Agenda

for

159th OCC Meeting

Date: 19.07.2019
Eastern Regional Power Committee
14, Golf Club Road, Tollygunge
Kolkata: 700 033

Eastern Regional Power Committee

Agenda for 159th OCC Meeting to be held on 19th July, 2019 at ERPC, Kolkata

Item no. 1: Confirmation of minutes of 158th OCC meeting of ERPC held on 27.06.2019

The minutes of 158th OCC meeting were uploaded in ERPC website and circulated vide letter dated 10.07.2019 to all the constituents.

Members may confirm the minutes.

PART A : ER GRID PERFORMANCE

Item no. A1: ER Grid performance during June, 2019

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

1. **Frequency profile**
2. **Over drawal /under injection by ER Entities**
3. **Performance of Hydro Power Stations during peak hours**
4. **Performance of ISGS during RRAS**
5. **Reactive Power performance of Generators**
6. **Restricted Governor /Free Governor Mode Operation of generators in ER**

Member may discuss.

PART B: ITEMS FOR DISCUSSION

Item No. B.1: Persistent Low Voltage at 400/220 kV Nodes in West Bengal System -- ERLDC

Low voltage chronic issues have been observed in few pockets of West Bengal System. These pockets include

1. 400 kV Rajarhat, 400 kV Shubhasgram, 400 kV Jeerat and their downstream area,
2. 132 kV Malda and downstream areas

The chronic low voltage problem is still persisting and momentarily reliefs are observed only on the days of load crash in south Bengal due to inclement weather. Many letters are also written to WBSETCL highlighting the severity of the condition. However till date any improvement in low voltage problem is not observed.

The matter was also discussed in last OCC meeting where OCC advised SLDC, WB to prepare a plan for implementation of Under-Voltage Load Shedding (UVLS) in WBSETCL system to avoid voltage stability problem.

WBSLDC may please share the plan for implementation of UVLS and other actions which they have taken to limit the voltage fall during peak load condition.

Powergrid vide mail dated 24th June 2019 suggested that for improving system voltage during peak summer, "Static Var Compensator" (SVC), may be installed at Subhashgram S/s. Necessary sizing will be detailed further, upon approval of forum.

It is proposed to provide in-principal approval for installation of SVC at Subhashgram S/s, for maintain system voltage during summer, and upon approval detailed report, with implementation plan will be submitted further.

In 158th OCC, ERLDC elaborated that due to significant increase in demand at Subashgram, Jeerat and Malda areas, the voltage has been coming down below 370 kV during peak hours.

OCC observed that low voltage had been persisting in West Bengal system due to significant demand at Malda, Subashgram and Jeerat area and insufficient reactive power support by WBPDCL generating units (i.e. from Sagardhigi, Bakreswar and Kolaghat TPS units). OCC opined that this might be leading to voltage instability problem, if necessary preventive actions are not taken in advance.

OCC advised WBPDCL provide MVAR generation during low voltage condition as per the capability curve.

OCC advised SLDC, WB to implement Under-Voltage Load Shedding (UVLS) in WBSETCL system to avoid voltage stability problem.

OCC decided to discuss the issue of low voltage in West Bengal system and the proposal of installing SVC at Subashgram in a separate meeting with the concerned members from WBSETCL, WBPDCL, SLDC-WB, WBSEDCL, CESC, Powergrid ER-II, ERLDC and ERPC.

Accordingly, the meeting was conducted at ERPC, Kolkata on 8th July 2019. Minutes of the meeting are enclosed at ***Annexure-B1****.*

Members may discuss.

Item No. B.2: Intimation regarding closure of Regional OS Control Centre, Patna --NTPC

NTPC vide letter dated 8th July 2019 informed that NTPC ER-I Regional OS Control Centre, Patna, will discontinue its operation w.e.f. 16.07.2019. ERLDC is requested to coordinate/communicate directly with all NTPC Stations.

Besides this, VoIP based communication system is under development at NTPC Operation Monitoring Center at NTPC Bhawan, Scope Complex, New Delhi.

Members may discuss.

Item No. B.3: WIDE DEVIATION OF REAL TIME GENERATION/SCHEDULE GENARATION(SG) OF TALA AND CHUKHA HEP WITH RESPECT TO DECLARED CAPACITY--WBSEDCL

Due to wide deviation between Declared capacity & real time generation of Tala HEP & Chukha HEP the day ahead & intraday planning of the beneficiaries are getting dislocated on regular basis specially during the monsoon season.

In practice distribution utilities like WBSEDCL tunes the day ahead LGBR by trading through Exchange platform, based on the day ahead availability received from different power stations under long/Medium term PPA within 12.00hrs of every day. But in real time it is observed that the Schedule Generation (SG) of Tala HEP & CHEP differs widely w.r.t that of day ahead DC. So,

for such unrealistic day ahead DC prediction from Bhutan side the beneficiaries are failing to plan their power purchase portfolio on economic principle.

Moreover, it is also observed that Bhutan S.O. is not serious in revising the DC of Tala HEP & CHEP in accordance with the real time ongoing generation trend. So, due to uncertainty of SG for such approach, beneficiaries are facing severe problem to take proper decision for load generation balancing under prevailing stringent DSM regime.

Members may discuss.

Item No. B.4: Disaster Management Group at Regional level and Plant level--CEA

CEA vide letter dated 9th July 2019 informed that as per section 37 of the Disaster Management Act 2005, each Ministry is required prepare a Disaster Management plan related to their sector. Accordingly, MoP in association with CEA has prepared a plan for power sector and it is available at CEA website (http://164.100.60.14/reports/others/planning/pslf/cmp_powersector.pdf).

In the plan, a four –tier institutional structure has been envisaged i.e. at central level, regional level, state level, and local unit level to effectively deal with disaster situations in power sector. The group at regional level has to be constituted under the chair of Member Secretary. Similarly a group at plant level is to be formed. Details are given at **Annexure-B4**.

CEA requested to confirm the constitution of the group at regional level for disaster management.

Members may discuss.

Item No. B.5: Levy of transmission charges for overload capacity scheduled to long-term beneficiaries--TUL

1. The agenda is with reference to CERC Order dated 12.02.2019 in Petition No. 205/MP/2018 under which LTA customers are not required to avail additional LTA for scheduling of overload up to 10%. CERC under its Order dated 12.02.2019 has *inter-alia* held as below:

   *"23. ……**hydro generating stations irrespective of ownership (private or government) are not required to obtain LTA corresponding to overload capacity (upto 10%) and the injection of the same should be allowed by concerned RLDC.** In our view, even in case of a hydro generating station in the private sector, the RLDCs cannot compel them to obtain LTA/ MTOA/ STOA for overload capacity up to 10% of existing LTA during high inflow period. Accordingly, RLDCs are directed to allow injection of power corresponding to overload capacity upto 10% of LTA without obtaining additional LTA/ MTOA/ STOA for the overload capacity. Needless to mention, the RLDCs shall allow the Declared Capacity declared by the generator for the purpose of PAF calculation of the generating station. In order to ensure that the CTU and RLDCs receive their respective charges, we also think it appropriate to clarify that **in case of scheduling of overload capacity up to 10% beyond granted LTA, the hydro generating station or the beneficiary, as the case may be, shall be required to pay additional LTA charges and additional RLDC fees & charges for the overload capacity.** These additional charges shall be in proportion to the existing LTA charges and RLDC fees & charges respectively. CTU and respective RLDCs shall raise bills accordingly.*

2. Few of our long-term customers have raised concern over the computation of LTA charges for such overload capacity. As per Regulation 11(4) of CERC (Sharing of Inter-State Transmission Charges and Losses) Regulation 2010, LTA charges are computed as under:

   "POC transmission rate for demand zone in Rs/ MW/ month x Approved Withdrawal"(MW)
   (i.e. Approved Withdrawal being LTA quantum in MW)

3. Few customers are interested in availing the 10% overload capacity for few days in a month instead of continuously for the whole month. They are concerned that by availing overload for few days (say 3-4 days in a month), they will be liable to pay additional LTA charges for the whole month which will result into very high charges per unit of electricity actually scheduled. They are of the view that the same should be charged proportionately for the number of days for which overload capacity is availed.
4. Therefore, clarification is required regarding levy of transmission charges for scheduling the overload capacity to long-term beneficiaries under LTA. The billing for the same should be calculated on the basis of Rs/ MW/ time-block as is being done in case of Central Generating Stations and be levied on concerned LTA customers. A similar formula has been given under Regulation 11(7) of CERC (Sharing of Inter-State Transmission Charges and Losses) Regulation 2010 which is to be used for somewhat different conditions. The similar methodology for determining transmission charges for overload scheduling can be adopted as given below:

   POC Transmission rates for the generation zone in Rs / MW/ time block x Average MW injected during time blocks.

Members may discuss.

Item No. B.6: Non-synchronisation of 400 kV Dikchu-Rangpo Line due to large angular separation & voltage oscillation--TPTL

400 kV Dikchu – Rangpo line could not be synchronised both at Dikchu end as well as Rangpo end on 30.06.2019 due to large angular separation between Rangpo 400 kV bus bar and Dikchu 400 kV bus bar. The line could be synchronised only after opening of 400 kV Teesta III – Dikchu line, thereby isolating Dikchu HEP from the rest of the system.

Further, after the outage of 400 kV Dikchu – Rangpo Line at 09-55 hrs on 30.06.2019, voltage of Teesta III HEP bus bar dipped to 367 kV and voltage oscillations occurred at Teetsa III end. Though SATCOM was under operation at Kishanganj, voltage oscillations at Teesta III end as well as large angular separation between Dikchu & Rangpo persisted. To control voltage dip at Teesa III end, generation at Teesta III HEP was immediately reduced from 1320 MW to 920 MW in consultation with ERLDC.

Members may discuss.

Item No. B.7: Submission of data in MERIT Order portal --CEA

CEA vide mail dated 9th July 2019 informed that the MERIT Order portal had been launched on 23rd June, 2017 by Honourable Minister of Power. One of the most important advantages of "Merit" Portal is Transparent information dissemination pertaining to marginal variable cost and source wise purchase of electricity and indication of supply side reliability, adequacy, and cost of power procurement.

However, it has been observed that many of the states are not filling the data regularly and sometimes the data filled varies widely from the data available on the respective RLDCs daily reports.

It is requested that the states may be advised to fill the data regularly and check that correct data is filled on the MERIT Portal.

Members may comply.

Item No. B.8: Outage of important transmission lines

In 158th OCC, Powergrid informed that 400 kV Kishenganj-Patna D/C lines would be restored by end of August 2019.

It was informed that 400 kV Purnea-Biharshariff D/c would be restored by end of July 2019.

Members may update.

Item No. B.9: Rectification of bent Tower leg & bracing at Loc. No. 170 (DD+0) of 400kV D/C Nabinagar-Sasaram Line--Powergrid

Powergrid informed that during line patrolling, the main leg-A and connected bracing between Leg-A & Leg-D was found deformed and bend inside, following the summer cyclone in the month of May 2019.

It is proposed to replace the bend bracing by de-stringing of conductor and after that replacement of leg with support of derrick / hydra with proper guying arrangements. The above lines shall be under shut-down to carry out such rectification work for a period of about ten days. To avoid collapse of said tower, POWERGRID has provided stitching with additional tower member to safeguard the tower and kept under regular vigil. Due to severe bending of leg members, collapse of the said tower cannot be overruled and hence required to be replaced the bend members at the earliest.

The replacement of deformed / bulged leg & bracing has been planned from 1st to 10th July' 2019 for which shutdown requisition has already been proposed. Since this tower has been deformed due to severe cyclone, the rectification period of the subject tower may be considered as force majeure condition for the purpose of calculation of availability.

In 158th OCC, it was informed that no evacuation path would be available for Nabinagar generation plant during the shutdown period of 400kV D/C Nabinagar-Sasaram Line.

In view of above, OCC advised Powergrid to restore the line using ERS and complete the tower repairing work.

Members may discuss.

Item No. B.10: Operationalization of 400 kV Durgapur Bus Splitting Scheme

In 151st OCC Meeting, it was decided to discuss the issue in a separate meeting. In line with the OCC decision three meetings were held at ERPC, Kolkata on 26.12.2018, 17.01.2019 and 08.04.2019.

The minutes of the 3rd Special Meeting on "Operationalization of 400 kV Durgapur Bus Splitting Scheme" held at ERPC, Kolkata on 8th April 2019 at 11:00hrs.

In 156th OCC, ERLDC informed that protection coordination with the adjacent substations should be completed before putting the bus splitting scheme in service.

It was informed that the protection coordination issues were discussed in 78th PCC Meeting held on 22nd April 2019. As per the decision, Powergrid had to coordinate with adjacent substations.

OCC advised NTPC, WBPDCL and WBSETCL to review the settings and submit the confirmation to ERPC and ERLDC by end of April 2019.

Regarding utilization of 3rd ICT at Durgapur, it was informed that the Committee met on 10th April 2019.

In 157th OCC, OCC decided to put the Bus Splitting Scheme at 400 kV Durgapur S/s in operation in 1st week of June 2019.

Protection settings to be reviewed:

Durgapur Substation

Section	Name of Line	Length and Conductor Type	Group 1 setting from the Remote end (Bus Split Mode)			Group 2 setting from the remote end (Bus Close Mode)		
			Longest Line data	Shortest Line data		Longest Line data	Shortest Line data	
Durgapur A (Bus 1 & 2)	400 kV Durgapur-Farakka 1	146 km, Twin Moose	**DGP-JSR: 177KM (Twin Moose S/C)**	**DGP-BDHN: 11KM (Twin Moose D/C)**	Not Required	**DGP-JSR: 177KM (Twin Moose S/C)**	**DGP-BDHN: 11KM (Twin Moose D/C)**	Not Required
	400 kV Durgapur-Bidhan Nagar 1	11 km, Twin Moose	R1=0.0288 X1=0.3280 B1=3.5500 R0=0.2850 X0=1.0200 B0=2.6100 R0m= 0 X0m= 0	R1=0.0288 X1=0.3070 B1=3.7700 R0=0.2690 X0=1.0700 B0=2.2900 R0m=0.2080 X0m=0.6750	Not Required	R1=0.0288 X1=0.3280 B1=3.5500 R0=0.2850 X0=1.0200 B0=2.6100 R0m= 0 X0m= 0	R1=0.0288 X1=0.3070 B1=3.7700 R0=0.2690 X0=1.0700 B0=2.2900 R0m=0.2080 X0m=0.6750	Not Required
	400 kV Durgapur-Bidhan Nagar 2	11 km, Twin Moose			Not Required			Not Required
	400 kV Durgapur-Jamshedpur	177 km, Twin Moose			Not Required			Not Required
	400 kV Durgapur-Sagardighi 1	127 km, Twin moose			Not Required			Not Required
	400 kV Durgapur-Sagardighi 1	127 km, Twin moose			Not Required			Not Required
	400/220 kV ICT 1							
Durgapur B (Bus 3 & 4)	400 kV Durgapur Maithon 1	70.1 km. Twin Lapwing	**DGP-JSR: 150.4KM (Twin Moose S/C)**	**DGP-JSR: 70.1KM (Twin Moose D/C)**	Yes Required due to change in short/long line	**DGP-JSR: 177KM (Twin Moose S/C)**	**DGP-BDHN: 11KM (Twin Moose D/C)**	Yes Required due to change in short/long line
	400 kV Durgapur Maithon 2	70.1 km. Twin Lapwing	R1=0.0288 X1=0.3280 B1=3.5500 R0=0.2850 X0=1.0200 B0=2.6100 R0m= 0 X0m= 0	R1=0.0197 X1=0.3060 B1=3.8000 R0=0.2050 X0=0.9010 B0=2.3700 R0m=0.1700 X0m=0.5020	Yes Required due to change in short/long line	R1=0.0288 X1=0.3070 B1=3.7700 R0=0.2690 X0=1.0700 B0=2.2900 R0m=0.2080 X0m=0.6750	R1=0.0288 X1=0.3070 B1=3.7700 R0=0.2690 X0=1.0700 B0=2.2900 R0m=0.2080 X0m=0.6750	Yes Required due to change in short/long line
	400 kV Durgapur-Farakka 2	150.4 km, Twin Moose			Yes Required due to change in short/long line			Yes Required due to change in short/long line
	400/220 kV ICT 2							

Committee submitted the study results on utilization of 3rd ICT at Durgapur which is enclosed at ***Annexure-B10.***

Powergrid informed that separate group settings had been implemented as per the revised configuration.

OCC decided to put the Bus Splitting Scheme at 400 kV Durgapur S/s in operation in 1st week of July 2019.

DVC vide letter dated 10th July 2019 informed that after commissioning of 3rd ICT, any unit tripping of MTPS may lead to imposing restriction on loading of the tie lines.

DVC requested to adjudge the viability of keeping the 3rd ICT in service before commissioning of the bus-split at Durgapur(PG).

Members may update.

Item No. B.11: Status of projects funded under PSDF schemes

NLDC vide mail dated 15th July 2019 informed that the completion schedule of the projects approved for PSDF funding is linked with the release of first installment of grant from PSDF. For the purpose of computation of the scheduled date of commissioning, the same is being worked out on the basis the completion schedule mentioned in the DPR and the date release of first installment of grant.

During the review of the progress of the projects, it was observed that scheduled commissioning date had already expired in most of the projects. The delay was viewed seriously during the meetings of the PSDF Project Monitoring Group, review meetings taken by Ministry of Power and the PSDF Monitoring Committee meetings.

Some of the entities had sought time extension and the same was also granted. It is seen that such projects have not been completed even in the extended time schedule. The project entities are requested to review the present progress of the project and furnish the reasons for not completing the project within the scheduled commissioning date/extended time schedule. The entities may furnish following details

a) Details of works completed so far,
b) Status of balance works,
c) Likely date for completion of the balance works.
d) Revised completion schedule,

A meeting of PSDF Project Monitoring Group (PMG) is scheduled on **23rd July, 2019** wherein the requests for time extension shall be considered. It is therefore requested to furnish the details along with the request for time extension latest by latest by 19th July, 2019 so that the same can be examined and put for consideration of the PMG. All those entities who have submitted their requests earlier may also update the status and resubmit the request.

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

A. Projects approved:

SN	Name of Constituent	Name of Project	Date of approval from PSDF	Target Date of Completion	PSDF grant approved (in Rs.)	Amount drawn till date (inRs.)	Latest status
1	WBSETCL	Renovation & up-gradation of protection system of 220 kV & 400 kV Substations in W. Bengal	31-12-14	April 2018 Extended till March 2019	108.6 Cr	37 Cr.	Project has been completed. Final value of the project is 51.22 Cr.
2		Renovation & modernisation of transmission system for relieving congestion in Intra-State Transmission System.	22-05-17	March 2020	70.13	63.12 Cr	Order has been placed . Work is in progress.
3		Installation of switchable reactor at 400kV & shunt capacitors at 33kV	22-05-17	November 2019	43.37	11.69 Cr	Order had been placed and work is in progress.
4		Installation of Bus Reactors at different 400kV Substation within the state of West Bengal for reactive power management of the Grid			71.74 Cr		
5		Project for establishment of reliable communication and data acquisition at different substation at WBSETCL.			31.19 Cr		
6	WBPDCL	Implementation of Islanding scheme at Bandel Thermal Power Station	*10.04.17*	*March 2018*	1.39 Cr	1.25 Cr	*The islanding scheme had been implemented and in operation wef**15.11.2018***
7		Upgradation of Protection and SAS		April 2020	23.48	2.348 Cr	Bid opened and order has been placed. Work started.
8	OPTCL	Renovation & Up-gradation of protection and control systems of Sub-stations in the State of Odisha in order to rectify protection related deficiencies.	11.05.15	31.03.19	162.5 Cr.	37.79 Cr	90% work has been completed. Total expenditure may not exceed 68 Cr.
9		Implementation of OPGW based reliable communication at 132kV and above substations	15.11.17		25.61 Cr.	2.56 Cr	Agreement signed on 03.01.2018. Tender has been floated.
10		Installation of 125 MVAR Bus Reactor along with construction of associated bay each at 400kV Grid S/S of Mendhasal, Meramundali& New Duburi for VAR control &stabilisation of system voltage	27.07.18		27.23 Cr	2.72 Cr	Tender has been floated.
11	OHPC	Renovation and up-gradation of protection and control system of 4 nos.OHPC substations.		*U.Kolab, Balimela, U.Indravati, Burla, Chiplima March 2019*	*22.35 Cr.*	2.235 Cr	Placed the work order.

12	BSPTCL	Renovation and up-gradation of 220/132/33 KV GSS Biharshariff, Bodhgaya, Fatuha, Khagaul, Dehri -on-sone& 132/33 kV GSS Kataiya	11/5/15	31.07.2018	64.02 crore	56.04 crore	85% of work has been completed. Contract awarded for Rs.71.37 Cr till date. The work would be completed by Oct 2019.
13		Installation of capacitor bank at different 35 nos. of GSS under BSPTCL	5/9/2016	31st March 2019	18.88 crore	Nil	Work awarded for all GSS. Work had been completed for 27 substations
14		Renovation & up-gradation of protection and control system of 12 nos. 132/33 KV GSS under BSPTCL.	02.01.17	31st March 2018	49.22 Cr.		75% work completed for seven no. GSS as part of R & M work. Revised DPR is to be submitted for rest 5 no. GSS.
15	JUSNL	Renovation and up-gradation of protection system	*September 2017*	*15 Months*	*138.13 crores*	*39.02 Cr*	LOA placed to Siemens on 28th Sep 2018.
16	DVC	Renovation and upgradation of control & protection system and replacement of Substation Equipment of 220/132/33 kV Ramgarh Substation	02.01.17	01.06.2019	25.96 Cr	2.596 Crore on 01.06.2017	Work awarded for 28.07 Cr. Work would be completed by May 2019.
17		Renovation and upgradation of control & protection system including replacement of substation equipment at Parulia, Durgapur, Kalyaneshwari, Jamshedpur, Giridih, Barjora, Burnpur, Dhanbad and Burdwan Substation of DVC	27.11.17	24 Months from the date of release of fund.	140.5 Cr.	1st installment of 14.05 Cr. received on 21.12.2017	Work awarded for 77.97 Cr.
18	POWERGRID	Installation of STATCOM in ER		June 2018	*160.28 Cr*	*16.028 Cr*	Work is in progress, expected to complete by June 2018. STATCOM at Rourkela has been commissioned.
19	ERPC	Creation & Maintenance of web based protection database and desktop based protection calculation tool for Eastern Regional Grid	17.03.16	Project is alive from 30th October 2017	20 Cr.	4.94 Cr. + 9.88 Cr.	1) Protection Database Project has been declared 'Go live' w.e.f. 31.10.17. 2) Pending training on PDMS at Sikkim and 3rd training on PSCT has been also completed at ERPC Kolkata.
20a	ERPC	Training for Power System Engineers	*27.07.18*		0.61 Cr.	Nil	Approved
20b		Training on Power market trading at NORD POOL Academy for Power System Engineers of Eastern Regional Constituents	*27.07.18*		5.46 Cr.	Nil	

B. Projects under process of approval:

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

		Management System (ADMS) in SLDC, Odisha			Committee. It was sent to CERC for concurrence.
5		Protection upgradation and installation of SAS for seven numbers of 220/132/33kV Grid substations (Balasore, Bidanasi, Budhipadar, Katapalli, Narendrapur, New-Bolangir&Paradeep).	12-03-18	41.1 Cr.	Scheme examined by TSEG on 20.03.2018. Inputs sought from the entity are awaited.
6	WBSETCL	Implementation of Integated system for Scheduling, Accounting, Metering and Settlement of Transactions (SAMAST) system in West Bengal	22-12-17	25.96 Cr	Proposal recommended for approval of Appraisal committee
7	BSPTCL	Implementation of Schedulling, Accounting, Metering and settlement of Transcation in Electricity (SAMAST)in SLDC Bihar.	27-02-18	93.76 Cr.	Scheme examined by TSEG on 20.03.2018 & 31.05.2018. Further inputs furnished by BSPTCL on 1.8.2018. Shall be examined in the next meeting of TESG.

Respective constituents may update the status.

Item No. B.12: Finalization Outage Request and processing timeline--ERLDC

The procedure for timeline regarding submission of outage request till approval of the outage formulated by ERLDC has been circulated and discussed in 156th OCC meeting held at NTPC, Kahalgaon. The same had also been presented in 157th OCC meeting held at ERPC, Kolkata for beneficiary's comments/suggestion. Till date ERLDC did not receive any objection/suggestion from the utilities. Under this circumstance, the procedure mentioned through a flow chart in **Annexure-B12** may be approved and minute unless any modification/suggestion recommended.

In 158th OCC, all the constituents were advised to submit their comments on outage procedure within a week.

OCC decided to finalize the procedure in next OCC Meeting.

Members may decide.

Item No. B.13: Additional agenda

PART C: ITEMS FOR UPDATE

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

UFR Healthiness Certification for the month of June, 2019 has been received from OPTCL, CESC, WBSETCL, DVC, BSPTCL and JUSNL.

Members may note.

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

At present, the following islanding schemes are in service:

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

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

The healthiness certificate for Islanding Scheme for June, 2019 has been received from CTPS, DVC, NTPC, West Bengal, JUSNL, WBPDCL and CESC.

Members may note.

Item no. C.3: Healthiness of SPS existing in Eastern Region

The Status of healthiness certificate for June, 2019 is given below:

Sl. No.	Name of the SPS	Healthiness certificate received from	Healthiness certificate not received from
1.	*Talcher HVDC*	*NTPC,GMR,*	*JITPL, Powergrid,*
2.	SPS in CESC system	*CESC*	*Nil*
3.	SPS at Chuzachen	*Chuzachen*	*Nil*

Members may update.

Item no. C.4: Implementation of Automatic Demand Management Scheme (ADMS)-ERLDC

The latest status along with proposed logic as follows:

Sl No	State/Utility	Logic for ADMS operation	Implementation status/target	Proposed logic (if different from under implementation logic)
1	West Bengal	F <49.7 AND deviation > 12 % or 150 MW	Implemented on 25.11.16	F <49.9 AND deviation > 12 % or 150 MW
2	DVC	F <49.7 AND deviation > 12 % or 150 MW	Implemented on 17.06.2016	
3	Bihar	F <49.7 AND deviation > 12 % or 150 MW	They would place the order to Chemtrol for implementation.	F <49.9 AND deviation > 12 % or 150 MW
4	Jharkhand	1. System Frequency < 49.9 Hz AND deviation > 12 % or 25 MW 2. System Frequency <	9 Months Tendering for RTU installation is in progress. Offer	Condition 1: Block I feeders will be selected for load shedding Condition 2: Block I & II feeders will be selected for load shedding

		49.9 Hz AND deviation > 12 % or 50 MW 3. System Frequency < 49.9 Hz AND deviation > 12 % or 75 MW	received from Chemtrol for implementation.	Condition 3: Block I, II & III feeders will be selected for load shedding
5	Odisha	1. System Frequency < 49.9 Hz 2. Odisha over-drawl > 150 MW 3. DISCOM over-drawl > (40 MW)	10 Months Sent for PSDF approval.	Logic 2 and 3 is AND or OR, in case it is AND then ADMS may not operated when discom are in schedule but GRIDCO is overdrawing due to less generation at state embedded generators
6.	Sikkim			Sikkim informed that they have submitted a proposal to PSDF Committee for installation of OPGW cables which is under approval stage. Sikkim added that ADMS scheme would be implemented after installation of OPGW.

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

In 40th TCC, ERLDC informed that in SCADA O&M Meeting held on 6th March 2019, Chemtrol has agreed to implement ADMS in Bihar and Jharkhand system without any additional charges. However necessary consent for making payment of Rs 4 lakhs (excluding GST) for remaining period of maintenance contract shall be given before implementing the same.

In the TCC Meeting, both Bihar and Jharkhand gave consent for making necessary payment.

In 156th OCC, it was informed that in SCADA O&M Meeting held on 24th April 2019, Chemtrol had informed that ADMS had already been implemented in Bihar and testing was to be done. Chemtrol had added that, for implementation ADMS for Jharkhand, they needed the list feeders as per the blocks.

OCC advised Bihar and Jharkhand to do the needful to implement the ADMS.

Members may update.

Item no. C.5: Shut down plan of 400 KV Rangpo-Binaguri for Reconductoring work--Powergrid

Under ERSS-XX, reconductoring work of 400 KV Rangpo-Binaguri-D/C from existing twin moose to Twin HTLS has been approved with scheduled completion target of May-2020. Previously, there are only Rangpo-Binaguri-D/C connectivity was present for transferring power from Sikkim to rest of the grid, accordingly, the S/D for reconductoring work was kept on hold till commissioning of 400 KV Rangpo-Kishanganj & 400 KV Teesta-3-Kishanganj circuit.

After commissioning of above links by M/S. TVPTL, both 400 KV Rangpo-Binaguri S/D was allowed but with a condition that, in case of any breakdown of available links, any one circuit required to be brought back within 24 Hours of intimation.

As all aware that Rangpo-Binaguri, line corridor is completely passing through hilly terrain (Almost 70% of the line) & mostly populated by angle towers. Height of the towers in the peaks also make the task double difficult as approach and carrying of T&P's are itself a gigantic task. Although the work commenced on 19.03.2019 after getting approval of S/D till 25.04.2019, but as the returning conditions are there, work cannot be speed up as in every span, respective gangs used to complete one after another circuit and moving for next span.

However, due to certain issues of generation back down, the double circuit S/D was asked to return and finally both the circuit again charged on 26.05.2019. Merely two month period of S/D

was allowed in which due to condition of return of S/D the work could not take pace as envisaged.

After that numerous communications made from ER-II end for further S/D but citing system security & constraints the S/D deferred continuously. In this regard a letter from ED/ER-II dated 17.05.19 also given to POSOCO (Enclosed).It may be noted that, the work is very tedious and time taking activity as most of the work will be carried out at Hills. Again, entire work will take 10-12 months and allowing a small window in lean period will not serve the purpose.

As such again, the S/D for reconductoring is placed as below, for completion of scheduled scope:

SL NO	Name of Element	From	To	Nature	Remarks
01.	400 KV Rangpo-Binaguri-Circuit-I	01.09.2019	30.07.2020	OCB	Other Rangpo-Binaguri Circuit will be charged.
02.	400 KV Rangpo-Binaguri-Circuit-II.	01.11.2019	30.05.2020	OCB	Both the Rangpo-Binaguri D/C will be under shut down.

In continuation, it may be noted, that during S/D of circuits of Rangpo-Binaguri, SPS will be implemented at Rangpo end for maintaining safe operating limits, in case of any eventuality. S/D for both circuits asked in lean period only.

In 158th OCC, it was decided to form a Committee with members from ERPC, ERLDC, Powergrid, Teesta-V and Teesta-III to study the appropriate time for allowing the shutdown including the duration thereof for completing the re-conductoring work. The Committee would also monitor the progress of the work.

Members may submit the nomination.

Item no. C.6: Replacement of defective Tie-line energy meter of one circuit of 132kV Patratu(DVC)-Patratu TPS --DVC

DVC vide letter dated 6th June 2019 informed that the old energy meter one circuit of 132kV Patratu(DVC)-Patratu TPS (L#85) is not working since long. One new energy meter has been collected by DVC from Powergrid for replacement. DVC requested Powergrid to install the meter at the earliest.

In 158th OCC, Powergrid agreed to send their representative to Patratu for installation of SEM.

Adhunik informed that the GT meter and APNRL-Jamshedpur line SEMs showing erroneous readings while importing the power during shutdown of both units of APNRL.

Powergrid agreed to take necessary action.

DVC and Powergrid may update.

Item no. C.7: Issues related to installation/integration of PMU under URTDSM project in ER---ERLDC

In 158th OCC, Powergrid updated the status as follows:

- *Talcher : Analog channels had been integrated and digital channels are yet to be done*
- *Kahalgaon : The work is planned to be done during shutdown on 2nd July 2019*

OCC advised NTPC to cooperate with Powergrid to complete the work.

Members may update.

Item no. C.8: REPLACEMENT OF OLD RTUS IN EASTERN REGION FOR REPORTING OF RTU/SAS TO BACKUP CONTROL CENTRES

In 39th ERPC Meeting, it was decided that,

i) ERPC approved the proposal of Power Grid for replacement of the old RTUs in the Eastern Region for reporting of RTU / SAS to backup control centres at an estimated cost of Rs. 88.57 Crore with an implementation time of 36 months.
ii) Power Grid shall place a proposal before PSDF Committee for financing the above project from PSDF.

In 40th TCC, Powergrid informed that the DPR for PSDF would be submitted by April, 2019.

In 158th OCC, Powergrid informed that the DPR for PSDF would be submitted by 31st July, 2019.

Powergrid may update.

Item no. C.9: Unavailability of Video Conference facility at Sikkim SLDC--Sikkim

Sikkim vide mail dated 15th May 2019 informed that their Video Conference unit was having problem of HDMI port since last two years and it was not attended by M/s Chemtrols until January 2019. After that they took entire VC unit for repair.

Sikkim added that they raised the issue in last SCADA meeting wherein M/s Chemtrol assured to get it repaired by 30.04.2019 but the same is not yet returned.

In 158th OCC, It was informed that the issue was discussed in SCADA meeting wherein Chemtrol was agreed to repair the VC and requested Sikkim to clear the pending dues.

OCC advised Sikkim to clear the dues and send a copy to ERPC and ERLDC. OCC decided to take up the issue with Chemtrol in monthly SCADA meeting.

Members may update.

Item no. C.10: Low Frequency Oscillation at DSTPS Power Plant on 24th April from 17:37-17:54 Hrs--ERLDC

The DSTPS Power plant is having two units each of 500 MW capacity. On 24th April 2019, on multiple occasions low frequency oscillation was observed at DSTPS Power plant from 17:37-17:54 Hrs. The time plot of the net generation of DSTPS power plant based on data recorded by PMUs installed on its evacuation lines is given below for this event. It is known that severe oscillation had been observed in the past also at DSTPS power plant due to hunting of governor in the year 2013 and tripping of Boiler Feed Pump Trip in the year 2018. All these three events of oscillation have led to grid-scale oscillation. ERLDC has gathered the details of last PSS tuning activity at DSTPS power Plant that was completed in the year 2016. In recent past, one major network change has occurred around DSTPS Power plant which involves splitting of 400 kV Maithon Bus. Thus, along with above cases of LFO, the network changes also necessitate review of the PSS tuning of the generating units at DSTPS.

DSTPS (DVC) may kindly submit the following details:

1. Reason for such oscillation observed in DSTPS power plant.
2. Performance of the Last PSS tuning Exercise (No Details submitted so far to ERLDC)

3. Firm Timeline for PSS tuning activity as per discussion in 31st Jan 2019 meeting and above agenda item and in compliance to IEGC 5.2.K and CEA (Technical standards for connectivity to the Grid) Regulation, 2007 6.g

In 157th OCC, DVC informed that they would submit the detailed report to ERPC and ERLDC at the earliest.

DVC added that they were planning to conduct the PSS tuning during overhauling of the units.

DVC may update.

Item no. C.11: Review of the PSS Tuning of Generators in Eastern Region

On 31st January 2019, PSS Tuning Meeting was held at ERPC. All generating utilities were advised to complete the PSS tuning of their plant at earliest for improvement of damping in the grid during transients. In addition, the tuning reports have also to be submitted to ERLDC/ERPC for their validation.

In line with this ERLDC has communicated to following utilities in view of the recent oscillation observed during various events:

Generating Power Plant	**Remarks**	**Status of Action Plan to be informed to OCC**
All Units of DVC Generating Plant	Oscillation Observed at DSTPS on 24th April 2019 and other Oscillation events in the past.	*During overhauling of the units.*
Sikkim Hydro Complex (Teesta3, Teesta 5, Chujachen, Dikchu, Tashiding, Jorethang)	In view of Oscillation during the 16th April 2019 events and changes in Network configuration in Sikkim hydro Complex with augmentation of lines	During lean generation period
MPL Plant	Due to Change in Network configuration dur to bus splitting at Maithon.	MPL Unit-2: done in June-2019 in the AOH. MPL Unit-1: Planned in the AOH on Nov-2019.
APNRL Plant	Oscillation with Low Damping during transient and switching observed at the plant	*During overhauling of the units in Aug/Sep 19.*
Farakka NTPC Power Plant	With Augmentation of new lines and changes in network configuration with upcoming bus split at Kahalgaon.	*During overhauling of the units.*
NPJC/BRBCL/KBUNL NTPC Power Plant	The new units have been commissioned however there is no details on the PSS tuning activity in line with Indian Electricity Grid Code and CEA Grid Connectivity Standards	

Detailed status of other Plants regarding their tuning/data submission and Validation of PSS Tuning Data given as Annexure C11.

Members may update.

Item no. C.12: 220 kV inter-connecting lines of OPTCL with 400/220 kV Bolangir (PG), Keonjhar & Pandiabil S/s

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

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

Sl. No.	Name of the transmission line	Completion schedule
1.	**2x315MVA 400/220kV Bolangir S/s**	
a.	LILO of one circuit of Sadeipalli-Kesinga220 kV D/C line at Bolangir S/S	*Only 7 towers left (Severe ROW problem).**By July, 2019.***
2.	**400/220kV Pandiabil Grid S/s:**	
a.	Pratapsasan(OPTCL)-Pandiabil(PG) 220 kV D/C line	***By July, 2019.***
3.	**400/220 kV Keonjhar S/S**	
a	Keonjhar (PG)-Turumunga(OPTCL) 220kV D/C line	By June 2020

OPTCL may update.

Item no. C.13: 220 kV inter-connecting lines of JUSNL with 2x315 MVA, 400/220 kV sub-stations at Chaibasa, Daltonganj & Dhanbad

In last OCC, JUSNL updated the latest status as follows:

Sl. No.	Name of the transmission line	Completion schedule
1.	**Daltonganj 400/220/132kV S/s:**	
a.	Daltonganj(POWERGRID)–Latehar220kVD/c	By Dec, 2019.
b.	Daltonganj (POWERGRID) – Garhwa 220kV D/c	The line expected to be completed by May, 2018 but – Garhwa 220kV is expected to be completed by July 2019.
c	Daltonganj (POWERGRID) – Chatarpur/Lesliganj 132kV D/c	Tendering is in progress. Expected to be completed by October 2019
2	**Chaibasa400/220kVS/s**	
A	Chaibasa(POWERGRID)–Noamundi220kVD/c	Not yet started
3	**Dhanbad400/220kVS/s**	
A	LILO of Govindpur–Jainamore/TTPS 220kVD/c at Dhanbad	ROW issues.Target date April 2020.

JUSNL may update.

Item no. C.14: 220 kV inter-connecting lines of WBSETCL with 400/220 kV, 2x315 MVA Subashgram & 2x500 MVA Rajarhat sub-stations

In last OCC, *WBSETCL updated the latest status as follows:*

Sl. No.	Name of the transmission line	Completion schedule
1.	**2x500MVA, 400/220kV Rajarhat---**	
a.	Rajarhat-N. Town-2 (WBSETCL) 220 kV D/C line	ROW problem, August 2020
b.	Rajarhat- Barasat (WBSETCL) 220 kV D/C line	The line is charged from Rajathat and Jeerat. The line would be charged from Barasat end after completion of rest of the work by September 2020.
2	**Subashgram400/220kVS/s**	
a	Subashgram–Baraipur220kVD/cline	December 2019, 80% of work has been completed.

WBSETCL may update.

Item no. C.15: Bypassing arrangement of LILO of 400kV Lines at Angul

LILO of Meramundali-Bolangir/Jeypore 400 kV S/C line and LILO of one Ckt of TalcherMeramundali 400 kV D/C line has been done at Angul 765/400kV Sub-station. The bypass arrangement for these circuits were under implementation at Angul by Powergrid.

In 158th OCC, Powergrid informed that bypass arrangement would be completed by August 2019.

OPTCL informed that 2nd circuit of 400kV Meramundali-Mendhasal line would be commissioned by July 2019.

Powergrid and OPTCL may update.

Item no. C.16: Update on status of telemetry

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

Major issues are given below:

i. Regarding frequent intermittent of real time SCADA data from Talcher STPS Stage 1 & 2, NTPC agreed to provide additional ports by March 2019.
ii. Alternate path for Malda–Farakka OPGW link

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

In 158th OCC, Powergrid informed that alternate OPGW link through 400 kV Kishenganj-Darbhanga-Muzaffarpur lines would be implemented by July 2019.

Members may update.

Item no. C.17: Transfer capability determination by the states

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

It was decided in the NPC meeting that to begin with, power system study for assessment of operational limits / power transfer capability for each state will be done by the concerned RLDC in association with concerned SLDC. Monthly TTC /ATC will be uploaded by the SLDCs at their respective websites and also communicated to concerned RLDC & NLDC subsequently.

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

SlNo	State/Utility	TTC import(MW)		RM(MW)		ATC (Import) MW		Remark
		Import	Export	Import	Export	Import	Export	
1	BSPTCL	5130	--	100	--	5030	--	Aug-19
2	JUSNL	1289	--	32	--	1257	--	Sep-19
3	DVC	1171.6	3142	61.46	48.26	1110.14	3093.7	Sep-19
4	OPTCL	2391	--	90	--	2301	--	Sep-19

5	WBSETCL	4180	--	400	--	3780	--	July-19
6	Sikkim	--	--	--	--	--	--	

Members may update.

Item no. C.18: Replacement of GPRS communication with Optical Fiber for AMR

In ER, 80% meters are connected through Automated Meter Reading (AMR). At present the communication system used for data transfer from each location is GPRS. It has been observed that many locations are not communicating with AMR system due to poor/no GPRS signal. Many substations have their own optical fiber which is also used for the LAN network of respective stations. TCS has successfully connected 02 locations (Subhasgram-PG and Binaguri-PG) in ER-II with PGCIL intranet and these two locations are smoothly reporting to AMR system after connecting with PGCIL LAN. The proposed network will not only provide better communication but also reduce the cost of GSM.

In 157th OCC,Powergrid informed that optical fiber for AMR had been implemented at 35 locations and rest of the locations would be completed by July 2019.

POWERGRID may please update the progress.

Item no. C.19: Mock Black start exercises in Eastern Region – ERLDC

Mock black start date for financial year 2019-20 is as follows:

Sl no	Name of Hydro Station	Schedule	Tentative Date	Schedule	Tentative Date
		Test-I		Test-II	
1	U.Kolab	Last week of May, 2019	July 2019	Last Week of January 2020	
2	Maithon	1stweek of June 2019		1st Week of February 2020	
3	Rengali	2ndweek of June 2019	Done on 27th June 2019	Last week of November 2020	
4	U. Indarvati	3rdweek ofJune 2019	July 2019	2nd week of February 2020	
5	Subarnarekha	1stweek of October 2019	July 2019	1st week of January 2020	
6	Balimela	3rdweek of October 2019	July 2019	1st week of March 2020	
7	Teesta-V	2ndweek of May 2019	During winter	Last week of February 2020	
8	Chuzachen	Last Week of Dec 2019		Last week of February 2020	
9	Burla	Last Week of June 2019	July 2019	Last week of February 2020	
10	TLDP-III	1st Week of June 2019		2nd Week of January 2020	
11	TLDP-IV	Last Week of June 2019		1st Week of February 2020	
12	Teesta-III	Last Week of Oct 2019		First Week of March 2020	
13	Jorthang	First Week of May 2019		First Week of Feb 2020	
14	Tasheding	2nd Week of May 2019		2nd Week of Feb 2020	

15	Dikchu	Sep 2019		3rd Week of Feb 2020	

Members may update.

Item no. C.20: Submission of Thermal Loading of Transmission line and associated terminal equipment by ISTS licensee

Thermal Loading of Transmission line and associated terminal equipment is one of the most vital data which is utilized for Operation Purpose, calculation of ATC/TTC and various other studies. This information has to be submitted by the utilities however even after so much follow-up, significant delay has been observed in submission. All Utilities are advised as quoted below are advised to submit the details by next OCC Meeting to ERLDC. In case of non-submission, the information on non-sharing of details will be shared with **National Power Committee.**

Name of Utility	Whether End Equipment Rating Submitted or Not?
PGCIL ERTS-1 and ERTS-2	**ERTS-1 submitted**
DMTCL	
Sterlite (ENICL, OGPTL, PKTCL)	
TVPTL	
Alipurduar Transmission Limited	
Powerlink	
CBPTCL	
OPTCL	**Submitted**
WBSETCL	**Submitted**
BSPTCL	
DVC	**Submitted**
JUVNL	

Members may update.

Item no. C.21: Summary of Status Update on Previous agenda items in OCC

OCC	Agenda	Decision	Status Update
152	**Item No. B3: Installation of PMUs for observation of the dynamic performance of STATCOMs**	Powergrid informed that M/s GE had agreed to supply and install of 4 no's PMUs for 4 STATCOMs in the Eastern Region within the quantity variation clause under the existing URTDSM Project.	In 157th OCC Meeting Powergrid informed that the work would be completed by July 2019.
154	**Item No. B.18: Details of Capacitor bank installed in Distribution/Sub transmission network**	OCC advised all the states to submit the updated capacitor bank list in their control area to ERLDC and ERPC.	Bihar/Orissa, West Bengal has submitted the Details. Jharkhand, Sikkim and DVC does not have any capacitor bank installed.
155	**C.22: Collection of modeling data from Renewable as well as conventional energy generators: ERLDC**	OCC advised all the constituents to submit the details of renewable power plants of 5 MW and above.	157th OCC advised all the SLDCs to submit the details to ERPC and ERLDC.
156	**Low frequency Oscillation at MTDC BNC-ALP-Agra**	OSS Advised ERTS-2 to submit the analysis report to ERLDC/ERPC	Powergrid informed that the issue was referred to ABB, Sweden. The report is yet to be received from ABB.
156	**Item no. C.20: Updated Black Start and**	DVC and Orissa have submitted the updated restoration procedure.	Jharkhand submitted the updated procedure.

	Restoration procedure of State--ERLDC		West Bengal, Sikkim and Bihar agreed to share the details within a week.
156	**Item No. B.12: Status of Auto-Reclosure on Lines from Tala and Chukha Hydro Power Plant (Bhutan)**	DGPC informed that an expert Committee was constituted to enable the autorecloser for transmission lines connected to Tala and Chuka hydro stations. The Committee had recommended for implementation of the autorecloser at Tala and Chuka. DGPC added that they are planning to implement the autorecloser scheme for the transmission lines connected at Chuka by May 2019. Based on the experience gained, they would implement the autorecloser scheme for the transmission lines connected at Tala.	It was informed that autorecloser was implemented for Chuka-Birpara lines. It was successfully operated on 26th June 2019. DGPC informed that they will implement the autorecloser at Tala end. Regarding 400kV Binaguri-Malbase, it was informed that some configuration issues have to be addressed before putting the autorecloser in operation.

Item no. C.22: Delay in furnishing information to ERLDC/ERPC regarding of Commissioning of new Transmission Elements/ Generating Units within State and integration of SCADA data with ERLDC--ERLDC

The above matter was deliberated in several past OCC meetings and format for data submission was also circulated. All states and transmission licensees agreed to submit the list of transmissions elements (ISTS & within state) synchronized **for the first time**during last month and new elements to be commissioned during next month, within 7th day of the current month to ERLDC through mail.

For the Month of April-2019, except Odisha no state and transmission licensee has submitted its list of transmission element /generators synchronised **in the previous Month** and List of Transmission element and generators expected to be synchronised during next Month.

The absence of updated information regarding new elements energized in the previous month and elements expected to be commissioned during the next month poses difficulty in integration of SCADA data of intra state lines in ERLDC SCADA system, which in turn severely impairs monitoring and supervising the regional grid – both in real time as well as off-line, at RLDC level. It is also observed that in ERLDC SCADA network and SLDC SCADA network some of the 220 and 132 kV transmission lines and substations are yet to be updated.

ERLDC is in the process of checking and updating the intra-state transmission network models of all states up to 132 KV using SCADA network availability at ERLDC and the transmission map available in the SLDC/STU website. Five groups (one for each state and one group for DVC & Sikkim) have already been formed at ERLDC to validate all state networks up to 132 kV level. In this regard all SLDCs are requested to nominate two executives(one from system operation and one from SCADA side) who shall help and coordinate with ERLDC executives during state network validation process for successful updating of SCADA and off-line models.

In the 157th OCC meeting members were requested to nominate two executives. However, till date nomination has been received from SLDC Jharkhand only.

In the interest of smooth and expeditious execution of this important work of validation / updation of state SCADA models, constituents are once again requested to please cooperate by nominating their concerned representatives.

In 158th OCC, ERLDC informed that nominations were received only from Jharkhand.

OCC advised all the other SLDCs to nominate two executives to coordinate with ERLDC for state network validation.

Members may please note and nominate two executives.

Item no. C.23: Issue of Control Room Coordination during Outage and Restoration at Substations having multiple control room and lines with different ownership.--ERLDC

With the introduction of TBCB, multiple utilities are part of the Indian power System. As on date six (7) transmission licensees own various transmission assets of Eastern Region. The entities are **Powergrid, Sterlite (ENICL,PKTCL, OGPTL), Cross Border Power transmission Corp Ltd(CBPTCL), Darbhanga Motihari Transmission Cop Ltd(DMTCL), Powerlinks, Alipurduar Transmission Ltd(ATL) and Teesta Valley power Transmission Ltd (TVPTL).** Other than Powergrid& Sterile, no other licensee has any dedicated operational control room for coordination with ERLDC during tripping/shutdown or any other switching operations. Only mobile number of few nodal executives of other transmission licensees is available to ERLDC, which are sometimes unreachable during odd hours. Due to non-availability of dedicated control center, it is very difficult to coordinate with associated transmission licenses during tripping of lines in odd hours, which causes delay in restoration of transmission asset and collection of tripping related information. ERLDC Real time operators are facing few difficulties which are presented on case to case basis:
Case 1: Transmission line owner and substations owner are different: In this case, in case of line tripping, ERLDC has to coordinate with three different utilities for trial attempt or restoration of the line. Also, in case of planned outage the ERLDC has to coordinate with three separate utilities resulting in unavoidable delays

Case 2: In same Substation two different control room: In one of the substations, it is observed that new transmission line integration is coming up with separate control room. This makes it quite difficult to coordinate the charging attempt as Bus/line both owners even though in same substation has to be coordinated. Again, this results in unavoidable delays and confusion among operators in calling two separate operators at same substation.
In view of the above, to avoid any confusion and unwanted delays during real time operation, a strategy and responsibility has to be fixed to ease out the RLDC Real time operator job.following is suggested:

For better co-ordination between transmission licensee and control center, all transmission licenses are requested to formulate their own control center and share the details with all.

For minimizing time and efforts required in coordinating with different agencies and facilitating decision making by ERLDC, it is proposed that representatives of the private transmission licensees in ER may be deployed at RTAMC-1 / RTAMC-2 with their own infrastructure or one executive of the private transmission licensee to be deployed at the substation from which transmission licensees line emanate.

In 158th OCC, ERLDC was advised to give a list of substations along with details of transmission licensees where they are facing the problem.

After detailed deliberation, it was decided to communicate issue to highest authorities of transmission licensees.

Members may update.

Item no. C.24: Non-submission of daily energy data in PSP portal during night hours for preparation of PSP report--ERLDC

ERLDC is preparing daily Power Supply Position (PSP) around 04:00hrs on daily basis based on energy data provided by the generators, states& transmission licenses.The correctness of the data in this report is very essentials as the energy data furnished in this report are being shared with various important organizations. As per current procedure, generators, transmission licenses & states are submitting the energy data to ERLDC web based reporting portal during night hours using their user credentials. However,it has been observed that some of the stakeholders are not submitting the data to ERLDC portal during night hours and in some cases data furnished by the stakeholders are erroneous.

Following are the ERLDC observation regarding data submission by the stake holders:

1. ISGS NTPC generators like Talcher, Barh and BRBCL submitted data regularly. However generators like Kahlagaon, Farakka and KBUNL are submitting data during very late night hours after repeated persuasion from ERLDC control room.
2. Inter-regional data submitted by the RTAMC ER - 1 & 2 sometimes differ significantly from the data recorded by SEMs installed in Inter Regional Link.
3. West Bengal SLDC always submits partial data.
4. SLDCs need to submit state generators Ex-Bus generation data at desired field of web based reporting software. However some SLDC submit gross generation data of state generator at their desired data field.

The above discrepancies are making the Daily Power Position Report vulnerable to errors / inaccuracies besides causing difficulty in timely preparation of the report. Submission of correct and complete data by the stake holders is very much essential for publication of correct Daily Power Position Report.

Stakeholders are requested to submit correct and all required data field available in web based reporting software during night hours.

Members may update.

PART D:: OPERATIONAL PLANNING

Item no. D.1: Anticipated power supply position during August 19

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of August 19 were prepared by ERPC Secretariat on the basis of LGBR for 2019-20 and feedback of constituents, keeping in view that the units are available for generation and expected load growth etc. is at **Annexure-D.1**.

Members may confirm.

Item no. D.2: Shutdown proposal of transmission lines and generating units for the month of August 19

In 151st OCC, it was observed that constituents had not submitting the shutdown requisition within stipulated time as a result ERLDC had been facing difficulty in properly analyzing the shutdown.

OCC decided the following procedure for submission of transmission elements outage requisition:

1. ***Shutdown of Intra Regional Lines*** *- Transmission licensee/SLDCs/Transmission Asset owners shall apply shutdown of their respective Intra Regional Lines for the next month to ERLDC strictly by **8th** of every Month. Based on this, ERLDC shall prepare the list which would be placed in OCC Agenda. Any shutdown requisition received after 8th of the month would not be normally considered for discussion in the OCC meeting unless it is considered to be an emergency requirement.*
2. ***Shutdown of Inter Regional Lines*** *- Transmission licensee/ SLDCs/Transmission Asset owners shall send their shutdown requisition of Inter Regional Lines for the next month directly to NLDC strictly by **5th** of every month with a copy to respective RLDCs.*

Generator shutdown for August 2019:

System	Station	Unit	Capacity (MW)	From	To	No. of Days	Reason
JHARKHAND	Tenughat TPS	1	210	15.07.19	10.08.19	10	Overhauling
		2	210	12.08.19	08.09.19	20	Overhauling
DVC	DSTPS	1	500	16.08.19	20.09.19	16	COH (Blr,Turb,Gen.)
ODISHA	Talcher TPS	3	60	20.07.19	03.08.19	3	AOH
		4	60	13.08.19	27.08.19	15	AOH
WBPDCL	Bandel TPS	1	60	16.06.19	14.08.19	14	Capital Overhauling
	Kolaghat TPS	2	210	01.08.19	31.03.20	31	R&M
	SgTPS	1	300	12.07.19	15.08.19	15	Capital Overhauling
	BkTPS	2	210	21.08.19	27.08.19	7	Boiler License renewal
DPL	DPPS	7	300	17.08.19	31.08.19	15	Boiler License renewal
NTPC	KUBNL,MTPS-II	4	195	01.07.19	04.08.19	4	LP rotor inspection,Boiler OH
BRBCL	Nabinagar TPS	1	250	26.07.19	19.08.19	19	LP turbine inspection,Rotor threading,Generator inspection.

ERLDC may place the list transmission line shutdown discussed on 17th July 2019 through VC.

Members may confirm.

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

(i) Thermal Generating units:

S.No	Station	Location	Owner	Unit No	Capacity	Reason(s)	Outage		Expected Revival Date
					(MW)		Date	Time	
1	GMR	ODISHA	GMR	1	350	CAPITAL OVER HAULING	26-May-19	04:51	28-Jun-19
2	FARAKKA	WEST BENGAL	NTPC	6	500	ANNUAL MAINTAINANCE	7-Jun-19	00:15	23-Aug-19
3	KOLAGHAT	WEST BENGAL	WBPDCL	1	210	POLLUTION CONTROL PROBLEM	10-May-18	23:05	NO DEFINITE PROGRAM
4	KOLAGHAT	WEST BENGAL	WBPDCL	3	210	POLLUTION CONTROL PROBLEM	23-Feb-17	11:51	NO DEFINITE PROGRAM
5	CTPS	JHARKHAND	DVC	3	130	TURBINE BLADE DAMAGE	30-Jul-17	00:00	NO DEFINITE PROGRAM
6	JITPL	ODHISA	JITPL	2	600	BOTTOM ASH SCRAPER CLEANING JOB	8-Jun-19	01:15	18-Jun-19
7	STERLITE	ODHISA	GRIDCO	2	600	DUE TO PROBLEM IN OLTC SYSTEM OF Unit Transformer	10-Apr-19	00:29	15-Jun-19
8	WARIA	WEST BENGAL	DVC	4	210	BTL	11-Apr-19	02:45	14-Jun-19
9	SAGARDIGHI	WEST BENGAL	WBPDCL	4	500	DRY ASH SYSTEM PROBLEM	27-Apr-19	13:13	14-Jun-19
10	MEJIA	WEST BENGAL	DVC	2	210	UAT# 2B differential realy operated	12-Jun-19	20:16	14-Jun-19
	Sub Total (SS)				**3520**				

Generators/ constituents are requested to update the expected date of revival of the units.

(ii) Hydro Generating units:

Sl. No.	Station	Unit No.	Capacity (MW)	Reason (s) of outage	Outage date	Expected Revival
I.	Balimela	Unit- 1	60	Renovation &Modernizationwork (Planned)	05-08-2016	30-09-2019

		Unit- 2	60	Renovation &modernization work (Planned).	20-11-2017	30-09-2019
2	Burla	Unit-1	49.5	Turbine &Generator coupling cover water leakage (Forced)	14-03-2018	31-12-2019
		Unit-5	37.5	Renovation. Modernization & up rating work (Planned)	25-10-2016	09-12-2019
		Unit-6	37.5	Renovation, Modernization & up rating work (Planned)	16-10-2016	07-11-2019
		Unit-4	32	Intake Gate Problem (Forced)	25-10-2018	31-07-2019
		Unit-7	49.5	Replacement of GT (Planned)	06-06-2019	30-06-2019
-	Chiplima	Unit-3	24	Renovation &Modernization work (Planned)	15-10-2015	15-06-2019
4	Rengali	Unit-2	50	Capital Maintenance (Planned)	12-12-2018	30-07-2019
5	Upper Kolab	Unit-4	80	Capital Maintenance (Planned)	01-02-2019	31-07-2019
		Unit-3	80	Generator stator Inter tum/ Earth fault	28-03-2019	15-07-2019

It is seen that about 560 MW hydro capacities in Odisha is under forced outage / planned outage and therefore not available for providing the much needed peaking support during evening peak. SLDC / OHPC may please indicate restoration plan of the units.

Members may update.

(iii) Transmission elements

SL NO	Transmission Element / ICT	Agency	Outage From		Reasons for Outage
			DATE	TIME (HRS)	
1	220 KV BALIMELA - U' SILERU	OPTCL / APSEB	10-03-2018	22:45	LINE ANTITHEFT CHARGED FROM UPPER SILERU ON 17-04-18
2	400 KV IBEUL JHARSAGUDA D/C	IBEUL	29-04-2018	17:30	TOWER COLLAPSE AT LOC 44,45
3	400KV NEW PURNEA-BIHARSARIFF(PG)-D/C	ENICL	10-08-2018	10:28	TOWER COLLAPSE AT LOC 47/0
4	400 KV PATNA KISHANGANJ- I	POWERGRID	01-09-2018	00:32	TOWER COLLAPSE AT LOC 129. PILING DAMAGED
5	400KV FARAKKA - KAHALGAON- I	POWERGRID	06-03-2019	08:28	FOR TAKING UP BAY UP GRADATION WORK OF BAY-22 AT FSTPP END
6	220KV BEGUSARAI-NEW PURNEA-I	BSTPCL	29-05-2019	22:12	NEW PURNEA: Y-B, 58 km, IY-3.67 kA, IB- 3.52 kA
7	220KV BEGUSARAI-NEW PURNEA-II	BSTPCL	27-05-2019	12:54	B-N, 1.17 kA, 149.7 km from New Purnea
8	765 KV JHARSUGUDA - RAIPUR II	POWERGRID	08-06-2019	14:36	Tripped ON Y-N,12.3 KA,20 KM, PRESENTLY OUT ON HIGH VOLTAGE
9	400KV BINAGURI-TALA-IV	POWERGRID	05-06-2019	09:24	OUT DUE TO HIGH VOLTAGE
16	220KV Budhipadar- IB TPS-III & IV	OPTCL	02-06-2019	14:35	TOWER COLLAPSE AT LOC 13 & 14

17	220 KV PANDIABILI - SAMANGARA D/C	OPTCL	03-05-2019	11:10	49 nos of tower collapsed.As reported by SLDC OPTCL, total 60 nos of tower in between 220KV Pandiabili – Samangara line in which 48 nos towers fully damaged and 12 nos towers partially damaged. Line survey work under progress.

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

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

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

Members may update.

PART E::ITEMS FOR INFORMATION

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

Item No. E.1: Preparation of crisis management plan for Cyber Security in Power Sector in line with CERT-IN.

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

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

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

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

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

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

As suggested by CEA, a format would be circulated among ER constituents for furnishing the information of the their respective systems for discussion in OCC Meeting. The format is enclosed at **Annexure-E1**.

OCC advised all the constituents to submit the information to ERPC as per Annexure-E1.

Item No. E.2: Status of 1st Third Party Protection Audit:

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

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

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

The substation wise status of compliance are available at ERPC website (Observations include

PLCC rectification/activation which needs a comprehensive plan).

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

Item No. E.3: Commissioning of new transmission elements in Eastern Region

The details of new units/transmission elements commissioned in the month of May-2019 based on the inputs received from beneficiaries

Monthly commissioning List of Transmission element and generators: May 2019					
SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks
1	132KV Biharsharif-Sheikhpura ckt-2	BSPTCL	06-05-2019	17:37	Charged on no load
2	50MVA Transformer-T2@GSS Bihta new	BSPTCL	08-05-2019	16:00	Charged on no load
3	160MVA ICT-2 @ NARHAT(BGCL) GIS	BSPTCL	09-05-2019	17:24	Charged on no load
4	132KV Biharsharif-Nawada ckt-2	BSPTCL	10-05-2019	18:14	Charged upto loc. no. 142.
5	400 kV North Karanpur II Bay (430) @ Gaya	PGCIL	24-05-2019	17:54	
6	401 kV North Karanpur I Bay (427) @ Gaya	PGCIL	24-05-2019		
7	132kv Purulia-Jhalda	WBSETCL	29-05-2019	17:15	132kv Purulia-Bagmundi#1 & Jhalda-Bagmundi#2 shorted ph. To ph. outside Bagmundi 5/S to form Purulia-Jhalda line (R.L. 118.565km)

Item No. E.4: UFR operation during the month of May '19

System frequency touched a maximum of 50.33 Hz at 18:02Hrs of 01/05/19 and a minimum of 49.65 Hz at 14:16 Hrs of 09/05/19 and 21:17 Hrs on 21/05/19. Hence, no report of operation of UFR has been received from any of the constituents.

Item No. E.5: Grid incidences during the month of June, 2019

Sr No	GD/ GI	Date	Time	S/S involved	Summary	Load loss (MW)	Gen loss (MW)
1	GI-II	03-06-2019	01:15	Meramundali	At 01:15 hrs 400 KV Meramundali-Lapanga II tripped on B-N Fault (F/D 2 KM from Meramundali, F/C: 30.01 kA). At the same time, both the ICTs at Meramundali tripped on O/C without affecting 220 kV network. As reported, B phase bushing of 50 MVAr line reactor of 400 KV	0	0

					Meramundali-Lapanga II at Meramundali end failed after the event.		
2	GD-I	05-06-2019	19:01	Talcher	At 18:53 hrs , 500 KV Talcher Kolar Pole 1 was hand tripped at 18:53 hrs due to heavy isolator sparking at Talcher end resulting sending SPS signal to GMR and JITPL. GMR & JITPL generation reduced by 85 MW and 55 MW respectively. Initial HVDC flow was around 1800 MW. At 19:01 hrs, jumper protection of 400 kV Talcher (NTPC) - Talcher (HVDC) Q/C operated at NTPC end due to breaking of R phase isolator pole along with BPI. Due to tripping of all incoming feeders, HVDC Talcher Kolar pole 2 at Talcher end got blocked resulting back down of Unit 5 by 160 MW. At 19:03 Talcher stg 2 unit 4 tripped on teed protection.	0	300
3	GD-I	12-06-2019	00:37	Budhipadar	220 KV Budhipadar-IBTPS III,IV and 220 KV Budhipadar-Concast I were out of service. At 00:37 Hrs, Y phase LA of 220 KV Budhipadar-Tarkera I @ Budhipadar failed. resulting tripping of all lines emanating from Budhipadar end	252	350
4	GD-I	19-06-2019	13:02	Dumka	220 KV Maithon Dumka D/C tripped at 13:02 hrs on single phase to earth fault. At the same time 132 kV Dumka Lalmatia D/C tripped leading to the load loss of 120 MW at Paku, Dumka, Deogarh.	120	0
5	GI-II	22-06-2019	19:17	Darbhanga	400 kV Darbhanga - Kishangunj D/C along with bus I at Darbhanga tripped due to Y-N fault	0	0
6	GI-II	27-06-2019	11:19	Chaibasa	Tie CB of 400 KV Kharagpur Chaibasa-II was working as main CB of bus II at Chaibasa. while taking shutdown of 400 KV Kharagpur Chaibasa-II, Tie CB LBB of 400 KV Kharagpur Chaibasa-II operated at Chaibasa resulting bus bar II dead at Chaibasa	0	0

7	GD-I	30-06-2019	09:56	Dikchu & Jorethang	At 09:56 hrs, 400 KV Dikchu Rangpo tripped on Y-B –N fault from both ends. It is suspected that 400/132 KV ICT at Dikchu tripped possibly due to overreach in overcurrent protection. s a result, both running units at Dikchu tripped on loss of evacuation. At same time 220 kV JLHEP - New Melli D/C tripped from JLHEP ends resulting tripping of both the running units and total power failure at JLHEP end A400 kV level of Dikchu HEP was in charged condition as 400 kV Teesta III - Dikchu S/C was in service. Charging attempt of 400 kV Dikchu - Rangpo S/C was taken from both Dikchu and Rangpo ends. But it could not be done because angle difference between Dikchu and Rangpo S/S was more than 15 deg which was the limit of synchronizer relay at both S/S. To facilitate charging operation of 400 kV Dikchu - Rangpo S/C, 400 kV Teesta III - Dikchu S/C was hand tripped and total power failure occurred at Dikchu S/S. Then 400 kV Dikchu - Rangpo S/C was charged to synchronize Dikchu S/S. Finally 400 kV Teesta III - Dikchu was synchronized after reducing the generation and voltage at Teesta III.	0	200

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Eastern Regional Power Committee, Kolkata

Minutes of Special Meeting on "Low voltage issue in West Bengal System" held at ERPC, Kolkata on 8th July 2019 at 11:00hrs

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

At the start of the meeting, it was informed that the issue of low voltage at 400kV Rajarhat, 400kV Subhashgram, 400kV Jeerat and 132kV Malda in West Bengal system was already highlighted in 158th OCC Meeting held on 27.06.2019. As the subject requires detailed discussion, it was decided that the issue of low voltage in West Bengal system would be discussed in a separate meeting with the concerned members from WBSETCL, WBPDCL, SLDC-WB, WBSEDCL, CESC, Powergrid ER-II, ERLDC and ERPC. In line with the 158th OCC decision, this special meeting has been called.

ERLDC informed that around 450 MW and 100 MVAR increase in demand was observed at 400kV Subhashgram, Jeerat and Rajarhat compared to last year. But sufficient network connectivity and reactive power resources were not envisaged to cater the enhanced demand. There is margin available within the capability of generating units of WBPDCL (i.e. Sagardhigi, Bakreswar and Kolaghat TPS units) and NTPC Farakka to generate more reactive power during low voltage condition. However the same is not being fully utilized. The above factors together with inadequate reactive compensation at load end within West Bengal system are causing the voltage at Rajarhat and Subhashgram to decrease below 360 kV during 14:00 hrs to 16:00 hrs. ERLDC added that HEL generating units are generating MVAR as per their capability curve.

HEL informed that sometimes they even reduce the active power generation to enhance the reactive power generation. HEL suggested that incentive to generating units for providing adequate reactive power support to the grid should be introduced to encourage the generators to participate actively in improving the voltage profile.

WBSETCL informed that the 400kV and 220kV lines were loaded beyond the SIL limit and contributing to the low voltage in West Bengal system. This needs to be addressed while planning the transmission system.

Powergrid informed that commissioning of 400kV Farakka-Rajarhat-Gokarna lines is getting delayed due to severe ROW issues and they are putting all the efforts to commission the lines within four months.

All the members agreed that increase in demand with insufficient network connectivity and reactive power support is the main reason for low voltage in West Bengal system.

After detailed discussion, it was decided to implement the following short term measures to improve the voltage profile:

- WBPDCL was advised to take necessary action to provide reactive power support by their units as per their capability curve. WBPDCL generating units (i.e. Sagardhigi, Bakreswar and

Kolaghat TPS units) were advised to maintain the generator terminal voltage at 1 p.u. so that sufficient reactive power generation can be provided during low voltage.

- SLDC, WB was advised to closely monitor the voltage of South Bengal substations and instruct the concerned generators to enhance reactive power generation up to their respective limits.
- WBPDCL was advised to submit unit wise active and reactive power generated w.r.t generator terminal voltage for the units at Sagardhigi, Bakreswar and Kolaghat TPS at intervals of 15 minutes along with date and time to SLDC, WB and ERLDC.
- It was decided to communicate the issue to Farakka, NTPC for providing MVAR during low voltage condition as per the capability curve.
- It was also decided to monitor the performance of the generators on daily basis and ERLDC was advised to present performance of the generators in 159th OCC Meeting scheduled to be held at ERPC, Kolkata on 19th July 2019.
- As already proposed in 158th OCC, SLDC, WB was advised to expedite implementation of Under-Voltage Load Shedding (UVLS) in WBSETCL system to avoid voltage instability problem and major failure in and around the metro city of Kolkata. ED, ERLDC requested SLDC WB to explore the scope of rotational shedding of non-priority loads supplied from Jeerat, Subhasgram and Rajarhat at least during 14:00 to 16:00 Hrs.

The following medium term/long term measures and action taken plans were discussed in the meeting:

- WBSETCL informed that they are installing 610 MVAR additional capacitor banks in distribution network to improve the voltage. The capacitor banks would be commissioned by December 2019
- WBSETCL added that a number of new sub-stations are coming up in South and North 24 Parganas. They are considering 10 MVAR capacitor bank against each 50 MVA transformer, if voltage is seen below desired level during planning.
- WBSETCL further informed that they have entrusted contract to PRDC for detail study of the perspective plan to identify any gaps in reactive power management.
- CESC informed that they are installing 50 MVAR capacitor at 132kV level at New Kasipur S/s. The capacitor would be commissioned by December 2019. CESC added that the reactive power demand at Subhashgram (PG) S/s is expected to reduce after commissioning of the capacitor.
- It was opined that after commissioning of 400kV Farakka-Rajarhat-Gokarna lines and 765 kV New Ranchi-Midnapur-Jeerat corridor, the voltage would be improved.
- It was informed that LILO of 400kV Subhashgram-HEL D/C line at 400kV New Laxmikantpur S/s of WBSETCL has been approved in 2nd ERSCT Meeting held on 5th July 2019. Minutes of the meeting are awaited.
- It was opined that after commissioning of the above LILO, the loading at Subhashgram(PG) S/s would decrease which in turn would improve the voltage.

- The proposal of installing Static Var Compensator (SVC) at low voltage prone area was discussed in 2nd ERSCT Meeting held on 5th July 2019. A preliminary study has been carried out by CTU considering the SVC at different 400kV buses. Minutes of the meeting are awaited.
- WBSETCL was advised to send all the future plans of reactive power compensation, transmission network, distribution network and load details in around Subhashgram, Rajarhat, Jeerat and Malda areas to CTU and CEA.

In view of significant seasonal variation in West Bengal system demand, there is a need for reviewing of voltage profile, GT and ICT taps and reactive power resources twice in a year (i.e. before Summer and Winter). Accordingly it was decided to conduct such review meetings in March and October in every year till the issues of low/high voltage in West Bengal system resolved.

Meeting ended with vote of thanks to the chair.

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Annexure B4

Regional Level Disaster Management Group (RDMG)

Composition of Regional Level Disaster Management Group

a) Member Secretary (RPC) - Chairman
b) Secretary in-charge of Rehabilitation and Relief of the effected State of the Region
c) Representatives of each State Civil Defence
d) Regional HODs CPSUs (NTPC, NHPC, PGCIL etc.)
e) CMDs State TRANSCOs/Power Departments.
f) Chief Engineer, Central Water Commission (CWC), for floods related early warnings.
g) Deputy Director General, Indian Metrological Department (IMD), for Earthquake, and Cyclone related early warnings.
h) Group Head, Ocean Information and Forecast Services Group (ISG), for Tsunami related early warnings.
i) Head of RLDC

Responsibilities:

a) To provide inter-state emergency & start up power supply
b) To coordinate early restoration of regional grid.
c) To participate in damage assessment.
d) To facilitate resource movement to affected state (s) from other regional states

Plant level Emergency Management Group (EMG)

Composition of Plant Level Disaster Management Group

a) In-charge of the installation
b) Plant safety manager
c) Chief Plant Operation Administration
d) Representative of District Administration

Responsibilities:

a) To direct action in the affected area taking into consideration the priorities for safety of plant personnel, minimize damage to plant, property and the environment
b) To direct fire and security personnel for immediate action.
c) To ensure that all non-essential workers/staff in the affected area are evacuated to safer places
d) Set up communication points
e) Report all development and requirements/ assistance needed
f) Preserve all evidences so as to facilitate any inquiry into the cause and circumstances which caused or escalated the emergency
g) To coordinate with District Administration for necessary finance, medical facilities law & order etc.

DVC Generation	4979
DVC Load	2959
WB Generation	6211
WB Load	8669

Present Condition

	Case-I				Case-II							Case-III					
	Present Condition				After Bus Split at Parulia(PG)							Case-II+ 3rd 315 MVA ICT at Parulia (PG)					
	Base Case	N-1 220 kV Parulia(PG)-Parulia(DVC)-I	N-1 400 kV/220 kV ICT-1 @ Parulia PG	N-1 220 kV Maithon-Kalyaneswari-I	Base Case	N-1 220 kV Parulia(PG)-Parulia(DVC)-I	Outage of both PRL-PG lines	Outage of one PRL-PG line & ICT	N-1 400 kV/220 kV ICT-1 @ Parulia PG	N-1 400 kV/220 kV ICT-2 @ Parulia PG	N-1 220 kV Maithon-Kalyaneswari-I	Base Case	N-1 220 kV Parulia(PG)-Parulia(DVC)-I	Outage of both PRL-PG lines	N-1 400 kV/220 kV ICT-1 @ Parulia PG	N-1 400 kV/220 kV ICT-2 @ Parulia PG	N-1 220 kV Maithon-Kalyaneswari-I
400 kV/220 kV ICT-1 @ Parulia PG	168	166	219	170	106	104	133	171	0	172	101	72	70	172	0	99	73
400 kV/220 kV ICT-2 @ Parulia PG	168	166	0	170	309	308	-133	0	325	0	313	227	225	-86	232	0	229
400 kV/220 kV ICT-3@ Parulia PG	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	227	225	-86	232	309	229
220 kV Parulia(PG)-Parulia(DVC)-I	168	0	109	170	196	0	0	0	163	86	199	249	0	0	232	196	252
220 kV Parulia(PG)-Parulia(DVC)-2	168	331	109	170	196	388	0	171	163	86	199	249	491	0	232	196	252
220 kV Bidhannagar-Waria D/C	84	87	166	93	20	18	248	128	41	127	19	-66	-62	251	-43	-19	-60
220 kV Maithon-Kalyaneswari-I	162	162	175	0	172	173	222	207	179	206	0	157	158	221	160	172	0
220 kV Maithon-Kalyaneswari-II	162	162	175	297	172	173	222	207	179	206	316	157	158	221	160	172	287

Future Condition - I (considering 2 nos ICT at Parulia PG after Bus Split)

	Case-I								Case-II							
	2 x 315 MVA transformer at 400/220 kV DSTPS and LILO of Parulia(D)-Waria at DSTPS								Case1 + 220 kV Burdwan with 2 x 160 MVA ICT & Parulia-Burdwan D/C							
	Base Case	N-1 220 kV Parulia(PG)-Parulia(DVC)-I	N-1 400 kV/220 kV ICT-2 @ Parulia PG	N-1 400 kV/220 kV ICT-2 @ DSTPS	N-1 220 kV DSTPS-Waria-I	N-1 220 kV Maithon-Kalyaneswari-I	N-1 220 kV Bidhannagar-Waria-I	outage of both 220 kV Bidhannagar-Waria	Base Case	N-1 220 kV Parulia(PG)-Parulia(DVC)-I	N-1 400 kV/220 kV ICT-2 @ Parulia PG	N-1 400 kV/220 kV ICT-2 @ DSTPS	N-1 220 kV DSTPS-Waria-I	N-1 220 kV Maithon-Kalyaneswari-I	N-1 220 kV Bidhannagar-Waria-I	
400 kV/220 kV ICT-1 @ Parulia PG	10	9	84	35	-2.2	12	4	-46	30	28	100	80	20	31	23	
400 kV/220 kV ICT-2 @ Parulia PG	210	209	0	244	203	213	207	181	227	227	0	261	222	230	224	
400 kV/220 kV ICT-3 @ Parulia PG	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
400 kV/220 kV ICT-1 @ DSTPS	267	267	296	0	254	268	263	230	272	272	303	0	261	273	268	
400 kV/220 kV ICT-2 @ DSTPS	267	267	296	349	254	268	263	230	272	272	303	355	261	273	268	
220 kV Parulia(PG)-Parulia(DVC)-I	113	0	42	141	104	115	109	74	131	0	50	159	123	132	126	
220 kV Parulia(PG)-Parulia(DVC)-2	113	224	42	141	104	115	109	74	131	260	50	159	123	132	126	
220 kV Bidhannagar-Waria -I	-115	-114	-86	-75	-96	-112	0	0	-116	-115	-85	-77	-100	-114	0	
220 kV Bidhannagar-Waria -II	-115	-114	-86	-75	-96	-112	203	0	-116	-115	-85	-77	-100	-114	-206	
220 kV DSTPS-Waria-I	264	263	233	208	0	264	254	187	225	225	196	169	0	226	217	
220 kV DSTPS-Waria-II	264	263	233	208	453	264	254	187	225	225	196	169	387	226	217	
220 kV Maithon-Kalyaneswari-I	132	132	150	145	134	0	130	117	130	142	146	144	132	0	128	
220 kV Maithon-Kalyaneswari-II	132	132	150	145	134	240	130	117	130	142	146	144	132	237	128	
220 kV Paulia-Burdwan D/C	NA	NA	NA	NA	NA	NA	NA	NA	158	158	149	145	161	158	158	

Future Condition - II (considering 3 nos ICT at Parulia PG after Bus Split)

	Case-I								Case-II							
	2 x 315 MVA transformer at 400/220 kV DSTPS and LILO of Parulia(D)-Waria at DSTPS								Case1 + 220 kV Burnpur with 2 x 160 MVA ICT Parulia-Burnpur D/C							
	Base Case	N-1 220 kV Parulia(PG)-Parulia(DVC)-I	N-1 400 kV/220 kV ICT-2 @ Parulia PG	N-1 400 kV/220 kV ICT-2 @ DSTPS	N-1 220 kV DSTPS-Waria-I	N-1 220 kV Maithon-Kalyaneswari-I	N-1 220 kV Bidhannagar-Waria-I	outage of both 220 kV Bidhannagar-Waria	Base Case	N-1 220 kV Parulia(PG)-Parulia(DVC)-I	N-1 400 kV/220 kV ICT-2 @ Parulia PG	N-1 400 kV/220 kV ICT-2 @ DSTPS	N-1 220 kV DSTPS-Waria-I	N-1 220 kV Maithon-Kalyaneswari-I	N-1 220 kV Bidhannagar-Waria-I	
400 kV/220 kV ICT-1 @ Parulia PG	-13	-15	10	6	-26	-12	-20	-71	5	2.7	30	24	6	2.6	-2.4	
400 kV/220 kV ICT-2 @ Parulia PG	158	157	0	182	152	159	155	133	171	170	0	195	173	172	168	
400 kV/220 kV ICT-3 @ Parulia PG	158	157	210	182	152	159	155	133	171	170	227	195	173	172	168	
400 kV/220 kV ICT-1 @ DSTPS	252	253	267	0	240	253	248	214	256	257	272	0	245	258	252	
400 kV/220 kV ICT-2 @ DSTPS	252	253	267	327	240	253	248	214	256	257	272	332	245	258	252	
220 kV Parulia(PG)-Parulia(DVC)-I	153	0	113	185	141	155	147	102	175	0	131	207	165	177	168	
220 kV Parulia(PG)-Parulia(DVC)-2	153	302	113	185	141	155	147	102	175	345	131	207	165	177	168	
220 kV Bidhannagar-Waria -I	-129	-128	-115	-94	-109	-127	0	0	-131	-131	-116	-97	-114	-130	0	
220 kV Bidhannagar-Waria -II	-129	-128	-115	-94	-109	-127	-224	0	-131	-131	-116	-97	-114	-130	-234	
220 kV DSTPS-Waria-I	279	277	264	229	0	279	268	192	241	240	225	190	0	241	231	
220 kV DSTPS-Waria-II	279	277	264	229	478	279	268	192	241	240	225	190	412	241	231	
220 kV Maithon-Kalyaneswari-I	126	126	132	136	128	0	124	111	123	123	130	134	125	0	121	
220 kV Maithon-Kalyaneswari-II	126	126	132	136	128	228	124	111	123	123	130	134	125	223	121	
220 kV Paulia-Burdwan D/C	NA	NA	NA	NA	NA	NA	NA	NA	162	162	158	160	166	162	162	

-sd-
Saurav Kumar Sahay
ERLDC, POSOCO

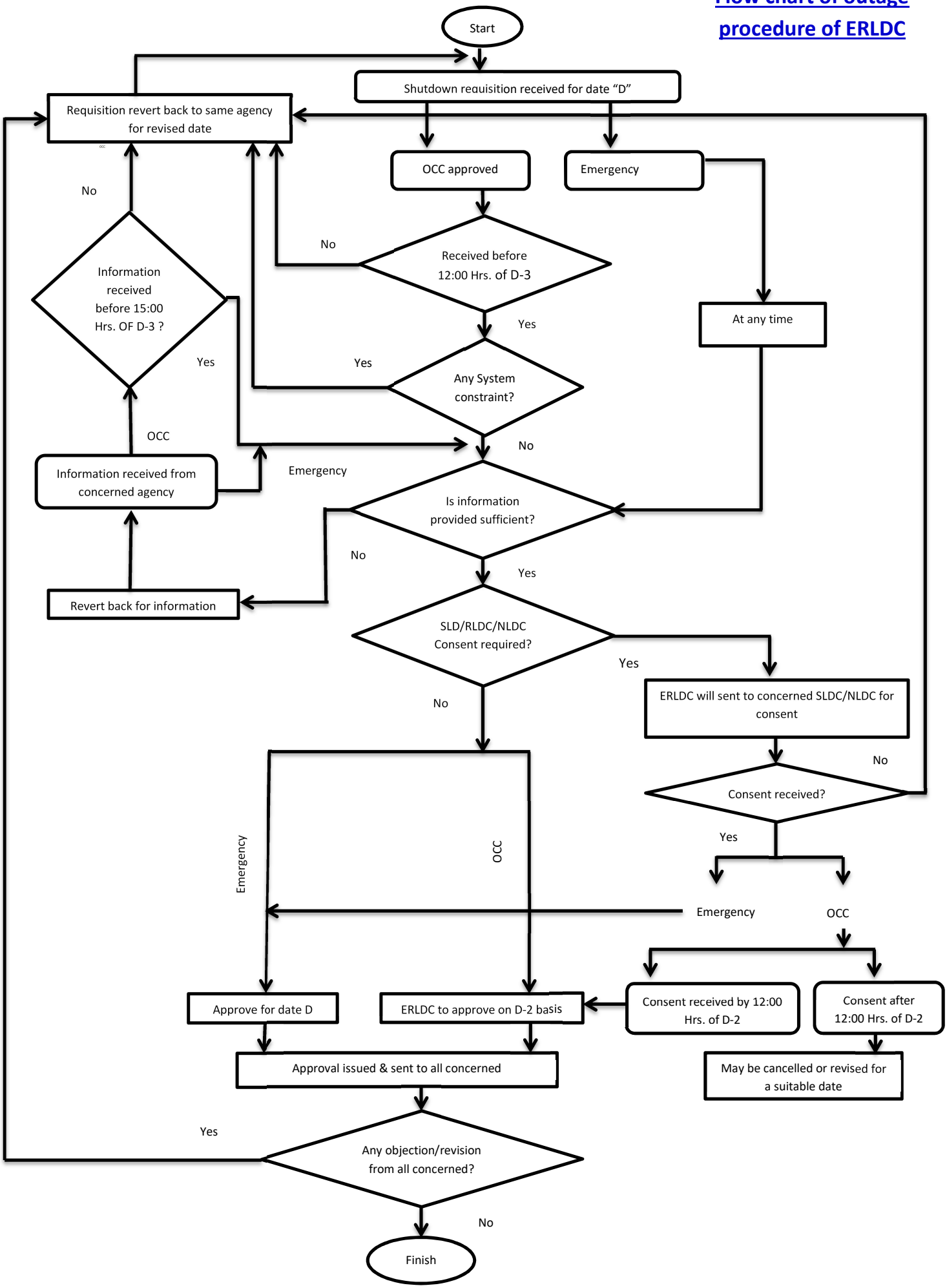
-sd-
Santosh Kumar Panda
EE, SLDC, DVC

- sd-
Sandip Ghosh
SDE, DVC

-sd-
J G Rao
EE, ERPC

Annexure-B12

Flow chart of outage procedure of ERLDC



ERLDC Shutdown approval process flow and time line-reg.

With the ever increase in transmission elements, the Grid is getting more secure and reliable. Still, outage of one element may affect severely to adjacent control area depending on system condition that area. Hence, planning and co-ordination between different control areas is absolute necessary. It has been seen that, due to lack of mutual consent/communication between two control area/license, outage of transmission elements are getting delayed or denied due to which monetary loss occurred as well as condition of that particular element worsen. ERLDC wants to draw the attention on the following points which are seen in Eastern constituents/license.

1. There is a shortage of designated outage coordinators in ER constituents /license. Sometimes proper communication is not possible with them.
2. E-mails are not reaching to them in time which is sent from ERLDC (particularly in GRIDCO case). Most of the time mails are seen when ERLDC inform them verbally.
3. It also leads to delayed consent thereby delaying the shutdown.
4. There is no substitute for the absence of outage co-ordination. Sometimes SLDC control room person are coordinating shutdown which is not a good practice. Progress tracking of any outage will be lost once shift change occurred.
5. Planned outages are being sent on holidays also which is very difficult to process.
6. We have seen that, in absence of competent authority (SLDC Hawarh and SLDC Patna for example), OCC approved shutdowns are also get cancelled.

To tackle all the above following suggestions may be considered:

1. Every Transmission license, generators and SLDCs must have dedicated outage co-coordinators and the contact information of all such co-coordinators shall be shared with all.
2. In absence of the designated outage co-coordinator, suitable substitute should be provided and the same shall be intimated to all.
3. All the indenting agencies are requested to communicate with their counterpart outage co-coordinator for smooth and speedy consent if it require.
4. Getting consent timely is very important. All the agencies, whose consent is required for a particular outage, are requested to adhere the time line given by ERLDC fails to which the outage will be cancelled or delayed accordingly.
5. All the agencies are requested to submit holiday list in their control area or any other contingencies well in advance to all.
6. All the agencies must provide their official as well as personal E-mail of their outage coordinators to ERLDC and ensure that checking of the both email are being done simultaneously.

A. The list of generators where PSS is not tuned however kept in service and no details have been provided for PSS tuning:

Power Plant	Unit No	PSS tuned (Yes/No)	PSS in Service (Yes/No)	Timeline and Plan for PSS tuning Activity
Kolaghat-WBPDCL	1	No	Yes	
Kolaghat-WBPDCL	2	No	Yes	
Kolaghat-WBPDCL	3	No	Yes	
Kolaghat-WBPDCL	4	No	Yes	
Kolaghat-WBPDCL	5	No	Yes	
DPL	8	No	Yes	
PPSP	1	No	Yes	
PPSP	2	No	Yes	
PPSP	3	No	Yes	
PPSP	4	No	Yes	
Bokaro A1	500 MW	No	Yes	

B. Generating Power Plants whose Excitation details or PSS tuning status or both have not been received at ERLDC/ ERPC:

Generating Utility	Unit		Generating Utility	Unit
WBSEDCL			**OHPC**	
TLDP III	4 x 33		Upper Indravati	1,2,3,4
TLDP IV	4 X 44		Balimela	6 X 60
DVC			Balimela	2 X 75
Bokaro -DVC	500 MW		Upper Kolab	4 X 80
Bokaro	3 X 210 MW		Rengali	4 X 50
Waria	4		**Orissa SLDC**	
Chandrapura B	2 X 250 MW		Sterlite	4 X 600
ISGS			**Jharkhand**	
Talcher Stage 1	1,2 (PSS tuning Received)		Subarnrekha	2 X 65
Nabinagar NPGC	1		**Bihar**	
BRBCL	1,2,3		KBUNL	1,2
KBUNL	3,4		**Bhutan**	
Rangit	3 x 20		Tala	6 X 170
			Chukha	4 X 84

C. Generating Power Plants where PSS is tuned and kept in service however, PSS Tuning report/plots/data have not been submitted to ERLDC/ERPC is as following:

Power Plant	Unit No		Power Plant	Unit No
Sagardighi-WBPDCL	3		Farakka NTPC	5
Sagardighi-WBPDCL	4		Farakka NTPC	6
Budge Budge-CESC	3		Talcher Stage 2	4
HEL-CESC	1		Talcher Stage 2	5
HEL-CESC	2		Talcher Stage 2	6
Mejia-DVC	4		Teesta-III	1
Mejia-DVC	5		Teesta-III	2
Mejia-DVC	6		Teesta-III	4
Mejia-DVC	7		Teesta-III	5
Mejia-DVC	8		Teesta-III	6
Durgapur-DVC	1		Tashiding	1
Durgapur-DVC	2		Maithon Power Limited	1
Koderma-DVC	1		Maithon Power Limited	2

Koderma-DVC	2		ADHUNIK	1
Farakka NTPC	1		ADHUNIK	2
Farakka NTPC	2		IB TPS	1
Farakka NTPC	3		IB TPS	2
Farakka NTPC	4			

D. Generators where PSS tuning has been done more than 3 years back:

Power Plant	Unit No	Last PSS Tuning Date	Whether Done in Last 3 Years	Timeline for Next PSS Tuning
Sagardighi-WBPDCL	4	Commissioning	No	
Budge Budge-CESC	1	2015	No	
Budge Budge-CESC	2	2015	No	
Budge Budge-CESC	3	2010	No	
HEL-CESC	1	2015	No	
HEL-CESC	2	2015	No	
Mejia-DVC	4			
Mejia-DVC	7	2010	No	
Mejia-DVC	8	2011	No	
Koderma-DVC	1			
Koderma-DVC	2			
Kahalgaon NTPC	4	2015	No	
Kahalgaon NTPC	5	2009	No	
Kahalgaon NTPC	6	2009	No	
Kahalgaon NTPC	7	2010	No	
Farakka NTPC	1	2008	No	
Farakka NTPC	2	2008	No	
Farakka NTPC	3	2008	No	
Farakka NTPC	4	2008	No	
Farakka NTPC	5	2008	No	
Farakka NTPC	6	2015	No	
Talcher Stage 1	1	2015	No	
Talcher Stage 1	2	2014	No	
Talcher Stage 2	3	No Details		
Talcher Stage 2	4	No Details		
Talcher Stage 2	5	No Details		
Talcher Stage 2	6	No Details		
Teesta V	1	2008	No	
Teesta V	2	2008	No	
Teesta V	3	2008	No	
Jorethang	1	2015	No	
Jorethang	2	2015	No	
Chuzachen HEP	1	2013	No	
Chuzachen HEP	2	2013	No	
ADHUNIK	1	2013	No	
ADHUNIK	2	2013	No	
GMR	1	2013	No	
GMR	2	2013	No	
GMR	3	2013	No	
IB TPS	1	2011	No	
IB TPS	2	2012	No	

E. Generators where PSS tuning has been done and have submitted the report and the observation

Name of the Unit	Intra Plant Mode (Hz)	Step Size of U_{ref}	Oscillation periodwith out PSS	Oscillation period with PSS	Whether PSS is effective as per step response test	Year of Tuning	Whether Recommended for Tuning
Kahalgaon Unit 1		3 %	3 cycle	1 cycle	Yes	2017	Yes after Bus Split
Kahalgaon Unit 2	1.5 Hz	3 %	3 cycle	1 cycle	Yes	2016	Yes after Bus Split
Kahalgaon Unit 3		6 %	-	-	Provided picture not clear to analyze response	2016	To be decided after explanation by NTPC, Also after bus split, returning is required
Kahalgaon Unit 4	1.876	3 %	5 cycle	3 Cycle	Yes	2015	Yes after Bus Split
Kahalgaon Unit 5		4 %			No Appreciable Response	2009	To be decided after explanation by NTPC, Yes after Bus Split
Kahalgaon Unit 6		4 %			No Appreciable Response	2019	
Kahalgaon Unit 7		2 %			Provided picture not clear to analyze response	2010	
Teesta V Unit 1		2 %	5 cycle	2 cycle	Yes	2008	Yes in view of changes in network
Teesta V Unit 2		2 %	5 cycle	1 cycle	Yes	2008	
Teesta V Unit 3		2 %	5 cycle	1 cycle	Yes	2008	
Talcher Unit 3		3 %	-	-	PSS is showing response but noappreciable change in active power is seen.		NTPC may explain the details after which requirement of retuning to be decided.
Talcher Unit 6		3 %	3 cycle	2 cycle	Yes	2008	No
Budge Budge 1		2 %	5 cycle	1 cycle	Yes (Tuned for various contingency)	2015	No
Budge Budge 2		2 %	5 cycle	1 cycle	Yes (Tuned for various contingency)	2015	No
JITPL Unit 1		5 %	-	-	No Appreciable Response	2016	JITPL to explain the response based on which it will be decided.
JITPL Unit 2		5 %	-	-	No Appreciable Response	2016	
Chujachen Unit 1		2 %	6 cycle	1 cycle	Yes	2013	Yes in view of changes in network
Chujachen Unit 1		2 %	6 cycle	1 cycle	Yes	2013	
Tashiding Unit 2	1.5 Hz	4 %	5 Cycle	1 Cycle	Yes	2017	Yes in view of changes in network
Bandel Unit 5	1.5 Hz	5 %	6 Cycle	3 cycle	Yes	2019	Adequate
Teesta 3 Unit 5		2 % and 3 %	3 Cycle	2 Cycle	Yes	2017	Retuning to be done due to network change

Talcher Unit 1		1 %	2 cycle	2 cycle	No Appreciable Response	2015	Yes (Either NTPC explain why there is no appreciable change in damping or better resolution data to be submitted if damping has been observed)
Talcher Unit 2		3 %	4 cycle	2 Cycle	Yes	2014	Adequate
Bakreshwar Unit 1		3 %	3 cycle	2 cycle	Yes	2019	Adequate
Bakreshwar Unit 2		3 %	4 cycle	4 cycle	No Appreciable Response	2019	Yes, Returning required as PSS signal is in phase with disturbance which is not good for unit.
Bakreshwar Unit 3		3 %	3 Cycle	4 cycle	Negative Response	2019	Yes, PSS response is negative which is highly undesirable
Bakreshwar Unit 4		3 %	No Change in Power	No Change in Power	No Response	2019	Yes, tuning to be done at reduced power level as at full load transient response is not observed which also need to be checked.
Bakreshwar Unit 5		3 %	No Change in Power	No Change in Power	No Response	2019	Yes, tuning to be done at reduced power level as at full load transient response is not observed which also need to be checked.
Santaldih Unit 5		3 %	3 cycle	2 cycle	Yes (more observable in Excel Data)	2019	Adequate
Santaldih Unit 6		3 %	3 cycle	2 cycle	Yes (more observable in Excel Data)	2019	Adequate
GMR Unit 1		3 %	3 cycle	1 cycle	Yes	2013	Yes, as done long time back
GMR Unit 2		3 %	4 cycle	1 cycle	Yes	2013	Yes, as done long time back
GMR Unit 3		3 %	3 cycle	1 cycle	Yes	2013	Yes, as done long time back

Annexure-D.1

Anticipated Power Supply Position for the month of
Aug-19

SL.NO		PARTICULARS	PEAK DEMAND MW	ENERGY MU
1		**BIHAR**		
	i)	NET MAX DEMAND	5130	3050
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	519	355
		- Central Sector	4101	2532
	iii)	SURPLUS(+)/DEFICIT(-)	-510	-163
2		**JHARKHAND**		
	i)	NET MAX DEMAND	1380	810
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	242	104
		- Central Sector	950	584
	iii)	SURPLUS(+)/DEFICIT(-)	-188	-122
3		**DVC**		
	i)	NET MAX DEMAND (OWN)	2885	1890
	ii)	NET POWER AVAILABILITY- Own Source	5358	2819
		- Central Sector	483	314
		Long term Bi-lateral (Export)	1416	1053
	iii)	SURPLUS(+)/DEFICIT(-)	1540	190
4		**ODISHA**		
	i)	NET MAX DEMAND	5075	3225
	ii)	NET POWER AVAILABILITY- Own Source	4167	2093
		- Central Sector	1681	946
	iii)	SURPLUS(+)/DEFICIT(-)	773	-187
5		**WEST BENGAL**		
5.1		**WBSEDCL**		
	i)	NET MAX DEMAND (OWN)	6910	4102
	ii)	CESC's DRAWAL	83	62
	iii)	TOTAL WBSEDCL's DEMAND	6993	4164
	iv)	NET POWER AVAILABILITY- Own Source	4201	1907
		- Import from DPL	68	0
		- Central Sector	2639	1803
	v)	SURPLUS(+)/DEFICIT(-)	-85	-454
	vi)	EXPORT (TO B'DESH & SIKKIM)	-295	-663
5.2		**DPL**		
	i)	NET MAX DEMAND	295	212
	ii)	NET POWER AVAILABILITY	363	159
	iii)	SURPLUS(+)/DEFICIT(-)	68	-53
5.3		**CESC**		
	i)	NET MAX DEMAND	1900	1060
	ii)	NET POWER AVAILABILITY - OWN SOURCE	750	508
		FROM HEL	540	386
		Import Requirement	610	166
	iii)	TOTAL AVAILABILITY	1900	1060
	iv)	SURPLUS(+)/DEFICIT(-)	0	0
6		**WEST BENGAL (WBSEDCL+DPL+CESC)** **(excluding DVC's supply to WBSEDCL's command area)**		
	i)	NET MAX DEMAND	9105	5374
	ii)	NET POWER AVAILABILITY- Own Source	5314	2575
		- Central Sector+Others	3789	2189
	iii)	SURPLUS(+)/DEFICIT(-)	-2	-611
7		**SIKKIM**		
	i)	NET MAX DEMAND	95	44
	ii)	NET POWER AVAILABILITY- Own Source	8	3
		- Central Sector+Others	176	114
	iii)	SURPLUS(+)/DEFICIT(-)	89	73
8		**EASTERN REGION** **At 1.03 AS DIVERSITY FACTOR**		
	i)	**NET MAX DEMAND**	22980	14394
		Long term Bi-lateral by DVC	1416	1053
		EXPORT BY WBSEDCL	-295	-663
	ii)	**NET TOTAL POWER AVAILABILITY OF ER (INCLUDING C/S ALLOCATION)**	26787	14626
	iii)	**PEAK SURPLUS(+)/DEFICIT(-) OF ER (ii)-(i)**	2686	-158

Quarterly Preparedness Monitoring -AGENDA

(Status as on :)

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