	1	Yes	res	done	done	done	done	done	done	PNUU Integrated on 04.05.2016
29		Urissa	Dinoguri	Powergrid	KIOSK	5	2	Yes	res	done	done	done	done	done	done	PNUC Integrated on 21.04.2016
30	ER-II	West Bengal	Binaguri	Powergrid	CR	2	2	Yes	Yes	done	done	done	done	done	done	PNU Integrated on 28.07.2016
31	EK-II	west Bengal	SUBHASHGKAIVI	Powergrid	KIOSK	2	1	Yes	Yes	done	done	done	done	done	done	PNUC Integrated on 22.00.2010
32	Odisha	Orissa	Balipada	Powergrid	CRUKingh	3	1	Vec	Yes	done	done	done	done	Donding	done	Communication Link not available
33	Odisha	Orissa		Powergrid	CK+KIOSK	2	3	Vec	Vec	done	done	done	done	renaing	done	Communication Link not available.
- 54	Ouisna	Ulissa	ANGOL	Powergrid	KIUSK	10	11	res	res	uone	uone	uone	uone	uone	uone	Pivio integrated on 24.05.2017.

PMU Installation and commissioning status of ER as on 20.04.2017

S No	Region	State	Sub-Station	Owner/	S/S type	PMII	TOTAL	PMU Delivery	Cable Delivery	Frection	Cable	CT/PT/DI	Commiss	Integration	SAT	Remarks
5.110	Region	State	Sub Station	Utility	5,5 сурс	11-10	QTY	status	status	Liccuon	laying	termination	ioning	megration	SAI	Kenturks
35	Odisha	Orissa	Keonjhar	Powergrid	CR	2	3	Yes	Yes	done	done	done	done	done	done	PMU integrated on 18.01.2017.
36	Odisha	Orissa	Jharsuguda	Powergrid	Kiosk	8	9	Yes	Yes	done	done	done	done	done	done	PMU integrated on 29.07.2016
37	Odisha	Orissa	GMR	GMR	Kiosk	3	4	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	
38	ER-II	Sikkim	RANGPO	Powergrid	CR	4	1	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU
																panel and SDH is more than 100 mtrs. Will be integrated on
																Mar 2017.
39	ER-II	West Bengal	Baharampur	Powergrid	CR	2	3	Yes	Yes	done	done	done	done	done	done	PMU integrated on 10.05.2016
40	ER-II	West Bengal	Birpara	Powergrid	CR	4	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 15.07.2016.
41	ER-II	DVC	CTPS B	DVC	CR	3	1	Yes	No	N/A	N/A	N/A	N/A	N/A	N/A	
42	ER-II	DVC	KALYANESWARI	DVC	CR	4	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 02.01.2017.
43	ER-II	DVC	PARULIA	DVC	CR	5	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 21.02.2017.
44	ER-II	West Bengal	Purulia PSP	WBSETCL	CR	2	1	Yes	No	N/A	N/A	N/A	N/A	N/A	N/A	
45	ER-II	Jharkhand	Bokaro TPS	DVC	CR	1	1	Yes	Yes	done	pending	pending	pending	Pending	pending	
46	ER-II	West Bengal	Durgapur TPS	DVC	CR	3	1	Yes	No	N/A	N/A	N/A	N/A	N/A	N/A	
47	Odisha	Orissa	TTPS(Talcher)	OPTCL	CR	3	1	Yes	No	N/A	N/A	N/A	N/A	N/A	N/A	
48	Odisha	Orissa	TALCHER	NTPC	CR	5	2	No	No	N/A	N/A	N/A	N/A	N/A	N/A	NTPC is not allowing to deliver mterial.
49	ER-II	Sikkim	TEESTA	Powergrid	CR	1	1	Yes	No	N/A	N/A	N/A	N/A	N/A	N/A	-
50	Odisha	Orissa	Uttara	Powergrid	CR	2	1	Yes	Yes	done	done	done	done	Pending	pending	Communication link from s/s to ERLDC and NTAMC to be
																provided by PGCIL.
51	Odisha	Orissa	Jindal	JITPL	CR	2	1	Yes	No	N/A	N/A	N/A	N/A	N/A	N/A	
52	Odisha	Orissa	Monnet	Monnet	CR	1	1	Yes	NO	N/A	N/A	N/A	N/A	N/A	N/A	
53	Odisha	Orissa	Strelite	Strelite	CR	3	1	Yes	NO	N/A	N/A	N/A	N/A	N/A	N/A	
54	Odisha	Citation	Ind barath	Ind barath	KIOSK	1	1	Yes	NO	N/A	N/A	N/A	N/A	N/A	N/A	
55	ER-II	SIKKIM	New Melli	Powergrid	CR	0	0	NO	NO	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.
50	ER-II	SIKKIM	11 POOI	Powergrid	CR	0	0	NO	NO	N/A	N/A	N/A	N/A	N/A Dending	N/A	
57	EK-II	west Bengal	Allpurduar	Powergrid	CR	0	/	res	res	partially	partially	pending	pending	Pending	pending	Work started on 22 12 2016 4 DMU papels and natwork
										uone	uone					nanol installed Bost 2 DML panels could not be prosted
																because location not finalised. Cable laving and
																termination at PMII nanel completed for 6 feeders CT/PT
																interfacing pending due to unavailability of shutdown
																PGCIL is asking to take DI points from field, which is not in
																scope. Work is held up. Team demobilised.
58	ER-II	West Bengal	Raiarhat	Powergrid	CR	2	1	Yes	Yes	done	pending	pending	pending	Pending	pending	Work withheld due to localite agitation issue
59	FR-I	Iharkhand	IAMSHEDPUR	Powergrid	CR	6	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 14.02.2017
60	ER-I	BIHAR	Kahalgaon(KHSTPP)	NTPC	CR	6	2	Yes	Yes	done	done	pending	pending	Pending	pending	Work withheld due to gate pass issue.
61	ER-I	BIHAR	Purnea	Powergrid	CR	6	2	Yes	Yes	done	done	pending	pending	done	pending	PMU integrated on 13.04.2017
62	ER-I	BIHAR	PATNA	Powergrid	Kiosk	6	7	Yes	Yes	done	done	done	done	done	done	PMU integrated on 11.04.2017
63	ER-I	Jharkhand	RANCHI	Powergrid	Kiosk	12	13	Yes	Yes	done	under	pending	pending	Pending	pending	
				_							progress	-	· ·	_		
64	ER-I	BIHAR	SASARAM(Pusauli)	Powergrid	CR+Kiosk	9	3	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	
65	ER-I	BIHAR	BARH	NTPC	CR	4	1	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	
66	ER-I	BIHAR	LakhiSarai	Powergrid	Kiosk	4	5	Yes	Yes	done	done	done	done	Pending	done	SAT completed. PMU not integrated because FO cable was
																not delivered due to road permit issue.
67	ER-I	BIHAR	BANKA	Powergrid	Kiosk	4	5	Yes	Yes	done	done	done	done	Pending	pending	SAT pending. PMU not integrated because switch was not
																delivered to site. Switch in transit.

PMU Installation and commissioning status of ER as on 20.04.2017

S.No	Region	State	Sub-Station	Owner/ Utility	S/S type	PMU	TOTAL PANEL QTY	PMU Delivery status	Cable Delivery status	Erection	Cable laying	CT/PT/DI termination	Commiss ioning	Integration	SAT	Remarks
68	ER-I	Jharkhand	Chaibasa	Powergrid	Kiosk	4	5	Yes	Yes	done	under progress	pending	pending	Pending	pending	
69	ER-I	BIHAR	765kv Gaya	Powergrid	Kiosk	11	12	Yes	Yes	done	done	done	done	done	done	PMU integrated on 24.02.2017
70	ER-I	Jharkhand	765/400kV Ranchi (N)	Powergrid	Kiosk	8	9	Yes	Yes	done	done	done	done	done	done	PMU integrated on 24.02.2017
71	ER-I	Bihar	Biharshariff	Powergrid	CR	9	3	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	
72	ER-I	Bihar	MUZAFFAPUR	Powergrid	CR	5	2	Yes	No	N/A	N/A	N/A	N/A	N/A	N/A	
73	ER-I	Jharkhand	Daltonganj	Powergrid	Kiosk	2	3	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	Road permit for Switch is pending.
74	ER-I	Bihar	Kishanganj (karandegł	Powergrid	CR	4	1	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mts.
75	ER-I	Jharkhand	Jharkhand Pool (Chan	Powergrid	Kiosk	4	1	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mts.
76	ER-I	Jharkhand	Patratu	Jharkhand	CR	3	1	Yes	No	N/A	N/A	N/A	N/A	N/A	N/A	
77	ER-I	Jharkhand	Tenughat	Jharkhand	CR	2	1	Yes	No	N/A	N/A	N/A	N/A	N/A	N/A	
78	ER-I	Bihar	Barauni PP	Bihar	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	BOQ not finalized.

ER PMU site activity Summary:

	Pagion	L H+ili+v	As per approve	d BOQ	Suppl	ied	Ins	talled	Commi	Commissioned ntegrated to ERLDC		
51. NO	Region	Otinty	No. of Substations	No. of PMU	s/s	PMU	s/s	PMU	S/S	PMU	S/S	PMU
1	ER-I	Powergrid	15	94	15	94	11	69	8	47	5	37
2	ER-I	NTPC	2	10	2	10	1	6	0	0	0	0
3	ER-I	Jharkhand	2	5	2	5	0	0	0	0	0	0
4	ER-I	Bihar	1	0	0	0	0	0	0	0	0	0
	ER-I	Total	20	109	19	109	12	75	8	47	5	37
1	ER-II	Powergrid	13	42	11	42	10	39	8	33	7	29
2	ER-II	NTPC	1	5	1	5	0	0	0	0	0	0
3	ER-II	DVC	13	37	13	37	10	29	9	28	4	13
4	ER-II	WBSETCL	7	21	7	21	5	15	2	5	2	5
	ER-II Total		34	105	32	105	25	83	19	66	13	47
1	Odisha	Powergrid	10	38	10	38	10	38	10	38	6	30
2	Odisha	OPTCL	8	19	6	16	5	15	3	6	0	0
3	Odisha	NTPC	1	5	1	5	0	0	0	0	0	0
4	Odisha	IPP	5	10	5	10	0	0	0	0	0	0
	Odisha	Total	24	72	22	69	15	53	13	44	6	30
	ER	Total	78	286	73	283	52	211	40	157	24	114

SI. No.	Site Name	Work Progress
		Installed, powered up, functioning and integrated with DVC,
1	ERLDC	WBSETCL and OPTCL PDS system.
2	Backup-NLDC	POSOCO did not provide space for PDS system installation.
		Installed, powered up, functioning and integrated with ERLDC
3	SLDC, Maithon	PDS system.
		Installed, powered up, functioning and integrated with ERLDC
4	SLDC, Bhubaneswar	PDS system.
		Installed, powered up, functioning and integrated with ERLDC
5	SLDC, Howrah (WBSETCL)	PDS system.

Status of PDS system Installation and commissioning at ER as on 20.04.2017

			Protect	ion & Co				
SI.	Substation	Av	vailability	1	Time Sy	ynchroi	nization	Remarks
NO		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-kanaigaon line-lii & 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

AVAILABILITY STATUS OF EVENT LOGGER, DISTURBANCE RECORDER & GPS

								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
22	Kharagpur	Ne	Vee	Vaa	Na	Na	No	IFOM PGCIL
33	кпагаури	NO	res	res	NO	NO	NO	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:

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

- 2) The present status of ERS towers in OPTCL system is as follows:
- > 220 kV ERS towers: 42 nos located at Mancheswar, Chatrapur & Budhipadar
- ➢ 400 kV ERS towers: 2 nos located at Mancheswar.
- > 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) WBSETCL informed that they have placed order for 2 sets of ERS towers on 31.10.2014 and expected by June, 2015.
- 4) The 25th ERPC meeting held on 21.09.2014, the board 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.

Availability of Emergency Restoration System in BSPTCL system

Sl. No.	Туре	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	

Note:-

- 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 is currently available in our system (as mentioned in above table with remarks "New").
- Same ERS tower is used in both 220 Kv and 132 kV circuits.

List of drifted meters to be replaced in Phase-II

SNO	LOCATION	METER SNO	FEEDER NAME
1	MUZAFFARPUR(PG)	NP-5074-A	400 KV MUZAFARPUR (PG)-GORAKHPUR(NR)-1
2	MUZAFFARPUR(PG)	NP-9981-A	400 KV MUZAFARPUR (PG)-GORAKHPUR(NR)-2
3	MEJIA(DVC)	NP-5226-A	MEJIA END OF MAITHON(PG)-1
4	MEJIA(DVC)	NP-5227-A	MEJIA END OF MAITHON(PG)-2
5	RANCHI(PG)	NP-5835-A	400 KV RANCHI-SIPAT-1 (WR)
6	RANCHI(PG)	NP-5836-A	400 KV RANCHI-SIPAT-2 (WR)
7	BINAGURI(PG)	NP-5884-A	BINAGURI END OF BONGAIGAON (NER)-1
8	BINAGURI(PG)	NP-5885-A	BINAGURI END OF BONGAIGAON (NER)-2
9	ROURKELLA(PG)	NP-5933-A	ROURKELA END OF TARKERA (GRIDCO)-2
10	KHARAGPUR(PG)	NP-7563-A	400 KV KHARAGPUR -BARIPADA(PG)
11	MPL	NP-7970-A	MAITHON RB END OF RANCHI (PG)-1 (MAIN)
12	MPL	NP-7971-A	MAITHON RB END OF RANCHI (PG)-2 (MAIN)
13	MPL	NP-7564-A	MAITHON RB END OF MAITHON (PG)-1 (MAIN)
14	MPL	NP-6518-A	MAITHON RB END OF MAITHON (PG)-2 (MAIN)
15	RANCHI NEW(PG)	NP-7847-A	765 KV RANCHI NEW -DHARAMJAYGARH-1
16	RANCHI NEW(PG)	NP-8753-A	765 KV RANCHI NEW -DHARAMJAYGARH-2
17	STERLITE	NP-7572-A	400 KV STERLITE - RAIGARH(WR)-II(MAIN)
18	STERLITE	NP-7372-A	400 KV STERLITE - ROURKELLA(PG)-II(MAIN)
19	ROURKELLA(PG)	NP-5928-A	400 KV ROURKELLA(PG)-RAIGARH(WR)
20	MIRAMUNDALI(OPTCL)	NP-5977-A	400 KV MIRAMUNDALI-ANGUL-1
21	MIRAMUNDALI(OPTCL)	NP-5976-A	400 KV MIRAMUNDALI-ANGUL-2
22	SUNDERGARH(PG)	NP-7634-A	765 KV SUNDERGARH-DHARAMJAYGARH-1
23	SUNDERGARH(PG)	NP-7638-A	765 KV SUNDERGARH-DHARAMJAYGARH-2

Det	ails of stations/U	Whether operating under RGMO	indicate in case of status is not available					
Name of State	Туре	Name of Uitlity	Sector (CS/SS/P rivate)	Name of Station	Name of Stage/ Unit	Installed capacity (MW)		
	Thermal	TVNL	SS	Tenughat	1	210	No	Difficulties in implementing
JHARKHAND	Hydro	ISED	SS SS	Subararakha	1	65	Yes	
	Hydro	JOED	SS	Subarniekna	2	65	Yes	
					2	82.5	NO	
			SS	Bandel TPS	3	82.5	No	
			SS		4	82.5 210	No	
			SS		5	250	No	Unit#6 could not be
			SS	Santaldih	6	250	No	implemented because of some technical problem
			SS		1	210	No	Nil
			SS		3	210	No	Nil
	Termal	WBPDCL	SS	Kolaghat	4	210	No	Nil
			SS		5	210	No	Nil
					6	210	Yes	
			SS		2	210	Yes	
WEST BENGAL			SS	Bakreshwar	3	210	Yes	
			SS		4 5	210	Yes	
			SS		1	300	No	Without OEM support it is
			SS	Sagardighi	2	300	No	not possible to put in FGMO/RGMO. At present OEM support is not
			SS		1	225	Yes	
	Hydro		SS	PPSP	2	225	Yes	In 134th OCC WBPDCL
			SS		4	225	Yes	in RGMO/FGMO mode
			SS	Dudas Dudas	1	250	Yes	
	Thermal	CESC	SS	Budge-Budge	2	250	Yes	
		0100	SS	Haldia	1	300	Yes	
	The same of		SS		2	300	Yes	
	Thermai		SS	DPL	1	210	No	Not adequate response in
		OPGC	SS	IB TPS	2	210	No	RGMO
			SS		1	49.5	No	
			SS		3	49.5 32	No	
			SS	Burla	4	32	No	
			SS		5	37.5	No No	
			SS		7	37.5	No	
			SS		1	60	No	
			SS		2	60 60	No No	
			SS	Balimola	4	60	No	
			SS	Daimeia	5	60	No	
Orissa			SS		6	60 75	NO No	
	Hydro	OHPC	SS		8	75	No	
			SS		1	50	No	
	1		55 SS	Rengali	3	50	NO	
	1		SS		4	50	No	
	1		SS		5	50	No	
	1		55 55		2	80	NO No	
	1		SS	Upper Kolab	3	80	No	
	1		SS		4	80	No	
			SS	l	1	150	No	

			SS	la desusti	2	150	No	
			SS	Indravati	3	150	No	
			SS		4	150	No	
		4	64					
			CS	Bokaro-A	1	500		RGMO will be service once the unit comes in CMC mode of operation. It will be done shortly in presence of
							No	BHEL experts.
			CS		1	210	No	Not possible due to non availability of Electro
			CS	Bokaro-B	2	210	No	hydraulic governing. The units will be
			CS		3	210	No	decommissioned shortly.
			CS		2	140	No	Not possible due to non availability of Electro
			CS	CTPS	3	140	No	hydraulic governing. The units will be decommissioned shortly.
			CS CS		7 8	250 250	Yes Yes	-
	Thermal	DVC	CS	DTPS	4	210	No	Not possible due to non availability of Electro hydraulic governing. The units will be decommissioned shortly.
			CS		1	210	No	Not possible due to non
			CS		2	210	No	availability of Electro
			CS	Mejia	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	
Central Sector			CS		6	250	Yes	
			CS	Meiia - B	7	500	Yes	_
			CS		8	500	Yes	
			CS	DSTPS	1	500	Yes	_
			CS		2	500	Yes	
			CS		1	500	Yes	_
			CS	KODERMA	2	500	Yes	
			CS	RTPS	1	600	Yes	_
			CS	_	2	600	Yes	
	Hvdro		CS	Panchet	1	40	No	RGMO mode of operation
	,		CS		2	40	No	would not be possible for
			CS		1	200	Yes	
			CS	Farakka STPP-I	2	200	Yes	
			CS		3	200	Yes	
			CS	Farakka STPP-II	1	500	Yes	
			CS CS	Farakka-11#6	2	500	Yes	Kept in RGMO mode from
			CS		1	210	Yes	April, 2014
	Thermal	NTPC	CS		2	210	Yes	
			CS		3	210	Yes	
			CS	Kahalgoan STPP	4	210	Yes	
			CS		5	500	Yes	
			CS		6	500	Yes	
			CS		7	500	Yes	
			CS	Talcher STPP Sto-I	1	500	Yes	ļ
			CS		2	500	Yes	<u> </u>
			CS	Barh	5	660	Yes	<u> </u>
	ļ		CS	Barh	6	660	Yes	<u> </u>
	1.1		CS	Terrisling	1	170	Yes	
	Hyaro	NHPC	CS	I EESTA HEP	3	170	Yes	
			45					
			PS		1	525	Yes	
			PS	IVIAITION KE TPP	2	525	Yes	
			PS		1	600	Yes	1
	The aver - I		PS	Starlita	2	600	Yes	
	rnermal	IPP	PS	Sternite	3	600	Yes	
			PS		4	600	Yes	
			PS	Adhunik Dowor	1	270	Yes	
			PS	Aunumik Power	2	270	Yes	
			-					

			PS		1	48	No	(RoR project with 3 hours			
IPP			PS	JLIILF	2	48	No	pondage)			
			PS	Chuischen HEP	1	49.5	No	(RoR project with 3 hours			
			PS	Chujachen nEr	2	49.5	No	pondage)			
			PS		1	200	No	could be put in RGMO			
	Hydro	IDD	PS		2	200	No	mode but because of transmission evacuation			
		IFF	PS	Toosta Uria	3	200	No				
			PS	reesta Olja	4	200	No				
			PS		5	200	No	could be put in RGMO mode but because of transmission evacuation constraint RGMO/FGMO i disabled (RoR project with 3 hours			
			PS		6	200	No	disabled			
		PS Dilata 1		1	48	No	(RoR project with 3 hours				
			PS	DIKCHU	2	48	No	pondage)			
			20								

Annexure-C.3

Anticipated Power Supply Position for the month of Nov-17

c		PARTICULARS	PEAK DEMAND	ENERGY
3			MW	MU
1		BIHAR		
-	i)	ΝΕΤ ΜΑΧ DEMAND	3000	2250
	"		3700	2230
	11)	INET POWER AVAILABILITY- Own Source (Including bilateral)	301	158
		- Central Sector	2663	1441
	iii)	SURPLUS(+)/DEFICIT(-)	-876	-651
2				
2			1000	700
	1)	NET MAX DEMAND	1280	/80
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	420	264
		- Central Sector	566	289
	iii)		-294	-227
	,		274	227
3		DVC		
	i)	NET MAX DEMAND (OWN)	2750	1652
	ii)	NET POWER AVAILABILITY- Own Source	4906	2668
	,	Control Sector	E04	222
		- Central Sector	504	322
		Long term Bi-lateral (Export)	1300	936
	iii)	SURPLUS(+)/DEFICIT(-)	1360	402
4		ORISSA		
1	iv		4200	2412
	1)		4200	2412
	ii)	NET POWER AVAILABILITY- Own Source	3156	1772
		- Central Sector	1050	607
	iii)	SURPLUS(+)/DEFICIT(-)	6	-33
1	,		5	
_				
5		WEST BENGAL		
5.1		WBSEDCL		
	i)	NET MAX DEMAND (OWN)	5345	2599
			0	0
	11)	CESC'S DRAWAL	0	0
	iii)	TOTAL WBSEDCL'S DEMAND	5345	2599
	iv)	NET POWER AVAILABILITY- Own Source	3324	1875
		- Import from DPI	79	0
		Control Sector	21/0	1105
		- Central Sector	2108	1105
	v)	SURPLUS(+)/DEFICIT(-)	226	381
	vi)	EXPORT (TO B'DESH & SIKKIM)	10	7
	,			
5.2		ומח		
3.2			050	171
	1)	NET MAX DEMAND	250	174
	ii)	NET POWER AVAILABILITY	329	136
	iii)	SURPLUS(+)/DEFICIT(-)	79	-38
	,			
5.2		0550		
5.5				
	i)	NET MAX DEMAND	1780	802
	ii)	NET POWER AVAILABILITY - OWN SOURCE	670	434
		FROM HEL	530	328
			0	0
		Involution E/TODE	500	0
ļ		Import Requirement	580	40
ļ	iii)	TOTAL AVAILABILITY	1780	802
ļ	iv)	SURPLUS(+)/DEFICIT(-)	0	0
1	.,		-	
¢				
0				
		(excluding DVC's supply to WESEDCE's command area)		
	i)	NET MAX DEMAND	7375	3575
	ii)	NET POWER AVAILABILITY- Own Source	4323	2445
ļ	,	_ Central Sector=Others	3278	1433
			3270	1433
1	111)	SUKPLUS(+)/DEFICIT(-)	226	303
7		SIKKIM		
	i)	NET MAX DEMAND	85	37
	.,		20	
	11)	INET FOWER AVAILABILITE OWIT SUULCE	3	2
		- Central Sector+Others	115	64
1	iii)	SURPLUS(+)/DEFICIT(-)	33	28
		1		
8		EASTERN REGION		
Ĭ				
		AL 1.03 A3 DIVERSITT FACTOR		
	i)	NET MAX DEMAND	19019	10706
1		Long term Bi-lateral by DVC	1300	936
		EXPORT BY WBSEDCL	10	7
1		NET TOTAL DOWED AVAILABLE TV OF TO	01044	
	IÍ)	NET TOTAL POWER AVAILABILITY OF ER	21344	11464
		(INCLUDING C/S ALLOCATION)		
	iii)	PEAK SURPLUS(+)/DEFICIT(-) OF ER	1015	-185
		(ii)-(i)		
		1 Y Y Y		

Annexure- C.4

Proposed Maintenance Schedule of Thermal Generating Units of ER during November, 2017 (as finalised in LGBR meeting)

Sustam	Station	Unit	Size (MW)	Per	riod	No. of	Deegen
System	Station	Umt	Size (IVI VV)	From	То	Days	Keason
DVC	BTPS - B	3	210	01.11.17	21.11.17	21	AOH (Boiler)
WDDDCI	Bandel	2	60	01.11.17	28.02.18	120	Capital Overhauling & Departmental R&M
WBIDCL	Sagarighi	1	300	01.11.17	06.11.17	6	Boiler License
	BUDGE-	3	250	18.11.17	24.11.17	7	Not Specified
CESC	TITAGAR	4	60	15.11.17	18.11.17	4	Not Specified
	SOUTHER	1	67.5	21.11.17	05.12.17	15	Not Specified
DPL	DPPS	8	250	01.11.17	15.11.17	15	Boiler License Renewal
NTPC	KhSTPS	4	210	01.11.17	05.12.17	35	Boiler, Turbine, Gen., DDCMIS R&M
IPP	GMR	2	350	01.11.17	25.11.17	25	Boiler Overhauling

पावर सिस्टम ऑपरेशन कॉरपोरेशन लिमिटेड

POWER SYSTEM OPERATION CORPORATION LIMITED

(A Government of India Enterprise)

मुली क्षेत्रीय भार प्रेमण केन्द्र, 14, मोल्फ कन्द्र रोड, टालिमंल, कोलफासा 700 033 न्रमाग : 033 2423 5867/5876, फेल्स : 033 2423 5809/5704/5029, ई-मेल : endc@posoco.in / www.eddc.org EASTERN REGIONAL LOAD DESPATCH CENTRE, 14, Golf Club Road, Tollygunge, Kolkata : 700 033 174, : 033 2423 5867/5875, Fax : 033 2423 5809/5704/5029, E-mail : eddc@posoco.in / www.eddc.org

ERLDC/SS & MIS/2017/VDI/3100

Date: 04-10-17

Τo,

Member Secretary Eastern Regional Power Committee 14, Golf Club Road, Kolkata – 33

Sub: Reporting of voltage deviation indices (VDI) for selected Substations in ER, for September 2017. विषय: September 2017 के लिए पूर्वी क्षेत्र में चयनित सबस्टेशन के लिए वोल्टेज विचलन सूचकांक (VDI) की रिपोर्टिंग

sir/ महोदय,

Enclosed please find VDI for selected 765 & 400kV buses of Eastern Region, computed for the month of September, 2017, for deliberation in next OCC meeting of ERPC.

संलग्न ERPC की अगली OCC बैठक में विचार विमर्श के लिए, September, 2017 के लिए गणना की गई पूर्वी क्षेत्र के चयनित 765 और 400 केवी बसों के लिए VDI को ढूंढें।

आपको धन्यवाद,

आपका विश्वस्त / Yours faithfully,

(पी मुखोपाध्याय) / (P Mukhopadhyay) कार्यकारी निदेशक/ Executive Director



VDI of Selected 765 kV & 400 kV in Eastern Region in the month of September - 2017

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नई रांची / Ranchi New			जमशेदपुर / Jamshedpur			मुजफ्फरपुर / Muzaffarpur		
MAY	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)
797	768	0.00	433	415	84.26	414	380	0.00

बिहार शरीफ / Bihar Sariff			बिनागुरी / Binaguri			जीरत / Jeerat		
		VDI (% of			VDI (% of			VDI (% of
MAX	MIN	Time)	MAX	MIN	Time)	MAX	MIN	Time)
418	394	0.00	418	397	0.00	422	378	0.75

राउरकेला / Rourkela			जयपोर / Jeypore			कोडरमा / Koderma		
		VDI (% of			VDI (% of			VDI (% of
МАХ	MIN	Time)	MAX	MIN	Time)	MAX	MIN	Time)
420	407	0.00	419	0	0.00	423	401	0.63

मैथन / Maithon			तीस्ता / Teesta			रांगपो / Rangpo		
ΜΔΧ	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)
419	404	0.00	413	396	0.00	412	394	0.00