Agenda

for

160th OCC Meeting

Date: 09.08.2019

Eastern Regional Power Committee

14, Golf Club Road, Tollygunge

Kolkata: 700 033

Eastern Regional Power Committee

Agenda for 160th OCC Meeting to be held on 9th August, 2019 at ERPC, Kolkata

Item no. 1: Confirmation of minutes of 159th OCC meeting of ERPC held on 19.07.2019

The minutes of 159th OCC meeting were uploaded in ERPC website and circulated vide letter dated 26.07.2019 to all the constituents.

Members may confirm the minutes.

PART A : ER GRID PERFORMANCE

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

The average consumption of Eastern Region for July- 2019 was 464 Mu. Eastern Region energy consumption reached a monthly maximum of 510 Mu on 14th July - 2019. Total Export schedule of Eastern region for July – 2019 was 1579 Mu, whereas actual export was1582Mu.

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**

A meeting to discuss and deliberate on the performance of governor response of ISGS and IPPs generating power plants of Eastern Region, was organised by ERLDC On 12th July 2019. Performance of each ISGS and IPPs Power plant for the six frequency events which happened from March to June 2019, were discussed in the meeting. The summary of the discussions with generators is provided **Annexure-A1.6**.

Member may discuss.

Item no. A2: Effect of cyclone FANI on Odisha system

In 159th OCC, Odisha was advised to give a presentation in next OCC Meeting on effect of FANI cyclone on transmission and distribution system in Odisha along with the restoration status.

Odisha agreed to give the presentation in next OCC Meeting.

Odisha may give a presentation.

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.

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.

In 159th OCC, WBPDCL informed that they are generating reactive power during low voltage by maintaining the generator terminal voltage at 1 p.u. and also submitting the data on daily basis.

ERLDC informed that WBPDCL generators are providing the VAR during low voltage but still there is a scope for improvement. ERLDC added that reactive power performance of Farakka unit 2 and 4 is not satisfactory and not generating sufficient VAR during low voltage.

OCC advised NTPC Farakka to take appropriate action to generate VAR during low voltage.

OCC advised SLDC, West Bengal to monitor the voltage and take appropriate action to control the voltage.

OCC also advised ERLDC and SLDC, WB to analyze the improvement in voltage profile due to reactive power support from WBPDCL.

Members may discuss.

Item No. B.2: 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.

In 159th OCC, Powergrid informed that restoration of the line using ERS would take more than 10 days as it requires destringing of 3.6 km line. The replacement of deformed / bulged leg & bracing would take 10 days.

OCC decided to discuss the issue in separate meeting with concerned utilities i.e. Eastern Railway, Bihar, BRBCL, Powergrid, ERLDC and ERPC.

In line with OCC decision, a special meeting was convened at ERPC on 2nd August 2019. Minutes of the meeting are enclosed at ***Annexure-B2.*** *In the meeting, Powergrid was advised to explore temporary connection of BRBCL power station with nearby 400kV transmission lines (i.e. 400kV Daltanganj-Sasaram D/C line or 400kV NPGC-Patna D/C line) using ERS during repair works of the defective tower of 400kV BRBCL-Sasaram D/C line. Powergrid agreed to explore the possibility for the same.*

Powergrid may place the scheme. Members may discuss.

Item No. B.3: Outage of important transmission lines

In 159th OCC, Powergrid informed that 400 kV Kishenganj-Patna D/C lines would be restored by end of December 2019.

ENCIL vide mail dated 5th August 2019 informed that 400 kV Purnea-Biharshariff D/c would be restored by end of November 2019.

Members may update.

Item No. B.4: Implementation of non-scheduling of power due to failure of Payment security mechanism (PSM)--ERLDC

As per Govt order: 1. "23/22/2019-R&R" dated: 28th June, 2019; 2. "23/22/2019-R&R" dated: 17th July, 2019; 3. "23/22/2019-R&R" dated: 23rd July, 2019, Non scheduling of power to the

default beneficiary in case of failure of Payment security mechanism has been successfully implemented by PSOOCO w.e.f. from 1st August 2019.

To facilitate the non-scheduling of power by the generator to any beneficiaries for non-maintenance of any valid Payment Security Mechanism (PSM), a web portal (Payment Security Administration portal link: **https://psa.posoco.in**) has been introduced by POSOCO on 31st July 2019. Using this portal beneficiaries and generators can update their payment security status for ISGS/LTA/MTOA transactions for the day ahead by 08:00 Hrs of the 'D-1' day using their user credential. As per the declaration in this portal, entitlement of the beneficiaries is being calculated at 09:00 Hrs of 'D-1' day for the day 'D' and uploaded in scheduling portal of ERLDC.

ERLDC may explain. Members may note.

Item No. B.5: Action Plan for Power Supply during Durga Puja, 2019 (4th October to 8th October, 2019)

he Hon'ble Minister-in- charge,Department of Power & Non-Conventional Energy Sources, Govt. of West Bengal has convened a meeting on 20/8/2019 regarding Action Plan for meeting the power demand during the Durga Puja festival, 2019 i.e. the period from 04/10/19 (Maha Sasthi) to 08/10/19 (Maha Dashami).

ERPC has assessed the expected **Availability** vis-à-vis projected **Demand** for West Bengal as well as Eastern Region during the above period. The details are given in the **Annexure-B5**.

Members may kindly discuss and finalize.

Item No. B.6: Review of Indian Electricity Grid Code (IEGC)

An Expert Group has been formed for comprehensive review the Indian Electricity Grid Code (IEGC). The Expert Group requested the inputs of RPCs to address the operational and regulatory issues pertinent to system operation.

Members may submit their views.

Item No. B.7: Installation of Earth Switch for 400KV Talcher-Rourkela D/C and 400KV D/C Talcher-Rengali lines at NTPC end --Powergrid

400KV D/C Talcher-Rourkela and 400KV D/C Talcher-Rengali lines belong to POWERGRID and it is being maintained by POWERGRID. The 400KV bays for both the lines at NTPC end belong to NTPC. There is no line side earth switch available for these lines at NTPC end for earthing any of these lines during shutdown maintenance activities. Only one circuit is allowed for shutdown for maintenance of these lines which leads to severe induction due to other circuit in service. Though localized earthing is being done during maintenance by POWERGRID, it is not sufficient for the safety of the working person against induction.

In view of this NTPC is requested to install the earth switch for these lines at the earliest.

Members may discuss.

Item No. B.8: 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.

In 159th OCC, DGPC informed that the hydro flow is changing rapidly, accordingly they are revising the DC. DGPC added that they are submitting the revised DC to NLDC, Bhutan.

OCC advised NLDC, Bhutan to adhere to the schedule, any deviation schedule due to change in hydro inflow should be taken care by revising the schedule. The day ahead schedule should be accurate so that the Beneficiaries can plan their availability as per the demand. Otherwise, the beneficiaries incurred with huge penalty under DSM due to deviation in the schedule of Bhutan power.

NLDC, Bhutan informed that accessing the ERLDC site requires high speed internet which is not available at NLDC, Bhutan therefore, they could not punch the revised schedule. However NLDC, Bhutan agreed to pass the information to ERLDC in time.

ERLDC and Bhutan may update.

Item No. B.9: Operationalization of 400 kV Durgapur Bus Splitting Scheme

In 158th OCC, 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).

In 159th OCC, ERLDC informed that the bus splitting scheme was charged for 15 minutes at 15:00 hrs on 18th July 2019 on trail basis. ERLDC had placed the observations in the meeting.

It was observed that the loading on 220kV Durgapur(PG)-Parulia(DVC) D/C line and 220kV Waria-Bidhanagar is increasing with bus splitting scheme. The loading on both the lines is further increasing with 3rd ICT at Durgapur (PG) in service.

OCC advised SLDC, WB to shift the loads to minimize the loading on 220kV Waria-Bidhanagar D/C line.

SLDC, WB informed that there is no scope for shifting the loads.

OCC opined that in view of increasing fault level at 400kV Durgapur, it is necessary to put the Bus spitting scheme in service.

OCC decided to put the Bus Spitting scheme in service for one day on trail basis without 3rd ICT at Durgapur (PG). Based on the real time observations, the further course of action would be decided.

ERLDC may place the details. Members may decide.

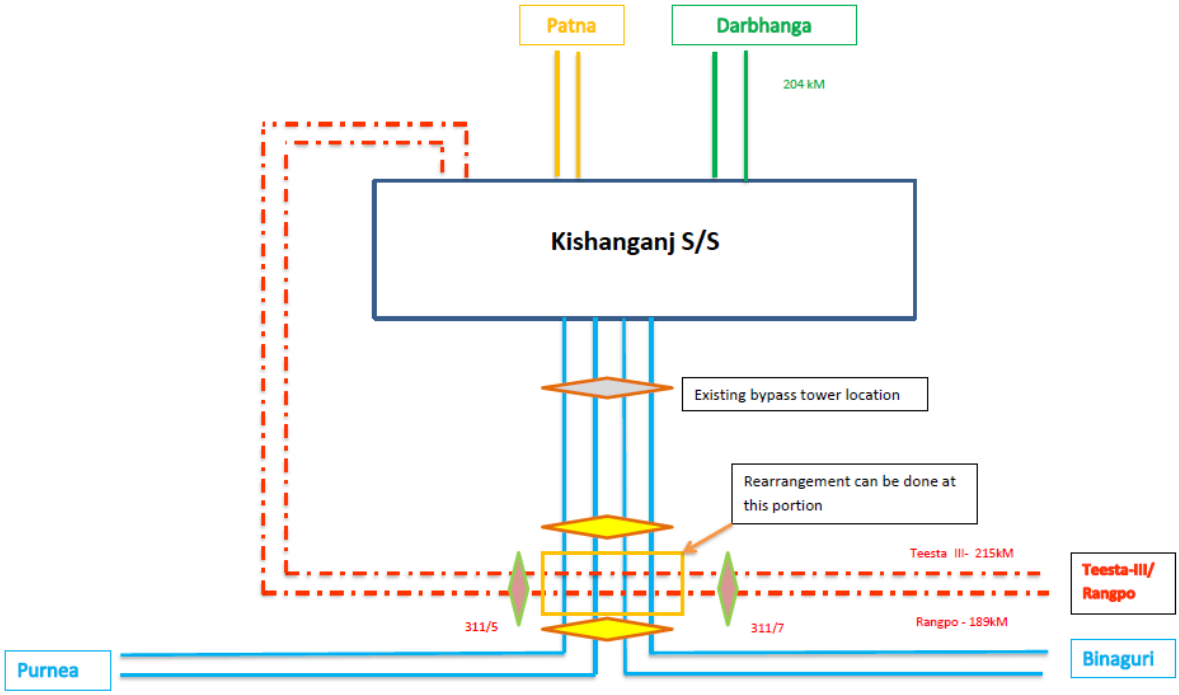
Item No. B.10: Bypassing arrangement of 400 kV Kishanganj S/S due to recent flood in North Bihar area—ERLDC

Due to heavy rain in North Bengal and North Bihar for last 2 weeks, flood like situation has arisen in different districts like Kishanganj, East Champaran, Madhubani, Sitamari, Supaul, Araria of Bihar and North Dinajpur of W. Bengal. On 13/07/19 it was gathered that water had accumulated in 400/220kV Kishanganj GIS substation & its adjacent areas had risen to alarming levels.

Earlier during 2017, Kishanganj(PG) S/Stn had to be completely shut down for a couple of days, on account of water-logging. To avoid such type of situation in future, after discussion in different OCC meetings, temporary arrangement was made to keep the major outgoing/incoming lines in service by making bypass arrangement outside of the Kisanganj S/s. Accordingly arrangement for reconfiguring 400kV Binaguri-Kishanganj D/C & 400 KV Purnea-Kishanganj D/C at Kishanganj S/S as 400 kV Binaguri –Purnea – III & IV was planned & commissioned by cross jumpering above two lines at the LILO portion during March-2018.Subsequently, 400kV Teesta_III-Kishanganj& 400 KV Rangpo-Kishanganj were commissioned on 04/01/2019 & 11/02/2019 respectively and with their commissioning, restriction on generation by the hydro station in Sikkim was withdrawn. At present, 2300MW of Sikkim hydro generation is being evacuated through Kishanganj and Binaguri S/S. Bypassing arrangement of these lines were not envisaged during that period due to non-commissioning of these lines during that period.

In the event of recurrence of a similar emergency flood like situation, for facilitating evacuation of bulk hydro generation of Sikkim it is necessary to explore some methodology to interconnect 400kV Teesta – III – Kishanganj&Rangpo –Kishanganj lines, with other lines of adjacent S/Stns . A new re-configuration scheme needs to be explored instead of the existing Kisanganj S/S bypass scheme In the event of recurrence of a similar emergency.

For finalizing the above scheme an emergency meeting was held at ERLDC with concerned Transmission licenses on 16-07-2019. Transmission licensees viz. TPTL, ATL, ER-II (PGCIL) are present in the meeting and ER-I (PGCIL), NLDC participated the meeting through VC.



In 159th OCC, Powergrid informed that since 400kV Teesta III-Rangpo lines crossing the LILO portion of 400kV Purna- Kishangaj-Binaguri line perpendicularly with vertical line configuration, it is not possible to make the bypass arrangement.

OCC opined that site visit with the concerned transmission licensees is required to find out a plan for bypass arrangement.

OCC decided to form a Committee with members from Powerlinks, Powergrid, TPTL and ENICL. The Committee would visit the site and prepare a feasible plan for the bypassing arrangement.

Accordingly, the Committee visited the site and submitted the report. The report is enclosed at ***Annexure-B10.***

Members may discuss.

Item No. B.11: Implementation of SPS for disconnection o Bhutan interconnection at Alipurduar Substation - NLDC

NLDC, POSOCO vide letter dated 23rd July 2019 to POWERGRID proposed to design and implement a suitable SPS scheme at 400 kV Alipurdwar substation to trip both 400 kV Alipurdwar-Jigmedling D/C in the event of tripping of both the HVDC poles at Alipudwar. Considering the grid security during high hydro condition with depleted outgoing 400 kV lines from New Purnea and Kishanganj this SPS needs to be implemented urgently.

Members may discuss.

Item No. B.12: Renewal of Maintenance and Support Contract for PSS/E User licenses--ERLDC

It has been decided in the 30th FOLD meeting held on 19.07.2019 that RLDCs shall coordinate with SLDCs of respective regions and confirm their approval for renewal of AMC of PSS/E. On receipt of the confirmation from RLDCs, NLDC will intimate the negotiation price details to SLDCs so that SLDCs can place award accordingly. The award needs to be placed by 30th September, 2019 to avoid any further rise in price.

In view of the above ERLDC had written a letter to all SLDCs of Eastern Region with request to communicate their approval for renewal of AMC along with the no. of licenses required by 9th August, 2019.

SLDCs may update

Item No. B.13: 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.

In 159th OCC, TUL informed that few of their long-term customers have raised concern over the computation of LTA charges for such overload capacity.

OCC opined that the issue might be placed in NR forum by their beneficiaries.

However, ERPC Secretariat agreed to look into the issue.

Members may discuss.

Item No. B.14: Status of projects funded under PSDF schemes

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

A. Projects approved:

SN	Name of Constituent	Name of Project	Date of approval from PSDF	Target Date of Completion	PSDF grant approved (in Rs.)	Amount drawn till date (inRs.)	Latest status
1	WBSETCL	Renovation & up-gradation of protection system of 220 kV & 400 kV Substations in W. Bengal	31-12-14	April 2018 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	22-05-17	November 2019	43.37	11.69 Cr	Order had been placed and work is in progress.

		33kV					
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	90% of work has been completed. The work would be completed by Dec 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 Management System (ADMS) in SLDC, Odisha	22-12-17	3.26 Cr	Scheme was approved by Appraisal Committee. It was sent to CERC for concurrence.
5		Protection upgradation and installation of SAS for seven numbers of 220/132/33kV Grid substations (Balasore, Bidanasi, Budhipadar, Katapalli, Narendrapur, New-Bolangir&Paradeep).	12-03-18	41.1 Cr.	Scheme examined by TSEG on 20.03.2018. Inputs sought from the entity are awaited.
6	WBSETCL	Implementation of Integated system for 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.15: 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-B15** 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.16: Ratification of projected Demand and generation for POC transmission charges and loss calculations for Q3 (2019-20)-ERLDC

The projected Demand and Generation of ER constituents to be considered in the base case for POC transmission charge and loss calculations for Q3 (Oct 19-Dec 19) are attached at **Annexure B16** for ratification by the constituents.

Members may discuss.

Item No. B.17: Updated Operating Procedure of Eastern Region-2019

The Operating Procedure of Eastern Regional power system, developed and maintained by ERLDC in accordance with section 5.1(f) of the IEGC, has been updated taking into consideration the evelopments that have taken place in the regional power system during the last one year including the amendments incorporated in the IEGC so far by Hon'ble CERC. Draft Operating procedure was circulated to the concerned for their review and suggestion via email dated 10th July 2019.

Based on comments received and other development operating procedure is finalized and same is available at ERLDC website www.erldc.in

Comments received from West Bengal after 20th July is considered in Revision 1 of operating procedure and same is available at ERLDC website www.erldc.in

Member kindly note

Item No. B.18: Status of main bay of 400kV Indravati(OHPC)-Indravati(PG) at OHPC substation

In 159th OCC, OHPC was advised to submit a detail plan of restoration of the main bay to ERLDC and ERPC.

OHPC may update.

Item No. B.19: 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 July, 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 July, 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 July, 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	9 Months Tendering for RTU installation is in	Condition 1: Block I feeders will be selected for load shedding Condition 2: Block I & II feeders will be

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

In 142nd OCC, 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 159th OCC, JUSNL informed that testing of ADMS had been completed and the ADMS would be kept in service in 1st week of August 2019.

BSPTCL informed that installation of ADMS had been completed and the testing would be done by 26th July 2019.

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 159th OCC, it was informed that the issue was discussed in shutdown meeting held on 18th July 2019 wherein it was opined that one circuit of 400 KV Rangpo-Binaguri D/C line could be allowed from September/October 2019 depending on the hydro generation availability in Sikkim.

Members may discuss.

Item no. C.6: 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.

In 159th OCC, Sikkim informed that they had cleared the dues.

Members may update.

Item no. C.7: 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.*
NPGC/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	

Members may update.

Item no. C.8: 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 Mar, 2020.***
2.	**400/220kV Pandiabil Grid S/s:**	
a.	Pratapsasan(OPTCL)-Pandiabil(PG) 220 kV D/C line	***By Mar, 2020.***
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.9: 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 Sep 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.10: 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	January 2020, 80% of work has been completed. The line up to the cable is charged from Subashgram end on antitheft.

WBSETCL may update.

Item no. C.11: 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 1st week of August 2019.

Powergrid and OPTCL may update.

Item no. C.12: 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.

In 159th OCC, ERLDC informed that PMU data available at ERLDC is intermittent due to communication issues and PMU data reporting from PDCs at SLDCs is also intermittent.

ERLDC opined that alternate OPGW link is required for reliable communication.

OCC advised Powergrid to take the necessary action to resolve the issue.

Members may update.

Item no. C.13: 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 November-2019

Sl No	State/Utility	TTC import(MW)		RM(MW)		ATC (Import) MW		Remark
		Import	Export	Import	Export	Import	Export	
1	BSPTCL	5300	--	100	--	5200	--	Oct-19
2	JUSNL	1185	--	32	--	1153	--	Oct-19
3	DVC	1171.6	3142	61.46	48.26	1110.14	3093.7	Sep-19
4	OPTCL	1963	--	80	--	1883	--	Nov-19
5	WBSETCL	3840	--	400	--	3440	--	Sep-19
6	Sikkim	285	--	2.5	--	282.5	--	Nov-19

As per the "Detailed Procedure for Relieving Congestion in Real Time Operation" Following has also been mandated for monitoring of Congestion in Real Time :

1. *SLDCs/ RLDCs/ NLDC shall have a display available in their web-sites showing TTC, TRM, ATC declared in advance alongwith Real time power flow in the corridor for which TTC has been declared shall be displayed alongside for comparison. The voltage of the important nodes in the grid downstream/ upstream of the corridor shall also be displayed.* Presently the display available for RLDC/NLDC for real time monitoring is :http://wbs.nldc.in:82/Web_TTC_ATC.aspx.As all SLDCs of Eastern region are now declaring ATC/TTC, so, now it would be desired to have the display for Eastern region where states ATC/TTC calculated will be monitored with actual. In order to, harmonise the process a detailed view of ATC/TTC links is given below which ERLDC can utilize for web based monitoring.

SLDC	**ATC/TTC Weblink**
DVC	http://application.dvc.gov.in:8080/CLD/atcttcmenu.jsp
West Bengal	http://www.wbsldc.in/atc-ttc
Bihar	http://www.bsptcl.in/ViewATCTTCWeb.aspx?GL=12&PL=10
Orissa	Dynamic Link for each month (Static Location for All months ATC/TTC to be kept for easy access)
Jharkhand	Web Link to be prepared by SLDC
Sikkim	Web Link to be prepared by SLDC

In addition , Each SLDC shall also show the same on their website for real time monitoring. Sample display for NLDC is given below.

Updated at : **29-07-2019 16:01:15**

S.No.	CORRIDOR / CONTROL AREA	TTC	ATC	ACTUAL FLOW (MW)
Import				
1	NR	17950	17150	12431
2	ER			-3218
3	NER	1150	1105	0
4	SR	10500	9750	3305
5	WR			-12714
6	Punjab	7000	6400	6206
7	DD&DNH	1300	1300	1111
8	S3 (Kerala)	2900	2810	2514
Export				
1	NR	4500	3800	-12431
2	ER			3218
3	NER	2695	2650	-482
4	SR	999999	999999	-3305
5	WR			12714
6	W3	999999	999999	12377

Fig : NLDC display for Real Time congestion

2. *State Load Despatch Centre (SLDC) shall assess the Total Transfer Capability (TTC), Transmission Reliability Margin (TRM) and Available Transfer Capability (ATC) on its inter-State transmission corridor considering the meshed intra State corridors for exchange (import/ export) of power with inter-State Transmission System (ISTS). The details of anticipated transmission constraints in the intra State system shall also be indicated separately.*Present Status of Mentioning about qassuptionaand LGBR used for ATC/TTC calculation based on the available online information are as follows**:**

SLDC	**ATC/TTC Review**
DVC	Contsraint and Load/gen Assumption needs to be mentioned
West Bengal	Contsraint and Load/gen Assumption needs to be mentioned

Orissa	No Issue, as ATC/TTC, Constraint and assumption are mentioned properly for both import as well as export TTC.
Bihar	Contsraint and Load/gen Assumption needs to be mentioned
Jharkhand	Contsraint and Load/gen Assumption needs to be mentioned
Sikkim	Contsraint and Load/gen Assumption needs to be mentioned

ERLDC may explain. Members may update.

Item no. C.14: 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	Done on 19th July 2019	Last Week of January 2020	
2	Maithon	1st week of June 2019		1st Week of February 2020	
3	Rengali	2nd week of June 2019	Done on 27th June 2019	Last week of November 2020	
4	U. Indarvati	3rd week of June 2019	July 2019	2nd week of February 2020	
5	Subarnarekha	1st week of October 2019	July 2019	1st week of January 2020	
6	Balimela	3rd week of October 2019	Done on 17th July 2019	1st week of March 2020	
7	Teesta-V	2nd week 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.15: Summary of Status Update on Previous agenda items in OCC

OCC	Agenda	Decision	Status Update
152	**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.	Powergrid informed that the work would be completed by 15th August 2019.
155	**Collection of modeling**	OCC advised all the constituents to	157th OCC advised all the

	data from Renewable as well as conventional energy generators: ERLDC	submit the details of renewable power plants of 5 MW and above.	SLDCs to submit the details to ERPC and ERLDC. Format along with explanation for collection of Wind and Solar Data has been shared by ERLDC to all SLDC.
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 Restoration procedure of State--ERLDC**	Bihar, Jharkhand, DVC and Orissa have submitted the updated restoration procedure.	Restoration procedure form West Bengal and Sikkim is yet to be received
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.	In 159th OCC, it was informed that autorecloser was implemented for Chuka-Birpara lines. It was successfully operated on 25th 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. OCC advised DGPC to implement 1-ph autorecloser instead of 3-ph.
157	**Reliability Indices Submission by PGCIL ERTS-1/ERTS-2 to ERLDC in Line with CERC Regulation**	PGCIL ERTS-1 and ERTS-2 agreed to provide the details from July 2019.	

Item no. C.16: 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 the 157th OCC meeting, members were requested to nominate two executives for validation of intra-state transmission network models of all states up to 132 KV in SCADA system.Nomination has been received from SLDC Jharkhand, Odisha and Bihar. Nomination from DVC and West Bengal is yet to be received at ERLDC.

DVC and West Bengal may nominate two executives.

Item no. C.17: 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.

In 159th OCC, OCC decided to discuss the issue with all the advised all the private transmission licensees in a separate meeting.

Accordingly, the issue was discussed in a separate meeting with all the private transmission licensees, Powergrid and ERLDC. Minutes of the meeting are yet to be issued.

Members may update.

PART D:: OPERATIONAL PLANNING

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

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of September 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 September 19

Generator shutdown for September 2019:

System	Station	Unit	Capacity (MW)	From	To	No. of Days	Reason
JHARKHAND	TTPS	2	210	12.08.19	08.09.19	8	Annual Overhauling
DVC	DSTPS	1	500	16.08.19	20.09.19	20	COH (Blr,Turb,Gen.)
ODISHA	Talcher TPS	5	110	09.09.19	28.09.19	20	AOH
WBPDCL	Santaldih TPS	6	250	15.09.19	21.09.19	7	Boiler License renewal

ERLDC may place the list transmission line shutdown discussed on 8th August 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
1	FARAKKA	WEST BENGAL	NTPC	6	500	ANNUAL MAINTAINANCE	7-Jun-19	7-Aug-19
2	MTHRB	JHARKHAND	MPL	2	525	ANNUAL OVERHAULING	20-Jun-19	4-Aug-19
3	MTPS II	BIHAR	NTPC	1	195	ANNUAL OVERHAULING	1-Jul-19	5-Aug-19
4	KAHALGAON	BIHAR	NTPC	4	210	ANNUAL OVERHAULING	11-Jul-19	12-Aug-19
5	KOLAGHAT	WEST BENGAL	WBPDCL	1	210	POLLUTION CONTROL PROBLEM	10-May-18	NO DEFINITE PROGRAM
6	KOLAGHAT	WEST BENGAL	WBPDCL	3	210	POLLUTION CONTROL PROBLEM	23-Feb-17	NO DEFINITE PROGRAM
7	*KOLAGHAT*	*WEST BENGAL*	*WBPDCL*	*6*	*210*	*BOILER OVER HAULING WORK*	*28-Jul-19*	*12-Aug-19*
8	BAKRESWAR	WEST BENGAL	WBPDCL	4	210	TBG OVERHAULING	13-Jul-19	2-Aug-19
9	MEJIA B	WEST BENGAL	DVC	7	500	ANNUAL OVERHAULING	3-Jul-19	3-Aug-19
10	CTPS	JHARKHAND	DVC	3	130	TURBINE BLADE DAMAGE	30-Jul-17	NO DEFINITE PROGRAM

11	TTPS	ODISHA	GRID CO	2	60	ANNUAL OVERHAULING	26-Jul-19	27-Aug-19
12							Date	
13	JITPL	ODISHA	JITPL	1	600	PA Fan Duct leakage	7-Jul-19	3-Aug-19
14	TALCHER	ODISHA	NTPC	1	500	*COAL SHORTAGE*	27-Jul-19	SUBJECT TO COAL AVAILABILITY
15	APNRL	JHARKHAND	ADHUNIK	2	270	*TURBINE VIBRATION*	1-Aug-19	6-Aug-19
16	STERLITE	ODISHA	GRID CO	2	600	DUE TO PROBLEM IN OLTC SYSTEM OF Unit Transformer	10-Apr-19	8-Aug-19
17	SAGARDIGHI	WEST BENGAL	WBPDCL	3	500	*COAL SHORTAGE*	4-Jul-19	SUBJECT TO COAL AVAILABILITY
18	SAGARDIGHI	WEST BENGAL	WBPDCL	2	300	*COAL SHORTAGE*	23-Jun-19	SUBJECT TO COAL AVAILABILITY
19	MEJIA	WEST BENGAL	DVC	2	210	LOW SYSTEM DEMAND	11-Jul-19	SUBJECTED TO DVC DEMAND
20	BOKARO B	JHARKHAND	DVC	3	210	Ash handling problem	30-Jun-19	12-Aug-19
21	BAKRESWAR	WEST BENGAL	WBPDCL	3	210	*COAL SHORTAGE*	18-Jul-19	SUBJECT TO COAL AVAILABILITY
22	IBTPS	ODISHA	GRID CO	1	210	Tripped on generator protection	23-Jul-19	6-Aug-19
23	BANDEL	WEST BENGAL	WBPDCL	5	210	*COAL SHORTAGE*	22-Jul-19	SUBJECT TO COAL AVAILABILITY
24	TENUGHAT	JHARKHAND	JUVNL	1	210	PROBLEM IN FD FAN	30-Jul-19	3-Aug-19
25	GMR	ODISHA	GRID CO	3	350	Turbine HP control valve problem.	31-Jul-19	6-Aug-19
26	DPL	WEST BENGAL	*WBPDCL*	7	250	*COAL SHORTAGE*	1-Aug-19	SUBJECT TO COAL AVAILABILITY
	Sub Total (SS)				7590			

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 Date
1	Balimela	Unit- 1	60	Renovation & Modernization work (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
3	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	Indrabati	Unit-4	150	Annual Maintenance	28-06-2019	
6	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 688 MW hydro capacities in Odisha is under forced outage / planned outagein the period of peak monsoon and therefore not available for providing the much needed peaking support during evening peak. SLDC / OHPC may please indicate restoration plan of the units.

(iii) Transmission elements

SL NO	Transmission Element / ICT	Agency	Outage From	Reasons for Outage
1	220 KV BALIMELA - U' SILERU	OPTCL / APSEB	10-03-2018	LINE ANTITHEFT CHARGED FROM UPPER SILERU ON 17-04-18
2	400 KV IBEUL JHARSAGUDA D/C	IBEUL	29-04-2018	TOWER COLLAPSE AT LOC 44,45
3	400KV NEW PURNEA-BIHARSARIFF(PG)-D/C	ENICL	10-08-2018	TOWER COLLAPSE AT LOC 47/0
4	400 KV PATNA KISHANGANJ- I	POWERGRID	01-09-2018	TOWER COLLAPSE AT LOC 129. PILING DAMAGED
5	400 KV PATNA KISHANGANJ- II	POWERGRID	06-07-2019	EMERGENCY HAND TRIPPED DUE TO FRUSTUM OF LOCATION NO: 129A/0 (A LEG) HAS BEEN EXPOSED ON SOIL EROSION.
6	220 KV PANDIABILI - SAMANGARA D/C	OPTCL	03-05-2019	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. WORK UNDER PROGRESS.
7	765KV JHARSUGUDA-RAIPUR-1	POWERGRID	22-07-2019	OPENED ON OVER VOLTAGE AT RAIPUR

8	765KV JHARSUGUDA-ANGUL-I	POWERGRID	31-07-2019	OPENED ON OVER VOLTAGE AT JHARSUGUDA
9	132KV KISHANGANJ-BARSOI	BSPHCL	19-07-2019	1 NO TOWER COLLAPSE IN THE LINE AS REPORTED BY SLDC, BIHAR.
10	400KV ALIPURDUAR-JIGMELLING-I	POWERGRID/ BHUTAN	28-07-2019	R-N, 1.5 KA, Z2 FROM ALIPURDUAR; UNDER PATROLLING

(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: 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.

In 159th OCC, all the SLDCs were advised to fill the correct data in MERIT portal on regular basis.

Item No. E.3: 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.4: Commissioning of new transmission elements in Eastern Region

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

SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks
1	Unit 2 of Mangdhechu (180MW)	DGCL	02-07-2019	12:02	Synchronised for first time
2	400 kV Bidhanagar - New Chanditala	WBSETCL	10-07-2019	19:36	LILO of 400kV Bidhanagr-Arambag at New-Chanditala
3	400 kV New_Chanditala-Arambag	WBSETCL	16-07-2019	14:50	
4	400 KV Patna-NPGC II	PGCIL	17-07-2019	20:23	
5	401 KV Patna-NPGC I	PGCIL	18-07-2019	17:14	
12	Bay of 132kV Rangpo-Chuzachen-2 at Rangpo		24-07-2019	22:05	Rearrangement of 132kv Chuzachen-Gangtok as 132kV Rangpo-Chuzachen-2 & 132kV Rangpo-Gangtok-1 Bay swapping between 132kV Rabgpo-Melli& 132kV Rangpo-gangtok-1
13	Bay of 132kV Rangpo-Melli at Rangpo		24-07-2019	22:39	
6	220 kv Dalkhola-Gazole-1	WBSETCL	25-07-2019	19:09	LILO of 220kV Malda-Dalkhola-DC at Gazole. Only LILO portion is owned by WBSETCL
7	220 kv Gazole-Malda-1	WBSETCL	25-07-2019	19:12	
8	220 kv Dalkhola-Gazole-2	WBSETCL	25-07-2019	19:56	
9	220 kv Gazole-Malda-2	WBSETCL	25-07-2019	19:57	
10	160MVA ICT 1 at Gazole	WBSETCL	25-07-2019	11:54	
11	160MVA ICT 2 at Gazole	WBSETCL	26-07-2019	12:23	

Item No. E.5: UFR operation during the month of July'19

System frequency touched a maximum of 50.32 Hz at13:06hrs of 07/07/19, 15:50hrs of 15/07/19 & 18:03hrs of 24/07/19and a minimum of 49.64 Hz at 00:06hrs of 04/07/19. Hence, no report of operation of UFR has been received from any of the constituents.

Item No. E.6: Grid incidences during the month of July, 2019

Sr No	GD/ GI	Date	Time	S/S involved	Summary	Load loss (MW)	Gen loss (MW)
1	GD-I	14-07-2019	10:35	Jorethang, Melli (New) and Tashiding	At 10:35:11 hrs, 220 kv Jorethang – New Melli D/C, 220 kv Rangpo - Tashiding S/C, 220 kv Tashiding – New Melli S/C and 220 kV Melli (New) – Rangpo – S/C tripped due to R-Y fault (Fault location is yet to be received) resulting total power failure at Jorethang, Tashiding and Melli (New) S/S. All the running units at Jorethang and Tashiding tripped due to loss of evacuation path.	0	200
2	GI-I	22-07-2019	03:57	Siliguri	At 03:57 Hrs, 220kV Siliguri-Dalkhola - I tripped along with tripping of 220kV Siliguri-Binaguri - II,220/132 kV ICT-II at Siliguri and 220 kV Bus-II at Siliguri; At same time,220 kV Siliguri-Dalkhola - I successfully auto-reclosed at both ends.	0	0
3	GI-II	26-07-2019	10:30	Kahalgaon	At 10:30 hrs KhSTPP unit 3 tripped along with Khalgaon bus II. 400 KVKhSTPP - Lakhisarai - II also tripped at the same time due to DT receipt at Lakhisarai end. Unit 3 tripped due to loss of auxiliary supply. Bus tripped due to operation of LBB of main bay of U#3. 400 KV KhSTPP Lakhisarai II tripped due to DT receipt at Lakhisarai end.	0	184

****

Governor Response of ISGS and IPP Generating plants

Generating Power Plants	Response of the Power Plant as observed from ERLDC SCADA data / Power Plant Data	Course of Action decided during Meeting
Farakka NTPC	**Stage 1 (3 X 200 MW):** Old Siemens Make SSI system where finetuning of RGMO is not feasible.	**Stage 1:** Old system would be replaced with new BHEL make MAX DNA DCS system. during the AOH, as per latest LGBR. RGMO tuning would be completed after such upgradation.
	Stage 2 (2 X 500 MW): Performance is being monitored.	**Stage 2 (2 X 500 MW):** Further finetuning will be carried out if the performance is not adequate.
	Stage 3 (500 MW): Software has been upgraded for the better response of Governing system	**Stage 3:** Finetuning of parameters will be done by NTPC for better response.
Kahalgaon NTPC	**Stage 1 (4 X 210 MW):** These are Russian make old units having mechanical governor. The performance of Unit 4 is not good due to the control valve issue.	**Stage 1 (4 X 210 MW):** During the next AOH,issue of Unit 4 will be rectified for better response.
	Stage 2 (3 X 500 MW): The response is unsatisfactory even after tuning.	**Stage 2 (3 X 500 MW):** The matter of poor response has been taken with BHEL. Unit 6 and 7 will be tuned by mid of August 2019, for which no shutdown would be required.
Talcher NTPC	**Stage 1 (2 X 500 MW):** Old GE make Units and poor response is observed.	**Stage 1 (2 X 500 MW):** NTPC informed that the GE make units 1 & 2 are quite old and their performance had been unsatisfactory since beginning. However, the vibration problem of U-2 has been rectified by the OEM. It was further stated byNTPCthat their corporate engineering has taken up the matter with GE and their response is awaited. There are plans to attend to the governor problems during the next overhauling in November 2019. ERLDC requested NTPC to update anydevelopment on this front.
	Stage 2 (4 X 500 MW): Unit 3 is providing an oscillatory response. Other units' performance was also not satisfactory	**Stage 2 (4 X 500 MW):** The oscillatory response observed for unit 3 will be rectified in the AOH. Unit 4,5 and 6 response will be tuned by

		the end of Mid Sept 2019.
Barh NTPC	**Unit 4 and 5:** NTPC Barh units have Siemens make governor whose response was not satisfactory. Barh responded that they have taken the logic from NTPC Mouda whose performance is good and will implement the same.In addition, there are some limitation due to boiler and need modification.	**Unit 4 and 5:** NTPC Barh intimated that new logic (RGMO) will be implemented in Barh Units by end of Aug 2019, together with tuning of AGC software.. The modification in the boiler will be completed during the AOH of the Units as per LGBR schedule.
BRBCL	The response of the units is not satisfactory.Change in frequency is not being correctly detected. Correction in load reference (in response to frequency change) is being generated after 1 minute.	BRBCL intimated that they will implement the new logic for RGMO within 2 weeks and will share the response with high-quality data for analysis.
GMR Orissa	The units are Chinese make. Response is observed, however it is not adequate	GMR will fine-tune and improve the logic for detection of frequency event and Response will be analyzed during the next frequency event to find whether any improvement has taken place.
MPL	Good Response was observed in many cases and fine-tuning is being done as per the event response. U1 was generally operating in VWO mode.	MPL intimated that they have changed the settings for sliding pressure curve which has provided better response and the units are being operated in throttledvalve condition rather than VWO to give the response as per IEGC.
APNRL	Based on data recorded at ERLDC,response of APNRL units has been observed to be delayed and inadequate. APNRL informed that they will send the data for these events where satisfactory response has been obtained as checked by them.	APNRL intimated that frequency influence detection and associated action were intentionally having a delay to check the RGMO logic. The delay has now been removed and better response can be observed from now onwards.
Teesta V	Generation response is slow during frequency response event.	Teesta V intimated that they will check the RGMO software and remove any delay in the governor control to provide an adequate response.
Teesta 3	The response of Teesta 3 Units is fast, adequate and sustaining.	Teesta 3 intimated that they have tuned their RGMO logic due to which they are

		now able to provide good response.
Dikchu	Dikchu intimated that they have not implemented RGMO, so units are run under FGMO.	Dikchu will take help from Teesta 3 to fine-tune their primary response.

In addition to the above, a few other issues were also deliberated during the meeting which are as follows:

1. Generators were advised to improve their RGMO logic and its fine-tuning to detect sudden frequency change beyond 0.03 Hz, maintaining the Frequency Response for at least 10 minutes thereafter, and subsequent withdrawal of response with a rate of 1% per minute.
2. It was strictly advised to all the generating plants not to operate their units in Valve Wide open (VWO) mode as this reduces the margin for primary frequency response from the generators.
3. From the DCS data received from many generating stations it is observed that the the response variables are not updating as expected due to improper setting in the DCS system. It was decided that all generating plants wouldexplore all possibilities for providingDCS data of better resolution and accuracy by changing the logic implemented for the update of data in their DCS system.

For all future frequency events, after receiving intimation from ERLDC, all generating plants will collect their DCS data, analyze their Units' response, calculate the % response and find out the reason for any inadequate response. The analysis will also be submitted to ERLDC.

ERPC :: KOLKATA

Minutes of Special Meeting on "Shutdown of 400 kV D/C Nabinagar-Sasaram Line" held on 02.08.2019 at ERPC, Kolkata

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

Member Secretary, ERPC chaired the meeting. He welcomed participants from Powergrid, BRBCL, NPGC, Eastern Central Railway, ERLDC & ERPC in the meeting. He explained that the issue was discussed in 158th OCC Meeting held on 27th June 2019 wherein, Powergrid informed that during line patrolling of 400kV D/C Nabinagar-Sasaram Line, 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. Powergrid had requested for shutdown of 400kV D/C Nabinagar-Sasaram Line for ten days 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. To avoid collapse of said tower, POWERGRID had provided stitching with additional tower member to safeguard the tower and kept under regular vigil.

OCC opined that no evacuation path would be available for Nabinagar generation plant during the shutdown period of 400kV D/C Nabinagar-Sasaram Line. OCC advised Powergrid to restore the line using ERS and complete the tower repairing work.

In 159th OCC Meeting held on 19th July 2019, Powergrid informed that restoration of the line using ERS would take more than 10 days as it requires destringing of 3.6 km line. The replacement of deformed / bulged leg & bracing would take 10 days. OCC decided to discuss the issue in separate meeting with the concerned utilities i.e. Eastern Railway, Bihar, BRBCL, Powergrid, ERLDC and ERPC.

In line with the OCC decision this meeting has been convened. The following deliberations were held in the meeting:

- BRBCL informed that 400kV NPGC-BRBCL line (about 10 km) was not yet completed by NPGC. Therefore, survival power to BRBCL plant will not be available during the shutdown of 400 kV D/C Nabinagar-Sasaram Line. Therefore, BRBCL requested Powergrid to carry out the tower repairing work by taking single circuit instead of double circuit shutdown.
- Powergrid informed that carrying out the tower repairing work by taking single circuit shutdown and using ERS is not possible. Powergrid assured to expedite and complete the repairing work within four days provided both line shutdown is granted.
- BRBCL added that since no alternative supply is available, the repairing work on the above line can only be started after complete shutdown of the turbine till stopping of the barring gear and the machines have to be started in cold start mode. Hence the BRBCL units will be under shutdown for one more week in addition to the shutdown period taken for the tower repairing work.
- Railways suggested that in order to have minimum interruption to Railways, the maintenance of BRBCL units may be planned during the shutdown of 400 kV D/C Nabinagar-Sasaram Line.

- ED, ERLDC suggested that if possible, 400 kV D/C Nabinagar-Sasaram Line may be connected to a nearby 400kV transmission line using ERS and jumpering arrangement for evacuation of BRBCL power during the shutdown of 400 kV D/C Nabinagar-Sasaram Line.
- During the discussion, it emerged that 400kV Daltanganj-Sasaram D/C line and 400kV NPGC-Patna D/C line are passing close to 400 kV D/C Nabinagar-Sasaram Line.
- Powergrid was advised to explore temporary connection of BRBCL power station with nearby 400kV transmission lines (i.e. 400kV Daltanganj-Sasaram D/C line or 400kV NPGC-Patna D/C line) using ERS during repair works of the defective tower of 400kV BRBCL-Sasaram D/C line. Powergrid agreed to explore the possibility for the same.
- Powergrid was advised to place the scheme in the upcoming 160th OCC Meeting scheduled to be held on 9th August 2019 at ERPC Kolkata. BRBCL and Railway were also advised to attend the 160th OCC Meeting.
- NPGC informed that 400kV NPGC-BRBCL line was planned only for drawing the start up power for NPGC station and for meeting system contingencies, if any. Contract for this line was awarded long time back and work also started but the line could not be completed due to serious ROW issues.
- It was opined that as a long term plan, the construction of 400kV NPGC-BRBCL line (10 km) is to be expedited for providing power to BRBCL under contingency. Possibility of construction of the line on cost plus basis through Powergrid may be explored for early construction of the line. It was decided to refer the issue to TCC for further guidance.
- BRBCL was also advised to plan for dedicated low voltage supply from state for meeting the emergency supply at the station.
- ERLDC suggested that to avoid situation like this in future, if there are two circuits planned for the evacuation of power from a generating station then separate single circuit towers should be planned instead of one double circuit tower.

Meeting ended with vote of thanks to the chair.

****

ANNEXURE- B5

EASTERN REGIONAL POWER COMMITTEE

Generation Availability During Puja-2019

Expected Peak Hours Generation

			Gross MW				Net MW			
System	Plants	Unit Considered	Therm.	Hydro+RES	Import Captive	Total	Therm.	Hydro	Captive	Total
BSPHCL	BTPS	1X110	0							
	MTPS	2X110	120							
TOTAL			120	80	0	200	103	80	0	183
JUVNL	TTPS	2x210	380	100	60	540	321	100	60	481
DVC	BTPS-A	1X500	450							
	BTPS-B	1x210	150							
	CTPS	2x250	500							
	DTPS	1X210	180							
	MTPS	4x210+2X250+2X500	1850							
	Durgapur STPS	2X500	950							
	Kodarma TPS	2X500	980							
	RTPS	2X600	600							
	TOTAL		5660	80	0	5740	5151	80	0	5231
ODISHA	IB TPS	2x210+1x660	950							
	TTPS	4x60+1x110	300							
	TOTAL		1250	1450	900	3600	1138	1443	900	3480
WBPDCL	BTPS	2x60+1X215	280							
	STPS	2X250	450							
	KTPP	5x210	850							
	BkTPP	5x210	1000							
	Sag TPS	2X300+2X500	1400							
	DPPS	+1*110+1*300+1X250	480							
	TOTAL		4460		105	4565	4014	0	105	4119
WBSEDCL	(JAL.+RAMAM+TISTA)HPS+PPSP+TLDP		0	1000	0	1000	0	1000		1000
CESC	TTPS	4x60	0							
	STPS	2x67.5	100							
	B.BUDGE TPS	3x250	730							
	HEL	2X300	600							
	TOTAL		1430			1430	1302			1302
NTPC	FSTPP	3x200+3x500	1900							
	KhSTPP	4x210+3X500	2100							
	TSTPP	2x500	1000							
	TSTPS Stg-II		*150*							
	Barh STPS	2X660	*1260*							
	MTPS Stg-II	2X195	*350*							
	BRBCL	3X250	*700*							
	NSTPS	1X660	*600*							
	TOTAL		8060			8060	5351	*		5351
NHPC	RHPS	3x20		60		60		60		60
	Teesta HEP	3x170		510		510		510		510
IPP	MPL (U#1&2)	2X525	1000							
	APNRL (U#1,2)	2X270	480							
	GMR (2x350)	2X350	650							
	JITPL (2X600)	1X600	580							
	Total IPP TH		2710			2710	2480	0		2480
	CHUZACHEN (2x55)			100		100		100		100
	JORETHANG (2x48)			90		90		90		90
	TEESTA URJA St III (6x200)			830		830		830		830
	Tashinding (2x48.5)			90		90		90		90
	DICKCHU (2X48)			90		90		90		90
	Total IPP HY			1200		1200	0	1200		1200
Import from BHUTAN	Chu. HPS,BIR. Receipt	4X190		250		250		250		250
	KHPS	4X15		60		60		60		60
	Tala HEP	6X170		850		850		723		723
	Dagachu HPS	2X63		126		126		120		120
	Mangdechhu HEP	2X180		180		180		180		
TOTAL				1466		1286		1153		1153
GRAND TOTAL			24070	5766	1065	30901	19859	5625	1065	26550

*** for Eastern Region only .**

West Bengal SHARE FROM ISGS

	PEAK	% SHARE
FSTPS	597	34.21%
KhSTPP	57	3.10%
TSTPP	96	10.13%
BarhTPS	0	0.00%
MTPS-Stg-II	26	9.64%
BRBCL	0	0.00%
NSTPS	0	0.00%
TOTAL	775	
RHPS	17	28.34%
Teest HPS	122	23.98%
CHPC	80	31.85%
KHEP	30	50.00%
THEP	276	38%
MHEP	39	32.14%
Total	425	
Gr.Total	1024	

EASTERN REGIONAL POWER COMMITTEE
PUJA LOAD FORECAST '2019

DEMAND IN NET MW AND AT 50.0 HZ

		WEST BENGAL							
PUJA		**WBSEDCL**	**CESC**	**TOTAL WEST**	**BSPHCL**	**JUVNL**	**DVC**	**ODISHA**	**REGION**
DAYS				**BENGAL***					
	MAX	**7270**	**2180**	**9450**	**5535**	**1400**	**3000**	**5245**	**23770**
SASTHI									
04-Oct-19	**MIN**	**4929**	**1258**	**6252**	**3396**	**842**	**2446**	**4594**	**18325**
FRIDAY	**AVG**	**6107**	**1700**	**7808**	**4258**	**1075**	**2653**	**4902**	**20760**
	MAX	**6200**	**1750**	**7950**	**5235**	**1330**	**2960**	**4775**	**21800**
SAPTAMI									
05-Oct-19	**MIN**	**3277**	**1021**	**4440**	**2957**	**942**	**2683**	**3982**	**15852**
SATURDAY	**AVG**	**4190**	**1248**	**5438**	**3700**	**1087**	**2849**	**4272**	**17404**
	MAX	**5620**	**1490**	**7085**	**5140**	**1305**	**2860**	**4602**	**21040**
ASTAMI									
06-Oct-19	**MIN**	**3042**	**861**	**3958**	**2927**	**893**	**2526**	**3675**	**15060**
SUNDAY	**AVG**	**4054**	**1150**	**5204**	**3776**	**1052**	**2726**	**3963**	**16771**
	MAX	**5300**	**1420**	**6720**	**4740**	**1285**	**2820**	**4693**	**20215**
NAVAMI									
07-Oct-19	**MIN**	**2931**	**868**	**3842**	**3009**	**961**	**2462**	**3767**	**15259**
MONDAY	**AVG**	**3853**	**1093**	**4945**	**3699**	**1098**	**2676**	**4310**	**16779**
	MAX	**5150**	**1370**	**6520**	**4255**	**1060**	**2530**	**4520**	**18475**
DASHMI									
08-Oct-19	**MIN**	**3629**	**901**	**4721**	**2779**	**670**	**2268**	**3899**	**14629**
TUESDAY	**AVG**	**4187**	**1130**	**5316**	**3566**	**929**	**2419**	**4163**	**16437**

***There would be around 2000 MW shortfall in West Bengal System w.r.t its availability during peak hours on Sasthi day(i,e 04.10.2019 Friday)**
If there would be rain, there would be dropped of 1200 MW DEMAND in WEST Bengal System and Region as a whole around 2000 MW

EASTERN REGIONAL POWER COMMITTEE

LOAD MANAGEMENT OF WEST BENGAL DURING ALL THE PUJA DAYS
04.10.2019 TO 08.10.2019 (SASTI TO DASHMI)

(All figures are in net MW)

SYSTEM	04.10.2019 (SASTI) FRIDAY	05.10.2019 (SAPTAMI) SATURDAY	06.10.2018 (ASTAMI) SUNDAY	07.10.2019 (NAVAMI) MONDAY	08.10.2019 (DASMI) TUESDAY
	PEAK	PEAK	PEAK	PEAK	PEAK
WBSEDCL GEN.	1000	1000	1000	1000	1000
WBPDCL GEN.	4014	4014	4014	4014	4014
CESC GEN. (Inc. HEL)	1302	1302	1302	1302	1302
CENTRAL SECTOR SHARE	1024	1024	1024	1024	1024
Import from CPP	105	105	105	105	105
TOTAL AVAILABILITY	7445	7445	7445	7445	7445
DEMAND OF WEST BENGAL	9450	7950	7085	6720	6520
Sur.(+)/Def.(-)	**-2005**	**-504**	**361**	**725**	**925**
E.REGIONAL AVAILABILITY	26550	26550	26550	26550	26550
E.REGIONAL DEMAND	23770	21800	21040	20215	18475
Probable forced & partial outages @4%	1062	1062	1062	1062	1062
E.REGIONAL Sur.(+)/Def.(-)	1717	3687	4448	5273	7012

MOM regarding site visit on dated 29.07.2019 at Kishanganj site associated with tapping of 400KV Teesta-III – Kishanganj/400KV Rangpo-Kishanganj TL of M/s TPTL with LILO portion of POWERGRID 400KV D/C Binaguri-Kishanganj-Purnea TL(Ckt-III & IV).

Members Present

On behalf of POWERGRID

Sh. Shibu Manandi,Binaguri

Sh S.Rajbanshi,Malda

Sh Nitesh Kumar,Dalkhola

On behalf of M/s TPTL

Mr. Ayappa ,Siliguri

Mr.Dheeraj Shriwastav,siliguri

Upon Inspection, following are the observations:-

Point - 1: Direct jumpering from 400KV D/C Binaguri-Kishanganj-Purnea TL in power line crossing span with 400KV Teesta-III-Kishanganj/400KV Rangpo-Kishanganj TL (having suspension towers in crossing spans) seems impossible as the lines are crossing more or less perpendicularly with POWERGRID line on top and as such any jumpering arrangement shall result in clearance issue.

Point-2:- By passing of 400KV Teesta-III-Kishanganj TL through ERS towers also seems impossible due to water-logging in the entire area.

Point-3:- Option for permanent placement of new towers may be checked through surveyor in the power line crossing spans for future bypassing requirement if any. Since area is extreme row prone repeated re-arrangement may be difficult.

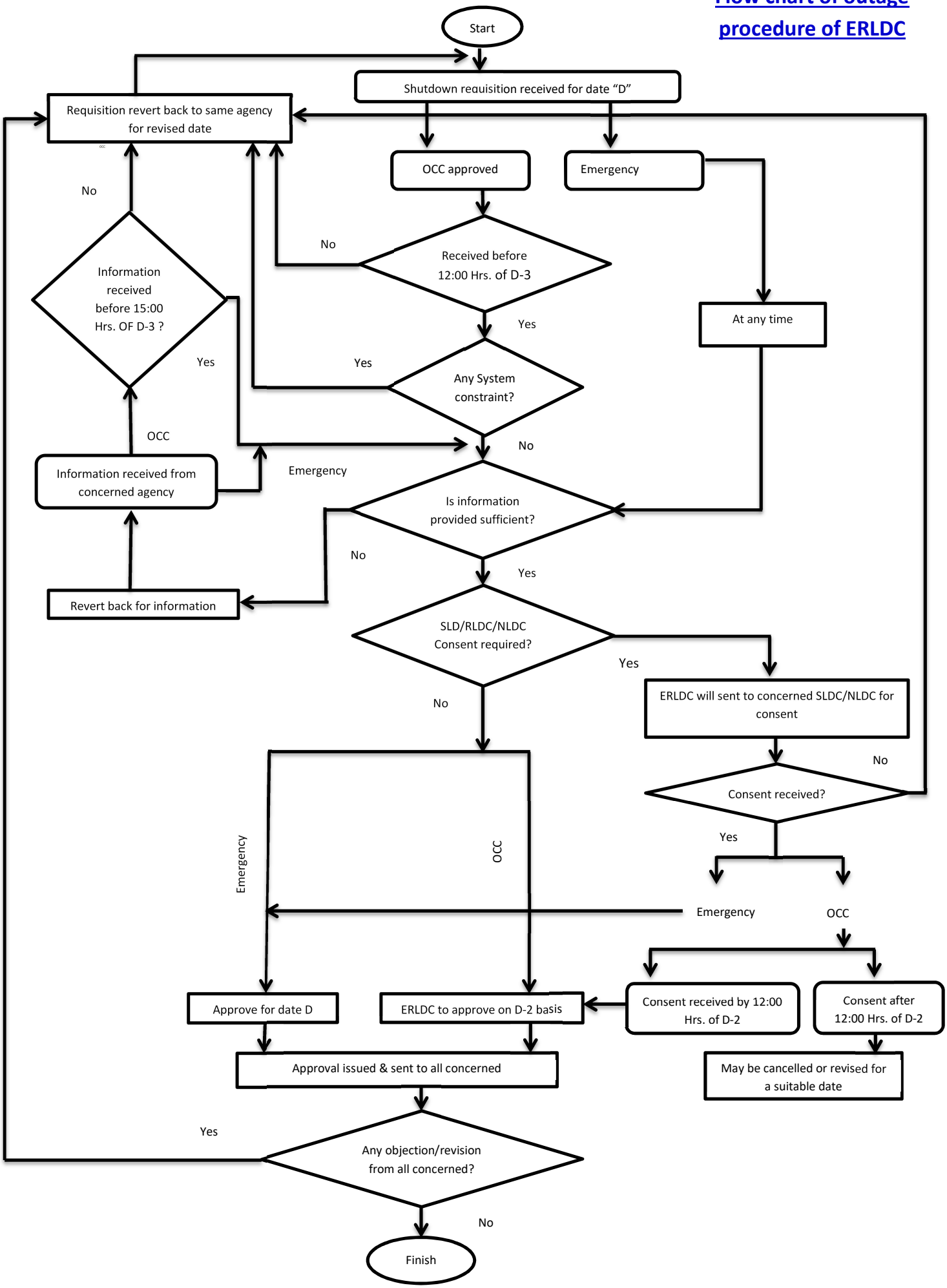
29/7/19

29/7/19

Y. Ayyappa.
29/7/19
(TPTL).

Annexure-B15

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.

Annexure-B16

Generation Projection (Oct 2019 - Dec 2019)

				Generation declared Commercial from 1st Jan'19 to 30th June'19					Generation declared/expected to be declared Commercial from 1st July'19 to 30th Sep'19								
Sl. No.	Entities	Region	Projections based on 3 Years Data	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	TOTAL	Comments From DICs /Others (if any)	Figure as per Comments/ PoC Data	Projected Generation before normalization w.r.t projected All India Peak Demand
			(MW)			(MW)	(MW)	(MW)			(MW)	(MW)	(MW)	(MW)			(MW)
1	West Bengal	ER	5065											5065			5065
2	Odisha	ER	2637						OPGC Stage-II	4	660	432	432	3069	As per data given by GRIDCO	3266	3266
3	Bihar	ER	138											138			138
4	Jharkhand	ER	357											357			357
5	Sikkim	ER	0											0			0
6	Chujachan	ER	109											109			109
7	DVC	ER	3996											3996	As per data given by DVC	4859	4859
	Durgapur Steel	ER															
	Koderma TPP	ER															
	Bokaro TPS	ER															
	Raghunathpur	ER															
8	MPL	ER	942											942			942
9	Teesta V	ER	533											533			533
10	Kahalgaon	ER	2212											2212	As per data given by NTPC	2171	2171
11	Farakka	ER	1977											1977		1960	1960
12	Talcher	ER	945											945	Restricted to the generation(Installed Capacity-NAC)	942	942
13	Rangit	ER	67											67			67
14	Adhunik Power	ER	401											401			401
15	Barh	ER	1279											1279	As per data given by NTPC	1238	1238
16	Kamalanga TPP (GMR)	ER	637											637			637
17	JITPL	ER	760											760			760
18	Jorethang	ER	81											81			81
19	Bhutan	ER	793											793			793
20	Teesta-III	ER	915											915			915
21	Dikchu HEP	ER	105											105			105
22	Nabinagar BRBCL	ER	450	Nabinagar BRBCL	3	250	164	164						614			614
23	Tashiding HEP	ER	95											95			95
24	Kanti Bijlee Stg-2 (KBUNL)	ER													As per last quarter	300	300
	TOTAL		24495					164					432	25090			26348

Note:

1. Projections are based on monthly maximum injection in the last 3 years from actual metered data.
2. Generation forecast has been done based on the following criteria

DEMAND FORECAST USING PAST 3 YEARS DATA (Oct 2019 - Dec 2019)

										1	2	3	4		
	2016-17			2017-18			2018-19								
	Oct-16	Nov-16	Dec-16	Oct-17	Nov-17	Dec-17	Oct-18	Nov-18	Dec-18	2015-16 Average	2016-17Average	2017-18 Average	Projected Demand for (Oct 2019 - Dec 2019) before normalization	Data given by DICs	Comments
Bihar	3,702	3,759	3,534	4,515	3,917	4,038	5,084	4,425	4,151	3,665	4,157	4,553	5,013		
DVC	2,450	2,357	2,507	2,573	2,731	2,737	2,837	2,837	2,957	2,438	2,680	2,877	3,104	3070	As per data given by DVC
Jharkhand	1,172	1,168	1,194	1,206	1,245	1,200	1,247	1,289	1,291	1,178	1,217	1,276	1,321		
Odisha	3,920	3,788	3,837	4,370	4,108	4,151	5,219	4,516	4,042	3,848	4,210	4,592	4,961	4000	As per data given by GRIDCO
West Bengal	7,886	7,402	6,207	7,777	6,610	6,045	8,850	7,551	6,225	7,165	6,811	7,542	7,550		
Sikkim	92	92	91	90	96	94	93	101	106	92	93	100	103		

Notes

1. Projections are based on the past 3 years' monthly Peak Demand Met data available on the website of CEA
2. The above projections are being done for financial year 2019-2020 (Q3) i.e October 2019-December 2019
3. Projections are being done based on the forecast function available in MS Office Excel
4. CEA Reports can be accessed from the following links:

http://www.cea.nic.in/reports/monthly/powersupply/2018/psp_peak-10.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2018/psp_peak-11.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2018/psp_peak-12.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2017/psp_peak-10.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2017/psp_peak-11.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2017/psp_peak-12.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2016/psp_peak-10.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2016/psp_peak-11.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2016/psp_peak-12.pdf

Annexure-D.1

Anticipated Power Supply Position for the month of
Sep-19

SL.NO		PARTICULARS	PEAK DEMAND MW	ENERGY MU
1		**BIHAR**		
	i)	NET MAX DEMAND	5250	2985
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	520	342
		- Central Sector	4609	2511
	iii)	SURPLUS(+)/DEFICIT(-)	-121	-133
2		**JHARKHAND**		
	i)	NET MAX DEMAND	1430	800
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	346	163
		- Central Sector	972	567
	iii)	SURPLUS(+)/DEFICIT(-)	-112	-70
3		**DVC**		
	i)	NET MAX DEMAND (OWN)	2820	1785
	ii)	NET POWER AVAILABILITY- Own Source	5299	2827
		- Central Sector	529	323
		Long term Bi-lateral (Export)	1467	1056
	iii)	SURPLUS(+)/DEFICIT(-)	1540	309
4		**ODISHA**		
	i)	NET MAX DEMAND	5035	2990
	ii)	NET POWER AVAILABILITY- Own Source	4079	1957
		- Central Sector	1644	895
	iii)	SURPLUS(+)/DEFICIT(-)	689	-138
5		**WEST BENGAL**		
5.1		**WBSEDCL**		
	i)	NET MAX DEMAND (OWN)	7030	3896
	ii)	CESC's DRAWAL	83	60
	iii)	TOTAL WBSEDCL's DEMAND	7113	3956
	iv)	NET POWER AVAILABILITY- Own Source	4305	1960
		- Import from DPL	165	0
		- Central Sector	2505	1648
	v)	SURPLUS(+)/DEFICIT(-)	-138	-348
	vi)	EXPORT (TO B'DESH & SIKKIM)	-348	-486
5.2		**DPL**		
	i)	NET MAX DEMAND	300	205
	ii)	NET POWER AVAILABILITY	465	218
	iii)	SURPLUS(+)/DEFICIT(-)	165	13
5.3		**CESC**		
	i)	NET MAX DEMAND	2050	1080
	ii)	NET POWER AVAILABILITY - OWN SOURCE	750	507
		FROM HEL	540	379
		Import Requirement	760	194
	iii)	TOTAL AVAILABILITY	2050	1080
	iv)	SURPLUS(+)/DEFICIT(-)	0	0
6		**WEST BENGAL (WBSEDCL+DPL+CESC)** **(excluding DVC's supply to WBSEDCL's command area)**		
	i)	NET MAX DEMAND	9380	5181
	ii)	NET POWER AVAILABILITY- Own Source	5520	2685
		- Central Sector+Others	3805	2027
	iii)	SURPLUS(+)/DEFICIT(-)	-55	-469
7		**SIKKIM**		
	i)	NET MAX DEMAND	95	44
	ii)	NET POWER AVAILABILITY- Own Source	8	3
		- Central Sector+Others	179	112
	iii)	SURPLUS(+)/DEFICIT(-)	92	71
8		**EASTERN REGION** **At 1.03 AS DIVERSITY FACTOR**		
	i)	**NET MAX DEMAND**	23311	13784
		Long term Bi-lateral by DVC	1467	1056
		EXPORT BY WBSEDCL	-348	-486
	ii)	**NET TOTAL POWER AVAILABILITY OF ER (INCLUDING C/S ALLOCATION)**	27510	14411
	iii)	**PEAK SURPLUS(+)/DEFICIT(-) OF ER (ii)-(i)**	3080	57

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 ____		