Minutes

of

144th OCC Meeting

Date: 02.05.2018

Eastern Regional Power Committee

14, Golf Club Road, Tollygunge

Kolkata: 700 033

Eastern Regional Power Committee

Minutes of 144th OCC Meeting to be held on 19th April, 2018 at ERPC, Kolkata

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

Item no. 1: Confirmation of minutes of 143rd OCC meeting of ERPC held on 26.03.2018

The minutes of 143rd OCC meeting were uploaded in ERPC website and circulated vide letter dated 11.04.2018 to all the constituents.

Members may confirm the minutes.

Deliberation in the meeting

Members confirmed the minutes of 143rd OCC meeting.

PART A : ER GRID PERFORMANCE

Item no. A1: ER Grid performance during March, 2018

The average consumption of Eastern Region for March - 2018 was 415.6 Mu. Eastern Region achieved maximum energy consumption of 461 Mu on 29thMarch - 2018. Total Export schedule of Eastern region for March - 2018 was 2802 Mu, whereas actual export was2485Mu.

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

1. **Over drawal/under injection by ER Entities**
2. **Performance of Hydro Power Stations during peak hours**
3. **Performance of ISGS during RRAS**

Deliberation in the meeting

ERLDC presented the performance of the Eastern Region grid during March 2018. Presentation is enclosed at ***Annexure- A1****.*

ERLDC informed that Eastern Region achieved maximum demand of 21587 MW and maximum energy consumption of 461 Mu on 29th March 2018.

On enquiry, BSPTCL informed that 220kV Patna-Sipara Line III was loaded at 09:16hrs of 8th March 2018 to feed the load at Khagual via Bus-II of Sipara. From Patna, 220kV Patna-Sipara Line III was directly connected to Khagual through Bus splitting at 220kV Sipara.

ERLDC informed that Farakka Unit#4 was not in service from 11th march 2018.

On enquiry, NTPC informed that turbine rotor blade of Farakka unit #4 got damage. The rotor would reach by today. The unit would be in service by 30th April 2018.

ERLDC informed that total power failed at Farakka, NTPC on 30th March 2018 due to a bus fault.

NTPC informed that bus bar protection operated due to wrong operation of Earth Switch.

OCC decided to discuss the disturbance in detail in 66th PCC Meeting scheduled to be held on 25th April 2018.

ERLDC informed that the Odisha over drawl quantum during March 2018 was around 135 Mu and West Bengal over drawl quantum during March 2018 was around 72 Mu. Some improvement in drawl pattern of West Bengal and Odisha has been observed during April 2018.

Odisha informed their Hydro generators would be available from end of April 2018 and assured to maintain their drawl within the Schedule.

OCC advised West Bengal to plan their generation to balance the load by maximizing the availability of their internal generation and arranging procurement of power through STOA/ MTOA/ Power Exchange.

Item no. A2: Commissioning of new transmission elements in Eastern Region

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

SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks
1	220 kV Patna Sipara 3	BSPTCL	05-03-2018	10:09	loaded at 09:16hrs of 08/03/18 and being operated as Patna-Khagaul 2nd ckt, by 220kV bus-segregation at Sipara
2	315 MVA, 400/220 kV ICT # I at Daltonganj	PGCIL	08-03-2018	00:59	
3	160 MVA ATR # I at Daltonganj	PGCIL	08-03-2018	00:12	
4	220 kV DTG Bus # I & II Daltonganj	PGCIL	08-03-2018	00:18 00:21	
5	132 kV Daltonganj (JUSNL) – Daltonganj (PG) # II	PGCIL	07-03-2018	23:50	By using part of 220kV Latehar-DLT(J) D/C & disconnecting DLT(J) from Latehar side.
8	132 kV Daltonganj (JUSNL) – Daltonganj (PG) # I	PGCIL	10-03-2018	00:52	
9	80 MVAr Bus reactorat Daltangunj	PGCIL	20-03-2018	18:58	
10	240 MVAR L/R 3 of 765 KV AngulJharsuguda 3	PGCIL	31-03-2018	13:09	charged as B/R in Jharsuguda

Constituents may update.

Deliberation in the meeting

*Members updated the status which is enclosed at **Annexure-A2**.*

CESC updated the status as follows:

Monthly commissioning List of Transmission element and generators: Previous Month					
SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks (conductor type/spec/expected load/any other)
1	132 kV SIEMENS	CESC	09.03.2018	16:59 hrs.	

	make 7-panel DBB GIS Board at Majerhat Substation	Limited			
2	One 132kV Interconnector Feeder(no 2) between EMSS 132kV GIS Bdand Park Circus S/S.	CESC Limited	14.03.2018	09:19 hrs.	800 sq mm XLPE S/C Al Cable
3	220/132/33 kV 160 MVA T-3 (alongwith a URJA make 33/0.42 kV 100 KVA ET-3)	CESC Limited	28.03.2018	13:33 hrs.	Bharat Bijlee Make
4	One 220 kV Interconnector Feeder (No. 2) between EMSS and NCSS. (decommissioning the existing 132 kV Ckt between EMSS 132 KV GIS and Gantry arrangement and Pr St (For 75 MVA T-3))	CESC Limited	28.03.2018	15:37 hrs.	800 sq mm XLPE S/C Cu Cable

GRIDCO informed that they will send the updated status to ERPC and ERLDC within a week.

Item no. A3: Reactive Power performance of Generators

Generating stations have been monitored for certain sample dates in the month of March,18.

Power Plant	**Max and Min Voltage observed for March 18 (KV)**	**Date for occurrence (March 18)**
Farakka STPS	420, 409	12,7
Khalgaon STPS	419, 408	17,25
Talcher STPS	411, 395	13,25
Teesta-v	424,398	6, 28
Bakreshwar TPS	412, 395	10, 25
Kolaghat TPS	425, 402	12,17
Sagardighi TPS	419, 407	21,28
MPL	418, 407	12,28
Mejia-B	422, 410	17,21
DSTPS	420, 411	12,27
Adhunik TPS	420, 408	81,22
Barh	423, 409	13,22
JITPL	417, 406	14,27
GMR	417, 404	18,9
HEL	429,398	12,26
Kodarma	421, 406	12,28

ERLDC may present the reactive performance.

Deliberation in the meeting

*ERLDC presented the performance of the generators. Presentation is enclosed at **Annexure-A3**.*

ERLDC informed that Barh #4 & #5 units performance was not satisfactory. The units were injecting VAR during high voltage.

OCC advised NTPC to take appropriate action to absorb reactive power during high voltage condition as per their capability curve.

NTPC agreed.

Item no. A4: UFR operation during the month of March'18

System frequency touched a maximum of 50.25 Hz at 13:03Hrs of 21/03/18and a minimum of 49.67Hz at 21:19Hrs of 14/03/18.Hence, no report of operation of UFR has been received from any of the constituents.

Members may note.

Deliberation in the meeting

Members noted.

Item no. A5: Grid incidences during the month of March, 2018

Sr No	GD/ GI	Date	Time	S/S involved	Summary
1	GD-I	09-03-2018	17:15	Waria	On 09-03-18 at 17:15 hrs, total power failure occurred at 220/132 kV Waria S/S along with tripping of all 220/132 kV ATRs and running units(U #4) at Waria.
2	GD-I	21-03-2018	13:03	Hazipur	On 21-03-18, 220 KV Muzaffarpur-Hazipur-I tripped on B-N fault at 12:57 hrs and 220 KV Muzaffarpur-Hazipur-II tripped due to Y-B at 13:03hrs.
3	GD-I	22-03-2018	20:38	Jorethang	220 kV Jorethang - New Melli D/C tripped at Jorethang end on R-N fault at 20:38 hrs (R/I at Jorethang: Ckt I: R-N, 7.14 km; Ckt II: R-N, Z-I, 7.2 km). At same time 220 kV Rangpo - Tashiding S/C (A/R was successful at Ragpo end; R/I R-N, 22.56 km, 4.2 kA) and 220 kV Tashiding -New Melli S/C (Did not trip from New Melli end) tripped at Tashiding end.
4	GD-I	26-03-2018	17:19	Tashiding	At 17:19 hrs 220 kV Tashiding - Rangpo S/C and 220 kV Tashiding - New Melli (Did not trip at New Melli end) S/C tripped at Tashiding end due to Y-N fault resulting S/S dead at Tashiding.
5	GD-I	28-03-2018	18:43	Biharshariff	Due to Y phase jumper snapping of 220 kV side of 400/220 kV ICT - III resulted tripping of all three 400/220 kV ICTs at Biharshariff and 220 kV Tenughat - Biharshariff S/C (From Tenughat in Z-III) resulting load loss at nearby area.

6	GD-I	30-03-2018	13:57	Farakka	At 13:57 hrs all main bays connected to 400 kV bus II at Farakka tripped due to Y-N fault resulting tripping of 400 kV Farakka Malda I, unit V at Farakka and 400/220 kV ICT at Farakka. During restoration attempt at 14:29 hrs both 400 kV bus I & II at Farakka tripped along with unit I, II, III & VI at Farakka, 400KV Farakka - Gokarno - I, 400 kV Farakka - Kahalgaon - I, 400 kV Farakka - Malda - II and 400 kV Farakka - Sagardighi S/C. 400 KV Farakka –Baharampur, 400 KV Farakka-Durgapur D/C & Farakka – Kahalgaon –II remain connected through tie breaker at Farakka s/s

Members may note.

Deliberation in the meeting

Members noted.

Item no. A6: Non-compliance of directions issued by SLDC

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

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

No report from any constituent has yet received. Hence, ERLDC would be considering 'Nil' report for all constituents for March18.

Members may note.

Deliberation in the meeting

Members noted.

Item no. A7: Reporting of voltage deviation indices (VDI) for select S/Stns in ER

ERLDC submitted the Voltage Deviation Index (VDI) of selected 400 kV Sub-stations for March 2018 of Eastern Region which is enclosed at **Annexure- A7**.

Members may note.

Deliberation in the meeting

Members noted.

PART B: ITEMS FOR DISCUSSION

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

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

A. Projects approved:

SN	Name of Constituent	Name of Project	Date of approval from PSDF	Target Date of Completion	PSDF grant approved (in Rs.)	Amount drawn till date (in Rs.)	Latest status
1	WBSETCL	Renovation & up-gradation of protection system of 220 kV & 400 kV Substations in W. Bengal	31-12-14	April 2018	108.6 Cr	18.26 Cr.	100 % Supply is Completed 100 % Erection is completed Claim is submitted for releasing of 30.06 Cr., the same is yet to be received.
2		Renovation & modernisation of transmission system for relieving congestion in Intra-State Transmission System.	22-05-17	25 months from date of release of 1st instalment	70.13	Nil	Order has been placed for 96.44 Cr. 1st instalment is yet to be received.
3		Installation of switchable reactor at 400kV & shunt capacitors at 33kV	22-05-17	19 months from date of release of 1st instalment	43.37	Nil	Order has been placed for 12.53 Cr. 1st instalment is yet to be received.
4	WBPDCL	Implementation of Islanding scheme at Bandel Thermal Power Station	*10.04.17*	*March 2018*	1.39 Cr		*Award placed to ABB. The material reached the site and installation is in progress. The scheme would be implemented by April 2018.*
5		Upgradation of Protection and SAS			23.48		Approved by Ministry of Power. Fresh tendering is in progress.
6	OPTCL	Renovation & Up-gradation of protection and control systems of Sub-stations in the State of Odisha in order to rectify protection related deficiencies.	10.05.15	30.11.18	162.5 Cr.	37.79 Cr	Total contract awarded for Rs. 51.35 Cr
7		Implementation of OPGW based reliable communication at 132kV and above substations	15.11.2017		25.61 Cr.		Agreement signed on 03.01.2018
8	OHPC	Renovation and up-gradation of protection and control system of 4 nos. OHPC substations.		*U.Kolab-March 19 Balimela-Feb 2019 U.Indravati-Jan 19 Burla-Nov 2018, Chiplima Dec 2018*	*22.35 Cr.*		Tendering under progress.
9	BSPTCL	Renovation and up-gradation of 220/132/33 KV GSS Biharshariff, Bodhgaya, Fatuha, Khagaul, Dehri -on-sone & 132/33 kV GSS Kataiya	11/5/2015	31.07.2018	64.02 crore	56.04 crore	80% of work has been completed. Contract awarded for Rs.71.37 Cr till date.
10		Installation of capacitor bank at different 35 nos. of GSS under BSPTCL	5/9/2016	12th March 2019	18.88 crore	Nil	Work awarded for all GSS.
11		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.

12	JUSNL	Renovation and up-gradation of protection system	*September 2017*	*2 years*	*138.13 crores*		LOA issued to PRDC on 22nd March 2018 for monitoring the project. Tendering is in progress.
13	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.
14		Renovation and upgradation of control & protection system including replacement of substation equipment at Parulia, Durgapur, Kalyaneshwari, Jamshedpur, Giridih, Barjora, Burnpur, Dhanbad and Burdwan Substation of DVC	27.11.17	24 Months from the date of release of fund.	140.5 Cr.	1st installment of 14.05 Cr. received on 21.12.2017	Work awarded for 6.45 Cr.
15	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.
16	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.
17a	ERPC	Training for Power System Engineers					The proposal was approved by Appraisal Committee. The proposal was sent to CERC. CERC has sought some queries from the Appraisal Committee. The matter shall be taken up by the Appraisal Committee during its next meeting.
17b		Training on Power market trading at NORD POOL Academy for Power System Engineers of Eastern Regional Constituents					

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	Scheme was examined by TSEG. Inputs sought from entity.
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 examined by TSEG. Inputs sought from entity.
3	JUSNL	Reliable Communication & Data Acquisition System upto 132kV Substations.	23-08-17	102.31 Cr	Scheme was examined by TSEG. Inputs sought from entity. Scheme has been revised as suggested by TSEG and it would be submitted within a week.
4	OPTCL	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	28-08-17	31.94 Cr	Scheme was examined by TSEG. Inputs sought from entity. OPTCL submitted the relevant information.

C. Projects recently submitted:

SN	Name of Constituent	Name of Project	Date of Submission	Estimated cost (in Rs.)	Latest status
1	WBSETCL	Implementation of Integated system for Scheduling, Accounting, Metering and	22-12-17	25.96 Cr	

		Settlement of Transactions (SAMAST) system in West Bengal			
2	OPTCL	Implementation of Automatic Demand Management System (ADMS) in SLDC, Odisha	22-12-17	3.26 Cr	
3	OPTCL	Protection upgradation and installation of SAS for seven numbers of 220/132/33kV Grid substations (Balasore, Bidanasi, Budhipadar, Katapalli, Narendrapur, New-Bolangir & Paradeep).	20.02.2018	41.1 Cr.	

Respective constituents may update the status.

Deliberation in the meeting

Members updated the latest status as mentioned in above table.

Item No. B.2: Low Frequency Oscillation (LFO) observed in Pan India grid on 17th March 2018 from 02:43 hrs to 02:48 hrs

Low frequency oscillation of 0.37 Hz was observed in pan India grid on 17th March 2018 from 02:43 hrs to 02:48 hrs. Based on the synchrophasor data analysis the oscillation was more prominent in the Eastern region near Farakka. The farakka bus voltage from PMU is given where oscillation can be observed. Based on analysis of all India SCADA data, it was found that there was a large variation in the MW and MVAR of the Kahalagaon Unit 6 during the same time period. On inquiry, it was found that there was some issue with the Kahalgaon unit 6 turbine Electro-hydraulic governer (EHG) due to which its control valves oscillated causing Unit generation fluctuation from 40 MW to 470 MW as can be seen from the power flow and MVAR pattern received from NTPC. The time of LFO initiation in the grid observed from PMU data and Kahalgaon also matched. Further, based on the analysis of all India data of units by NLDC it was observed that no other unit has observed such severe oscillation during the period in their MW/MVAr. So, It can be inferred from the analysis that oscillation has excited in the grid due to the malfunctioning of turbine EHG of Kahalgaon Unit 6.

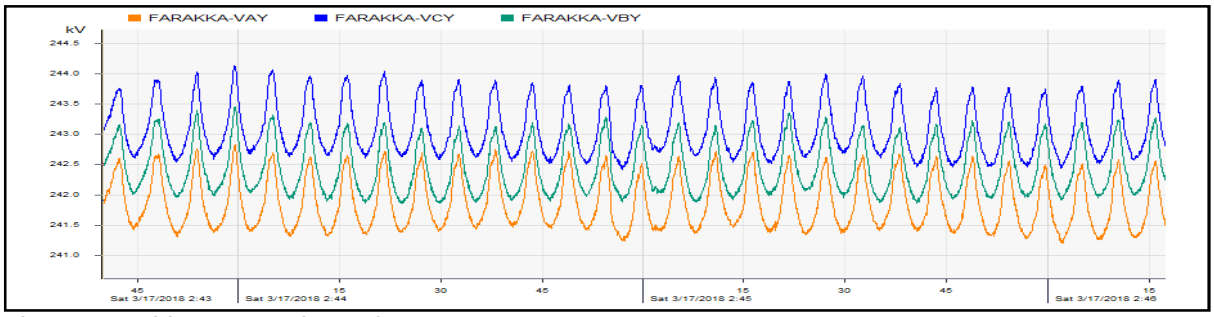


Fig 1 : Farakka Bus Voltage from PMU.

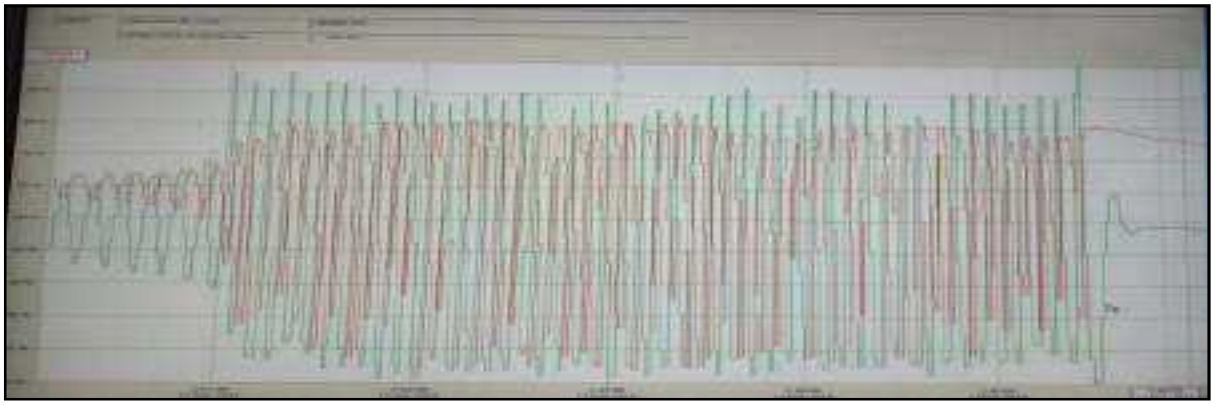


Fig 2 : MW and MVAR of Kahalgaon Unit 6 received from NTPC.

In view of the above incident, it is desired that:

1. NTPC Kahalgaon may kindly explain the issue with the turbine EHG governor and the remedial action taken so that such event does not reappear in near future as these have an adverse impact on the entire the Indian Grid.
2. Further, it is desirable that all generating units must immediately share the details of MW/MVAr of their units in Excel/.CSV format to ERLDC as soon as they receive communication from ERLDC control Room or ERLDC Protection team for analysis of such event. The resolution of such data should be 1 seconds or better as available from the DCS of the power plant. In case of generators within the state, the respective SLDC to immediately collect the data and submit to ERLDC/ERPC for analysis.
3. PSS tuning of all the units above 100 MW may kindly be ensured as per the relevant regulation of CERC and CEA in the Eastern region and their tuning reports to be shared with ERLDC/ERPC.

In 143rd OCC, NTPC Kahalgaon was advised to submit the relevant details to ERLDC with a copy to ERPC. OCC advised all the generating stations to submit the MW/MVAr flows of their units in Excel/.CSV format of the event to ERLDC and ERPC for detailed analysis.

In 65th PCC, NTPC was advised to give a detailed presentation on the findings.

NTPC may present. Members may discuss.

Deliberation in the meeting

ERLDC informed that detailed report has been received from NTPC.

NTPC gave a detailed presentation highlighting the findings and remedial actions. The presentation is enclosed at ***Annexure-B2****.*

NTPC explained the incidence as follows:

- *Unit-6 was running at 380 MW load in CMC with EHC governing mode in service. At around 02:41 hrs sudden load fluctuations were started ranging from 40 MW to 470 MW with associated wide hunting in MVAR from -180 to +150 MVAR.*
- *Intermittent 'EHTC fault' alarm was also appearing and getting reset on its own during this period. It was further observed that both HP & IP turbine Control Valves were getting full opened and full closed very frequently.*
- *Unit was tried to be made stable by increasing the load demand of EHC Load Controller. But EHC function was found nonresponsive.*
- *Finally Turbine governing was shifted to Hydraulic Mode isolating the EHC mode from Governing panel. After that unit response became stable at normal level.*

NTPC informed that on further investigation it was observed that minor load hunting in the range of 10-15 MW was persisted for 5 minutes before the wide load hunting. EHC circuit was checked thoroughly and one card in feedback circuit was found to have malfunctioned. After replacing the defective card, EHC function was checked in detail and found satisfactory. Thereafter, Unit was shifted to EHC governing mode and its operation was satisfactory.

NTPC added that differential feedback of the valve position is added to minimize the fluctuations and also to generate an alarm for alerting the operator.

The presentation was appreciated by OCC members.

Item No. B.3: Low-Frequency Oscillation (LFO) observed At Durgapur and nearby nodes on 05thAPRIL 2018 from 14:21 hrs to 14:28 hrs.

Low-frequency oscillation of 0.1 Hz was observed in Durgapur and nearby nodes on 05th April 2018 from 14:21 hrs to 14:28 hrs. The oscillation was prominent in the Eastern region near

Durgapur only based on the synchrophasor data analysis. Plot of Durgapur bus voltage based on PMU data is shown in the figure below where oscillation can be clearly observed. No significant oscillation was recorded by any other PMU during the said period, indicating some nearby local phenomenon or generator hunting. On further analysis of Eastern region SCADA data, large variations in the MW and MVAR of Sagardighi Unit 4 was noticed during the same time period.

Details are enclosed at **Annexure-B3**.

In view of the aboveincident, it is desired that :

1. Sagardighi (WBPDCL) may kindly explain the issue with the turbine vibration and the remedial action taken so that such event does not reappear in near future as these have an adverse impact on the entire the Indian Grid.
2. Following the example of WBPDCL, it is desirable that in futureany other generating unit experiencing oscillation must also immediately share the details of MW/MVAr of their units in Excel/.CSV format to ERLDC as soon as they receive communication from ERLDC control Room or ERLDC Protection team for analysis of such event. The resolution of such data should be 1 seconds or better as available from the DCS of the power plant. In case of generators within the state, the respective SLDC to immediately collect the data and submit to ERLDC/ERPC for analysis.
3. The scope of PSS tuning at different plants in ER may be explored so that such oscillations can be dampened in a timely manner.

ERLDC may elaborate. WBPDCL may explain. Members may discuss.

Deliberation in the meeting

ERLDC gave a presentation on Low Frequency Oscillations observed in the ER Grid on 05 April'18 from 14:21 - 14:28 Hrs. Presentation is enclosed at ***Annexure-B3.1****. ERLDC explained that large fluctuations were observed in MW and MVAR of Sagardighi Unit 4.*

ERLDC informed that similar incident was occurred earlier on 22nd July 2017 at 22:47 Hrs, Low Frequency Oscillations of frequency 0.083 Hz were observed in Sagardighi Unit 4 and WBPDCL has not submitted any report.

ERLDC added that oscillations in electrical parameters like voltage & frequency would impact nearby generators by increasing wear and tear. Therefore, ERLDC has requested for following actions:

- *WBPDCL should submit a report.*
- *All Generating Units must intimate the RLDC/SLDC immediately if any such hunting/vibration is observed in Units (Cause/Effect).*
- *All Generating Units must Submit the one second or finer resolution data of MW/MVAr for all units to RLDC/SLDC*
- *PSS Tuning of all Generating Units above 100 MW must tune their PSS in Compliance to CERC Regulation and CEA grid Standard.*

WBPDCL informed that oscillations were observed due to problem in Governor of Sagardhigi unit#4. WBPDCL added that the unit is under shutdown and they are investigating the root cause.

OCC advised WBPDCL to submit a report for both the incidences occurred on 05 April'18 and 22nd July 2017 along with the action taken.

Item No. B.4: Accounting of state drawl from Substation of PGCIL/ISTS Licensee in ER

State net drawl from Substation of PGCIL/ISTS Licensee in ER is being computed considering meter installed at feeders on LV side of Transformer due to the fact that for a few ICTs, multiple states used to draw through same ICT. Further, Sub stations where auxiliary requirement is met through tertiary of the IST ICT, States net drawl is computed by adding drawl through feeders after LV side of Transformer and auxiliary consumption through tertiary. Presently with network strengthening and re-configuration in ER, such case of multiple State/entity drawing power from same ICT of PGCIL/ISTS Licence does not exist anymore.

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

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

In order to enable ERLDC compute the state drawl through ICTs of PGCIL & other ISTS Licensees in ER as per CEA Regulations, PGCIL is requested to install meters at HV and LV side of ICTs at the stations enclosed at **Annexure-B4**.

Members may discuss.

Deliberation in the meeting

Powergrid informed that SEMs are already available at some stations.

OCC advised Powergrid to check the healthiness & time synchronization of the installed SEMs and install new SEMs wherever it is required.

Item No. B.5: Status of Implementation of Enquiry Committee Recommendations

9.9 Optimum utilization of available assets:

9.9.2 An audit of devices such as HVDC, TCSC, SVC and PSS should be done immediately to ensure that their stability features are enabled. Further, exercise of PSS tuning should be planned and implemented. Settings of these dynamic stabilizing devices should be reviewed at appropriate intervals.

In 2007 Based on a system study (Prof. Kulkarni) were proposed the following units to be equipped with PSS devices:

1. Kolaghat stage II 400 kV U#4.5.6.(201MW each)of WBPDCL;
2. Farakka U#4,5 (500MW each)of NTPC;
3. U.Kolab 4 units (80 MW each) of OHPC;
4. Budge Budge U# 1,2,(250 MW) of CESC Ltd.

Thereafter, PSS tuning of all units were carried out with the help of BHEL Service Manager, Shri K. Partha Sarathi in the presence of Prof. Kulkarni except Budge Budge units. PSS tuning of Budge-Budge unit 1&2 of CESC has been carried out on 28th &29th July, 2015.

142nd OCC opined that for identifying the generators for PSS tuning, a fresh study is needed to be done as per the existing network. OCC referred to TCC for further guidance.

Powergrid informed that they are planning to conduct audit for HVDC, TCSC and SVC in April 2018.

In 37th TCC, Members authorised Member Secretary, ERPC to contact different IITs including IISc for the study and advised to place a comprehensive proposal in next TCC Meeting.

In 143rd OCC, Powergrid informed that audit for TCSC Purnea, FSC Ranchi and HVDC Talcher had been completed and the same for HVDC Alipurduar is planned in April 2018.

OCC advised Powergrid to share the details to ERPC to ERLDC.

Deliberation in the meeting

Powergrid agreed to submit the technical audit report within 10 days.

9.12 Implementation of islanding schemes: Efforts should be made to design islanding scheme based on frequency sensing relays so that in case of imminent grid failure, electrical islands can be formed. These electrical islands can not only help in maintaining supply to essential services but would also help in faster restoration of grid.

No islanding scheme is available in Odisha, Bihar and Sikkim.

Bihar and NTPC informed that they would discuss the islanding scheme for Kanti generating units with Bihar load in 2nd week of April 2018.

OPTCL has submitted the detail plan of IbTPS islanding scheme.

OCC advised OPTCL to give a presentation on CPP islanding scheme existing in Odisha with the details of extending power capacity to Odisha during emergencies.

OPTCL may give a presentation. Bihar may update.

Deliberation in the meeting

OPTCL informed that they are yet to convene a separate meeting with respective CPPs.

Bihar and NTPC informed that the islanding scheme for Kanti was discussed on 18th April 2018 and agreed to implement the islanding scheme. However, they could not prepare any draft scheme.

OCC advised ERLDC to prepare a draft islanding scheme.

OCC advised BSPTCL and NTPC to share all the required details to ERLDC.

9.13.2 Training and certification of system operators need to be given focused attention. Sufficient financial incentives need to be given to certified system operators so that system operation gets recognized as specialized activity.

In 142nd OCC, Members updated the status of certification of system operators as follows:

State	***Status of certification of system operator***
SLDC, West Bengal	*Operators will appear for certification in March 2018*
SLDC, Odisha	*Complied*
SLDC, DVC	*Complied*
SLDC, Jharkhand	*4 operators were certified*
SLDC, Bihar	*Training has been completed but yet to appear in exam for certification*
SLDC, Sikkim	*No information received*

In 37th TCC, Sikkim informed that they are in the process of creating a separate cadre of certified operator for their newly established SLDC after necessary approval of the State Govt. of Sikkim.

Deliberation in the meeting

OCC advised Sikkim to send the updated status to ERPC.

9.18 Strengthening of system study groups in various power sector organizations

There is need to reinforce system study groups in power sector organisations to analyse the system behaviour under different network status/ tripping of lines/outage of generators. Where these do not exist, these should be created.

In 142nd OCC, it was informed that system study groups have been formed at state level in all states except Sikkim.

Deliberation in the meeting

OCC advised Sikkim to form a system study group.

9.20. Improved telecom Infrastructure for cyber security

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.

MS, ERPC informed that a presentation on Cyber Security in Power Sector is also planned to be conducted at 37th TCC/ERPC meeting.

OCC referred the issue to TCC for further deliberation.

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

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-B5**.

OCC advised all the constituents to submit the information to ERPC as per Annexure-B5.

It was informed that a workshop would be held at ERPC, Kolkata in April 2018 for for further benefit of ER Constituents.

Members may discuss.

Deliberation in the meeting

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

It was informed that a workshop on Cyber Security would be held at ERPC, Kolkata in May 2018.

Item No. B.6: Methodology for Submitting the Status of New Transmission Elements/ Generating Units to be Commissioned within the State

For clear visibility of the Eastern Region networks and better system operation, all the new transmission elements (ISTS & STU links) need to be updated regularly. The commissioning of new transmission elements of ISTS lines has been processed and updated by RLDC whereas commissioning of STU lines has been processed by SLDCs. However, commissioning status of new STU lines of states has not been updated to ERLDC and ERPC regularly. Sometime SLDCs used to submit the status of their new commissioning of elements during OCC meeting. To regularize the process following methodology need to be adopted:

1. Transmission elements/ Generating units expected to be commissioned during next month need to be submitted to ERLDC/ERPC in every OCC.
2. Detail parameters of new transmission element before commissioning need to be shared with RLDC.
3. Detail date and time of synchronization need to be updated on real time to ERLDC after commissioning of any new Transmission element/Generating unit.
4. SLDC SCADA team needs to configure the new element in their SCADA and share the same to ERLDC SCADA for network update.
5. List of the new transmission elements/ generating units commissioned during last month need to inform RLDC/RPC within 7th day of the current month, so that same to be updated in OCC.

In 141st OCC, all the constituents were advised to submit the information within 7th day of the month to following mail ids:

- *erldcam@gmail.com*
- *ftcer@posoco.in*
- *mserpc-power@nic.in*

To maintain harmonization, all the states and transmission licensees are request to submit the details to ERLDC/ERPC in the following format:

Monthly commissioning List of Transmission element and generators: Previous Month					
SL NO	**Element Name**	**Owner**	**Charging Date**	**Charging Time**	**Remarks (conductor type/spec/expected load/any other)**

Expected commissioning List of Transmission element and generators: Next Month				
SL NO	**Element Name**	**Owner**	**Expected Charging Date**	**Remarks (conductor type/spec/expected load/any other)**

The matter was deliberated in last OCC meetings, wherein all states and transmission licensees agreed to submit the list of transmissions elements synchronized for the first timeduring last month within 7th day of the current month to ERLDC through mail. However, in April-2018ERLDC received information regarding new elements commissioned inMar-18 only from West Bengal. Other states and transmission licensees did not submit both List of Transmission element and generators synchronised in theprevious Month and List of Transmission element and generators expected to be synchronised during next Month.

Members may discuss.

Deliberation in the meeting

ERLDC updated the data has been received from WBSETCL and CESC.

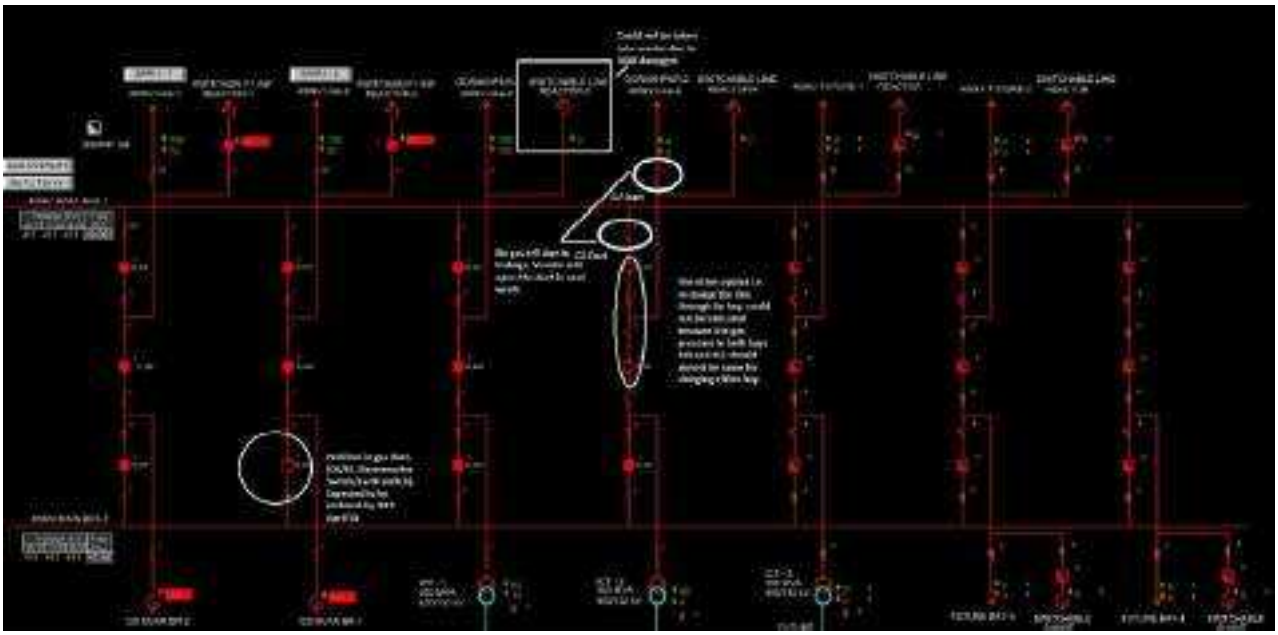
OCC advised all the other constituents to send the information as per the format on monthly basis to ERLDC.

Item No. B.7: Unreliable operation at Motihari (DMTCL) SS

400/132kV Motihari S/Stn is of critical importance as the two high capacity inter-regional lines (400kVBarh-Gorakhpur Qd. Moose D/C) link E. Region with N. Region at this S/Stn. The Barh-Motihari D/C Qd. Moose line is essential for reliable power evacuation from Barh STPS of 2X660MW capacity. Motihari S/Stn is also responsible for meeting about 200MW load, considering Bihar and Nepal together.

Power supply to Motihari, Dhaka, Raxaul, Bettia, Ramnagar etc. S/Stns of Bihar and to Nepal at Surajpura and Parwanipur interface points failed at 09:56 Hrs of 07-04-18, due to tripping of all lines connected to Motihari 400kV (DMTCL) S/Stn on YN/BN/3-ph faults, leading to interruption of around 200MW load in Bihar and Nepal taken together. The 3-ph fault of Barh-Motihari D/C line was cleared with a delay of 400ms, which is much higher than that mandated by CEA standards (100ms). The units at Barh STPS experienced severe jerk of about 110MW during such fault. On same day at 18:25 Hrs, ICT I again tripped on overload protection. As a result 132 KV side became dead resulting in load loss of 177 MW at Ramnagar, Betiah, Raxaul, Motihari, Dhaka, Sibhar, Narkatiyaganj including 80 MW of Nepal as mentioned above

As on date main CB of 125MVAR bus reactor-1, line isolator of 400kV Gorakhpur-2 line along with main and tie CBs of this line are out of service due to problem in gas duct. 400 kV Motihari – Gorakhpur – II was out of service due to unavailability of both bays at Motihari S/S.



It may be appreciated that in view of the importance of Motihari 400kV as stated above, reliable performance of this S/Stn has to be ensured under all circumstances. Further absence of DMTCL executives are felt in various ERPC meeting such as OCC and PCC where all such disturbances/events are analyzed threadbare and remedial measures to avoid recurrence such type of incidences are decided.

DMTCL may explain. Members may discuss.

Deliberation in the meeting

DMTCL representative was not available in the meeting.

It was decided to pursue the issue with DMTCL and decided to discuss the issue in 66th PCC Meeting scheduled to be held on 25th April 2018.

Item No. B.8: WBSETCL Agenda

1. Maintaining of 132kV Dalkhola(WB)-Kishanganj(BSPHCL) tie line in radial mode:

The tie line was put in service in radial mode for drawal of Bihar maximum of 25 MW as per the decision taken in 109th OCC Meeting held on 29.05.2015. But the tie line was synchronized from BSPHCL end without any consent and knowledge of WBSLDC. Synchronization has to be discontinued immediately.

Deliberation in the meeting

BSPTCL informed that 132 KV Kishanganj(old) – Dalkola(WBESTCL) transmission line would be LILO at 132/33 KV Baisi GSS. After the LILO arrangement, BSPTCL would draw power only during emergencies.

2. Shutdown of 132kV Waria(DTPS)-Burdwan D/C of DVC for drawing new 132kV DGP-Panagarh D/C line of WBSETCL

Deliberation in the meeting

After detailed deliberation, DVC and WBSETCL requested ERPC Secretariat to convene a separate meeting with Eastern Railway.

OCC agreed and advised DVC and WBSETCL to submit the issues in detail to ERPC.

3. Maintenance of 66kV CB of 66kV Kalimpong-Melli(Sikkim) line at Sikkim end

WBSETCL may elaborate. Members may discuss.

Deliberation in the meeting

Sikkim informed that CB is belongs to WBSETCL and WBSETCL is maintaining the CB.

OCC advised WBSETCL to check the ownership and responsibility of maintenance of the CB.

Item No. B.9: LILO arrangement at 132/33 KV GSS Baisi in 132 KV Kishanganj(old)-Dalkola(WBESTCL)

BSPTCL vide mail dated 13th April 2018 informed that 132/33 KV GSS Baisi is being constructed by M/S GE T&D India Ltd. under state plan which is ready for charging through 132 KV Kishanganj(old) – Dalkola(WBESTCL) transmission line (which is ISTS line) through LILO arrangement.

i. Erection and commissioning of Remote Terminal Unit (RTU) is being under progress.
ii. Shifting of ABT meter installed at Kishanganj (old) end in Dalkola feeder to Baisi end of Dalkola feeder also under process.

BSPTCL requested for charging of 132/33 KV Baisi GSS through LILO in 132 KV Kishanganj(old) – Dalkola(WBESTCL) transmission line.

BSPTCL may elaborate. Members may discuss.

Deliberation in the meeting

BSPTCL informed that the construction of 132/33 KV GSS Baisi S/s is almost at completion stage. They are planning to LILO 132 KV Kishanganj(old) – Dalkola(WBESTCL) transmission line at 132/33 KV GSS Baisi S/s. After LILO, 132kV Baisi – Dalkola(WBESTCL) would become an interstate tie line.

OCC in principle agreed to the proposal and advised to place the details in State Sector Standing Committee for further deliberation.

Item No. B.10: Issues related to Rangpo SPS and HVDC Talcher-Kolar

As decided in 37th TCC Meeting held on 16th March 2018 and 65th PCC Meeting held on 28th March 2018, a special meeting was held on 6th April 2018 (Friday) at ERPC Conference Hall, Kolkata to review the existing issues associated with the above mentioned SPSs. The Minutes of the meeting are enclosed at **Annexure-B10**.

Members may update.

Deliberation in the meeting

Teesta-III, Chuzachen, Dikchu and Dans Energy informed that implementation of Proposal 2 as decided in the meeting held at ERPC on 06.04.2018 has been tested and they are ready to implement Proposal 2 from 1st may 2018.

OCC advised Teesta-III, Chuzachen, Dikchu and DansEnergy to give a written confirmation to ERPC and ERLDC.

Item No. B.11: Segregation of ISGS station wise Bundle Coal power & Non Bundle coal power in ERLDC schedule to maintain proper merit order dispatch.

As per present practice of ISGS scheduling, both Bundle (Coal) & Non Bundle power in respect of any beneficiary are scheduled in clubbed manner. But as a matter of fact the Bundle (Coal) power is costlier than non bundle power of same ISGS station due to additional trading margin @7paisa per unit payable to NVVNL as Nodal Agency of JNSM Bundle power scheme. So due to this prevailing practice proper merit order dispatch is not being maintained during Backing down & URS allocation. Hence, head wise segregation of ISGS schedule is required to explore immediately with a view to honour the spirit of merit order dispatch principle in compliance with National Tariff Policy.

Members may discuss.

Deliberation in the meeting

Member Secretary, ERPC suggested that ERPC in co-ordination with ERLDC and WBSEDCL would study the issue and revert back to OCC subsequently.

Item No. B.12: Issues related to 220/132kV Patratu S/s.

In 65th PCC, JUSNL informed that the switchyard at Patratu would be upgraded to 400kV level and 220/132kV Patratu S/s may not be in service during the construction work.

PCC opined that TVNL generation would not be available in this case and JUSNL should plan some alternative arrangement to meet the demand in around Hatia.

PCC decided to refer this issue to OCC Meeting and advised JUSNL to submit their action plan in next OCC meeting.

JUSNL may explain.

Deliberation in the meeting

JUSNL updated that 220/132kV Patratu S/s would be in service during the construction of 400/220/132kV Patratu S/s. After the construction work, the lines will be shifted from old substation to new substation.

PART C: ITEMS FOR UPDATE

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

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

Members may note.

Deliberation in the meeting

Members noted.

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

At present, the following islanding schemes are in service:

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

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

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

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

Members may note.

Deliberation in the meeting

Members noted.

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

NTPC, Chuzachen, JITPL, GMR, & CESC have submitted the healthiness certificate for the month of March 2018.

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

Members may update.

Deliberation in the meeting

Sl. No.	Name of the SPS	Healthiness certificate received from	Healthiness certificate not received from
1.	*Talcher HVDC*	*NTPC, Powergrid, GMR & JITPL*	*Nil*
2.	*Rangpo*	*Chuzachen*	*Powergrid, Dikchu, Teesta-III, Dansenergy*
3.	SPS of 132 kV Muzaffarpur-	*Powergrid*	*Nil*

	Dhalkebar D/C		
4.	SPS in CESC system	*CESC*	*Nil*
5.	SPS for Power Export to Bangladesh	*Nil*	*Powergrid*
6.	SPS at Chuzachen	*Chuzachen*	*Nil*

Powergrid informed that SPS will be tested after time synchronization.

Dikchu, Dansenergy & Teesta-III informed that time synchronization has been completed at their end.

OCC advised Powergrid to carry out the SPS testing at the earliest.

Item no. C.4: Commissioning of breakers at 400/220kV Indravati (OHPC) S/s

In 141st OCC, it was explained that 3x105 MVA 400/220kV ICT-I tie breaker, 220kV Bus coupler and transfer bus breakers are not in service at 400/220kV Indravati (OHPC) S/s.

In 142nd OCC, OHPC submitted the action plan as follows:

1. *220kV Bus Coupler: CB and CT needed to be replaced. They would restore the Bus coupler by August 2018.*
2. *220kV Bus tie: CB and CT needed to be replaced. They would restore the Bus Tie by November 2018.*
3. *400kV Tie-1 Breaker: CB and CT needed to be replaced. They would restore the 400kV Tie-I by January 2019.*

OCC opined that the target dates given by OHPC for replacement of CT and Breakers is too long and advised to take serious actions to complete the work at the earliest.

OHPC may update.

Deliberation in the meeting

OHPC informed that the work would be completed as per the above schedule.

Item no. C.5: Inadequacy of DVC transmission system (220kV and below) for meeting its own demand

The total load of DVC system is catered by the 220/132kV ATRs at Jamshedpur, CTPS, DTPS, Kalyaneswari , Giridih, Koderma and Ramgarh. The ATRs at CTPS, Kalyaneswari and DTPS remain heavily loaded and tripping of any ATR is likely to trigger cascade tripping and loss of major load in DVC system. Moreover, during shutdown or forced outage of 220kV Jindal-Jamshedpur tie or nil generation at Bokaro-B, the only 315MVA, 400/220kV ICT at Bokaro-A gets severely overloaded. In the event of loss of 400kV Bokaro-A-Koderma D/C line, the Bokaro-A station has little chance of survival as the existing 315MVA, 400/220kV ICT at Bokaro is insufficient to evacuate the station generation. It has also been observed that, during low generation at CTPS-B, the 220kV Bokaro-B – CTPS-B D/C line gets heavily overloaded and (n-1) security criteria is not satisfied.

In view of the aforesaid facts, DVC needs to expedite strengthening of its transmission system for achieving long term adequacy and till such time, to cope with the rising demand, suitable load / generation rejection schemes may be urgently implemented to automatically shed load/generation with tripping of associated line / ATR.

In 37th TCC, ERLDC gave a detailed presentation highlighting the constraints faced by DVC in catering its load due to phasing out of old units connected at 132kV level and increase in demand at DVC system.

Further evacuation problem in Bokaro-A was also highlighted. Tripping of any of the existing highly loaded 220/132kV ATR may create disturbance not only in DVC system but also the adjacent system.

DVC assured that they have already taken short term and medium term measures to mitigate the problem.

TCC advised DVC to submit their action plan to ERPC and ERLDC.

DVC may update.

Deliberation in the meeting

ERLDC presented one more incident occurred on 11th April 2018 where cascade tripping in DVC system was observed. Presentation is enclosed at ***Annexure-C5****.*

DVC submitted their action plan, which is enclosed at ***Annexure-C5.1****.*

Item no. C.6: Flexible jumpering arrangement for bypassing substations, prone to inundation during monsoon, for ensuring continuity of important corridors and power evacuation from power stations—ERLDC

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

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

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

In 138th OCC Powergrid informed that feeders are identified for Alipurduar, Kishanganj and Dalkhola SS for necessary jumpering. However, awarding and execution of the work will take some time.

In 143rd OCC, Powergrid informed that the necessary jumpering arrangement at Alipurduar, Kishanganj and Dalkhola SS would be completed by May 2018.

PGCIL may update. DMTCL may update the actions taken for Motihari S/S.

Deliberation in the meeting

Powergrid informed that the necessary jumpering arrangement at Alipurduar, Kishanganj and Dalkhola SS would be completed by May 2018.

Item no. C.7: Controlling overdrawal of states by disconnection of radial feeders -ERLDC

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

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

The updated list is enclosed at Annexure-C7*.*

In 142nd OCC, all constituents were advised to indicate the average and maximum load relief expected on disconnection of the identified intra-state / tie lines.

In 143rd OCC, OPTCL informed that 132kV Chatrapur-Ganjam S/c line could be deleted from the list.

OCC advised all the constituents to submit the details of average and maximum load relief expected on disconnection of the identified intra-state / tie lines.

Members may update.

Deliberation in the meeting

OCC finalized the list as enclosed at ***Annexure-C7****.*

Item no. C.8: 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 25 MW	Implemented on 17.06.2016	
3	Bihar	F <49.7 AND deviation > 12 % or 150 MW	3 months Feeders identified. Communication healthiness needs to be checked.	F <49.9 AND deviation > 12 % or 150 MW
4	Jharkhand	1. System Frequency < 49.9 Hz AND deviation > 12 % or 25 MW 2. System Frequency < 49.9 Hz AND deviation > 12 % or 50	9 Months RTU installation is in progress	Condition 1: Block I feeders will be selected for load shedding Condition 2: Block I & II feeders will be selected for load shedding Condition 3: Block I, II & III feeders will be selected for load shedding

		MW 3. System Frequency < 49.9 Hz AND deviation > 12 % or 75 MW		
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			No information furnished by Sikkim

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 37th TCC, Bihar informed that the Scheme would be implemented after commissioning of communication scheme which is being executed by PGCIL.

PGCIL informed that the communication scheme would be commissioned by June 2018.

Bihar added that PGCIL has agreed to commission the communication scheme by April 2018 and requested to adhere the schedule.

Jharkhand informed that they would implement the scheme by May 2018.

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.

Members may update.

Deliberation in the meeting

Members noted.

Item no. C.9: Repeated tripping of 220kV Chuka-Birpara D/c line

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

BPC vide mail submitted the details of replacement of porcelain insulators with glass insulators in the 220kV Chhukha-Birpara D/C line (Bhutan section). Out of 97 towers, porcelain insulators have been completely replaced with glass insulators in 31 locations, while at 20 locations only some insulator strings have been replaced. The remaining insulators would be replaced in a phase wise manner during preventive and break down maintenance.

BPC/DGPC and POWERGRID may update.

Deliberation in the meeting

Members noted.

Item no. C.10: Repair/Rectification of tower at location 79 of 132kV Rangpo-Melli D/c line and Chuzachen(Rangpo)-Gangtok transmission lines - Powergrid

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

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

In 141st OCC, Sikkim informed that rectification of the tower has been taken up with Gati. The work would be completed by 2nd week of February 2018.

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

Powergrid and Sikkim may update.

Deliberation in the meeting

Powergrid informed that they have not yet received any proposal from Sikkim.

Item no. C.11: Status of Installation of STATCOM in Eastern Region

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

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

Powergrid updated the latest status as follows:

Sl No	Location /Sub-Station of POWERGRID in ER	STATCOM - Dynamic Shunt Controller (MVAr)	Mechanically Switched Compensation Sl. (MVAr)		Latest status
			Reactor (MSR)	Capacitor (MSC)	
1	Rourkela	±300	2x125		*Completed and test charged in March 2018.*
2	Kishanganj	±200	2x125		*70% civil work completed. 30% switchyard equipment supplied. Expected to complete by December 2018*
3	Ranchi(New)	±300	2x125		*80% civil work completed. All switchyard equipment, reactors and 3 transformers supplied. Expected to complete by June 2018*
4	Jeypore	±200	2x125	2x125	*Expected to complete by June 2018*

Powergrid may update.

Deliberation in the meeting

Powergrid was advised to share the details of test charging and present status of STATCOM at Rourkela.

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

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

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

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

OPTCL may update.

Deliberation in the meeting

OPTCL updated the status as mentioned in above table.

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

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

Sl. No.	Name of the transmission line	Completion schedule
1.	**Daltonganj 400/220/132kV S/s:**	
a.	Daltonganj (POWERGRID) – Latehar 220kV D/c	By April, 2019.
b.	Daltonganj (POWERGRID) – Garhwa 220kV D/c	The line expected to be completed by May, 2018 but – Garhwa 220kV is expected to be completed by Dec 2018.
c	Daltonganj (POWERGRID) – Daltonganj (JUSNL) 132kV D/c	By May, 2018. However Daltonganj (PG) has been connected to Daltonganj (JUSNL) at 132kV through existing 220 kV Latehar-Daltonganj line as stop gap arrangement till completion of the line.
d	Daltonganj (POWERGRID) – Chatarpur/Lesliganj 132kV D/c	Tendering is in progress. Expected to be completed by October 2019
2	**Chaibasa400/220kVS/s**	
a	Chaibasa(POWERGRID)–Noamundi220kVD/c	
3	**Dhanbad400/220kVS/s**	
a	LILO of Govindpur–Jainamore/TTPS 220kVD/c at Dhanbad	

JUSNL may update.

Deliberation in the meeting

JUSNL updated the status as mentioned in above table.

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

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

Sl. No.	Name of the transmission line	Completion schedule
1.	**2x315MVA, 400/220kV Alipurduar sub-station**	
a.	Alipurduar (POWERGRID) – Alipurduar (WBSETCL) 220kV D/c (***Twin moose***)	*Stringing is in progress. The work would complete by next week.*
2.	**2x500MVA, 400/220kV Rajarhat ---**	
a.	Rajarhat-N. Town-3 (WBSETCL) 220 kV D/C line	Matching, ROW problem
b.	Rajarhat-N. Town-2 (WBSETCL) 220 kV D/C line	June, 2018, ROW problem
c.	Rajarhat- Barasat (WBSETCL) 220 kV D/C line	June, 2018, ROW problem
3	**Subashgram400/220kVS/s**	
a	Subashgram–Baraipur220kVD/cline	Feb 2019, 50% of work has been completed.

WBSETCL may update.

Deliberation in the meeting

WBSETCL updated the status as mentioned in above table.

Item no. C.15: 220 kV inter-connecting lines of BSPTCL

In 143rd OCC, BSPTCL updated the status as follows:

1. Darbhanga (ISTS) –Darbhanga (BSPTCL) 220kV D/c by end of April 2018
2. Darbhanga(ISTS)–Laukhi (earlier Supaul New) 220kVD/c by Mid April 2018

BSPTCL may update.

Deliberation in the meeting

BSPTCL updated the status as follows:

1. Darbhanga (ISTS) –Darbhanga (BSPTCL) 220kV D/c by Mid May 2018
2. Darbhanga(ISTS)–Laukhi (earlier Supaul New) 220kVD/c by end of April 2018

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

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

The latest status of telemetry is enclosed at **Annexure-C16**.

ERLDC may present. Members may update.

Deliberation in the meeting

ERLDC elaborated the latest status of telemetry. ERLDC informed that Tisco, New Farakka and Lalmatia (NTPC) data are not available.

DVC informed that work is in progress and Tisco data would be available soon.

NTPC informed that New Farakka data would be available to ERLDC by end of May 2018.
OCC advised NTPC to ensure the data availability of Lalmatia(NTPC) at ERLDC.

Item no. C.17: Failure of Real time telemetry

a) In geographically located area of North Bengal and Sikkim to ERLDC:

On 06th December 2017 at 17:26 hours, there was failure of real time SCADA data of 17 nos Central Sector station to ERLDC due to communication failure between Malda – Farakka OPGW link. The real time data restored at 09:37 Hours of 07th December 2017.

The real time SCADA data of North Bengal & Sikkim is totally dependent on availability of Malda – Farakka communication link. The path redundancy of Malda – Farakka communication link must be planned and implemented by POWERGRID so that such failure could be avoided.

The real time SCADA data failure of 17 nos Central Sector station to ERLDC due to communication failure Malda – Farakka OPGW link has been discussed in 141st OCC meeting held on 18th January 2018 wherein POWERGRID pointed out the alternate communication path could be established after installation of OPGW communication link between Purnea 400 kV to Biharshariff 400 kV. This link is owned by M/s East North Interconnection Company Limited (A subsidiary of Sterlite Power Transmission Limited).

In 142nd OCC, M/s East North Interconnection Company Limited (ENICL) informed that OPGW is already available in the line but laying of approach cable inside the POWERGRID sub-stations & termination at both end to communication Mux is pending. ENICL added that the same is under discussion at their end for early implementation of the same.

In 143rd OCC, ENCIL updated that termination of OPGW would be completed by end of June 2018.

Powergrid informed that the link would be in service by end of July 2018 subjected to termination of OPGW link.

ENCIL & POWERGRID may update

Deliberation in the meeting

ENCIL representative was not available in the meeting to update latest status.

b) Farakka STPS to ERLDC:

Real time SCADA data from Farakka STPS stage #3 SAS is not available at ERLDC since 10:32 Hrs of 09/09/2017. Real time SCADA data failure has been intimated to NTPC Farakka Generating station on number of occasions; verbally over phone & through but the same is yet to be rectified.

In 143rd OCC, NTPC informed that they are in the process of replacing the SAS which would be completed by April 2018.

NTPC may update

Deliberation in the meeting

NTPC informed that they are in the process of replacing the SAS which would be completed by end of May 2018.

Item no. C.18: 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.

ATC/TTC declared by states for the month of July-2018 is given below:

Sl No	State/Utility	TTC import(MW)		RM(MW)		ATC (Import) MW		Remark
		Import	Export	Import	Export	Import	Export	
1	BSPTCL	--	--	--	--	--	--	Last available for Jan-18
2	JUSNL	980	--	60	--	920	--	
3	DVC	1188	3164	59	46	1247	3118	For Aug-18
4	OPTCL	1804	--	86	--	1718	--	
5	WBSETCL	3815	--	300	--	3515	--	April-18
6	Sikkim	--	--	--	--	--	--	

As per decision of 143rd OCC meeting constituents have started sending TTC figures 3 months in advance only Bihar and Sikkim are not sending their updated TTC value. Sikkim has not intimated TTC value till date.

In last OCC meeting, representative from Bihar confirmed that they will send revised TTC along with base case once updation of base case gets completed.

BSPTCL is requested to update the status.

Deliberation in the meeting

BSPTCL informed that they need some training on ATC/TTC computation and their SLDC engineers will visit ERLDC to be acquainted with the procedure.

Item no. C.19: Time correction of SEMs in Eastern Region – Replacement of heavily drifted SEMs

The issue was discussed in 35th TCC/ERPC meetings and it was felt that the meters with severe drift greater than 10 min need to be replaced first and if replacement is done with Genus then readings are to be collected manually using Laptop till interfacing with AMR is completed. 35th ERPC advised Powergrid to replace the 10% of the heavily drifted SEMs with new Genus make meters in Phase-I. Subsequently drifted meter replacement work of Phase –I for 24 meters have been completed.

As per decision taken in 134th OCC meeting, another 10% heavily drifted meter list was prepared by ERLDC and given to Powergrid for replacement. In 140th OCC it was informed that all the Phase-II meters have been replaced except Kharagpur. Since issue of integration of Genus

meter is already resolved, It was also decided that list of meters to be replaced in next phase may be prepared.

Accordingly List of drifted meters to be replaced in Phase-III is placed below:

List of drifted meters to be replaced in Phase-III

SNO	LOCATION	METER SNO	FEEDER NAME	Region
1	JEERAT(WB)	NP-6445-A	400 KV JEERAT (WBSETCL) - BERHAMPORE(PG)	ER-II
2	JEERAT(WB)	NP-6446-A	400 KV JEERAT (WBSETCL) - SUBHASGRAM	ER-II
3	RANCHI(PG)	NP-7853-A	400 KV RAGHUNATHPUR 1	ER-I
4	RANCHI(PG)	NP-7871-A	400 KV RAGHUNATHPUR 2	ER-I
5	ALIPURDUAR(PG)	NR-3716-A	400 KV POLE-3 MAIN BAY-AGRA(NR)	ER-II
6	ALIPURDUAR(PG)	NR-3718-A	400 KV POLE-3 TIE BAY AGRA(NR)	ER-II
7	NEW MELLI(PG)	NR-4620-A	220 KV JORETHANG(JLHEP)-1	ER-II
8	NEW MELLI(PG)	NR-4621-A	220 KV JORETHANG(JLHEP)-2	ER-II
9	TEESTA-III	NR-3714-A	400 KV SIDE OF TEEST-III HEP GT-1	ER-II
10	TEESTA-III	NR-3715-A	400 KV SIDE OF TEEST-III HEP GT-2	ER-II
11	TEESTA-III	NR-4450-A	400 KV SIDE OF TEEST-III HEP GT-3	ER-II
12	TEESTA-III	NR-3720-A	400 KV SIDE OF TEEST-III HEP GT-4	ER-II
13	TEESTA-III	NR-4623-A	400 KV SIDE OF TEEST-III HEP GT-5	ER-II
14	TEESTA-III	NR-3719-A	400 KV SIDE OF TEEST-III HEP GT-6	ER-II
15	TEESTA-III	NR-4456-A	400 KV TEESTA-III - DICKCHU (MAIN)	ER-II
16	TEESTA-III	NR-4618-A	400 KV TEESTA-III - DICKCHU (CHECK)	ER-II
17	TEESTA-III	NR-4454-A	400 KV TEESTA-III - RANGPO (MAIN)	ER-II
18	TEESTA-III	NR-4453-A	400 KV TEESTA-III - RANGPO (CHECK)	ER-II
19	JINDAL (GRIDCO)	NP-6502-A	220KV JAMSHEDPUR (DVC)	ODHISA PROJECT
20	JAMSHEDPUR (DVC)	NP-6010-B	220 KV JINDAL	ER-I
21	GANGTOK(PG)	NP-6026-A	132KV CHUZACHEN(GATI)	ER-II
22	RANGPO(PG)	NP-7958-A	132 KV CHUZACHEN (GATI)	ER-II

In 143rd OCC, Powergrid informed that time correction could be done at Jeerat end SEMs within 3 weeks.

Powergrid added that they will receive the SEMs by 1st April 2018 and replacement of SEMs would be completed by 2nd week of May 2018.

Powergrid may update.

Deliberation in the meeting

Powergrid updated that new SEMs have been received and acceptance tests are in progress. Acceptance tests would complete by end of April 2018.

Powergrid added that time correction has been done at Ranchi.

Item no. C.20: Meter related issues

1. **Replacement of SEM meters/ time drift correction of SEMs installed in 400kV Derang-Phoolpada(PG) D/C line.**

JITPL vide letter dated 5th February 2018 informed that there was time drift in SEMs installed in 400kV Derang-Phoolpada(PG) D/C line.

JITPL requested to resolve the long pending issue for which they are incurring loss in billing and DSM.

In 143rd OCC, Powergrid informed that SEM at one end has been replaced, the other end would be replaced after receiving the SEMs.

ERLDC, JITPL and PGCIL may update.

Deliberation in the meeting

Powergrid informed that 6 SEMs are yet to be replaced. The meters would be replaced soon.

2. Less(1/3rd) energy recording by 132kV side SEM of Malda ICT-2

Meter No NP-7977-A installed at 132 KV side of Malda 220/132 ICT-2 is recording 1/3rd as compared to actual loading of ICT-2 since 25.02.18. Itissuspected that themeter is not getting Voltage of two Phases due to either CVT fuse outage or some other reason. ERLDC requested PGCIL vide email dated 02.03.18 to check current and Voltage input to the meter and rectify the problem immediately. The problem is still persisting and data validation part is being affected.

PGCIL may please update.

Deliberation in the meeting

Powergrid informed that CT & PT connections are yet to be checked.

It was informed that Genus interfacing software is not reading the SEM data properly during element outage blocks.

OCC advised Powergrid to resolve the issues.

3. Non receipt of Jamtara end meter data

Jamtara end meter NP-6110-A data of Maithon Line is not being received by ERLDC since 01.04.18. The meter data of Jamtara was being sent to ERLDC by Vendor of JUVNL upto 31.03.18. As informed by SLDC Ranchi, the data will be sent to ERLDC by respective sub stations of Jharkhand wef 01.04.18. However the data is not being received by ERLDC since 01.04.18. The said meter is also not reporting in AMR.

JUVNL may please further update.

Deliberation in the meeting

ERLDC informed that the data of Jamtara end has been received, the same is expected to be resolved.

4. Less recording by BidhanagarWBSETCL end meter

Meter No NP-6485-A installed at Bidhanagar end of 220 Waria (DVC) Line-2 is recording almost negligible data compared to Waria end meter since 11:15 Hrs of 16.03.2018. Subsequently ERLDC vide mail dated 28.03.18 and 03.04.18 (with a copy to PGCIL) requested WBSETCL to check CT/PT connection and Value measuredbythe said meter. However the problem is still persisting and WBSETCL energy accounting is done with Waria DVC end meter.

WBSETCL/PGCIL may please further update.

Deliberation in the meeting

OCC advised WBSETCL to resolve the issues at the earliest.

Item no. C.21: Mock Black start exercises in Eastern Region – ERLDC

The tentative schedule of black-start exercises for F.Y 2017-18 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, 2017	*30th May 2017*	Last Week of January2018	*Done on 9th January 2018*
2	Maithon	1stweek of June 2017	Completed on 04.04.17	1stWeek of February2018	Planned to be conducted on 23rd or 24th April 2018
3	Rengali	2ndweek of June 2017	Done on 29.06.2017	Last week of November 2017	Done on 30th November 2017
4	U. Indarvati	3rdweek ofJune 2017	November 2017	2ndweek of February2018	*Done #U1 on 09.03.2018*
5	Subarnarekha	1stweek of October 2017	Done on 14th October 2017	1stweek of January2018	In mid March 2018
6	Balimela	3rdweek of October 2017	November 2017	1stweek of March 2018	*Done #U6 on 09.03.2018*
7	Teesta-V	2ndweek of Nov 2017		Last week of February2018	Done on 26th December 2017
8	Chuzachen	Last Week of May2017	May, 2017	January2018	In April 2018
9	Burla	Last Week of June 2017	Dec, 2017	Last week of February2018	Done on 29th January 2018
10	TLDP-III	1st Week of June 2017	Done on 20th Dec, 2017.	2ndWeek of January2018	
11	TLDP-IV	Last Week of June 2017	After Mansoon	1stWeek of February2018	Done on 22nd March 2018
12	Teesta-III		December 2017		Done on 8th January 2018

Tentative Schedule for mock black start exercise for FY 2018-19 is given below members may discuss and finalize the schedule

Sl no	Name of Hydro Station	Schedule	Tentative Date	Schedule	Tentative Date
		Test-I		Test-II	
1	U.Kolab	Last week of May, 2018		Last Week of January2019	
2	Maithon	1stweek of June 2018		1stWeek of February2019	
3	Rengali	2ndweek of June 2018		Last week of November 2018	
4	U. Indarvati	3rdweek ofJune 2018		2ndweek of February2019	
5	Subarnarekha	1stweek of October 2018		1stweek of January2019	
6	Balimela	3rdweek of October 2018		1stweek of March 2019	
7	Teesta-V	2ndweek of Nov 2018	April 18 last week	Last week of February2019	
8	Chuzachen	Last Week of May2018	In May 2018	2nd week of January2019	

9	Burla	Last Week of June 2018		Last week of February2019	
10	TLDP-III	1st Week of June 2018		2ndWeek of January2019	
11	TLDP-IV	Last Week of June 2018		1st Week of February2019	
12	Teesta-III	Last week of Oct 2018		First Week of March 2019	
13	Jorthang	First Week of May 2018		First Week of Feb 2019	
14	Tasheding	2nd Week of May 2018		2nd Week of Feb 2019	
15	Dikchu	3rd Week of May 2018		3rd Week of Feb 2019	

Members may update.

Deliberation in the meeting

Members updated the schedule as mentioned in above table.

Item no. C.22: Testing of DG sets by SLDCs

In the event of failure of local supply, the critical function of monitoring and controlling state grids by SLDCs should not get affected. Hence it is essential to maintain the respective DG sets in healthy condition at all times. SLDCs may confirm whether their DG sets are tested on weekly basis.

In 142 OCC meeting JUSNL informed that they have been testing the DG sets on weekly basis.

Odisha, West Bengal and DVC informed that they have been testing the DG sets on monthly basis.

OCC advised all SLDCs to test the DG sets on weekly basis.

SLDCs may update the present frequency of testing of DG sets.

Deliberation in the meeting

SLDCs informed that now they are testing the DG sets on weekly basis.

Item no. C.23: Schedule for reactive capability tests

In last OCC, Members updated the status and informed the schedule as follows:

- Adhunik TPS(both units) – Unit #1 done on 27.10.2016. Unit #2 would be in service from April 2018.
- JITPL(both units) – After the emergent inspection of OEM(BHEL). Testing would be done in June 2018
- Barh TPS – Vibration problems will be attended during overhauling. The testing would be done after overhauling in December 2019.
- Raghunathpur – In 1st week of April 2018
- GMR (Three units) – It was informed that Grid Conditions are not supporting for testing of the units. TCC advised GMR to discuss the issues in 143rd OCC Meeting scheduled to be held on 26th March 2018.

ERLDC informed that the unit to be tested need not operate at full load. Further, during some part of the day, grid voltage may be favourable for testing only leading reactive capability while

during some other part of the day or on a different day, the condition may be conducive for testing lagging reactive capability. The power stations may therefore select the date and period of testing as per their convenience but they should not keep the testing itself in abeyance, on some pretext or the other.

Adhunik TPS was requested to share results of the test carried out on 27.10.16 for their U#1.

Members may update.

Deliberation in the meeting

Members updated the status and informed the schedule as follows:

- Adhunik TPS(both units) – Unit #1 done on 27.10.2016 and submitted the testing report of unit #1. Unit #2 would be in service from April 2018.
- JITPL(both units) – done testing of unit#1 and agreed to send the report. After the emergent inspection of OEM(BHEL). Unit #2 testing would be done in June 2018
- Barh TPS – Vibration problems will be attended during overhauling. The testing would be done after overhauling in December 2019.
- Raghunathpur – Next week
- GMR (Three units) – In last week of April 2018.

Item no. C.24: Installation of PMUs in Eastern Region under URTDSM project

LOA for installation of PMUs in Eastern Region under URTDSM project was awarded to M/s Alstom on 15th January 2014. The contract has to be completed in all respect within 24 months from the award. The status of implementation may be informed since PMU data is very much important to real time shift operator for analyzing the security of the grid. The updated status as furnished in 142nd OCC by Powergrid is given at **Annexure-C.24**.

Powergrid vide mail dated 8th January 2018 informed that they are facing difficulty in installation of PMUs at following locations:

1. IBEUL: Material delivered at site in the month of August. Accordingly team was deployed for installation. But Due to non-readiness at site the team could not work and has to returned back. Till now permission has not been granted for PMU installation.
2. JITPL: Material delivered at site in the month of August. Team was deployed for PMU installation. Due to space constraint the installation could not be done.

In 142nd OCC, POWERGRID informed that the installation could not be completed at Jindal, Angul due to space constraint. In the meeting, JITPL representative agreed to resolve the issues.

POWERGRID informed that air-conditioning and lighting arrangement in PDC control room at SLDC-Howrah was not yet provided by WBSETCL for PDC installation. The requirement of air-conditioning and lighting in PDC control room at SLDC-Howrah was intimated to WBSETCL during survey on November-2014 but the same is not yet provided. The matter has also been discussed in 20th SCADA O&M meeting held on 15th December 2018 wherein WBSETCL intimated that the same would be done on priority.

OCC advised WBSETCL to provide the air-conditioning and lighting in PDC control room at SLDC-Howrah at the earliest.

In 37th TCC, JITPL agreed to examine and confirm the space within one week.

Regarding Patratu, it was decided that NTPC and JUSNL would sit together and sort out the issue by March, 2018.

In 143rd OCC, WBSETCL informed that the air-conditioning and lighting in PDC control room at SLDC-Howrah by July 2018.

Regarding Patratu, NTPC and JUSNL informed that they would settle the issues in April, 2018.

POWERGRID may update the status.

Deliberation in the meeting

JITPL informed that they have allotted the space but few issues related to interfacing are needed to be discussed.

OCC advised Powergrid and JITPL to settle the issues.

Item no. C.25: Curtailment of charging time on tripping of 132 KV new Kataiya-Kushaha Transmission Line from GSS Kataiya raised by Nepal Electricity Authority--BSPTCL

Nepal Electricity Authority (NEA) has requested to arrange the shortest time period for charging of 132 KV new Kataiya- Kushaha Transmission Line from GSS Kataiya. The charging of the said lines are getting delayed about 1:30 - 2 hrs from January itself. Previously on tripping of line, the line used to be charged based on telephonic conversation within 10 min. To minimize the charging time on tripping of 132 KV new Kataiya- Kushaha Transmission Line from GSS Kataiya the method of 1st instance charging of tripped line with consent limited to BSPTCL Kataiya & Duhabi/Kushaha/Nepal only may be allowed.

In 142nd OCC, BSPTCL informed that they were to take consent from ERLDC then NLDC before charging the line. Hence the charging of the line was getting delayed.

ERLDC informed that they take up the issue with NLDC.

ERLDC may update.

Deliberation in the meeting

ERLDC assured that all the best possible efforts would be taken in consultation with NLDC to minimise the time delay in charging the line.

Item no. C.26: Flexible Operation of thermal power stations- Identification of pilot projects--CEA

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

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

In 142nd OCC, NTPC informed all the units of NTPC were capable of 55% minimum load operation. DVC informed that they were planning to implement at DSTPS.

In 37th TCC, DVC informed that they would demonstrate the capability of 55% minimum load operation for one unit of DSTPS by March 2018.

DVC may update.

Deliberation in the meeting

DVC informed that an exercise to test 55% minimum load operation had been conducted at DSTPS recently. The details of the test results, as and when received, would be shared with OCC members.

Item no. C.27: CONTINGENCY PLAN TO MEET DEFICIENT / EXCESS RAILFALL DURING MONSOON -CEA

The anticipated monthly demand profile in respect of various states and the annual maintenance plan of various generating units of has been received from Eastern Region. It is understood that this data is based on normal monsoon scenario. However, a poor or excess monsoon activity, sudden excess silt in the river, and such other contingencies may lead to increased demand – supply gap in the region(s) or county. Each RPC needs to be fully prepared to meet such credible contingencies.

In the above background, it is requested to estimate the impact (in terms of average MW) of various contingencies including the above ones, on the demand and availability in respect of each state/ UT for the months of June to September,2018, and an implementable action plan be prepared for handling the contingency situation like deficit or delayed monsoon, excessive monsoon, flooding of mines or damaging of railway network or situation of high silt(in the Northern Region during July-August),etc, Implementable concrete steps like identification of flexible plant outages, maintaining sufficient coal stock at critical plant sites and diversion of coal via alternate route may also be identified and documented by each RPC. Contingency arising out of failure of transmission towers also needs to be considered and preparedness by the CTU/STUs to meet the same using ERS be examined and outcome/action plan documented. The Ministry of Power has desired that the aforesaid contingency plan be made ready by this month end.

The contingency plan has been received from DVC, Bihar and Odisha. OCC advised all other constituents to submit the contingency plan to mserpc-power@nic.in.

Members may submit the contingency plan.

Deliberation in the meeting

WBPDCL has submitted the contingency plan.

Item no. C.28: Operationalizing black start facility at Purulia Pump Storage Project (PPSP) of WBSEDCL--ERLDC

CERC vide order dated 04.07.13 on Petition No. 149/MP/2012 had directed WBSEDCL to operationalize black –start facility at PPSP after finalizing a suitable scheme in consultation with ERLDC

The said order was challenged by WBSEDCL and an appeal was filed with APTEL by WBSEDCL

Subsequently, APTEL vide order dated 21.11.2015 on the Appeal No. 60 (filed by WBSEDCL) directed CEA to submit a report on the feasibility of black start of PPSP units.

Further, APTEL vide order dated 31.05.16, based on CEA report dated 18.04.16, directed CERC to ensure implementation of the recommendations of CEA within 6 months of the date of order.

In 34th TCC, WBSETCL informed that black start exercise can be conducted after commissioning of new 400kV PPSP S/s with 80 MVAR reactor.

WBSEDCL informed that they have contacted OEM Toshiba for feasibility of black start and OEM required to conduct a simulation with CEA recommendations.

TCC advised WBSEDCL/WBSETCL to submit the status to CERC.

Thereafter, WBSEDCL had filed a petition before CERC on 30thSeptember, 2016 seeking extension of time for six months.

OCC in its 130th meeting held on 17-02-17, *advised WBSEDCL to explore the opportunity for conducting black start exercise as the extension given by CERC is going to lapse by March.2017.*

WBSEDCL informed that they are fully dependant on OEM Toshiba to carry out this exercise.

In the 134th OCC meeting held on 23-06-17, WBSEDCL was requested to furnisha detailed report indicating the actions taken so far for implementation of black-start and FGMO/RGMO features for their PPSP units along with expected date for making these features functional. Representative of WBSEDCL assured OCC that the present status would be apprised at an early date.
In the 135th OCC meeting held on 24-07-17, WBSEDCL informed that they were yet to receive any comments from the OEM.
In the 136th OCC meeting held on 30-08-17, ERLDC observed that WBSEDCL had already consumed 6 month time extension granted by CERC for implementation of black-start facility at PPSP and no progress could be made even after expiry of 11 months. Since such delay and uncertainty in execution of the work was directly affecting the security of Eastern Regional grid, matter may escalated to MOP / CEA for hiring the professional service of competent vendors / consultants so that blackstart capability at PPSP could be operationalised within a definite target date.

By delaying the implementation of PPSP black-start for around 2 years since issuance of order by APTEL, WBSEDCL has practically failed to comply with the orders of both APTEL and CERC, apart from failing to improve the much needed reliability of the ER grid.

OCC may please escalate the issue with APTEL, CERC and CEA for expeditious resolution of the matter.

In 143rd OCC, WBSEDCL informed that a feasibility study had been carried out by OEM Toshiba. WBSEDCL added that OEM had not recommended for charging the line beyond the PPSP switchyard. WBSEDCL submitted the report.

OCC advised WBSEDCL to approach APTEL with the OEM observations to get exemption from black start exercise.

WBSEDCL may update.

Deliberation in the meeting

WBSEDCL informed that they are preparing relevant documents and they would place the details in APTEL/CERC.

PART D:: OPERATIONAL PLANNING

Item no. D.1: Anticipated power supply position during May'18

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

Members may confirm.

Deliberation in the meeting

Modified anticipated power supply position for the month of May 2018 after incorporating constituents' observations is given at **Annexure-D.1***.*

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

Members may finalize the Shutdown proposals of transmission lines and generating stations for the month of May'18 as placed at **Annexure-D.2**.

System	Station	Unit	Size (MW)	Period		No. of Days	Reason
				From	To		
NTPC	TSTPS	5	500	25.05.18	30.06.18	45	Boiler Mod.+Capital+Gen.

Members may confirm.

Deliberation in the meeting

Approved maintenance programme of generators as follows:

System	Station	Unit	Size (MW)	Period		No. of Days	Reason
				From	To		
NTPC	TSTPS	5	500	25.05.18	08.07.18	45	Boiler Mod.+Capital+Gen.
WBPDCL	Kolaghat TPS	2	210	01.06.18	09.06.18	9	ESP Retrofitting
		5	210	15.06.18	13.08.18	28	ESP Retrofitting

Approved maintenance programme of transmission elements for the month of May 2018 is given at **Annexure-D.2.**

1. Rescheduling of Kahalgaon STPS unit overhauling –NTPC

NTPC vide letter dated 30th March 2018 informed that in view if increased incidences of blade failure of 250 MW and 500 MW KWU design LP turbine rotors(version 3,4, 5 & 6), it has now become imperative to carry out LP turbine overhauling in every 2 years as per our corporate Turbine Expert Group. Accordingly, the overhauling of Kahalgaon STPS units are rescheduled as tabulated below to avoid any mis-happening and unwanted long outage:

Kahalgaon STPS	Schedule as per Provisional LGBR	Re-schedule proposed	Remarks
Unit-4	24.06.18 to 30.06.18 (7 days)	07.05.18 to 13.05.18 (7 days)	Short shutdown preponed to avoid generation loss on account of Air Pre-Heater tubes choking.
Unit-3	15.05.18 to 08.06.18 (25 days)	01.06.18 to 25.06.18 (25 days)	Postponed for resource mobilisation after Unit-4.
Unit-5	01.08.18 to 04.09.18 (35 days)	15.07.18 to 13.08.18 (30 days)	Preponed for early overhauling of Unit-6.
Unit-6	Earlier not planned in 2018-19	01.09.18 to 05.10.18 (35 days)	Earlier not planned in 2018-19 but revised in view of increased incidences of LP turbine blade failure.
Unit-7	16.11.18 to 10.12.18 (25 days)	Dropped	Re-planned in Apr'19.

NTPC may elaborate. Members may approve.

Deliberation in the meeting

Member Secretary, ERPC informed that LGBR for 2018-19 has been prepared after through consultation with all the constituents of Eastern Region. The same has already been submitted to CEA for necessary action at their end. Based on the LGBR, the utility constituents of Eastern Region has made the necessary planning to meet the load during 2018-19. At this juncture, wholesale changes with regard to shut down program of generation units, as proposed by NTPC, is not acceptable, as it makes the entire exercise associated with preparation and finalization of LGBR futile. The very purpose of whole exercise would be defeated with such huge changes in schedules. He advised NTPC to properly plan the overhauling schedules of their units in advance. He observed that only with the explicit approval of the beneficiaries of the generating units, NTPC may proceed with the implementation of revised shut down program.

After through deliberation, OCC agreed for rescheduling of shut down program of Unit 4 and Unit 6 of Kahalgaon STPS.

For rescheduling of other units, OCC advised NTPC to consult with all the beneficiaries and place the revised schedule in next OCC meeting.

2. Rescheduling of Talcher STPS unit 2 overhauling–NTPC

NTPC vide letter dated 27th March 2018 informed that overhauling of Talcher STPS unit 2 was initially scheduled from **10th November 2018 for 30 days** as per LGBR.

Subsequently considering the past experience of power demand in festive season of ER during October and November, NTPC requested to prepone the shutdown to **15th July 2018 to 13th August 2018** for 30 days. During this period there will be increased hydro generation and hence less demand in the Grid.

NTPC may elaborate. Members may approve.

Deliberation in the meeting

OCC did not agree with the NTPC proposal regarding rescheduling of Unit-2 of Talcher STPS. NTPC was advised to strictly adhere to the schedule given in LGBR unless an emergent situation demands any revision of shut down program.

3. Shut down of 220 kV New Melli-Rangpo Line of POWERGRID and 220 kV Jorethang – New Melli Line of M/s Dans Energy Pvt. Ltd. -TPTL

TPTL requested for simultaneous shut down of 220 kV New Melli-Rangpo Line of POWERGRID and 220 kV Jorethang – New Melli Line of M/s Dans Energy Pvt. Ltd. from **08-00 hrs**

on 29.4.2018 to 17-30 hrs on 8.5.2018 on continuous basis to carry out stringing of 400 D/C Quad Moose Teesta III – Kishanganj Transmission in between tower no. 140/3 to 141 and 141 to 142 (New) in South Sikkim to cross over 220 kV New Melli-Rangpo Line and 220 kV Jorethang – New Melli Line respectively.

Day wise Plan for Carrying out the shutdown works are as follows:-

Day 1 & 2:-
Issue of PTW at 08:00 hours, Installation of backstay arrangement and Removal of Conductor, OPGW from existing 220 kV Lines.

Day 3 to Day 9:-
Final Sagging work of 400 kV D/C Line (Conductor, Earthwire, OPGW)

Day 10:-
Spacering, Jumpering of 400 kV Line & restoration conductors of 220 kV Line, Removal of backstay & return of shutdown at 17:30 hours.

POWERGRID & Dans Energy are requested to provide required OPGW for diamond formation for the crossings of their line.

Members may approve.

Deliberation in the meeting

In the absence of TPTL representative, the agenda could not be discussed. Member Secretary, ERPC took strong exception to the absence of concerned TPTL representative in the meeting. He observed that absence of TPTL representative reflected that TPTL was not serious about pursuing the shutdown.

Member Secretary, ERPC suggested that, in future, the shutdown proposal submitted by any entity would not be taken up for discussion in the OCC meeting in the absence of the concerned representative.

4. Shut down request for construction of 400kV Alipurduar-Siliguri and Kishanganj-Darbhanga lines—Alipurduar Trans. Ltd.

Alipurduar Trans. Ltd. requested for shutdown of different transmission lines in ER for construction of 400kV Alipurduar-Siliguri and Kishanganj-Darbhanga lines. Details are encloased at **Annexure-D2.4.**

Members may approve.

Deliberation in the meeting

Powergrid informed that crossing profile is required from Alipurduar Trans. Ltd.

OCC in principle agreed to the shutdown subjected to respective constituents approval in real time.

5. Request for approval of deemed availability for shutdown of 400kV Sundargarh-Raigarh line 2 & 4 due to natural calamity

PGCIL vide letter dated 7th April 2018 requested for deemed availability for shutdown of 400kV Sundargarh-Raigarh line 2 & 4 which was taken from 7th April 2018(10:00hrs) to 16th April 2018 (18:00hrs). Details are enclosed at **Annexure-D2.5**.

Members may approve.

Deliberation in the meeting

It was informed that deemed availability would be considered as per the CERC regulations.

6. Request for approval of deemed availability for shutdown availed for installation of counterweight in pilot polymer insulators.

PGCIL vide letter dated 8th March 2018 requested for deemed availability of shutdown availed for installation of counterweight in pilot polymer insulators. Details are enclosed at **Annexure-D2.6**.

Members may approve.

Deliberation in the meeting

OCC advised Powergrid to quote the clause of CERC regulation under which the deemed availability proposal submitted by Powergrid could be considered.

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

(i) Thermal Generating units:

S.No	Station	Owner	Unit No	Capacity (MW)	Reason(s)	Outage (Date)
1	FARAKKA	NTPC	4	500	Annual O/H	11-Mar-18
2	ADHUNIK	APNRL	2	270	FLAME FAILURE INITIALLY ,LATER GENERATOR VIBRATION	7-Sep-17
3	RAGHUNATHPUR	DVC	2	600	Initially tripped on Electrical fault, presently out due to coal shortage	27-Feb-18
4	KOLAGHAT	WBPDCL	2	210	DESYNCHRONISED DUE TO LESS DEMAND	7-Apr-18
5	MEJIA	DVC	6	250	STATOR EARTH FAULT	15-Mar-18
6	VEDANTA	GRIDCO	2	600	PROBLEM IN BOILER	8-Feb-18
7	SAGARDIGHI	WBPDCL	4	500	TURBINE VIBRATION	5-Apr-18
8	Koderma	DVC	2	500	Flame Failure	11-Apr-18
9	KOLAGHAT	WBPDCL	5	210	BTL	11-Apr-18

(ii) Hydro Generating units:

Sr. No	Generating Station	UNIT NO	CAP(MW)	REASONS FOR OUTAGE	OUTAGE DATE
1	BURLA	5	37.5	R & M WORK	25.10.2016
2	BURLA	6	37.5	R & M WORK	16.10.2015
3	CHIPLIMA	3	24	R & M WORK	15.10.2015
4	BALIMELA	1	60	R & M WORK	05.08.2016
5	BALIMELA	2	60	R & M WORK	20.11.2017
6	BALIMELA	7	75	Governor & Guide vane problem	12.10.2017
7	U.KOLAB	2	80	Repair of MIV & Draft tube gate leakage	28.05.2017

It is therefore seen that about 375 MW hydro capacity in Odisha is under forced outage / R&M and therefore not available for providing the much needed peaking support in summer peak. SLDC / OHPC may please indicate the capacity expected to be restored by 31/05/18.

(iii) Transmission elements

SL NO	Transmission Element / ICT	Agency	OutageDate	Reasons for Outage
1	220 KV BALIMELA - U' SILERU	OPTCL / APSEB	10.03.18	L.A FAILURE AT UPPER SILERU END.
2	400KV TALA -BINAGURI -I	POWERGRID/BHUTAN	02.03.18	LINE OPENED ON O/V
3	132 KV ARRAH-ARRAH	BSPTCL	12.2.18	FOR RECONDUCTORING AND MULTI CKT TOWER ERECTION WORK
4	765kV GAYA - VARANASI-II	POWERGRID	25.02.18	MODIFICATION OF TOWER NOS 338 & 339 BY CASTING OF NEW TOWER FOUNDATION.
5	400 KV MOTIHARI-GORAKHPUR -II	POWERGRID	07.04.18	B-N FAULT ;SF6 GAS DUCT LEAKAGE IN MAIN AND TIE BAY ;
6	400 KV BARH KAHALGAON –I	POWERGRID	10.4.18	R_N;1.786 KA,251 KM FROM BARH
7	132 KV KAHALGAON SABOUR	BSPTCL	10.4.18	Y_N,Z1,90 KM FROM SABOUR TRIPPED ON SOTF
8	500 KV HVDC BHERAMARA	POWERGRID BANGLADESH	8.4.18	BUS EXTENSION FOR CONSTRUCTION OF POLE 2

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

Members may update.

Deliberation in the meeting

Members noted

PART E:: ITEMS FOR INFORMATION

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

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

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

Members may note.

Deliberation in the meeting

Members noted

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

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

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

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

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

Members may note.

Deliberation in the meeting

Members noted

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

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

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

- All NTPC stations in Eastern Region
- Teesta, NHPC
- All OHPC generating units
- All CESC generating units
- All units of WBPDCL
- DGPC units

Members may note.

Deliberation in the meeting

Members noted

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

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

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

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

Members may note.

Deliberation in the meeting

Members noted

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

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

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

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

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

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

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

Members may note.

Deliberation in the meeting

Members noted

Item No. E.6: Status of 1st Third Party Protection Audit:

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

Name of Constituents	Total Observations	Complied	% of Compliance
Powergrid	54	46	85.19
NTPC	16	14	87.50

NHPC	1	1	100.00
DVC	40	26	65.00
WB	68	27	39.71
Odisha	59	42	71.19
JUSNL	34	25	73.53
BSPTCL	16	5	31.25
IPP (GMR, Sterlite and MPL)	5	5	100.00

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

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

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

Members may comply.

Deliberation in the meeting

Members noted for compliance.

Item No. E.7: Checklist for submission of updated data for Protection Database

The network data in Protection Database needs to be updated on regular basis on account of commissioning of new elements in the CTU as well as STU networks. Accordingly, a checklist has been prepared which is enclosed in **Annexure-E8**.

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

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

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

Constituents may note and comply.

Deliberation in the meeting

Members noted for compliance.

Item No. E.8: Non-Payment of dues to Powergrid—Powergrid Odisha

A. **JITPL**: Rs. 1.09 Crore from M/s JITPL (Rs. 52.653 Lakh towards bay maintenance + Rs. 57.239 Lakh towards interest charges)

B. **Ind-Bharath Energy(Utkal) Ltd(IBEUL):** Rs.88 Lakh is due from M/s Ind-Bharath (Utkal) Energy Limited towards Bay maintenance and Interest charges.

JITPL and IBEUL may note and clear the dues.

Deliberation in the meeting

Members noted for compliance.

Item No. E.9: Additional agenda

1. Control area Jurisdiction of Chuzachen HEP:

CTU has informed vide letter dated 29.03.18 that the connectivity of Chuzachen HEP with CTU is revoked with immediate effect.Chuzachen HEP being an Independent Power Producer (IPP), presently having connectivity with STU (Govt. of Sikkim) network only and embedded entity of Sikkim,so as per IEGC clause 6.4.2.c.ii and CERC order 95 MP 2013, the scheduling responsibility lies with the State Load Despatch Centre, Sikkim.

IEGC 6.4.2. clause states that:

Quote

"The following generating stations shall come under the respective Regional ISTS control area and hence the respective RLDC shall coordinate the scheduling of the following generating stations:

a) Central Generating Stations (excluding stations where full Share is allocated to host state),
b) ……
c) In other cases, the control area shall be decided on the following criteria:

(i) ……..
(ii) If a generating station is connected only to the State transmission network, the SLDC shall coordinate scheduling, except for the case as at (a) above.
(iii) …….
(iv) …….

As per IEGC clause 6.4.2.ii, if scheduling responsibility is to be continued by ERLDC, then approval has to be taken from CERC and a No Objection Certificate (NOC) is also required from Sikkim.

Member may please discuss.

Deliberation in the meeting

Sikkim agreed to give NOC for scheduling Chuzachen generation after the approval of CERC.

Chuzachen informed that they will approach Sikkim after the approval of CERC.

2. Abnormal error in Check Energy Meter of 80 MVA ICT I & II at Jigmiling Substation.

The Check energy meters belonging to PTC/POWERGRID, installed on the LV side of 80 MVA ICT I & II at Jigmeling Substation (Gelegphu) has been malfunctioning and showing abnormal error, owing to inconsistent pulse output. The % error between the Main meter and Check meter are beyond the acceptable limit. The comparative statement of main and check energy meters since January 2017 is enclosed. While the main energy meters pertaining to BPC is being tested annually, the check energy meter has not been tested since 2015.
The inconsistent functioning of check energy meter at Jigmiling was informed to PTC vide email dated June 6, 2017 and also vide letter dated July 24, 2017. However, no action has been taken till date. The abnormal error in the check energy meter continues till date as evident from enclosed statement. Hence, PTC/POWERGRID is requested to take immediate action to calibrate/change the energy meters.

Deliberation in the meeting

It was decided that the issue would be referred to PTC.

3. High error between Main and Check Energy Meters of 220kV CB Feeder No. II at Birpara end.

The difference between main and check energy of 220kV ChhukhaBirpara Feeder II at Birpara end is showing high error of 1.08% and 1.00% for February and March 2018 respectively. The error is more than the allowable limit of 0.6%.

The Check Energy Meter which belong to Bhutan has been tested during January, 2018 and found to be within permissible limit. The main energy meter at Birpara end for 220kV CB Feeder No. II & III pertaining to PTC/POWERGRID was replaced with Genus make energy meter on April 20, 2017.

Therefore, PTC/POWERGRID is requested to test the Main Energy Meter at Birpara end.

Deliberation in the meeting

Powergrid informed the meters have been tested and matched with other end meters.

Bhutan representative was requested to hand over all the relevant data to ERLDC for through scrutiny. The result of the scrutiny would be placed by ERLDC in the next OCC meeting.

4. High error between Main and Check Energy Meters of 400kV Malbase – Siliguri Feeder – III (Siliguri end)

The percentage error observed for Main Energy Meter of 400kV Siliguri-Malbase Feeder – III(Siliguri end) is beyond permissible limit for the Month of February & March 2018. As per Power Purchase Agreement (PPA) the percentage error should not exceed 0.6%. The Check Energy Meter which belong to Bhutan has been tested on 19th January, 2018 and found to be within permissible limit.

Therefore, PTC/POWERGRID is requested to test the Main Energy Meter at Siliguri End.

Deliberation in the meeting

Powergrid informed the meters have been tested and matched with other end meters.

It was informed that ERLDC would study and place the outcome in next OCC Meeting.

Meeting ended with vote of thanks to the chair

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Annexure - A

Participants in 144th OCC Meeting of ERPC

Venue: ERPC Conference Room, Kolkata　　Time: 11:00 hrs　　Date: 19.04.2018 (Thursday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
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"Coming together is a beginning, staying together is progress, and working together is success." –Henry Ford

Participants in 144th OCC Meeting of ERPC

Venue: ERPC Conference Room, Kolkata   Time: 11:00 hrs   Date: 19.04.2018 (Thursday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
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32	R.P. Singh	AGM(Coml) KBUNL	9431011366	rampari ksha@rediffmail.com	[signature]
33	Sudeep Kumar	DyMgr, POWERGRID Patna	9431820338	sudeep kumar@powergridindia.com	[signature]
34	R.K. MANDAL	AGM(EEMG) NTPC, Kahalgaon	9431600132	rkmandal@ntpc.co.in	[signature]
35	Sunil Paswan	NTPC Barh	9431600140	sunilpaswan@ntpc.co.in	[signature]
36	S.N. Ghosh	NTPC-Barh	9471006034	[illegible]@ntpc.co.in	[signature]
37	A.N. Pal	CM, ERLDC	9831339584	a-n-pal@hotmail.com	[signature]
38	Chaly	DGM(O) NTPC Kahalg	9471911660	[illegible]@gmail.com	[signature]
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40	PARTHA GHOSH	DM, ER-II	9434748263	partha.ghosh@powergrid india.com	[signature]

"Coming together is a beginning, staying together is progress, and working together is success." –Henry Ford

Participants in 144th OCC Meeting of ERPC

Venue: ERPC Conference Room, Kolkata Time: 11:00 hrs Date: 19.04.2018 (Thursday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
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58	PK Mahapatra	AGM/OPGC	9337515401	pradeep.mahapatra@opgc.co.in	
59	P K Mohanty	GM-GMR	7894450332	pradeep.mohanty@gmrgroup.in	
60	A. K. Dutta	AGM, NTPC, FKK	9431215304	duttaak@ntpc.co.in	

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Participants in 144th OCC Meeting of ERPC

Venue: ERPC Conference Room, Kolkata Time: 11:00 hrs Date: 19.04.2018 (Thursday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
61	Shailendra Gautam	AGM (O&M)	8016099975	shailendra.gautam@jaiprakash.co.in	[signature]
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73	J. G Rao	EE, ERPC	9547891353	eseb-cea@yahoo.co.in	[signature]
74					
75					
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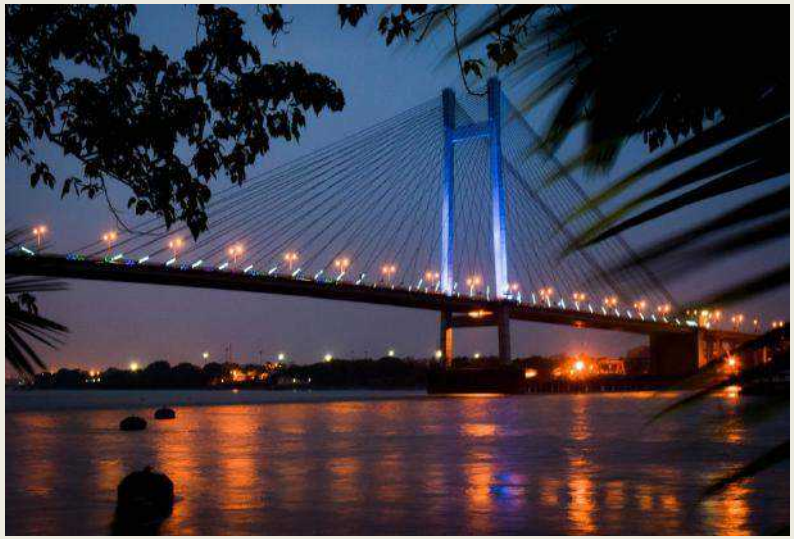
Power System Operation Corporation Ltd.

144th OCC Meeting



At ERPC, Kolkata

1 April, 2018

ER Grid Performances

Highlights for the month of March-18

Frequency Profile

Average Freq:- 49.97 Hz

Avg FVI: - 0.046

Lowest FVI:- 0.022

Max- 50.25Hz on 21st March' 18

Min- 49.67 Hz on 14th March' 18

79.30% of the time freq was with in IEGC Band

Peak Demand

ER: 21587 MW on 29th March 2018 at 19:30 hrs

% Growth in Average Demand Met w.r.t. last year- 10.03%

BSPHCL : 4452 MW ; ON 23/03/18

JUVNL: 1224 MW; ON 28/03/18

DVC: 3084 MW; ON 23/03/18

GRIDCO: 4469 MW; ON 15/03/18

WB: 8495 MW; ON 28/03/18

SIKKIM: 101 MW; ON 16/03/18

Energy met

Max. 462 MU on 29th *Mar 2018*

%Growth w.r.t. last year on Max energy 9.53%

Avg. 416 MU in March *2018*

%Growth w.r.t. last year on Avg. energy – 11.25%

New Element

Generating Units-NIL

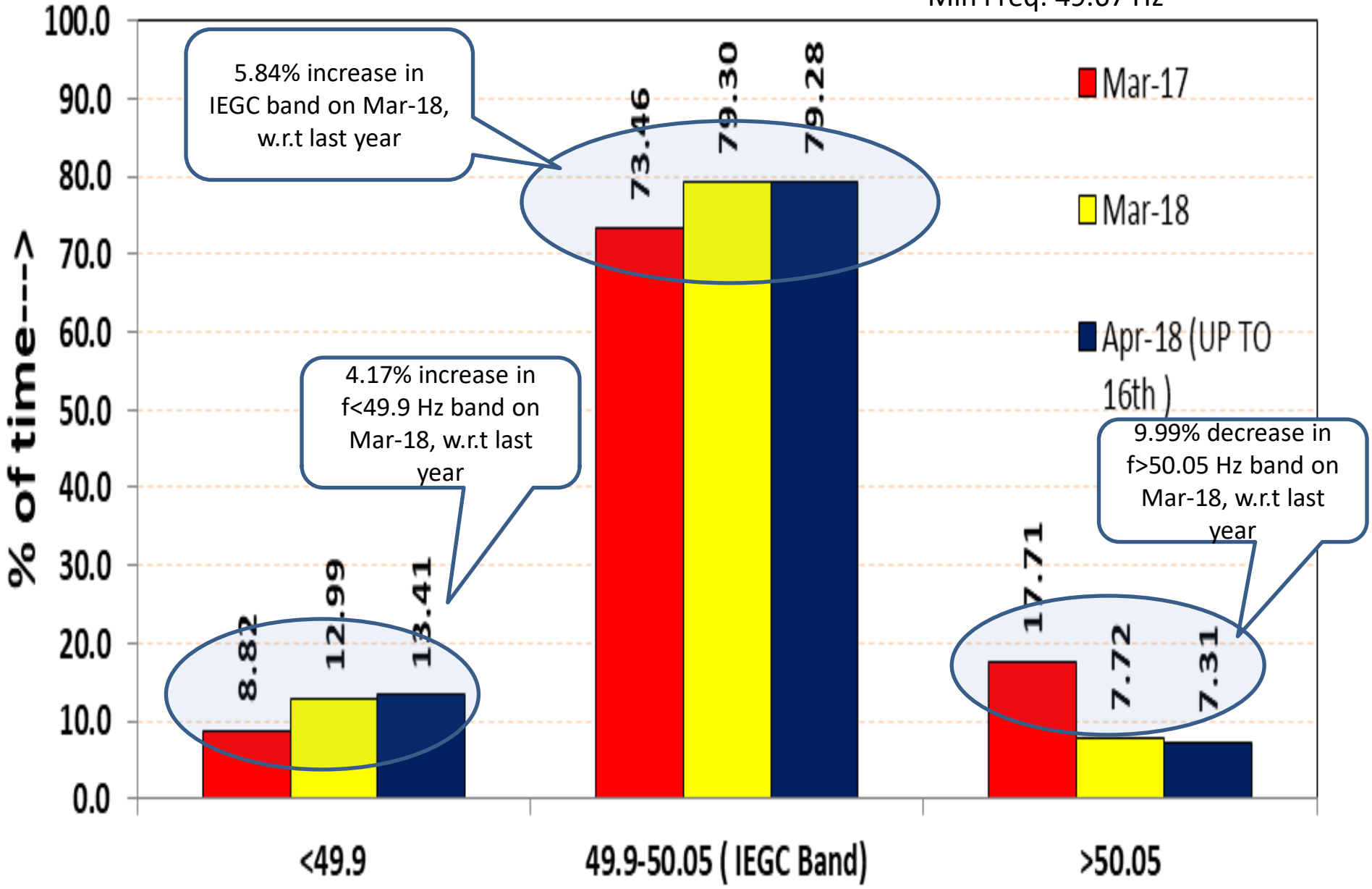
Open Access

STOA transactions approved -215 nos.

Energy Approved- 629.5 MUs

Monthly Frequency Profile of Grid

In Mar-18 (Up to 21st):
Max Freq: 50.25 Hz
Min Freq: 49.67 Hz




Frequency Duration curve
50.4
50.3
50.2
50.1
50
49.9
49.8
49.7
Frequency--->
0
10
20
30
40
50
60
70
80
90
100
Percentage--->
Jan-18
Feb-18
Feb-17

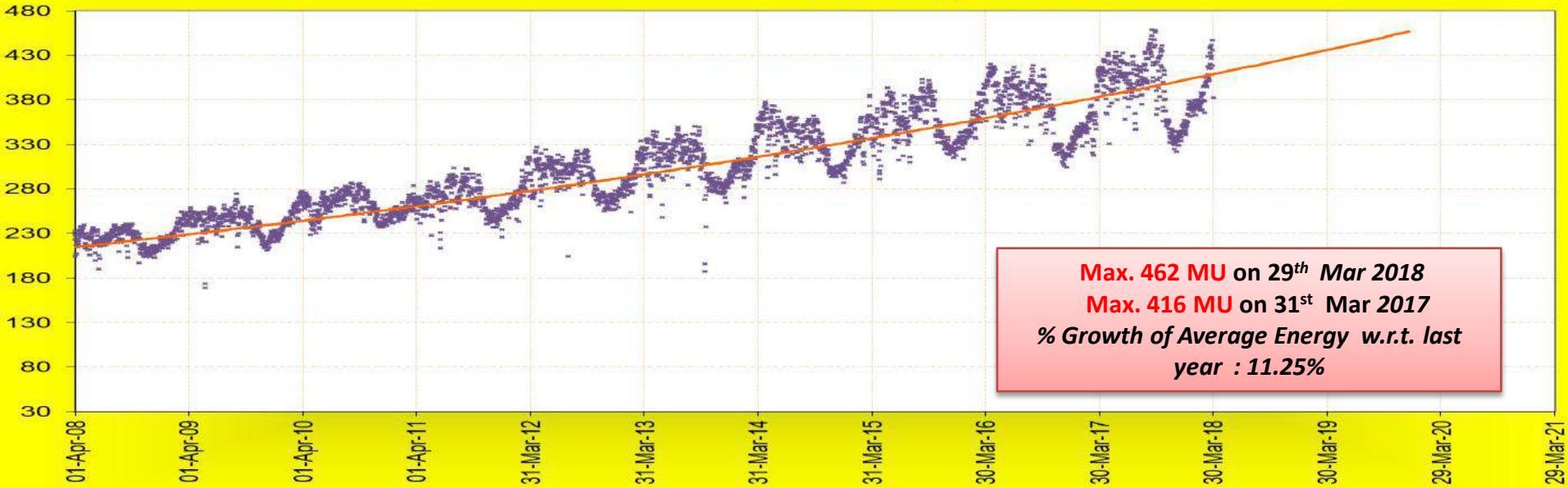
So Far Highest Demand

Constitute	Demand (in MW)	Date	Time	Dmd met on 29th Mar'18 (max dmd met day)
Bihar	4710	16-Apr-18	21:04	4429
DVC	3333	10-Apr-16	20:57	2974
Jharkhand	1222	22-Apr-17	22:42	1170
Odisha	4656	10-Oct-17	19:37	4540
W. Bengal	8605	12-Apr-17	19:56	8382
Sikkim	117	28-Oct-16	18:59	99
ER	21587	29-Mar-18	19:30	21587

So Far Highest Energy Consumption

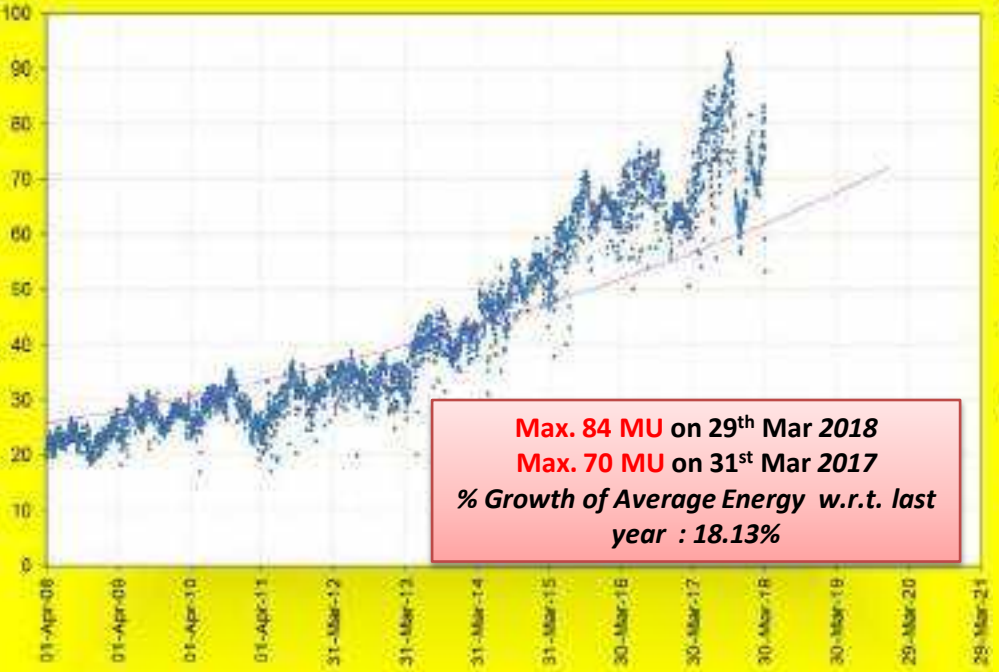
Constitute	Energy consumption (in MUs)	Date	Dmd met on 29th Mar'18 (max dmd met day)
Bihar	90.3	26-Sep-17	81.7
DVC	75	23-Mar-17	59.8
Jharkhand	26	20-Apr-16	24.1
Odisha	91.5	16-Sep-17	90
West Bengal	181	29-Mar-18	174.7
Sikkim	2.1	07-Dec-17	1.6
ER	462	29-Mar-18	462

ER Energy met in MU



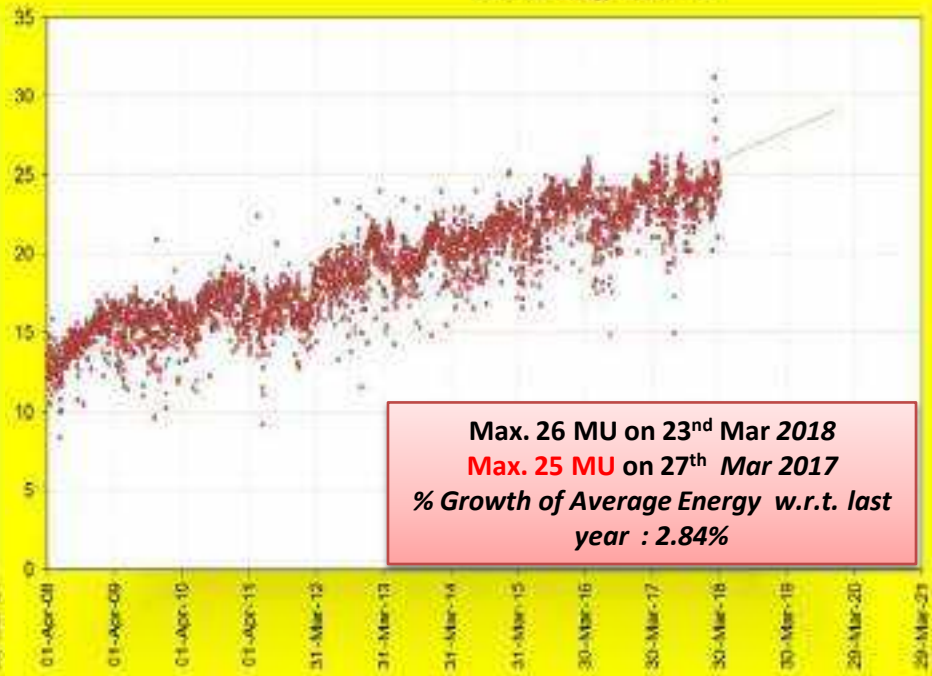
Max. 462 MU on 29th *Mar 2018*
Max. 416 MU on 31st Mar *2017*
% Growth of Average Energy w.r.t. last year : 11.25%

BSPHCL Energy met in MU



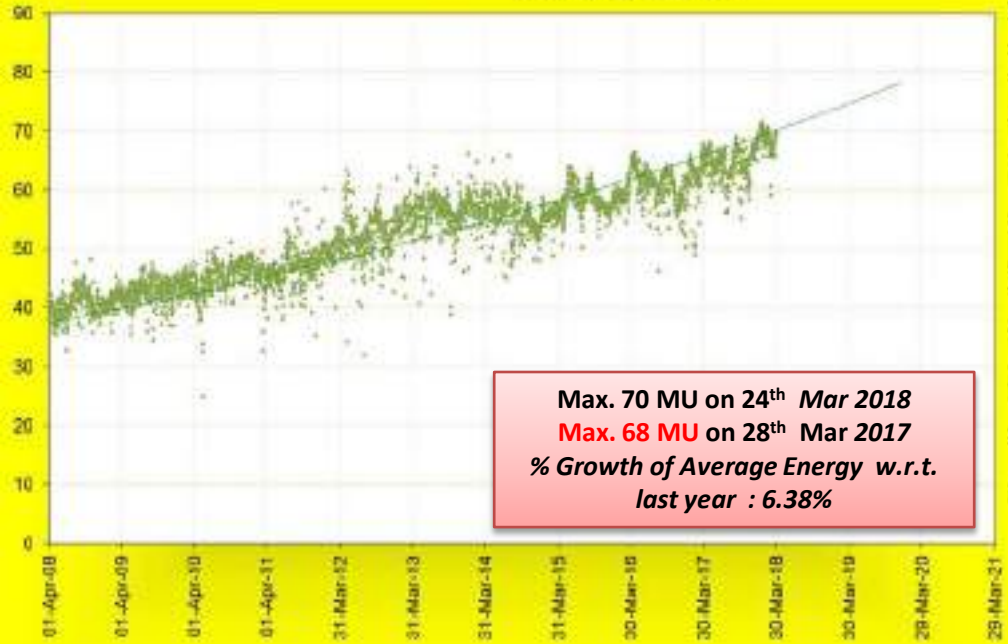
Max. 84 MU on 29th Mar *2018*
Max. 70 MU on 31st Mar *2017*
% Growth of Average Energy w.r.t. last year : 18.13%

JUVNL Energy met in MU



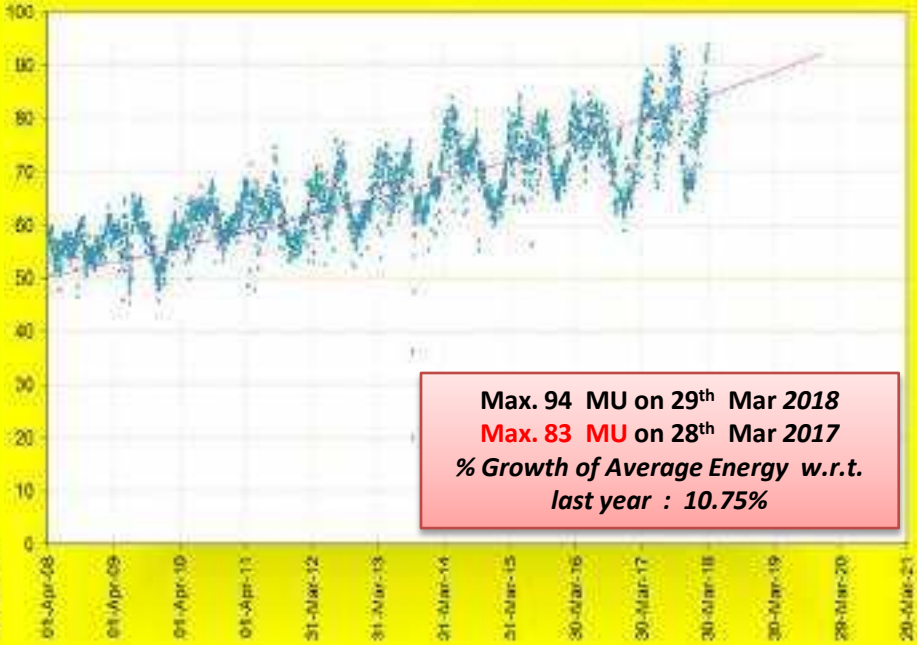
Max. 26 MU on 23nd Mar *2018*
Max. 25 MU on 27th *Mar 2017*
% Growth of Average Energy w.r.t. last year : 2.84%

DVC Energy met in MU



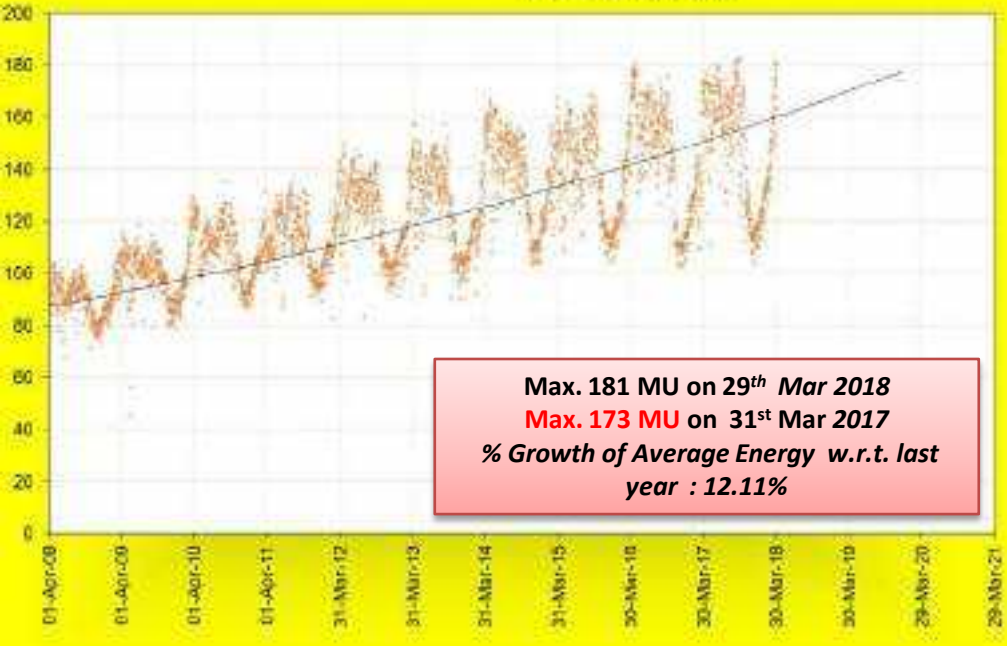
Max. 70 MU on 24th *Mar 2018*
Max. 68 MU on 28th Mar *2017*
% Growth of Average Energy w.r.t. last year : 6.38%

Odisha Energy met in MU



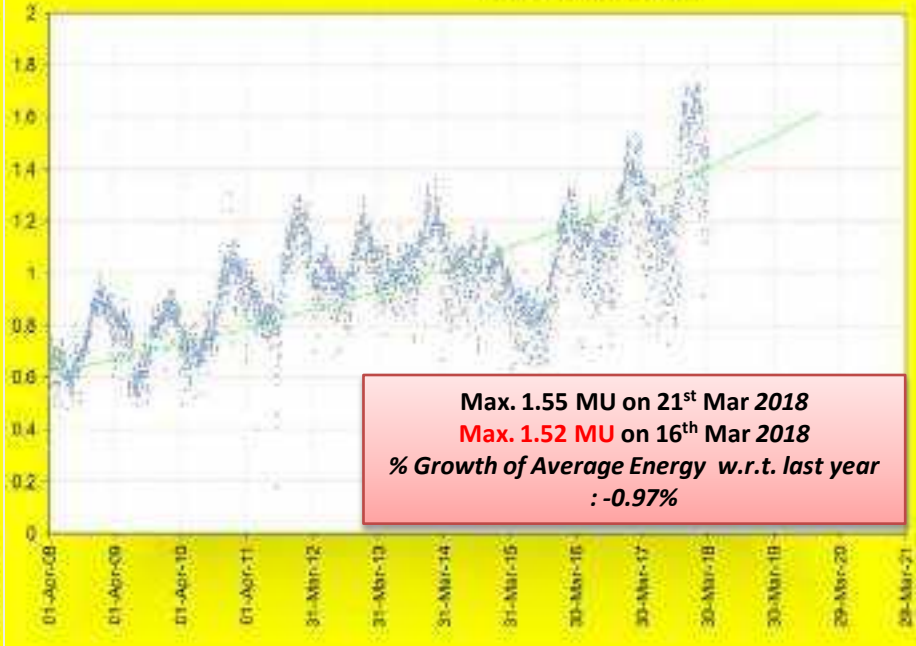
Max. 94 MU on 29th Mar *2018*
Max. 83 MU on 28th Mar *2017*
% Growth of Average Energy w.r.t. last year : 10.75%

WB Energy met in MU



Max. 181 MU on 29th *Mar 2018*
Max. 173 MU on 31st Mar *2017*
% Growth of Average Energy w.r.t. last year : 12.11%

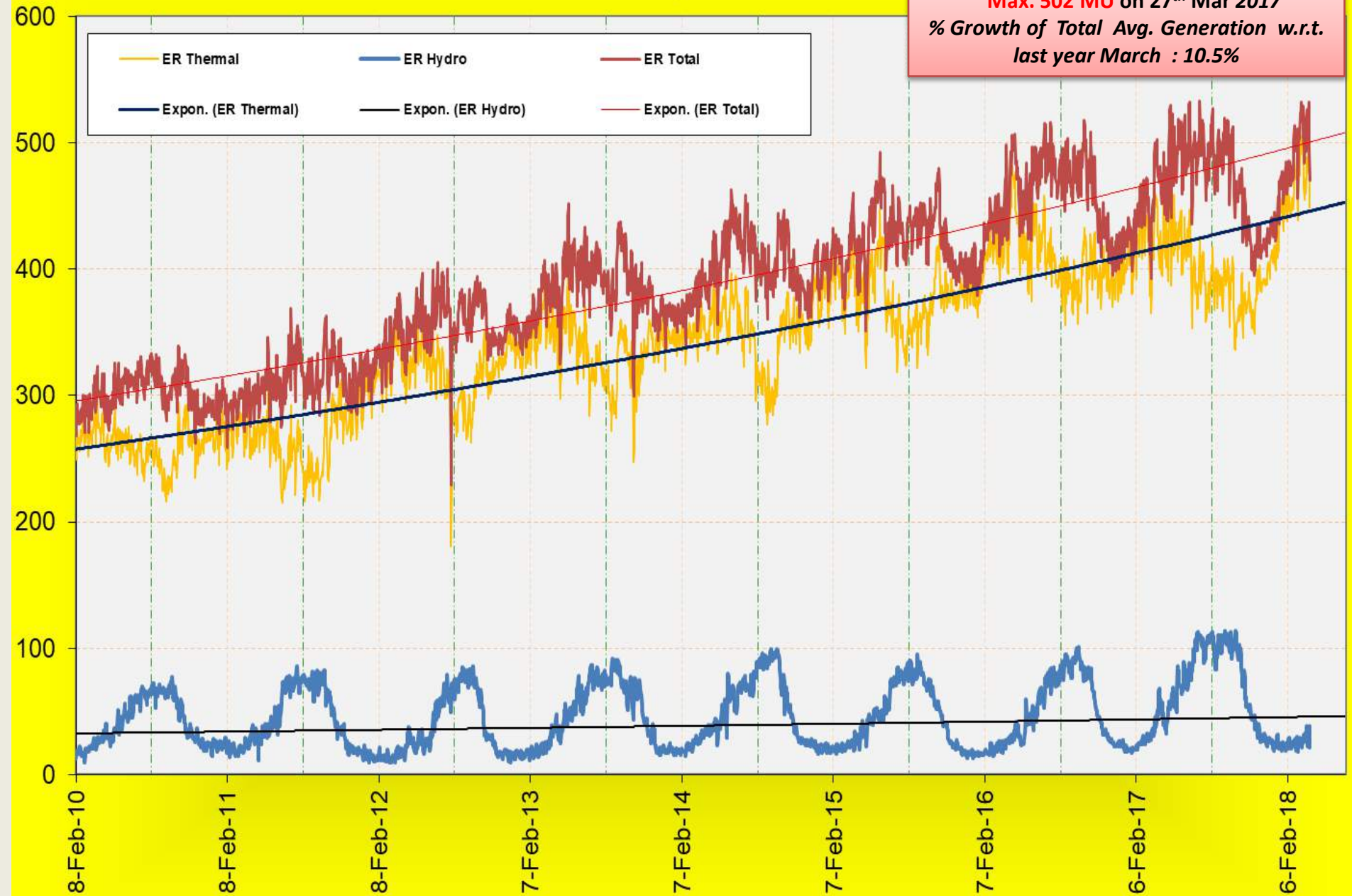
Sikkim Energy met in MU



Max. 1.55 MU on 21st Mar *2018*
Max. 1.52 MU on 16th Mar *2018*
% Growth of Average Energy w.r.t. last year : -0.97%

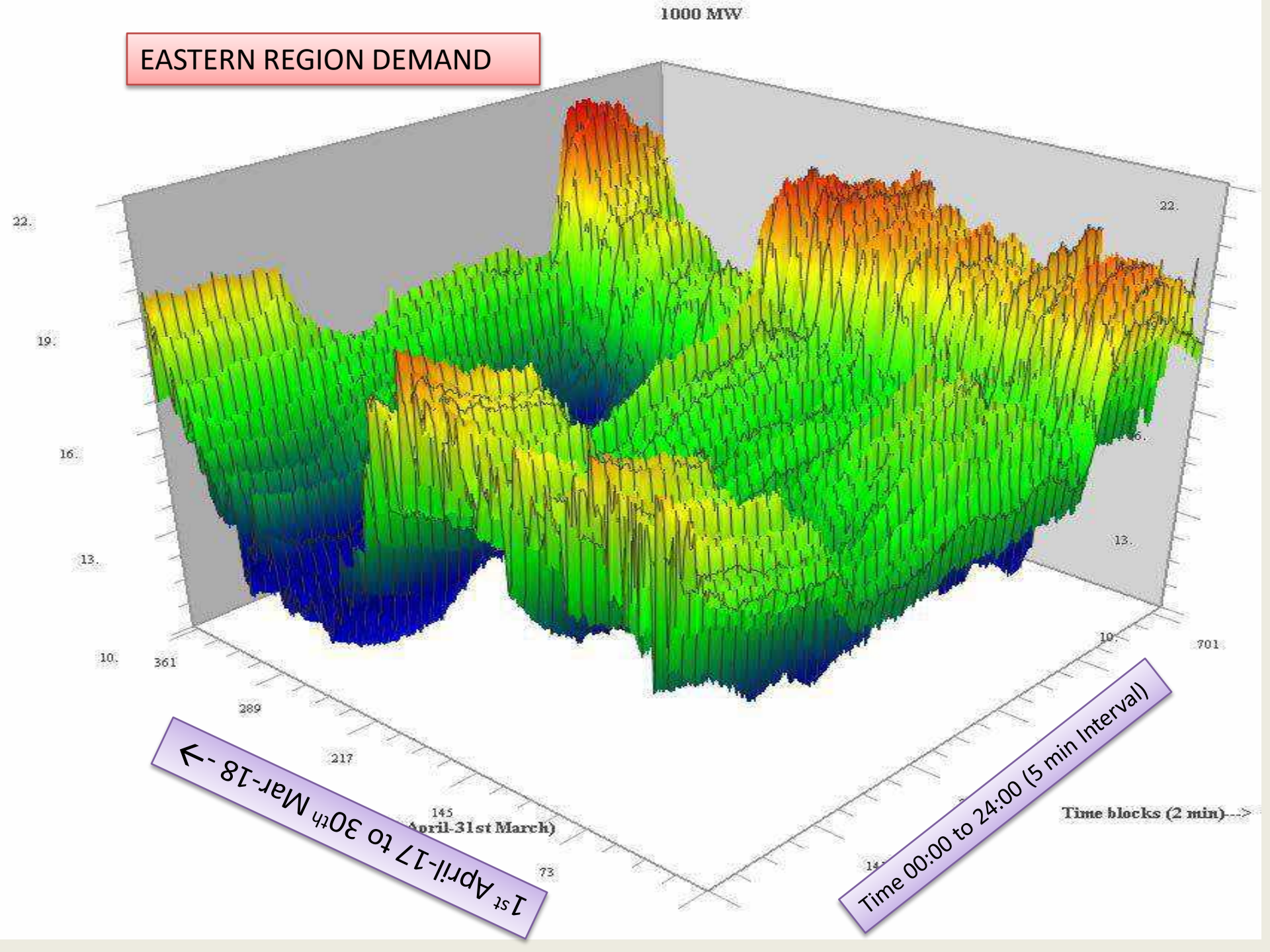
Daily Generation in MU

Max. 532 MU on 28th *Mar 2018*
Max. 502 MU on 27th Mar *2017*
% Growth of Total Avg. Generation w.r.t. last year March : 10.5%

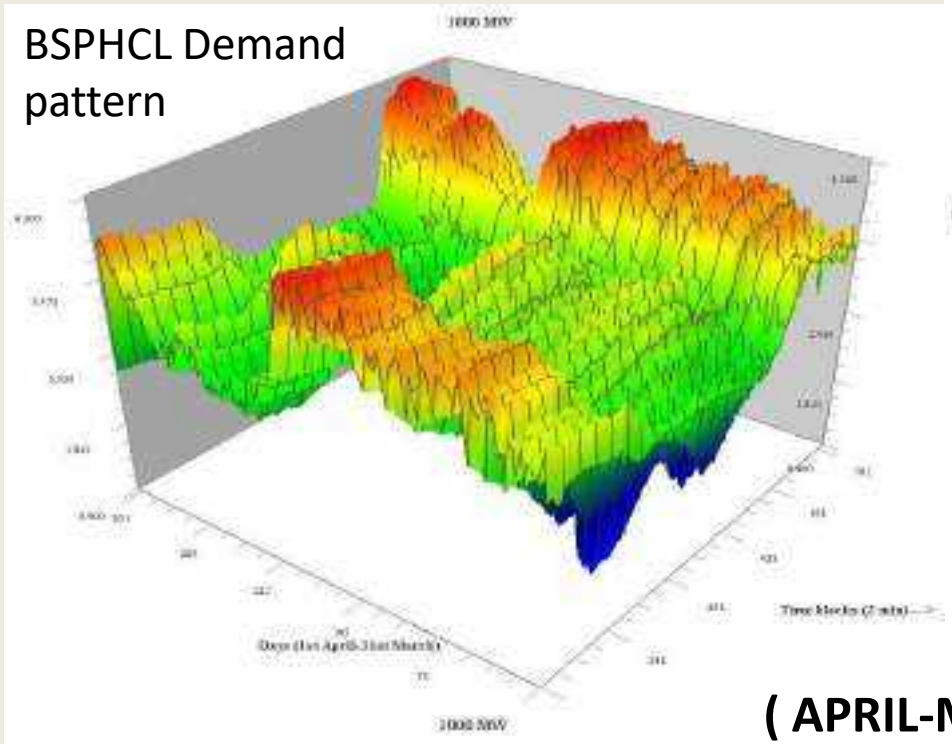


3D VIEW OF ER DEMAND PATTERN (APR-17 TO MAR-18)

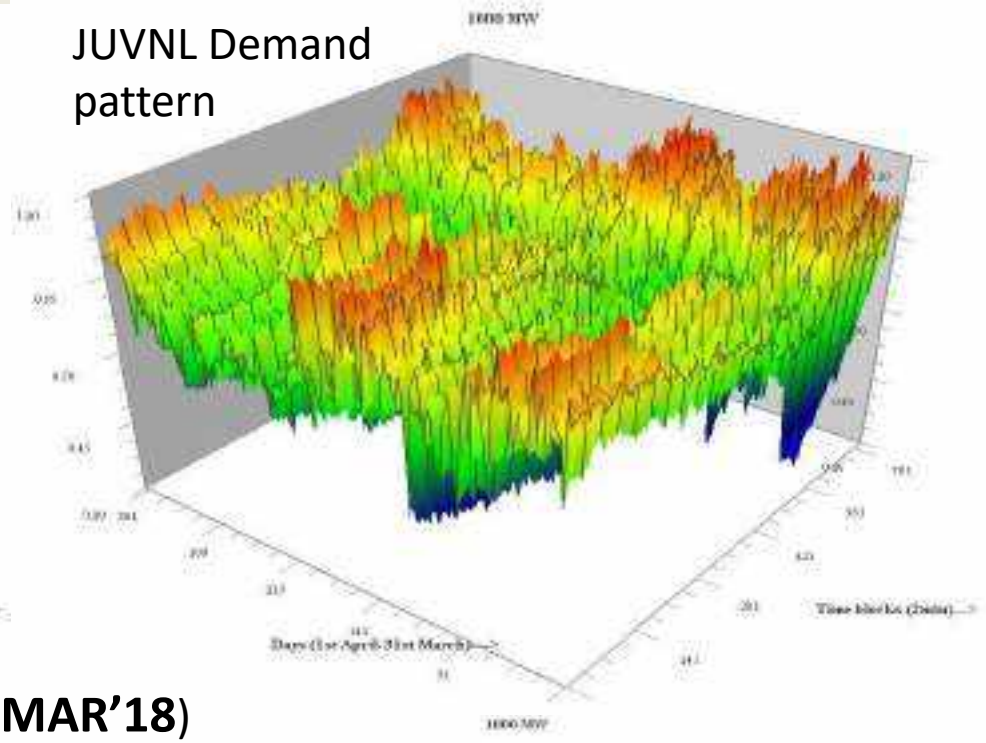
EASTERN REGION DEMAND



BSPHCL Demand pattern

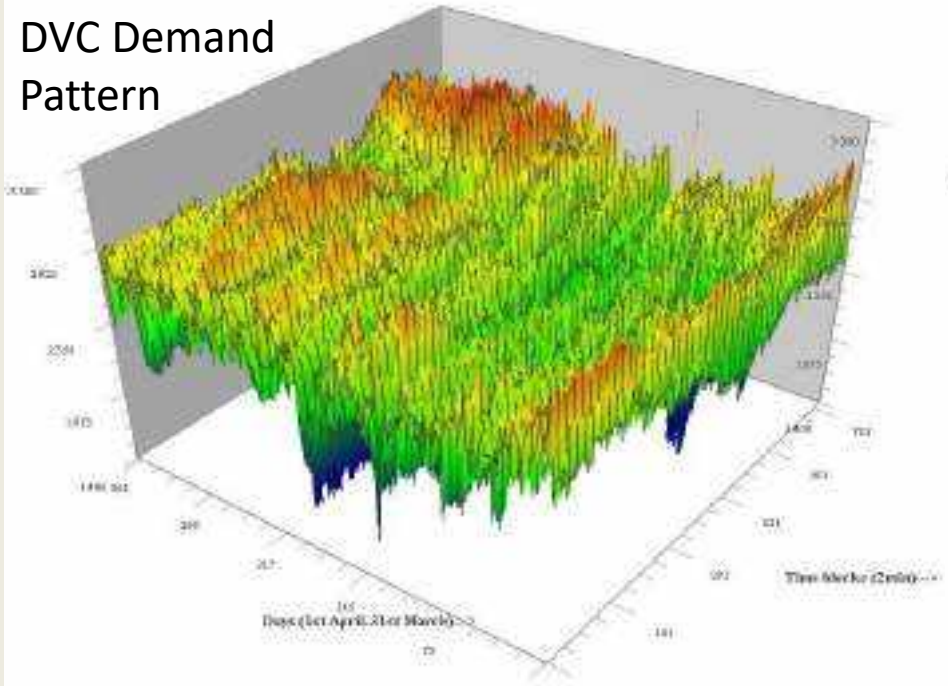


JUVNL Demand pattern

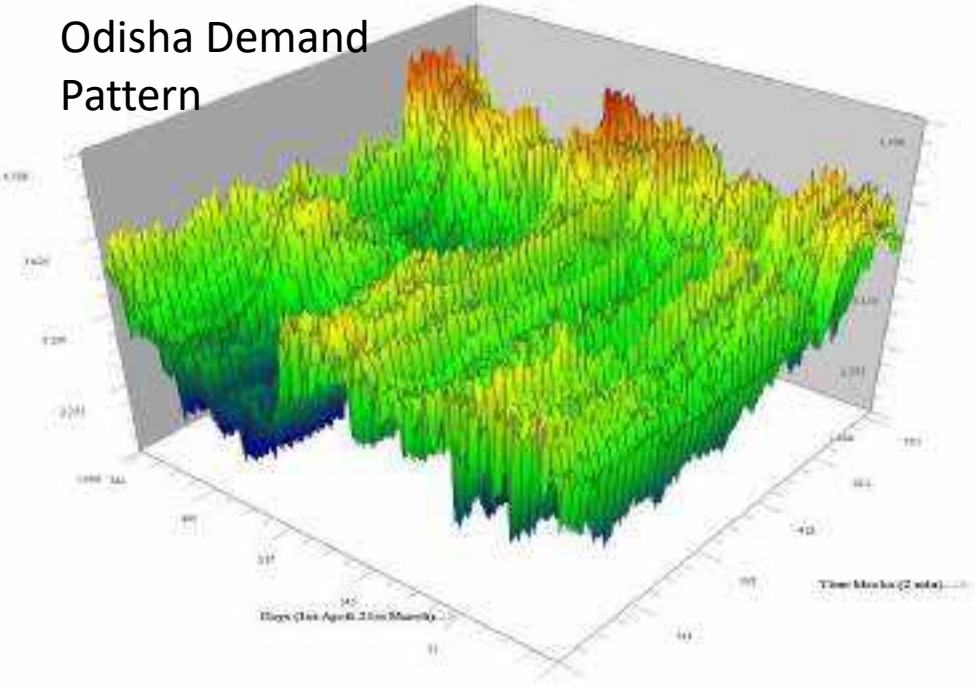


(APRIL-MAR’18)

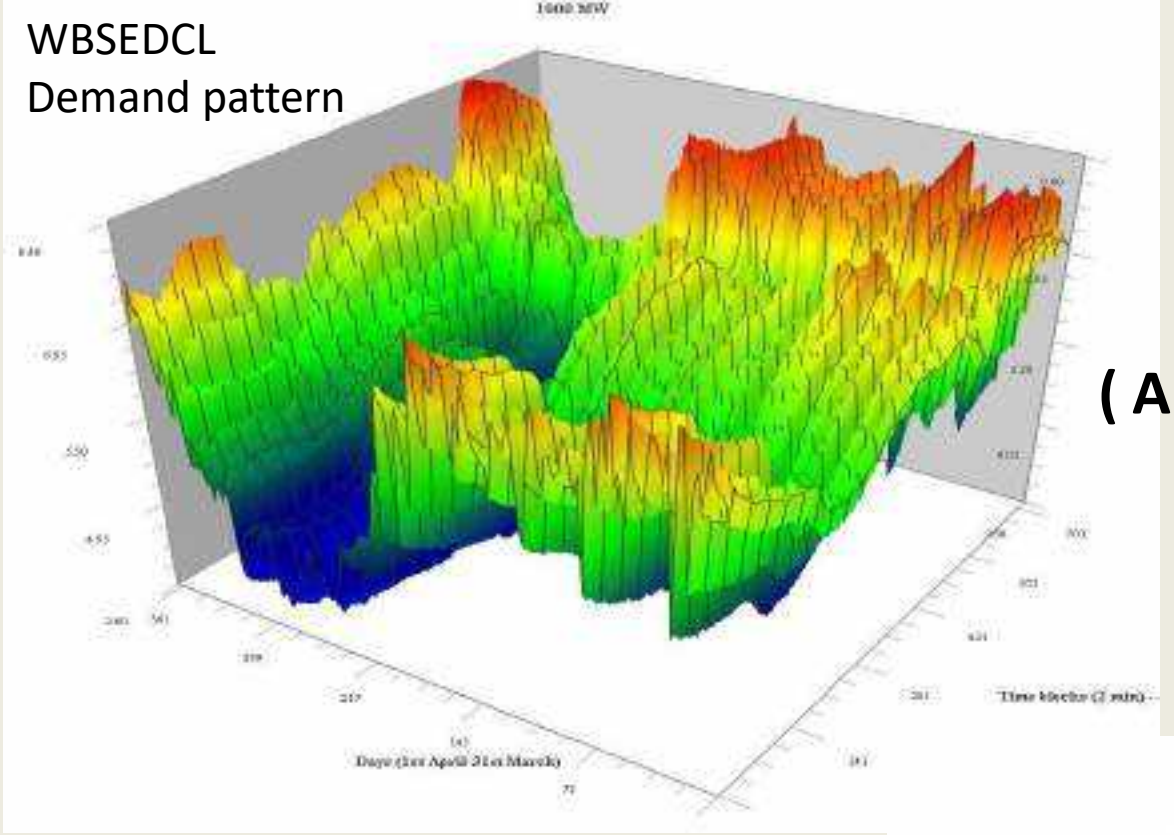
DVC Demand Pattern



Odisha Demand Pattern

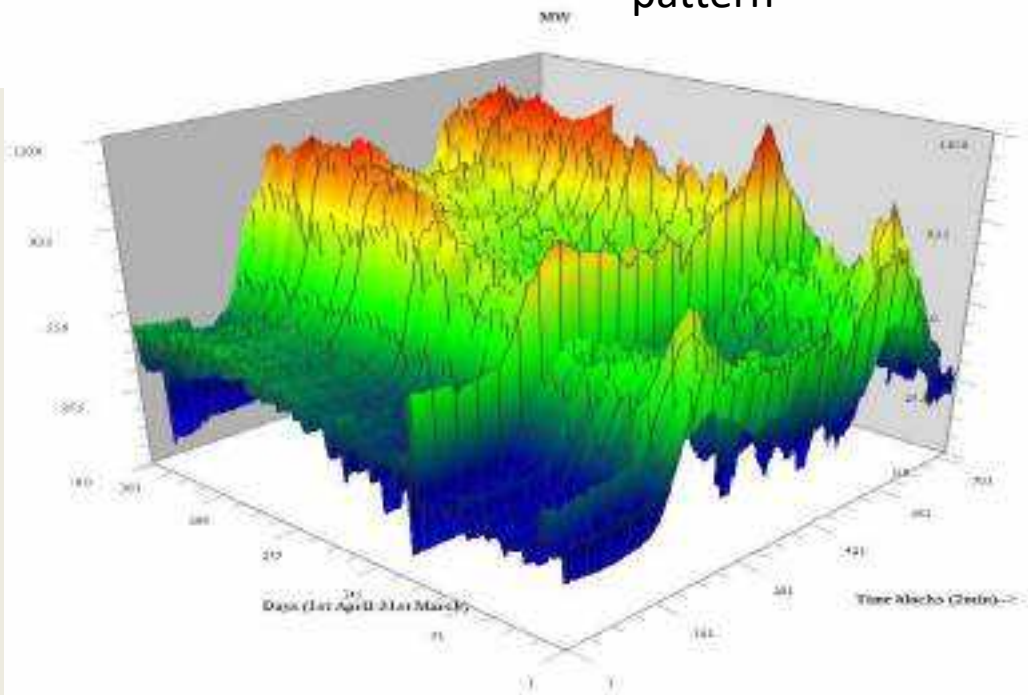


WBSEDCL
Demand pattern

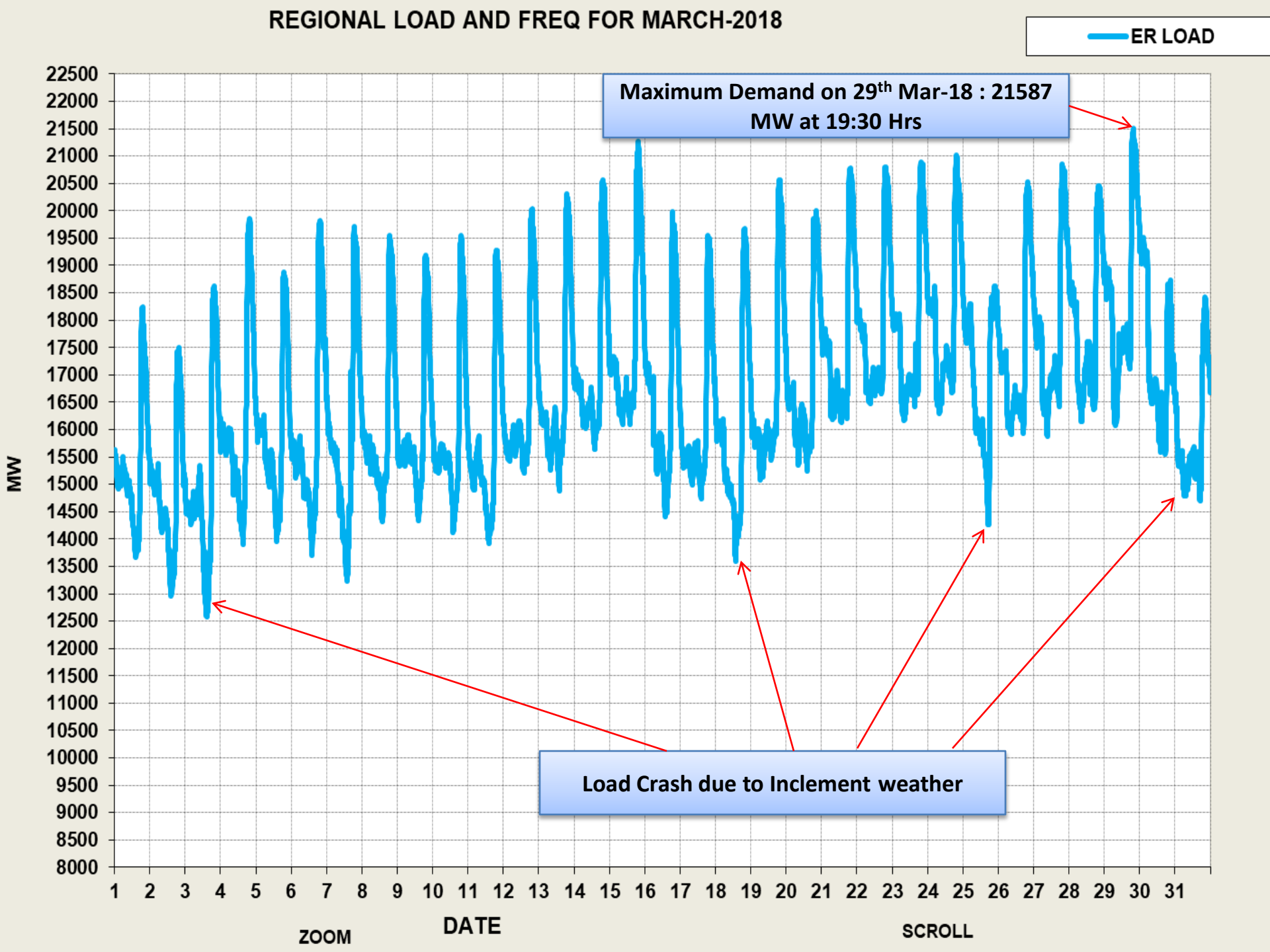


(APRIL-MAR’18)

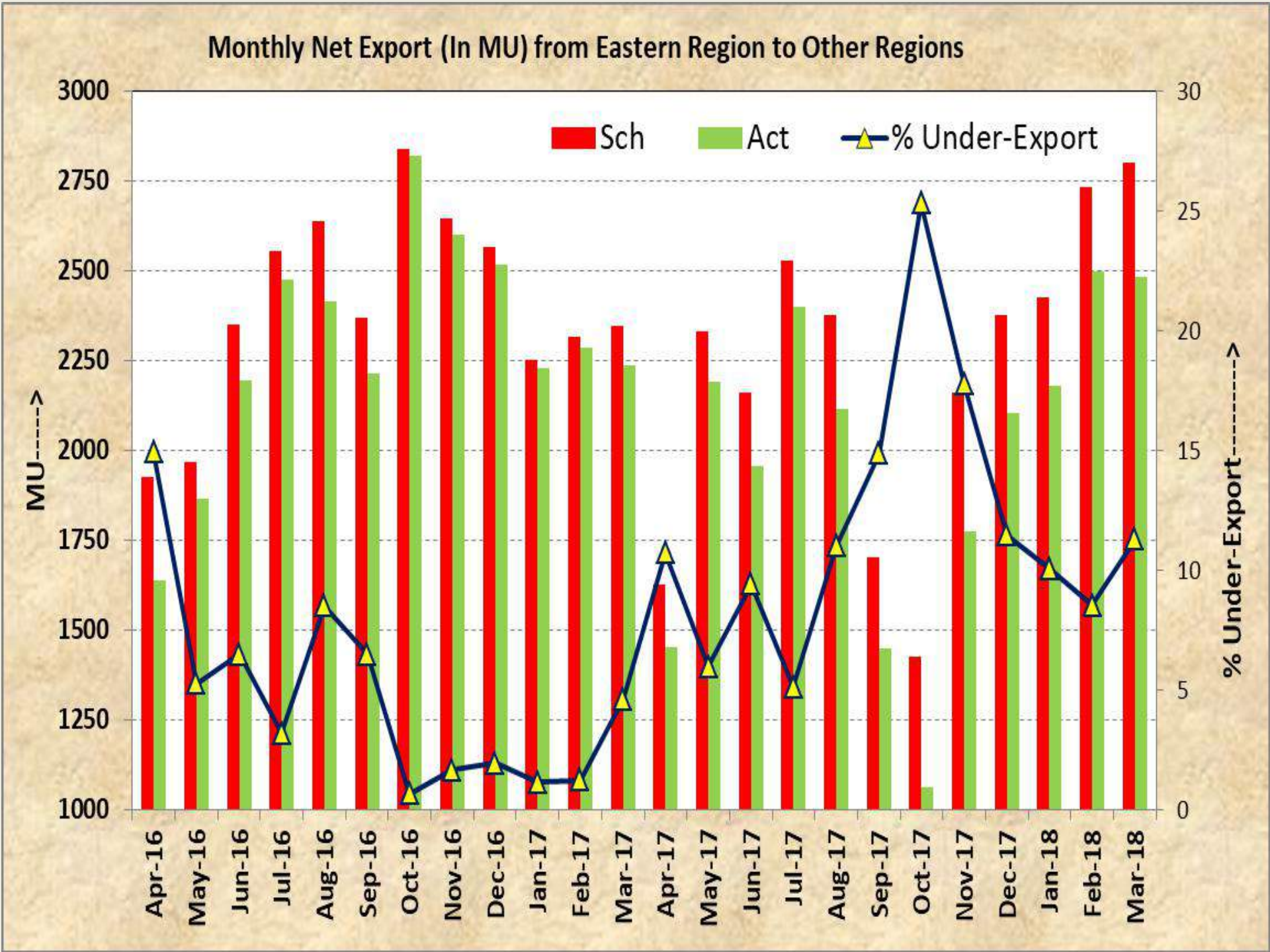
Sikkim Demand pattern

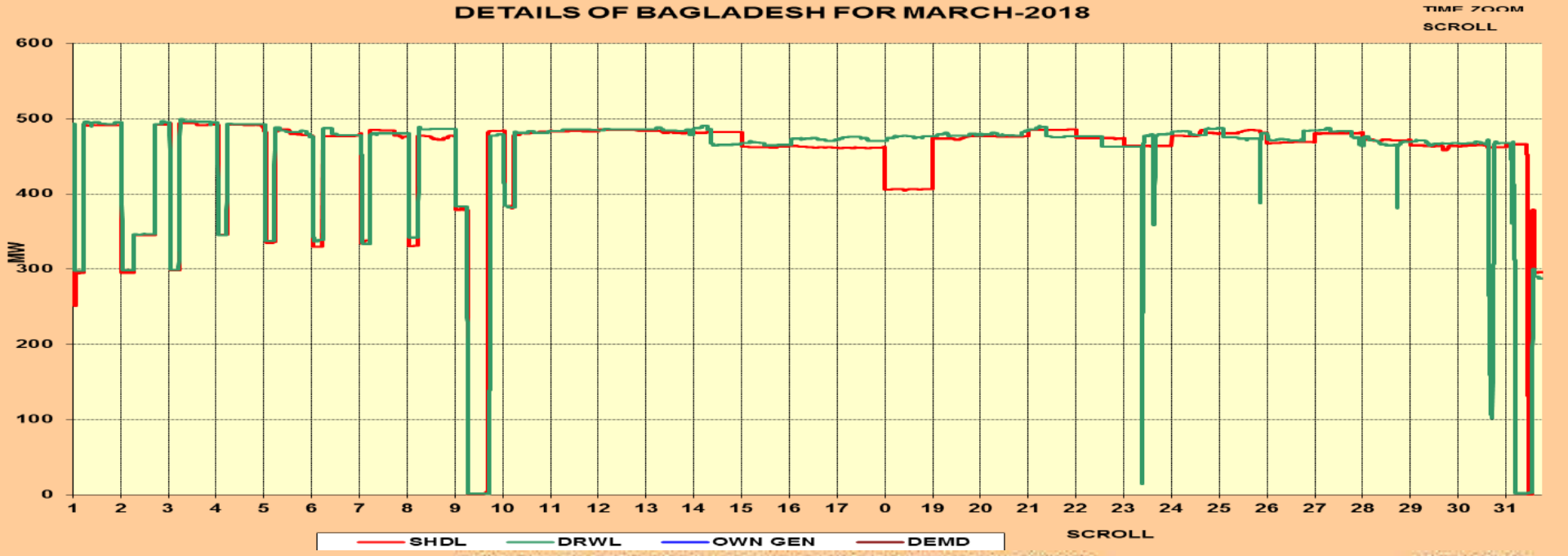


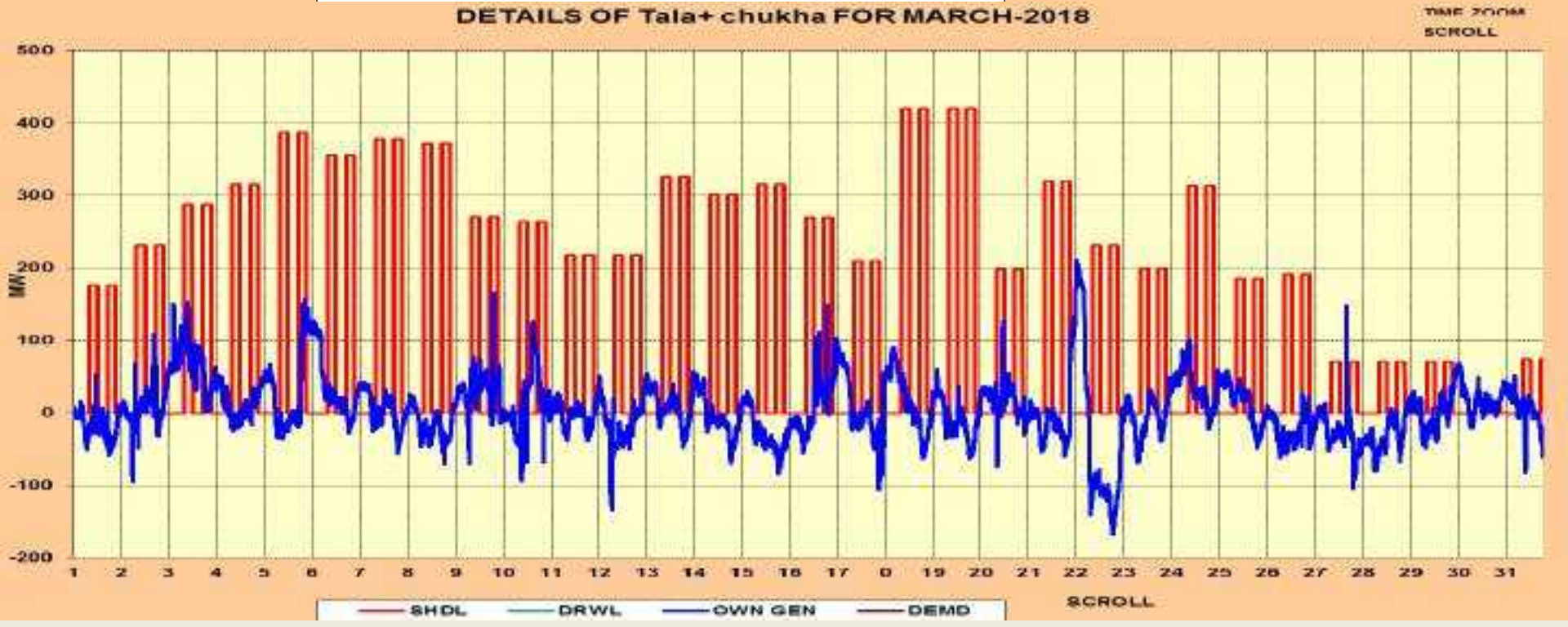
REGIONAL LOAD AND FREQ FOR MARCH-2018



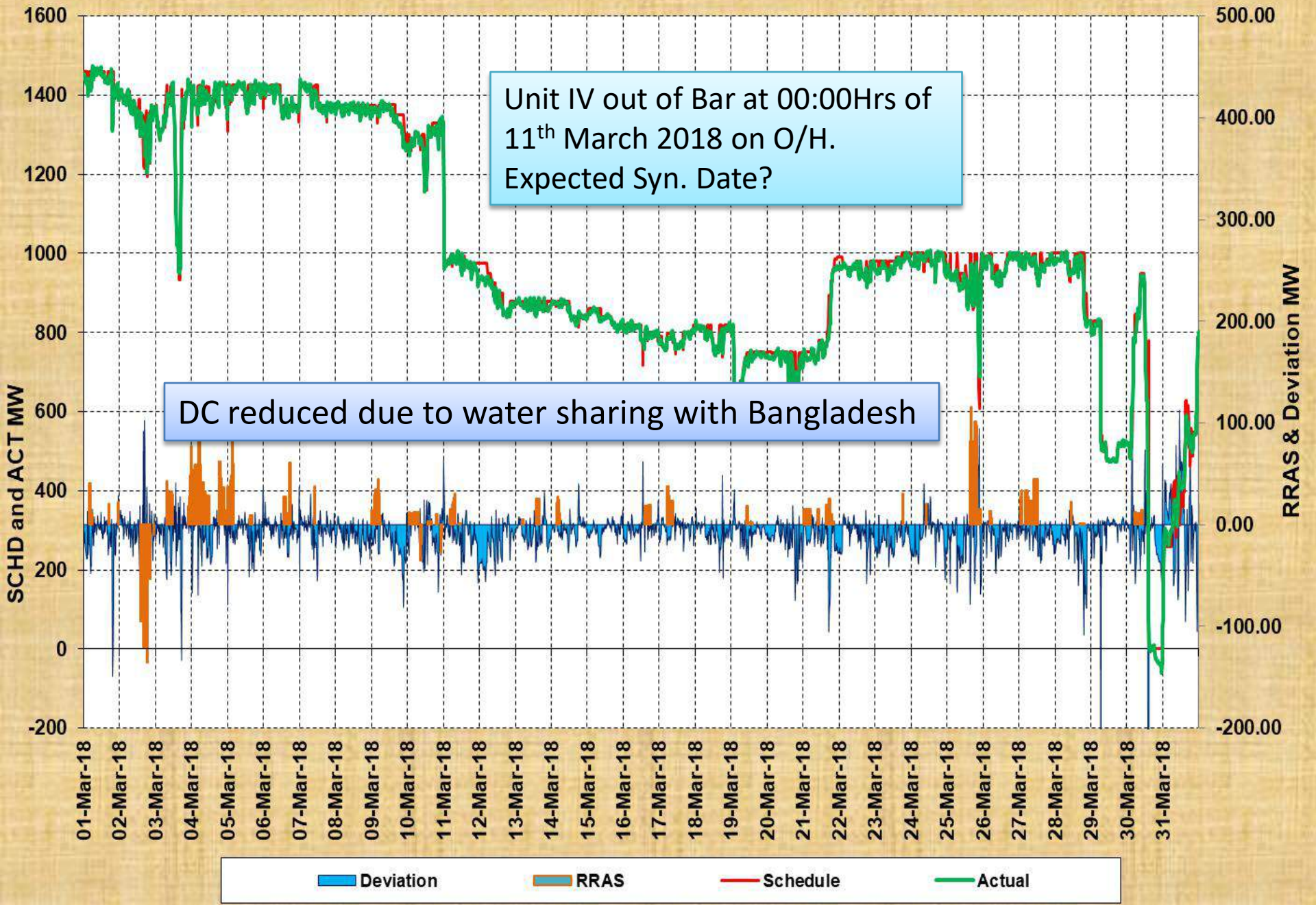
Performance of constituents/Utilities on maximum demand day in March, 2018
(29-03-2018)


Monthly Net Export (In MU) from Eastern Region to Other Regions
Sch
Act
% Under-Export
MU---->
% Under-Export---------->
3000
2750
2500
2250
2000
1750
1500
1250
1000
30
25
20
15
10
5
0
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
Oct-16
Nov-16
Dec-16
Jan-17
Feb-17
Mar-17
Apr-17
May-17
Jun-17
Jul-17
Aug-17
Sep-17
Oct-17
Nov-17
Dec-17
Jan-18
Feb-18
Mar-18


DETAILS OF BAGLADESH FOR MARCH-2018
TIME ZOOM
SCROLL
600
500
400
300
200
100
0
MW
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 0 19 20 21 22 23 24 25 26 27 28 29 30 31
SCROLL
SHDL
DRWL
OWN GEN
DEMD


DETAILS OF Tala+ chukha FOR MARCH-2018
TIME ZOOM
SCROLL
500
400
300
200
100
0
-100
-200
MW
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 0 19 20 21 22 23 24 25 26 27 28 29 30 31
SCROLL
SHDL
DRWL
OWN GEN
DEMD

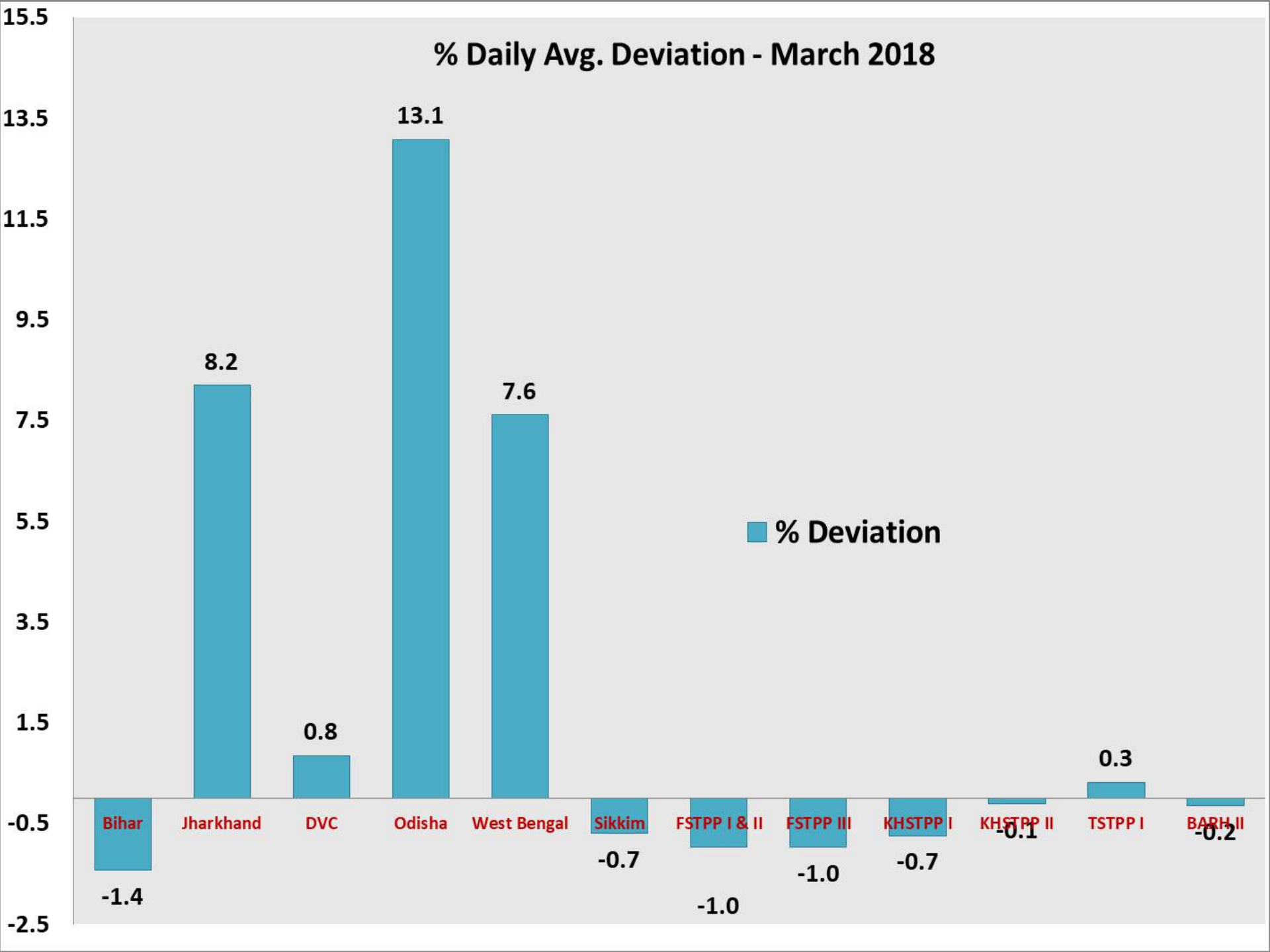
FSTPP DC Pattern During March - 2018



Over Drawl / Under Injection by ER Entities
Non-compliance of direction issued by SLDC

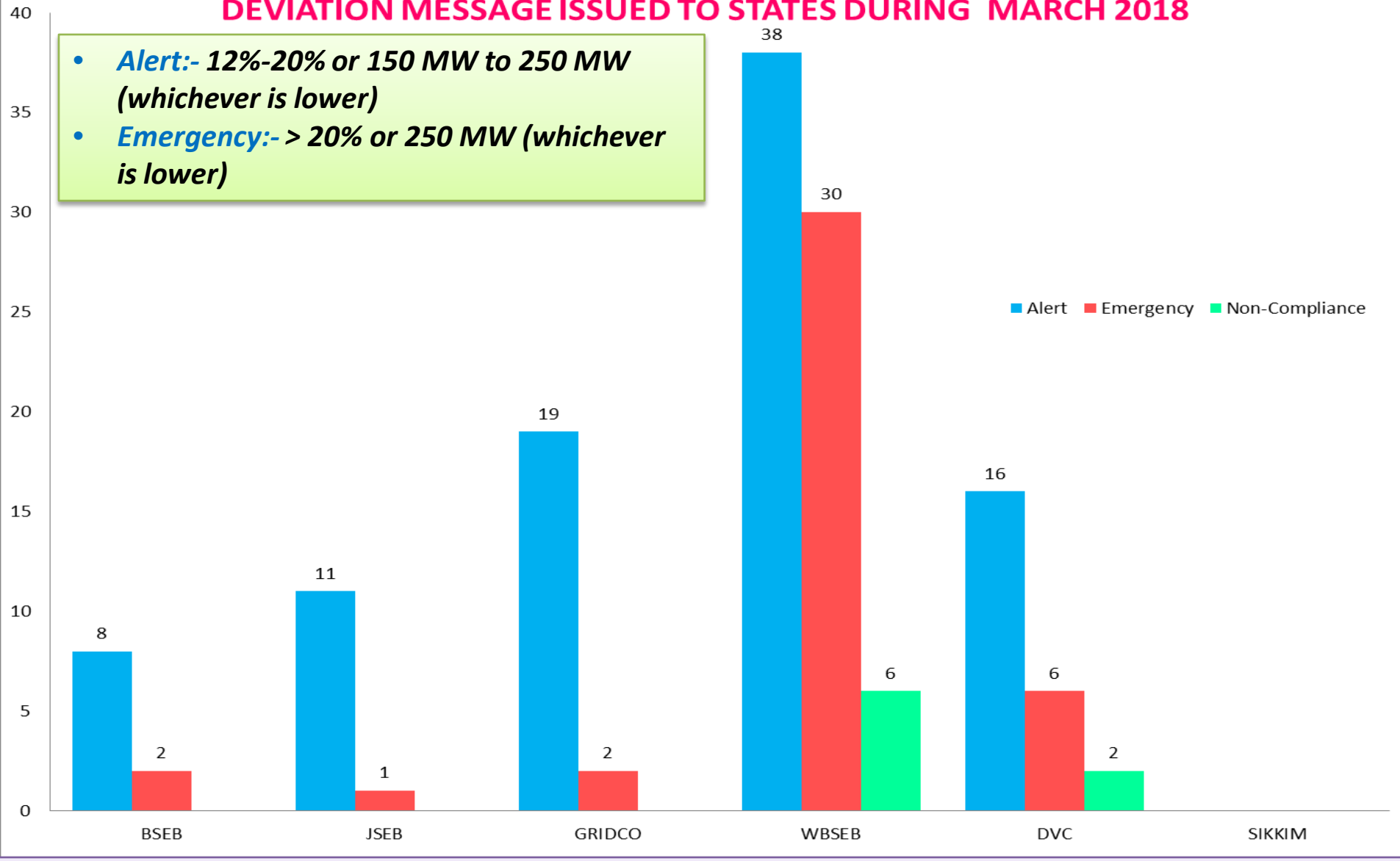
March 2018 Schedule Vs Actual Drawl

	Schedule (Mu)	Actual (Mu)	Deviation (Mu)	Daily Avg. Dev (Mu)	% Deviation (Daily Average)
Bihar	2110	2080	-30	-1.0	-1.4
Jharkhand	**443**	**480**	**36**	**1.2**	**8.2**
DVC	-1564	-1577	-13	-0.4	0.8
Odisha	**1029**	**1164**	**135**	**4.3**	**13.1**
West Bengal	**944**	**1016**	**72**	**2.3**	**7.6**
Sikkim	42	42	0	0.0	-0.7
FSTPP I & II	748	741	-7	-0.2	-1.0
FSTPP III	305	302	-3	-0.1	-1.0
KHSTPP I	383	380	-3	-0.1	-0.7
KHSTPP II	975	973	-1	0.0	-0.1
TSTPP I	691	693	2	0.1	0.3
BARH II	895	894	-1	0.0	-0.2


% Daily Avg. Deviation - March 2018
% Deviation
15.5
13.5
11.5
9.5
7.5
5.5
3.5
1.5
-0.5
-2.5
Bihar
-1.4
Jharkhand
8.2
DVC
0.8
Odisha
13.1
West Bengal
7.6
Sikkim
-0.7
FSTPP I & II
-1.0
FSTPP III
-1.0
KHSTPP I
-0.7
KHSTPP II
-0.1
TSTPP I
0.3
BARH II
-0.2

DEVIATION MESSAGE ISSUED TO STATES DURING MARCH 2018

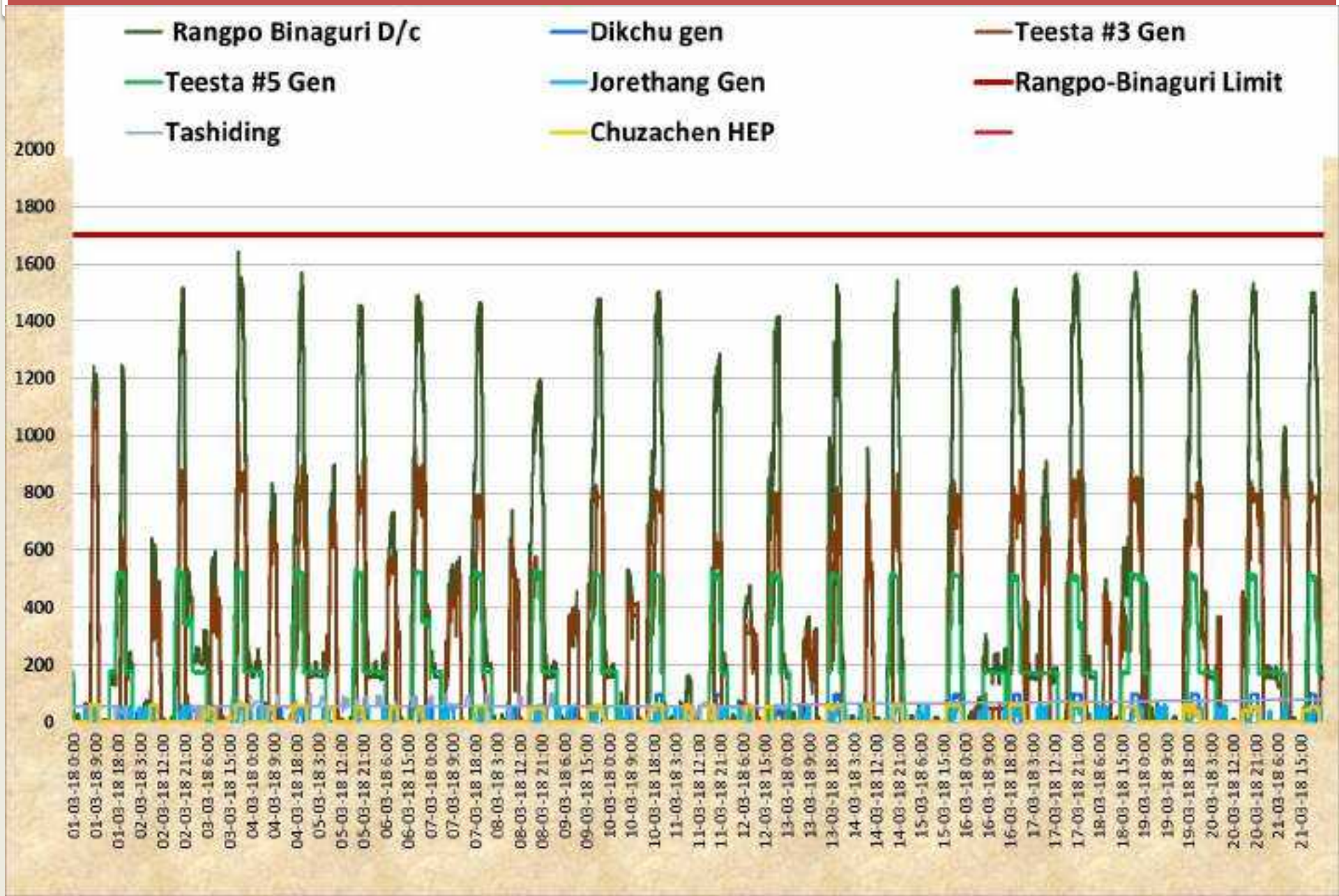
- ***Alert:- 12%-20% or 150 MW to 250 MW (whichever is lower)***
- ***Emergency:- > 20% or 250 MW (whichever is lower)***



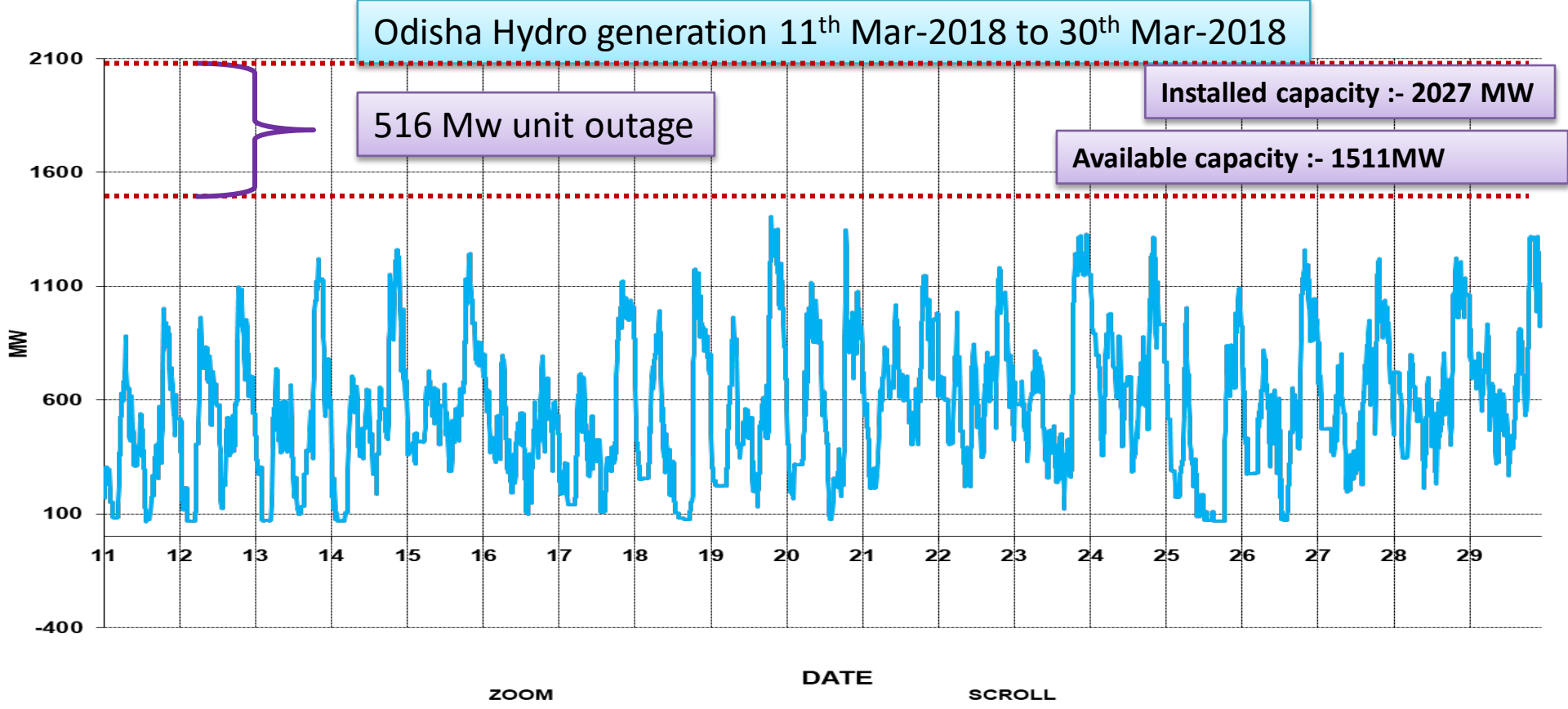
- **Total Number of Deviation violation and zero crossing violation messages issued during March-2018 :- 197**
- **Deviation Violation Messages :- 143 & Zero Crossing Violation :- 54**

Teesta – III & Teesta – V Dispatch Pattern during lean hydro inflow

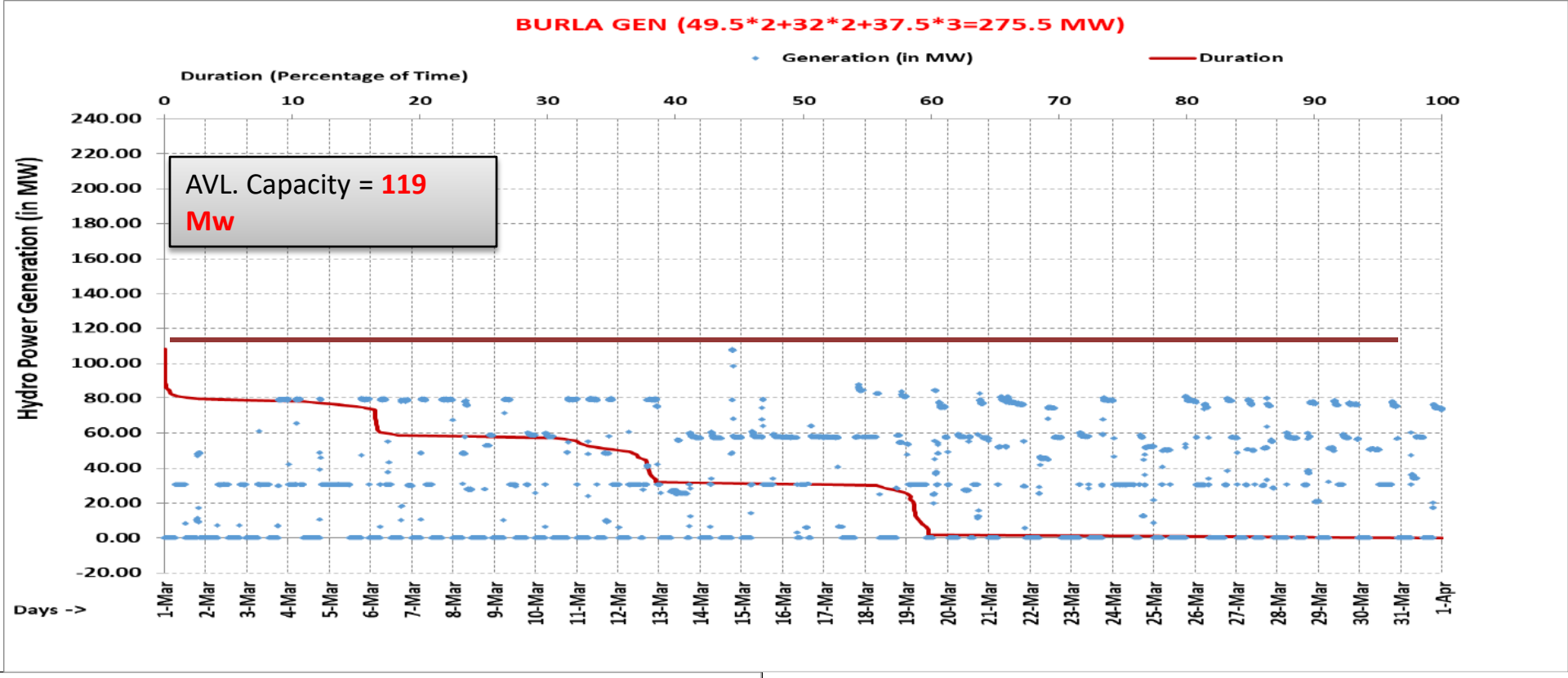
Rangpo – Binaguri D/C & Generation Pattern of Generators in Sikkim 01-03-2018 to 20-03-2018

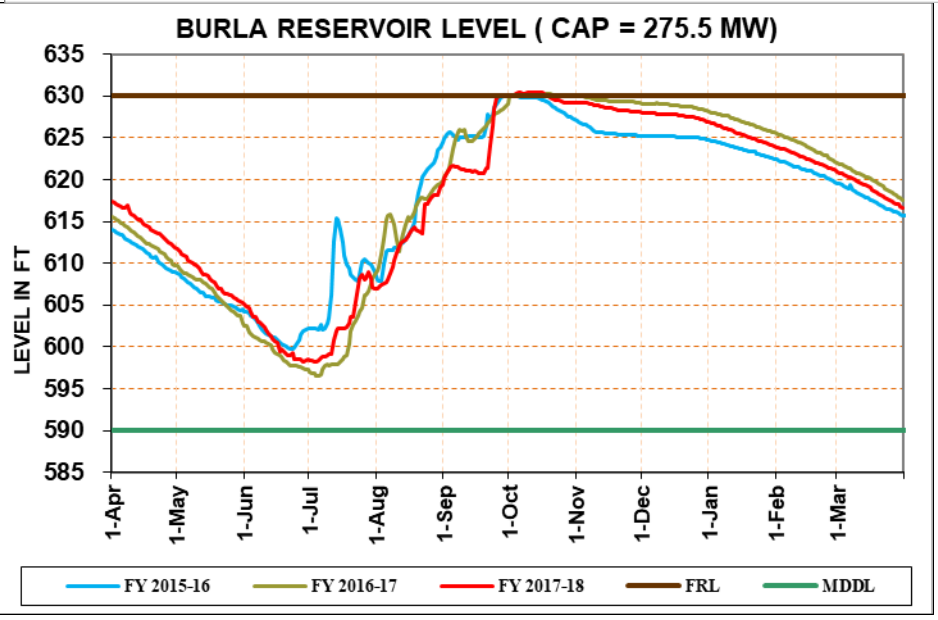


State Hydro Generators Performance

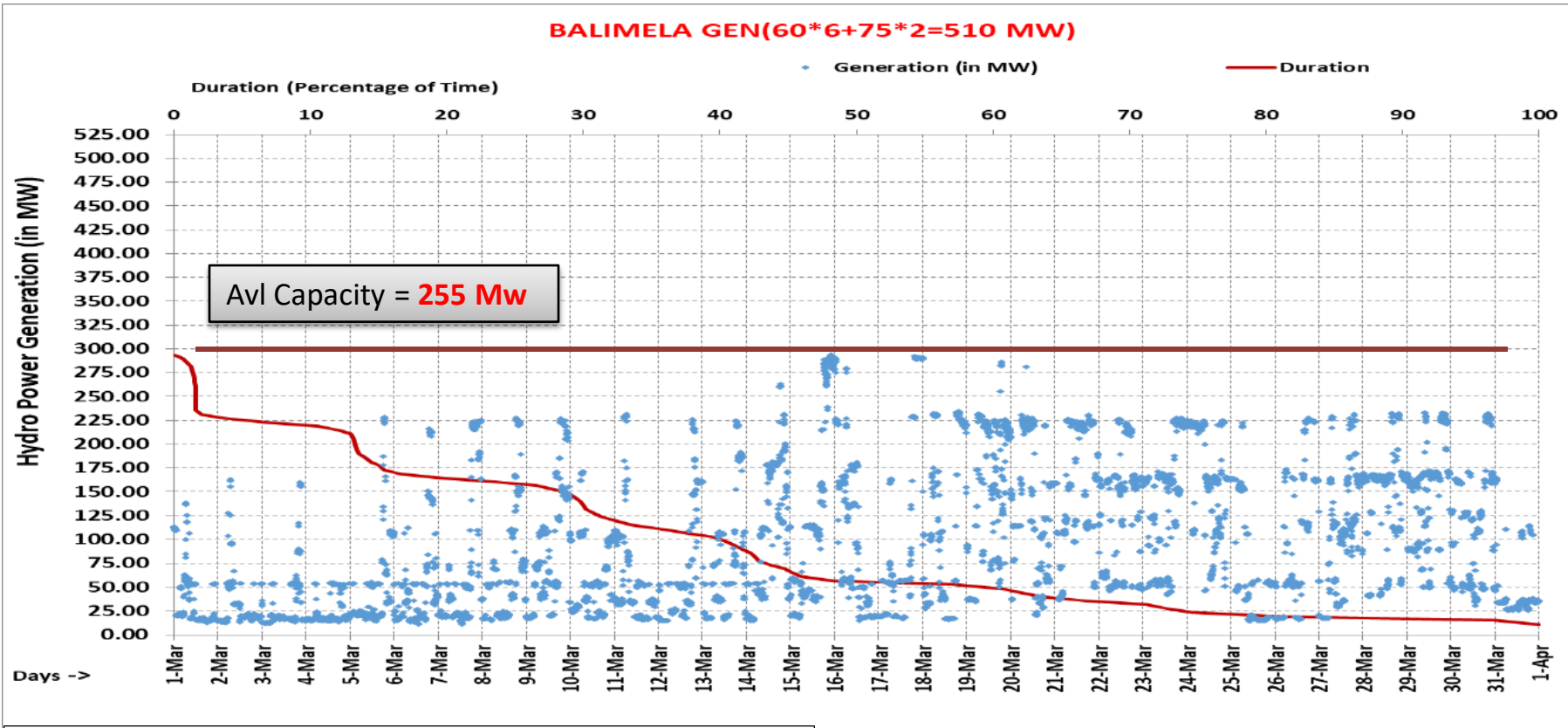


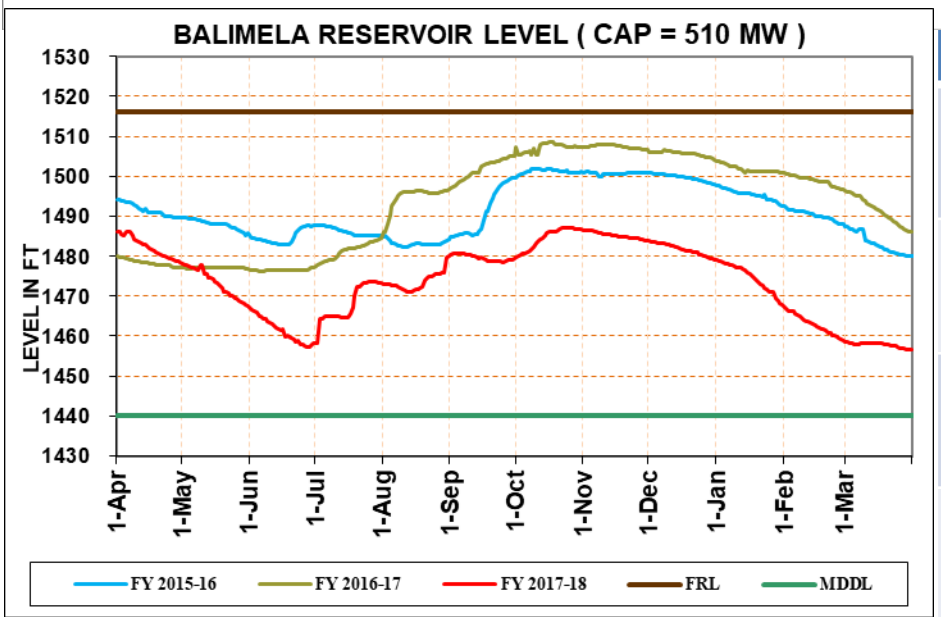
	Long Outage	Forced Outage
Burla	75 : U-5(37.5 mw), U-6(37.5 mw)	81.5: U-2(49.5 mw) U-4(32 mw)
Chipilima	24 :U-3 (24mW)	
Rengali		
Balimela	195 : U-1(60 mw)U-7(75 Mw) U-2(60Mw)	U-6 (60 Mw)
Up Kolab	80 : U-2(80 Mw)	
Indravati		
	374	141.5



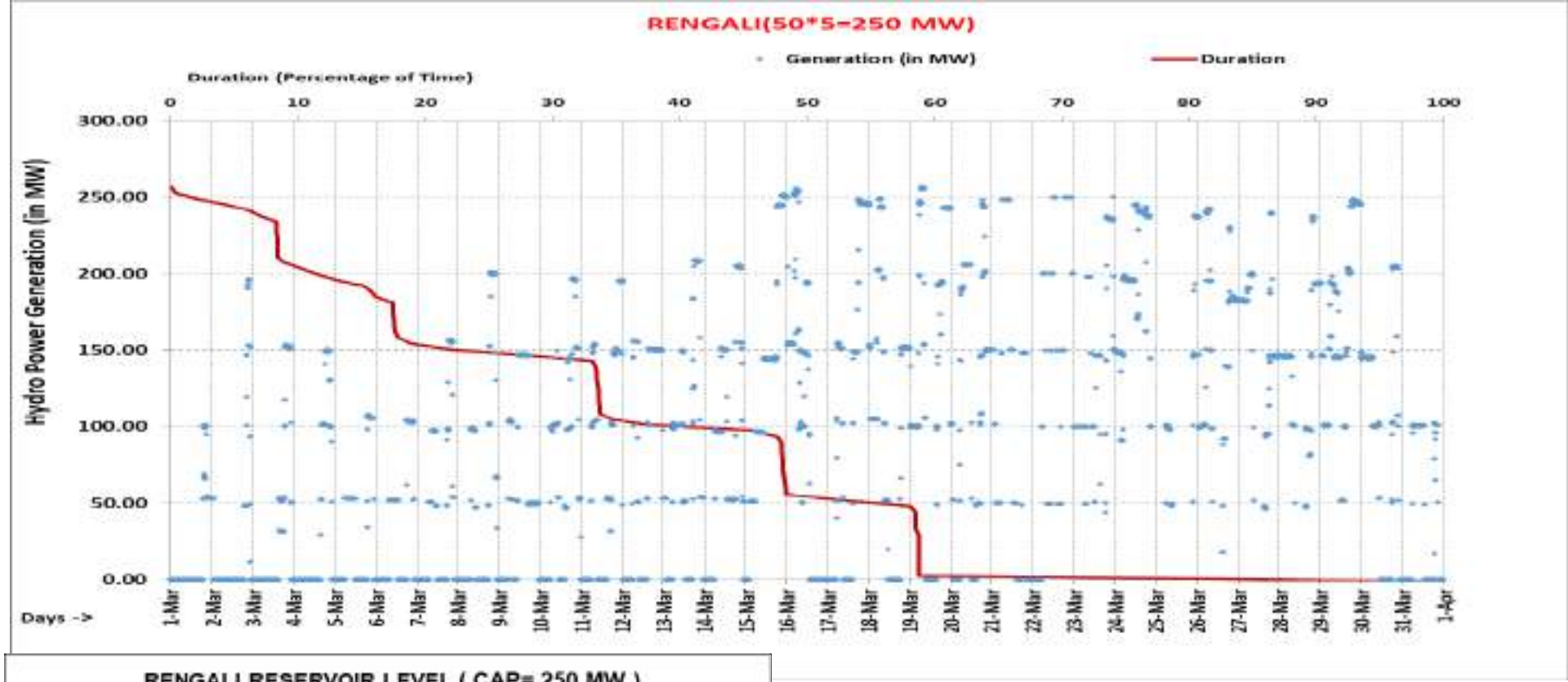


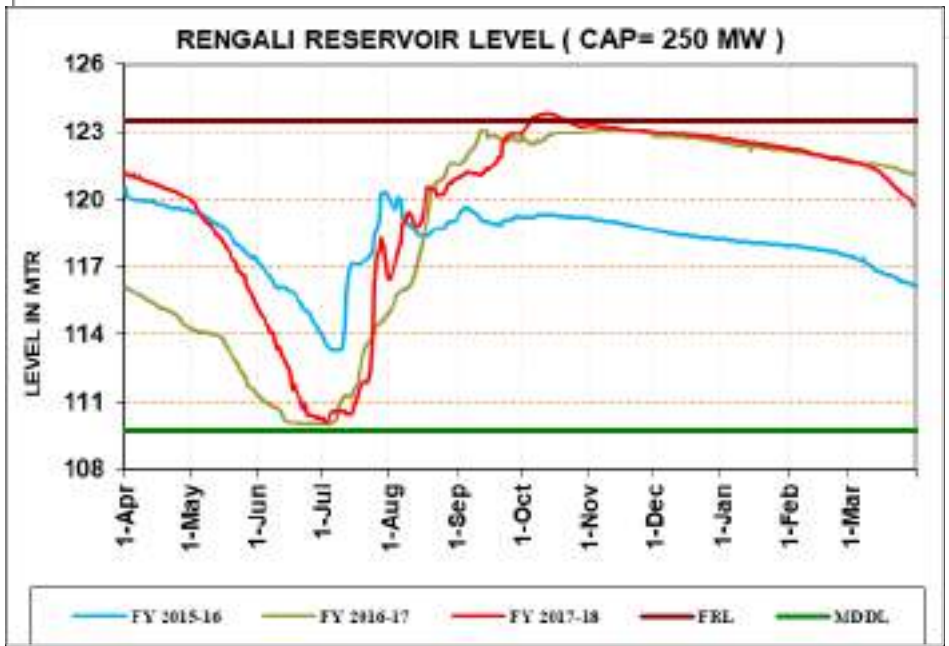
Unit No	Date of Outage	Reason
U - 1	19.11.17(19:00)	Gen. UGB oil temp high
U - 2	01.12.17(08:30)	Annual Maint.
U - 5	25.10.2016	R & M Work
U - 6	16.10.2015	R & M Work





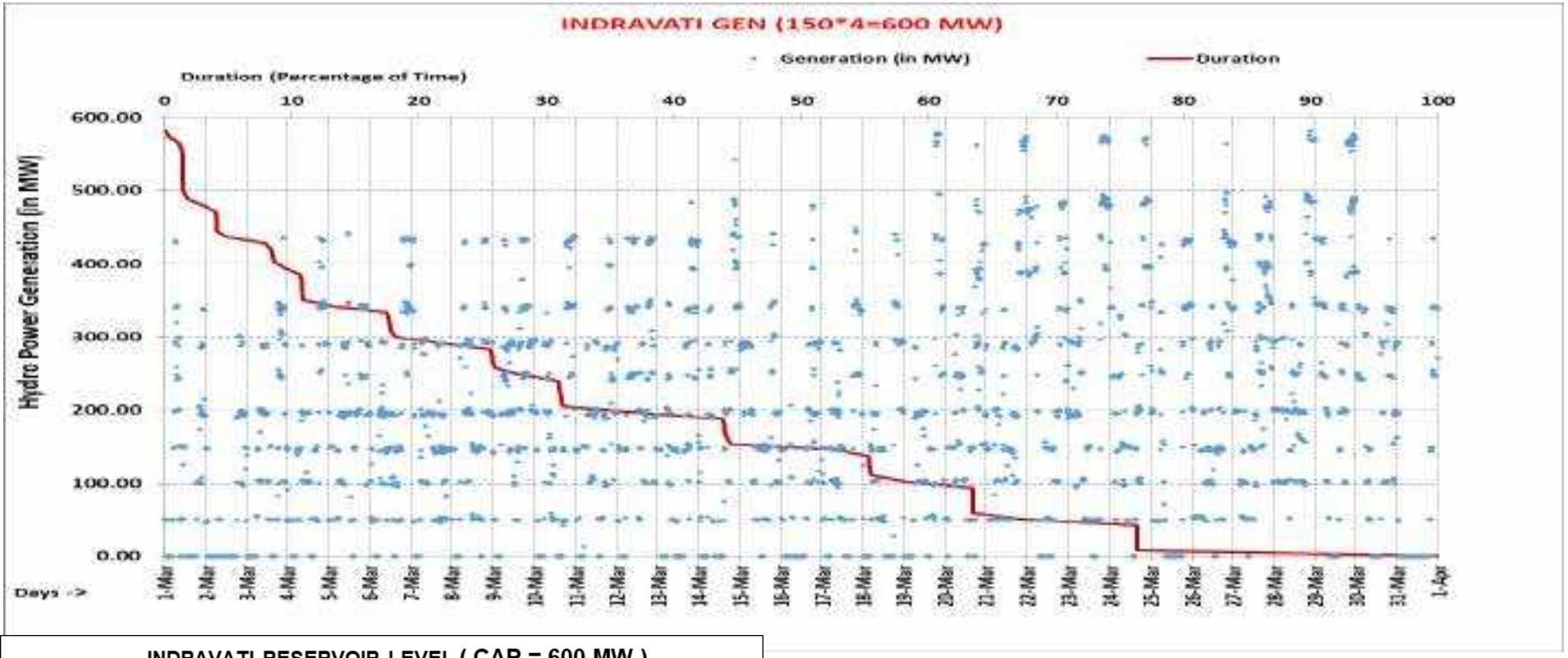
Unit No	Date of Outage	Reason
U – 1(60 MW)	05.08.16	R & M Work
U – 7 (75 MW)	12.10.17(17:30)	Generator problem
U – 2(60 MW)	20.11.17	R & M Work
U – 6(60 MW)	20.03.18	Annual Maint.

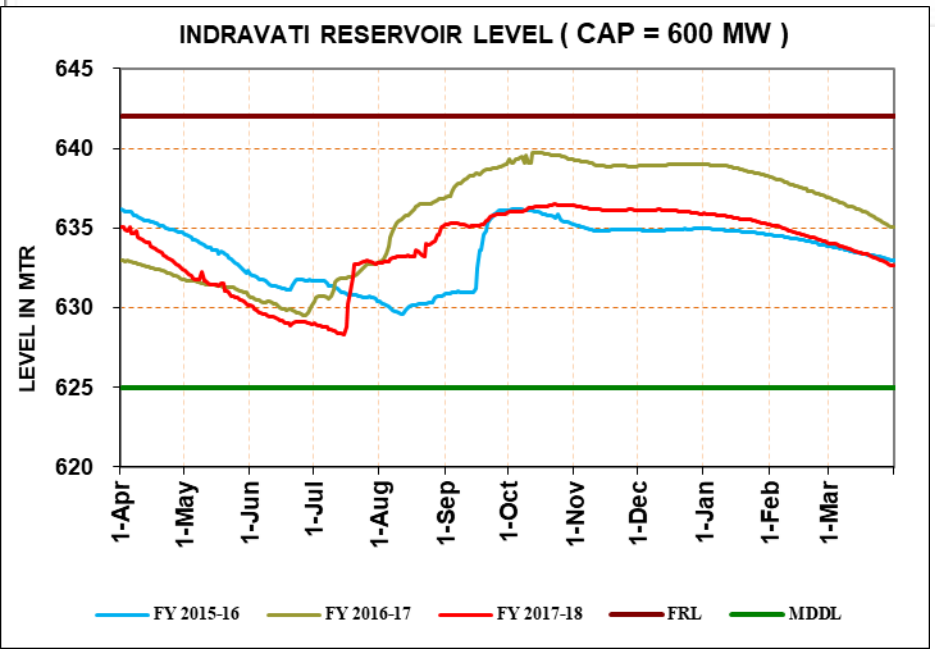




Unit No	Date of Outage	Reason
U - 5	21.03.2017	Hoist Gate Problem

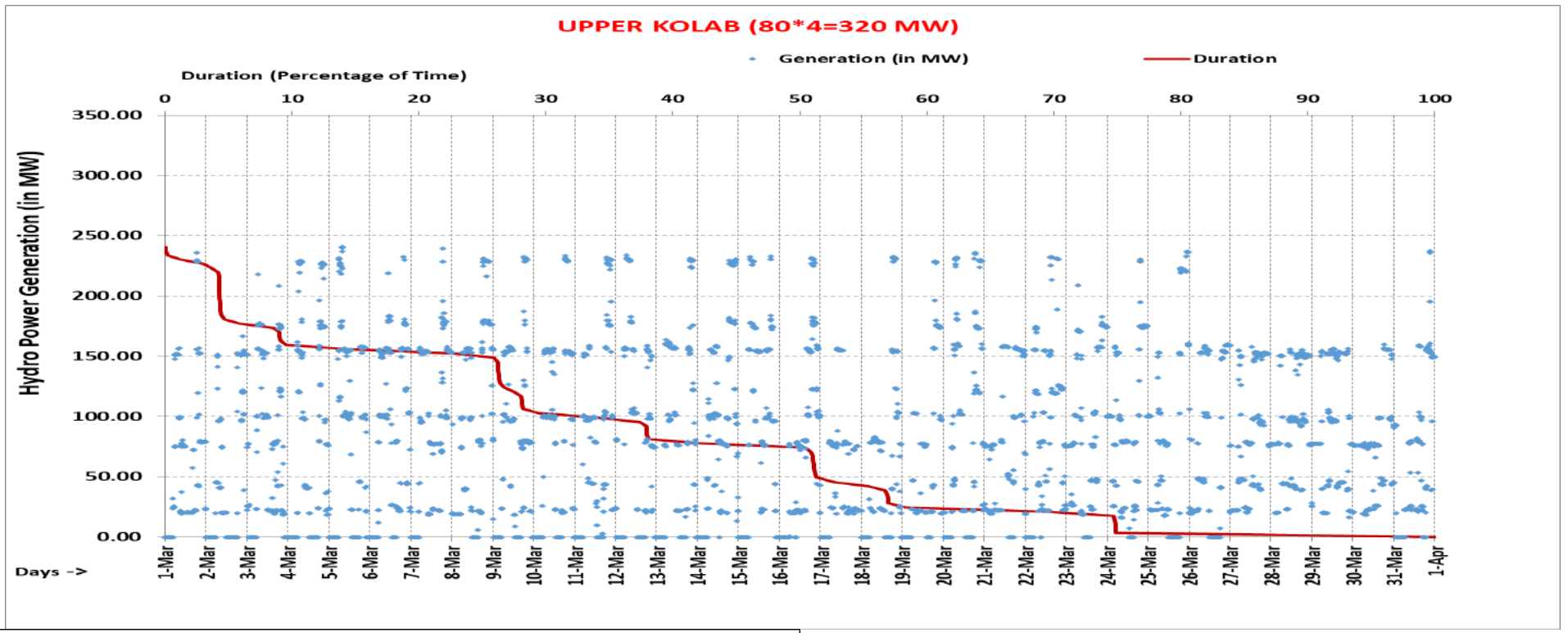
U-5 synchronized

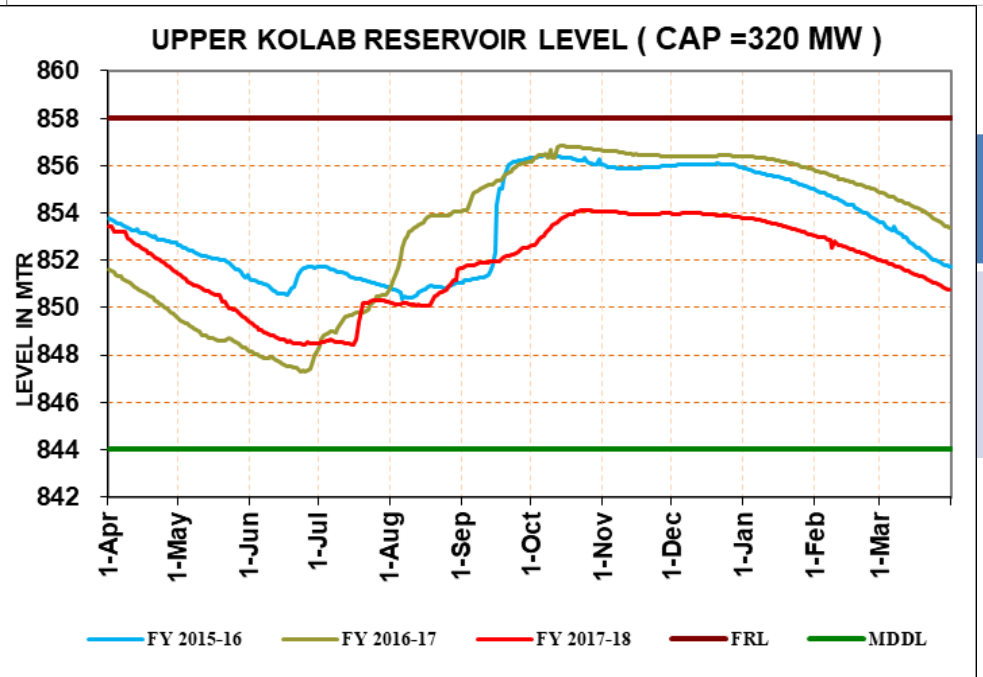




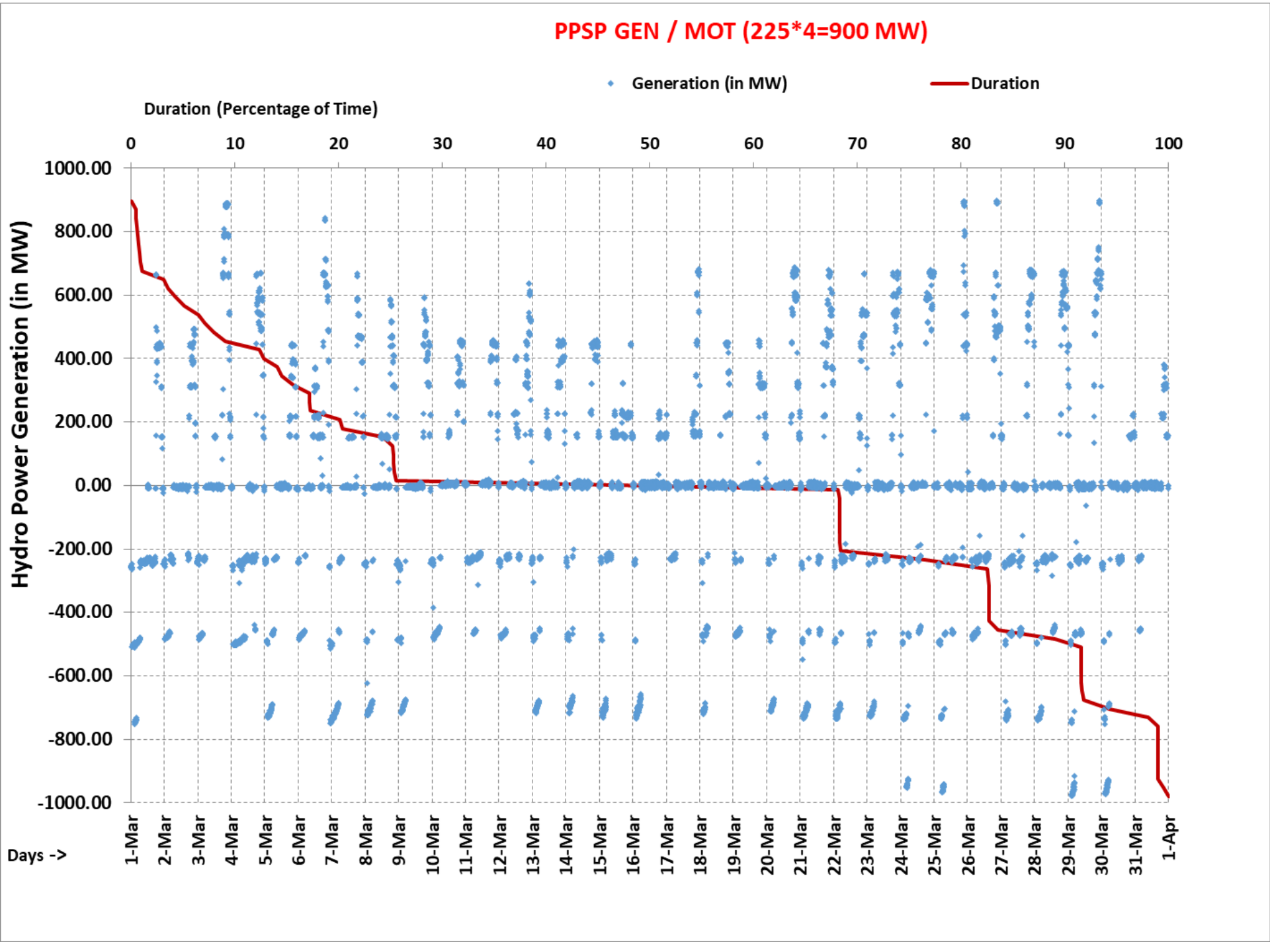
Unit No	Date of Outage	Reason
U - 1	01.12.2017	Annual Maint

U-1 synchronized





Unit No	Date of Outage	Reason
U – 2(80 MW)	28.05.2017	Repair of MIV & Draft Tube Gate leakage


PPSP GEN / MOT (225*4=900 MW)
Generation (in MW)
Duration
Duration (Percentage of Time)
0
10
20
30
40
50
60
70
80
90
100
Hydro Power Generation (in MW)
1000.00
800.00
600.00
400.00
200.00
0.00
-200.00
-400.00
-600.00
-800.00
-1000.00
Days ->
1-Mar
2-Mar
3-Mar
4-Mar
5-Mar
6-Mar
7-Mar
8-Mar
9-Mar
10-Mar
11-Mar
12-Mar
13-Mar
14-Mar
15-Mar
16-Mar
17-Mar
18-Mar
19-Mar
20-Mar
21-Mar
22-Mar
23-Mar
24-Mar
25-Mar
26-Mar
27-Mar
28-Mar
29-Mar
30-Mar
31-Mar
1-Apr

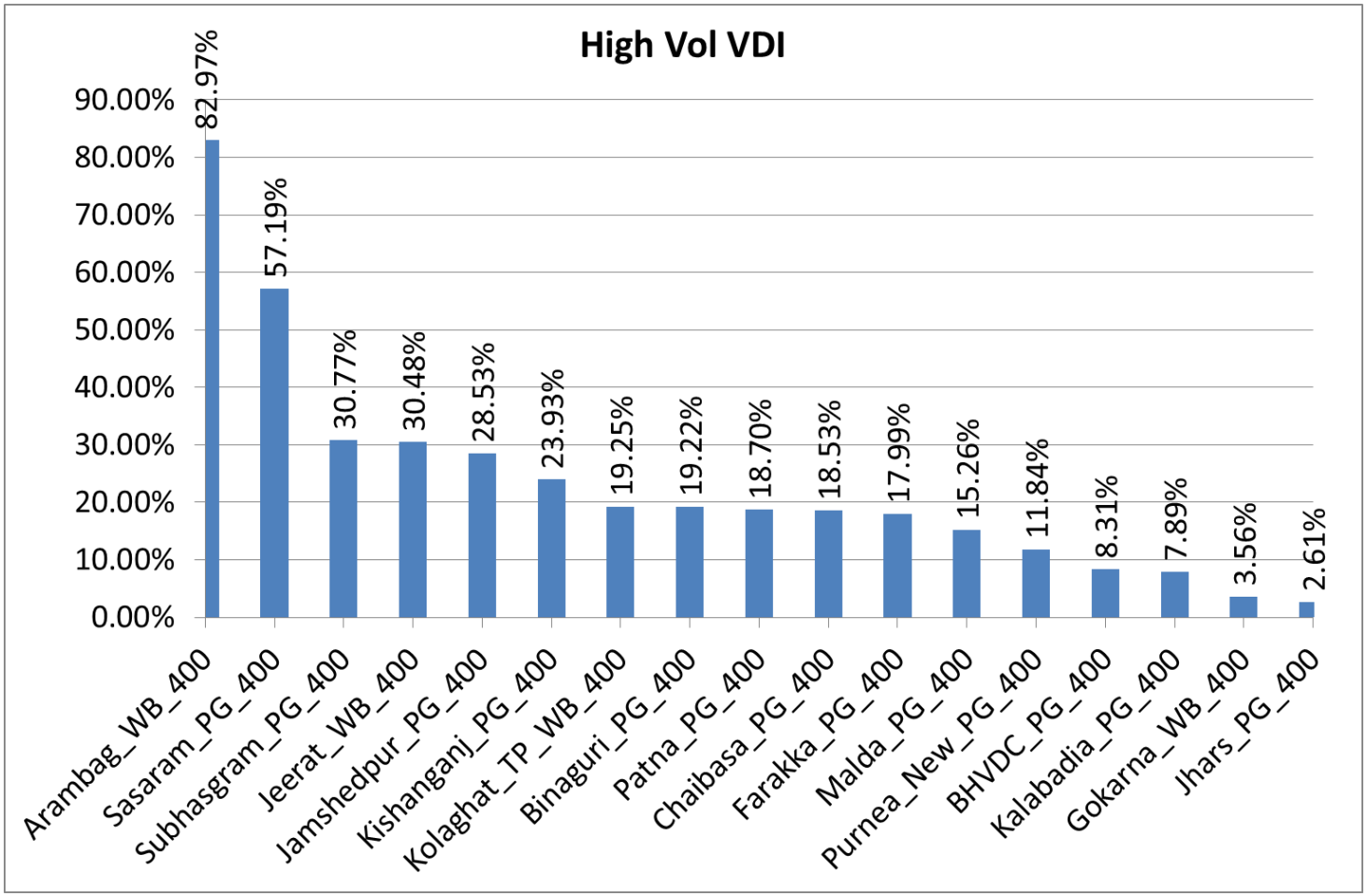
Voltage Variation Index of ER Substation in March, 2018

Statistics of VDI of various S/S* in Eastern Region for February, 2018

% of time	No of S/S having voltage higher than IEGC limit for …	No of S/S having voltage lower than IEGC limit for …	No of S/S having voltage not in IEGC band for …
100%	0	0	0
>= 50% but < 100%	2	0	2
>= 30% but < 50%	2	0	2
>= 10% but < 30%	9	0	9

* For all S/S at 400 kV and above voltage level and selective S/S at 220 kV and lower level where voltage data were available in SCADA for considerable amount of time

% of time voltage more than IEGC limit



Commissioning list of transmission element and generators: Mar-2018

Annexure-A2

SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks
1	220 kV Patna Sipara 3	BSPTCL	3/5/2018	10:09	loaded at 09:16hrs of 08/03/18 to feed the load at Khagual via Bus-II @Sipara.
2	315 MVA, 400/220 kv ICT # I at Daltonganj	PGCIL	3/8/2018	0:59	
3	160 MVA ATR # I at Daltonganj	PGCIL	3/8/2018	0:12	
4	220 kV DTG Bus # I & II Daltonganj	PGCIL	3/8/2018	00:18 00:21	
5	132 kV Daltonganj (JUSNL) – Daltonganj (PG) # II	PGCIL	3/7/2018	23:50	
6	400 kV Gaya – Nabinagar (NPGC) line # I upto Dead end Tower	PGCIL	3/9/2018	18:03	
7	400 kV Gaya – Nabinagar (NPGC) line # II	PGCIL	3/9/2018	18:22	
8	132 KV Daltangaj to Daltangaj I	PGCIL	3/10/2018	0:52	
9	80 MVAr Bus reactorat Daltangunj	PGCIL	3/20/2018	18:58	

Commissioning list of transmission element and generators: Mar-2018

SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks
10	240 MVAR L/r 3 of 765 KV Angul Jharsguda 3	PGCIL	3/31/2018	13:09	charged as b/r in jharsguda
11	132 KV MOHITNAGAR-NJP #1(R.L.- 29.23km)	WBSETCL	2/27/2018	17:35	Charged at 132kv
12	132 KV MOHITNAGAR-NJP #2 (R.L.-30.4km)	WBSETCL	3/10/2018	17:14	Charged at 132kv
13	132 KV MOHITNAGAR-MOYNAGURI (R.L.-24.56km)	WBSETCL	2/27/2018	17:42	Charged at 132kv
14	132 KV MOHISPOTA- CHALSA (R.L.-62.6km)	WBSETCL	3/10/2018	17:20	Charged at 132kv
15	132 KV BUS-BAR #1	WBSETCL	2/27/2018	17:37	Charge
16	132 KV BUS COUPLER & BUS-BAR #2	WBSETCL	2/27/2018	17:38	Charged at 132kv
17	50 MVA 132/33 TR#1	WBSETCL	2/27/2018	18:41 18:46	
18	50 MVA 132/33 TR#2	WBSETCL	2/27/2018	18:38 18:45	33KV bus charged
19	33KV outgoing feeders Mohitnagar#1, Raninagar#1&2	WBSETCL	3/1/2018	17:40hr and on	Loading commenced.

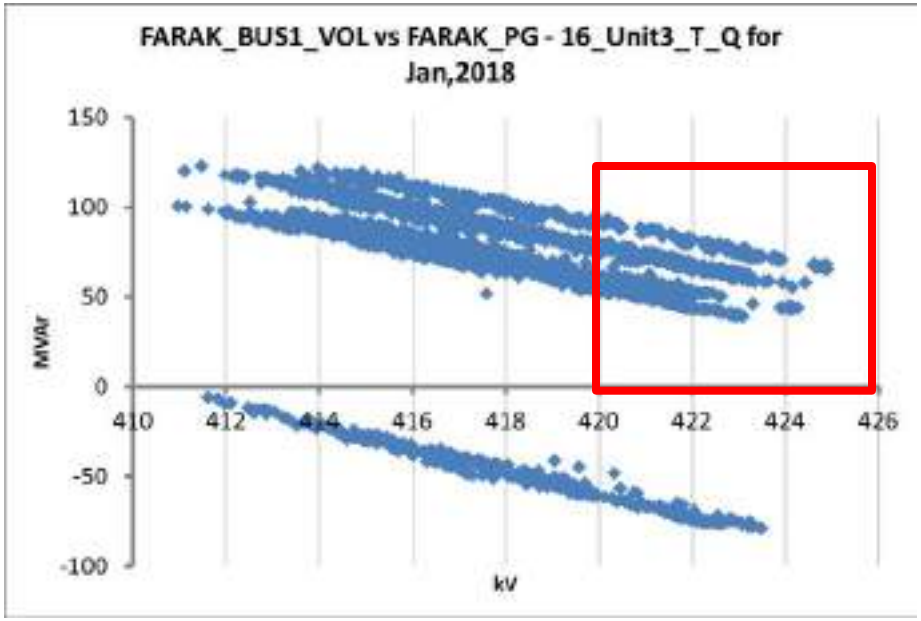
Reactive power performances of various units in the month of March, 2018

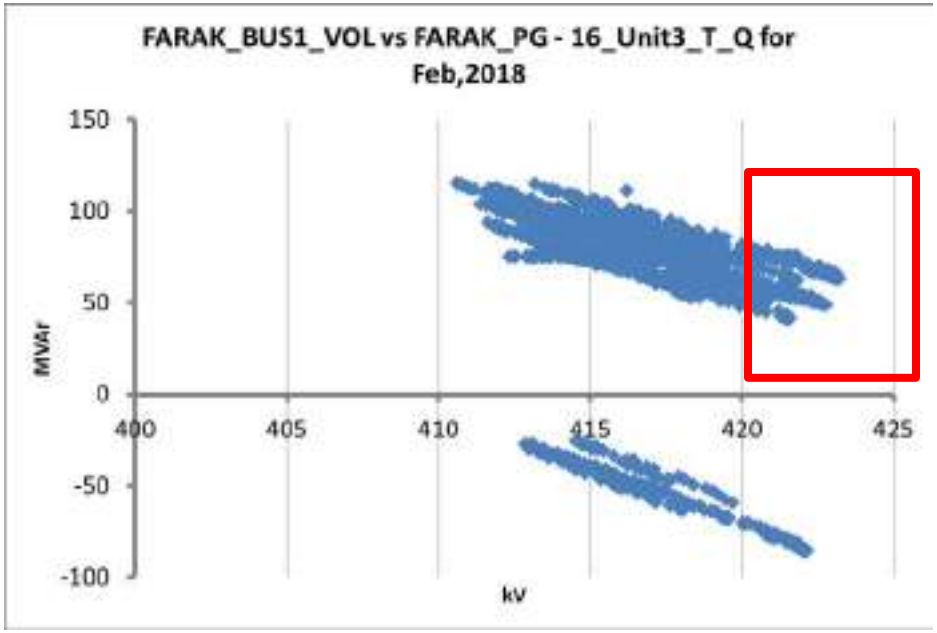
Reactive power injection and terminal bus voltage are compared for various generating units in ER.

- Scatter plot is plotted with taking
  - Terminal voltage across x axis
  - Reactive power injection across y axis
  - (Nominal terminal voltage (kV), 0 MVAr) as origin
- MVAr injection should reduce with increase in terminal voltage

Response of the units whose MVAr injection decreases with increase in voltage but does not absorb reactive power even in high voltage period

FSTPP unit 3

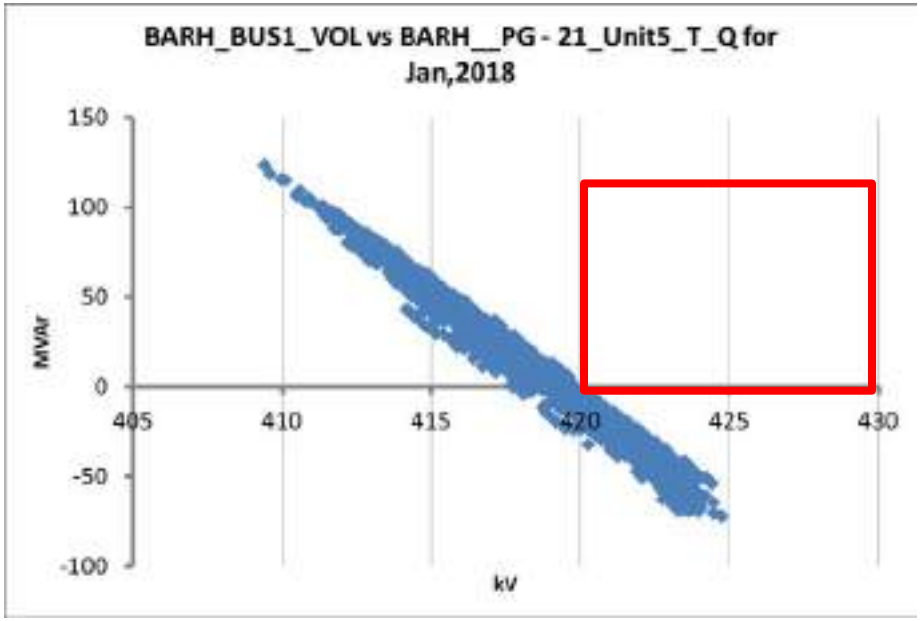


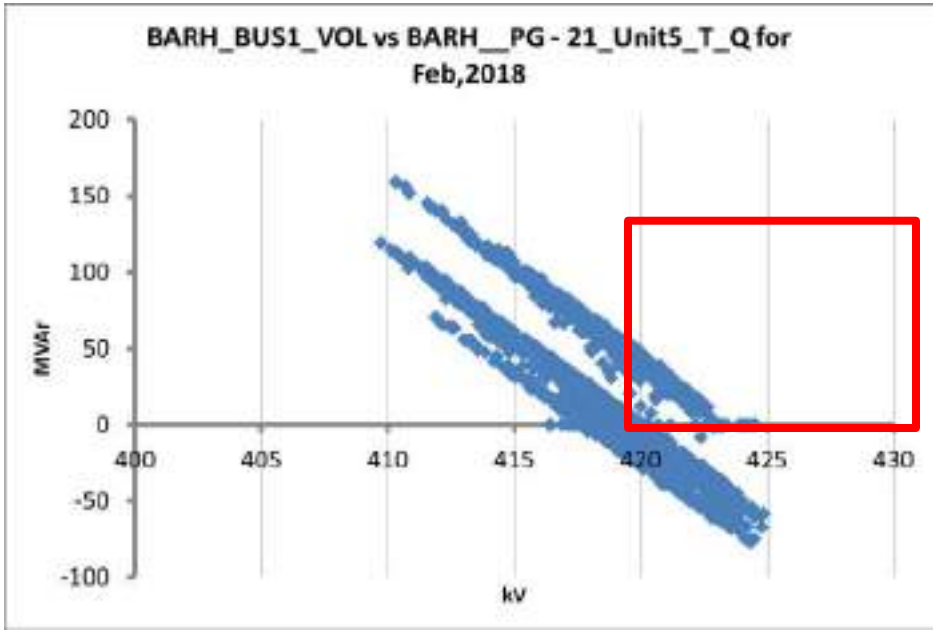


January, 2018:
Maximum MVAr absorption is 80MVAr
% of time with positive VAR injection when voltage was more than IEGC limit 21%

February, 2018 :
Maximum MVAr absorption is 83 MVAr
% of time with positive VAR injection when voltage was more than IEGC limit 12%

Barh unit 5





January, 2018:
Maximum MVAr absorption is 72 MVAr
% of time with positive VAR injection when voltage was more than IEGC limit 0%

February, 2018 :
Maximum MVAr absorption is 75 MVAr
% of time with positive VAR injection when voltage was more than IEGC limit 8%

There was no voltage injection during high voltage condition in the month of January 2018

पावर सिस्टम ऑपरेशन कॉरपोरेशन लिमिटेड
POWER SYSTEM OPERATION CORPORATION LIMITED
पूर्वी क्षेत्र भार प्रेषण केन्द्र, 14, गोल्फ क्लब रोड, टालीगंज, कोलकाता - 700 033
EASTERN REGIONAL LOAD DESPATCH CENTRE, 14, Golf Club Road, Tollygunge, Kolkata - 700 033

ERLDC/SS & MIS/2018/VDI/6870

Date: 03-04-18

To,

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

Sub: Reporting of voltage deviation indices (VDI) for selected Substations in ER, for March 2018.
विषय: March 2018 के लिए पूर्वी क्षेत्र में चयनित सबस्टेशन के लिए वोल्टेज विचलन सूचकांक (VDI) की रिपोर्टिंग

सेवा में,

Enclosed please find VDI for selected 765 & 400kV buses of Eastern Region, computed for the month of March 2018, for deliberation in next OCC meeting of ERPC.

संलग्न ERPC की अगली OCC बैठक में विचार विमर्श के लिए, March 2018 के लिए गणना की गई पूर्वी क्षेत्र के चयनित 765 और 400 केवी बसों के लिए VDI के ब्यौरे।

आपको धन्यवाद

आपका विश्वस्त / Yours faithfully,

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

VDI of Selected 765 kV & 400 kV in Eastern Region in the month of March - 2018

नई रांची / Ranchi New			जमशेदपुर / Jamshedpur			मुजफ्फरपुर / Muzaffarpur		
MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)
792	782	0.00	423	404	6.57	417	387	0.00

बिहार शरीफ / Bihar Sariff			बिनागुरी / Binaguri			जीरत / Jeerat		
MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)
423	402	1.10	429	400	17.07	423	383	1.26

राउरकेला / Rourkela			जयपोर / Jeypore			कोडरमा / Koderma		
MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)
416	394	0.02	429	331	0.12	424	406	0.07

मैथन / Maithon			तीस्ता / Teesta			रांगपो / Rangpo		
MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)
422	406	0.55	425	399	5.58	425	395	1.36


Electro Hydraulic
Governing Card failure of U#6 of NTPC Kahalgaon
Annexure-B2
Presented By
Anurag Roy

Brief Description of Incidence:

Brief Description of Incidence:

Unit-6 was running at 380 MW load in CMC with EHC governing mode in service. At around 02:41 hrs sudden wide load fluctuation started ranging from 40 MW to 470 MW with associated wide hunting in MVAR from -180 to +150 MVAR. Intermittent 'EHTC fault' alarm was also appearing and getting reset on its own during this period. It was further observed that both HP & IP turbine Control Valves were getting full open and full close very frequently. Unit was tried to be made stable by increasing the load demand of EHC Load Controller. But EHC function was found nonresponsive. Finally Turbine governing was shifted to Hydraulic Mode isolating the EHC mode from Governing panel. After that unit load as well as MVAR became stable at normal level.

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Analysis:

On further investigation it was observed that minor load hunting in the range of 10-15 MW was persisting from 5 minutes before the wide load hunting. EHC circuit was checked thoroughly and one card in feedback circuit was found to have malfunctioned.

Remedial Measures:

After replacing the defective card, EHC function was checked in detail and found satisfactory. Thereafter, again Unit was shifted in EHC governing mode and its operation was again normal.

What is a Governing System

To govern means to control and regulate certain parameters to achieve expected results.

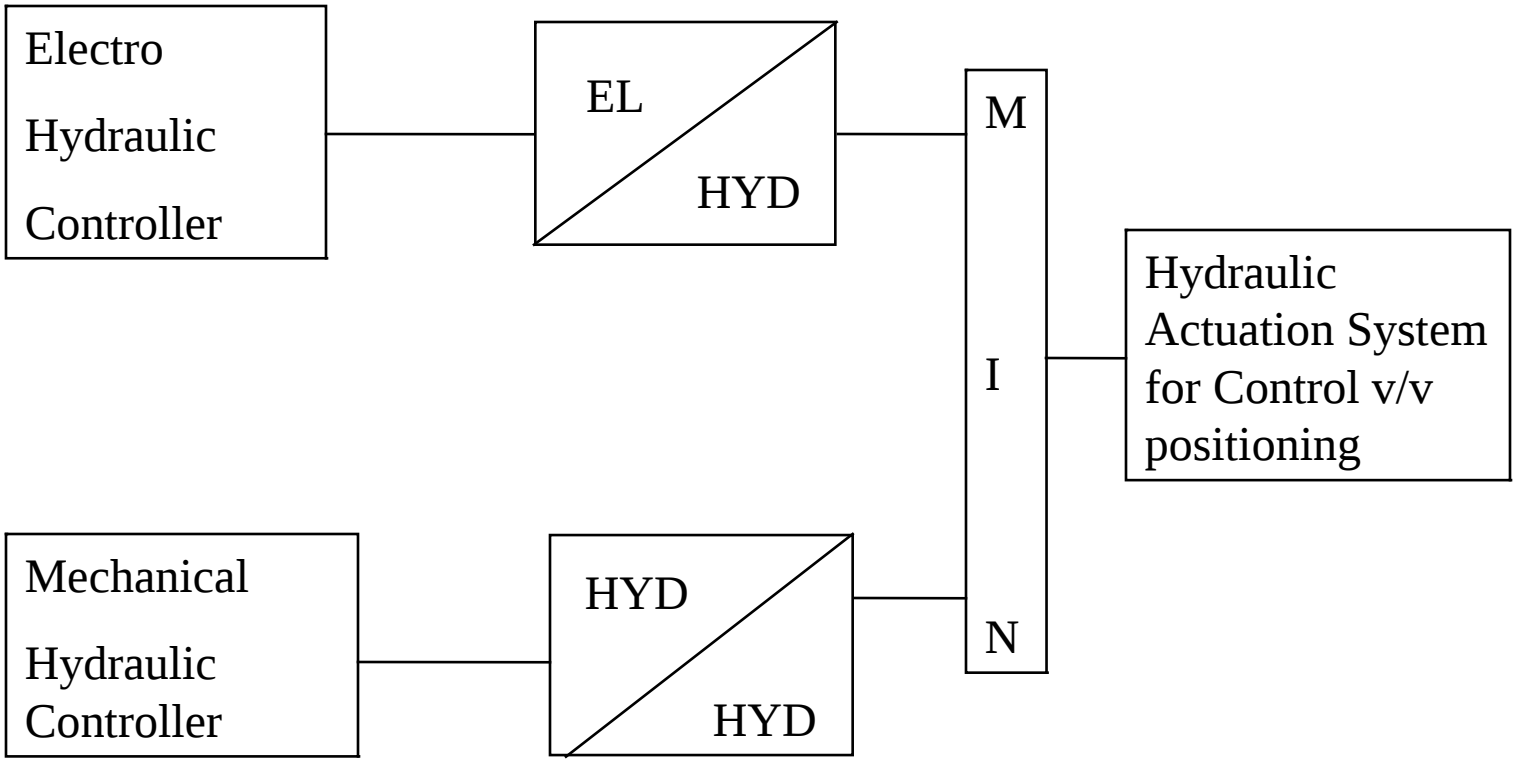
Turbine Governing system is meant for regulation of turbine speed under no load and varying load condition.

It helps in precise control of grid frequency under normal operation and protects the machine as well as grid during emergency situation.

Gov System of KWU M/C

- KWU machines are equipped with Hydraulic and Electro-hydraulic governing system .
- Under normal operating condition EH governing system is used
- Hydraulic governing system is used as backup governing system on failure of EH governing.

Structure of KWU Gov System



Electro hydraulic governing (EHC)

Electro hydraulic controller is an integral part of EAST(Electronic Automation for steam turbine) supplied with KWU turbines.

The EHC has a task to control the steam flow to the turbine by positioning of HP & IP control valves and

- control speed during start up
- control load of TG after synchronization

ADVANTAGES OF EHC

a) Increases the life of turboset by conservative operation with the aid of TSE
b) High operational reliability and safety with integrated circuits , as well as speed and load measurement in multiple channels
c) Precise maintenance of the rated frequency of the power grid by means of an exact frequency load curve.
d) Low speed deviation under all operational conditions.
e) Support of the pressure control system

Elements of EHC

- EHC can be divided into following sub-sections:

1 Speed measurement and Speed controller

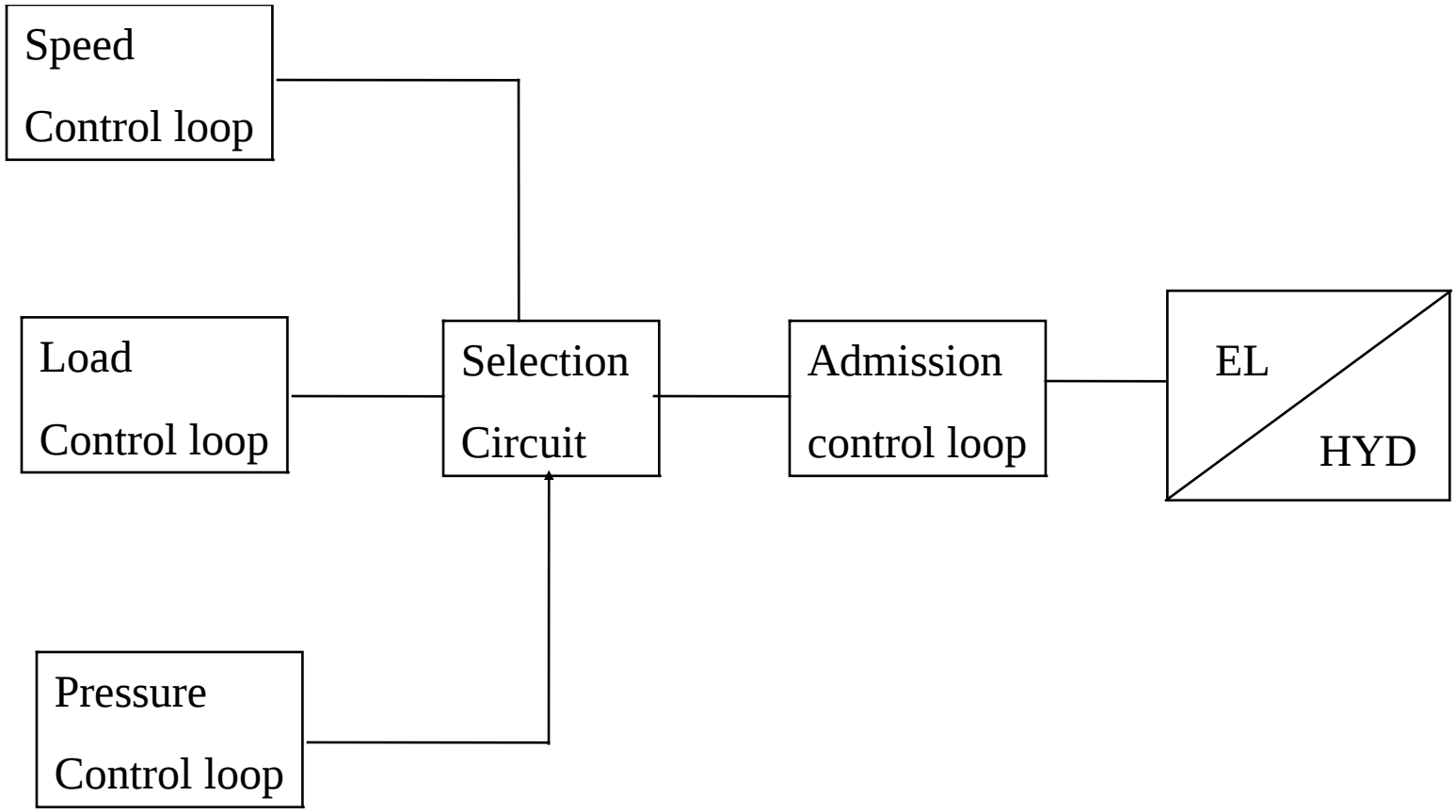
2 Load measurement and Load controller

3 Pressure controller

4 Selection circuit(Control mode selection)

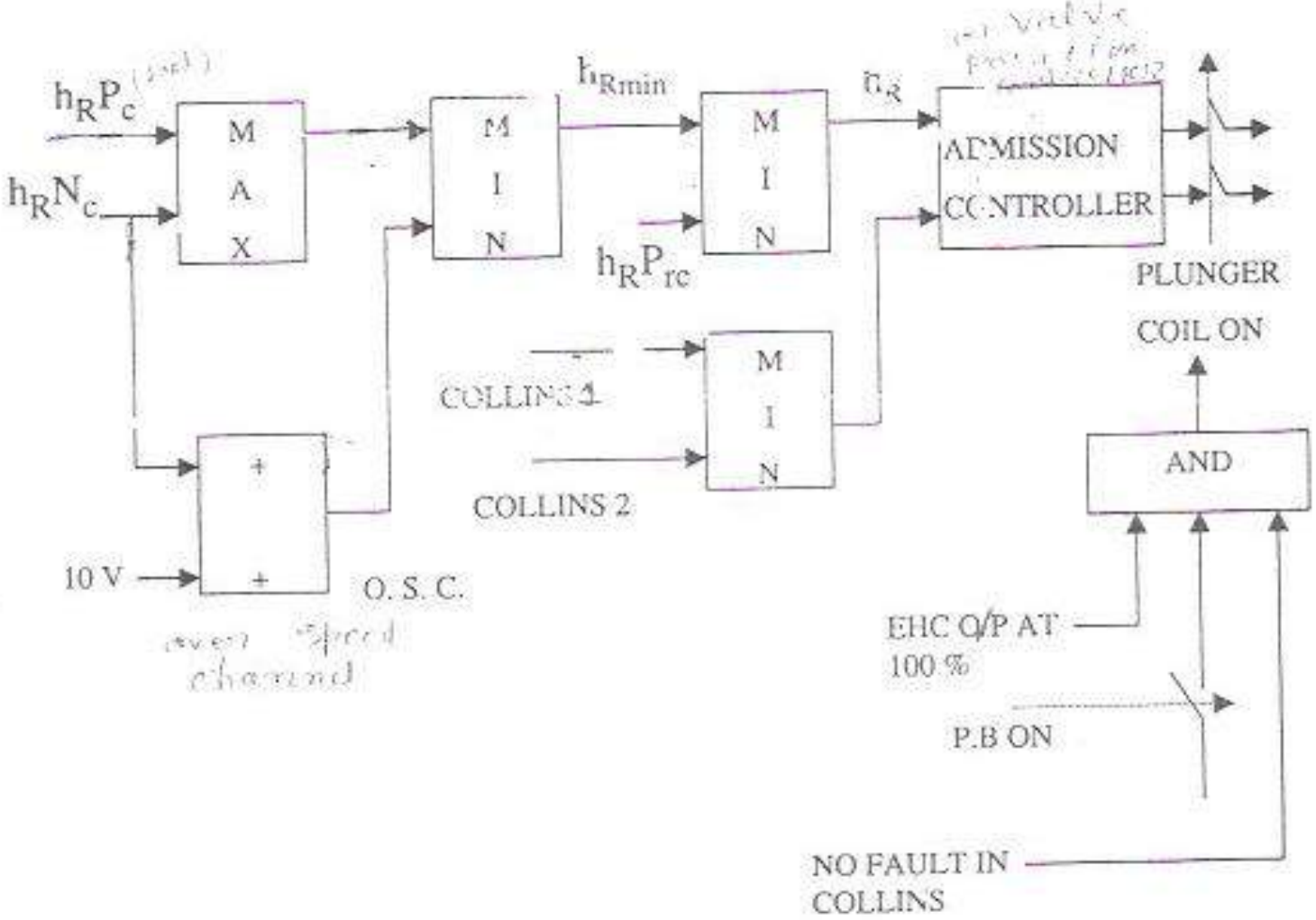
5 Admission /Position Controller

Structure of EHC



4 Control Transfer

- This loop receives the signal from speed controller (hrnc), load controller(hr PC) and pr. controller
- a set of Max & Min selection and then final value selected is passed on to position /admission controller
- hrnc and hrPC pass through a maximum value selector and the value selected is passed on to first MIN value selection. 10.5v is added in hrnc and this value is also fed to first Min value selector.
- The value selected in first Min value selector is passed on to the second MIN value selector along with output of pressure controller output (hr PRC) The value selected here is passed on the position / admission controller.

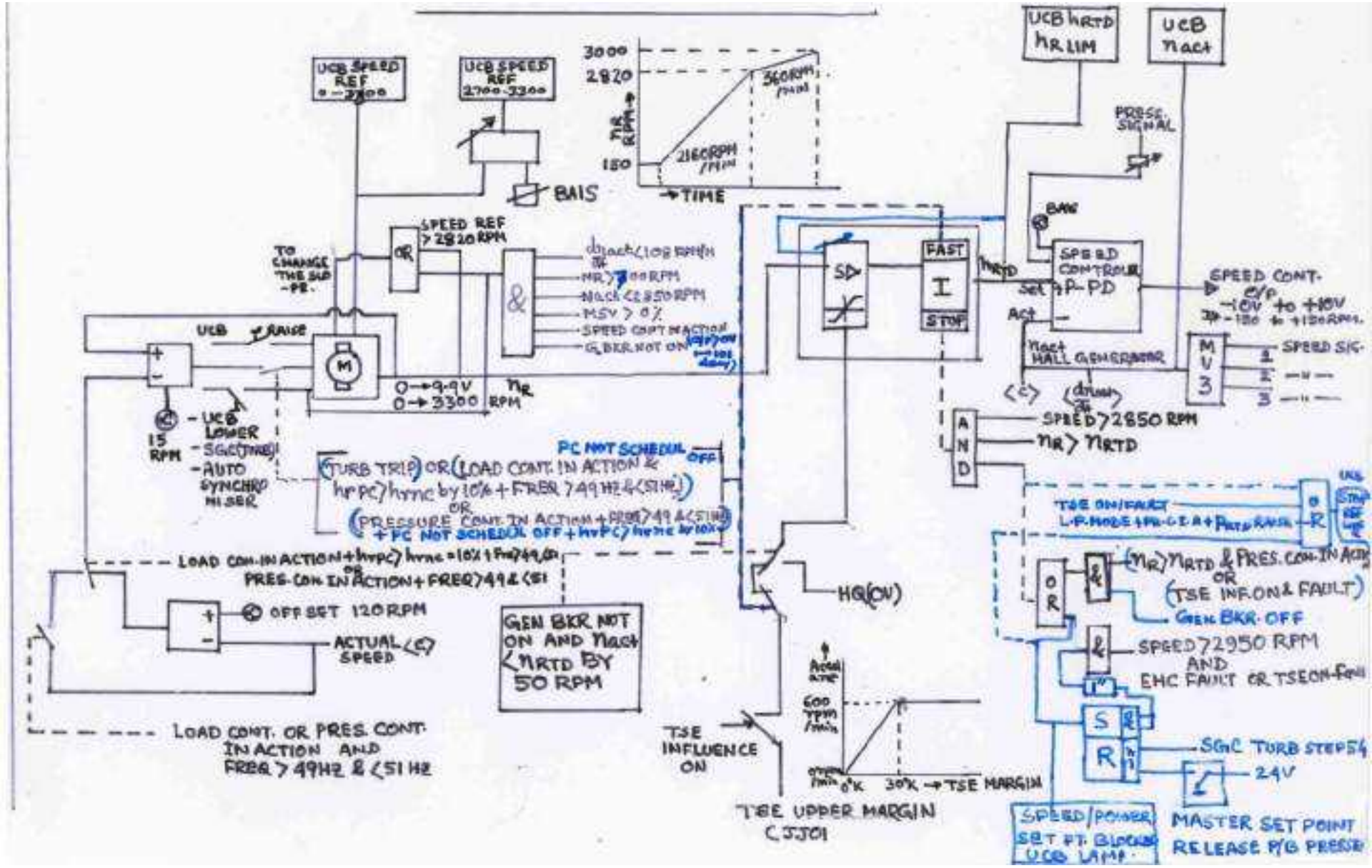


Selection Circuit

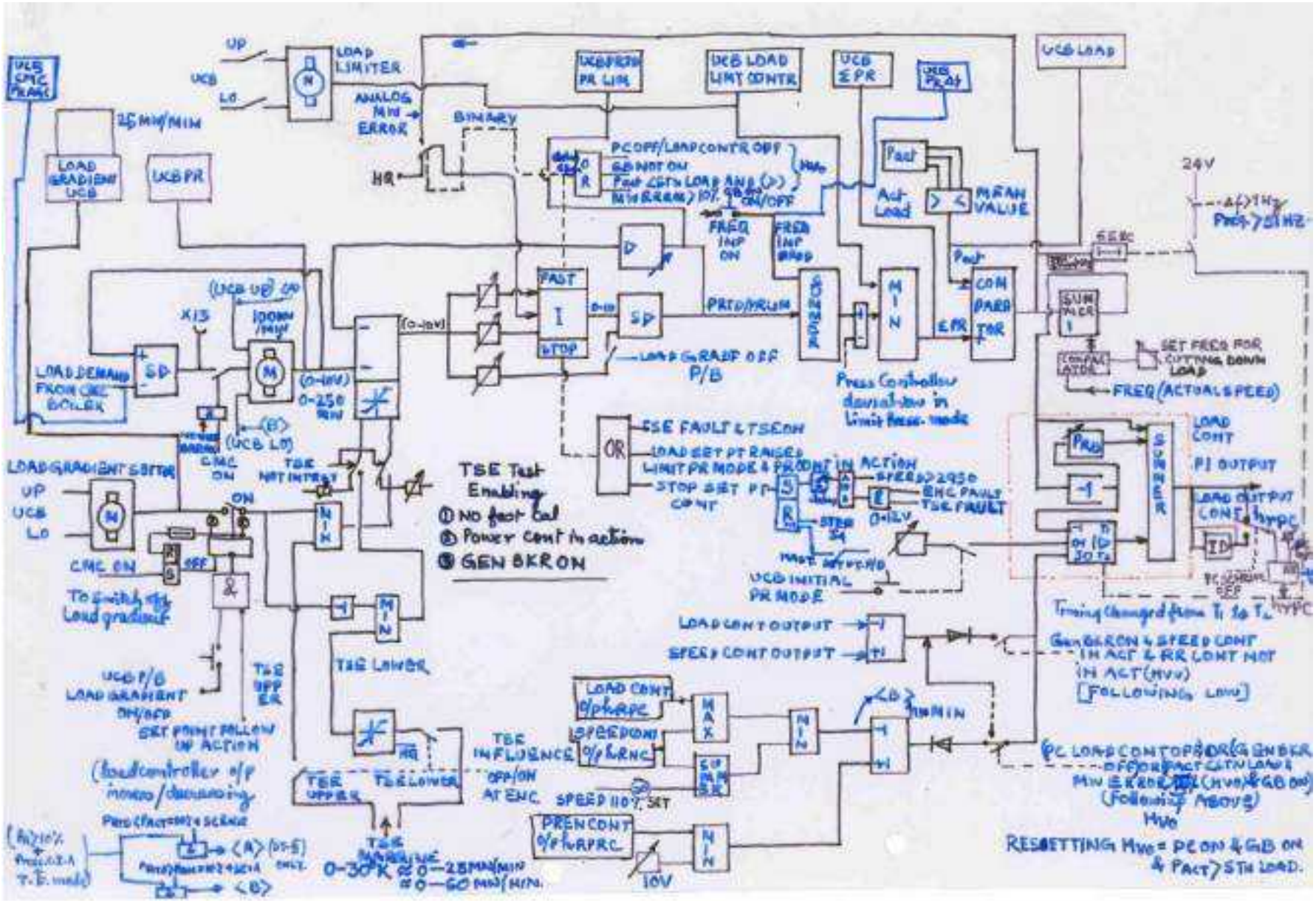
5 Position/admission Controller

- Position Controller is the final control element in EHC. It receives the signal from control transfer
- It receives feedback signal from Collins transmitters.Two Collins transmitters are provided
- Selection of transmitter is through MIN value selector
- Plunger coil supplied in EHC is an integrator type. The balance point of the coil is –1.0V
- Provision to switch ON/OFF the voltage supply to plunger coil. Switching ON /OFF can be done only if the output of position controller is > 100%.

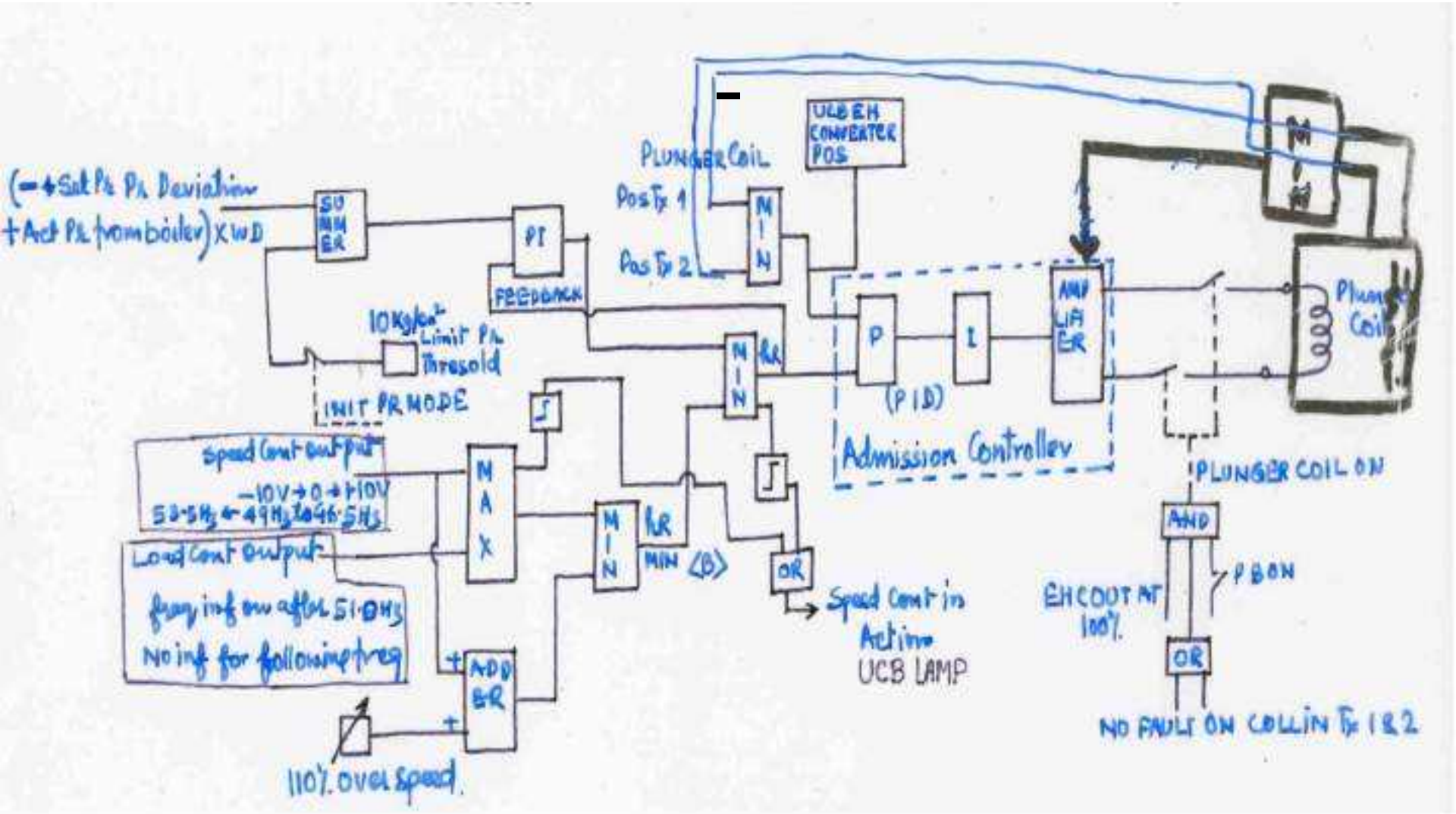
EHC: SPEED CONTROLLER



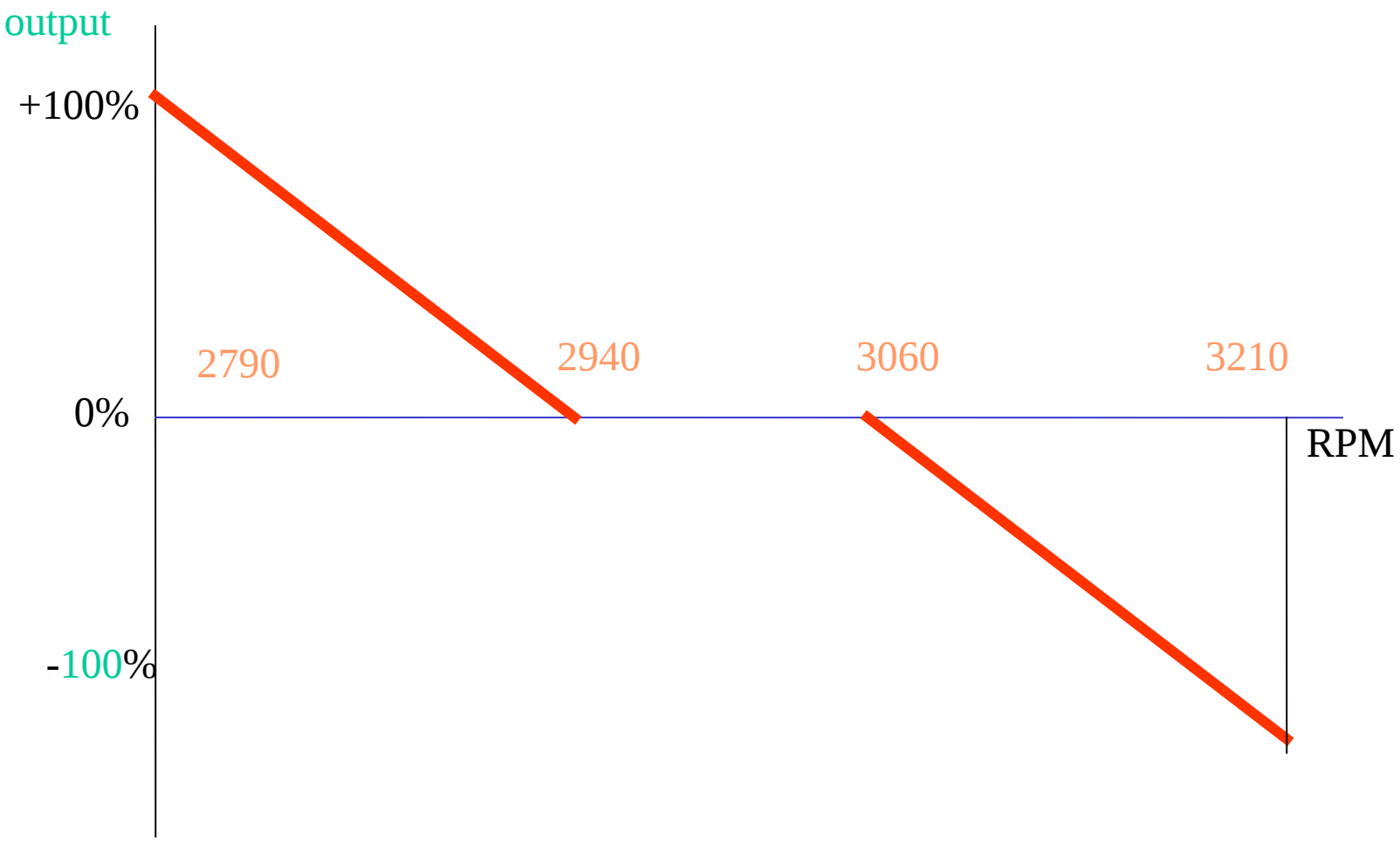
EHC: Load controller



CONTROL TRANSFER LOGIG & ADMISSION CONTROLLER



Droop of kwu m/c

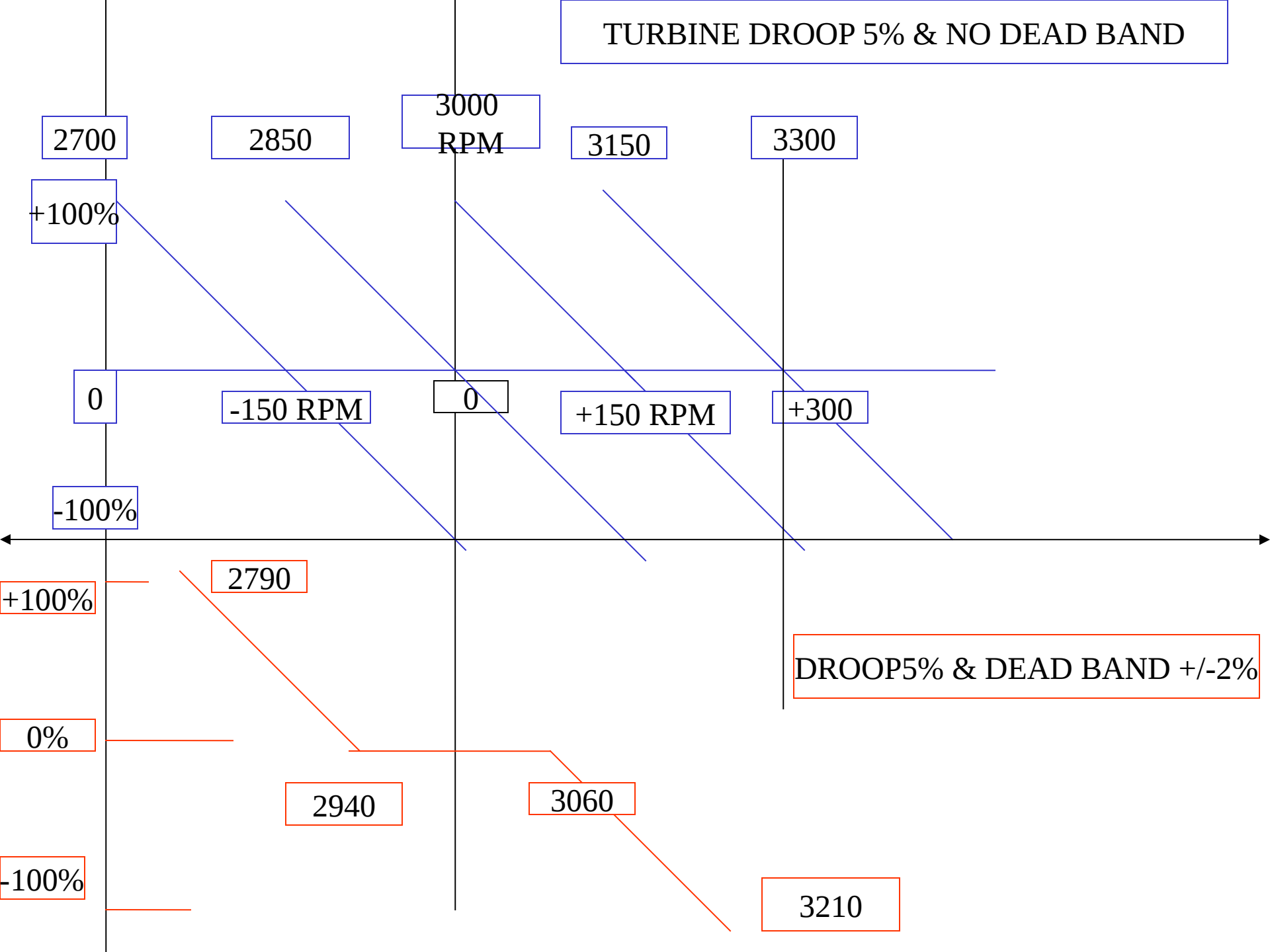


What is Droop?

% of frequency change (% of RPM change) will lead to full travel of Governing valves or full load change.

5% droop means: 5%*50 Hz= 2.5 Hz

Will change 500MW. In terms of output total change should take place is 100%


TURBINE DROOP 5% & NO DEAD BAND
2700
2850
3000 RPM
3150
3300
+100%
0
-150 RPM
0
+150 RPM
+300
-100%
2790
+100%
DROOP5% & DEAD BAND +/-2%
0%
2940
3060
-100%
3210

From Sagardighi U#4 Active power MW plot, it was observed that output variation was of approx. 100 MW. Sagardighi U#4 Reactive power plot, indicated a fluctuation of approx. 160 MVar. At 14:47 Sagradighi Unit 4 tripped due to turbine vibration but was not reported at that time to ERLDC.

On inquiry with SLDC WBSETCL, it was reported that there was some problem in turbine bearing (bearing and supports are designed to keep the static and dynamic forces under control) which was causing balancing problem of rotor.Thus to mitigate turbine vibration, load set point was changed manually which in turn led to Unit generation fluctuation from 150 MW to 250 MW as can be seen from the power flow and MVAR pattern attached below. The time of LFO initiation in the grid observed from PMU data and output fluctuation of Sagardighi U#4 are also matched. Further, based on the analysis of SCADA data of all other units by ERLDC it was inferred that no other unit has experienced such severe oscillation in their MW/MVAr during the period.Even in other units of Sagrdighi no variation was observed. So, It can be inferred from the analysis that oscillation has excited in the grid due to Sagardighi Unit 4.

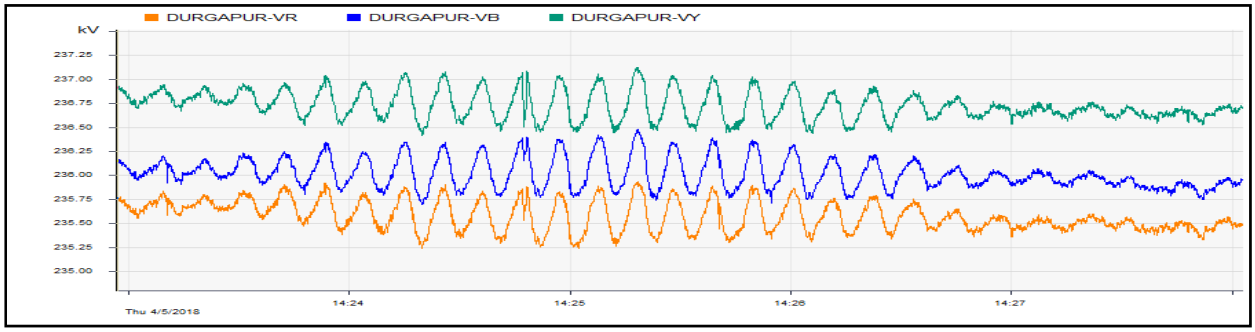
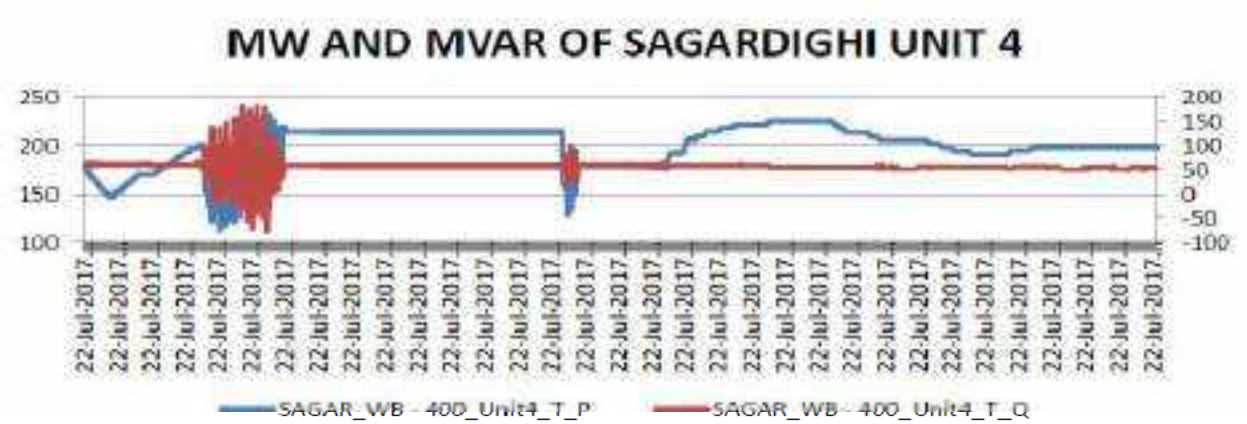


Fig 1 : Durgapur Bus Voltage from PMU.

Fig 2 : MW Plot of Sagardighi Unit 4 on 05th April .

This is not the first time Sagardighi U#4 has caused such problem but on previous occasions also LFO was observed due to hunting of Sagardighi U#4 on 22 JULY 2017 AT 22:47 HRS. On that occasion, LFO of 0.083 Hz was observed where Mw output of Sagrdighi Unit #4 varried from 120 to 250 Mw and Mvar varied from -70 Mvar to + 170 Mvar .



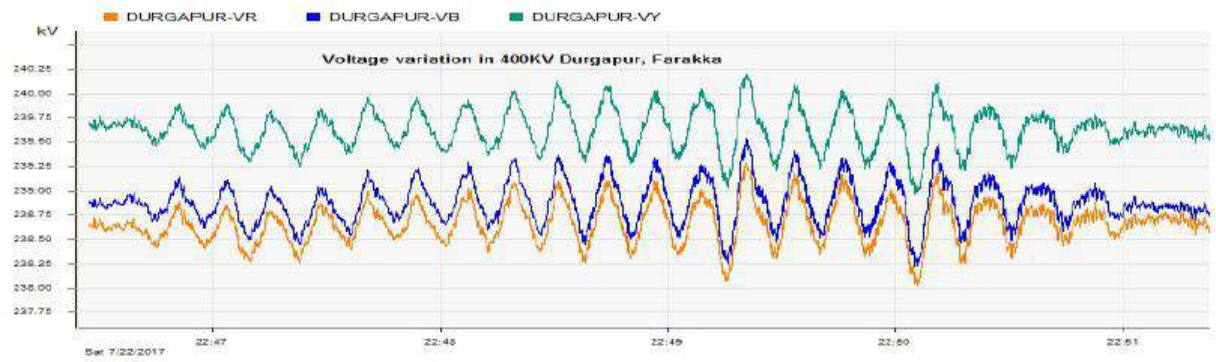
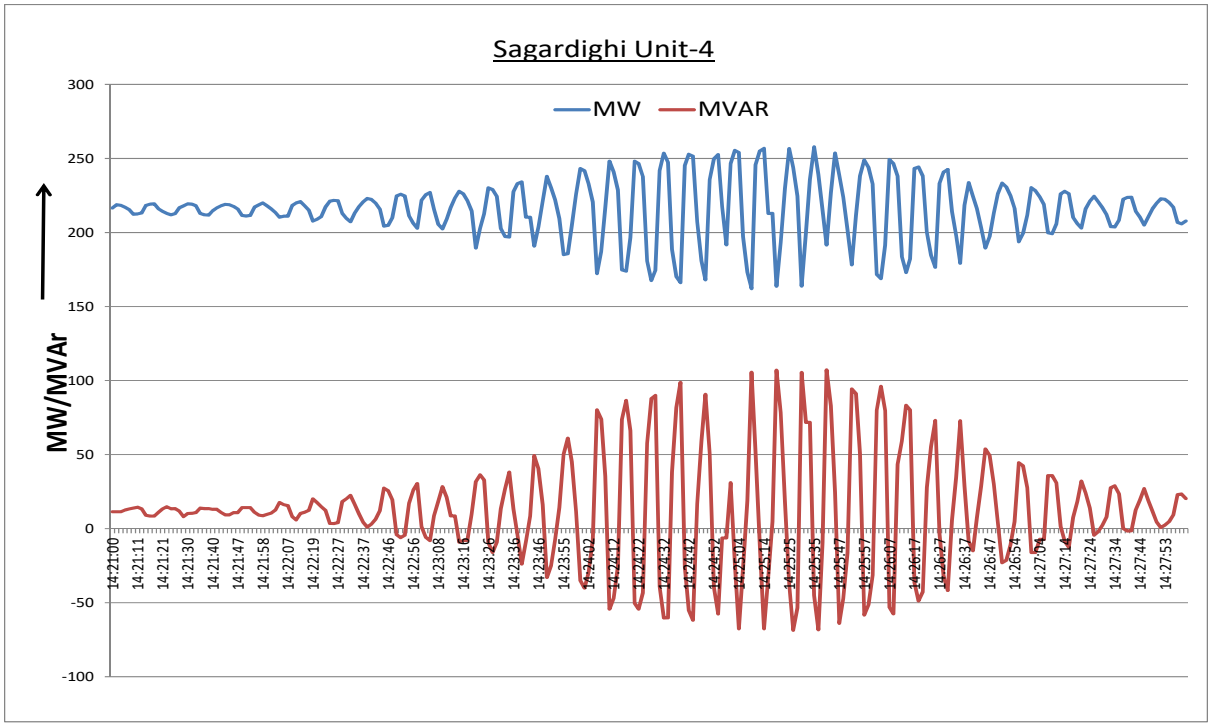


Fig (3)Scada and Pmu plot of LFO observed on 22/07/2017

WBPDCL vide mail dated 10th April 2018 has already sent 15 sec data for Unit 1 and Unit 2and 1 sec MW/MVAr data for Unit-3 and Unit -4. In the data received, large oscillations can easily be seen in MW and MVAr Output of Unit-4. The graph of Unit side data as received from WBPDCL is as follows.



Agenda : Low Frequency Oscillation on 05 April'18

Event:

- **LFO observed in ER Grid near Durgapur.**
- **Date : 5th April'18, 14:21 - 14:28 Hrs.**
- **Frequency of LFO : 0.1 Hz.**
- **Oscillation Observability: ER Grid with Maximum Amplitude at Durgapur.**

Observation :

- **No Major Switching/Tripping in the Indian Grid.**
- **PMU data provided also supported that Highest Magnitude observed at Durgapur**
- **All generators near Durgapur were analyzed for variation in MW/MVAR**
- **Large Fluctuation Observed only in MW and MVAR of Sagardighi Unit 4.**
- **The time of LFO from PMU data and Variation in Sagardighi Unit 4 MW/MVAR variation also matched.**
- **No nearby unit MW/MVAr varied near the Farakka PMU.**

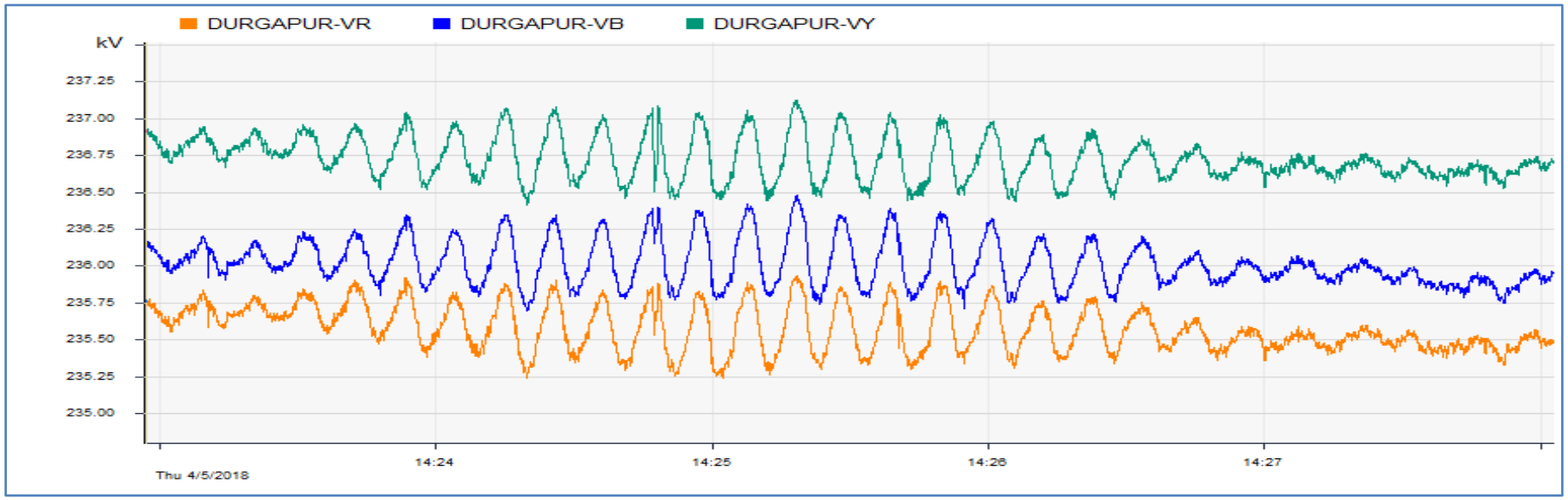


Fig : Durgapur Bus Voltage from PMU indicating oscillation on 5th April' 18.

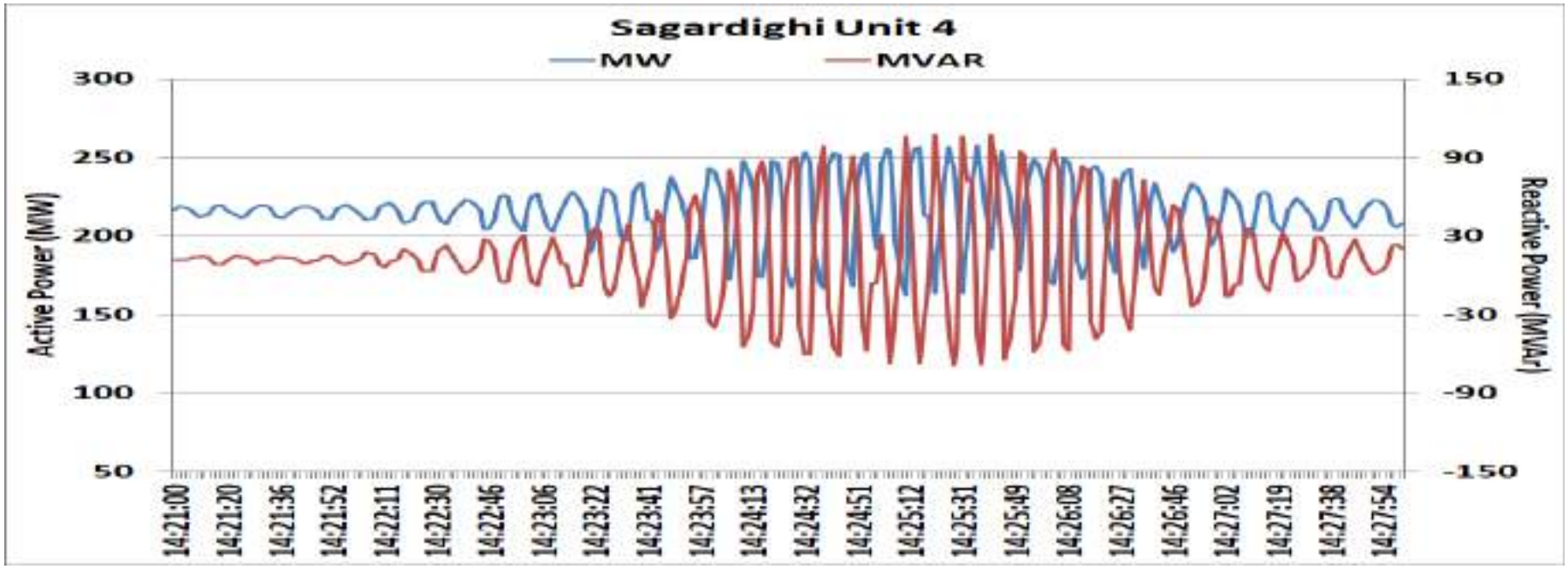


Fig : MW/MVAr Plot of Sagardighi Unit 4 on 5th April' 18 (From WBPDCL)

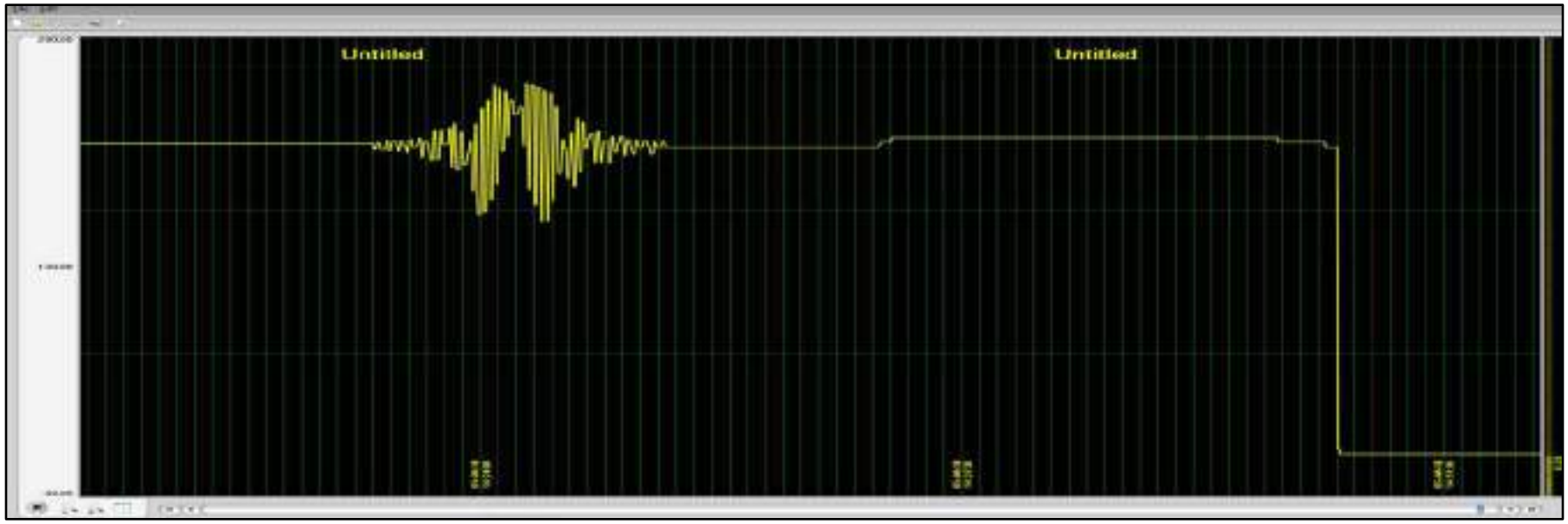


Fig : MW variation of the Sagardighi unit 4 and its subsequent tripping observed from ERLDC SCADA for 5th April' 18.

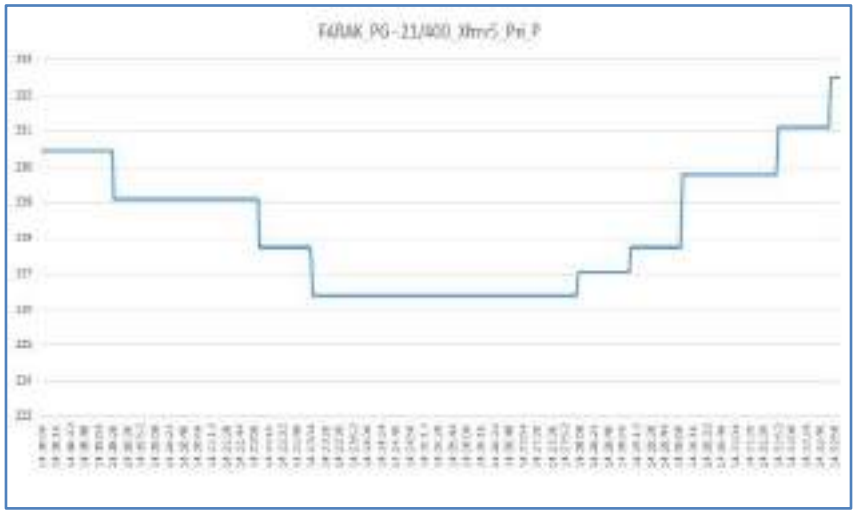


Fig : MW of Sagardighi Unit 2 and Farakka Unit 5 indicating no varaiation in the unit.

Analysis :

- On inquiry, it was found that there was some problem in bearing which is causing balancing problem of rotor leading to turbine vibration.
- To mitigate this load set point was changed manually : This led to Unit Generation fluctuation from 160 MW to 250 MW MW and reactive Power from -60 to 100 MVAr.
- At 14:47 Sagradighi Unit 4 tripped due to turbine vibration but was not reported at that time to ERLDC.

Inference :

- **The Issue of Turbine vibration of Sagardighi Unit 4 Causing MW/MVAR oscillation in the unit is the root cause for the LFO observed in the grid.**

Cause of Concern :

- **Repetition of similar incident**
  - On 22nd July 2017 at 22:47 Hrs, the Sagardighi Unit 4 has led to LFO of frequency 0.083 Hz.
  - Impact nearby generator by increasing wear and tear due to variation in electrical parameters like voltage, frequency.
- **WBPDCL has not submitted Reason for Oscillation not submitted for both events by.**

Impact of Forced Oscillation by the units in Indian Power System:

- **Impact of One unit Hunting: Can Result in Grid Scale Low frequency Oscillation.**
  - Previous Cases Observed of Similar Nature
    1. **Kahalgaon Unit 6 :** Hunting of Governor
    2. **DSTPS Unit 2 :** Hunting of Governor (in 2013), Boiler Feed Pump Trip (2018)
    3. **Tarapur Unit 3 :** ESCV Valve Malfunction
    4. **Sipat Unit 4 :** Toggling of Plant Power Control
    5. **Kothagudam Unit :** Plant level hunting
    6. **Rihand Stage-II Units :**Digital Control system Software problem
    7. **MAPS Unit 2 :** Mal-operation of over speed limiting gear
    8. **Kaiga Unit 2:** Malfunctioning of AVR

Course Of Action Required :

1. **SAGARDIGHI:** To submit a report on the issue and action taken.
2. **All Generating Unit :** Must intimate the RLDC/SLDC immediately if any such hunting/vibration is observed in Units (Cause/Effect).
3. **All Generating Unit :** Must Submit the one second or finer resolution data of MW/MVAr for all units to RLDC/SLDC
4. **PSS Tuning :** All Generating Units above 100 MW must tune their PSS in Compliance to CERC Regulation and CEA grid Standard.

Annexure-B4

Sub Station	ICT	HV side Meter	LV Side Meter
ALIPURDUAR	400/220	2	2
BARIPADA	400/220	3	3
BIHARSHARIF	400/220	3	3
BINAGURI	400/220	2	2
BOLANGIR	400/220	2	2
CHAIBASA	400/220	2	2
DURGAPUR	400/220	2	2
GAYA	400/220	2	2
JAMSHEDPUR	400/220	3	3
JEYPORE	400/220	2	2
KEONJHAR	400/220	2	2
KISHANGANJ	400/220	2	2
MAITHON	400/220	2	2
MALDA	400/220	2	2
MUZAFFARPUR	400/220	3	3
NEW PURNEA	400/220	2	2
PANDIABILI	400/220	2	2
PATNA	400/220	3	3
RANCHI	400/220	2	2
RENGALI	400/220	2	2
ROURKELA	400/220	2	2
SASARAM	400/220	2	2
SUBHASGRAM	400/220	5	5
BANKA	400/132	2	2
LAKHISARAI	400/132	2	2

ARAH	220/132	3	3
BARIPADA	220/132	2	2
BIRPARA	220/132	2	2
MALDA	220/132	2	2
NJP/SILIGURI	220/132	2	2
PURNEA	220/132	3	3
GANGTOK	132/66	2	2
	Total	**74**	**74**

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 ____		

Eastern Regional Power Committee, Kolkata

Minutes of SPS Review Meeting held on 6th April 2018 at ERPC, Kolkata

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

Member Secretary, ERPC chaired the meeting and he welcomed all the participants. Thereafter, the agenda points were discussed in seriatim.

1. Issues of SPS associated with tripping of any pole of HVDC Talcher-Kolar

During synchronization of NEW grid with SR grid, to limit the surplus power likely to be wheeled to SR through ER and WR, in the event of single or bi-pole outage of 500 kV Talcher-Kolar HVDC, arrangement for 600 MW generation reduction in ER (200 MW each at SEL, GMR and JITPL) by sending digital signals from Talcher STPS was made, apart from the pre-existing reduction/tripping of TSTPS-II generation.

To implement this SPS, signal is transmitted from Talcher to the concerned generating stations.

The SPS needs to be reviewed in view of the following:

A. **Availability of new high capacity AC transmission elements in ER, SR and WR:** A number of new high capacity transmission elements have been commissioned in ER, SR and WR after implementation of the SPS. Since 765kV Angul-Srikakulam D/c line is available, the chances of wheeling of surplus power from ER to SR via WR are limited.

B. **Sending SPS signal to Vedanta (SEL):** after removing LILO of Rourkela-Jharsuguda at SEL, this link is no more available. In view of removal of 400kV Rourkela-Jharsuguda LILO at SEL, PLCC link for sending SPS signal to Vedanta/Sterlite may be re-established either via Jharsuguda or via Meramandali or via Angul.

C. **Continuous receipt of generation back down signal on shutdown of HVDC Talcher-Kolar single pole:** The SPS could not be taken back into service as there was continuous receipt of backing down signal at the respective generator ends. Hence, the SPS had to be kept by-passed throughout the shutdown period even though Pole-II was in service.

Members may decide.

Deliberation in the meeting

Members opined that since Vedanta is an embedded entity of Odisha state and comes under the jurisdiction of SLDC, Odisha, the generation reduction of 200 MW at Vedanta TPS in the event of single or bi-pole outage of 500 kV Talcher-Kolar HVDC would be excluded from the SPS scheme.

*NLDC gave a detailed presentation highlighting the existing SPS schemes implemented for single or bi-pole outage of 500 kV Talcher-Kolar HVDC. Presentation is enclosed at **Annexure-I**. NLDC explained that with WR to ER import of 2400 MW, the loading of 765/400kV, 1500 MVA ICTs at Vemagiri S/s would increase more than 900 MW on single or bi-pole outage of 500 kV Talcher-Kolar HVDC. Hence the N-1-1 criterion could not be met at 765 kV Vemagiri S/s. As per the study, the generation reduction at GMR and JITPL would decrease the loading of 765/400kV, 1500 MVA ICTs at Vemagiri. This constraint could be relieved after commissioning of 765 kV Vemagiri(PG) – Chilikaluripeta D/C lines expected by April 2019.*

NLDC requested the forum to keep the SPS in operation until the constraint at 765/400kV, 1500 MVA ICTs at Vemagiri relieved.

Member Secretary, ERPC opined that since the most of the Talcher, NTPC power is allocated to Southern Region, all possible avenues for mitigating the impact of Bi-pole tripping at Talcher should be explored and exhausted at SR. He also suggested that suitable load shedding schemes should be planned at Vemagiri to remove the constraint. After exhausting all avenues at SR, if any additional burden is to be borne by ER, the same may be discussed.

*ERLDC gave a presentation highlighting the study results with existing network. Presentation is enclosed at **Annexure-II**. ERLDC elaborated that, with ER to WR export of 1300 MW, most severe N-1-1 contingency is tripping of 400 KV Talcher-Angul S/C line. ERLDC concluded outcome of the study as follows:*

- *In case of bi-pole outage of 500 kV Talcher-Kolar HVDC and tripping of 400 KV Talcher-Angul S/C line, the loading of 400 KV Talcher-Meeramundali S/c is touching to its limits.*
- *In such case, generation back down at Talcher is sufficient to limit the power flow through 400 KV Talcher-Meeramundali S/C. The additional reduction of 500 MW generation at JITPL and GMR would aggravate the loading of 400 KV Talcher-Meeramundali S/C line.*

ERLDC opined that optimization of generation reduction quantum is to be decided considering sensitivity, severity of the power flows on case to case basis.

After detailed deliberation, it was decided to constitute a Committee with the members from NLDC, ERLDC, ERPC, Odisha, JITPL and GMR to conduct a detailed study and find out a possible solution. Further, it was decided that the committee would meet on 18th April 2018 at 11:00hrs at ERPC Conference Hall, Kolkata. The committee would submit its report by May 2018.

2. Issues related to Rangpo SPS operation

Rangpo SPS is designed in a special meeting held on 14th October 2016 to facilitate maximum evacuation from the hydro generation projects in Sikkim.

A. Operation of SPS-I & II: The following issues related to operation of SPS-I & II were identified in monthly PCC meetings:

SPS operation Date	Issue
27-07-17	Time delay for SPS-2 more than 500 ms
10-01-18	Time delay of SPS-2 less than 500 ms
21-02-18	SPS-1 operated even though the flow did not cross 850 MW after tripping of one line

In 54th PCC, Powergrid informed that the scheme was implemented using PLC and there may be minor errors in MW transducers. This problem would be resolved when the SPS scheme implemented through BCU and SAS which is under the awarding stage. The implementation would take 3 to 4 months.

PCC felt that the time delay between SPS 1 and II may be reviewed till the SPS scheme implemented through SAS. PCC decided to review the time delay.

B. Review of generation reduction: In 138th OCC, it was informed that Tashiding HEP is also included under Rangpo SPS, two units of Tashiding HEP will trip on actuation of SPS. However, it will be reviewed in coordination with other generators covered in the SPS.

Members may decide.

Deliberation in the meeting

*ERLDC gave a detailed presentation highlighting the existing SPS scheme at 400 kV Rangpo S/s. Presentation is enclosed at **Annexure-III**. It was explained that, as per the CERC order dated 22nd June 2017, the total power flow through 400 kV Rangpo- Binaguri D/C line was enhanced to 1700 MW and the threshold limit for Rangpo SPS was revised to 850 MW. Accordingly, SPS was designed such that in case of outage of one circuit of 400kV Rangpo-Binaguri D/c line, the power flow through the another circuit would be restricted to 850 MW. Therefore after the commissioning of Tashideng HEP, there is a need for reviewing the generation reduction by each HEPs to accommodate the Tashideng HEP unit.*

A. Review of quantum of generation reduction:

*ERLDC elaborated that, if one unit of Tashiding is allowed to remain synchronized to the grid after actuation of SPS-1 signal in the event of outage of any one circuit of 400kV Rangpo-Binaguri D/c line, the resulting power flow in other circuit would jump to 861 + 48 = **909** MW. Therefore, around 59*

MW generation backing down is necessary to limit the power flow through the healthy circuit of 400kV Rangpo-Binaguri line within 850 MW. The additional generation backing down might be apportioned among the stations in the ratio of their respective unit size/capacity which is as given below:

- *Teesta-III: 30MW*
- *Chujachen: 8MW*
- *Dikchu:7MW*
- *Tashiding:7MW*
- *Jorethang:7MW*

Teesta III and DANS Energy representatives informed that generation backing down would take time from 20 seconds to 1 minute and in the mean time, SPS-II may operate as the time delay between SPS-I and SPS-II is only 500 ms.

After detailed deliberations the following two proposals were emerged which are as given below:

Proposal 1:

- *ERPC proposed that tripping of one additional unit out of the remaining units on receipt of the SPS-1 signal would be more feasible to implement, instead of the generation backing down. Tripping of additional unit should be implemented on rotational basis among the stations on monthly basis for sharing the burden uniformly.*
- *ERLDC informed that Teesta-III unit may be excluded from the above proposed scheme as Teesta-III generators were giving generation relief to the maximum extent possible and only one unit of 200 MW would remained synchronized to the Grid.*
- *It was felt that the tripping of 200 MW Teesta-III unit would give more relief than the required margin of 59 MW and moreover, the remaining unit of Teesta-III would be getting tripped after the actuation of SPS-II signal. So, it was agreed that if the Scheme is implemented, it has to exclude Teesta-III and only the remaining units of Chuzachen, Dikchu, Jorethang and Tashideng HEPs shall participate in the Scheme.*
- *Powergrid informed that no modification would be required in logic and hardware to implement the above proposal at Rangpo S/s and only the tripping logic at individual stations has to be extended to the respective unit.*
- *Accordingly, it was proposed that the month-wise roaster for tripping one of the remaining units along with the first unit would be as follows and the same may be implemented w.e.f 1st May, 2018.*

    - *1st Month– Second unit of Dikchu HPS*
    - *2nd Month – Second unit of Jorethang HPS*
    - *3rd Month - Second unit of Chuzachen HPS*
    - *4th Month – Second unit of Tashiding HPS*

Proposal 2:

- *ERLDC proposed an another proposal in which the units which were supposed to trip through SPS-I trip logic could be operated on over load with the quantum of additional generation as follows:*

    - *Teesta-III: 30MW*
    - *Chujachen: 8MW*
    - *Dikchu:7MW*
    - *Tashiding:7MW*
    - *Jorethang:7MW*

- *Accordingly, the other unit which would remain connected to the Grid should normally operate with reduced load (the reduction shall be as indicated above) so that on actuation of SPS-I signal total generation quantum will remain within the threshold limit.*
- *Powergrid informed that no modification in logic and hardware is required to implement the scheme.*

Teesta III and DANS Energy representatives agreed to the Proposal 2.

Representatives of Chuzahen and Dikchu were not present in the meeting.

After detailed deliberation, it was agreed to implement the Proposal-2 and all the respective generators (i.e. Teesta-III, Chuzachen, Dikchu, Jorethang & Tashideng) were advised to do the necessary modification at their end and implement the scheme w.e.f. 1st May 2018.

B. Review of time delay between SPS-I & II operation:

ERLDC opined that the power flow in the lone Rangpo-Binaguri circuit may sometimes need a little more time than 500ms to fall within 850MW on actuation of SPS-1 and requested to increase the time delay between SPS-I and SPS-II operation from 500 ms to 1000 ms.

Powergrid informed that the scheme has been implemented using R-S flip flop and there might be minor errors in MW transducers. This problem would be resolved once the SPS scheme is implemented through BCU and SAS. SPS trip signals can be configured as SOEs in ERLDC SCADA after implementation of the same. The implementation would complete by June 2018.

Powergrid added that they have observed hot spots at many locations and increasing the time delay to 1000 ms may further deteriorate the healthiness of the remaining healthy circuit. Powergrid opined that 700 ms would be a judicious time delay between SPS-I and SPS-II operation. Powergrid

requested all the generators to do the time synchronization with GPS clock so that the time delay can be measured correctly.

After detailed deliberation, it was decided to enhance the time delay between SPS-I and SPS-II operation from 500 ms to 700 ms and Powergrid was advised to implement the same at the earliest.

3. Load shedding scheme at 400/220kV Patna(PG) and 220/132/33kV Sipara-- Additional Agenda by BSPTCL

Earlier there were two 400/220kV ICTs at Patna(PG) S/s, one of 315 MVA and another of 500 MVA. It was observed that 315 MVA ICT used to trip on overload in the event of tripping 500 MVA ICT. This had caused severe power failures in around Patna. In order to avoid such cascade tripping, a load shedding scheme was implemented at Patna. On tripping of 500 MVA ICT at Patna, the following lines would trip from 220kV Patna (PG) and Sipara to avoid overloading on 315MVA ICT:

- 220kV Patna(PG)-Khagaul line from Patna(PG) end
- 220kV Patna(PG)-Fatua line from Patna(PG) end
- 220kV Sipara-Khagaul line from Sipara end

BSPTCL informed that recently one more 500MVA, 400/220kV ICT was commissioned at Patna(PG) S/s which satisfied the N-1 criterion at 400/220kV Patna(PG) S/s. Hence the load shedding scheme at 220kV Patna (PG) and Sipara is not required. BSPTCL informed that they are removing the load shedding scheme at 220kV Patna (PG) and Sipara.

Members may note.

Deliberation in the meeting

Members noted.

Meeting ended with vote of thanks to the chair.

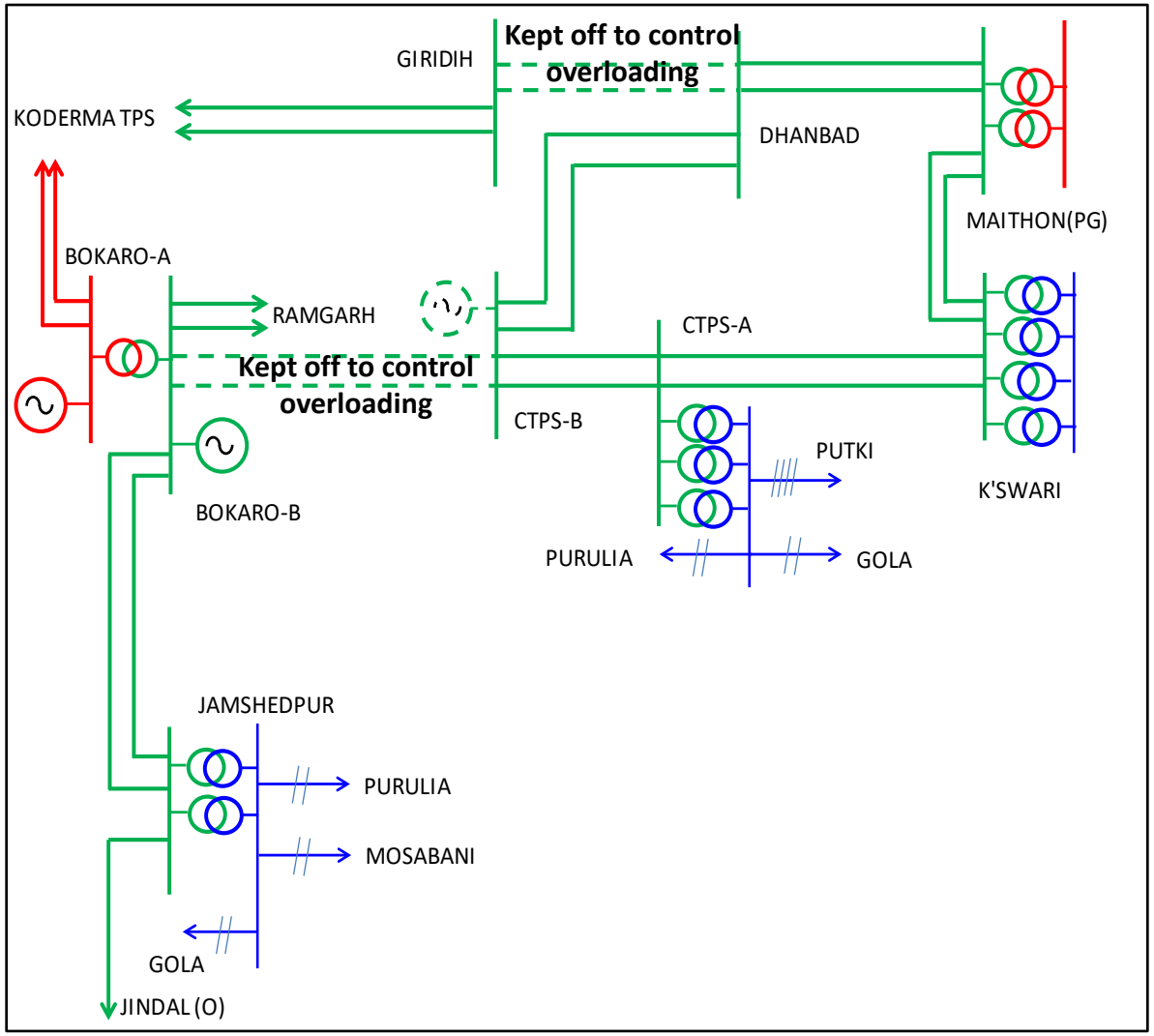
****

Annexure-C5

Grid Disturbance (GD-1) on 11th April 2018 at Dhanbad, Jamshedpur and Nearby Area in DVC

Event

- **19:42 Hrs :** 220 kV Maithon(PG)-Dhanbad-I tripped on Fault.
- **20:10 Hrs :** While attempting to restore ckt 1, the other circuit i.e. 220 KV Maithon(PG)-Dhanbad II tripped fault **(Power flow 211 MW)**
- **20:15 Hrs :** 220 kV Kalyaneswari – CTPS-A ckt-I tripped from Kalyaneswari end due to snapping of Y-ph CT Jumper **(Power Flow 150 MW/Ckt)**
- **At 20:18 Hrs :**
  - 220kV Kalyaneswari – CTPS-A ckt-II tripped on YB fault **(Power flow 280 MW)**
  - **Total Power Failure at CTPS-A, CTPS-B, and Dhanbad**
  - 220 kV Bokaro B – Jamshedpur D/C was opened to avoid overloading of Bokaro-A 400/220kV ICT.
  - 220 kV Joda-Jindal S/C tripped on protection from Joda end.
  - **Total Power Failure at Jamshedpur**
  - **Total Load Loss : 700 MW**



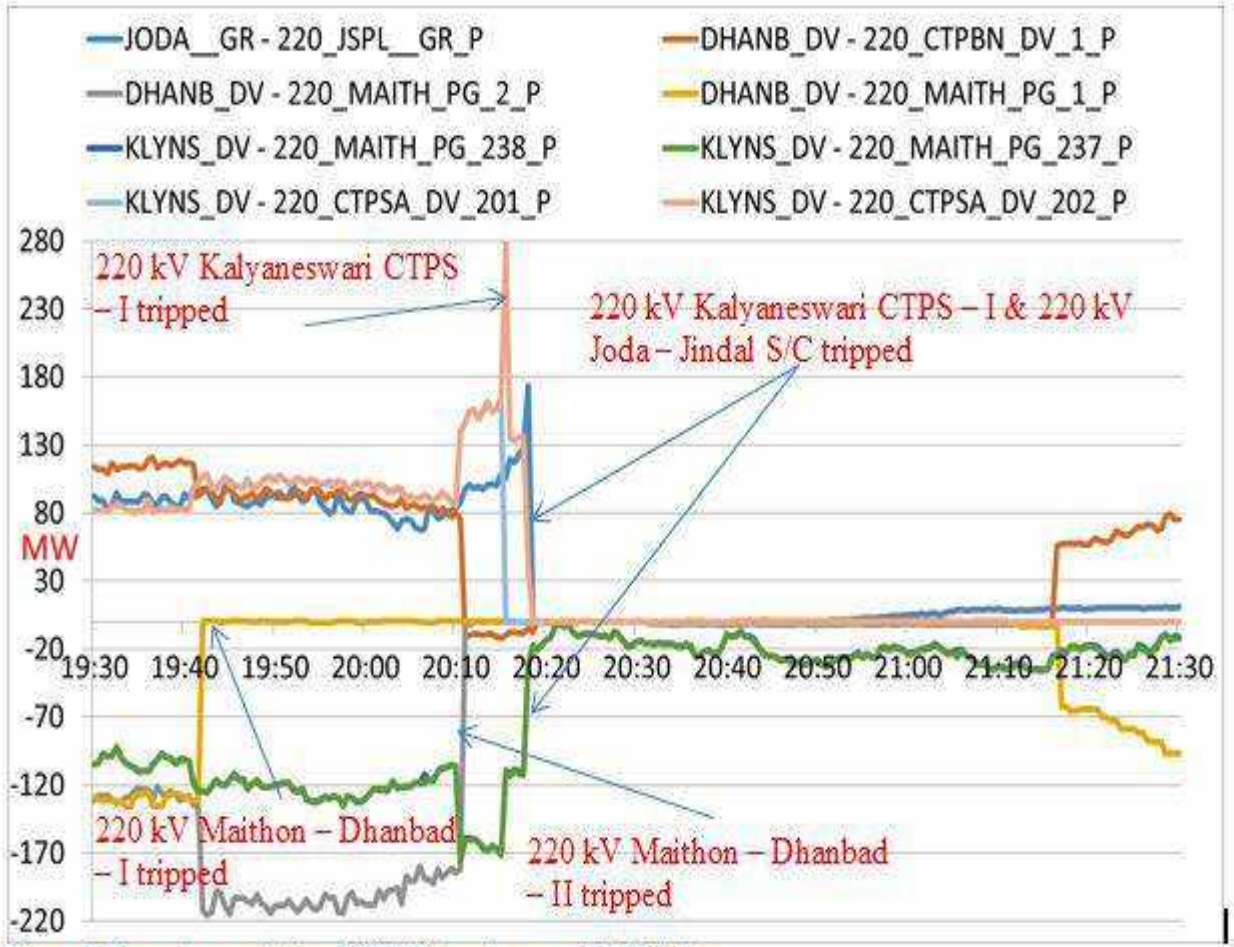


Figure 6: Power flow variation of 220 kV circuits as per SCADA data

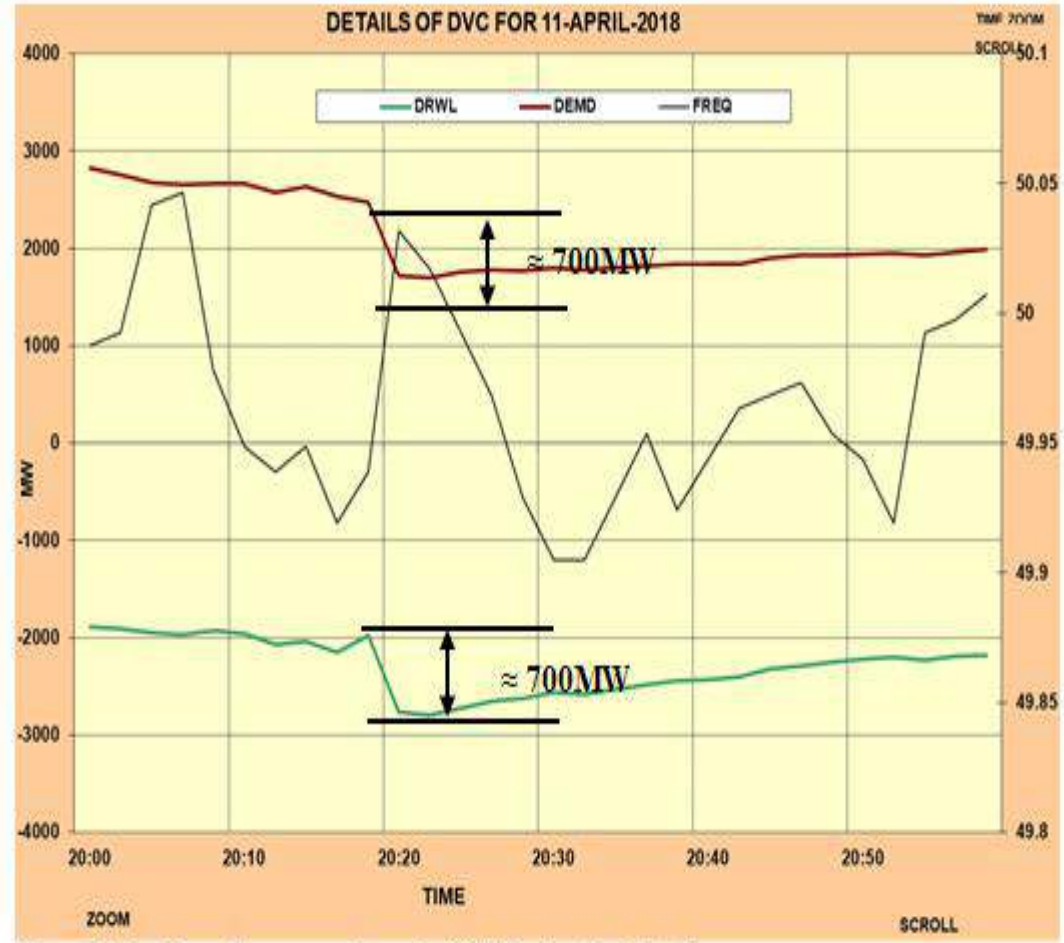


Figure 7: Variation of power exchange by DVC during the disturbance

Observation :-

- **The N-1 Reliability of DVC system has not been ensured in the current event leading to Cascade Tripping.**
- **Second Cascade Tripping Event after the Grid Disturbance at Kalyaneshwari and CTPS in Month of Jan'18 also large load loss of 558 MW and gen Loss of 189 MW occurred.**
- **Major Concern : Peak Load Season of DVC is approaching and such disturbance can become frequent If adequate measures not taken.**

Short Term Action :-

- **OCC and PCC has suggested for Load Trimming Scheme (LTS) Implementation on 220/132 kV ICTs and 220 kV Lines to avoid such cascaded tripping. (DVC may present Implementation Plan and its Current Status to OCC)**
- **315 MVA 400/220 kV Bokaro 2nd ICT may be Commissioned on accelerated manner. (DVC may Kindly update the Status to OCC)**

Long Term Action :-

- **220/132 kV ICTs and 220 kV Lines Augmentation Plan for DVC network for Ensuring N-1 Reliability. (In OCC/PCM DVC has intimated that they will submit the Plan in a week : No Plan has yet been received)**

Annexure-C5.1

Damodar Valley Corporation

Under Ministry of Power, GoI (Established by Act No. XIV of 1948)
ELECTRICITY DEPARTMENT
DVC TOWERS, VIP ROAD, KOLKATA - 700 054.

No. EDCON/SPE/System Study/288

पूर्वी क्षेत्रीय विद्युत समिति
Eastern Regional Power Committee
डायरी सं० / Diary No. 131
दिनांक / Date 19/04/18
भारत सरकार / Govt of India
14, गोल्फ क्लब रोड टालीगंज
14, Golf Club Road
कोलकाता-33, Kolkata-33

Dated. 16.04.2018

To
The Member (Secretary),
Eastern Region Power Committee
14, Golf Club Road
Tollygunj, Kolkata - 700033

Sub: Contingency Planning in respect of DVC T&D System

Ref.: ITEM NO. B15 of 37th ERPC Meeting

Dear Sir,

As advised to be submitted under referred item No. recorded in the Minutes of the 37th ERPC Meeting held on 16th March – 18 at Goa, the subject action plan in regard to the strengthening of the DVC transmission system for long term adequacy, especially for the evacuation of 1 x 500MW generation of Bokaro – A and contingency planning in respect of highly loaded ATRs, is enclosed herewith for your kind information and further needful please.

Regards,

Yours faithfully,

(S. K. Bose) 16/4/18
Chief Engineer – I
System Planning & Engineering

Enclo.: As stated above

Copy to:

1. Executive Director, ERLDC, Kolkata

Distribution:

1. Executive Director (System), DVC, Kolkata
2. Chief Engineer - I (SLDC), DVC, Howrah
3. Chief Engineer - I (CLD), DVC, Maithon

Contingency Planning of DVC in respect of ITEM NO. B15 of 37th ERPC Meeting

ATR/ICT at	Existing scheme	Proposed scheme	Status
BTPS	1 x 315 MVA ICT	2 x 315 MVA ICT	a. ICT already commissioned b. 220KV Controlling bay is under construction (Target : 03/19)
CTPS	Load at 33KV level is being fed by 132/33KV Power Transformer through 220/132KV ATR	New 2 x 80MVA 220/33KV power transformers are going to be installed to relieve ATRs	a. Transformer already procured b. Contruction of 220KV bays is under pre-tendering stage (Target : 12/18)
Kalyaneswari	Load at Patherdih region is being fed by Kalyaneswari - MHS - Patherdih line through ATRs	2 x 160MVA ATRs are going to be installed at Dhanbad s/s along with contruction of 132KV D/C Dhanbad - Patherdih line These two ATRs may cater the load of Patherdih region through the above line and the ATRs at Kalyaneswari get relieved	a. 132KV D/C Dhanbad - Patherdih line is under contruction (Target : 08/18) b. Procurement & installation of 2 x 160MVA ATRs is under process (Target : 06/19)
DTPS	The load of Burdwan, Belmuri, Howrah is being fed from DTPS through 3 x 160 MVA ATR	220/132KV Infrastructure at Burdwan substation along with creation of 220KV D/C line from Parulia s/s to Burdwan s/s is under consideration This arrangement may cater the load of Burdwan, Belmuri, Howrah; In exigency power may flow at upstream (towards DTPS) to reduce the ATR loading	a. 220KV D/C Parulia - Burdwan line is under contruction (Target : 08/19) b. Contruction of 220KV (GIS) /132KV at Burdwan s/s is under tendering stage (Target : 12/19)

LIST OF FEEDERS IDENTIFIED TO BE DISCONNECTED UNDER RLDC INSTRUCTION, TO CONTROL OVERDRAWAL OF THE CONCERNED STATE

WB System

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

Odisha System

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

Intra-state Feeders	Remarks
132kV Bolangir(New)-Patnagarh S/C	
132kV Bhanjanagar-Phulbani S/C	
132kV Chandaka-Nimapara / Ranasighpur	
132kV Baripada(PG)-Jaleswar/Bhograi	
132kV Jajpur Rd. – Kendrapara D/C	

DVC System (feeders identified are at 33kV)

List of Sheddable Feeders of DVC

SUBSTN	NAME OF THE CONSUMER	Category	Rev. CD in MVA
Barhi	JSEB Barhi	JSEB	30.0
BTPS-A	JSEB Bokaro	JSEB	24.0
CTPS	JSEB Chas	JSEB	20.0
Konar	JSEB Konar Banaso	JSEB	10.0
Kumardubi	JSEB Mugma	JSEB	22.0
Giridih	JSEB Giridih	JSEB	55.0
Patherdih	JSEB Digwadih	JSEB	17.0
Patherdih	JSEB Gobindpur	JSEB	40.0
Putki	JSEB Ganeshpur	JSEB	35.0
Putki	JSEB Jamadoba	JSEB	13.0
Barhi	JSEB Padma PSS RGGVY	JSEB	18.0
CTPS	JSEB Dugdha	JSEB	25.0
Ramgarh	JSEB Ramgarh	JSEB	80.0
Konar	JSEB Karma PSS RGGVY	JSEB	3.0
Kumardubi	JSEB Kumardubi	JSEB	9.0
Nimiaghat	JSEB Dumri Banaso	JSEB	40.0
Patherdih	JSEB Mukunda	JSEB	13.0
Putki	JSEB Katras (Tilatand)	JSEB	17.0
Patherdih	PMCH Medical College	JSEB	9.0
Ramgarh	JSEB West Bokaro (Ghato)	JSEB	1.5
Sindri	JSEB Sindri	JSEB	9.0
Biada	*JSEB Biada-Chas*	*JSEB*	15.0
Putki	JSEB Katras(Sijua)	JSEB	2.5
Putki	JSEB Sendra Bansjora	JSEB	4.0
CTPS	JSEB Jainamore	JSEB	22.0
Maithon R/B	JSEB Badjna	JSEB	18.0
Belmuri	WBSEB Belmuri	WBSEB	25.00
Burdwan	WBSEB Burdwan	WBSEB	48.00
Kalipahari	WBSEB Kanyapur	WBSEB	29.00
Kalipahari	WBSEB Luchipur	WBSEB	25.00
Maithon L/B	WBSEB Dendua	WBSEB	10.00
Maithon L/B	WBSEB Kalyaneswary	WBSEB	1.00
MTPS	WBSEB Borjora	WBSEB	10.00
Patherdih	WBSEB Santhaldih	WBSEB	0.80
Jamuria	WBSEDCL Jamuria	WBSEB	20.0

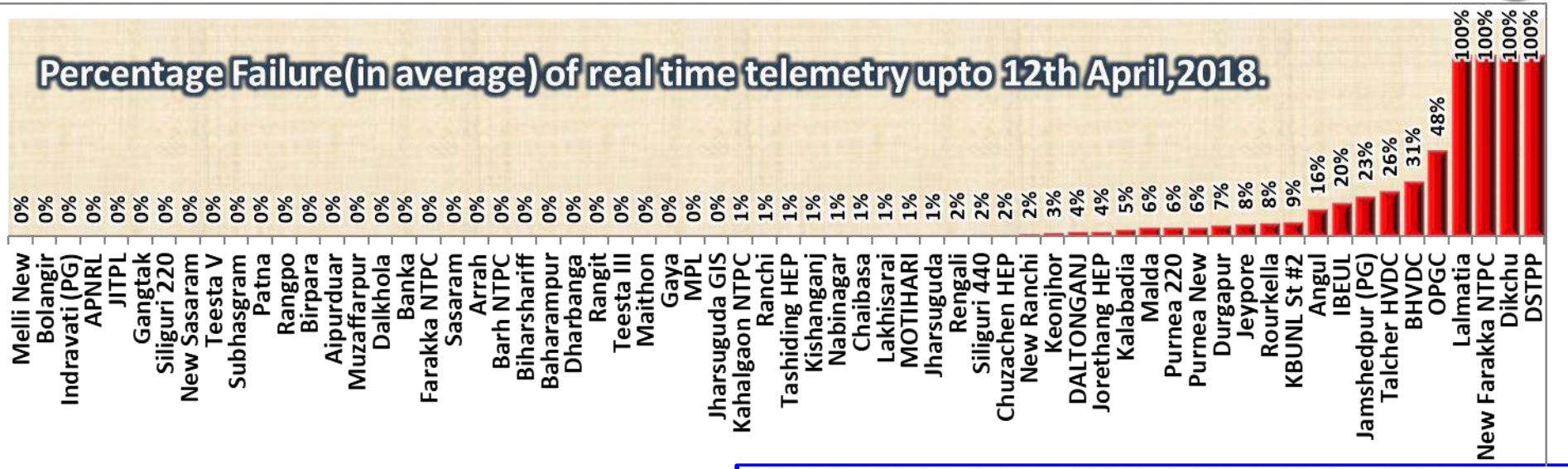
JUSNL System

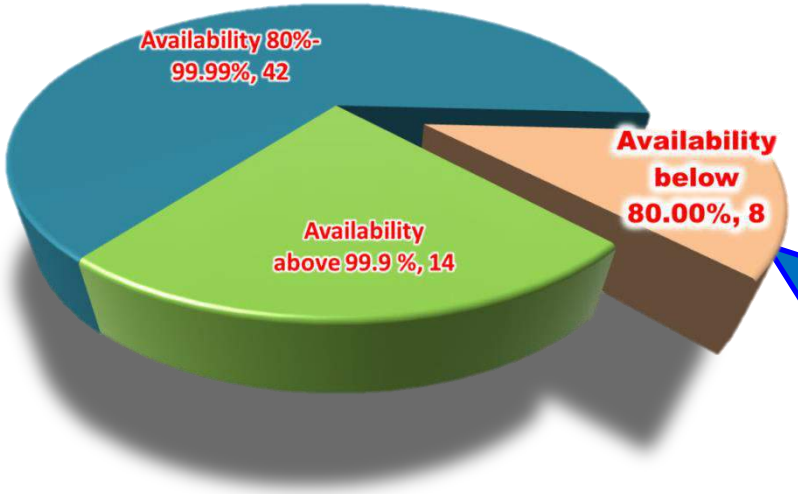
Priority	Feeders/ICTs	Point of Disconnection
1	One 400/220 kV 315 MVA ICT Jamsedpur	400 kV Jamsedpur
2	220 kV Ranchi(PG)-Chandil(JUVNL)	220 kV Ranchi-PG
Intra-state Feeders		**Remarks**
132kV Chandil – Golmuri D/C		
132kV Dumka-Pakur S/C		

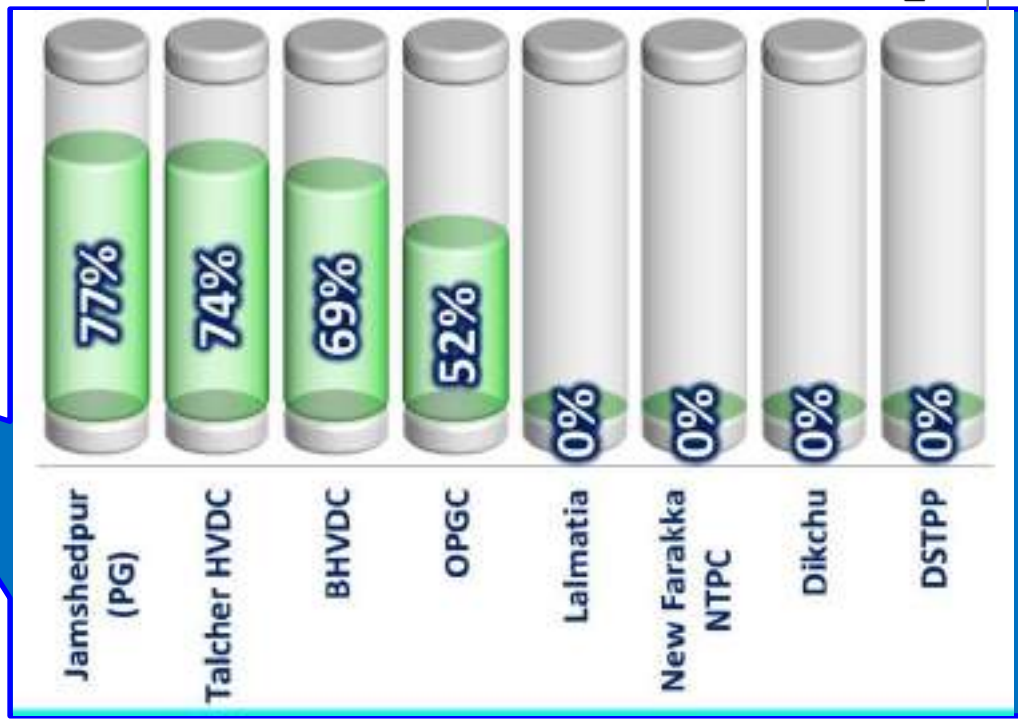
BSPTCL System

Priority	Feeders/ICTs	Point of Disconnection
1	132kV Banka(PG)-Banka D/C line	132kV Banka PG
2	132kV Banka(PG)-Sultanganj D/C	132kV Banka PG
3	132kV Ara(PG)-Jagdishpur S/C line	132 kV Ara PG

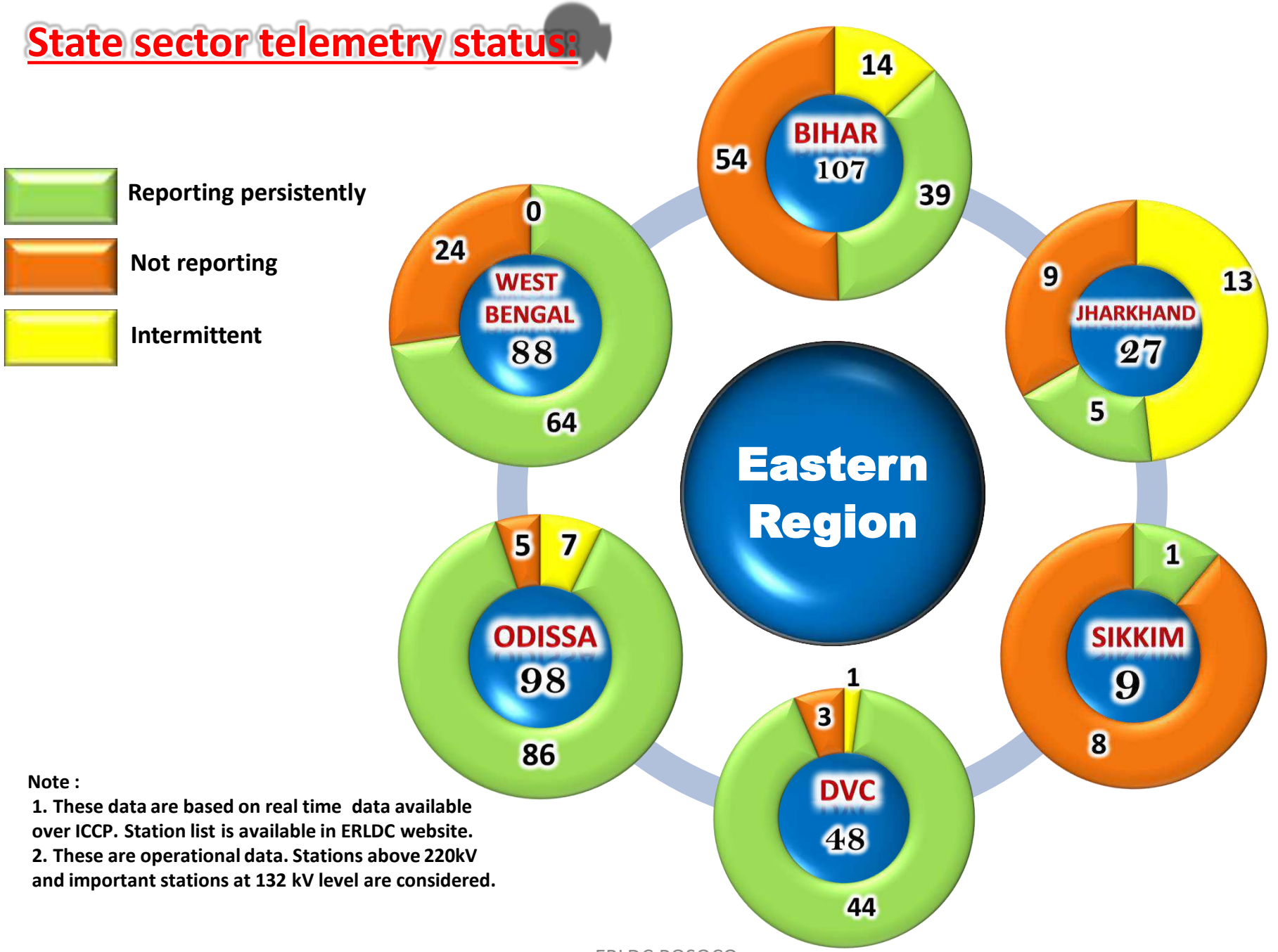
Overview of real time telemetry of Eastern region, April-2018.







State sector telemetry status:



Note :

1. These data are based on real time data available over ICCP. Station list is available in ERLDC website.
2. These are operational data. Stations above 220kV and important stations at 132 kV level are considered.

Major concerns

- **Prolong outage:**
  - **New Farakka (NTPC) since 09-09-2017(Target date 30th April,2018 ,as informed by NTPC in 143rd OCC).**
  - **Lalmatia(NTPC) since 01-01-2018.**
- **TISCO 400KV :**
  - **Stopped reporting since 26-03-2018(due to wideband issue as informed by DVC).**

BIHAR

List of station having availability higher than 90% of time

Biharsharif(220kV)	BODH GAYA(220kV)	Darbhanga(220kV)	Fatuha(220kV)	Hajipur(220kV)	KHAGAUL(220kV)
Madhepura(220kV)	Sipara(220kV)	Arrah(132kV)	BARH(132kV)	BARIPAHARI(132kV)	BETIAH(132kV)
Chandauti(132kV)	Dalsinghsarai(132kV)	DHAKA(132kV)	DIGHA(132kV)	Ekangarsarai(132kV)	GOH(132kV)
Hajipur Old(132kV)	Imamgunj(132kV)	Jagdishpur(132kV)	Jakkanpur(132kV)	Karpi(132kV)	Katihar(132kV)
Kusheswar Asthan (132kV)	LAKHISARAI(132kV)	MASRAKH(132kV)	Mithapur(132kV)	Nalanda(132kV)	Runisaidpur(132kV)
SAHARSA(132kV)	Sasaram(132kV)	Shekhpura(132kV)	Shitalpur(132kV)	SKMCH(132kV)	Sonebarsa(132kV)
Tekari(132kV)	Wazirganj(132kV)	KBUNL_ST_1(220KV)			

List of station having intermittent data

Kishanganj new(220kV)	Pusauli(220kV)	Samastipur new(220kV)	BIHTA(132kV)	Dumraon(132kV)	Gaighat(132kV)
Harnaut(132kV)	Kundra(132kV)	Nawada(132kV)	Raxaul (132kV)	Sherghati(132kV)	Sitamarhi(132kV)
Sonenagar(132kV)	Vaishali(132kV)				

List of stations having availability (less than 10% or RTU not integarated)

Begusarai(220kV)	DEHRI(220kV)	GOPALGANJ(220kV)	sonenagar new(220kV)	Uda Kishanganj(132kV)	Aurangabad(132kV)
BANJARI(132kV)	Banka(132kV)	Belaganj(132kV)	BIKRAMGANJ(132kV)	BUXAR(132kV)	Chhapra(132kV)
Dhandaha(132kV)	Ekma(132kV)	Forbisganj(132kV)	Gangwara(132kV)	Hathidah(132kV)	HULASGANJ(132kV)
Jahanabad(132kV)	Jai Nagar(132kV)	Jamalpur(132kV)	Jamui(132kV)	Jandaha(132kV)	Kahalgaon(132kV)
KARBIGAHIA(132kV)	Karmnasa(132kV)	Katra(132kV)	Khagaria(132kV)	Kishanganj(132kV)	Kochas (Dinara)(132kV)
Koshi(132kV)	Madhubani(132kV)	MASAURHI(132kV)	Mohania(132kV)	Motihari(132kV)	Muzaffarpur (Ramdayalu)(132kV)
Naugachhia(132kV)	Pandaul(132kV)	Phulparas (132kV)	Purnea(132kV)	RAFIGANJ(132kV)	Rajgir(132kV)
Ramnagar(132kV)	Sabour(132kV)	Samastipur(132kV)	Siwan(132kV)	Sultanganj(132kV)	Supaul(132kV)
TEHTA(132kV)	Valmikinagar(132kV)	BTPS_NEW(132KV)	DARBHANGA(132KV)	MOTIPUR(220KV)	MUSHAURI(220KV)

DVC

List of station having availability higher than 90%

BOKARO A TPS(400kV)	DURGAPUR TPS(400kV)	MEJIA B TPS(400kV)	RAGHUNATHPUR(400kV)	BARHI(132kV)	BURNPUR(220kV)
CTPS 1(132kV)	CTPS 2(220kV)	CTPS B(220kV)	DHANBAD(220kV)	DURGAPUR(220kV)	HOWRAH(132kV)
JAMSHEDPUR(220kV)	KALYANESWARI(220kV)	MEJIA A TPS(220kV)	MOSABANI(132kV)	PATRATU(132kV)	RAMGARH(220kV)
WARIA TPS(220kV)	ASP(132kV)	BAIDA(132kV)	BARDWAN(132kV)	BARJORA(220kV)	BELMURI(132kV)
CHANDIL(132kV)	GIRIDHI(220kV)	HAZARIBAG(132kV)	JAMURIA(132kV)	KALIPAHARI(132kV)	KODARMA(132kV)
KUMARDHUBI(132kV)	MAITHON HPS(132kV)	ORTH KARANPURA(132k	PANCHET HPS(132kV)	PARULIA(132kV)	PATHERDIH(132kV)
PURULIA(220kV)	PUTKI(132kV)	RAMGARH(132kV)	RAMKANAL(132kV)	KODARMA(440kV)	BOKARO_B

List of station having intermittent data

GOLA(132kV)

List of station having availability less than 10%

TISCO(400kV) KHARAGPUR(132kV) NIMIAGHAT(132kV)

JHARKHAND

List of station having availability higher than 90%

Chandil(220kV) Patratu(220kV) Ramchandrapur(220kV) Tenughat(220kV) Hatia-I(132kV)

List of station having intermittent data

Adityapur(132kV)	hakradharpur(132kV	Daltonganj(132kV)	Dumka(132kV)	Golmuri(132kV)	Japla(132kV)
Kamdara(132kV)	Kanke(132kV)	Lalmatia(132kV)	Manique(132kV)	Namkum(132kV)	Noamundi(132kV)
Pakur(132kV)					

List of station having availability less than 10%

Hatia-II(220kV)	Deoghar(132kV)	Garawah(132kV)	Goilkera(132kV)	Jadugoda(132kV)	Jamtara(132kV)
Latehar(132kV)	ajkharsawan(132kV	Sahebganj(132kV)			

WEST BENGAL

List of station having availability higher than 90%

Arambag(400kV)	Domjur(220kV)	Gokarna 400kv(400kV)	Haldia TPP(400kV)	Howrah(220kV)	Jeerat(400kV)
Kasba(220kV)	KTPS(400kV)	Lakshmikantapur(220kV)	Midnapur(220kV)	PPSP(400kV)	Satgachia(220kV)
Subhasgram(220kV)	Durgapur(400kV)	Bakreswar(400kV)	Kharagpur(400kV)	Sagardighi(400kV)	CHANDITALA(400kV)
Asansol(220kV)	DPL(220kV)	Durgapur(220kV)	Gokarna(220kV)	Rishra(220kV)	STPS(220kV)
NJP(220kV)	Bishnupur(132kV)	BTPS(132kV)	Liluah(132kV)	Rammam(132kV)	Saltlake(132kV)
Titagarh(132kV)	Maldah(132kV)	NBU(132kV)	Tcf-2(132kV)	Ashoknagar(132kV)	Adisaptagram(132kV)
New Bishnupur(220kV)	Borjora(132kV)	Bighati(132kV)	Kursiang(132kV)	NPPSP(400kV)	IPCHL(220kV)
JK NAGAR(220kV)	NEWTOWN3(220kV)	SADAIPUR(220kV)	DHARAMPUR(220kV)	Budge Budge(CESC)(220kV)	Chakmir(CESC)(132kV)
Majherhat(CESC)(132kV)	Southern(CESC)(132kV)	Botanical gurden(CESC)(132kV)	New Coshipur(CESC)(220kV)	Princep street(CESC)(132kV)	Parklane(CESC)(132kV)
Titagarh(CESC)(132kV)	BT Road(CESC)(132kV)	Jadavpur(CESC)(132kV)	EM Bypass(CESC)(220kV)	Chakmir(CESC)(132kV)	East Calcutta(CESC)(132kV)
Dum Dum(CESC)(132kV)	Taratala(CESC)(132kV)	BBD Bag(CESC)(132kV)	Belur(CESC)(132kV)		

List of station having availability less than 10%

Haldia New(220kV)	Dalkhola(220kV)	Krishnanagar(220kV)	KLC Bantala(220kV)	Barasat(132kV)	Bongaon(132kV)
Haldia Old(132kV)	Kolaghat(132kV)	Raigunj(132kV)	Sainthia(132kV)	Birpara(132kV)	Chalsa(132kV)
Tcf-1(132kV)	Tcf-3(132kV)	Tarakeswar(132kV)	Alipuduar(132kV)	Gangarampur(132kV)	Joka(132kV)
Kalimpong(66kV)	Hizli(132kV)	FOUNDRY PARK(220kV)	TLDP3(220kV)	TLDP4(220kV)	Patuli(CESC)(132kV)

ODISHA

List of station having availability higher than 90%

Mendhasal(400kV)	Meramundali(400kV)	JSPLA(400kV)	GMR(400kV)	Jayanagar(220kV)	Balimela HPS(220kV)
Uper Kolab HPS(220kV)	Theruvalli(220kV)	Indravati HPS(220kV)	Bhanjanagar(220kV)	Narendrapur(220kV)	Bidanasi(220kV)
Nayagarh(220kV)	Rengali HPS(220kV)	TTPS(220kV)	NALCO(220kV)	Rengali swiching station(220kV)	Joda(220kV)
Duburi New(400kV)	Duburi Old(220kV)	Paradeep(220kV)	Bhdrakh(220kV)	Balasore(220kV)	Budhipadar(220kV)
Tarkera(220kV)	Barkote(220kV)	TATA POWER(220kV)	JSL(220kV)	TSIL(220kV)	VEDANTA(220kV)
VISA(220kV)	JSPL(220kV)	MIL(220kV)	OPTCL (Podia)(220kV)	Sunabeda(132kV)	Machhkund HPS(132kV)
Rayagada(132kV)	Chhatrapur(132kV)	Akhusinga(132kV)	Basta(132kV)	Balugaon(132kV)	Khurda(132kV)
Puri(132kV)	Cuttack(132kV)	Choudwar(132kV)	ICCL(132kV)	Chainpal(132kV)	Rairangpur(132kV)
Dhenkanal(132kV)	Baripada(132kV)	Jajpur Road(132kV)	Angul(132kV)	Boinda(132kV)	Kendrapara(132kV)
Rourkela(132kV)	Burla HPS(132kV)	Chiplima HPS(132kV)	Sambalpur(132kV)	Rajgangapur(132kV)	Bargarh(132kV)
ARYAN(132kV)	NBVL(132kV)	EMAMI(132kV)	AISCL(132kV)	IMFFA(132kV)	MINAKHEE(132kV)
OPCL(132kV)	OCLRJ(132kV)	OCL(132kV)	Bolangir Old(132kV)	Bolani(132kV)	Soro(132kV)
Sonepur(132kV)	Anandpur (132kV)	ACC, Bargarh(132kV)	Barpalli(132kV)	Digapahandi(132kV)	Jaleswar(132kV)
Chhend(132kV)	Karanjia(132kV)	Kesura(132kV)	Patnagarh(132kV)	Pattamundai(132kV)	Phulbani(132kV)
Sundargarh(132kV)	Kalarangi(132kV)				

List of station having intermittent data

Chandaka(220kV)	IB TPS(220kV)	Bolangir New(220kV)	Aska(132kV)	Bhubaneswar (132kV)	Kamakhyanagar(132kV)
ARATI(132kV)					

List of station having availability less than 10%

Kesinga(132kV)	Sijua(132kV)	SHYAM(132kV)	VEDANTA(LANGIGARH)(132kV)	Parlakhemundi(132kV)


Thank
you

PMU Installation and commissioning status of ER as on 12.01.2018

Annexure-C24

S.No	Region	State	Sub-Station	Owner/ Utility	S/S type	PMU	TOTAL PANEL QTY	PMU Delivery status	Cable Delivery status	Erection	Cable laying	CT/PT/DI termination	Commissioning	Integration	SAT	Remarks
			78			296	175	74	75	66	65	64	64	43	60	
1	ER-II	West Bengal	Arambagh	WBSETCL	CR	3	1	Yes	Yes	done	done	done	done	done	done	
2	ER-II	West Bengal	BAKRESHWAR TPS	WBSETCL	CR	4	1	Yes	Yes	done	done	done	done	done	done	
3	ER-II	West Bengal	Bidhannagar	WBSETCL	CR	3	1	Yes	Yes	done	done	done	done	done	done	
4	ER-II	West Bengal	JEERAT	WBSETCL	CR	2	1	Yes	Yes	done	done	done	done	done	pending	SAT pending as customer didn't agree to witness SAT.
57	ER-II	West Bengal	Alipurduar	Powergrid	CR	6	7	Yes	Yes	partially done	partially done	partially done	partially done	Pending	pending	Work started on 22.12.2016. 4 PMU panels and network panel installed. Rest 2 PMU panels could not be erected because location not finalised. Cable laying and termination at PMU panel completed for 6 feeders. CT/PT interfacing pending due to unavailability of shutdown. PGCIL is asking to take DI points from field, which is not in scope. Work is held up. Team demobilised.
6	ER-II	West Bengal	KASBA	WBSETCL	CR	3	1	Yes	Yes	done	done	done	done	done	done	
7	ER-II	DVC	DSTPS	DVC	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Communication Link not available.
67	ER-I	BIHAR	BANKA	Powergrid	Kiosk	4	5	Yes	Yes	done	done	done	done	Pending	pending	SAT pending.
9	ER-II	DVC	MEJIA-B	DVC	CR	2	1	Yes	Yes	done	done	done	done	done	done	Integrated on 07.12.2016
45	ER-II	Jharkhand	Bokaro TPS	DVC	CR	1	1	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mtrs.
11	ER-II	DVC	Raghunathpur TPS	DVC	CR	3	1	Yes	Yes	done	done	done	done	done	done	
33	Odisha	Orissa	Bolangir	Powergrid	CR+Kiosk	2	3	Yes	Yes	done	done	done	done	Pending	done	Communication Link not available.
13	ER-II	DVC	Bokaro	DVC	CR	2	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 24.06.2016
14	ER-II	DVC	CTPS(Chanderpura)	DVC	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mtrs.
78	ER-I	Bihar	Barauni PP	Bihar	CR	0	0	No	No	N/A	N/A	N/A	N/A	N/A	N/A	Substation deleted.
16	Odisha	Orissa	MENDHASAL	OPTCL	CR	2	1	Yes	Yes	done	done	done	done	done	done	
17	Odisha	Orissa	MERAMANDALI	OPTCL	CR	6	2	Yes	Yes	done	done	done	done	done	done	
18	Odisha	Orissa	RENGALI	OPTCL	CR	2	1	Yes	Yes	done	done	done	done	done	done	Integrated on 22.06.2017
37	Odisha	Orissa	GMR	GMR	Kiosk	3	4	Yes	Yes	done	done	done	done	Pending	pending	SDH Panel not commisioned, powergrid supervision required for SAT activity
20	Odisha	Orissa	BALIMELA(H)	OPTCL	CR	3	1	Yes	Yes	done	done	done	done	done	done	
21	ER-II	West Bengal	Durgapur	Powergrid	CR	5	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 30.05.2016.
15	Odisha	Orissa	Budhipadar	OPTCL	CR	10	0	No	Yes	pending	pending	pending	pending	pending	pending	Manufactured, waiting for FAT. Will be dispatched after FAT.
23	Odisha	Orissa	Indrawati	Powergrid	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Communication Link not available.
24	Odisha	Orissa	Indrawati HPS	OPTCL	CR	1	1	Yes	Yes	done	done	done	done	done	done	Team deployed in substation. Permission for panel installation & cable laying given but no work permission in existing control panel is given. Team was idle for more than. 10 days.
25	Odisha	Orissa	JEYPORE	Powergrid	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Communication Link not available.
26	ER-II	West Bengal	MAITHON	Powergrid	CR	7	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 21.06.2016.
27	ER-II	West Bengal	MALDA	Powergrid	CR	2	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 24.06.2016
28	Odisha	Orissa	Rengali	Powergrid	Kiosk	2	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 04.05.2016
29	Odisha	Orissa	ROURKELA	Powergrid	Kiosk	5	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 21.04.2016
30	ER-II	West Bengal	Binaguri	Powergrid	CR	7	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 28.07.2016

PMU Installation and commissioning status of ER as on 12.01.2018

S.No	Region	State	Sub-Station	Owner/ Utility	S/S type	PMU	TOTAL PANEL QTY	PMU Delivery status	Cable Delivery status	Erection	Cable laying	CT/PT/DI termination	Commissioning	Integration	SAT	Remarks
31	ER-II	West Bengal	SUBHASHGRAM	Powergrid	Kiosk	2	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 22.06.2016
32	Odisha	Orissa	Baripada	Powergrid	CR	3	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 30.01.2017.
75	ER-I	Jharkhand	Jharkhand Pool (Chan	Powergrid	Kiosk	4	1	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mts.
34	Odisha	Orissa	ANGUL	Powergrid	Kiosk	10	11	Yes	Yes	done	done	done	done	done	done	PMU integrated on 24.03.2017.
35	Odisha	Orissa	Keonjhar	Powergrid	CR	2	3	Yes	Yes	done	done	done	done	done	done	PMU integrated on 18.01.2017.
36	Odisha	Orissa	Jharsuguda	Powergrid	Kiosk	8	9	Yes	Yes	done	done	done	done	done	done	PMU integrated on 29.07.2016
74	ER-I	Bihar	Kishanganj (karandegh	Powergrid	CR	4	1	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mts.
8	ER-II	DVC	Kodarma TPS	DVC	CR	3	1	Yes	Yes	done	done	done	done	Pending	done	SDH panel does not exist.
39	ER-II	West Bengal	Baharampur	Powergrid	CR	2	3	Yes	Yes	done	done	done	done	done	done	PMU integrated on 10.05.2016
40	ER-II	West Bengal	Birpara	Powergrid	CR	4	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 15.07.2016.
41	ER-II	DVC	CTPS B	DVC	CR	3	1	Yes	Yes	done	done	done	done	done	done	mom/sat signature pending from powergrid end.
42	ER-II	DVC	KALYANESWARI	DVC	CR	4	1	Yes	Yes	done	done	done	done	done	done	PMU integrated on 02.01.2017.
43	ER-II	DVC	PARULIA	DVC	CR	5	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 21.02.2017.
44	ER-II	West Bengal	Purulia PSP	WBSETCL	CR	2	1	Yes	Yes	done	done	done	done	done	done	
66	ER-I	BIHAR	LakhiSarai	Powergrid	Kiosk	4	5	Yes	Yes	done	done	done	done	Pending	done	SAT completed. Integration planed
46	ER-II	West Bengal	Durgapur TPS	DVC	CR	3	1	Yes	Yes	done	done	done	done	done	done	
73	ER-I	Jharkhand	Daltonganj	Powergrid	Kiosk	2	3	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	Site on-hold as Substation is under construction.
22	ER-II	West Bengal	FARRAKA	NTPC	CR	5	2	Yes	Yes	done	done	done	done	pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mtrs.
54	Odisha	Orissa	Ind barath	Ind barath	Kiosk	1	1	Yes	Yes	pending	pending	pending	pending	pending	pending	Permission awaited
10	ER-II	DVC	Maithon RB TPS	DVC	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Work started on 04.07.2016. Panel shifted. Team demobilised due to access issue and panel location issue. Team deputed again 18th August, I&C done, integration pending due to communication break with control center.
51	Odisha	Orissa	Jindal	JITPL	CR	2	1	Yes	Yes	pending	pending	pending	pending	pending	pending	Permission awaited
5	ER-II	West Bengal	Kolaghat TPS	WBSETCL	CR	4	1	Yes	Yes	done	done	done	done	done	done	
52	Odisha	Orissa	Monnet	Monnet	CR	1	1	Yes	Yes	pending	pending	pending	pending	pending	pending	Permission awaited
55	ER-II	Sikkim	New Melli	Powergrid	CR	0	0	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Substation deleted.
76	ER-I	Jharkhand	Patratu	Jharkhand	CR	3	1	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	Permission awaited.
53	Odisha	Orissa	Strelite	Strelite	CR	3	1	Yes	Yes	done	done	done	done	pending	done	SDH not commisioned
48	Odisha	Orissa	TALCHER	NTPC	CR	5	2	Yes	Yes	pending	pending	pending	pending	pending	pending	Permission awaited
58	ER-II	West Bengal	Rajarhat	Powergrid	CR	2	1	Yes	Yes	done	pending	pending	pending	Pending	pending	Site on-hold. Work withheld due to localite agitation issue.
59	ER-I	Jharkhand	JAMSHEDPUR	Powergrid	CR	6	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 14.02.2017
60	ER-I	BIHAR	Kahalgaon(KHSTPP)	NTPC	CR	6	2	Yes	Yes	done	done	pending	pending	Pending	pending	Work on-hold. NTPC asked to use Armoured cable. Out of scope. Team idemobilized from site. Site assumed as closed as per PRM in Kolkatta.
61	ER-I	BIHAR	Purnea	Powergrid	CR	6	2	Yes	Yes	done	done	done	done	done	done	PMU integrated on 13.04.2017

PMU Installation and commissioning status of ER as on 12.01.2018

S.No	Region	State	Sub-Station	Owner/ Utility	S/S type	PMU	TOTAL PANEL QTY	PMU Delivery status	Cable Delivery status	Erection	Cable laying	CT/PT/DI termination	Commissioning	Integration	SAT	Remarks
62	ER-I	BIHAR	PATNA	Powergrid	Kiosk	6	7	Yes	Yes	done	done	done	done	done	done	PMU integrated on 11.04.2017
63	ER-I	Jharkhand	RANCHI	Powergrid	Kiosk	12	13	Yes	Yes	done	done	done	done	done	done	
64	ER-I	BIHAR	SASARAM(Pusauli)	Powergrid	CR+Kiosk	9	3	Yes	Yes	done	done	done	done	done	done	
65	ER-I	BIHAR	BARH	NTPC	CR	4	1	Yes	Yes	done	done	done	done	Pending	done	Communication Link not available.
12	ER-II	DVC	MEJIA	DVC	CR	5	2	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mtrs.
38	ER-II	Sikkim	RANGPO	Powergrid	CR	4	1	Yes	Yes	done	done	done	done	Pending	done	S/S couldn't be integrated because distance between PMU panel and SDH is more than 100 mtrs.
68	ER-I	Jharkhand	Chaibasa	Powergrid	Kiosk	4	5	Yes	Yes	done	done	done	done	done	done	
69	ER-I	BIHAR	765kv Gaya	Powergrid	Kiosk	11	12	Yes	Yes	done	done	done	done	done	done	PMU integrated on 24.02.2017
70	ER-I	Jharkhand	765/400kV Ranchi (N)	Powergrid	Kiosk	8	9	Yes	Yes	done	done	done	done	done	done	PMU integrated on 24.02.2017
71	ER-I	Bihar	Biharshariff	Powergrid	CR	9	3	Yes	Yes	done	done	done	done	done	done	
72	ER-I	Bihar	MUZAFFAPUR	Powergrid	CR	5	2	Yes	Yes	done	done	done	done	done	done	
49	ER-II	Sikkim	TEESTA	NHPC	CR	1	1	Yes	Yes	done	done	done	done	done	pending	SAT pending due to no supervision
77	ER-I	Jharkhand	Tenughat	Jharkhand	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	SDH panel not commisioned
19	Odisha	Orissa	U.KOLAB	OPTCL	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Communication Link not available.
56	ER-II	Sikkim	TT Pool	Powergrid	CR	0	0	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Substation deleted.
50	Odisha	Orissa	Uttara	Powergrid	CR	2	1	Yes	Yes	done	done	done	done	Pending	done	Communication link from s/s to ERLDC not available.
47	Odisha	Orissa	TTPS(Talcher)	OPTCL	CR	3	1	Yes	Yes	pending	pending	pending	pending	pending	pending	Permission awaited

ER PMU site activity Summary:

Sl. No.	Region	Utility	As per approved BOQ		Supplied		Installed		Commissioned		Integrated to ERLDC/ SLDC	
			No. of Substations	No. of PMU	S/S	PMU	S/S	PMU	S/S	PMU	S/S	PMU
1	ER-I	Powergrid	15	94	15	94	14	92	14	92	10	76
2	ER-I	NTPC	2	10	2	10	2	10	1	4	0	0
3	ER-I	Jharkhand	2	5	2	5	1	2	1	2	0	0
4	ER-I	Bihar	0	0	0	0	0	0	0	0	0	0
	ER-I	**Total**	**19**	**109**	**19**	**109**	**17**	**104**	**16**	**98**	10	76
1	ER-II	Powergrid	10	41	10	42	9	35	8	33	7	29
	ER-II	NHPC	1	1	1	1	1	1	1	1	1	1
2	ER-II	NTPC	1	5	1	5	1	5	1	5	0	0
3	ER-II	DVC	13	37	13	37	13	37	13	37	7	22
4	ER-II	WBSETCL	7	21	7	21	7	21	7	21	7	21
	ER-II	**Total**	**32**	**105**	**32**	**106**	**31**	**99**	**30**	**97**	**22**	**73**
1	Odisha	Powergrid	10	38	10	38	10	38	10	38	6	30
2	Odisha	OPTCL	8	29	7	19	6	16	6	16	5	14
3	Odisha	NTPC	1	5	1	5	0	0	0	0	0	0
4	Odisha	IPP	5	10	5	10	2	6	2	6	0	0
	Odisha	**Total**	**24**	**82**	**23**	**72**	**18**	**60**	**18**	**60**	**11**	**44**
	ER	**Total**	**75**	**296**	**74**	**287**	**66**	**263**	**64**	**255**	**43**	**193**

Annexure-D.1

Anticipated Power Supply Position for the month of
May-18

SL.NO		PARTICULARS	PEAK DEMAND MW	ENERGY MU
1		**BIHAR**		
	i)	NET MAX DEMAND	5000	2534
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	346	190
		- Central Sector	3143	1831
	iii)	SURPLUS(+)/DEFICIT(-)	-1511	-513
2		**JHARKHAND**		
	i)	NET MAX DEMAND	1130	810
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	430	167
		- Central Sector	831	467
	iii)	SURPLUS(+)/DEFICIT(-)	131	-176
3		**DVC**		
	i)	NET MAX DEMAND (OWN)	2900	1725
	ii)	NET POWER AVAILABILITY- Own Source	5200	2864
		- Central Sector	250	181
		Long term Bi-lateral (Export)	1564	1164
	iii)	SURPLUS(+)/DEFICIT(-)	986	156
4		**ORISSA**		
	i)	NET MAX DEMAND	4300	2678
	ii)	NET POWER AVAILABILITY- Own Source	3265	1815
		- Central Sector	1235	708
	iii)	SURPLUS(+)/DEFICIT(-)	200	-155
5		**WEST BENGAL**		
5.1		**WBSEDCL**		
	i)	NET MAX DEMAND (OWN)	5580	3556
	ii)	CESC's DRAWAL	0	0
	iii)	TOTAL WBSEDCL's DEMAND	5580	3556
	iv)	NET POWER AVAILABILITY- Own Source	3690	2149
		- Import from DPL	148	0
		- Central Sector	2086	1411
	v)	SURPLUS(+)/DEFICIT(-)	344	4
	vi)	EXPORT (TO B'DESH & SIKKIM)	5	4
5.2		**DPL**		
	i)	NET MAX DEMAND	280	180
	ii)	NET POWER AVAILABILITY	428	192
	iii)	SURPLUS(+)/DEFICIT(-)	148	12
5.3		**CESC**		
	i)	NET MAX DEMAND	2180	1159
	ii)	NET POWER AVAILABILITY - OWN SOURCE	830	503
		FROM HEL	540	348
		FROM CPL/PCBL	40	0
		Import Requirement	770	308
	iii)	TOTAL AVAILABILITY	2180	1159
	iv)	SURPLUS(+)/DEFICIT(-)	0	0
6		**WEST BENGAL (WBSEDCL+DPL+CESC)** **(excluding DVC's supply to WBSEDCL's command area)**		
	i)	NET MAX DEMAND	8040	4895
	ii)	NET POWER AVAILABILITY- Own Source	4948	2843
		- Central Sector+Others	3436	1759
	iii)	SURPLUS(+)/DEFICIT(-)	344	-292
7		**SIKKIM**		
	i)	NET MAX DEMAND	85	35
	ii)	NET POWER AVAILABILITY- Own Source	1	0
		- Central Sector+Others	158	86
	iii)	SURPLUS(+)/DEFICIT(-)	74	52
8		**EASTERN REGION** **At 1.03 AS DIVERSITY FACTOR**		
	i)	**NET MAX DEMAND**	20830	12677
		Long term Bi-lateral by DVC	1564	1164
		EXPORT BY WBSEDCL	5	4
	ii)	**NET TOTAL POWER AVAILABILITY OF ER** **(INCLUDING C/S ALLOCATION)**	23243	12912
	iii)	**PEAK SURPLUS(+)/DEFICIT(-) OF ER** **(ii)-(i)**	844	-933

Annexure-D2

EASTERN REGIONAL LOAD DESPATCH CENTRE
KOLKATA

TRANSMISSION ELEMENTS OUTAGE APPROVED IN 144TH OCC MEETING OF ERPC

		FROM		TO					
SL. No	NAME OF THE ELEMENTS	DATE	TIME	DATE	TIME	REMARKS	S.D availed BY	Reason	SUBJECT TO CONSENT FROM AGENCY
1	765/400KV 3X500 MVA ICT-I AT NEW RANCHI	03/05/18	08:00	05/05/18	18:00	ODB	ER-I	STATCOM CONSTRUCTION	NLDC
2	765 KV , 3X80 MVAR B/R-II AT NEW RANCHI	07/05/18	08:00	07/05/18	18:00	ODB	ER-I	Spare switching after carrying out stability	NLDC
3	765/400KV 3X500 MVA ICT-II AT NEW RANCHI	09/05/18	08:00	11/05/18	18:00	ODB	ER-I	STATCOM CONSTRUCTION	NLDC
4	765 KV , NEW RANCHI - DHARMAJAYGARH-II	14/05/18	08:00	14/05/18	18:00	ODB	ER-I	STATCOM CONSTRUCTION	NLDC
5	765 KV , NEW RANCHI - DHARMAJAY GARH - II LR (Switchable)	14/05/18	08:00	24/05/18	18:00	OCB	ER-I	STATCOM CONSTRUCTION	NLDC
6	400 KV Ranchi-NPPSP-I line	17/05/18	08:00	17/05/18	18:00	ODB	ER-I	STATCOM CONSTRUCTION	WB
7	400 KV BUS -I AT NEW RANCHI	18/05/18	08:00	19/05/18	18:00	ODB	ER-I	STATCOM CONSTRUCTION	
8	400 KV Ranchi-NPPSP-II line	21/05/18	08:00	21/05/18	18:00	ODB	ER-I	STATCOM CONSTRUCTION	WB
9	400 KV BUS -2 AT NEW RANCHI	23/05/18	08:00	24/05/18	18:00	ODB	ER-I	STATCOM CONSTRUCTION	
10	400/220kV, 315MVA ICT-3 AT JAMSHEDPUR	08/05/18	09:30	08/05/18	17:30	ODB	ER-I	CSD TESTING WORK	JSEB
11	125 MVAR BR 3 & 50 MVAR BR 1 AT JAMSHEDPUR	11/05/18	09:30	11/05/18	17:30	ODB	ER-I	CSD TESTING WORK	
12	125 MVAR BR2 AT JAMSHEDPUR	15/05/18	09:30	15/05/18	17:30	ODB	ER-I	CSD TESTING WORK	
13	400kv TIE BAY OF Siliguri-I & 500MVA ICT-II (402) at New Purnea	07/05/18	10:00	07/05/18	18:00	ODB	ER-I	AMP WORK	
14	400kv TIE BAY OF Siliguri-II & 500MVA ICT-I(406) at New Purnea	08/05/18	10:00	08/05/18	18:00	ODB	ER-I	AMP WORK	
15	400KV LINE REACTOR BAY OF 63MVAR MUZAFFARPUR-I (412R) at New Purnea	10/05/18	10:00	10/05/18	18:00	ODB	ER-I	AMP WORK	
16	125MVAR BUS REACTOR -II AT NEW PURNEA	11/05/18	10:00	11/05/18	18:00	ODB	ER-I	AMP WORK	
17	220KV NPRN-PRN-I	15/05/18	10:00	15/05/18	18:00	ODB	ER-I	LINE ISOLATOR ALLINGMENT WORK	BSEB
18	220KV NPRN-PRN-II	17/05/18	10:00	17/05/18	18:00	ODB	ER-I	LINE ISOLATOR ALLINGMENT WORK	BSEB
19	400/132KV 200 MVA ICT-1 AT LAKHISARAI	03/05/18	08:00	04/05/18	18:00	ODB	ER-I	Checking of Air Cell & AMP	BSEB
20	400 kV Main Bus-2 AT LAKHISARAI	08/05/18	10:00	08/05/18	14:00	ODB	ER-I	AMP	BSEB
21	400 kV Bay No.- 407 (Main Bay of 400 kV LKR-KHG-2) AT LAKHISARAI	09/05/18	10:00	09/05/18	11:00	ODB	ER-I	Taking Oil Sample of R-Phase CT	
22	400 kV Bay No.- 405 (Tie Bay of 400 kV BSF-2 & ICT-2) AT LAKHISARAI	10/05/18	10:00	10/05/18	14:00	ODB	ER-I	Taking Oil Sample of B-Phase CT	
23	80 MVAR Bus Reactor AT LAKHISARAI	11/05/18	08:00	12/05/18	18:00	ODB	ER-I	For checking/rectification of alignment of Bus Reactor Isolator and AMP	
24	200 MVA ICT-2 & 80 MVAR Bus Reactor AT LAKHISARAI	13/05/18	08:00	16/05/18	18:00	ODB	ER-I	Fire wall Construction, Checking of Aircel of ICT-2 and AMP	BSEB
25	132 kV LAKHISARAI-LAKHISARAI-I	19/05/18	10:00	19/05/18	14:00	ODB	ER-I	LINE BAY AMP WORK.	BSEB
26	132 kV LAKHISARAI-LAKHISARAI-II	21/05/18	10:00	21/05/18	14:00	ODB	ER-I	LINE BAY AMP WORK.	BSEB
27	132 kV LAKHISARAI-JAMUI-I	23/05/18	10:00	23/05/18	14:00	ODB	ER-I	LINE BAY AMP WORK.	BSEB
28	132 kV LAKHISARAI-JAMUI-II	24/05/18	10:00	24/05/18	14:00	ODB	ER-I	LINE BAY AMP WORK.	BSEB
29	50 MVAr Line Reactor-2 OF KAHALGAON-I AT LAKHISARAI	26/05/18	10:00	26/05/18	17:00	ODB	ER-I	AMP WORK.	SWITCHABLE??
30	400 kV LKR-KHG Line-1	26/05/18	10:00	26/05/18	10:10	ODB	ER-I	for taking 50 MVAr Line Reactor-2 out of service.	
31	400 kV LKR-KHG Line-1	26/05/18	16:50	26/05/18	17:00	ODB	ER-I	for taking 50 MVAr Line Reactor-2 in service.	
32	400/132KV 200MVA ICT-1 AT BANKA	22/05/18	10:00	22/05/18	18:00	ODB	ER-I	Providing insulation sleeves on tertiary conductor	BSEB
33	400/132KV 200MVA ICT-2 AT BANKA	23/05/18	10:00	23/05/18	18:00	ODB	ER-I	Providing insulation sleeves on tertiary bushing	BSEB
34	400KV BUS-1 AT MUZAFFARPUR	28/05/18	09:00	30/05/18	18:00	ODB	ER-I	AMP WORK	BSEB
35	400kV Maithon-Gaya-1 line	08/05/18	08:00	08/05/18	18:00	ODB	ER-I	FOR REPLACEMENT OF INSULATORS DAMAGED BY MISCREANTS IN MULTI CKT PORTION	
36	400kV Maithon-Gaya-2 line	09/05/18	08:00	09/05/18	18:00	ODB	ER-I	FOR REPLACEMENT OF INSULATORS DAMAGED BY MISCREANTS IN MULTI CKT PORTION	
37	400kV Koderma-Gaya-1 line	09/05/18	08:00	09/05/18	18:00	ODB	ER-I	FOR REPLACEMENT OF INSULATORS DAMAGED BY MISCREANTS IN MULTI CKT PORTION	DVC
38	400kV Koderma-Gaya-2 line	08/05/18	08:00	08/05/18	18:00	ODB	ER-I	FOR REPLACEMENT OF INSULATORS DAMAGED BY MISCREANTS IN MULTI CKT PORTION	DVC
39	220 KV BUS-I at Gaya S/S	14/05/18	08:00	14/05/18	18:00	ODB	ER-I	FOR KHIJARSARAI BAY BAY CONSTRUCTION WORK	BSEB
40	220 KV BUS-II at Gaya S/S	15/05/18	08:00	15/05/18	18:00	ODB	ER-I	FOR KHIJARSARAI BAY BAY CONSTRUCTION WORK	BSEB
41	400 KV BUS-I at Gaya S/S	16/05/18	08:00	16/05/18	18:00	ODB	ER-I	for isolator mantanance work under Nabinagar package	BSEB
42	400 KV BUS-II at Gaya S/S	17/05/18	08:00	17/05/18	18:00	ODB	ER-I	for isolator mantanance work under Nabinagar package	BSEB
43	765 KV BUS-I at Gaya S/S	18/05/18	08:00	18/05/18	18:00	ODB	ER-I	For isolator rectification work under S/S extn. Package	NLDC
44	765 KV BUS-II at Gaya S/S	21/05/18	08:00	21/05/18	18:00	ODB	ER-I	For isolator rectification work under S/S extn. Package	NLDC
45	765 kV GAYA - BALIA LINE ALONG WITH 240 MVAR L/R AT GAYA	22/05/18	08:00	24/05/18	18:00	ODB	ER-I	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER INSULATOR AND REACTOR AMP	NLDC
46	400 kV PATNA-BALIA - III	02/05/18	08:00	03/05/18	17:30	ODB	ER-I	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER INSULATOR	NLDC
47	400 kV PATNA-BALIA - IV	04/05/18	08:00	05/05/18	17:30	ODB	ER-I	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER INSULATOR	NLDC
48	400 kV PATNA-KISHANGANJ CKT I	08/05/18	08:00	09/05/18	17:30	ODB	ER-I	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER INSULATOR	
49	400 kV PATNA-KISHANGANJ CKT I	11/05/18	08:00	12/05/18	17:30	ODB	ER-I	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER INSULATOR	
50	400 kV PATNA-BARH CKT – II & 400KV KAHALGAON BARH CKT-I	23/05/18	08:00	24/05/18	17:30	ODB	ER-I	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER INSULATOR	
51	400 kV PATNA-BARH CKT – I & 400KV KAHALGAON BARH CKT-II	25/05/18	08:00	26/05/18	17:30	ODB	ER-I	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER INSULATOR	
52	400KV PATNA BARH -III & 400KV BARH MOTIHARI -I	28/05/18	08:00	29/05/18	17:30	ODB	ER-I	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER INSULATOR	
53	400KV PATNA BARH -IV & 400KV BARH MOTIHARI -II	30/05/18	08:00	31/05/18	17:30	ODB	ER-I	FOR REPLACEMENT OF PORCELAIN INSULATOR WITH POLYMER INSULATOR	
54	500 MVA ICT 1 AT PATNA	07/05/18	10:00	11/05/18	18:00	OCB	ER-I	TO ATTEND OIL LEAKAGE	BSEB
55	220 KV Bus 1 AT PATNA	15/05/18	10:00	16/05/18	18:00	ODB	ER-I	FOR BAY CONSTRUCTION WORK OF 220 KV PATNA - KHAGAUL LINE(NEW)	BSEB
56	220 KV Bus 2 AT PATNA	17/05/18	10:00	18/05/18	18:00	ODB	ER-I	FOR BAY CONSTRUCTION WORK OF 220 KV PATNA - KHAGAUL LINE(NEW)	BSEB
57	400 k V Biharsarif - Balia - I & II	24/04/18	09:00	25/04/18	18:00	ODB	ER-I	FOR POWER LINE CROSSING WORK OF 400 kV NABINAGAR - II - PATNA TRANSMISSION INE BETWEEN LOC NO 166 & 167	NLDC
58	400 KV PATNA - BALIA - I& II	29/05/18	09:00	30/05/18	18:00	ODB	ER-I	FOR POWER LINE CROSSING WORK OF 400 kV NABINAGAR - II - PATNA TRANSMISSION INE BETWEEN LOC NO 895 &896	NLDC
59	400 KV BIHARSARIF - VARANASI - I & II	23/05/18	09:00	24/05/18	18:00	ODB	ER-I	FOR POWER LINE CROSSING WORK OF 400 kV NABINAGAR - II - PATNA TRANSMISSION INE BETWEEN LOC NO 312 & 313	NLDC
60	132 kV GAYA - SONENAGAR D/c	07/05/18	09:00	08/05/18	18:00	ODB	ER-I	FOR POWER LINE CROSSING WORK OF 400 kV NABINAGAR - II - PATNA TRANSMISSION INE BETWEEN LOC NO 284 & 285	BSEB
61	132 kV Sonenagar - Aurangabad D/c line and Under Constaruction 132 kV D/C Barun - aurangabad Line	30/04/18	09:00	01/05/18	18:00	ODB	ER-I	FOR POWER LINE CROSSING WORK OF 400 kV NABINAGAR - II - PATNA TRANSMISSION INE	BSEB
62	400 kV SASARAM - DALTONGANJ D/C	14/05/18	09:00	15/05/18	18:00	ODB	ER-I	FOR POWER LINE CROSSING WORK OF 400 kV NABINAGAR - II - PATNA TRANSMISSION INE	BSEB
63	400 kV BIHARSARIF - SASARAM- I & II	18/05/18	09:00	19/05/18	18:00	ODB	ER-I	FOR POWER LINE CROSSING WORK OF 400 kV NABINAGAR - II - PATNA TRANSMISSION INE BETWEEN LOC NO 296 & 297.	NLDC
64	400KV BSF-Sasaram-2 main bay(No.-409) AT BSF	10/05/18	09:00	10/05/18	17:00	ODB	ER-I	Bay AMP work	
65	400KV BSF-Sasaram-2 & Balia-2 Tie Bay(No.-408) AT BSF	11/05/18	09:00	11/05/18	17:00	ODB	ER-I	Bay AMP work	
66	400/220KV 315 MVA ICT-I AT RANCHI	02/05/18	10:00	02/05/18	17:00	ODB	ER-I	Cheking and Rectification of Main Bay isolator (40389ARph) CT side Contact	JSEB

67	400KV MAIN BAY OF 125 MVAR BR I AT RANCHI	03/05/18	10:00	03/05/18	17:00	ODB	ER-I	AMP	
68	220KV BUS COUPLER BAY AT RANCHI	04/05/18		04/05/18	17:00	ODB	ER-I	AMP	JSEB
69	400/220KV 315 MVA ICT-II AT RANCHI	07/05/18	10:00	07/05/18	17:00	ODB	ER-I	For fixing of heatshrink inLV Bushing	JSEB
70	400KV RNC- RKL-II	08/05/18	10:00	08/05/18	17:00	ODB	ER-I	Fixing of Arm in Line Earth Switch Yph	
71	400KV 80MVAR LR-I OF 400KV Sipat-I AT ARNCHI	09/05/18	10:00	09/05/18	17:00	ODB	ER-I	For Top oup of oil in Conservator	
72	400KV MAIN BAY OF RNC-RNC-III AT RANCHI	10/05/18	10:00	10/05/18	17:00	ODB	ER-I	AMP	
73	400KV 80MVAR LR-II OF 400KV Sipat-II AT RANCHI	11/05/18	10:00	11/05/18	14:00	ODB	ER-I	For Top oup of oil in Conservator	
74	400KV Tie of NEW RNC-3 & B/R-2 AT RANCHI	12/05/18	10:00	12/05/18	14:00	ODB	ER-I	AMP	
75	765kV Gaya -Varanasi-I	01/05/18	08:00	10/05/18	18:00	ODB	ER-I	FOR SHIFTING OF TOWERS	NLDC
76	400kV HVDC North side Converter Tnx Main Bay @ Pusauli	01/05/18	09:00	03/05/18	18:00	OCB	ER-I	For Breaker Drive overhauling and Bay AMP work	NLDC
77	400kV HVDC East side Converter Tnx Main Bay @ Pusauli	04/05/18	09:00	06/05/18	18:00	OCB	ER-I	For Breaker Drive overhauling and Bay AMP work	NLDC
78	400kV HVDC East side Converter Tnx_Filter Tie Bay @ Pusauli	07/05/18	09:00	09/05/18	18:00	OCB	ER-I	For Breaker Drive overhauling and Bay AMP work	NLDC
79	3*110MVAR 765kV Bus Reactor Bay@Pusauli	08/05/18	09:00	08/05/18	18:00	ODB	ER-I	AMP work	NLDC
80	400KV Main Bay OF 400/220kV 500MVA ICT-I @ Pusauli	09/05/18	09:00	11/05/18	18:00	OCB	ER-I	To attend Gas Leakage in Breaker.	
81	400kV North Side Filter Main Bay@Pusauli	10/05/18	09:00	12/05/18	18:00	OCB	ER-I	For Breaker Drive overhauling and Bay AMP work	NLDC
82	**765/400kV, 1500MVA, ICT for regular changeover in 06 month**	**11/05/18**	**09:00**	**13/05/18**	**18:00**	**765/400kV, 1500MVA ICT, B-Phase will be out from 11.05.2018to 13.05.2018 on continuous basis for 03 days only.**	ER-I	02 days for stability test and changing of Delta connection in LV side and 01 day for idle charging (without load) for 24 hrs due to first time charging of 500MVA, B-Phase ICT	NLDC
83	220kV Main Bus-I @ Pusauli	12/05/18	09:00	12/05/18	18:00	ODB	ER-I	AMP work	BSEB
84	400kV East Side Filter Main Bay@Pusauli	13/05/18	09:00	15/05/18	18:00	OCB	ER-I	For Breaker Drive overhauling and Bay AMP work	NLDC
85	765kV Fatehpur Line Main Bay @ Pusauli	13/05/18	09:00	13/05/18	18:00	ODB	ER-I	AMP work	NLDC
86	765KV Main Bay of 765/400kV 1500MVA ICT @ Pusauli	15/05/18	09:00	15/05/18	18:00	ODB	ER-I	AMP work	NLDC
87	400kV HVDC North side Converter Tnx_Filter Tie Bay @ Pusauli	16/05/18	09:00	18/05/18	18:00	OCB	ER-I	For Breaker Drive overhauling and Bay AMP work	NLDC
88	125MVAR Bus Reactor-II Main Bay @ Pusauli	17/05/18	09:00	17/05/18	18:00	ODB	ER-I	AMP work	
89	400kV Allahabad Main bay @ Pusauli	19/05/18	09:00	21/05/18	18:00	OCB	ER-I	For Breaker Drive overhauling and Bay AMP work	
90	63 MVARVaranasi Line Reactor(North Side)@ Pusauli	20/05/18	09:00	04/06/18	18:00	OCB	ER-I	For Reactor and Breaker Overhauling Work	NLDC
91	400KV Varanasi Main Bay (East Side) at Pusauli	22/05/18	09:00	22/05/18	18:00	ODB	ER-I	AMP work	
92	400KV Biharsharif-IV Main Bay @ Pusauli	24/05/18	09:00	24/05/18	18:00	ODB	ER-I	AMP work	
93	400KV Varanasi North Side Main bay @ Pusauli	25/05/18	09:00	27/05/18	18:00	OCB	ER-I	For Breaker Drive overhauling and Bay AMP work	
94	400KV 125MVAR Bus Reactor-II at Pusauli	26/05/18	09:00	26/05/18	18:00	ODB	ER-I	AMP work	
95	63MVAR Biharsharif-II L/R at Pusauli	28/05/18	09:00	28/05/18	18:00	ODB	ER-I	AMP work	
96	400kV Nabinagar-I AND Biharsharif-IV Tie Bay @ Pusauli	30/05/18	09:00	30/05/18	18:00	ODB	ER-I	AMP work	
97	400KV MAIN Bay of KGP 1 (413 BAY) AT CHAIBASA	10/05/18	10:00	10/05/18	17:00	ODB	ER-I	AMP	
98	400KV TIE BAY OF KGP 1 AND FUTURE AT CHAIBASA	12/05/18	10:00	12/05/18	17:00	ODB	ER-I	AMP	
99	400KV MAIN Bay of KGP 2 (416 BAY) AT CHAIBASA	15/05/18	10:00	15/05/18	17:00	ODB	ER-I	AMP	
100	400KV TIE BAY OF KGP 2 AND FUTURE AT CHAIBASA	17/05/18	10:00	17/05/18	17:00	ODB	ER-I	AMP	
101	400KV BUS 2 AT CHAIBASA	19/05/18	10:00	19/05/18	17:00	ODB	ER-I	COMISIIONING OF BUS REACTOR 2 IN 415 BAY	JSEB
102	220 KV Birpara-Malbase by Powergrid,Birpara	07/05/18	08:00	07/05/18	17:30	ODB	POWERGRID,ER-II	Replacement of Dead End Cone and Jumper at LocMC 110	NLDC
103	400 KV TALA-NSLG -I by Powergrid,Birpara	07/05/18	08:00	07/05/18	17:30	ODB	POWERGRID,ER-II	Shutdown Required for work in 220 KV Birpara-Malbase Line at loc MC 110 as due induction from 400 KV , it is immposible to work in the top phase of 220 KV Birpara- malbase TL.	NLDC
104	220KV BIRPARA -NSLG-I by Powergrid,Birpara	08/05/18	08:00	09/05/18	17:30	ODB	POWERGRID,ER-II	Refixing of VD & Arching Horn	
105	220KV BIRPARA -NSLG-II by Powergrid,Birpara	10/05/18	08:00	11/05/18	17:30	ODB	POWERGRID,ER-II	Refixing of VD & Arching Horn	
106	160MVA ICT-2 at Birpara	13/05/18	08:00	13/05/18	17:30	ODB	POWERGRID,ER-II	Line Isolator Alignment checking for NTAMC remote operation	WB
107	400KV New Siliguri - New Purnea-II by Powergrid,Dalkhola	14/05/18	08:00	15/05/18	17:30	ODB	POWERGRID,ER-II	TL Maintenance work	
108	400KV New Siliguri - New Purnea-I by Powergrid,Dalkhola	16/05/18	08:00	17/05/18	17:30	ODB	POWERGRID,ER-II	TL Maintenance work	
109	400KV Malda - New Purnea-I by Powergrid,Dalkhola	10/05/18	09:00	12/05/18	17:00	ODB	POWERGRID,ER-II	T/L mtc. with 2 nos. bend earth peak repairing	
110	220KV DALKHOLA-DALKHOLA-I by Powergrid,Dalkhola	07/05/18	09:00	07/05/18	13:00	ODB	POWERGRID,ER-II	CT OIL SAMPLING & BAY MAINTENANCE	WB
111	220KV DALKHOLA-DALKHOLA-II by Powergrid,Dalkhola	07/05/18	14:00	07/05/18	17:00	ODB	POWERGRID,ER-II	CT OIL SAMPLING & BAY MAINTENANCE	WB
112	400kV D/C NSLG-KNE-NPRN both Ckt (Line owned by POWER LINK and LILOED at POWER GRID Kishanganj sub station by Powergrid,Dalkhola	03/05/18	08:00	04/05/18	17:00	OCB	POWERGRID,ER-II	Isolation of multicircuit line portion feeding Kishanganj sub station by shorting at 1st multicircuit tower (Anchor-1) to facilitated erection of new 400KV tower on pile foundation. After shorting & removal of jumper at Anchor -I tower , Power will flow directly NSLG to NPRN by-passing KNE s/s.	
113	125 MVAR-Bus Reactor-3 at Powergrid, Durgapur	02/05/18	09:00	02/05/18	17:00	ODB	POWERGRID,ER-II	FF commissioning balance works under BHEL (ERSS-IX)	
114	125MVAR BUS REACTOR-2 at Powergrid, Durgapur	04/05/18	09:00	04/05/18	17:00	ODB	POWERGRID,ER-II	FF commissioning balance works under BHEL (ERSS-IX)	
115	315MVA ICT-I at Powergrid, Durgapur	08/05/18	09:00	08/05/18	17:00	ODB	POWERGRID,ER-II	One relay replacement & LBB DC supply modification works	DVC
116	400 Kv Bus-4 at Powergrid, Durgapur	22/05/18	09:00	22/05/18	17:00	ODB	POWERGRID,ER-II	Isolator Droper connection with Bus in RT-01 Package (GE)	
117	400 Kv Bus-3 at Powergrid, Durgapur	29/05/18	09:00	29/05/18	17:00	ODB	POWERGRID,ER-II	Isolator Droper connection with Bus in ERSS-XVII(SPML)	
118	400 KV Bidhannagar line-I at Powergrid, Durgapur	24/05/18	09:00	24/05/18	17:00	ODB	POWERGRID,ER-II	CVT JB replacement work due damage	WB
119	400 KV Bidhannagar line-II at Powergrid, Durgapur	16/05/18	09:00	16/05/18	17:00	ODB	POWERGRID,ER-II	CVT& LA shifting to new Location and jumper connection.	WB
120	430 bay(Jamshedpur-I Main) at Powergrid, Durgapur	10/05/18	09:00	10/05/18	17:00	ODB	POWERGRID,ER-II	CB Aux. Contact replacement	
121	400KV S/C FARAKKA - BEHRAMPUR T/L by Powergrid,Farakka	28/04/18	08:00	28/04/18	18:00	ODB	POWERGRID,ER-II	For stringing between location no- 25/0 to 26/0 & LOC NO- 12/0 - 13/0 of 400 KV Farakka -Behrampur D/c line	
122	400KV S/C FARAKKA - SAGARDIGHI T/L by Powergrid,Farakka	30/04/18	08:00	30/04/18	18:00	ODB	POWERGRID,ER-II	For stringing between location no- 23/0 to 24/0 & LOC NO- 13/0 - 14/0 of 400 KV Farakka -Behrampur D/c line	WB
123	400KV S/C FARAKKA - DURGAPUR-I T/L by Powergrid,Farakka	03/05/18	08:00	03/05/18	18:00	ODB	POWERGRID,ER-II	**For stringing between location no- 10/0 to 11/0 of 400 KV Farakka -Behrampur D/c line**	
124	400KV S/C FARAKKA - DURGAPUR-II T/L by Powergrid,Farakka	05/05/18	08:00	05/05/18	18:00	ODB	POWERGRID,ER-II	For stringing between location no- 8/0 to 9/0 of 400 KV Farakka - Behrampur D/c line	
125	220KV FARAKKA-LALMATIA T/L by Powergrid,Farakka	08/05/18	08:00	08/05/18	18:00	ODB	POWERGRID,ER-II	For stringing between location no- 5/0 to 6/0 of 400 KV Farakka -	JSEB
126	400KV D/C FARAKKA - KAHALGAON -(I & II) T/L by Powergrid,Farakka	10/05/18	08:00	11/05/18	18:00	ODB	POWERGRID,ER-II	For stringing between location no- 4/0 to 5/0 of 400 KV Farakka - Behrampur D/c line	
127	400 KV Farakka- Kahalgaon-I line by Powergrid,Farakka	30/04/18	10:00	30/04/18	18:00	ODB	POWERGRID,ER-II	For connecting bay-22 (Main Bay of 400 KV Farakka- Kahalgaon-I)	
128	400 KV Farakka- Kahalgaon-III line by Powergrid,Farakka	01/05/18	10:00	01/05/18	18:00	ODB	POWERGRID,ER-II	For connecting bay-34 (Tie Bay of 400 KV Farakka- Kahalgaon-III) from line side after augmentation of Isolator & CT from 2000A to	
129	400 KV BUS-II of NTPC Farakka by Powergrid,Farakka	02/05/18	10:00	02/05/18	18:00	ODB	POWERGRID,ER-II	For connecting BUS isolator of bay no-24 & 35 to BUS-II (After	
130	400 KV BUS-I of NTPC Farakka by Powergrid,Farakka	04/05/18	10:00	04/05/18	18:00	ODB	POWERGRID,ER-II	For disconnecting BUS isolator of bay no-22 & 33 from BUS-I (For	
131	400 KV Farakka- Kahalgaon-I line by Powergrid,Farakka	05/05/18	10:00	05/05/18	18:00	ODB	POWERGRID,ER-II	For disconnecting bay-22 (Main Bay of 400 KV Farakka- Kahalgaon-	
132	Main Bay of 400 KV Farakka- Kahalgaon-I (Bay-22) by	05/05/18	10:00	15/05/18	18:00	OCB	POWERGRID,ER-II	For augmentation of Isolator & CT from 2000A to 3150 A rating	
133	400 KV Farakka- Kahalgaon-III line by Powergrid,Farakka	06/05/18	10:00	06/05/18	18:00	ODB	POWERGRID,ER-II	For disconnecting bay-34 (Tie Bay of 400 KV Farakka- Kahalgaon-III) from line side for augmentation of Isolator & CT from 2000A to 3150 A rating under ERSS-XV projects.	
134	Tie Bay of 400 KV Farakka- Kahalgaon-III (Bay-33 & 34) by	06/05/18	10:00	15/05/18	18:00	OCB	POWERGRID,ER-II	For augmentation of Isolator & CT from 2000A to 3150 A in bay-34	
135	400 KV Farakka- Kahalgaon-I line by Powergrid,Farakka	15/05/18	10:00	15/05/18	18:00	ODB	POWERGRID,ER-II	For connecting bay-22 (Main Bay of 400 KV Farakka- Kahalgaon-I)	
136	400 KV Farakka- Kahalgaon-III line by Powergrid,Farakka	16/05/18	10:00	16/05/18	18:00	ODB	POWERGRID,ER-II	For connecting bay-34 (Tie Bay of 400 KV Farakka- Kahalgaon-III)	
137	400 KV BUS-I of NTPC Farakka by Powergrid,Farakka	17/05/18	10:00	17/05/18	18:00	ODB	POWERGRID,ER-II	For connecting BUS isolator of bay no-22 & 33 to BUS-I (After	
138	66KV Gangtok-Tadong (Line#2) Feeder by Powergrid,Gangtok	02/05/18	09:00	02/05/18	17:30	ODB	POWERGRID,ER-II	CT tan delta and Line Isolator and Transfer Bus Isolator AMP	SIKKIM
139	66KV Gangtok-Lagyap (Line#3) Feeder by Powergrid,Gangtok	04/05/18	09:00	04/05/18	17:30	ODB	POWERGRID,ER-II	CT tan delta and Line Isolator and Transfer Bus Isolator AMP	SIKKIM
140	132KV / 66KV 50 MVA ICT#2 Gangtok by Powergrid,Gangtok	05/05/18	09:00	05/05/18	17:30	ODB	POWERGRID,ER-II	ICT AMP	SIKKIM
141	132KV / 66KV 50 MVA ICT#1 Gangtok by Powergrid,Gangtok	07/05/18	09:00	07/05/18	17:30	ODB	POWERGRID,ER-II	ICT AMP	SIKKIM
142	400KV Maithon-RB Line 1 by Powergrid,Maithan	15/05/18	09:00	14/02/18	17:30	ODB	POWERGRID,ER-II	Retrofiiting of PLCC panel and end to end Testing	
143	400KV Maithon-RB Line 2 by Powergrid,Maithan	16/05/18	09:00	21/02/18	17:30	ODB	POWERGRID,ER-II	Retrofiiting of PLCC panel and end to end Testing	
144	400KV MAITHON-MEJIA3 by Powergrid,Maithan	17/05/18	09:00	17/05/18	17:00	ODB	POWERGRID,ER-II	AMP OF LINE	DVC
145	400KV MEJIA-JAMSHEDPUR by Powergrid,Maithan	23/05/18	09:00	23/05/18	17:00	ODB	POWERGRID,ER-II	AMP OF LINE	DVC
146	400KV MAITHON-DURGAPUR 1 by Powergrid,Maithan	03/05/18	09:00	03/05/18	17:00	ODB	POWERGRID,ER-II	AMP OF LINE	
147	400KV MAITHON-DURGAPUR 2 by Powergrid,Maithan	10/05/18	09:00	10/05/18	17:00	ODB	POWERGRID,ER-II	AMP OF LINE	

148	50MVA ICT-IV(220/132 kV) at Powergrid,Malda	02/05/18	09:00	02/05/18	16:00	ODB	POWERGRID,ER-II	IEC 61850 compliant Numerical relay retrofitting	WB
149	160 MVA ICT-I(220/132 kV) at Powergrid,Malda	04/05/18	09:00	04/05/18	16:00	ODB	POWERGRID,ER-II	Isolator Allignment, CC Circular Coplience	WB
150	220 kV Malda Dalkhola I at Powergrid,Malda/Dalkhola	08/05/18	09:00	09/05/18	17:00	ODB	POWERGRID,ER-II	Protection Audit Complience at Malda & CT oil sample at Dalkhola	
151	220 kV Malda Dalkhola II at Powergrid,Malda/Dalkhola	10/05/18	09:00	11/05/18	17:00	ODB	POWERGRID,ER-II	Protection Audit Complience at Malda & CT oil sample at Dalkhola	
152	400KV Rangpo-Binaguri-I line by Powergrid,Rangpo	02/05/18	08:00	03/05/18	17:00	ODB	POWERGRID,ER-II	AMP works & Line maintenance	
153	400KV Rangpo-Binaguri-II line by Powergrid,Rangpo	04/05/18	08:00	05/05/18	17:00	ODB	POWERGRID,ER-II	AMP works & Line maintenance	
154	132 KV Rangpo-Gangtok line by Powergrid,Rangpo	07/05/18	08:00	11/05/18	17:00	ODB	POWERGRID,ER-II	Balance Porcelin Insulator repacement with CLR insulator	SIKKIM
155	132KV Rangpo-Melli line by Powergrid,Rangpo	12/05/18	08:00	13/05/18	17:00	ODB	POWERGRID,ER-II	AMP works & Line maintenance	SIKKIM
156	400KV Rangpo-Teesta-5 line I by Powergrid,Rangpo	14/05/18	08:00	16/05/18	17:00	ODB	POWERGRID,ER-II	AMP works & Line maintenance	
157	400KV Rangpo-Teesta-5 line II by Powergrid,Rangpo	17/05/18	08:00	18/05/18	17:00	ODB	POWERGRID,ER-II	AMP works & Line maintenance	
158	132KV Chuzachen-Gangtok line by Powergrid,Rangpo	21/05/18	08:00	25/05/18	17:00	ODB	POWERGRID,ER-II	Balance Porcelin Insulator repacement with CLR insulator	SIKKIM
159	132KV Rangpo-Rangit line by Powergrid,Rangpo	27/05/18	08:00	31/05/18	17:00	ODB	POWERGRID,ER-II	Balance Porcelin Insulator repacement with CLR insulator	
160	400KV Teesta 3-408 bay at Powergrid,Rangpo	03/05/18	08:00	07/05/18	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work	
161	220KV BUS-1 at Powergrid,Rangpo	08/05/18	08:00	10/05/18	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work(both Shutdown needed on same dates) and flash indulator replacement by New Melli	
162	220KV Rangpo- NEW MELLI line by Powergrid,Rangpo/New Melli	08/05/18	08:00	10/05/18	17:00	OCB	POWERGRID,ER-II		
163	400\220kV 315 MVA ICT-2 at Rangpo	11/05/18	08:00	14/05/18	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work	
164	220\132 Kv 100 MVA ICT-2 at Powergrid,Rangpo	15/05/18	08:00	18/05/18	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work	
165	400\220kV 315 MVAICT -1 at Powergrid,Rangpo	19/05/18	08:00	23/05/18	17:00	OCB	POWERGRID,ER-II	For rectification of SF6 gas leakage repair work	
166	132KV SLG-NBU line by Powergrid,Siliguri	03/05/18	10:00	03/05/18	15:00	ODB	POWERGRID,ER-II	Bay AMP work at Powergrid,Siliguri	WB
167	132KV SLG-NJP line by Powergrid,Siliguri	04/05/18	10:00	04/05/18	15:00	ODB	POWERGRID,ER-II	Bay AMP work at Powergrid,Siliguri	WB
168	132KV SLG-MELLI line by Powergrid,Siliguri	05/05/18	10:00	05/05/18	15:00	ODB	POWERGRID,ER-II	Bay AMP work at Powergrid,Siliguri	SIKKIM
169	400KV Jeerat Line & 315MVA ICT#1 Tie Bay (Bay No. 403) at Subhasgram	01/05/18	08:00	04/05/18	17:30	OCB	POWERGRID,ER-II	CGL make CB overhauling	
170	315 MVA ICT#1 main Bay (Bay No. 403) at Subhasgram	05/05/18	08:00	08/05/18	17:30	OCB	POWERGRID,ER-II	CGL make CB overhauling	
171	400 KV Jeerat Line Main Bay (Bay No. 404) at Subhasgram	09/05/18	08:00	12/05/18	17:30	OCB	POWERGRID,ER-II	CGL make CB overhauling	
172	220 KV Transfer Bus Coupler Bay (Bay No. 212) at Subhasgram	14/05/18	08:00	16/05/18	17:30	OCB	POWERGRID,ER-II	CGL make CB overhauling	WB
173	220KV New Town Line Bay (Bay No.205) at Subhasgram	17/05/18	08:00	19/05/18	17:30	OCB	POWERGRID,ER-II	CGL make CB overhauling	
174	220KV WBSETCL Subhasgram CKT#1 Bay (Bay No.207) at	21/05/18	08:00	23/05/18	17:30	OCB	POWERGRID,ER-II	CGL make CB overhauling	WB
175	100 MVAR Bus Reactor at WBSETCL, Jeerat S/s at Subhasgram	24/05/18	08:00	26/05/18	17:30	OCB	POWERGRID,ER-II	Replacement of Bushing of B Phase CGL Reactor	WB
176	400KV Berhampore-Jeerat Line at Subhasgram	26/05/18	08:00	26/05/18	17:30	ODB	POWERGRID,ER-II	Relay testing due to CTR change and CB AMP.	WB
177	315 MVA ICT-I at Subhasgram	28/05/18	08:00	31/05/18	17:30	OCB	POWERGRID,ER-II	OLTC inspection to rectify oil migration problem	WB
178	400KV Alipurduar-Bongaigaon-II by Powergrid,Alipurduar	03/05/18	08:00	04/05/18	13:00	ODB	POWERGRID,ER-II	investigation of intermittent sound from wave-trap.	NLDC
179	403 Main bay of Jeerat line by Powergrid,Baharampore	20/04/18	09:00	20/04/18	17:00	ODB	POWERGRID,ER-II	Bay AMP	
180	400 KV 402(Tie of Bheramara-II & Jeerat) bay by	24/04/18	09:00	24/04/18	17:00	ODB	POWERGRID,ER-II	Bay AMP	
181	400KV Berhampore Sagardighi Ckt-I line bay (407 L BAY) by Powergrid,Baharampore	25/04/18	09:00	25/04/18	18:00	ODB	POWERGRID,ER-II	CT REPLACEMENT OF Y PH DUE TO OIL SEEPAGE	
182	132 KV D/C Raghunathganj-Gokarna Powergrid,Baharampore	03/05/18	09:00	04/05/18	17:00	ODB	POWERGRID,ER-II	Construction/Line crossing	WB
183	400 KV D/C Sagardighi-Durgapur by Powergrid,Baharampore	07/05/18	09:00	07/05/18	17:00	ODB	POWERGRID,ER-II	Construction/Line crossing	WB
184	132 KV D/C Raghunathganj-Bhadrapur Gokarna T/L by	24/05/18	09:00	24/05/18	17:00	ODB	POWERGRID,ER-II	Construction/Line crossing	WB
185	220 KV D/C Sagardighi-Gokarna T/L & S/C Farakka-Berhampore/Jeerat T/L by Powergrid,Baharampore	28/05/18	09:00	28/05/18	17:00	ODB	POWERGRID,ER-II	Line crossing	WB
186	220KV Alipurduar-Salakati-I	09/05/18	09:00	09/05/18	17:30	ODB	POWERGRID,ER-II	AMP Work	NLDC
187	220KV Alipurduar-Salakati-II	10/05/18	09:00	10/05/18	17:30	ODB	POWERGRID,ER-II	AMP Work	NLDC
188	400KV Alipurduar-Bongaigaon-I & Binaguri-Alipurduar-I	04/05/18	09:00	04/05/18	17:30	ODB	POWERGRID,ER-II	flexible jumper connection at Alipurduar	NLDC
189	400KV Alipurduar-Bongaigaon-II & Binaguri-Alipurduar-II	05/05/18	09:00	05/05/18	17:30	ODB	POWERGRID,ER-II	flexible jumper connection at Alipurduar	NLDC
190	Tie Bay-720 of 765KV Darlipali(NTPC)-II & 765KV Dharamjaygarh-I	01/05/18	08:00	01/05/18	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	NLDC
191	Main Bay-721 of 765KV Dharamjaygarh-I at Sundargarh	02/05/18	08:00	02/05/18	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	NLDC
192	Main Bay-718 of 765KV Sundargarh-Dharamjaygarh Line-4 at Sunda	03/05/18	08:00	03/05/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	NLDC
193	Tie Bay-714 of 765KV Sundargarh-Dharamjaygarh Line-3 at Sundarg	04/05/18	08:00	04/05/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	NLDC
194	Main Bay-706 of 765/400KV ICT-II at Sundargarh	05/05/18	08:00	05/05/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	NLDC
195	Main Bay-707 of 765KV Angul L/R-II at Sundargarh	07/05/18	08:00	07/05/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	NLDC
196	Main Bay-719 of 765KV Darlipali(NTPC)-2 at Sundargarh	08/05/18	08:00	08/05/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	NLDC
197	765KV Bus-I at Sundargarh	09/05/18	08:00	11/05/18	18:00	OCB	ER-II/Odisha/Sundergarh	Dismantling, shifting and re-erection of 765 Bus E/s to a new	NLDC
198	765KV Bus-II at Sundargarh	12/05/18	08:00	14/05/18	18:00	OCB	ER-II/Odisha/Sundergarh	Dismantling, shifting and re-erection of 765 Bus E/s to a new	NLDC
199	400KV Sundargarh-Rourkela Ckt #4 at Sundargarh	14/05/18	09:00	14/05/18	13:00	ODB	ER-II/Odisha/Sundergarh	Rectification of phase to ground clearance issue of Bushing to wave	
200	400KV Sundargarh-Raigarh Ckt #4 at Sundargarh	15/05/18	09:00	15/05/18	13:00	ODB	ER-II/Odisha/Sundergarh	Rectification of phase to ground clearance issue of Bushing to wave trap jumper under construction head	NLDC
201	765KV Sundargarh-Dharamjaygarh Ckt #1at Sundargarh	16/05/18	08:00	16/05/18	14:00	ODB	ER-II/Odisha/Sundergarh	Modification of Line side Jumpering from quard to twin to reduce	NLDC
202	765KV Sundargarh-Dharamjaygarh Ckt #2 at Sundargarh	17/05/18	08:00	17/05/18	14:00	ODB	ER-II/Odisha/Sundergarh	Modification of Line side Jumpering from quard to twin to reduce load on CVT under system improvement scheme.	NLDC
203	765KV 240MVAr Bus Reactor-2 at Sundargarh	18/05/18	09:00	18/05/18	13:00	ODB	ER-II/Odisha/Sundergarh	Shifting Y-Phase Reactor to spare reactor to attend oil leakage of Y-Phase Reactor	NLDC
204	765KV 1500MVA ICT-2 at Sundargarh	19/05/18	09:00	19/05/18	13:00	ODB	ER-II/Odisha/Sundergarh	Shifting of R-Phase ICT to spare ICT to attend oil leakage of R-Phase	NLDC
205	765KV 240 Mvar B/R-I at Sundargarh	21/05/18	08:00	21/05/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	NLDC
206	765KV 240 Mvar B/R-II at Sundargarh	22/05/18	08:00	22/05/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	NLDC
207	Main Bay-424 of 400KV Indbarath Ckt-2 at Sundargarh	23/05/18	08:00	23/05/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	
208	Tie Bay-423 of 400KV Indbarath Ckt-2 & Future at Sundargarh	24/05/18	08:00	24/05/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	

209	Main Bay-421 of 400KV Indbarath Ckt-2 at Sundargarh	25/05/18	08:00	25/05/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	
210	Tie Bay-420 of 400KV Indbarath Ckt-2 & Future at Sundargarh	26/05/18	08:00	26/05/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	
211	A/R Switch to be non auto mode at both end for 400 KV Rourkela-Sundargarh - I (One)	01/05/18	08:00	30/05/18	17:00	ODB	ER-II/Odisha/Sundergarh TL	For PID Testing of Porcelin Insulator	
212	A/R Switch to be non auto mode at both end for 400 KV Sundargarh-Raigarh - I (One)	01/05/18	08:00	30/05/18	17:00	ODB	ER-II/Odisha/Sundergarh TL	For PID Testing of Porcelin Insulator	NLDC
213	A/R Switch to be non auto mode at both end for 400 KV Rourkela-Sundargarh - II (Two)	01/05/18	08:00	30/05/18	17:00	ODB	ER-II/Odisha/Sundergarh TL	For PID Testing of Porcelin Insulator	
214	A/R Switch to be non auto mode at both end for 400 KV Sundargarh - Raigarh - II (Two)	01/05/18	08:00	30/05/18	17:00	ODB	ER-II/Odisha/Sundergarh TL	For PID Testing of Porcelin Insulator	NLDC
215	A/R Switch to be non auto mode at both end for 400 KV Rourkela-Sundargarh - III (Three)	01/05/18	08:00	30/05/18	17:00	ODB	ER-II/Odisha/Sundergarh TL	For PID Testing of Porcelin Insulator	
216	A/R Switch to be non auto mode at both end for 400 KV Sundargarh - Raigarh - III (Three)	01/05/18	08:00	30/05/18	17:00	ODB	ER-II/Odisha/Sundergarh TL	For PID Testing of Porcelin Insulator	NLDC
217	A/R Switch to be non auto mode at both end for 400 KV Rourkela-Sundargarh - IV (Four)	01/05/18	08:00	30/05/18	17:00	ODB	ER-II/Odisha/Sundergarh TL	For PID Testing of Porcelin Insulator	NLDC
218	A/R Switch to be non auto mode at both end for 400 KV Sundargarh - Raigarh - IV (Four)	01/05/18	08:00	30/05/18	17:00	ODB	ER-II/Odisha/Sundergarh TL	For PID Testing of Porcelin Insulator	NLDC
219	400 KV SNG-RGH Fdr. - IV	06/05/18	08:00	06/05/18	17:00	ODB	ER-II/Odisha/Sundergarh TL	For replacement of 2 string of broken glass insulator in R phase	NLDC
220	765 KV SNG-DHARAMJAYGARH - III & IV	07/05/18	08:00	09/05/18	17:00	ODB	ER-II/Odisha/Sundergarh TL	Insulator replacement work at Loc No. 119 (R phase KPS end, Ckt. I	NLDC
221	400 KV Sundargarh-Raigarh - I (One)	13/05/18	08:00	13/05/18	17:00	ODB	ER-II/Odisha/Sundergarh TL	For replacement of Porcelin insulator at Loc No. 763 and Loc No.	NLDC
222	765 KV ANG-SNG LINE - I	20/05/18	08:00	20/05/18	17:00	ODB	ER-II/Odisha/Sundergarh TL	For replacement of Glass insulator at Loc No. 271	NLDC
223	400 KV Sundargarh - Raigarh - II (Two)	22/05/18	08:00	23/05/18	17:00	ODB	ER-II/Odisha/Sundergarh TL	For tree cutting at Loc No. 426	NLDC
224	765KV SRIKAKULAM LINE 2 REACTOR BAY (726R) at Angul	01/05/18	07:00	01/05/18	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	NLDC
225	400kV Bus Reactor-3 Main Bay (404) at Angul	02/05/18	07:00	02/05/18	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	
226	400KV ICT-3 MAIN BAY(413) at Angul	03/05/18	07:00	03/05/18	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	
227	765KV Sundargarh Line-1 MAIN BAY (709) at Angul	04/05/18	07:00	04/05/18	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	NLDC
228	765/400kV, 1500MVA ICT-1 at Angul	09/05/18	07:00	09/05/18	18:00	ODB	ER-II/Odisha/Angul SS	To attend Oil Leakage in R-phase.	NLDC
229	765/400kV, 1500MVA ICT-2 at Angul	10/05/18	07:00	10/05/18	18:00	ODB	ER-II/Odisha/Angul SS	NRV replacement work in B-phase.	NLDC
230	765/400kV, 1500MVA ICT-3 at Angul	11/05/18	07:00	11/05/18	18:00	ODB	ER-II/Odisha/Angul SS	NRV replacement work in R-phase.	NLDC
231	400kV Rengali-Indravati Line	25/05/18	07:00	25/05/18	18:00	ODB	ER-II/Odisha/Angul TLAM	For Line strengthening & system improvement work by replacing	NLDC
232	400kv Bay 407 (ICT-1 Main) at Rengali	01/05/18	09:00	01/05/18	17:00	ODB	ER-II/Odisha/Rengali	For AMP work	
233	400 KV Indravati FSC Bay (Bay-412 FSC)	02/05/18	09:00	03/05/18	17:00	OCB	ER-II/Odisha/Rengali	For AMP work	
234	400kv Bay 401 (Keonjhar Main) at Rengali	04/05/18	09:00	05/05/18	17:00	OCB	ER-II/Odisha/Rengali	For CT replacement works.	
235	400kv Bay 409 (ICT-2 Main) at Rengali	07/05/18	09:00	08/05/18	17:00	OCB	ER-II/Odisha/Rengali	For CT replacement works.	
236	400kv Bay 408 (ICT-1 & ICT-II Tie) at Rengali	09/05/18	09:00	10/05/18	17:00	OCB	ER-II/Odisha/Rengali	For CT replacement works.	
237	400 KV BUS # 2 at Rengali	11/05/18	09:00	11/05/18	17:00	ODB	ER-II/Odisha/Rengali	For jumper Replacement work	GRIDCO
238	400kV Rengali-Talcher # 1 Main Bay-404 at Rengali	14/05/18	09:00	18/05/18	17:00	OCB	ER-II/Odisha/Rengali	For CB Mechanism and Pole overhaulling work and AMP.	
239	400kV Rengali-Talcher # 1 Tie Bay-406 at Rengali	19/05/18	09:00	23/05/18	17:00	OCB	ER-II/Odisha/Rengali	For CB Mechanism and Pole overhaulling work and AMP.	
240	400kV Rengali-Talcher # 2 Main Bay-403 at Rengali	24/05/18	09:00	28/05/18	17:00	OCB	ER-II/Odisha/Rengali	For CB Mechanism and Pole overhaulling work and AMP.	
241	400Kv Indrvati-Rengali S/c line	07/05/18	08:00	09/05/18	17:00	ODB	ER-II/Odisha/Bhowanipatna	Attending camera patrolling defect and Rigid spacer changing work	NLDC
242	400 KV BUS-I	01/05/18	09:00	02/05/18	18:00	ODB	ER-II/Odisha /Bolangir	For IPS Tube erection under Construction of Reactor bay extension	GRIDCO
243	400 KV BUS-II	03/05/18	09:00	04/05/18	18:00	ODB	ER-II/Odisha /Bolangir	For IPS Tube erection under Construction of Reactor bay extension	GRIDCO
244	220KV side ICT-II BAY CB (212 BAY CB) at Bolangir	04/05/18	09:00	04/05/18	18:00	ODB	ER-II/Odisha /Bolangir	AMP work for 212 CB (Timing and DCRM)	GRIDCO
245	400 KV BOL-ANGUL LINE TIE BAY (Bay no- 40102)	07/05/18	09:00	12/05/18	18:00	ODB	ER-II/Odisha /Bolangir	For tiles work of newly constructed ACP under Construction of	
246	220KV BUS COUPLER BAY CB (204 CB)	08/05/18	09:00	08/05/18	18:00	ODB	ER-II/Odisha /Bolangir	AMP work for 204 CB(Timing and DCRM) & 204 CT	GRIDCO
247	220KV Sadaipalli Line BAY CB (205 CB)	09/05/18	09:00	09/05/18	18:00	ODB	ER-II/Odisha /Bolangir	AMP work for 205 CB(Timing and DCRM)& 205 CT	GRIDCO
248	400KV Bolangir Angul line	10/05/18	08:00	10/05/18	17:00	ODB	ER-II/Odisha /Bolangir	AMP work	NLDC
249	Auto reclose of 400 KV Rengali- Indravati line in non-Auto mode	01/05/18	08:00	31/05/18	18:00	ODB	ER-II/Odisha /Bolangir	PID Testing	NLDC
250	400 KV ROURKELA - RANCHI # 1	03/05/18	09:00	03/05/18	18:00	ODB	ER-II/ODISHA/ROURKELA	Checking of A/R Scheme	
251	125MVAR BUS REACTOR#2 AT ROURKELA	04/05/18	09:00	04/05/18	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORK.	
252	220 KV ICT#2 INCOMER BAY (BAY NO-208) AT ROURKELA	05/05/18	09:00	05/05/18	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORK.	GRIDCO
253	220 KV ROURKELA-TARKERA#2 BAY(BAY NO-209) AT ROURKELA	07/05/18	09:00	07/05/18	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORK.	GRIDCO
254	220 KV ROURKELA-TARKERA#1 BAY(BAY NO-210) AT ROURKELA	08/05/18	09:00	08/05/18	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORK.	GRIDCO
255	220 KV ICT#1 INCOMER BAY (BAY NO-211) AT ROURKELA	10/05/18	09:00	10/05/18	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORK.	GRIDCO
256	315MVA ICT#1 MAIN BAY (BAY NO.-424) AT ROURKELA	11/05/18	09:00	11/05/18	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORK.	GRIDCO
257	400KV ROURKELA-CHAIBASA#1 MAIN BAY (BAY NO.- 416)	12/05/18	09:00	12/05/18	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP Work.	
258	400KV SUNDARGARH#2-RANCHI#2 TIE BAY (BAY NO.- 420)	14/05/18	09:00	14/05/18	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORK.	
259	400KV ROURKELA-CHAIBASA#2	15/05/18	09:00	15/05/18	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORK IN MAIN BAY, LINE BAY & LINE REACTOR	
260	400KV ROURKELA-SUNDARGARH#1	17/05/18	09:00	16/04/18	18:00	ODB	ER-II/ODISHA/ROURKELA	Re-fixing of Jumper Bolt, CC Ring Bolt, VD & Fixing of Split Pins.	
261	400KV ROURKELA-SUNDARGARH#3	18/05/18	09:00	17/04/18	18:00	ODB	ER-II/ODISHA/ROURKELA	Re-fixing of Jumper Bolt, CC Ring Bolt, VD & Fixing of Split Pins.	
262	400 KV ROURKELA - CHAIBASA # 1	21/05/18	09:00	22/09/18	18:00	OCB	ER-II/ODISHA/ROURKELA	Retroffiting of A/R Relay for Main and Tie Bay	
263	315MVA ICT#1 AT ROURKELA	23/05/18	09:00	26/05/18	18:00	OCB	ER-II/ODISHA/ROURKELA	FOR ATTENDING OIL LEAKAGE PROBLEM IN OLTC TANK OF ICT	GRIDCO
264	400 KV Indravati-Bus Reactor Main Bay	24/05/18	08:00	24/05/18	18:00	ODB	ER-II/Odisha /Indravati	AMP work of BR main Bay (410) and BR	
265	315MVA ICT-I Main bay (403)	02/05/18	09:30	02/05/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
266	400 kV Bus-II at Baripada	03/05/18	08:30	03/05/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	For GIS bay EXTN works(for isolation of GIS Bus-II)	GRIDCO
267	400 kV Bay 415 CB(GIS) at Baripada	03/05/18	08:30	12/05/18	17:30	OCB	ER-II/Odisha/BARIPADA S/S	For GIS Bus-II ext. works	
268	315MVA ICT-II main bay (406)	04/05/18	09:30	04/05/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
269	160 MVA ICT#1 at Baripada	07/05/18	09:00	07/05/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP	GRIDCO
270	132kV main BUS at Baripada	09/05/18	09:30	09/05/18	12:30	ODB	ER-II/Odisha/BARIPADA S/S	Bus CVT JB replacement	GRIDCO
271	400 kV Bus-II at Baripada	12/05/18	08:30	12/05/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	For GIS bay EXTN works(for recoonecting jumpers to GIS Bus-II)	GRIDCO
272	400 kV Bus-I at Baripada	13/05/18	08:30	13/05/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	For GIS bay EXTN works(for isolation of GIS Bus-I)	GRIDCO
273	400 kV Bay 413CB(GIS) at Baripada	13/05/18	08:30	22/05/18	17:30	OCB	ER-II/Odisha/BARIPADA S/S	For GIS Bus-I ext. works	
274	400kV Bay 404(Kharapur Main bay)	15/05/18	09:30	15/05/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
275	220 kV BUS-I at Baripada	21/05/18	09:30	21/05/18	13:30	ODB	ER-II/Odisha/BARIPADA S/S	CVT JB replacement works	GRIDCO
276	400 kV Bus-I at Baripada	22/05/18	08:30	22/05/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	For GIS bay EXTN works(for recoonecting jumpers to GIS Bus-I)	GRIDCO
277	220 kV BUS-II	23/05/18	09:30	23/05/18	13:30	ODB	ER-II/Odisha/BARIPADA S/S	CVT JB replacement works	GRIDCO
278	400kV baripada-Kharagpur line	24/05/18	09:30	24/05/18	13:30	ODB	ER-II/Odisha/BARIPADA S/S	Replacement of CVT JB	WB
279	400kV Bay 412(TISCO Main bay)	25/05/18	09:30	25/05/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
280	315MVA ICT-I	26/05/18	09:00	26/05/18	13:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP	GRIDCO
281	500MVA ICT #3 at Baripada	30/05/18	09:30	30/04/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	PRD replacement works	GRIDCO
282	400 kV Bus -I at Jeypore	01/05/18	09:00	01/05/18	17:00	ODB	ER-II/Odisha /Jeypore	For Pipe structure connection from Existing 400KV Bus-I to Ongoing	**GRIDCO**
283	400 kV Bus -II at Jeypore	02/05/18	09:00	02/05/18	17:00	ODB	ER-II/Odisha /Jeypore	For Pipe structure connection from Existing 400KV Bus-II to	GRIDCO
284	400 kV Jeypore-Indravati S/C Line	03/05/18	09:00	05/05/18	18:00	ODB	ER-II/Odisha /Jeypore	For Replacement of PID Defective Insulators in Jey-Ivt Line	NLDC
285	Indravati Line - Gajuwaka-I TieBay (411) at Jeypore	04/05/18	09:00	04/05/18	18:00	ODB	ER-II/Odisha /Jeypore	For AMP Works	
286	Indravati Line Main Bay (410) at Jeypore	05/05/18	09:00	05/05/18	18:00	ODB	ER-II/Odisha /Jeypore	For AMP Works	
287	ICT-I (3x 105 MVA) at Jeypore	07/05/18	09:30	07/05/18	17:30	ODB	ER-II/Odisha /Jeypore	For Extending Tertiary of Existing ICT-I (3x105MVA) for STATCOM	GRIDCO
288	315MVA ICT #2	08/05/18	09:30	09/05/18	17:30	ODB	ER-II/Odisha /Jeypore	ELPRO isolator(02 Nos) allignment work	GRIDCO
289	220KV JEYNAGAR-I Line	10/05/18	09:30	10/05/18	17:30	ODB	ER-II/Odisha /Jeypore	For Isolator Retrofitting works (220KV JeynagarI TBC Isolator)	GRIDCO
290	220KV JEYNAGAR-II Line	11/05/18	09:30	11/05/18	17:30	ODB	ER-II/Odisha /Jeypore	For Isolator Retrofitting works (220KV JeynagarII TBC Isolator)	GRIDCO
291	ICT-I (3x 105 MVA) at Jeypore	12/05/18	09:30	12/05/18	17:30	ODB	ER-II/Odisha /Jeypore	For Isolator Retrofitting works (220KV ICT I TBC Isolator)	GRIDCO
292	220 kV Bus -II at Jeypore	14/05/18	09:30	14/05/18	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-II side Isolators of Jeynagar I	GRIDCO
293	220 kV Bus -II at Jeypore	15/05/18	09:30	15/05/18	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-II side Isolators of Jeynagar II	GRIDCO
294	220 kV Bus -II at Jeypore	16/05/18	09:30	16/05/18	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-II side Isolators of ICT- I	GRIDCO
295	220 kV Bus -II at Jeypore	17/05/18	09:30	17/05/18	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-II side Isolators of Bus Coupler	GRIDCO
296	220 kV Bus -I at Jeypore	18/05/18	09:30	18/05/18	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-I side Isolators of Jeynagar I	GRIDCO
297	220 kV Bus -I at Jeypore	19/05/18	09:30	19/05/18	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-I side Isolators of Jeynagar II	GRIDCO
298	125 MVAR Bus Reactor	20/05/18	09:00	20/05/18	10:00	ODB	ER-II/Odisha /Jeypore	For STATCOM Post commissioning Test of External Reactive device	
299	315 MVA ICT-II	20/05/18	12:00	20/05/18	13:00	ODB	ER-II/Odisha /Jeypore	For STATCOM Post commissioning Test of External Transformer	GRIDCO
300	220 kV Bus -I at Jeypore	21/05/18	09:30	21/05/18	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-I side Isolators of ICT- I	GRIDCO
301	220 kV Bus -I at Jeypore	22/05/18	09:30	22/05/18	13:30	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-I side Isolators of Bus Coupler	GRIDCO
302	220KV JEYNAGAR-I Line	23/05/18	09:30	23/05/18	17:00	ODB	ER-II/Odisha /Jeypore	For Isolator Retrofitting works (220KV JeynagarI 89C Isolator) & R-	GRIDCO
303	220KV JEYNAGAR-II Line	24/05/18	09:30	24/05/18	13:30	ODB	ER-II/Odisha /Jeypore	For Isolator Retrofitting works (220KV JeynagarII 89C Isolator)	GRIDCO
304	ICT-I (3x 105 MVA) at Jeypore	25/05/18	09:30	25/05/18	13:30	ODB	ER-II/Odisha /Jeypore	For Isolator Retrofitting works (220KV ICT I 89C Isolator)	GRIDCO

305	400 kV Jeypore-Indravati S/C Line	26/05/18	09:00	26/05/18	17:30	ODB	ER-II/Odisha /Jeypore	For replacement of 400KV B-ph Line CVT	NLDC
306	400KV Jeypore-Gazuwaka-I FSC	28/05/18	09:00	28/05/18	17:30	ODB	ER-II/Odisha /Jeypore	For rectification of SF6 gas leakage and overhaulling of R-ph CB of	NLDC
307	Tie bay (414) of 400KV Gajuwaka Line-II & 400KV Bolangir Line at	29/05/18	09:00	29/05/18	17:30	ODB	ER-II/Odisha /Jeypore	For rectification of Oil leakage of R-ph CB of 414CT-A	
308	400 kV GAJUWAKA-I LINE	30/05/18	09:00	31/05/18	17:30	ODB	ER-II/Odisha /Jeypore	For Rectification of Shut Down Nature of Defects	NLDC
309	400 kV GAJUWAKA-II LINE	01/06/18	09:00	02/06/18	17:30	ODB	ER-II/Odisha /Jeypore	For Rectification of Shut Down Nature of Defects	NLDC
310	400KV Bus-I at Keonjhar	07/05/18	09:00	12/05/18	18:00	ODB	Keonjhar	Stringing of Jack Bus over Bus-I for 125 MVAR Reactor	
311	400KV Bus-II at Keonjhar	14/05/18	09:00	19/05/18	18:00	ODB	Keonjhar	Stringing of Jack Bus over Bus-II for 125 MVAR Reactor	
312	765 KV D/C Jharsuguda-Dharamjaygarh Transmission line -Ckt-III	04/05/18	08:00	06/05/18	17:00	ODB	POWERGRID	Maintenance work and connection with New portion of balace line	NLDC
313	765 KV D/C Angul - Jharsuguda Transmission line (Ckt-I & II)	07/05/18	08:00	18/05/18	17:00	OCB	POWERGRID	Swapping arrangement : Stringing work of 765KV Angul -	NLDC
314	765 KV D/C Jharsuguda-Dharamjaygarh Transmission line -Ckt-I & I	20/05/18	08:00	22/05/18	17:00	OCB	POWERGRID	Replacement of Porcelain insulators at Powerline crossing (Crossing	NLDC
315	400 KV Sundargarh-Indbarath (Ib Thermal) transmission line Ckt-I&II	20/05/18	08:00	22/05/18	17:00	OCB	INDBARATH	Shut down is required for replacement of Porcelain insulators of	
316	400KV Jeypore-Bolangir S/c line	20/04/18	08:00	20/04/18	17:00	ODB	ER-II/Odisha/Bhawanipatna TLM	Amp	NLDC
317	765KV Angul-Srikakulam ckt#2	17/04/18	07:00	17/04/18	18:00	ODB	ER-II/Odisha/Nayagarh TL	AMP	NLDC
318	765KV Angul-Srikakulam ckt#1	18/04/18	07:00	18/04/18	18:00	ODB	ER-II/Odisha/Nayagarh TL	AMP	NLDC
319	80 MVAR BUS REACTOR	02/05/18	10:00	02/05/18	17:00	ODB	ER-II/Odisha/Pandiabili GIS	For AMP of Bus reactor	
320	201 BAY	03/05/18	10:00	03/05/18	17:00	ODB	ER-II/Odisha/Pandiabili GIS	Timing and CRM of Breaker	GRIDCO
321	202 BAY(220KV ICT-2 BAY)	04/05/18	10:00	04/05/18	17:00	ODB	ER-II/Odisha/Pandiabili GIS	Timing and CRM of Breaker	GRIDCO
322	203 BAY	07/05/18	10:00	07/05/18	17:00	ODB	ER-II/Odisha/Pandiabili GIS	Timing and CRM of Breaker	GRIDCO
323	204 BAY(Pandiabili-Samagara ckt-1)	08/05/18	10:00	08/05/18	17:00	ODB	ER-II/Odisha/Pandiabili GIS	Timing and CRM of Breaker	GRIDCO
324	205 BAY(Pandiabili-Samagara- ckt-2)	09/05/18	10:00	09/05/18	17:00	ODB	ER-II/Odisha/Pandiabili GIS	Timing and CRM of Breaker	GRIDCO
325	206 BYA(Bus coupler Bay)	10/05/18	10:00	10/05/18	17:00	ODB	ER-II/Odisha/Pandiabili GIS	Timing and CRM of Breaker	GRIDCO
326	207 BAY(200KV side ICT-1 BAY)	11/05/18	10:00	11/05/18	17:00	ODB	ER-II/Odisha/Pandiabili GIS	Timing and CRM of Breaker	GRIDCO
327	208 BAY(220KV Pandiabili-Atri-2)	14/05/18	10:00	14/05/18	17:00	ODB	ER-II/Odisha/Pandiabili GIS	Timing and CRM of Breaker	GRIDCO
328	209BAY(220KV Pandiabili-Atri-1)	15/05/18	10:00	15/05/18	17:00	ODB	ER-II/Odisha/Pandiabili GIS	Timing and CRM of Breaker	GRIDCO
329	400kV FKK-Durgapur 2	11/05/18	09:00	11/05/18	17:00	ODB	FSTPP	CB testing	
330	400KV FKK-Sagardighi Line	15/05/18	09:00	16/05/18	17:00	ODB	FSTPP	Relay, CB & CT Testing	WB
331	400KV/220kV Auto Transformer	18/05/18	09:00	18/05/18	17:00	ODB	FSTPP	Auto Transformer Testing	JSEB
332	400kV Fkk-Kah 3	22/05/18	09:00	22/05/18	17:00	ODB	FSTPP	CT Testing	
333	400kV Fkk-Malda 2	23/05/18	09:00	23/05/18	17:00	ODB	FSTPP	CT Testing	
334	400KV FKK-Bahrampore Line	29/05/18	09:00	31/05/18	17:00	OCB	FSTPP	CT Replacement	
335	Maintenance work for Barh Patna line -1	08/05/18	09:30	09/05/18	18:00	OCB	BARH	Attending defect of isolator & annual testing of bay equipments.	
336	Maintenance work for ICT#2	21/05/18	09:30	26/05/18	18:00	OCB	BARH	Annual testing of ICT#2	
337	Maintenance work for ICT#2 Bay Equipments	21/05/18	09:30	26/05/18	18:00	OCB	BARH	Annual testing of Bay Equipments	
338	400KV Kahalgaon-Banka Line-1	10/05/18	09:30	10/05/18	17:30	ODB	KAHALGAON	PM works & relay testing	
339	400KV Kahalgaon-Banka Line-2	17/05/18	09:30	17/05/18	17:30	ODB	KAHALGAON	PM works & relay testing	
340	400KV Kahalgaon-Barh Line-1	24/05/18	09:30	24/05/18	17:30	ODB	KAHALGAON	PM works & relay testing	
341	765kV D/C Jharsuguda-Dharamjaygarh Line (Ckt-3 & 4)	20/05/18	08:00	22/05/18	18:00	OCB	OGPTL	for Overhead Stringing of U/C 765KV D/C Raipur- Sundargarh Transmission line(of OGPTL) at OGPTL Location numbers AP 129D/0- AP129E/0 (PGCIL tower Nos: 19/0-19/1)	NLDC
342	400KV TeestaV-Rangpo Feeder-II	23/05/18	09:30	24/05/18	17:00	OCB	Teesta-V	for replacement of CVT in Y-Phase	
343	132 KV RANGIT-RAMMAM	05/05/18	09:00	06/05/18	17:00	ODB	ER-II	FOR REPLACEMENT OF PORCEALIN BY CLR INSULATOR.	
344	220kV Korba-Budhipadar Line Ckt-3	27/05/18	08:00	28/05/18	18:00	OCB	OGPTL	for Overhead Stringing of U/C 765KV D/C Raipur- Sundargarh Transmission line(of OGPTL) at OGPTL Location numbers AP 104A/0-AP105/0.(PGCIL tower Nos: 345N-346N)	NLDC

Outages proposed in other RPCs requiring ERPC approval

Sl No	Name of Elements	From		To		Basis	outages proposed in	Reason	Remarks
		Date	Time	Date	Time				
	HVDC Pole-1 at Vizag Station	28-Apr-18	09:00	29-Apr-18	18:00	Cont.	SRPC	For renovation of LT system including replacement of all LT CBs as advised in Specialm Protection meeting held on 02.04.2018 at POWERGRID, Secunderabad.	Curtailment 150 MW
	FATEHPUR-PG --SASARAM-ER (765KV)(POWERGRID)	18-May-18	08:00	29-May-18	18:00	DAILY	NRPC	To attend the shut down nature defects (Fixing of Missing Jumper Bolts, Spacer Damper,cottor Pin etc)	
	GAYA-ER - BALIA (765KV)	06-May-18	08:00	06-May-18	18:00	DAILY	NRPC	To attend the shut down nature defects (Fixing of Missing Jumper Bolts, Spacer Damper,cottor Pin etc)	
	GAYA-ER - VARANASI (765KV)-- 1	01-May-18	08:00	06-May-18	18:00	DAILY	NRPC	FOR ATTENDING THE STRENGTHENING WORK OF SUSPENSION TOWERS. To	
	VARANASI)- BALIA (765KV)(POWERGRID)	07-May-18	08:00	08-May-18	18:00	DAILY	NRPC	To attend the shut down nature defects (Fixing of Missing Jumper Bolts, Spacer Damper,cottor Pin etc)	
	765kV D'JAIGARH- JHARSUGUDA I	07-May-18	06:00	09-May-18	18:00	Daily	WRPC	Replacement of Conventional Insulators with Polymer insulators in major crossings line Power, River, N.H., S.H., Railway Crossings for public safety. AR in Non Auto Mode for other ckt will be required during above period.	
	765kV D'JAIGARH-RANCHI I	10-May-18	06:00	10-May-18	18:00	Daily	WRPC	Replacement of Y-phase LR Unit PRV by OEM	
	765kV D'JAIGARH- JHARSUGUDA II	10-May-18	06:00	12-May-18	18:00	Daily	WRPC	Replacement of Conventional Insulators with Polymer insulators in major crossings line Power, River, N.H., S.H., Railway Crossings for public safety. AR in Non Auto Mode for other ckt will be required during above period.	
	765KV Jabalpur-Orai#2 Line alongwith Line Reactor at Jabalpur PS	13-May-18	10:00	13-May-18	18:00	Daily	WRPC	On line switching of associated Line Reactot for CSD Commissioning & Line Isolator should be opened.	
	765kV D'JAIGARH- JHARSUGUDA I	16-May-18	09:00	16-May-18	10:00	Daily	WRPC	Firmware upgradation& testing of Micom relays	
	765kV D'JAIGARH- JHARSUGUDA II	16-May-18	11:00	16-May-18	12:00	Daily	WRPC	Firmware upgradation& testing of Micom relays	
	765kV D'JAIGARH-RANCHI I	16-May-18	15:00	16-May-18	16:00	Daily	WRPC	Firmware upgradation& testing of Micom relays	
	765kV D'JAIGARH-RANCHI II	16-May-18	17:00	16-May-18	18:00	Daily	WRPC	Firmware upgradation& testing of Micom relays	
	765kV D'JAIGARH-RANCHI I	16-May-18	06:00	19-May-18	18:00	Daily	WRPC	Replacement of Conventional Insulators with Polymer insulators in major crossings line Power, River, N.H., S.H., Railway Crossings for public safety. AR in Non Auto Mode for other ckt will be required during above period.	
	765kV D/C Jharsuguda-Dharamjaygarh Circuit 3 & 4	20/05/18	08:00	22/05/18	18:00	continuous	WRPC	Overhead stringing works of U/C 765kV D/C Rapur-Sundergarh Line	
	765 D'JAIGARH-RANCHI II	21/05/18	09:00	21/05/18	18:00	Daily	WRPC	First time swapping of (Non-switachble) Y-phase line reactor unit with Spare unit.	
	765 D'JAIGARH- JHARSUGUDA I	29/05/18	06:00	29/05/18	20:00	Daily	WRPC	For Replacement of Line Earth switch with the new E/S supplied with induced contacts by OEM	

ALIPURDUAR
TRANSMISSION LIMITED
A WHOLLY OWNED SUBSIDIARY OF :
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CIN : U40109GJ2015PLC095114

Ref. No.: ATL/SLG/IPTC-Bhutan/ERPC/0223/2018-2019 *Date: 14th April'2018*

To,
The Member Secretary,
Eastern Regional Power Committee,
14, Golf Club Road, Tollygaung,
Kolkata- 700033 (W.B)

Kind Attention: *Mr. Joydev Banarjee*.

Sub: Request for incorporating the shutdown requisition in the Agenda Points for 144th OCC meeting to be held on 19.04.2018 at Kolkata for Construction of 400kV D/C Quad. Alipurduar - Siliguri and Kishanganj - Darbhanga Transmission Line.

Ref: (i) Our Letter Ref. No.: *ATL/SLG/IPTC-Bhutan/ERPC/0190/2017-2018; Date: 14th March'2018.*
(ii) OCC Meeting Notice Ref. No: ERPC/MS/OPERATION/2018/ DATE: 04.04.2018

Dear Sir,

With reference to above, we would like to bring your kind attention that, **Alipurduar Transmission Limited *(a wholly subsidiary of Kalpataru Power Transmission Limited)***, is a "Transmission Licensee" granted by the **Central Electricity Regulatory Commission (CERC) vide Transmission License No: 41/Transmission/2016/CERC** (copy attached), engaged in construction of 400kV D/C Quad. Alipurduar - Siliguri (117Kms) and Kishanganj (PGCIL) to Darbhanga (DMTCL) Transmission Line in Bihar under IPTC-Bhutan Project, which has been awarded by **M/S RECTPCL vide their LOI Ref. No.: RECTPCL/P-22/Bhutan-HEP/LOI/2015-16/1758; dated 29th October' 2016** on Tariff Based Competitive Bidding (TBCB), towards Strengthening of Indian Transmission System for transfer of Power from New HEPs in Bhutan on Build, Own, Operation and Maintenance (BOOM) Basis to provide Transmission Services on a Long Term Basis to the Long Term Customers. The Transmission Service Agreement (TSA) has been signed between Alipurduar Transmission Limited & Long Term Transmission Customers (LTTCs) to provide transmission service on a long-term basis.

Order of Ministry of Power (Central Electricity Authority) dated 19th October 2016 published in Gazette Notification number 2512 dated 20th October, 2016 all rights and power under section 164 of the Electricity Act-2003, which the telegraph authority possess under the Indian Telegraph Act-1885 (XII of 1885) under sections 10 to 19 as amended up to date to establish the Transmission System by Alipurduar Transmission Limited.

Presently, we are carrying-out the construction activities of our both **400KV Double Circuit (Quad. Conductor) Transmission Lines from Alipurduar (PGCIL) to Siliguri (PGCIL)** and **Kishanganj (PGCIL) to Darbhanga (DMTCL)** & Bay Extension at Darbhanga Sub-station of DMTCL. For carrying-out the Stringing activities of the subjected overhead lines &sub-station, we might be required Power line Shutdown and Bus Bar Shutdown of various utilities "as & when required basis" during carrying-out stringing/erection activities at various places.

Our agenda points for 144th OCC Meeting to be held at ERPC-Kolkata on 19th April'2018 is given as below. We require shutdown of following power lines & Bus Bar for carrying-out Stringing and Erection activities at various places. Detail of Shutdown required is as given below:-

Alipurduar Transmission Limited Siliguri

Contd.....P/2.

For Construction of 400KV D/C Quad. Kishanganj - Darbhanga Transmission line of ATL:-

Sl. No.	Name of Line/Equipment Shut-down Required	Name of Owner of Line / Equipment	Date and Time (Shutdown Required)	Remarks
1	220 KV D/C Kishanganj - Madhepura	BSPTCL	From: 02/05/2018 Time : 9 A.M. (09.00 Hrs.) To: 03/05/2018 Time : 5 P.M. (17.00 Hrs.)	On Daily Basis for Carrying-out Stringing Activities
2	132 KV D/C Madhepura - LILO Supaul AND 132KV D/C Madhepura - Supaul	BSPTCL	From: 07/05/2018 Time : 9 A.M. (09.00 Hrs.) To: 08/05/2018 Time : 5 P.M. (17.00 Hrs.)	
3	132 KV S/C Kishanganj - Barsoi	BSPTCL	From: 10/05/2018 Time : 9 A.M. (09.00 Hrs.) To: 11/05/2018 Time : 5 P.M. (17.00 Hrs.)	
4	220 KV D/C Darbhanga - Motipur	BSPTCL	From: 15/05/2018 Time : 9 A.M. (09.00 Hrs.) To: 16/05/2018 Time : 5 P.M. (17.00 Hrs.)	
5	132 KV D/C Madhepura - Saharsa	BSPTCL	From: 20/05/2018 Time : 9 A.M. (09.00 Hrs.) To: 21/05/2018 Time : 5 P.M. (17.00 Hrs.)	
6	220 KV Darbhanga - Samastipur	BSPTCL	From: 25/05/2018 Time : 9 A.M. (09.00 Hrs.) To: 26/05/2018 Time : 5 P.M. (17.00 Hrs.)	
7	220 KV D/C Madhepura - Laukhi	BSPTCL	From: 30/05/2018 Time : 9 A.M. (09.00 Hrs.) To: 31/05/2018 Time : 5 P.M. (17.00 Hrs.)	
8	132 KV S/C Purnia - Forbesganj	BSPTCL	From: 06/06/2018 Time : 9 A.M. (09.00 Hrs.) To: 07/06/2018 Time : 5 P.M. (17.00 Hrs.)	

For Construction of 400KV D/C Quad. Alipurduar - Siliguri Transmission line of ATL:-

Sl. No.	Name of Line / Equipment Shut-down Required	Name of Owner of Line / Equipment	Date and Time (Shutdown Required)	Remarks
1	400 KV BON-SIL D/C Bongaigaon - Siliguri T/L .	ENICL (Sterlite)	From: 04/12/2018 Time : 9 A.M. (09.00 Hrs.) To: 05/12/2018 Time : 5 P.M. (17.00 Hrs.)	On Daily Basis for Carrying-out Stringing Activities
2	400 KV D/C Twin Binnaguri - Malda T/L	PGCIL	From: 27/11/2018 Time : 9 A.M. (09.00 Hrs.) To: 28/11/2018 Time : 5 P.M. (17.00 Hrs.)	
3	400 KV D/C Tala-Binnaguri (N.S.L.G) T/L-2 .	PGCIL	From: 20/11/2018 Time : 9 A.M. (09.00 Hrs.) To: 21/11/2018 Time : 5 P.M. (17.00 Hrs.)	
4	400 KV D/C Tala -Binnaguri (N.S.L.G) T/L-1	PGCIL	From: 14/11/2018 Time : 9 A.M. (09.00 Hrs.) To: 15/11/2018 Time : 5 P.M. (17.00 Hrs.)	
5	220 KV D/C Birpara-Siliguri T/L .	PGCIL	From: 14/11/2018 Time : 9 A.M. (09.00 Hrs.) To: 15/11/2018 Time : 5 P.M. (17.00 Hrs.)	
6	132 KV S/C New Jaipaiguri- Maynaguri T/L (N-M-1)	WBSETCL	From: 18/10/2018 Time : 9 A.M. (09.00 Hrs.) To: 19/10/2018 Time : 5 P.M. (17.00 Hrs.)	
7	132 KV S/C NJP- CHALSA T/L - (N-M-2)	WBSETCL	From: 11/10/2018 Time : 9 A.M. (09.00 Hrs.) To: 12/10/2018 Time : 5 P.M. (17.00 Hrs.)	
8	132 KV S/C NJP- CHALSA T/L (N-M-2)	WBSETCL	From: 22/05/2018 Time : 9 A.M. (09.00 Hrs.) To: 23/05/2018 Time : 5 P.M. (17.00 Hrs.)	
9	132 KV S/C NJP- MNG T/L (N-M)	WBSETCL	From: 27/05/2018 Time : 9 A.M. (09.00 Hrs.) To: 28/05/2018 Time : 5 P.M. (17.00 Hrs.)	
10	132 KV S/C NJP-MGN T/L (N-M-1),132 KV S/C NJP-CHALSA T/L (N-M-2)	WBSETCL	From: 23/10/2018 Time : 9 A.M. (09.00 Hrs.) To: 24/10/2018 Time : 5 P.M. (17.00 Hrs.)	
11	132 KV D/C CHALSA -MNG T/L (J-C)	WBSETCL	From: 06/11/2018 Time : 9 A.M. (09.00 Hrs.) To: 07/11/2018 Time : 5 P.M. (17.00 Hrs.)	
12	400 KV D/C Tala -Binnaguri (N.S.L.G) TL-1 (T-P-S)	PGCIL	From: 28/12/2018 Time : 9 A.M. (09.00 Hrs.) To: 29/12/2018 Time : 5 P.M. (17.00 Hrs.)	
13	132 KV S/C Maynaguri - Birpara CKT-2 T/L ,132 KV S/C Maynaguri - Birpara CKT-1 T/L (MB)	WBSETCL	From: 25/12/2018 Time : 9 A.M. (09.00 Hrs.) To: 26/12/2018 Time : 5 P.M. (17.00 Hrs.)	
14	400 KV D/C Tala-Binnaguri (N.S.L.G) TL-2 .T/L (T-K-S)	PGCIL	From: 18/12/2018 Time : 9 A.M. (09.00 Hrs.) To: 19/12/2018 Time : 5 P.M. (17.00 Hrs.)	

Alipurduar Transmission Limited Siliguri Sevoke Road

15	220 KV D/C Birpara-Siliguri T/L .	PGCIL	From: 14/12/2018 Time : 9 A.M. (09.00 Hrs.) To: 15/12/2018 Time : 5 P.M. (17.00 Hrs.)	
16	132 KV S/C Birpara-Pundibari (Coochbehar)T/L (B-A)	WBSETCL	From: 09/11/2018 Time : 9 A.M. (09.00 Hrs.) To: 10/11/2018 Time : 5 P.M. (17.00 Hrs.)	
17	132 KV S/C Birpara-Alipurduar T/L (B-P)	WBSETCL	From: 24/10/2018 Time : 9 A.M. (09.00 Hrs.) To: 25/10/2018 Time : 5 P.M. (17.00 Hrs.)	
18	220 KV D/C Birpara-Salakati T/L. (BRP.-BGN.)	PGCIL	From: 04/10/2018 Time : 9 A.M. (09.00 Hrs.) To: 05/10/2018 Time : 5 P.M. (17.00 Hrs.)	
19	132 KV D/C (132 KV EARTH ELECTRODE MATHABHANGA - ALIPURDUAR)	PGCIL	From: 16/11/2018 Time : 9 A.M. (09.00 Hrs.) To: 17/11/2018 Time : 5 P.M. (17.00 Hrs.)	
20	220 KV D/C Birpara-Salakati T/L(BRP.-BGN.)	PGCIL	From: 11/12/2018 Time : 9 A.M. (09.00 Hrs.) To: 12/12/2018 Time : 5 P.M. (17.00 Hrs.)	
21	132 KV S/C Birpara-Alipurduar T/L . (B-A)	WBSETL	From: 07/12/2018 Time : 9 A.M. (09.00 Hrs.) To: 08/12/2018 Time : 5 P.M. (17.00 Hrs.)	

Furthermore, we are planning to commence the Erection of our Gantry Tower 4T1A and 1No Beam, which is close to Bus Reactor BS-2 of 400kV Sub-station of DMTCL. For this work, we require shutdown of both circuits of Bus Reactor BS-2 of DMTCL during the period of working. Details of shut down required are given below:-

Name of Line/Equipment	Date and Time	Remarks
Shutdown of Bus Reactor BS-2 400kV Sub-station of DMTCL at Darbhanga	From 23/04/2018 to 27/04/2018 on daily basis from 09=00Hrs to 18=00Hrs	For Erection of Gantry Tower 4T1A and 1No Beam.
Shutdown of Main Bus -1 400kV Sub-station of DMTCL at Darbhanga	From 01/05/2018 to 08/05/2018 on daily basis from 09=00Hrs to 18=00Hrs	For Integration of Bus Bar
Shutdown of Main Bus -2 400kV Sub-station of DMTCL at Darbhanga	From 10/05/2018 to 17/05/2018 on daily basis from 09=00Hrs to 18=00Hrs	For Integration of Bus Bar
Shutdown of both Bus Bar (Main Bus - 1 & 2) 400kV Sub-station of DMTCL at Darbhanga	From 16/05/2018 to 17/05/2018 on daily basis from 09=00Hrs to 18=00Hrs	For Bus Bar Protection Panel Integration

In view of above, we are hereby requesting your good-self for incorporating the above shutdown request in the Agenda Points for 144th OCC Meeting to be held at ERPC-Kolkata on 19th April'2018 for further approvals and oblige, please.

Thanking you,
Yours truly,
For Alipurduar Transmission Limited,

14/04/18

(Zaved Kawser)
AGM-Projects,
ATL-Siliguri, W.B.

Alipurduar Transmission Limited * Siliguri * Sevoke Road *

Copy to:-

1. The Executive Director, ERLDC/POSOCO, 14, Golf Club Road, Tollygaunge, Kolkata - for your information, please.
2. The DGM (Market Operation), ERLDC/POSOCO, 14 Golf Club Road, Tollygaunge, Kolkata.
3. The Executive Engineer, ERPC, 14 Golf Club Road, Tollygaung, Kolkata.

ALIPURDUAR
TRANSMISSION LIMITED
A wholly owned subsidiary of:
KALPATARU POWER TRANSMISSION LIMITED
Project Office:
Flat No: S-2, North View Apartment, Ward No: 42 of SMC
2 ½ Mile, Sevoke Road, P.S. – Bhaktinagar,
Siliguri, Dist. – Jalpaiguri, West Bengal - 734008.
Tel: +91 8585013822.
CIN: U40109GJ2015PLC095114

Ref. No.: ATL/SLG/IPTC-Bhutan/ERPC/0190/2017-2018 *Date: 14th March'2018*

To,
The Member Secretary,
Eastern Regional Power Committee,
14, Golf Club Road, Tollygaung,
Kolkata- 700033 (W.B)

Kind Attention: *Mr. Joydev Banarjee*.

Sub: Construction of 400kV D/C Quad. Alipurduar - Siliguri and Kishanganj - Darbhanga Transmission Line - Request for granting permission for attending the OCC Meeting as a Special Invitee.

Dear Sir,

With reference to above, we would like to bring your kind attention that, **Alipurduar Transmission Limited** ***(a wholly subsidiary of Kalpataru Power Transmission Limited)***, is a "Transmission Licensee" granted by the **Central Electricity Regulatory Commission (CERC) vide Transmission License No: 41/Transmission/2016/CERC** (copy attached), engaged in construction of 400kV D/C Quad. Alipurduar - Siliguri (117Kms) and Kishanganj (PGCIL) to Darbhanga (DMTCL) Transmission Line in Bihar under IPTC-Bhutan Project, which has been awarded by **M/S RECTPCL vide their LOI Ref. No.: RECTPCL/P-22/Bhutan-HEP/LOI/2015-16/1758; dated 29th October' 2016** on Tariff Based Competitive Bidding (TBCB), towards Strengthening of Indian Transmission System for transfer of Power from New HEPs in Bhutan on Build, Own, Operation and Maintenance (BOOM) Basis to provide Transmission Services on a Long Term Basis to the Long Term Customers. The Transmission Service Agreement (TSA) has been signed between Alipurduar Transmission Limited & Long Term Transmission Customers (LTTCs) to provide transmission service on a long-term basis.

Order of Ministry of Power (Central Electricity Authority) dated 19th October 2016 published in Gazette Notification number 2512 dated 20th October, 2016 all rights and power under section 164 of the Electricity Act-2003, which the telegraph authority possess under the Indian Telegraph Act-1885 (XII of 1885) under sections 10 to 19 as amended up to date to establish the Transmission System by Alipurduar Transmission Limited.

Presently, we are carrying-out the construction activities of our both **400KV Double Circuit (Quad. Conductor) Transmission Lines from Alipurduar (PGCIL) to Siliguri (PGCIL) and Kishanganj (PGCIL) to Darbhanga (DMTCL)** & completed almost 70% of the total construction activities. Further, we expect that the line would be ready for charging on or before 31st December'2018.

For carrying-out the Stringing activity of the subjected overhead lines, we might be required Powerline Shutdown of various utilities as & when required basis during stringing activity of Powerline Crossing Sections.

Contd.....P/2.

In view of above, we are hereby requesting your good-self for permitting us for attending the OCC Meeting as a Special Invitee, which would be conducted on 26th March'2018 to enabling us to raise the requisition of shutdown related issues for further approvals.

This is for your kind perusal, please.

Thanking you,
Yours truly,
For Alipurduar Transmission Limited,

(Zaved Kawser)
AGM-Projects,
ATL-Siliguri, W.B.

Copy to:-

1. The Executive Director, ERLDC/POSOCO, 14, Golf Club Road, Tollygaunge, Kolkata - for your information, please.
2. The DGM(Market Operation), ERLDC/POSOCO, 14 Golf Club Road, Tollygaunge, Kolkata.
3. The Executive Engineer, ERPC, 14 Golf Club Road, Tollygaunge, Kolkata.

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

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

Ref: ODP/BB/AM/TLM

Date:7th April 2018

To
The Member Secretary
Eastern Regional Power Committee
14, Golf Club Road
Tollygunge, Kolkata-700033

Sub: Request for approval of deemed availability for shut down of 400KV Sundargarh-Raigarh ckt 2 & 4 due to natural calamity.

Dear Sir,

This is to inform that during heavy & cyclonic storm on 31-03-18 and 01-04-18, 02 nos towers at loc-407 and 417 of 400 KV Sundargarh-Raigarh line 2&4 have been affected due to severe bending of main leg member and found in very critical condition. Accordingly, emergency shutdown has been taken from 07/04/2018, 10:00Hrs to 16/04/2018 18:00 Hrs on continuous basis for both the lines with due approval for immediate replacement of the damaged towers. This has been done to avoid tower collapse and consequential damage to so many other adjacent towers leading to long outage of the line.

Since this emergency shutdown for prevention of tower collapse and tripping/outage of Powerlines which is due to natural calamity, it is requested that the aforesaid outage may not be considered in calculating availability of the system.

Thank You

With Kind Regards.

7/04/18

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

Copy:
1. ED, ERLDC,14 Golf Club Road
Tollygunge,Kolkata-700033
2.ED,Odisha Projects,BBSR
for kind information

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

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

Ref: ODP/BB/AM/TLM/4189

Date:08th March 2018

To

The Member Secretary

Eastern Regional Power Committee

14, Golf Club Road

Tollygunge, Kolkata-700033

Sub: Request for approval of deemed availability for shut down of 400KV Baripada-Pandiabili, 400KV Pandiabili-Mendhasal ckt 1&2 and 400KV Dubri-Pandiabili Line

Dear Sir,

This is to inform that after due discussion Shutdown of the following Lines are approved in the 142nd OCC.

Sl. No	Name of element	From		To		Remarks
		Date	Time	Date	Time	
1	400KV Baripada-Pandiabili line	09/03/2018	08:00	09/03/2018	18:00	ODB
2	400KV Pandiabili-Mendhasal linet#1	09/03/2018	08:00	09/03/2018	18:00	ODB
3	400KV Dubri-Pandiabili line	10/03/2018	08:00	10/03/2018	18:00	ODB
4	400KV Pandiabili-Mendhasal linet#2	10/03/2018	08:00	10/03/2018	18:00	ODB

The shutdown of the above lines is taken for installation of counterweight in the pilot Polymer insulators of all the tension towers in the LILO portion of Baripada-Mendhasal Line at Pandiabili. This is being done for prevention of excess swing of jumpers during heavy wind and storm condition and also to avoid tripping of lines.

Since this activity is for system improvement and prevention of tripping/outage of Powerlines, it is requested that the aforesaid outage may please be considered as deemed availability of the system.

Thank You

With Kind Regards.

8/3/18

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

Copy:

1. ED, ERLDC,14 Golf Club Road
   Tollygunge,Kolkata-700033
2. ED,Odisha Projects,BBSR
   for kind information

Annexure-E1

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

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

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

Annexure – E.4

AVAILABILITY STATUS OF EVENT LOGGER, DISTURBANCE RECORDER & GPS

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

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

Eastern Regional Power Committee

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

NAME OF ORGANISATION:
FOR THE MONTH OF:

SUBSTATION DETAIL:

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

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