Minutes

of

142nd OCC Meeting

Date: 13.03.2018

Eastern Regional Power Committee

14, Golf Club Road, Tollygunge

Kolkata: 700 033

Eastern Regional Power Committee

Minutes of 142nd OCC Meeting held on 23rd February, 2018 at ERPC, Kolkata

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

Shri J. Bandyopadhyay, Member Secretary, EPRC chaired the meeting. He welcomed Shri P. Mukhopadhyay, ED, ERLDC and all the other participants in the meeting.

Thereafter, he requested EE (PS), ERPC to take up the agenda points in seriatim.

Item no. 1: Confirmation of minutes of 141st OCC meeting of ERPC held on 18.01.2018

The minutes of 141st OCC meeting were uploaded in ERPC website and circulated vide letter dated 31.01.2018 to all the constituents.

Members may confirm the minutes.

Deliberation in the meeting

Members confirmed the minutes of 141st OCC meeting.

PART A : ER GRID PERFORMANCE

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

The average consumption of Eastern Region for January - 2018 was 371.8 MU. Eastern Region has achieved maximum energy consumption of 386 MU on 29th January - 2018. Total Export schedule of Eastern region for January - 2018 was 2426.9 MU, whereas actual export was 2182.3 MU.

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 January 2018. Presentation is enclosed at **Annexure- A1**.*

It was opined in the meeting that NTPC should not decrease the DC suddenly citing coal stock problem. It should be informed at least one day in advance.

OCC advised NTPC to submit their station wise coal stock position to ERLDC on daily basis while declaring DC on day ahead.

ERLDC informed that high voltage was observed at 400kV Arambagh and Sagardighi S/s on continuous basis and Sagardighi units are not absorbing VAR during high voltage condition.

WBPDCL informed that they were unable to change the GT tap position and OEM support is also not available. They are trying for local vendor to change the GT tap position.

OCC advised WBPDCL to take the issue seriously and take appropriate action to absorb reactive power during high voltage condition as per their capability curve.

MS, ERPC informed that a special meeting would be held at ERPC, Kolkata among NLDC, ERLDC, PTC, ERPC and Bhutan on 27th March,2018 tentatively to discuss the issues of power injection pattern of Tala and Chuka hydro generating stations of Bhutan at the Indian Periphery.

ERLDC explained the wide spread blackout on 19.01.18 in DVC system and informed that the total load of DVC system is being 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 was not satisfied.

In view of the aforesaid facts, ERLDC stressed that DVC needed 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.

Considering the seriousness of the issue, OCC referred the issue of DVC to TCC for further guidance.

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

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

SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks
1	400kV Jharsuguda - Rourkela - IV	Powergrid	02-01-18	17:06	LILO of 400kV Rourkela Raigarh IV at Jharsuguda
2	125MVAR Bus reactor at Rourkela	Powergrid	05-01-18	0:16	Replacement of old 50MVAR Bus Reactor
3	400Kv Jharsuguda - Rourkela - III	Powergrid	05-01-18	22:19	LILO of 400kV Rourkela Raigarh II at Jharsuguda
4	400kV Jharsugud – Raigarh - III	Powergrid	05-01-18	22:25	LILO of 400kV Rourkela Raigarh II at Jharsuguda
5	400 KV Sasaram – Daltonganj - II	Powergrid	31-01-18	23:32	Charged on No load basis
6	400KV Bus - I at Daltonganj	Powergrid	31-01-18	23:32	
7	63 MVAr line Reactor of 400 KV Sasaram - Daltonganj II at Daltonganj	Powergrid	31-01-18	23:32	
8	132 KV Chapra(New) - Chapra	BSEB	26.12.17		
9	132 kV Sonebarsa -Kuseshwarshtan	BSEB	08.01.18		
10	132 kV Jehanabad - Ataula ckt-II	BSEB	14.01.18		
11	132 kV Jainagar - Madhubani	BSEB	27.01.18		
12	132 kV Jainagar - Jhanjharpur (LILO at Loc No.162 at Jainagar)	BSEB	27.01.18		

13	132 kV Jhanjharpur - Phoolparas	BSEB	27.01.18		

Constituents may update.

Deliberation in the meeting

OPTCL updated that 132kV Paradip-Jagathsinghpur line LILO at 132kV Tirtol along with 40 MVA, 132/33kV Transformer was charged first time on 5th January 2018.

Item no. A3: Persistent over drawl by West Bengal and Odisha

Over drawl figure of West Bengal and Odisha from 01-02-2018 to 07-02-2018 are shown below:

State	West Bengal		Odisha	
Date	Over Drawl (MU)	Max. Over Drawl (MW)	Over Drawl (MU)	Max. Over Drawl (MW)
01-02-18	0.397	312	2.463	452
02-02-18	2.609	469	2.920	459
03-02-18	2.080	451	2.825	413
04-02-18	2.372	453	2.971	515
05-02-18	-0.255	345	1.651	422
06-02-18	1.045	273	2.601	378
07-02-18	0.964	427	3.131	429

In 141st OCC, over drawl pattern of West Bengal and Odisha was deliberated in details. Some improvement in West Bengal and Odisha Drawl pattern has been observed during January which is most possibly due to decrease in system demand during winter season. However, till date Februry-2018, West Bengal average over drawl quantum is increased to 1 to 2 MU whereas for Odisha over drawl quantum is increased to around 2 to 3 MU per day.

With the onset of summer, system demand of Odisha and West Bengal system is expected to increase further. The problem would be compounded with the outage of thermal units and less water reservoir level in hydro generators of Odisha. This may lead to further increase in over drawl and the situation may be worsened further.

In view of above, West Bengal and Odisha are advised plan accordingly to maximize their internal generation availability and increase their power purchase quantum in STOA/Power Exchange or from any other source in future to avoid any over drawl during February and March.

ERLDC may present. WBSETCL and Odisha may explain.

Deliberation in the meeting

ERLDC informed that the overdrawal pattern of West Bengal and Odisha had been improved in February 2018 but overdrawal during morning peak needed to be taken care of.

OCC advised West Bengal and Odisha to meticulously 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. They should not lean on the grid bridging the gap between demand and supply.

OCC referred to TCC for further advice.

Item no. A4: Reactive Power performance of Generators

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

Power Plant	Max and Min Voltage observed for Jan 18 (KV)	Date for occurrence (Jan 18)
Farakka STPS	425, 410	27,12
Khalgaon STPS	422, 409	8,12
Talcher STPS	414, 395	2,7
Teesta-v	425,398	27,05
Bakreshwar TPS	413, 394	10, 29
Kolaghat TPS	426, 405	10,3
Sagardighi TPS	426, 411	4,6
MPL	419, 408	9,18
Mejia-B	422, 410	6,8
DSTPS	422, 412	8,20
Adhunik TPS	423, 408	8,22
Barh	424, 409	3,12
JITPL	418, 408	8,22
GMR	417, 404	8,9
HEL	429,398	15,26
Kodarma	422, 407	3,3

ERLDC may present the reactive performance.

Deliberation in the meeting

*ERLDC presented the performance of the generators. Presentation is enclosed at **Annexure-A4**.*

ERLDC informed that Farakka #3 was 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.

ERLDC added that they were unable to monitor the performance of Sagardighi units because of non-availability of data. The RTU is not reporting since January 2018.

WBPDCL agreed to resolve the issue.

Item no. A5: Restricted Governor /Free Governor Mode Operation of generators in ER

Generating units are requested to share change in generation output recorded at the terminal of generating units for the following events.

1. On 10.01.2018 at 17:34Hrs, Due to Loss of Evacuation path 1050 MW Generation loss occurred at Teesta-III, Dikchu,Tashding. Frequency changed from 50.02 Hz to 49.96 Hz.

2. On 30.01.2018 at 10:46Hrs, Due to Fault at Korderma S/s , Generation loss of 1250 Mw & Load Loss of 350 Mw occurred at Koderma & Bokaro S/S. Frequency changed from 49.90 Hz to 49.84 Hz.

ERLDC may present.

Deliberation in the meeting

ERLDC presented the performance of the generators. The presentation is enclosed at ***Annexure-A5****.*

ERLDC added that response of most of the generators was unsatisfactory and some generators are giving negative response which needed to be attended immediately.

OCC advised all the generators to go through the details in Annexure-A5 and take appropriate action to improve the performance.

OCC referred the issue to TCC Meeting for further guidance.

Item no. A6: UFR operation during the month of January'18

System frequency touched a maximum of 50.29 Hz at 21:59 Hrs of 31/01/18 and a minimum of 49.62 Hz at 20:48 Hrs of 31/01/18. 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. A7: 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 January18.

Members may note.

Deliberation in the meeting

Members noted.

Item no. A8: Grid incidences during the month of January, 2018

Sr No	GD/ GI	Date	Time	S/S involved	Summary
1	GD-I	10/01/2018	17:34	Teesta III	At 17:34 hrs tripping of 400 kV Binaguri - Rangpo - II on R-Y-N fault initiated of SPS - I operation which resulted in tripping of B/C at Teesta III and unit tripping at Tashiding. As only one unit was in service at Chujachen and Dikchu, no generation reduction occurred due to operation of SPS - I. Though power flow through 400 kV Binaguri - Rangpo - I was more than 850 MW for less than 350 ms(as per PMU data), SPS - II operated resulting tripping of 400 kV Teesta III - Rangpo S/C and the running unit at Teesta III and Dikchu.
2	GD-I	14/01/2018	23:20	Purnea	220/132 kV ICT - II at Purnea, 132 kV Purnea - Kishangunj S/C and 132 kV Purnea - Purnea III were under shut down. At 23:20 hrs 132 kV Purnea - Purnea I & II tripped from BSPTCL end only due to operation of O/C relay.
3	GD-I	19/01/2018	12:23	Kalyaneswari	During normalization of 220 kV bus II at Kalyaneswari, 220 kV bus I failed along with bus tie breaker resulting tripping of all connected lines and ATRs at 12:25 hrs. Subsequently 220/132 kV ATR I, II & III tripped on O/C . DSTPS #4 tripped at same time as its auxiliary power was supplied through 220/132 kV ATRs at DSTPS.
4	GD-I	20/01/2018	13:28	Sahebgunj	At 13:28 Hrs, 132 KV KhSTPP-Lalmatia and 132 KV Kahalgaon (BSPHCL)-Lalmatia tripped from Lalmatia end only, leading to load loss at Sahebgunj.
5	GD-I	30/01/2018	10:46	Koderma	Due to problem in tie CB of 400 kV Koderma - Gaya - II and 400 kV Koderma - Biharshariff - II, all 400 kV lines i.e. 400 kV Koderma - Biharshariff D/C, 400 kV Koderma - Gaya D/C & 400 kV Koderma - Bokaro A D/C along with all 400/220 kV ICTs at Bokaro A & Koderma tripped resulting loss of total power supply at Koderma and Bokaro A and running units at Koderma & BokaroA.

Members may note.

Deliberation in the meeting

Members noted.

Item no. A9: 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 January 2018 of Eastern Region which is enclosed at **Annexure- A9**.

Members may note.

Deliberation in the meeting

Members noted.

PART B: ITEMS FOR DISCUSSION

Item No. B.1: Implementation of Automatic Generation Control

For better frequency control by utilisation of spinning reserves, CERC vide order no 11/SM/2015 dated 13-10-2015 has approved introduction of AGC in the country. A pilot implementation at Dadri TPS in NR is already operating successfully. However, it is now required to introduce AGC on regional basis considering each region as a control area.

In Eastern Region it is therefore necessary to identify a power station for participation in AGC, based on several enabling factors such as healthiness of generator control system, availability of wideband communication with ERLDC etc.

Members may discuss and decide.

Deliberation in the meeting

NTPC informed that they are in the process of formulating a plan to implement AGC at recently commissioned station Barh STPS-II. Unit #4 & 5 of Barh STPS are being considered for AGC implementation. However, the work involved would require 6-7 months for implementation. Moreover, at present complete wideband communication with Barh STPS-II is not yet established.

OCC advised NTPC to place their implementation plan in TCC meeting.

Item No. B.2: Automatic Under Frequency Load Shedding (AUFLS) and mapping of Feeders -NPC

In 7th NPC, it was agreed that there is need for review of the quantum of load shedding and introduction of additional slabs/stages of frequency.

NPC sought the views of RPCs on the review of quantum of load shedding and stages of frequency.

Present load relief of ER is given below:

Control Area	Stage –I (49.2 Hz) (MW)	Stage –II (49.0 Hz) (MW)	Stage–III (48.8Hz) (MW)	Stage–IV (48.6Hz) (MW)	Total Relief by Control Area
BSEB	98	99	99	101	397
JSEB	61	62	61	62	246
DVC	134	135.5	136	137	542.5
Odisha	181.5	183.5	184	186	735
WB & CESC	345.5	350	350	354	1399.5
Total	**820**	**830**	**830**	**840**	**3320**

It was also agreed that the RPCs to initiate the process of mapping of feeders covered under AUFLS scheme to have a real time assessment of load-relief likely to be available under the scheme if it operated.

Members may discuss and decide.

Deliberation in the meeting

Members opined that it is more appropriate to decide the quantum of load shedding and stages of frequency for AUFLS scheme at National level.

It was informed that mapping of feeders covered under AUFLS scheme had been implemented for all the states.

Item No. B.3: 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.

Members may submit the contingency plan.

Deliberation in the meeting

OCC advised all the constituents to send their contingency plan within a week to mserpc-power@nic.in.

Item No. B.4: Status of Implementation of Enquiry Committee Recommendations

9.4 Ensuring primary frequency response from generators:

In Petition No. 84/MP/2015, Date of order: July 31, 2017 section 23 (a), CERC noted

- … the Commission, starting from the month of September, 2017 shall be closely watching the primary response of ISGSs as reported by POSOCO/NLDCs.
- At the State level, SLDCs shall report the frequency response of intra-State generators to the concerned SERCs."

To comply with this order, ERLDC is sending the primary response of all ISGS/IPP in the region to NLDC. Reports from all RLDCs are in turn compiled by NLDC and submitted to the Hon'ble Commission.

DVC informed that they are calculating the RGMO response of their generators and sending to ERLDC.

OCC advised other SLDCs to monitor performance of the generators under their control area.

Deliberation in the meeting

OCC referred the issue to TCC for further guidance.

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.

Deliberation in the meeting

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.

9.10.2 Possibility of voltage collapse prediction, sensing global power system conditions derived from local measurements may be explored.

Deliberation in the meeting

OCC felt that the issue could be taken up in National forum.

9.11 Need of Dynamic Security Assessment and review of State Estimation: In order to assess the system security in real time and assess the vulnerability condition of the system, dynamic security assessment need to be periodically carried out at the control centers. A proper review and upgradation of the state estimation procedure is required to improve the visibility and situational awareness of the system.

Dynamic Security Assessment is propsed to be covered in NLDC SCADA upgradation package. State Estimation is currently in working condition at ERLDC.

Deliberation in the meeting

ERLDC informed that Dynamic Security Assessment is proposed to be covered in NLDC SCADA upgradation package. State Estimation is currently in working condition at ERLDC.

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.

*Latest status is enclosed at **Annexure-B5**.*

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

Deliberation in the meeting

OCC opined that an islanding scheme for Kanti generating units with Bihar load might be explored.

OCC advised Bihar and NTPC to discuss and place the details in next OCC.

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.

OCC advised OPTCL to place their plan for IbTPS islanding scheme in the next OCC meeting.

9.13 Autonomy to Load Despatch Centres

9.13.1 As National Grid is on the horizon, homogenization of system operation philosophy is need of the hour. The present organizational set up of Load Despatch Centres need to be reviewed. System operation needs to be entrusted to Independent System Operator (ISO). In addition, SLDCs should be reinforced and ring fenced for ensuring functional autonomy.

Deliberation in the meeting

OCC opined that it is beyond the purview of this forum. The issue should be taken up with Govt. of India by a National forum.

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.

Deliberation in the meeting

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*

OCC referred to TCC for further guidance.

9.14 Development of Intra-State transmission system

Intra-State transmission system needs to be planned and strengthened in a better way to avoid problems of frequent congestion.

In 30th TCC/ ERPC held on 19/20th June, 2015 constitution of Standing Committee on Transmission Planning for State Sector was approved by ERPC. In this forum of ERPC various proposals for system strengthening schemes of Eastern Region mainly under state sector/s (STU) will be discussed.

Deliberation in the meeting

It was informed that various proposals for system strengthening schemes of Intra-State transmission system are being discussed in Standing Committee on Transmission Planning for State Sector Meetings.

9.15 Network visualization

9.15.2 The Communication network should be strengthened by putting fibre optic communication system. Further, the Communication network should be maintained properly to ensure reliability of data at Load Despatch Cenres.

Deliberation in the meeting

ED, ERLDC informed that the issue is being deliberated in SCADA O & M meeting and an agenda of non – availability of last mile fiber connectivity is being placed in 37th TCC / ERPC meeting.

9.15.3 RTUs and communication equipments should have uninterrupted power supply with proper battery backup so that in case of total power failure, supervisory control and data acquisition channels do not fail.

Deliberation in the meeting

ED, ERLDC informed that this matter is already discussed for Powergrid substations and pointed out in approved report of replacement of old RTU / SAS in ER by ERPC. The same is under implementation by POWERGRID for their part.

9.16 Reduction in Start-up time for Generators

Deliberation in the meeting

Mock black start excises are being conducted regularly for Hydro generators but for thermal generators, it is difficult to be conducted.

OCC felt that the issue could be taken up in National forum.

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.

Deliberation in the meeting

It was informed that system study groups have been formed at state level in all states except Sikkim.

Sikkim representative was not available in the meeting for discussion.

9.20. Improved telecom Infrastructure for cyber security

Members may update the latest status.

Deliberation in the meeting

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.

Item No. B.5: Status of projects funded under PSDF schemes

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

SN	Name of Constituent	Name of Project	Date of approval 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 92% Erection is completed
2		Renovation & modernisation of transmission system for relieving congestion in Intra-State Transmission System.	22-05-17	19 months from date of release of 1st instalment	43.37	Nil	Agreement signed. Bank A/c opened & PFMS mapping is in process.
3		Installation of switchable reactor at 400kV & shunt capacitors at 33kV	22-05-17	25 months from date of release of 1st instalment	70.13	Nil	Agreement signed. Bank A/c opened & PFMS mapping is in process.
4	WBPDCL	Implementation of Islanding scheme at Bandel Thermal Power Station	*10.04.17*	*March 2018*	1.39 Cr		Award placed to ABB. Material delivery by Dec, 17. Most of the materials have reached the site and the installation would commence soon.
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	10.05.17	162.5 Cr.	16.25 Cr + 8.91 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.		
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	31.03.2018	64.22 crore	23.68 crore	Project is on going. 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 9 nos of 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.		Kept on hold. Revised DPR may be submitted.
12	JUSNL	Renovation and up-gradation of protection system	*September 2017*	*138.13 crores*			Approved by Appraisal Committee. LOA will be issued to PRDC in March 2018.
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	*630.28 Cr*	*63.028 Cr*	work is in progress, eexpected to complete by June 2018
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					

Respective constituents may update the status.

Deliberation in the meeting

Members updated the latest status as mentioned in above table.

Item No. B.6: Charging of 220/132 kV 160MVA ICT-1 & 400/220 kV 315 MVA ICT-1 of Daltonganj SS from 132kV side

Powergrid vide letter dated 10.02.2018 informed that Daltangunj SS of Powergrid is ready for charging in all respect and both 400KV Sasaram - Daltangunge line has already been charged on 31.01.2018.

Further CTU has advised for charging of 220/132 kV ,160MVA ICT-1 & 400/220 kV, 315 MVA ICT-1 of Daltonganj SS from 132kV side (through charging from 132 kV Dalatonganj Daltonganj Line -I of JUSNL). Accordingly the following elements will be charged at Daltonganj SS:

1) 132kV Line bay no. 106 (Daltonganj Line-1 bay) along with 132kV Main Bus
2) 220/132 kV 160MVA ICT-1 through 132 kV bay no. 102
3) 220 kV Bus-1 & 2 through charging bay no. 201 & 211
4) 400/220 kV 315MVA ICT-1 through 220kV bay no. 203
5) 80 MVAR Bus Reactor

After 24 hours charging of ICTs on no-load, it will be synchronized from 400kV side " or " Alternatively if synchronisation is not possible, charging of 220/132 kV, 160MVA ICT-1 & 400/220 kV, 315 MVA ICT-1 from 400KV side along with the 132KV line simultaneously for power flow in radial mode.

JUSNL vide letter dated 8th February 2018 informed that ERLDC has considered only one unit of TVNL for load flow analysis of 132 kV Dalatonganj Daltonganj Line. This will increase the loading of 220kV Ranchi(PG)-Hatia II line. Details are enclosed at **Annexure-B6**.

Members may discuss.

Deliberation in the meeting

POWERGRID and JUSNL agreed to settle the issues bilaterally in a separate meeting at Daltanganj on 26th February 2018 and above elements would be charged as per the plan.

Item No. B.7: 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*

However, only Bihar and West Bengal have submitted their list to ERLDC/ERPC within time line and no one has submitted any update on expected transmission elements planned to be commissioned during next month.

Members may discuss.

Deliberation in the meeting

OCC advised all the other constituents to submit the information in time to following mail ids:

- *erldcam@gmail.com*

- *ftcer@posoco.in*
- *mserpc-power@nic.in*

Item No. B.8: Approval of outage procedure and Submission of outage request to ERLDC as per procedure-ERLDC

The procedure for transmission element outage was approved in 87th ERPC meeting. After this some minor modifications in the approved procedure was also done. As per the procedure following need to be adhered by the outage indenting parties while applying OCC approved transmission element outages to ERLDC for approval:

1. Request for outages which are approved by OCC must be sent by the indenting agency of the transmission asset at least 3 days in advance to respective RLDC by 1000 hours. (For example, if an outage is to be availed on say 10th day of the month, the indenting agency would forward such requests to the concerned RLDC on or before 7th day of the month by 1000 hours.)
2. In case the request for transmission element outage is not received within the timeline prescribed above, it will be assumed that the indenting agency is not availing the outage. However, indenting agency is duty bound to inform ERLDC at least 3 days in advance, if it is not availing the OCC approved outage.

Since last few months it was observed that some of the indenting agencies were deviating from submission dates corresponding to their OCC approval date while submitting their request, which causes a lot of inconvenience to coordinate with multiple agencies and also to carry out system study before approve the outage request. In some cases, indenting agencies were also not intimated ERLDC/ERPC in advance for cancellation of any outage approved in OCC.

Detail outage procedure as on date is updated in ERLDC website.

In this regard, it is advised to all indenting agencies to follow the updated outage procedure while submitting any outages to ERLDC/ERPC. All beneficiaries are also requested to go through the outage procedure and give their comments if any modification required.

Members may approve the updated outage procedure available in ERLDC website.

Deliberation in the meeting

OCC advised all the constituents to go through the outage procedure and give their comments to erldcam@gmail.com and ftcer@posoco.in, if any modification is required.

WBSETCL informed that availing shutdown information pertaining to WBSETCL should be intimated to them at least one day in advance.

ERLDC agreed.

Item No. B.9: Difficulty for issuance of Planned/Emergency outage of Inter Regional lines due to ownership issues

Generally line maintenance responsibility of various inter-regional lines lies with the concerned regions up to their jurisdiction as decided within the regions in their internal meetings. However, the responsibility for outage verification of the line lies with only one region between the two for submission of outage data to respective RLDC/RPC for availability certification. E.g 400kV transmission lines in ER-NR corridor like 400kV Patna-Balia-Q/C and 400kV Biharsariff-Balia-D/C lines, maintenance activity lies on both NR-3 and ER-1 region of Powergrid as per their agreed jurisdiction while for transmission element availability calculation purpose NR-3 is submitting the line outage data to NRLDC/NRPC for outage verification/certification, due to which for any outage of these lines NR-3 availability is affected. Due to this when ER-1 is availing any outage in respect of 400kV Patna-Balia-Q/C and 400kV Biharsariff-Balia-D/C, NR-3 is not willing

to allow this shutdown due to reduction of its availability factor which leads to difficulty for getting consent from NLDC and NRLDC during outage approval process.

In this regard, it is advised that, transmission licensee shall submit the ownership region name with whom the availability responsibility lies to ERLDC/ERPC for all ER inter-regional links and outage duration of the line shall considered for availability calculation purpose as per the regulation irrespective of which region is taking the line shutdown permission.

Members may please note.

Deliberation in the meeting

ERLDC informed that they are facing difficulty for getting consent from NLDC and NRLDC during outage approval process because of ownership issues.

OCC advised PGCIL to confirm the ownership for all ER inter-regional links especially for ER-NR corridor.

Item No. B.10: Ratification of projected Demand and generation for POC transmission charges and loss calculations for Q1(2018-19)

The projected Demand and Generation of ER constituents to be considered in the base case for POC transmission charge and loss calculations for Q1 (April 18-June 18) are attached at **Annexure-B10** for ratification by the constituents.

Members may kindly go through and confirm.

Deliberation in the meeting

It was informed that validation committee meeting would be held on 26th February 2018.

OCC advised all the constituents to go through the details and confirm.

Item No. B.11: Recovery of loss due to schedule revision during flodding of Kishanganj S/S of PGCIL-Teesta Urja Ltd.

Due to flooding at Kishanganj S/S of PGCIL, the IEX schedule of Teesta-III HEP and other Projects was directed to be revised from 10:00 hours to 24:00, hours on 13.08.2017. However, vide subsequent communications, the curtailment of schedule was initially directed to start from 10.00 hrs , which got changed to 10.30 hrs and again to 10.00 a.m. However, the IEX schedule which had got curtailed from 10.30 hrs could not get revised to 10.00 hrs leading to the Teesta-III (and other Projects) being penalized under DSM for two time blocks from 10.00 hrs to 10.30 hrs.

In 141st OCC, it was informed by ERPC that request for discrepancy in schedule should have been pointed out much earlier. Request for revision for old cases might not be considered in future. In the instant case, schedule for collective transaction was not revised. Post facto revision of schedule of collective transaction is not feasible . Further, payment for the scheduled transaction had been received by Teesta Urga Ltd. Therefore, to accommodate the request for schedule revision with retrospective effect for DSM, payment received from collective transaction needed to be disclosed. Otherwise, there is a possibility of double accounting, leading to excess payment due to revision.

Teesta Urga Ltd. vide letter dated 13th February 2018 informed that for the two blocks from 10:00 to 10:30 hrs on 13.08.2017, the total deviation charges levied on Teesta Urga Ltd. is ₹ 12,06,362 whereas for the same blocks, Teesta Urga Ltd has received ₹ 2,61,610 from the Power Exchange (IEX) resulting in a net loss of ₹ 9, 44,752.

Members may discuss.

Deliberation in the meeting

The issue was deliberated in details in the meeting. It was decided to adjust the amount from DSM Pool as a special case. However, in future, this type of claim, if any, must be brought to the notice of ERPC and ERLDC immediately, failing which this type of request would not be entertained.

Item No. B.12: Revision of final schedule of Dikchu HEP and revocation of UI penalty inflicted on 13.08.2017- Dikchu

On 13.08.2017, Dikchu was advised by ERLDC through mail and phone to back down the generation to Zero w.e.f 10:00 hrs, 13.08.2017, as all STOA & collective transactions were cancelled due to flooded condition at Kishanganj S/s. Dikchu plant was shut down promptly within 10:01 hrs.

The final schedule of Dikchu HEP was revised to Zero w.e.f 10:30 hrs by NLDC. The consequence was that as per final generation schedule data, although Dikchu was able to generate 96 MW in between 10:00 hrs to 10:30 hrs, Dikchu generation was Zero in real time incurring heavy UI penalization.

It is requested to consider the merit of the incidence and accord consent in revision of the final schedule of 13.08.2017 from 10:00hrs to 10:30 hrs to Zero in respect of Dikchu HEP.

In 141st OCC, it was informed by ERPC that request for discrepancy in schedule should have been pointed out much earlier. Request for revision for old cases might not be considered in future. In the instant case, schedule for collective transaction was not revised. Post facto revision of schedule of collective transaction is not feasible . Further, payment for the scheduled transaction had been received by Dikchu HEP. Therefore, to accommodate the request for schedule revision with retrospective effect for DSM, payment received from collective transaction needed to be disclosed. Otherwise there is a possibility of double accounting, leading to excess payment due to revision.

Subsequently no further information was received from Dikchu.

Members may note.

Deliberation in the meeting

Dikchu representative was not present. Further, no information regarding the payment received by Dikchu from Power Exchange was also furnished.

Item No. B.13: 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).

POWERGRID may update

Deliberation in the meeting

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.

b) Muzzaffarpur S/S to ERLDC:

Real time SCADA data from Muzaffarpur is not available at ERLDC since 14:00 Hrs of 04/01/2018. Telemetered data of Muzaffarpur substation is significantly important not only to ERLDC but also for NLDC as it has international interconnections with Nepal and Inter-regional tie-lines with Northern Region.
Real time SCADA data failure has been intimated to Muzaffarpur Substation and POWERGRID ERTS-1 ULDC team as well on number of occasions; verbally over phone, & through mail & letter dated 16.01.18 but the same is yet to be rectified.

POWERGRID may update

Deliberation in the meeting

POWERGRID informed that real time SCADA data from Muzaffarpur Sub-station was restored on 14.02.18.

ERLDC informed that availability of real time SCADA data from Muzaffarpur sub-station is quite essential because of its inter-state, inter-regional as well as inter-national connectivity with Nepal hence early restoration of data is highly expected.

POWERGRID informed that delay in restoration was due to delay in AMC award for old RTU which is under process and it would be awarded by 05.03.18.

c) Motihari S/S to ERLDC:

Real time SCADA data from Motihari S/S is not available at ERLDC since 09:42 Hrs of 28/10/2017. Real time SCADA data failure has been intimated to Motihari Substation (M/s DMTCL) on number of occasions; verbally over phone & through but the same is yet to be rectified.

DMTCL may update

Deliberation in the meeting

ERLDC informed that real time SCADA data from Motihari Sub-station was restored on 16.02.18.

d) 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.

NTPC may update

Deliberation in the meeting

NTPC informed that they are in the process of replacing the SAS which is in tendering stage.

e) NLDC Bhutan to Back up NLDC India:

Real time data communication between NLDC Bhutan main and Back up NLDC India located at ERLDC, Kolkata is down since 15th September 2017. Due to the same, ERLDC not getting real time SCADA data of Tala HPS, Chukha HPS, Malbase S/s and Dagachu HPS. The matter has been informed to NLDC Bhutan on several occasions but same is yet to restore. NLDC Bhutan is requested to restore the real time SCADA data communication at the earliest.

Bhutan may update

Deliberation in the meeting

Concerned representative from NLDC Bhutan (M/s BPC) was un-available in the meeting for deliberation on the subject.

OCC referred the issue to TCC for further deliberation.

Item No. B.14: Replacement of old RTUs in Eastern Region for reporting of RTU/SAS to backup control centres

35th ERPC advised ERLDC to convene a separate meeting a form a committee with CTU/POWERGRID as nodal agency for assessment of old RTUs of Central Sector and further necessary action on replacement. Subsequently, two meeting were held at ERLDC,Kolkata on 09th June-2017 and 4th August-2017. The report has been finalized by the committee based on the suggestions received from the various committee members.

In 36th TCC/ERPC meeting, ERPC approved the proposal of replacement of RTU as submitted by the committee constituted as per advice of ERPC. The Committee report is enclosed. The scope of Replacement of RTUs in Eastern Region comprises of following:

A. Replacement of RTUs and Upgradation of SAS:

Replacement of existing S-900 and C264 RTUs installed in ULDC phase-I along with upgradation of RTU/SAS/ Remote Operation RTUs for dual reporting to both Main ERLDC & Backup ERLDC over IEC 60870-5-104 Protocol and lack of maintenance support due to non-availability of spares.

S.n	Region	Name of Substations	Remarks
1	ER-II	Durgapur	RTU to be replaced
2	ER-II	Malda	RTU to be replaced
3	ER-II	Binaguri	RTU to be replaced
4	ER-II	Siliguri220	RTU to be replaced
5	ER-II	Birpara	RTU to be replaced
6	ER-II	Subhasgram	RTU to be replaced
7	ER-II	Dalkhola	RTU to be replaced
8	ER-II	Gangtok	RTU to be replaced
9	*ER-II*	*Maithon*	*RTU to be replaced*
10	ER-II	Berhampore	Hardware/License upgradation
11	ER-II	Rangpo	Hardware/License upgradation
12	ER-II	NewMelli	Hardware/License upgradation
13	ER-I	Biharsharif	RTU to be replaced
14	ER-I	Jamshedpur	RTU to be replaced

15	ER-I	Purnea 400	RTU to be replaced
16	ER-I	Purnea 220	RTU to be replaced
17	ER-I	Sasaram HVDC	RTU to be replaced
18	ER-I	Muzaffarpur	*RTU to be replaced*
19	ER-I	Patna	*SAS to be replaced*
20	ER-I	Banka	Hardware/License upgradation
21	ER-I	Lakhisarai	Hardware/License upgradation
22	ER-I	Ranchi	*SAS to be replaced*
23	ER-I	New Ranchi	Hardware/License upgradation
24	ER-I	Chaibasa	Hardware/License upgradation
25	ER-I	Gaya	*Hardware/License upgradation*
26	ER-I	Sasaram 765	Hardware/License upgradation
27	ER-I	Ara	Hardware/License upgradation
28	Odisha Projects	Jeypore	RTU to be replaced
29	Odisha Projects	Baripada	RTU to be replaced
30	Odisha Projects	Indravati	RTU to be replaced
31	Odisha Projects	Rourkela	RTU to be replaced
32	Odisha Projects	Rengali	RTU to be replaced
33	Odisha Projects	Angul	Hardware/License upgradation
34	Odisha Projects	Jharsuguda	Hardware/License upgradation
35	Odisha Projects	Bolangir	Hardware/License upgradation
36	Odisha Projects	Keonjhar	Hardware/License upgradation
37	Odisha Projects	Pandiabili	Hardware/License upgradation
38	Odisha Projects	Talcher HVDC	Hardware/License upgradation

B. Implementation of BCU based Substation Automation System at Purnea 220 KV, Ara 220 KV, Birpara220KV, Siliguri220KV, Sasaram S/s in addition to the replacement of RTUs for data reporting to ERLDC through single RTU/SAS as per advice of ERLDC.

C. Replacement of DCPS for replacement of old DCPS commissioned in ULDC phase-I:

Following old DCPS & UPS in 18 nos. Central Sector locations is decided to be replaced:

Sr. No.	Location	Item
1	Durgapur	UPS
2	ERLDC, Kolkata	*2x4 kw DCPS with parallel operation*
3	Durgapur	
4	Kanchanpur	
5	Barkot	
6	Jamui	
7	Maldah	
8	Siliguri 400	
9	Jamshedpur	
10	Siliguri 220	
11	Rengali	
12	Birpara	
13	Rourkela	
14	Purnea 220	
15	Indravati	
16	Muzaffarpur	
17	Biharsharif	
18	Sasaram HVDC	

D. Laying of OPGW in the second circuit of following links commissioned in ULDC Phase-I:

S/n	Name of links	Length (Km)
1	Rourkela-Talcher	171
2	Durgapur-Jamshedpur	175
3	Durgapur-Farakka	150
4	Biharsharif-Sasaram	193
5	Biharsharif-Kahalgaon	202
6	LILO portion of Biharsharif-Balia at Ara	12
	Total	**903**

It is proposed for implementation of the above as 'Upgradation of SCADA/RTUs/SAS in Central Sector stations and strengthening of OPGW network in Eastern Region' through tariff basis and investment made by POWERGRID on this project shall be recovered through tariff.

Members may approve.

Deliberation in the meeting

POWERGRID updated the RTU / SAS replacement list as mentioned in above table which is as per the approved old RTU replacement report.

ERLDC requested POWERGRID to provide 2 x 4 KW of DCPS with parallel operation at ERLDC, Kolkata as per the system requirement.

POWERGRID informed that they are going to use the same technical specification of RTU as mentioned in the approved report. In the meeting, POWERGRID confirmed that with the completion of replacement/up-gradation of RTU / SAS, the existing problem of inability of dual reporting of each sub-station to both the control Centre (ERLDC main as well as ERLDC backup located at New Delhi) and multiple RTU / SAS in a single sub-station will be resolved.

OCC approved the proposal and referred to TCC for further concurrence.

Item No. B.15: Issuance of TOC for DSTPS-RTPS OPGW link by DVC-Powergrid

In 19th SCADA O & M meeting held on 07th April 2017 at ERLDC, Kolkata, POWERGRID informed that they are not able to complete the OPGW work in DSTPS – RTPS in DVC Sector under Microwave Replacement Package due to severe ROW issue. POWERGRID further informed that they have mobilized the team several times but work could not be completed due to heavy ROW / compensation issues related to TL construction resulting non-completion of 2 nos. OPGW drum (approx. 9 Km) out of total 69.182 Km. POWERGRID again informed that this issue is discussed in various forums but the solution is yet to be provided by DVC. DVC informed that they are not able to resolve the issue as this is old ROW / compensation issue related to TL construction. OPGW work in this link could not be completed due to ROW/Compensation issues since September-2013.

In 36th ERPC meeting, matter has been deliberated and DVC informed that they will try to resolve ROW issues by 31st October-2017 otherwise they will provide the necessary certificate.
In 20th SCADA O&M meeting held on 15th December-2017, POWERGRID informed that DVC has not yet issued TOC for this link. DVC confirmed that they will issue TOC and request for a letter from POWERGRID. POWERGRID issued the request letter on 20.12.2017. However, TOC is yet to be issued by DVC.

DVC may update.

Deliberation in the meeting

OCC referred the issue to TCC.

Item No. B.16: PPA details for the years 2017-18 to 2019-20

CEA vide mail dated 21st November 2017 informed that it has been decided to estimate the demand and availability of power (energy and peak), initially for the year 2017-18 and subsequently for the years 2018-19 and 2019-20. In this regard, PPA details for the years 2017-18 to 2019-20 are required as per the format enclosed at **Annexure-B16**.

All the constituents furnish the data as per the format to CEA by email: rk.jena@gov.in.

In 140th OCC, Member Secretary, ERPC informed that PPA details of the utility constituents and generators are required by CEA to identify the capacities of the IPPs which are available for fresh PPAs as well as the utility constituents who may utilize these.

OCC advised all the constituents to send the PPA details for the years 2017-18 to 2019-20 as per the format to CEA vide email: rk.jena@gov.in with a copy to mserpc-power@nic.in.

Constituents may update.

Deliberation in the meeting

OCC advised all the constituents to send the PPA details for the years 2017-18 to 2019-20 as per the format to CEA vide email: rk.jena@gov.in with a copy to mserpc-power@nic.in.

Item No. B.17: Option for handling intra-day load/generation variation due to RE or otherwise.

Sub-Group under FOR Technical Committee on Grid Integration of Renewable Energy (RE), with reference to regional cooperation had a meeting on 18.8.2017 in CERC office, New Delhi. Record of proceedings is placed in **Annexure-B17**.

As decided in the meeting various options for handling intra-day load / generation variation due to RE or otherwise, as discussed in the meeting be circulated and discussed with Members of Regional Power Committees and **feedback on the same may be provided to us to facilitate further deliberations and suitable recommendations by the FOR Technical Committee on Grid Integration of RE.**

In 140th OCC, all the members were advised to submit their comments to ERPC vide mail (mserpc-power@nic.in) within ten working days.

Members may update.

Deliberation in the meeting

It was informed that no comments have been received from the constituents.

OCC advised all the members to submit their comments to ERPC vide mail (mserpc-power@nic.in) at the earliest.

PART C: ITEMS FOR UPDATE

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

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

OCC advised OPTCL to change 33kV Laxmipur feeder with suitable feeder of desired load.

OPTCL may update.

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 January, 2018 has been received from NTPC, CTPS, DVC, Tata Power, JUSNL, WBPDCL and CESC.

Members may note.

Deliberation in the meeting

Members noted.

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

GMR, JITPL, Chuzachen, CESC, & NTPC (TSTPS) have submitted the healthiness certificate for the month of January 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.

In 138th OCC, ERLDC 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.

Powergrid vide mail dated 11-01-2018 informed that the SPS system at HVDC, Talcher and Angul are healthy but SPS system of Rourkela S/S is not in service after the isolation of LILO connectivity with Sterlite.

Powergrid may update.

Deliberation in the meeting

It was informed that Rangpo SPS was operated successfully as per the scheme on 10th January 2018 and 20th February 2018.

OCC advised Powergrid to submit the healthiness certificate for SPS of 132 kV Muzaffarpur-Dhalkebar D/C line.

OCC advised Powergrid to explore the possibilities for sending Talcher SPS signal to Vedanta/Sterlite via Angul-Jharsuguda or via Rourkela-Jharsuguda.

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.

OCC advised OHPC to submit the action plan in next OCC meeting.

OHPC may update.

Deliberation in the meeting

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.

Item no. C.5: 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.

Updated list of feeders is yet to be received from OPTCL and DVC.

*In 141st OCC, ERLDC presented the list of feeders to be disconnected during overdrawal of states. Presentation is enclosed at **Annexure-C5**.*

OCC advised all the constituents to go through the list of feeders in Annexure-C5 and finalize the list.

DVC has submitted the list. The list is circulated with the Agenda.

Members may update.

Deliberation in the meeting

Jhakhand, DVC and OPTCL indicated the intra-state radial feeders in addition to the already identified tie lines, for disconnection during overdrawal. The updated list is enclosed at ***Annexure-C5****.*

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

Item no. C.6: 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 MW 3. System Frequency < 49.9 Hz AND deviation > 12 % or 75 MW	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
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

Members may update.

Deliberation in the meeting

Members updated the latest status as mentioned in above table.

OCC 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.

Item no. C.7: Commissioning of 220 kV Patna-Sipara third ckt.

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

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

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

In 141st OCC, BSPTCL informed that testing of bus bar protection is in progress and the line would be commissioned by 31st January 2018.

BSPTCL may update the latest status.

Deliberation in the meeting

BSPTCL informed that the line would be commissioned by end of February 2018.

Item no. C.8: Reactor at 400kV Behrampur

In 140th OCC, Powergrid informed that in view of high voltage at Behrampur they have diverted one 125MVAR reactor to Behrampur and the reactor will be installed by end of December 2017.

In 141st OCC, Powergrid informed that 125MVAR bus reactor would be installed by end of February 2018.

Powergrid may update.

Deliberation in the meeting

Powergrid informed that diversion of Reactor is getting delayed due to Rail gate problem. Reactor would be installed by April 2018.

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.

In 138th OCC, DGPC informed that BPC is the owner of part of the line which is belongs to Bhutan. They have already replaced porcelain insulators of 7 to 8 towers with polymer insulators.

In 141st OCC, BPC representative informed that supply order has been placed for insulator replacement and the material will be delivered by January, 2018. The replacement of insulators would be completed by April, 2018.

BPC/DGPC may update.

Deliberation in the meeting

OCC referred the issue to TCC.

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.

Powergrid and Sikkim may update.

Deliberation in the meeting

Sikkim representative was not available in the meeting for discussion.

OCC referred the issue to TCC.

Item no. C.11: Replacement of CT at both ends of 400kV Jeerat-Baharampur Line

In 135th OCC, Powergrid agreed to replace 1000/1A CT by 2000/1 A CT at both ends of 400kV Jeerat-Baharampur Line.

WBSETCL and Powergrid may update.

Deliberation in the meeting

Powergrid informed that CT would be replaced in March 2018.

Item no. C.12: 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		*Expected to complete by Mid Feb. 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 April 2018*
4	Jeypore	±200	2x125	2x125	*Expected to complete by June 2018*

Powergrid may update.

Deliberation in the meeting

Powergrid updated that the work is in progress as per the given schedule.

Item no. C.13: 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.	**400/220 kV Keonjhar S/S**	
a.	Keonjhar (PG)-Keonjhar (OPTCL) 220 kV D/C line	By Mar, 2018.
b.	Keonjhar (PG)-Turumunga(OPTCL) 220kV D/C line	By 2019.
3.	**400/220kV Pandiabil Grid S/s:**	
a.	Pratapsasan(OPTCL)-Pandiabil(PG) 220 kV D/C line	By Mar, 2018.

OPTCL may update.

Deliberation in the meeting

OPTCL updated the status as mentioned in above table.

Item no. C.14: 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.	**Chaibasa 400/220kV S/s**	
a.	Chaibasa (JUSNL) – Ramchandrapur (JUSNL) 220kV D/c	*The line is yet to be charged from Ramchandrapur end.*
2.	**Daltonganj 400/220/132kV S/s:**	
a.	Daltonganj (POWERGRID) – Latehar 220kV D/c	Forest clearance is pending, it will take time.
b.	Daltonganj (POWERGRID) – Garhwa 220kV D/c	May, 2018. Forest clearance is pending, it will take time.
C	Daltonganj (POWERGRID) – Daltonganj (JUSNL) 132kV D/c	Dec, 2018. Forest clearance is pending, it will take time.
d	Daltonganj (POWERGRID) – Chatarpur/Lesliganj 132kV D/c	Matching with S/s, Forest clearance is pending, it will take time.

3.	**Dhanbad 400/220 kV S/s: Awarded under TBCB**	
a.	Dhanbad – Dhanbad (Govindpur) (JUSNL) 220kV D/c	Matching with S/s. Forest clearance is pending, it will take time.

JUSNL may update.

Deliberation in the meeting

JUSNL updated the status as mentioned in above table.

Item no. C.15: 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***)	*by March 2018*
2.	**2x500MVA, 400/220kV Rajarhat ---**	
a.	Rajarhat-N. Town-3 (WBSETCL) 220 kV D/C line	Matching
b.	Rajarhat-N. Town-2 (WBSETCL) 220 kV D/C line	June, 2018
c.	Rajarhat- Barasat (WBSETCL) 220 kV D/C line	June, 2018

WBSETCL may update.

Deliberation in the meeting

WBSETCL updated the status as mentioned in above table.

Item no. C.16: Erection and commissioning of 02 nos. of 220 kV line bays at KBUNL

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

The unavailability of bays at KBUNL is affecting the evacuation of power from KBUNL (Generating Station 2*110 MW+2*195MW). So, keeping these lines in loop at KBUNL will enhance the quality, reliability and stability of system. KBUNL may begin the construction and complete commissioning of 2nd bay in minimum possible time in order to avoid crisis arisen due to unforeseen outage of Biharsharif(PG) and DMTCL(Darbhanga).

As such target dates for the start and completion of the above works may kindly be got ensured from KBUNL.
In 140th OCC, KBUNL informed that tender has been floated and the work will be awarded in December 2017. The work will be completed by March 2018.

In 141st OCC, it was informed that the work will be awarded by end of April 2018.

KBUNL may update.

Deliberation in the meeting

It was informed that the work would be awarded by end of April 2018.

BSPTCL informed that the work was getting delayed and they are facing difficulties for synchronising 220 KV line at KBUNL.

OCC referred the issue to TCC for further guidance.

Item no. C.17: 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.

ERLDC may present.

Deliberation in the meeting

*ERLDC presented the latest status of telemetry. Presentation is enclosed at **Annexure-C17**.*

ERLDC informed that Sagardighi, New Farakka SCADA and Lalmatia (NTPC) data are not available. Unit side data of Farakka STPS (Unit #6) and GMR (Unit #1, Unit #2, Unit #3) are also not available to ERLDC.

OCC advised NTPC, WBPDCL, GMR and POWERGRID to take necessary actions to restore the data.

a) Frequent failure of JITPL data to ERLDC:

In 36th TCC, Powergrid agreed to allow JITPL to shift their PLCC modem from Bolangir S/s within a week. JITPL informed that they will shift the modem within a week and they will commission the communication system in another 10 days subject to availability of OEM (ABB) engineers.

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

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

In 140th OCC, ERLDC informed that JITPL data through PLCC is not yet restored.

In 141st OCC, JITPL informed that data through PLCC will be restored by end of January 2018.

JITPL may update.

Deliberation in the meeting

It was informed that JITPL data through PLCC was restored.

Item no. C.18: Transfer capability determination by the states -- Agenda by NPC

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

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

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

Sl No	State/Utility	TTC import(MW)		RM(MW)		ATC (Import) MW	
		Import	Export	Import	Export	Import	Export
1	BSPTCL						
2	JUSNL	885		60		825	
3	DVC	955	3065	54	44	901	3021
4	OPTCL						
5	WBSETCL						
6	Sikkim						

BSPTCL, OPTCL and WBSETCL may please appraise their respective import TTC and ATC with the assumptions and limiting constraints.

Deliberation in the meeting

ERLDC updated the status as follows:

Sl No	State/Utility	TTC import(MW)		RM(MW)		ATC (Import) MW	
		Import	Export	Import	Export	Import	Export
1	BSPTCL						
2	JUSNL	885		60		825	
3	DVC	955	3065	54	44	901	3021
4	OPTCL	1896	--	84	--	1812	--
5	WBSETCL	3960	--	300	--	3660	--
6	Sikkim						

BSPTCL informed that they were updating the recently commissioned elements in PSSE base case and agreed to send the ATC and TTC figures at the earliest.

Item no. C.19: Updating of GT and ICT Tap position of all EHV transformers

All the generation, transmission and distribution utilities have been requested to go through **Annexure-C19** related to last updated information related to GT/ICT/ATRs available at ERLDC and update the capacity, number, tap details, make (Company name) and other information including addition of new transformers, wherever felt necessary.

OCC advised all the constituents to go through the Annexure and send the updated information to erldcprotection@gmail.com.

Members may update.

Deliberation in the meeting

ERLDC informed that they have received the relevant information from Odisha, WBSETCL and CESC.

OCC advised all the other constituents to send the updated information to erldcprotection@gmail.com.

Item no. C.20: 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-C20**.

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 update.

Deliberation in the meeting

Members noted.

Item no. C.21: 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

Powergrid informed that they would start the replacement work of Phase III after collecting the SEMs.

Powergrid may update.

Deliberation in the meeting

PGCIL informed that they would start the replacement work of Phase III after collecting the SEMs tentatively in March 2018.

Item no. C.22: Meter related Issues-ERLDC

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

Issue	Location	Meter No	Line	Responsibility	Problem Since	Present Status
Non receipt of Data	1. NPGC	NP-1282-A NP-1287-A	132 KV Rihand & Sonnagar	BSPTCL	More than 3 month	Not Received. Status is same
Installation of Check/Standby meter	1.Subhashgram(WB)		220 KV Subhasgram(PG) D/C	WBSETCL/PGCIL	Charging of Line	As informed by PGCIL, Meter is available at Subashgram and the same to be collected by WBSETCL and to be put into service.
	2. New Town(WB)		220 KV Subhasgram(PG) S/C	WBSETCL/PGCIL	Charging of Line	
	3. Bantala(WB)		220 KV Subhasgram(PG) S/C	WBSETCL/PGCIL	Charging of Line	
	4. EM Bypass(CESC)		220 KV Subhasgram(PG) D/C	WBSETCL/PGCIL	Charging of Line	Meter already connected but time synchronisation yet to be done. SEM data is not received by ERLDC

In 140th OCC , BSPTCL was advised to communicate the problem of downloading the data of NPGC to Powergrid. WBSETCL was also advised to install the meters at the earliest. However NPGC end data is not received by ERLDC. Meter at WBSETCL/CESC end for New Town, Bantala and Subhasgram is yet to be installed.

In 141st OCC, BSPTCL informed that meter received at NPGC and it would be installed within 2 days.

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

Deliberation in the meeting

It was informed that the Meters have been installed at all the above locations but the time correction needed to be done at EM Bypass(CESC).

Item no. C.23: Less recording by Joda OPTCL end meter

Meter No NP-5937-A installed at Joda end of 220 Ramchandarpur is recording 10 % to 15 % Less as compared to Ramchandarpur end since 06.12.2017. Subsequently ERLDC vide mail dated 14.12.17 (with a copy to PGCIL) requested OPTCL to check CT/PT connection to the said meter. However the problem is still persisting and GRIDCO accounting is done with Ramchandarpur end meter.

In 141st OCC, OCC advised OPTCL to check CT/PT connections and CT burden first; the meter can be replaced if required.

OPTCL/PGCIL may please further update.

Deliberation in the meeting

OPTCL and PGCIL informed that the issue had been resolved.

Item no. C.24: 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. Details are enclosed at **Annexure-C24**.

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

ERLDC, JITPL and PGCIL may update.

Deliberation in the meeting

POWERGRID informed that they would replace the meters by next day.

Item no. C.25: Mock Black start exercises in Eastern Region – ERLDC

i) The status of black start exercises

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

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	
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	*1st week of March 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	*1st week of March 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	
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	Before 12th March 2018
12	Teesta-III		December 2017		Done on 8th January 2018

The black start exercise of Upper Indravati P.H. which was scheduled to be carried out on 09.01.2018 at 11:00Hrs could not be carried out due to transmission line problem and would be performed later.

In 141st OCC, WBSETCL was advised to submit the report on black start exercise of TLDP III to ERLDC and ERPC.

Members may update.

Deliberation in the meeting

Members updated the schedule as mentioned in above table.

ii) Testing of 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.

SLDCs may confirm.

Deliberation in the 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.

Item no. C.26: Schedule for reactive capability tests

The following was status of regarding reactive capability testing:

a. Adhunik TPS(both units) –Yet to be confirmed by Adhunik
b. JITPL(both units) – After the emergent inspection of OEM(BHEL)
c. Barh TPS – November 2017. Revised schedule yet to be received.
d. Raghunatpur (both units) – by December 2017. Revised scheduled awaited.
e. GMR (Three units)- January 2018

Testing of reactive capability of the above generating units is pending since long.

Members may update.

Deliberation in the meeting

DVC informed that coal stock position is not good. Hence it would not be possible to test the generators at full load.

ERLDC informed that units could be tested at partial loading and requested DVC to intimate the schedule.

GMR informed that their units would be tested in March 2018.

JITPL informed that testing of unit#1 had been completed in January 2017 and testing of unit#2 was pending.

OCC advised JITPL to send the test results to ERLDC and ERPC.

OCC felt that testing of reactive capability of the above generating units have been pending since long.

OCC referred the issue to TCC for further advice.

Item no. C.27: 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 140th OCC by Powergrid is given at **Annexure-C.27**.

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.

POWERGRID may update the status.

Deliberation in the meeting

POWERGRID submitted the updated status of installation of PMUs in Eastern Region under URTDSM project as enclosed at **Annexure-C.27***.*

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.

PART D:: OPERATIONAL PLANNING

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

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

ERPC Secretariat is not receiving the actual figures of previous month power supply position in time. All the constituents should furnish the information to ERPC Secretariat by 10th of every month.

Members may confirm.

Deliberation in the meeting

Modified anticipated power supply position for the month of March, 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 March'18

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

- *FSTPS unit #4 shutdown from 10th March 2018 for annual maint.*
- *KhSTPS unit #2 shutdown from 5th to 29th March 2018 for annual Maint.*

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

Deliberation in the meeting

Approved maintenance programme of generators and transmission elements for the month of March, 2018 is given at **Annexure-D.2.** *OCC approved the following generators shutdown:*

- *FSTPS unit #4 shutdown from 11th March 2018 for 35 days for annual maint.*
- *KhSTPS unit #2 shutdown from 5th to 25th March 2018 for annual Maint.*
- *KTPS Unit#5 shutdown from 15th March 2018 for 35 days*
- *CTPS unit#8 shutdown from 1st April 2018 for 25 days*

1. **Replacement of defective porcelain insulator with polymer insulator in NR-ER linked inter regional transmission line —Powergrid**

Powergrid vide letter dated 10th February 2018 informed the following

1. Installation of polymer insulators in 400 kV Biharsarif – Balia – I & II transmission line:
It is to be informed that due to redistribution of transmission lines between Power Grid ER-I and NR-III, the all NR-ER link transmission lines have been transferred to POWER Grid ER-I and being maintained by ER-I. The replacement of Porcelain insulators with polymer insulators in various transmission lines of POWERGRID/ER-I are being replaced in phased manner including the transmission lines transferred to POWERGRID/ER-I from POWERGRID NR-III.
2. As per discussion in 30th ERPC meeting held on 20th June 2015 at Shimla, the outage period for replacement of porcelain insulator with polymer insulator due to flashover in porcelain/anti fog disc type insulators due to environmental pollution is being considered under force majeure condition for calculation of availability by ERPC.

3. As per the record notes of discussion of special meeting of NRPC on 22.07.2008 at New Delhi. It may kindly be recalled that NRPC has considered the outage of lines on account of replacement of porcelain insulator with polymer insulator under force majeure condition for calculation of availability.

In view of above it is requested to consider the outage period for replacement of porcelain insulator with polymer insulator due to flashover in porcelain/anti fog disc type insulators due to environmental pollution of all NR-ER link transmission lines under force majeure condition for calculation of availability

Members may approve.

Deliberation in the meeting

Powergrid informed that due to redistribution of transmission lines between Power Grid ER-I and NR-III, the NR-ER link transmission lines have been transferred to POWER Grid ER-I. The replacement of Porcelain insulators with polymer insulators in various transmission lines of POWERGRID/ER-I are being replaced in phased manner including the additional transmission lines transferred to POWERGRID/ER-I from POWERGRID NR-III.

Powergrid requested to consider the outage period for replacement of porcelain insulator with polymer insulator under force majeure condition for calculation of availability.

OCC advised Powergrid to submit the list of additional lines which were transferred to POWERGRID ER-I and being maintained by ER-I. Further, OCC advised Powergrid to submit the shutdown requisition of these lines separately in advance in monthly OCC meetings as per the 30th ERPC decision.

The outage period for replacement of porcelain insulator with polymer insulator would be considered as force majeure condition for calculation of availability as per the decision of 30th ERPC meeting.

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

(i) Thermal Generating units:

Sr. No	Generating Station	Unit Number	Capacity(MW)	Reasons For Outage	Outage Date
1	KOLAGHAT	3	210	MAINTENANCE	2-Jan-17
2	BAKRESHWAR	1	210	MAINTENANCE	3-Jan-18
3	VEDANTA	1	600	ANNUAL OVERHAULING	19-Jan-18
4	VEDANTA	2	600	BOILER PROBLEM	8-Feb-18
5	ADHUNIK	2	270	FLAME FAILURE INITIALLY ,LATER GENERATOR VIBRATION	7-Sep-17
6	JITPL	1	600	BOTTAM ASH EVACUATION PROBLEM	30-Dec-17
7	KHSTPP	1	210	HYDROGEN LEAKAGE IN LLD	9-Feb-17
8	KOLAGHAT	3	210	MAINTENANCE WORK	25-Jan-18
9	DPL	8	250	MAINTENANCE WORK	11-Dec-17
10	MEJIA	5	250	PROBLEM IS IN BARRING GEAR	22-Sep-17
11	CTPS	3	130	TURBINE BLADE DAMAGE	30-Jul-17
12	Bokaro - B	3	210	COAL SHORTAGE	30-Jan-18
13	RAGHUNATHPUR	2	600	COAL SHORTAGE	27-Dec-17
14	Sagardighi	2	300	COAL SHORTAGE	1-Feb-18

15	TENUGHAT	2	210	COAL SHORTAGE	5-Feb-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
8	RENGALI	5	50	Hoist gate problem	21.03.17

(iii) Transmission elements

Transmission Element / ICT	Agency	Outage Date	Reasons for Outage
220 KV BALIMELA - U' SILERU	OPTCL / APSEB	27.04.15	LINE IDLE CHARGED FROM UPPER SILERU END AT 12:42 HRS OF 25.01.17
400KV TALA -BINAGURI –I	POWERGRID/BHUTAN	29.12.17	S/D AVAILED BY BHUTAN

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

Members may update.

Deliberation in the meeting

Members noted.

Item no. D.4: Status of commissioning of generating station and transmission elements

New generating units:

S.No.	Power Plant	Plant Size	Expected date

New transmission elements:

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

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: Black-start and restoration procedure of Eastern Region

The black-start and restoration plan for E. Region has been updated in compliance to Section 5.8(a) of the IEGC.

All SLDCs, ISGSs and regional IPPs may kindly provide their valuable feedback on the suggested changes preferably by 25-01-18, as the updated document is to be published in the current month.

The draft black start and restoration procedure of Eastern Region was circulated to all regional entities of the region through mail on 19-01-18 for their observations / comments. Based on feedback received from some of the constituents, the procedure has been updated and emailed to concerned utilities vide letter no. ERLDC/RP/2018/SS/ 5846 dated 30-01-17.

Members may note.

Deliberation in the meeting

Members noted.

Item No. E.8: Final list of links executed/to be executed under Fiber Optic Communication System in lieu of existing Unified Load Despatch & Communication (ULDC) Microwave links in Eastern Region

PGCIL vide mail dated 15th February 2018 informed that the following is the list of links which has been executed/to be executed under the project:

Sl no	Link Name	Link Length (Km)
A	**Central Sector**	
1	MTPS (Kati)- Muzaffarpur 400	23.909
2	Durgapur (CS) - Bidhannagar	12.004
3	Maithon-Ranchi	199
4	Hatia-Ranchi 400 (CS)	21.003
5	Sasaram (CS) - Gaya 765 (CS)	149.003

6	Muzzaffarpur - Biharshariff (CS)	129.638
7	ERLDC-Kasba (UGFO)	10.7
B	**BSPTCL Sector**	
1	Samastipur-Baroli	64
2	Samastipur-Hajipur	61
3	Samastipur-Kati	76
4	BTPS-Biharshariff	64
5	Biharshariff-Bodhagaya	80
6	Biharshariff-Fatua	46
7	Fatua-Jhakhanpur	26
8	Jakkanpur-SLDC Patna (UGFO)	6
C	**OPTCL Sector:**	
1	Chainpal-Meramandali	7
2	Talcher (TSTPS)- Meramandali	45
3	Duburi-Meramandali	96
4	Meramandali-Mendhasal	100.593
5	Tarkera- Budhipadhar	109
6	Rourkela-Tarkera	15
7	Mancheswar-Bhubaneswar SLDC	4
8	Bhubaneshwar SLDC-Vidyut Bhawan (Last Mile)	1.5
D	**WBSETCL Sector:**	
1	Bidhannagar- Barjora	25.624
2	Barjora- Bishnupur	42.803
3	Bishnupur- Arambag	50.789
4	Kolaghat TPS- Howrah SLDC	69.207
5	NJP-NBU	14
6	NBU-Binaguri	1
7	Rishra-Bighati	9
8	Bighati-BTPS	23
9	BTPS-Dharampur	18
10	Dharampur-Jeerat	8
11	Arambag- Kolaghat	78.26
12	132 kV Lilua-Rishra	17.03
13	132 kV Howrah- Lilua (WBSETCL)	12.459
14	132 Kv Kasba - Salt Lake (WBSETCL)	22.585
15	LILO at Liluah-Rishra	2.34
16	Saltlake S/s to Abhikshan Bhawan (UGFO)	0.514
17	Vidyut Bhawan to Saltlake GIS (UGFO)	1.03
18	Bidhannagar400-Bidhannagar220	0.91
E	**DVC Sector:**	
1	132 kV Maithon SLDC - MHPS	1
2	MHPS- 132 kV Kalyaneswari	2
3	220 kV Kalyaneswari - Mejia A	55
4	220 kV Mejia - Waria	34
5	220 kV Waria DTPS - Parulia	21
6	220 kV Parulia - Durgapur	1
7	132 kV Kalyaneswari - CTPS A	87
8	CTPS A - BTPS	32
9	220 kV Ramchandrapur - Chandil	33
10	Mejia A - Mejia B (UGFOC)	4.7
11	400 kV Barhi-KTPS	20.723
12	220 Kv Koderma-KTPS	17.559
13	Bokaro-Ramgarh	54.887
14	Konar-Bokaro	23.733

15	Konar-Barhi	58.455
16	Maithon-Kalyaneshwary	6.854
17	MHPS-Panchet	14.599
18	CTPS 132 kV C/R to CTPS-A 220 kV C/R	0.8
19	Kalyneshwari-Kalipahari	27.91
20	LILO at Raghunathpur	21.83
21	Kodarma TPS-Kodarma 400/220 S/s	0.787
22	BTPS A-BTPS B	1.265
23	Ramgarh220-Ramgarh 132	0.735
24	DSTPS-RTPS	69.182

Members may note.

Deliberation in the meeting

Members noted.

Item No. E.9: Final list of links executed/to be executed under Fiber Optic Communication System in ER under Expansion of Wideband Communication Network in ER

PGCIL vide mail dated 15th February 2018 informed that the following is the list of links which has been executed/to be executed under the project:

S/n	Link Name	Link Length (Km)
1	Dhalkola-Purnea	40.94
2	Birpara-Siliguri	80.44
3	LILO of Malda-Binaguri at Purnea	58.22
4	Baripada-Jamshedpur	140.91
5	Subhashgram -Jeerat	63.99
6	Bolangir - Jeypore	308.32
7	Bolangir - Angul	200.63
8	Rengali - Keonjhar	100.25
9	Ara -Patna	64.00
10	Ranchi 400 - Ranchi 765	78.00
11	Banka-Kahalgaon	48.95
12	Rangit - Gangtok (upto T-85)	22.00
13	400 KV Purnea S/s to LILO of Malda- Binaguri TL Section (Binaguri Section)	60.50
14	Patna-Barh	92.53
15	Teesta V - TP Rangpo/Binaguri	110.38
16	LILO at Sundargarh (Rourkela-Raigarh)	22.89
17	Angul- Jharsuguda	286.40
18	Uttara-Mendhasal (Pandiabili)	27.797
19	132 KV Rangpo S/s to LILO Siliguri-Gangtok (CS)	3.737
20	New Melli-Rangpo	25.40
21	MPL-Maithon PG	31.50
22	Indravati HPS - Indravati PG	3.79
23	Maithon - Kahalgaon	171.83
24	Biharsharif-Koderma	109.00

25	Siliguri 400 - Kishagunj (Incl LILO)	98.65
26	Baripada- Keonjhar	157.54
27	Dalkhola - Malda	116.15
28	Birpara - Alipurduar	59.184
29	Barh-Kahalgaon	215.22
30	Chandawa-Ranchi	68.31
31	LILO of Biharsharif-Kahalgaon at Lakhisarai	31.63
32	Daltonganj-Sasaram	196.13
33	Dalkhola-Siliguri LILO at Kishanganj (Dalkhola-Kishanganj)	31.09
34	Gaya-Chandwa	117.13
35	Jamshedpur-Chaibasa	47.86
36	Biharsharif-Banka	178.89
37	Purnea400-Purnea220	1.99
38	Punatsangchu- Alipurduar	63.78
S/n	Link Name	Link Length (Km)
39	Rourkela-Raigarh(Rourkela to LILO at Sundargarh)	123
40	Ranchi-Rourkela	144.97
41	Siliguri-Gangtok	126.064
42	Bongaingaon-Gelephu	55.00

Members may note.

Deliberation in the meeting

Members noted.

Item No. E.10: Additional agenda

1. **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.

Members may discuss.

Deliberation in the meeting

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.

ERLRC informed that they take up the issue with NLDC.

2. 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).

NTPC and DVC may decide.

Deliberation in the meeting

NTPC informed all the units of NTPC were capable of 55% minimum load operation.

DVC informed that they were planning to implement at DSTPS.

3. Nomination of members for Crisis & Disaster Management Plan for Power Sector

The old list of nominated members for Crisis & Disaster Management Plan for Power Sector of Eastern Region is attached as **Annexure-E10.3**. Most of the members in the list have been superannuated or transferred to other places.

SLDCs are requested to nominate/update the contact details of members for Crisis & Disaster Management.

Deliberation in the meeting

OCC advised all SLDCs to nominate/update the contact details of members for Crisis & Disaster Management.

4. Nominations of officers for Workshop/ Boot Camp on Coal Flexing to Support Variable Renewable Energy Integration and Grid Balancing

A work shop on Coal Flexing to Support Variable Renewable Energy Integration and Grid Balancing, under the aegis of FOLD, is scheduled to be held from March 06-07, 2018 at NRLDC, New Delhi.

SLDCs, ISGS/IPP thermal generating stations are requested to nominate one officer to attend above mentioned workshop at NRLDC, New Delhi. Apart from this, SLDCS and Generating Stations are also requested join the workshop through VC for wider participation.

Deliberation in the meeting

OCC advised all SLDCs and Generating stations to nominate one officer to attend the workshop.

ED, ERLDC informed that FOLD Meeting is scheduled to be held on 26th February 2018, he requested all the SLDCs to attend the Meeting. He added that FOLD meeting would be held on every month where in one SLDC would give a presentation to share their experience on recent developments.

ED, ERLDC requested SLDC, Odisha to prepare a presentation for forthcoming FOLD Meeting.

5. Implementation of 4th Phase AMR in Eastern Region-Powergrid

Powergrid informed that already 249 Meters are integrated under 3rd Phase of AMR system across Eastern Region as per LOA placed upon M/S. TCS. Now certain new locations and few new feeders at existing locations, also came within this period which need to be integrated now. Accordingly ERLDC has provided the list of SEM's against location wise (Attached as **Annexure-E10.5A)**. In total approx. 150 SEM's need to be integrated under 4th phase of integration.
Going by the previous LOA and standard escalation of component price on Year to Year basis a tentative cost estimate prepared which is attached as **Annexure-E10.5B** for reference. Total cost estimate comes to **Rs. 93,56,948/- (Rs. Ninety three lacs fifty six thousand nine hundred forty eight only).**

Considering the implementation of 4th phase AMR, it is proposed to finalize the contract with M/S. TCS on Single Tender basis, however, exact value will be intimated afterwards when negotiation will be completed with TCS.

In addition to above already discussion is going on with M/S. TCS regarding quantity variation of the existing contract for execution of atleast few meters immediately with same rate of existing LOA. On finalization of the issue exact quantities of SEM & cost implication for quantity variation will be intimated.

Members may discuss.

Deliberation in the meeting

OCC approved the procurement and decided to apportion the cost among the beneficiaries in the ratio of central sector allocation.

OCC has referred to TCC for further concurrence.

6. Antitheft charging of 400 KV Alipurduar-Phunatsangchu-D/C up to Indian Border (64.2 KM from Alipurduar SS)-Powergrid

Under strengthening scheme for development of pooling station at Northern part of West Bengal for power evacuation from Bhutan to NR/WR, 400 KV Alipurduar-Phunatsanchu-D/C line is envisaged. Now POWERGRID has already constructed the line from Alipurduar S/S to India Border (Total: 64.2 KM, Quad Moose, Double Circuit Line). However, Bhutan portion is yet to complete and in totality the power flow is expected in May'2018.

As POWERGRID portion is already completed and during construction itself the amount of problem faced in terms of ROW and based upon previous history, the border area is very much theft prone. Considering the delay in commissioning of Hydro projects at Bhutan side it is proposed to accommodate antitheft permission for the completed portion till complete commissioning of the line to avoid unnecessary loss/damage of assets.

The line will be kept antitheft charged from Alipurduar HVDC S/S as per CTU instruction considering present Grid conditions. Also, DOCO of the lines will be done as per prevailing regulations of CERC.

Deliberation in the meeting

Members noted.

7. Shut down of 400 KV Rangpo-Teesta-III & 220 KV Rangpo-New Melli-I line for rectification of GIB by Hyosung--Powergrid

400/220/132 KV Rangpo S/S is a GIS S/S constitute of separate voltage levels in different GIS Building. Every voltage level consists of inside GIB & outside GIB. Complete GIS system is supplied by M/S. Hyosung, South Korea.

In recent past it is observed that, SF6 gas leakages developed in outside GIB of different feeders. Time and again the Gas is being replenished on SOS basis to avoid, unwanted tripping of connected feeders. However recent trend shows rise in SF6 gas leakage, specifically for 02 feeders, namely, 400 KV Teesta-III and 220 KV New Melli-I.
As attending leakage in GIB, required special skill, M/S. Hyosung has been called upon for identification and providing necessary solutions for the same. After thorough investigation, M/S. Hyosung provided detailed rectification procedure involving replacement of GIB section also. However to carry out the rectification a standard procedure to be followed involving, Draining of SF6 gas for particular section and following drying up procedure & replacement.

In total to complete the activity for both the feeders as per Hyosung, followings are the requirement of S/D:-
1. 400 KV Rangpo-Teesta-III: For 05 Days on Continuous basis.
2. 220 KV New Melli-I: For 03 Days on Continuous basis.

As total team will come from Korea itself, we need to provide them exact S/D dates for arranging documentation formalities. In view of above, it is requested to provide S/D approval for the above element as follows:

Sl No	Name of Element	From	To	Nature
01.	**400 KV RANGPO-TEESTA-III**	**10:00 Hrs. of 31.03.18**	**16:00 Hrs of 05.04.18**	**OCB**
02.	**220 KV Rangpo-New Melli-I**	**10:00 Hrs. of 06.04.18**	**16:00 Hrs of 08.04.18**	**OCB**

Outage of the above elements may kindly be treated as per provisions of regulations.

Deliberation in the meeting

*OCC approved the shutdown as mentioned in **Annexure-D2**.*

8. Continuous S/D of 400kV D/C New Siliguri-New Purnea TL LILO At Kishanganj For Carrying out Diversion of Anchor Tower-2 Location which got damaged during last year flood-Powergrid

400kV Binaguri-New Purnea TL LILO at Kishanganj Loc No. Anchor-2 has got vulnerbale due to change in course River Mahananda.Two tower legs already encroached by river last year and the earth below the foundation have been eroded.

As a permanent measure Powergrid is shifting the Anchor-2 Tower on Pile Foundation and presently Pile Foundation work is in progress.

However, after completion of pile, during tower erection & stringing work Powergrid require continuous S/D of 400kV D/C Binaguri-Purnea LILO @ Kishanganj wef 1st week of April to End of May-18.

In order to save the long outage of both the lines we are proposing for bypassing the existing LILO at Kishanganj and by jumpering we shall through 1 ckt to Purnea SS.

Deliberation in the meeting

OCC in principle agreed to the proposal.

BSPTCL informed that they would make a study on their state network to cater their loads.

9. Continuous S/D of 220kV D/C Siliguri-Dalkhola LILO At Kishanganj For Carrying out Diversion of Anchor Tower-1,2 & Loc No.-35 Location which got damaged during last year flood.

3 Nos. Locations of 220kV Siliguri-Dalkhola TL LILO @ Kishanganj Loc No.- Anchor-1,Anchor-2 & Loc No.-35 have got vulnerbale due to change in course River Mahananda. Anchor-1 & Anchor-2 has already been encroached by Mahananda River and Loc No.-35 is presently at a distance of 8 metres from the river.

However, considering the last year trend and present site condition, it has been decided to shift all the affected 3 towers on Pile Foundation.

However, during construction of Pile and during tower erection & stringing work we require continuous S/D of 220kV Siliguri-Dalkhola LILO @ Kishanganj wef End of April-18 to June-18.

In order to save the long outage of both the lines we are proposing for bypassing the existing LILO at Kishanganj and by jumpering we shall through 1 ckt to Dalkhola SS.

Deliberation in the meeting

OCC in principle agreed to the proposal.

BSPTCL informed that they would make a study on their state network to cater their loads.

Meeting ended with vote of thanks to the chair.

****

Annexure - A

Participants in 142nd OCC Meeting of ERPC

Venue: ERPC Conference Room, Kolkata   Time: 10:30 hrs   Date: 23.02.2018 (Friday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
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18	T.R. Mohapatra	Mgr./ERLDC	9433041873	trmohapatra@posoco.in	[signature]
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"Coming together is a beginning, staying together is progress, and working together is success." –Henry Ford

Participants in 142nd OCC Meeting of ERPC

Venue: ERPC Conference Room, Kolkata Time: 10:30 hrs Date: 23.02.2018 (Friday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
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Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
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60	P. N. Sarkar	EE	9831027523		

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

Highlights for the month of January-18

Frequency Profile

Average Freq:- 49.98 Hz

Avg FVI: - 0.045

Lowest FVI:- 0.027

Max- 50.29Hz on 31st January' 18

Min- 49.62 Hz on 31st January' 18

78.01% of the time freq was with in IEGC Band

Peak Demand

ER: 18961 MW on 13th January 2018 at 19:04 hrs

% Growth in Average Demand Met w.r.t. last year:- 5.89%

BSPHCL : 4347 MW ; ON 18/01/18

JUVNL: 1187 MW; ON 15/01/18

DVC: 3118 MW; ON 23/01/18

GRIDCO: 4253 MW; ON 20/01/18

WB: 6597 MW; ON 31/01/18

SIKKIM: 107 MW; ON 10/01/18

Minimum Demand Met: 10800 MW on 03rd January 2018 at 03:28 hrs

Energy met

Max. 379 MU on 29th *Jan 2018*

%Growth w.r.t. last year on Max energy 8.40%

Avg. 365 MU in January *2018*

%Growth w.r.t. last year on Avg. energy :- 8.26%

New Element

Generating Units-NIL

Open Access

STOA transactions approved -220 nos.

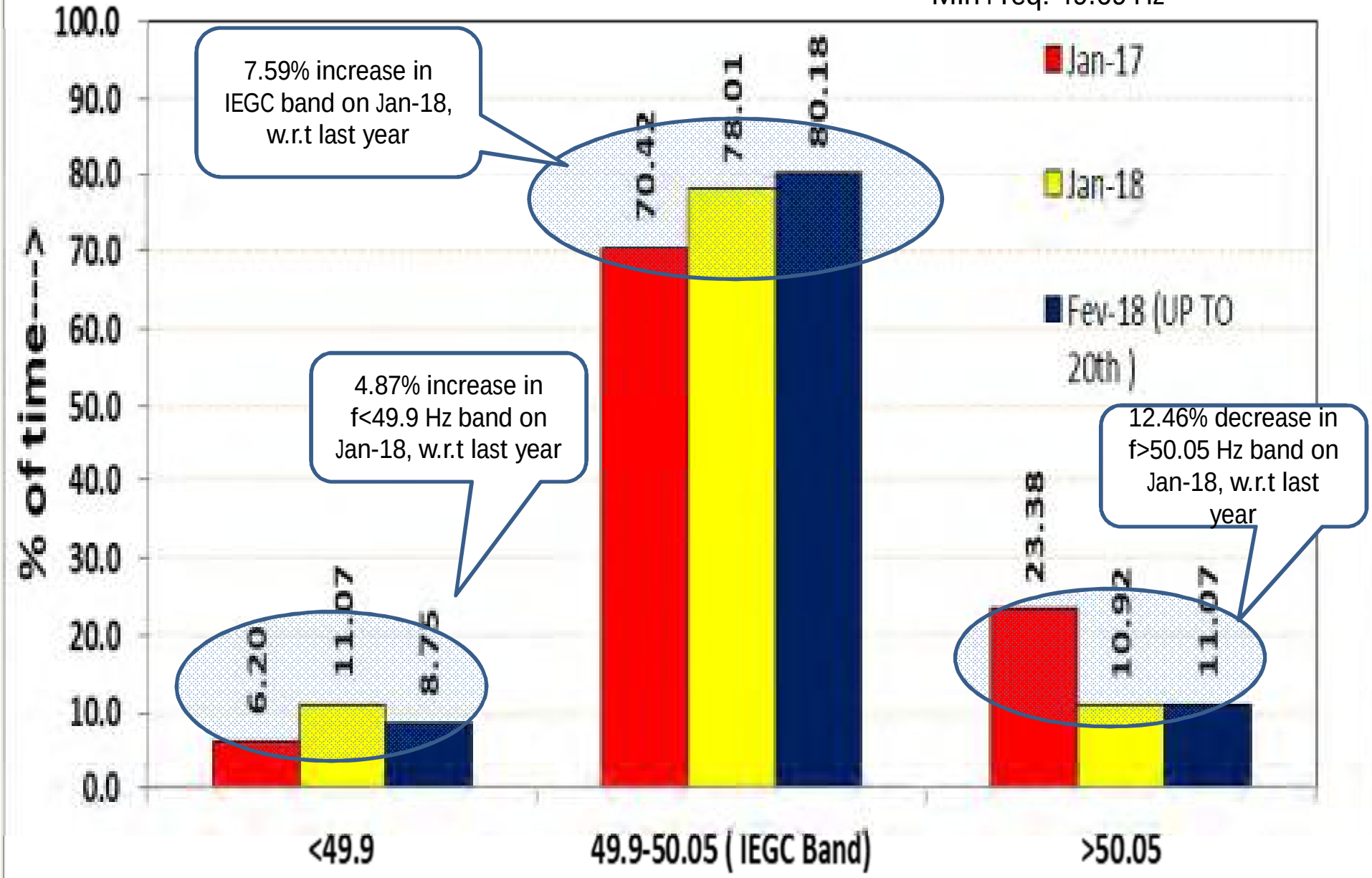
Energy Approved- 430.33 MUs

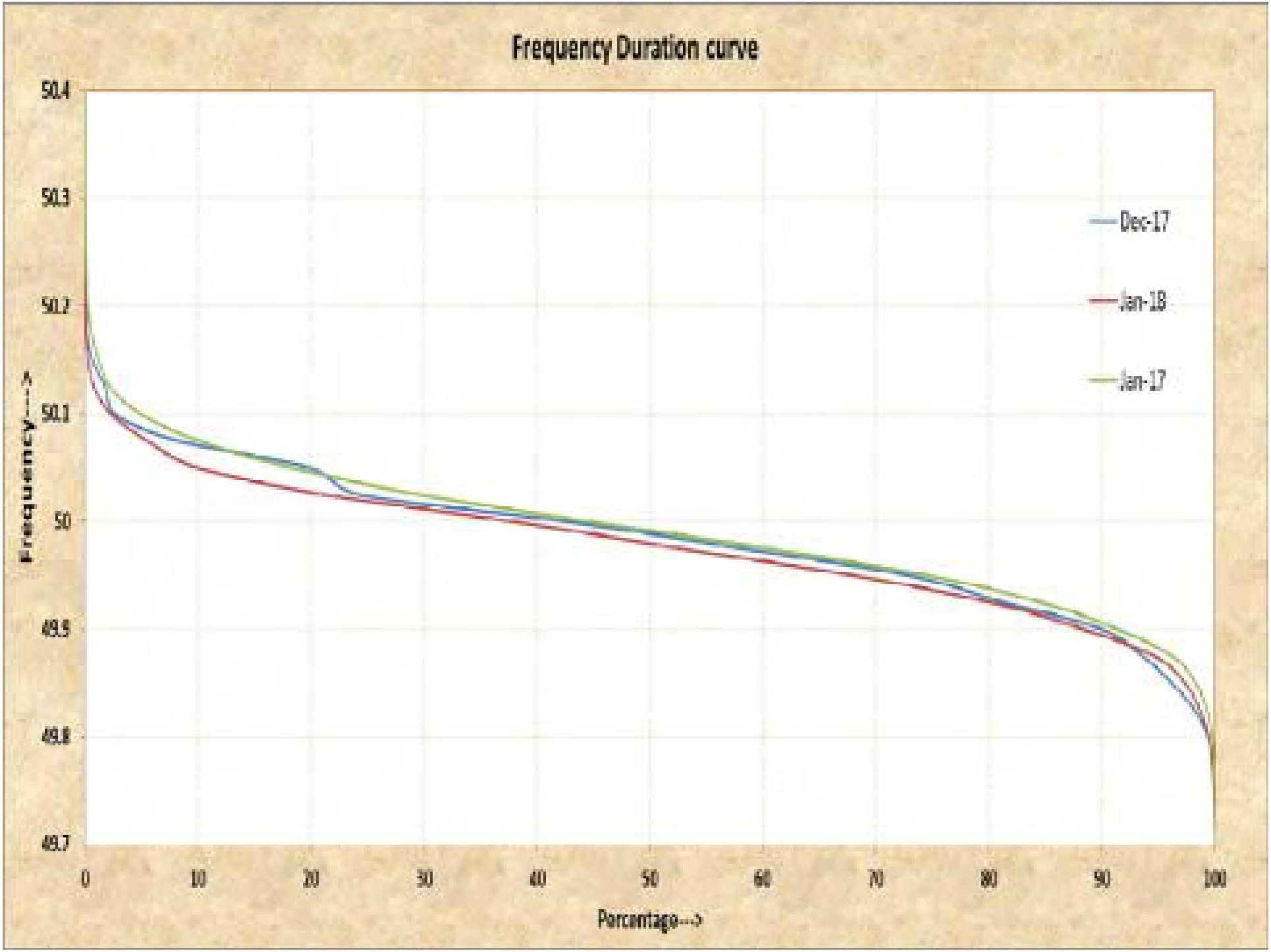
Achievements during the month January - 2018:

SL NO	Element Name	Owner	Charging Date	Charging Time	Remarks
1	400kV Jharsuguda-Rourkela-IV	PG	02-01-2018	17:06	LILO of 400kV Rourkela Raigarh IV at Jharsuguda, First time charged
2	125MVAR Bus reactor at Rourkela	PG	05-01-2018	00:16	Replacement of old 50MVAR Bus Reactor, First time charged
3	400kV Jharsuguda-Rourkela-III	PG	05-01-2018	22:19	LILO of 400kV Rourkela Raigarh II at Jharsuguda, First time charged
4	400kV Jharsuguda-Raigarh-III	PG	05-01-2018	22:25	LILO of 400kV Rourkela Raigarh II at Jharsuguda, First time charged
5	400kV Sasaram-Daltonganj-II	PG	31-01-2018	23:32	First time charged on no load basis
6	63MVAr line Reactor of 400kV Sasaram-Daltonganj-II at Daltonganj	PG	31-01-2018	23:32	First time charged

Monthly Frequency Profile of Grid

In Feb-18 (Up to 20th):
Max Freq: 50.21 Hz
Min Freq: 49.69 Hz



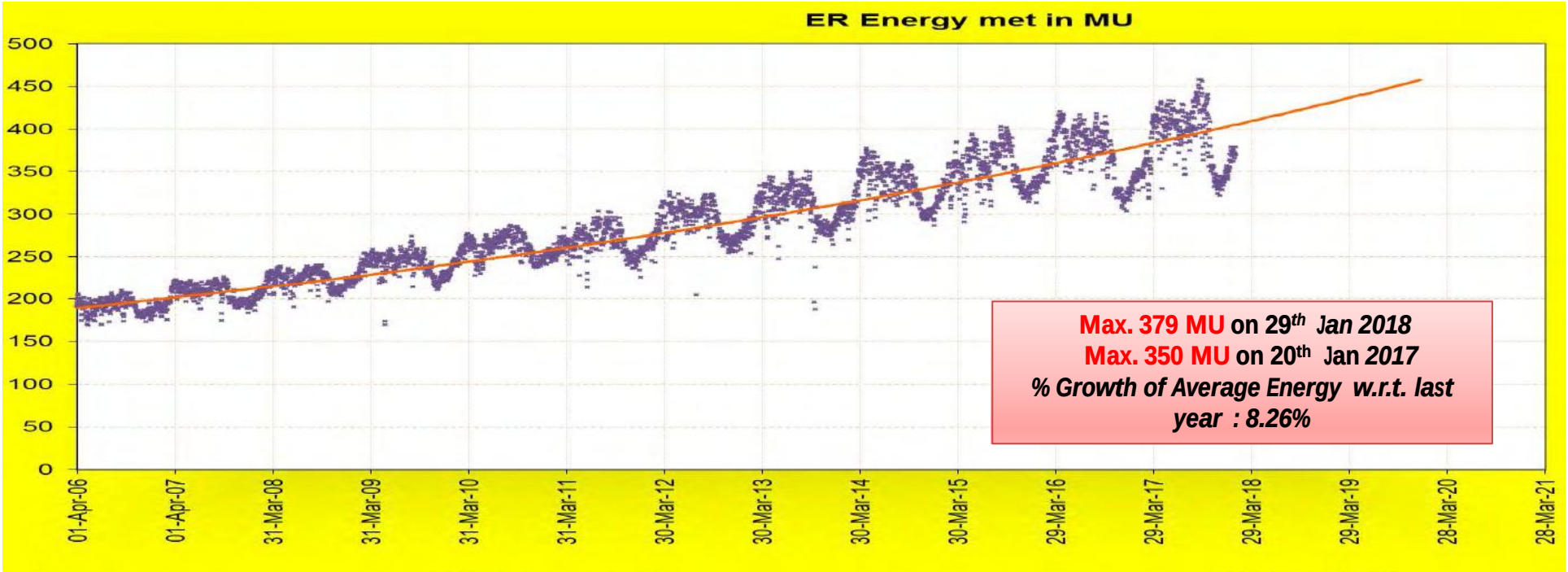

Frequency Duration curve
50.4
50.3
50.2
50.1
50
49.9
49.8
49.7
Frequency--->
0
10
20
30
40
50
60
70
80
90
100
Percentage--->
Dec-17
Jan-18
Jan-17

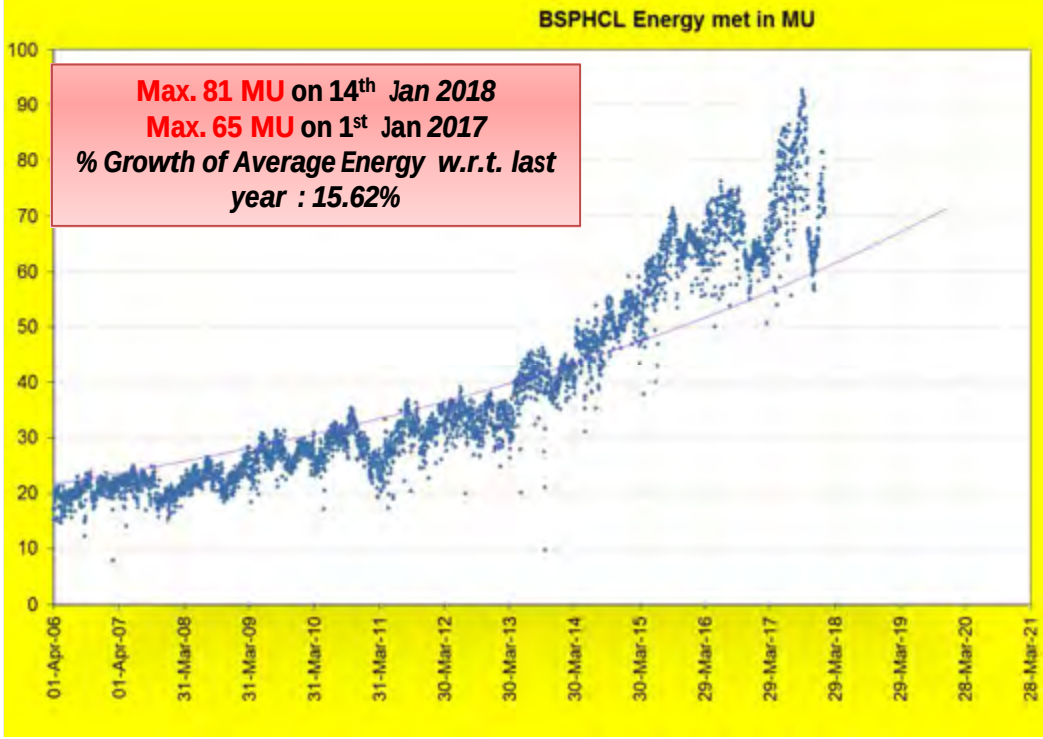
So Far Highest Demand

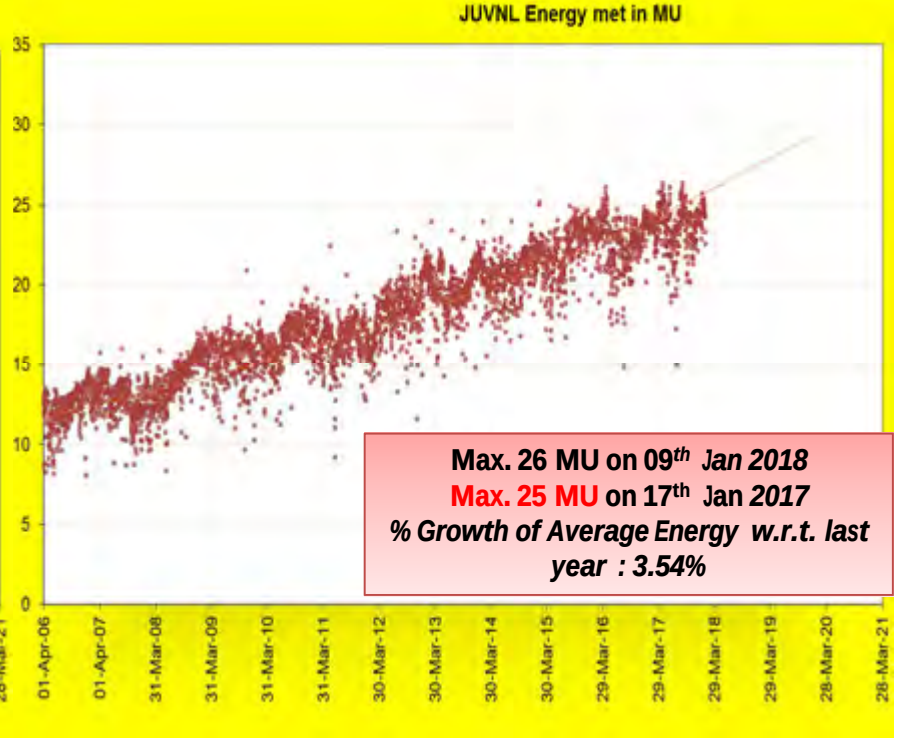
Constitute	Demand (in MW)	Date	Time	Dmd met on 13th Jan'18(max dmd met day)
Bihar	4488	09-Oct-17	20:38	3775
DVC	3333	10-Apr-16	20:57	2931
Jharkhand	1262	10-Jun-17	19:54	1019
Odisha	4656	10-Oct-17	19:37	4202
W. Bengal	8605	12-Apr-17	19:56	6377
Sikkim	117	28-Oct-16	18:59	102
ER	21116	18-Oct-17	19:43	18961

So Far Highest Energy Consumption

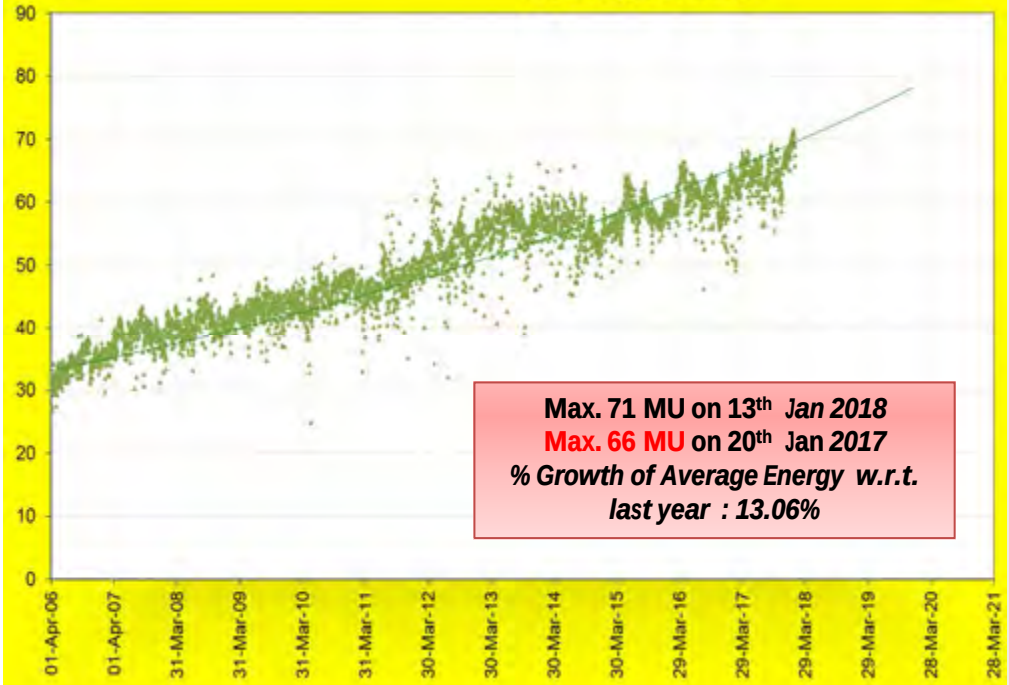
Constitute	Energy consumption (in MUs)	Date	Dmd met on 13th Jan'18(max dmd met day)
Bihar	90.3	26-Sep-17	68.9
DVC	75	23-Mar-17	62.2
Jharkhand	26	20-Apr-16	21.2
Odisha	91.5	16-Sep-17	80.7
West Bengal	181	27-Apr-16	113
Sikkim	2	24-Mar-17	1.8
ER	451	26-Sep-17	361


ER Energy met in MU
Max. 379 MU on 29th Jan 2018
Max. 350 MU on 20th Jan 2017
% Growth of Average Energy w.r.t. last year : 8.26%


BSPHCL Energy met in MU
Max. 81 MU on 14th Jan 2018
Max. 65 MU on 1st Jan 2017
% Growth of Average Energy w.r.t. last year : 15.62%

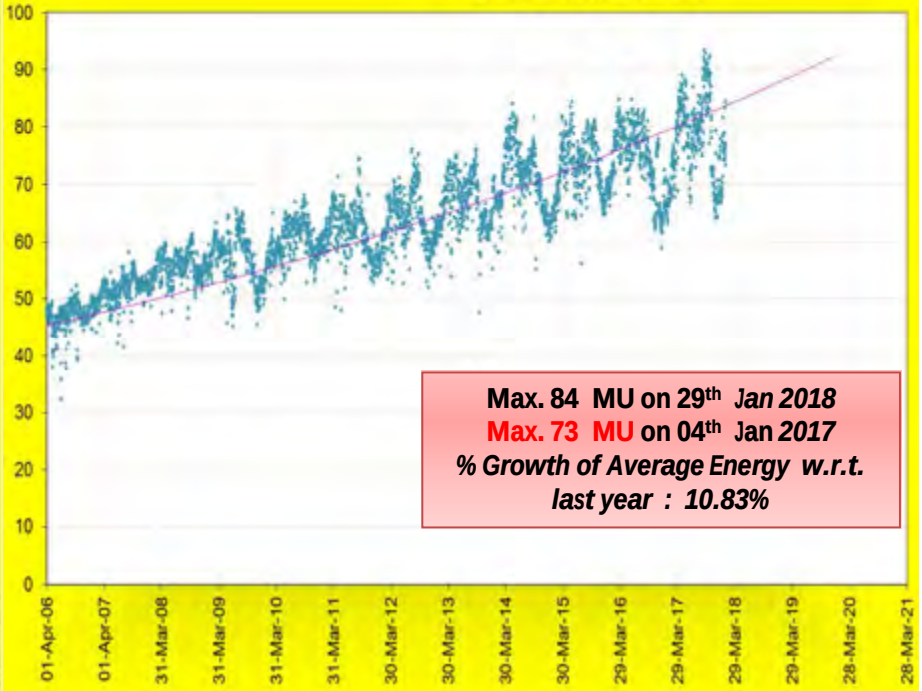

JUVNL Energy met in MU
Max. 26 MU on 09th Jan 2018
Max. 25 MU on 17th Jan 2017
% Growth of Average Energy w.r.t. last year : 3.54%

DVC Energy met in MU



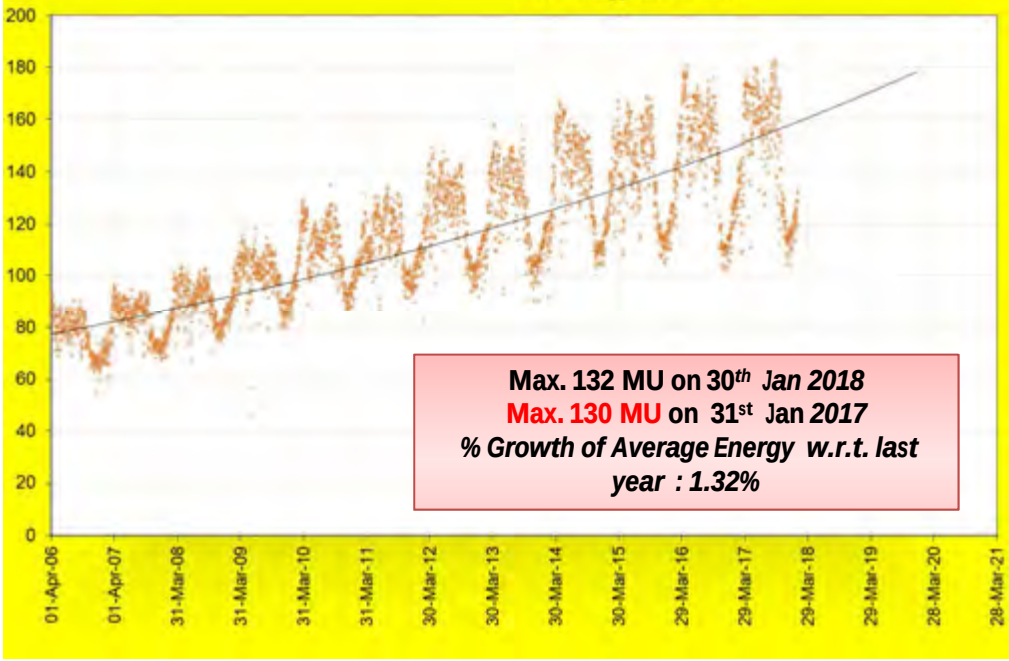
Max. 71 MU on 13th *Jan 2018*
Max. 66 MU on 20th Jan *2017*
% Growth of Average Energy w.r.t. last year : 13.06%

Odisha Energy met in MU



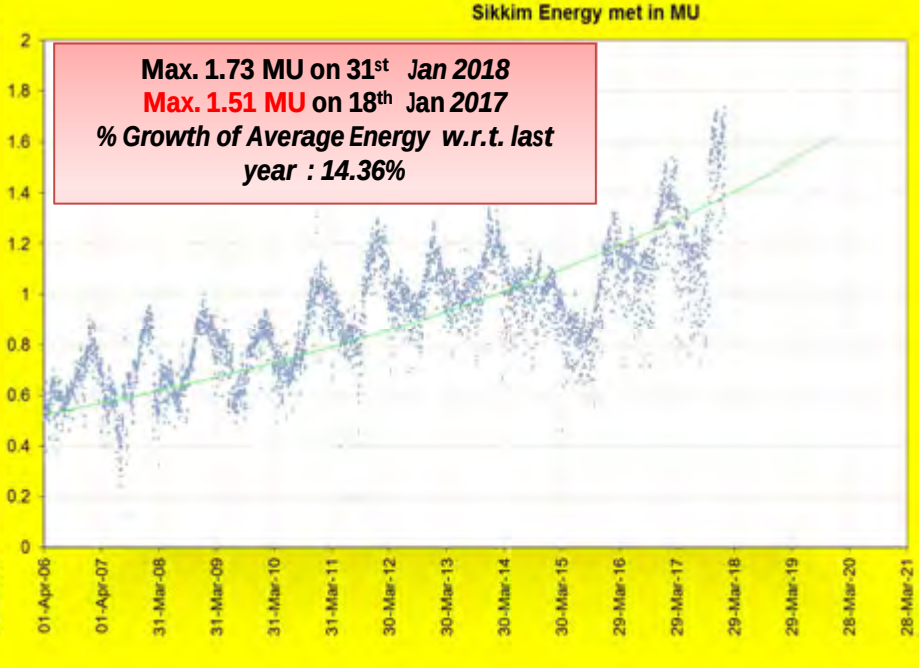
Max. 84 MU on 29th *Jan 2018*
Max. 73 MU on 04th Jan *2017*
% Growth of Average Energy w.r.t. last year : 10.83%

WB Energy met in MU

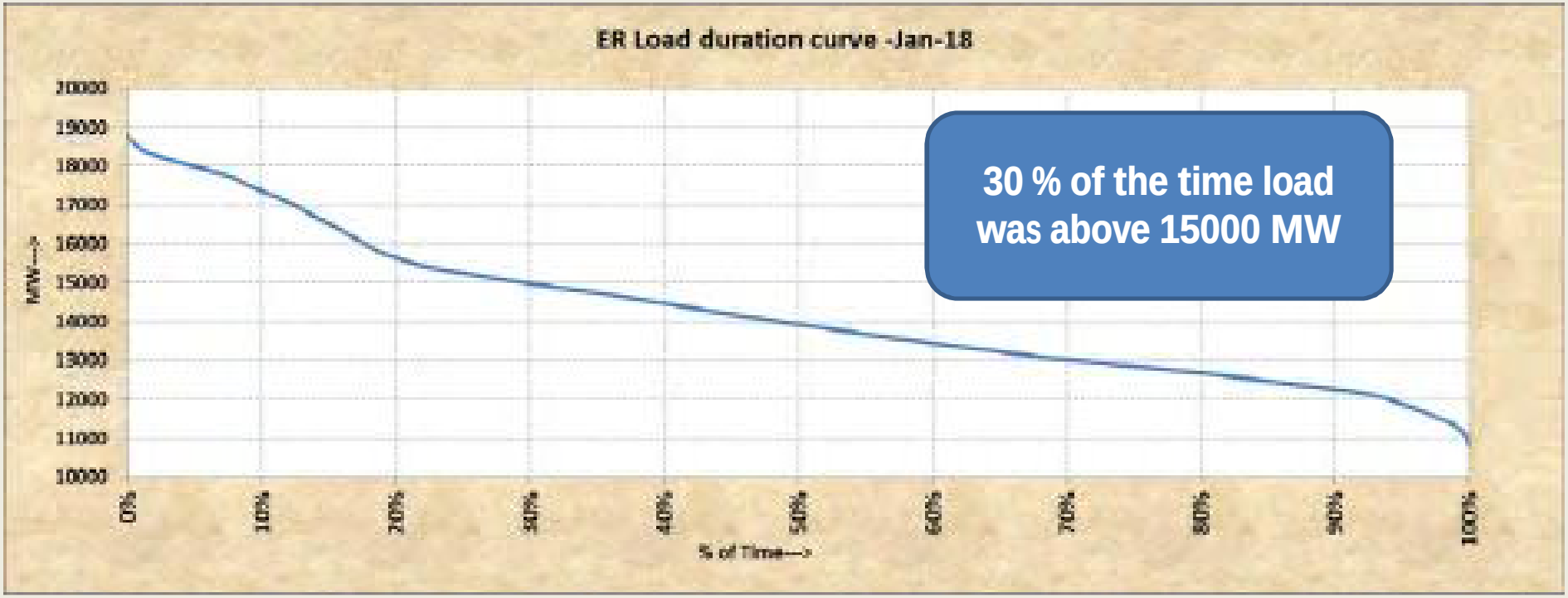


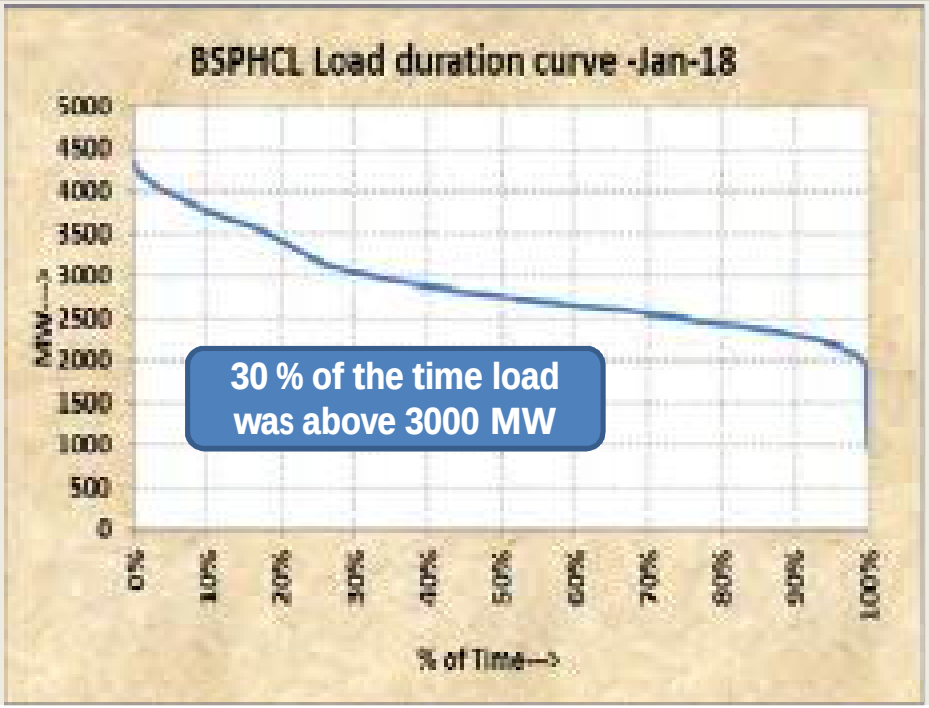
Max. 132 MU on 30th *Jan 2018*
Max. 130 MU on 31st Jan *2017*
% Growth of Average Energy w.r.t. last year : 1.32%

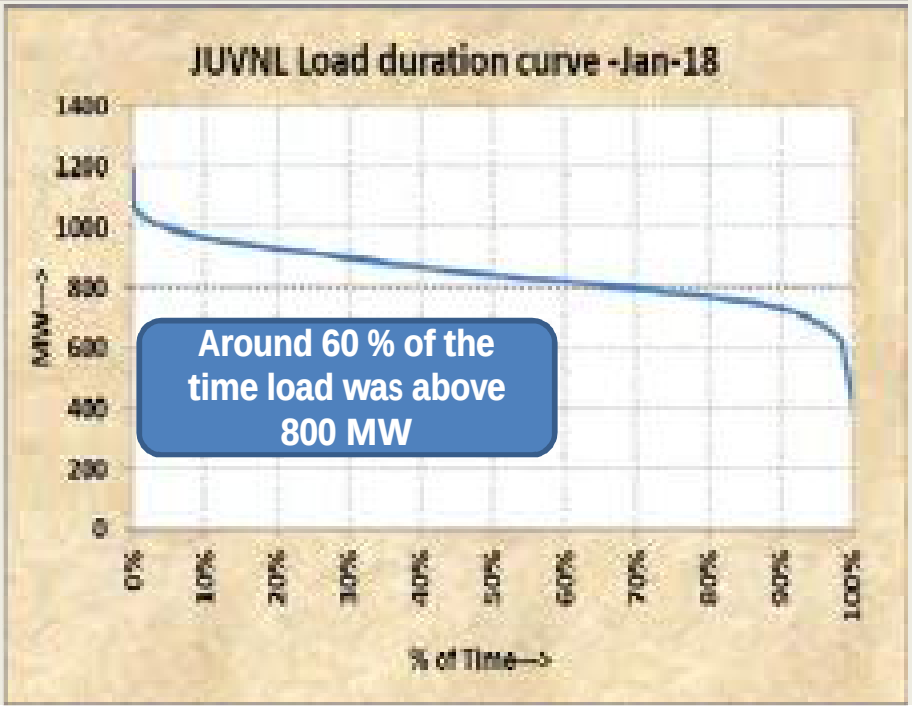
Sikkim Energy met in MU

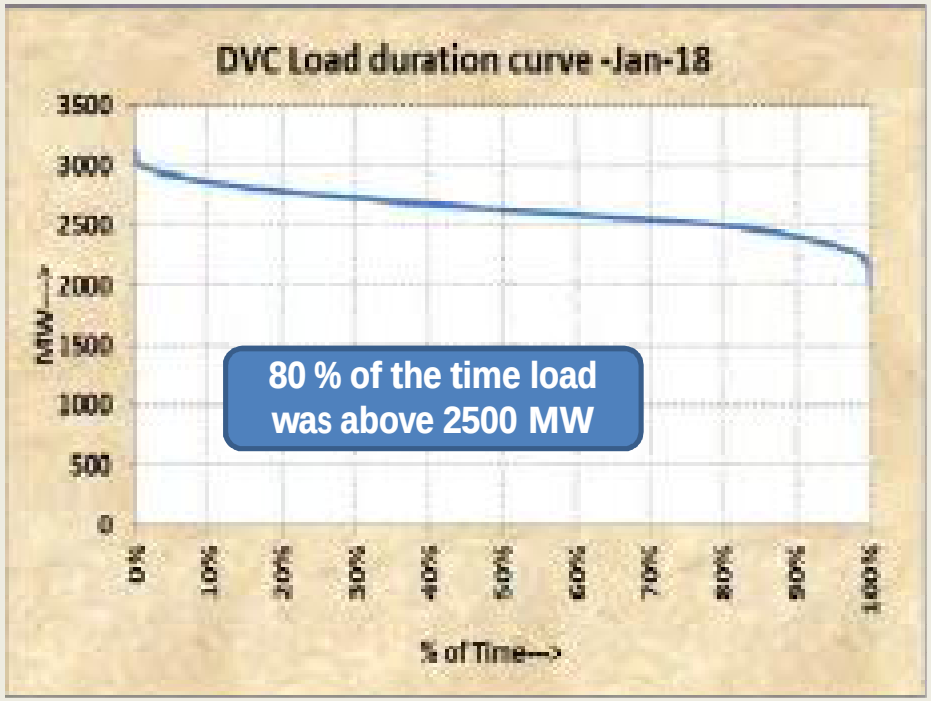


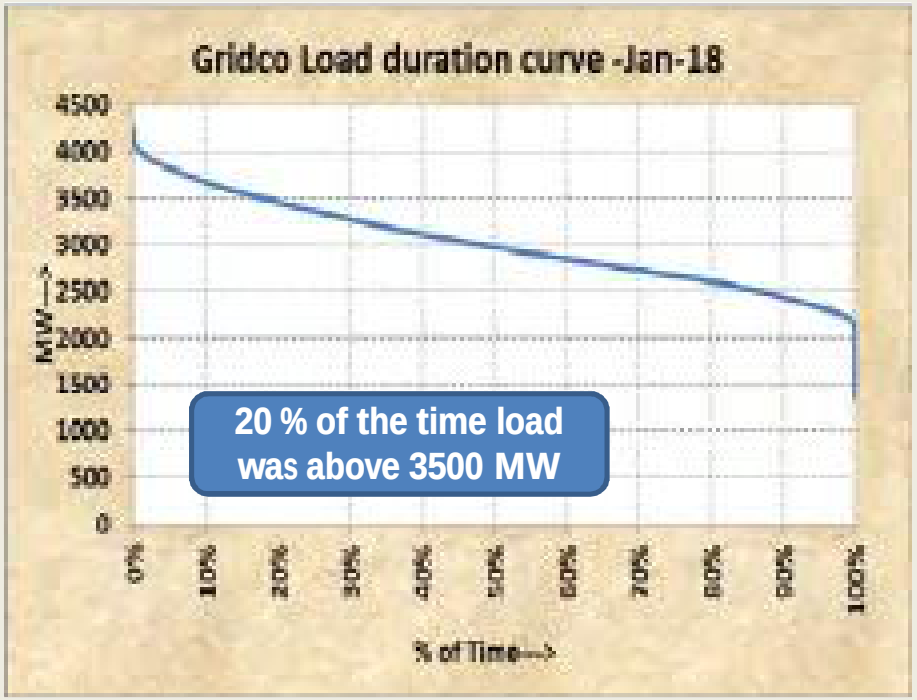
Max. 1.73 MU on 31st *Jan 2018*
Max. 1.51 MU on 18th Jan *2017*
% Growth of Average Energy w.r.t. last year : 14.36%

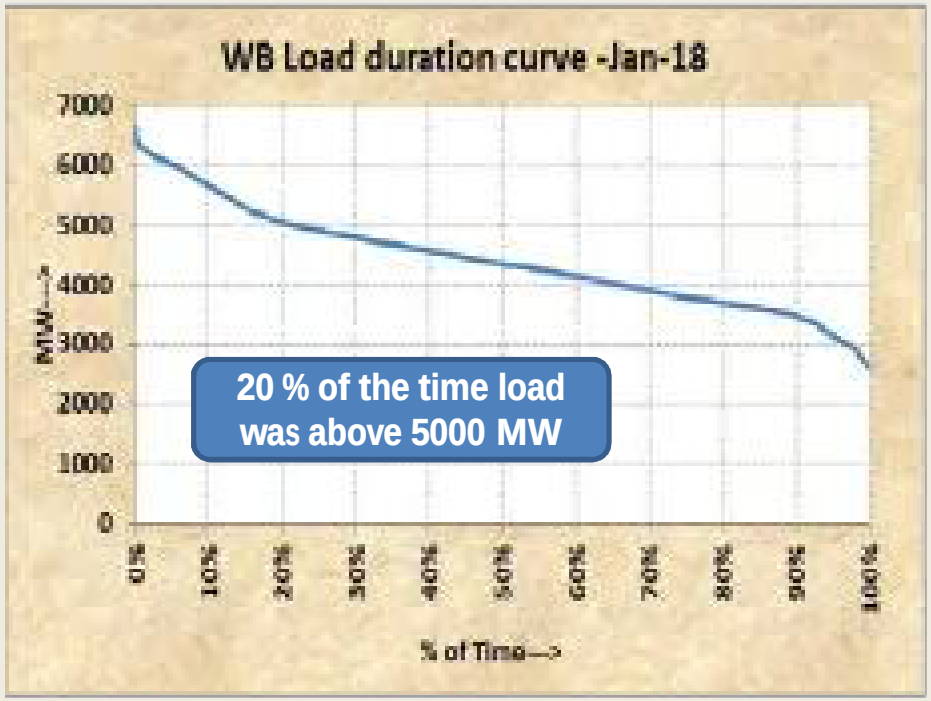

ER Load duration curve -Jan-18
MW--->
% of Time--->
30 % of the time load was above 15000 MW

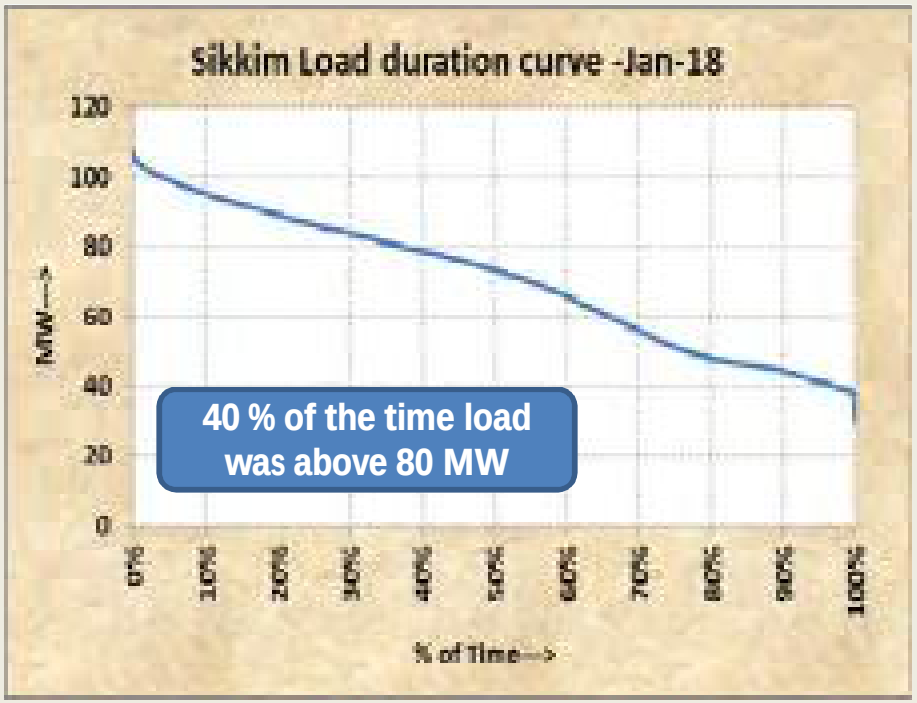

BSPHCL Load duration curve -Jan-18
MW--->
% of Time--->
30 % of the time load was above 3000 MW


JUVNL Load duration curve -Jan-18
MW--->
% of Time--->
Around 60 % of the time load was above 800 MW


DVC Load duration curve -Jan-18
3500
3000
2500
2000
1500
1000
500
0
MW---->
80 % of the time load was above 2500 MW
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
% of Time--->


Gridco Load duration curve -Jan-18
4500
4000
3500
3000
2500
2000
1500
1000
500
0
MW---->
20 % of the time load was above 3500 MW
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
% of Time--->


WB Load duration curve -Jan-18
7000
6000
5000
4000
3000
2000
1000
0
MW---->
20 % of the time load was above 5000 MW
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
% of Time--->

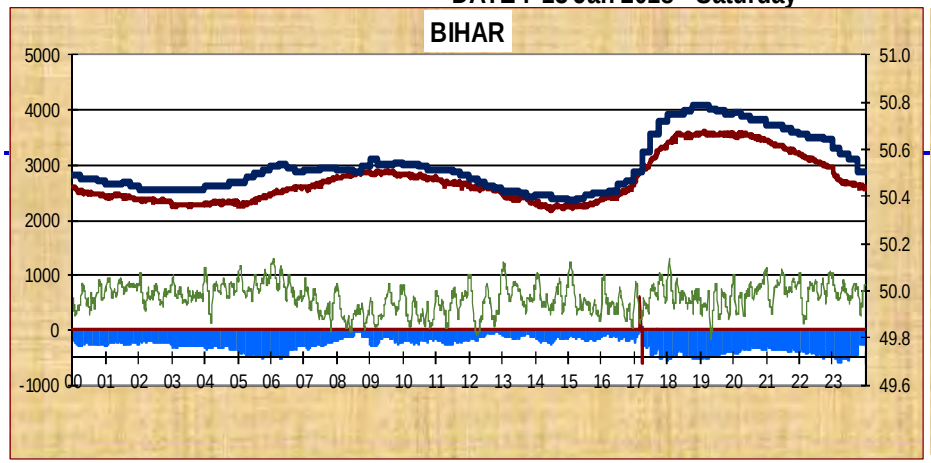

Sikkim Load duration curve -Jan-18
120
100
80
60
40
20
0
MW---->
40 % of the time load was above 80 MW
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
% of Time--->

Performance of constituents/Utilities on maximum demand day in January, 2018 (13-01-2018)

CONSTITUENTWISE SCHEDULE & ACTUAL EXCHANGE

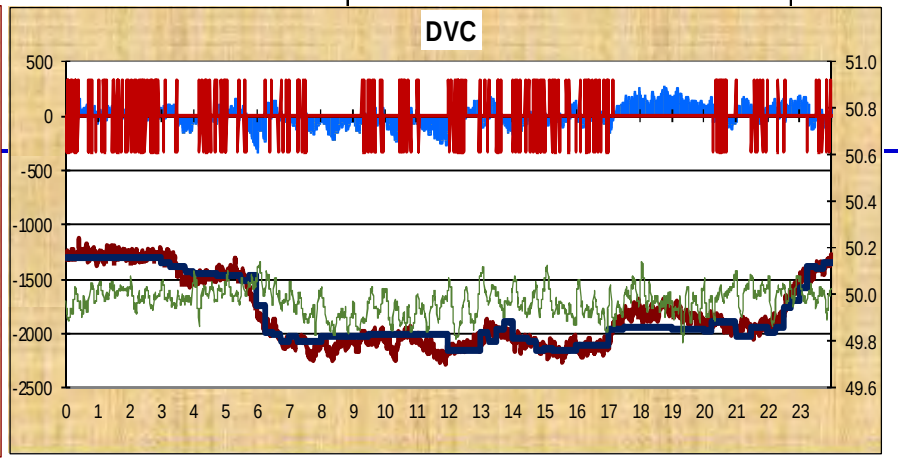
DATE : 13 Jan 2018 Saturday

BIHAR



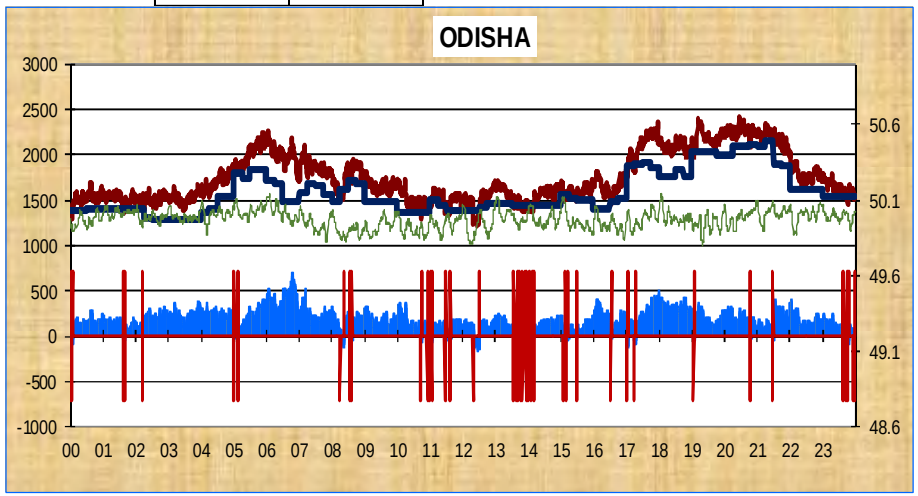
Act MU	MAX	MIN	Min/Max	UI	SCHEDULE
65.3	3602	2177	0.60	-6.50	71.81
Time:	19:06	14:28			

DVC



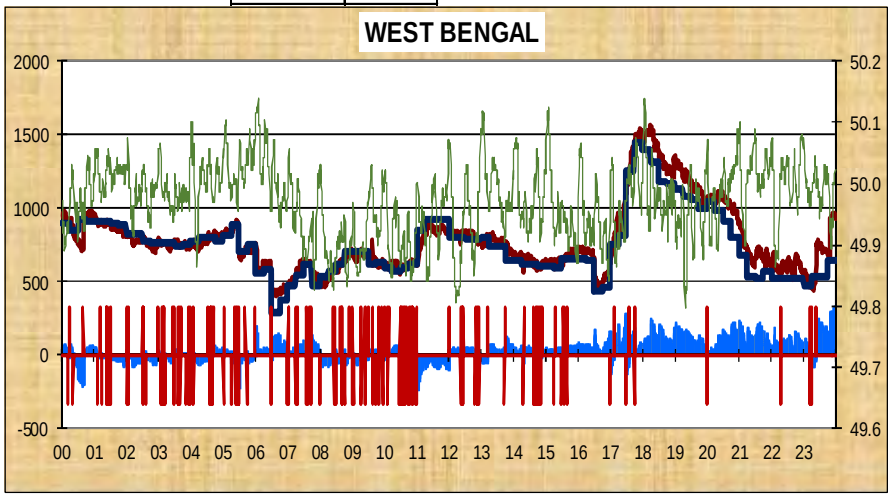
Act MU	MAX	MIN	Min/Max	UI	SCHEDULE
-43.6	-1133	-2282	0.50	0.16	-43.79
Time:	0:25	11:53			

ODISHA



Act MU	MAX	MIN	Min/Max	UI	SCHEDULE
42.2	2415	1218	0.50	4.13	38.02
Time:	20:26	12:27			

WEST BENGAL



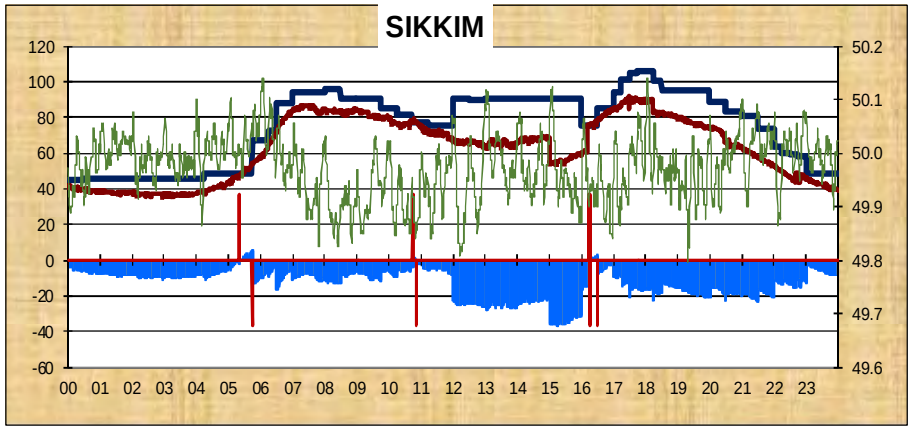
Act MU	MAX	MIN	Min/Max	UI	SCHEDULE
18.9	1562	394	0.25	0.86	18.00
Time:	18:15	6:29			

CONSTITUENTWISE SCHEDULE & ACTUAL EXCHANGE

DATE : 13 Jan 2018 Saturday

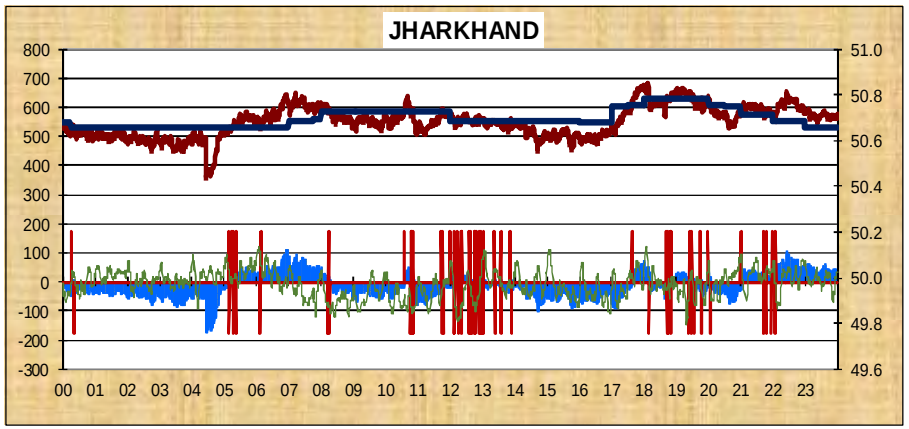
Frequency
Actual
Schedule

SIKKIM



MU	MAX	MIN	Min/Max	UI	SCHEDULE
1.5	92	35	0.39	-0.30	1.81
Time:	17:29	2:57			

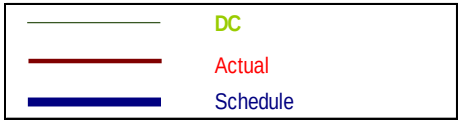
JHARKHAND



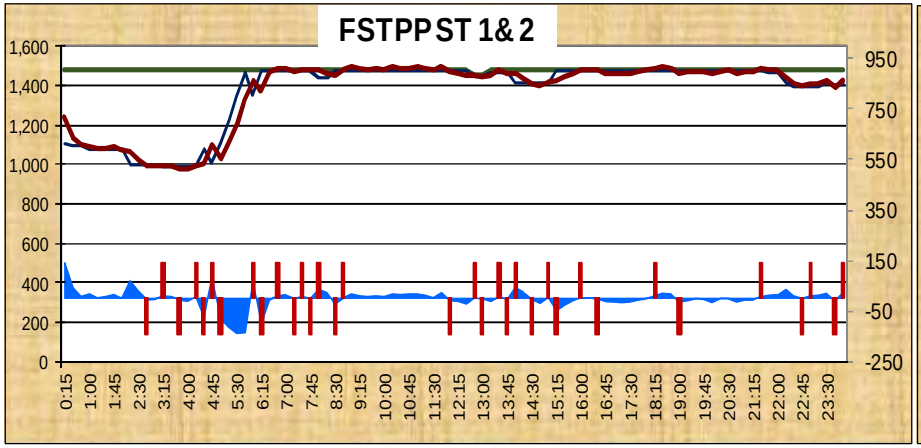
Act MU	MAX	MIN	Min/Max	UI	schd MU
13.24	681	359	0.53	-0.30	13.54
Time:	18:06	4:26			

ISGS (THERMAL) DC, SCHEDULE & ACTUAL GENERATION

DATE : 13 Jan 2018 Saturday

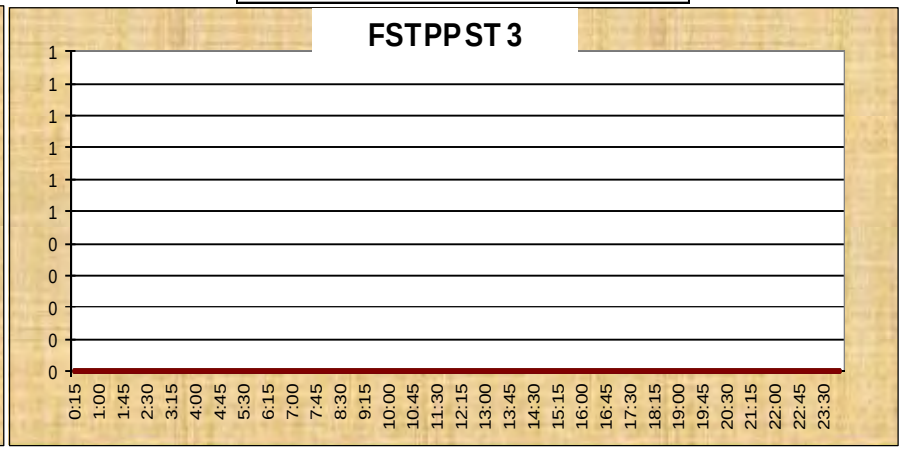


FSTPP ST 1& 2



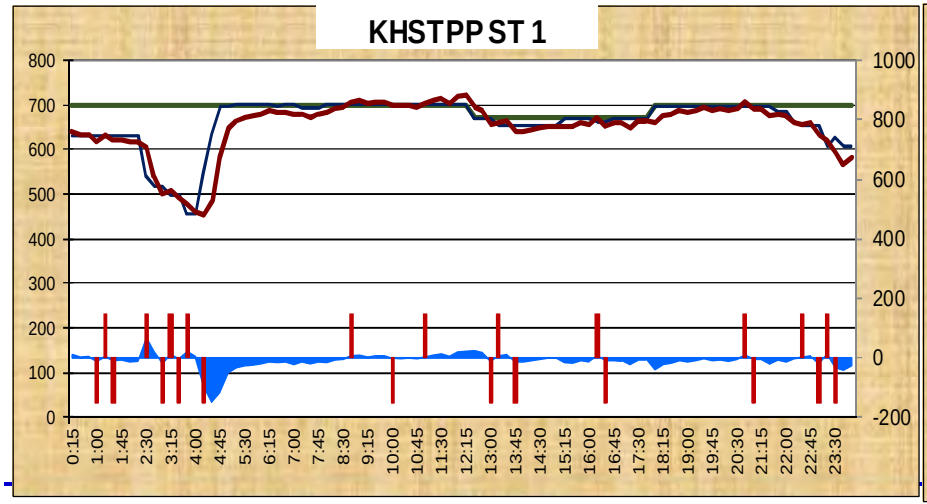
Act MU	MAX	MIN	Min/Max	UI	schd MU
32.81	1497	972	0.65	-0.01	32.82
Time:	11:45	4:00			

FSTPP ST 3



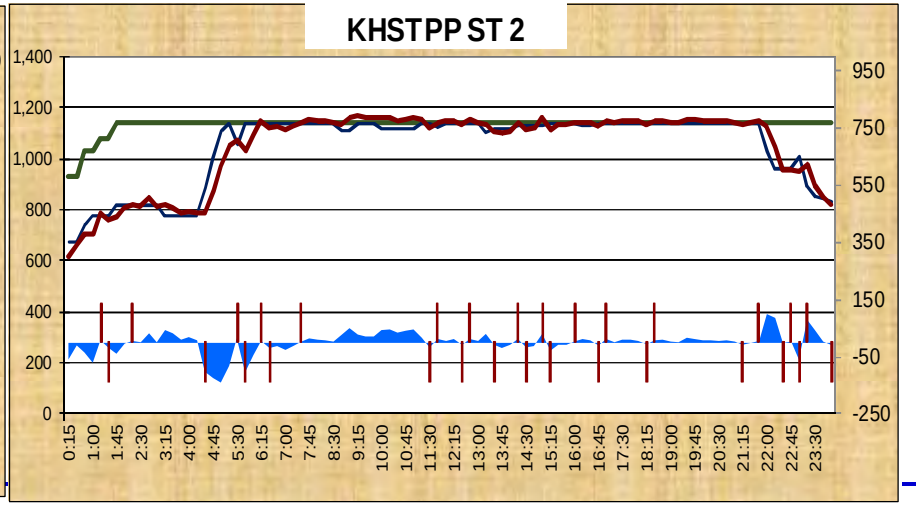
Act MU	MAX	MIN	Min/Max	UI	schd MU
0.0	0	0	0.00	0.00	0.00
Time:	0:15	0:15			

KHSTPP ST 1



Act MU	MAX	MIN	Min/Max	UI	schd MU
15.7	722	452	0.63	-0.22	15.88
Time:	12:15	4:15			

KHSTPP ST 2



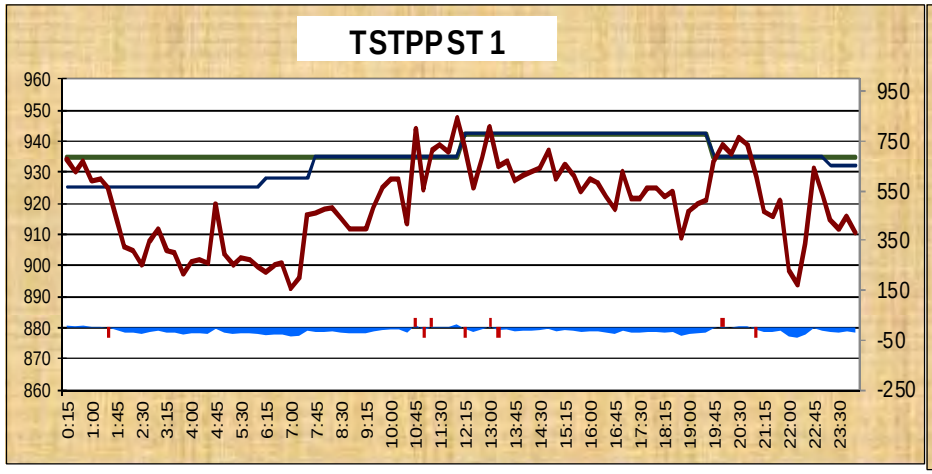
Act MU	MAX	MIN	Min/Max	UI	schd MU
25.1	1168	616	0.53	0.02	25.11
Time:	9:15	0:15			

ISGS (THERMAL) DC, SCHEDULE & ACTUAL GENERATION

DATE : 13 Jan 2018 Saturday

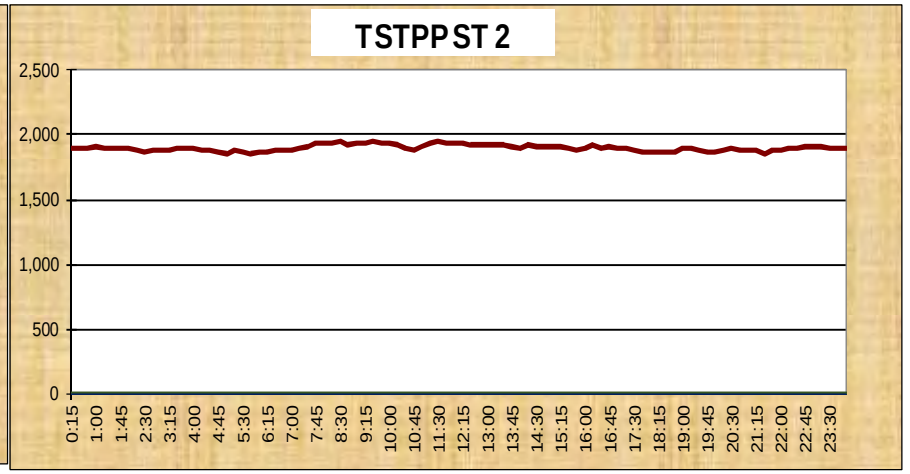
DC
Actual
Schedule

TSTPP ST 1



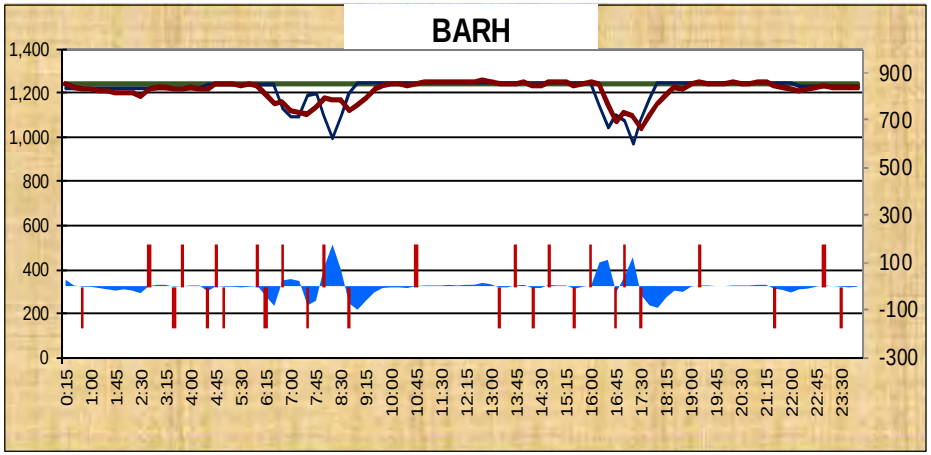
Act MU	MAX	MIN	Min/Max	UI	schd MU
22.1	948	893	0.94	-0.35	22.43
Time:	12:00	7:00			

TSTPP ST 2



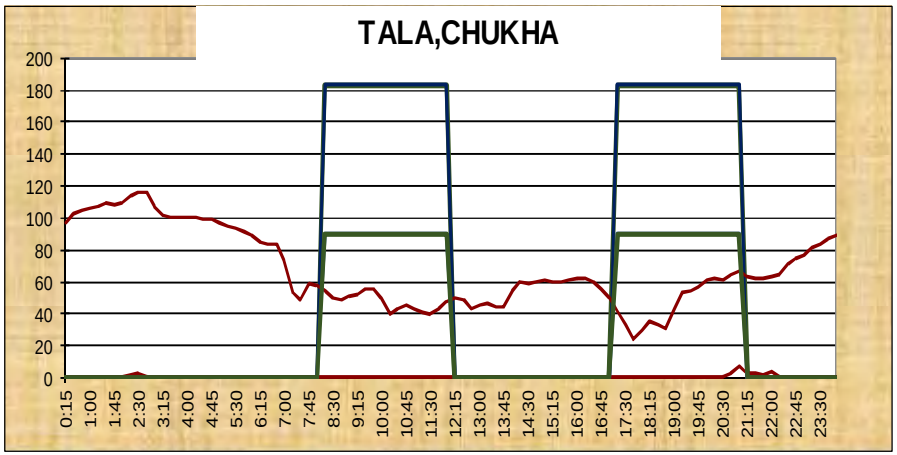
Act MU	MAX	MIN	Min/Max	UI	schd MU
45.5	1953	1847	0.95	45.53	0.00
Time:	11:30	5:45			

BARH



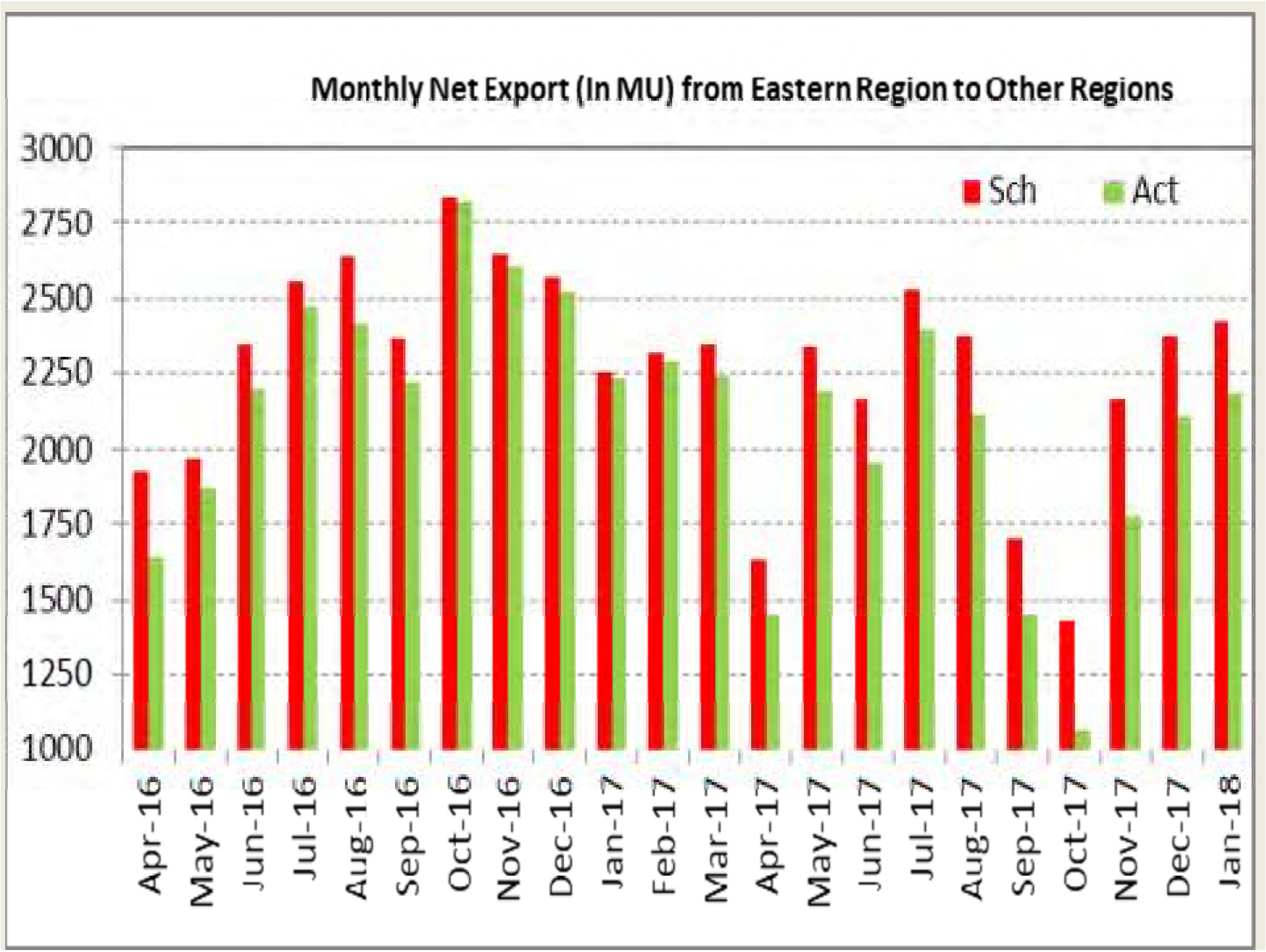
Act MU	MAX	MIN	Min/Max	UI	schd MU
29.1	1258	1038	0.83	-0.03	29.16
Time:	12:45	17:30			

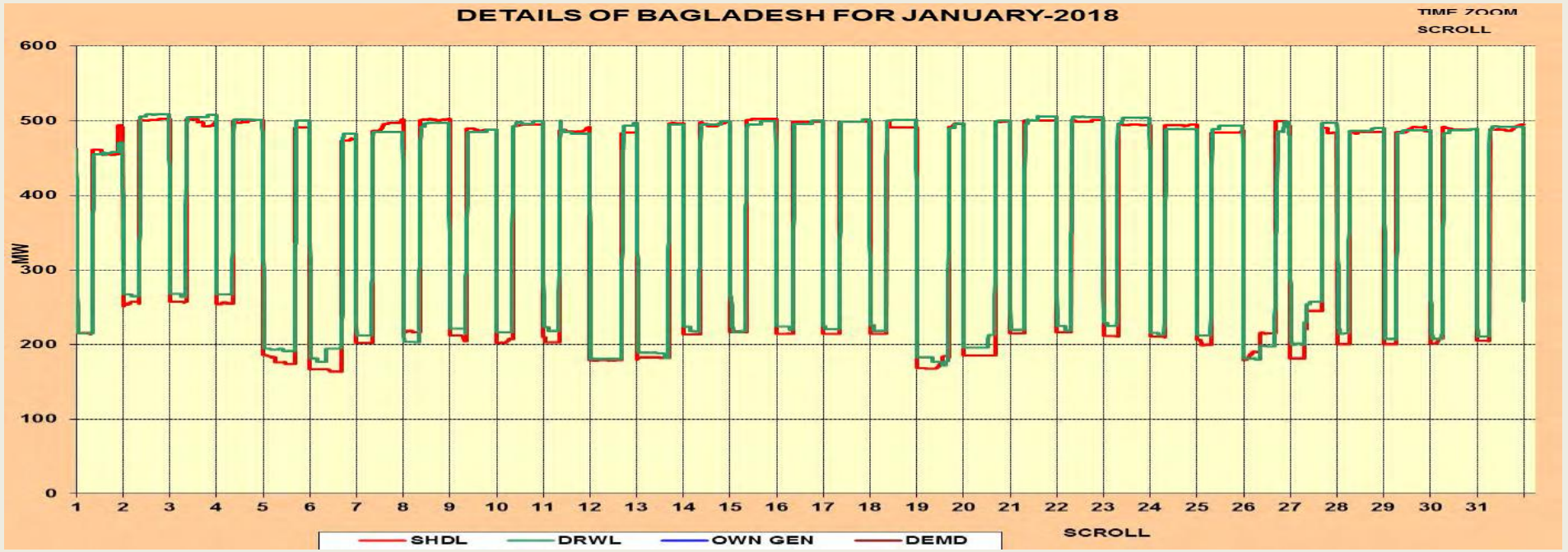
TALA,CHUKHA

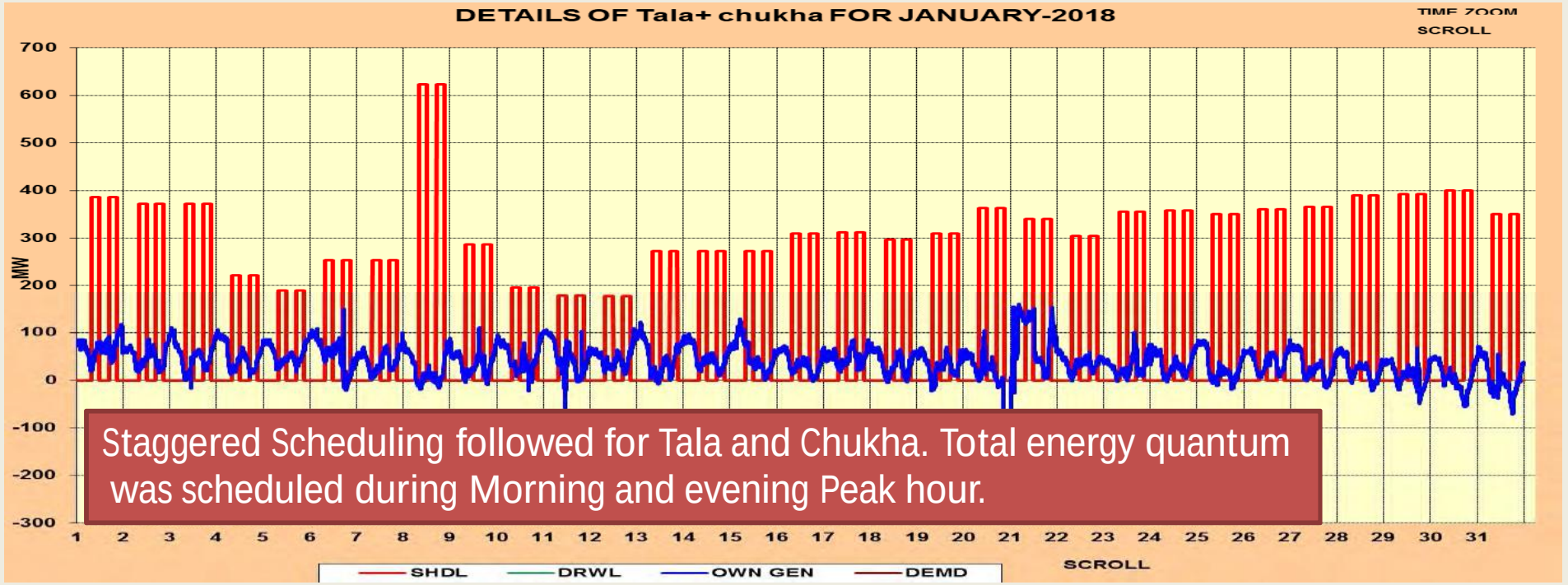


Tala Hydro	SCHD MU	ACT MU
	1.46	1.62

Chukha Hydro	SCHD MU	ACT MU
	0.72	0.02

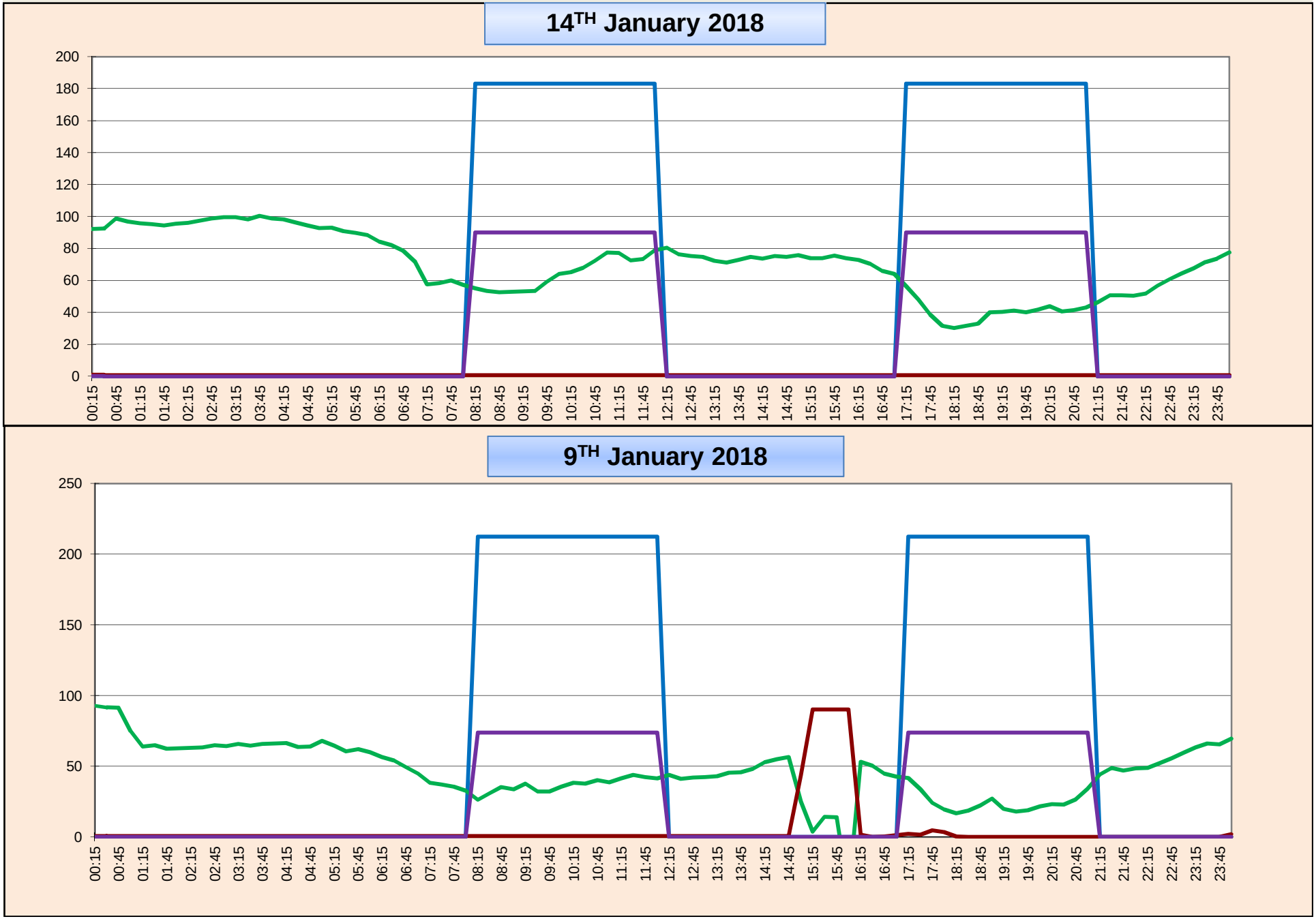

Monthly Net Export (In MU) from Eastern Region to Other Regions
Sch
Act
3000
2750
2500
2250
2000
1750
1500
1250
1000
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
Oct-16
Nov-16
Dec-16
Jan-17
Feb-17
Mar-17
Apr-17
May-17
Jun-17
Jul-17
Aug-17
Sep-17
Oct-17
Nov-17
Dec-17
Jan-18





Staggered Scheduling followed for Tala and Chukha. Total energy quantum was scheduled during Morning and evening Peak hour.

TALA,CHUKHA SCHD VS ACTUAL

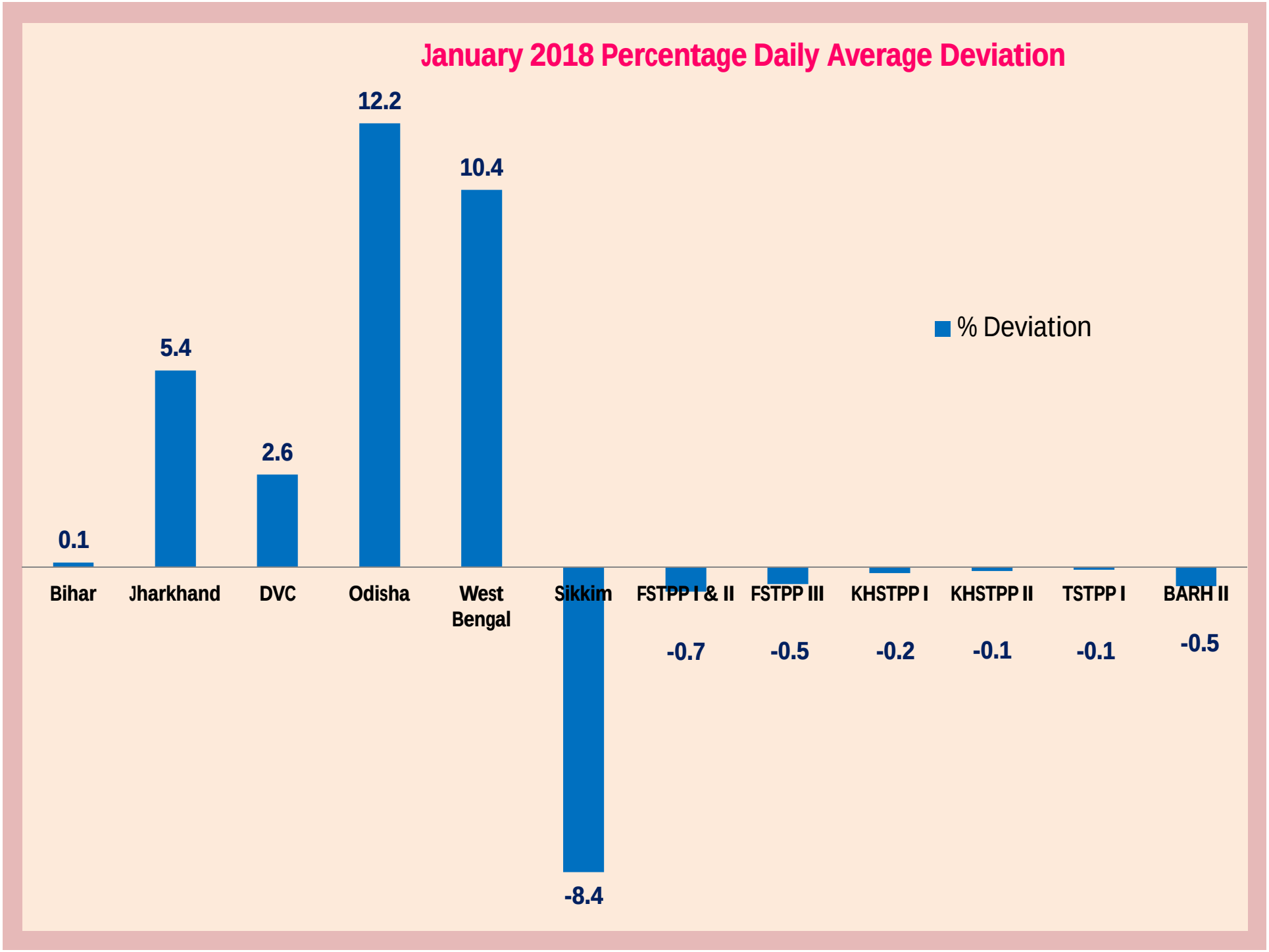


Over Drawl / Under Injection by ER Entities

Non-compliance of direction issued by SLDC

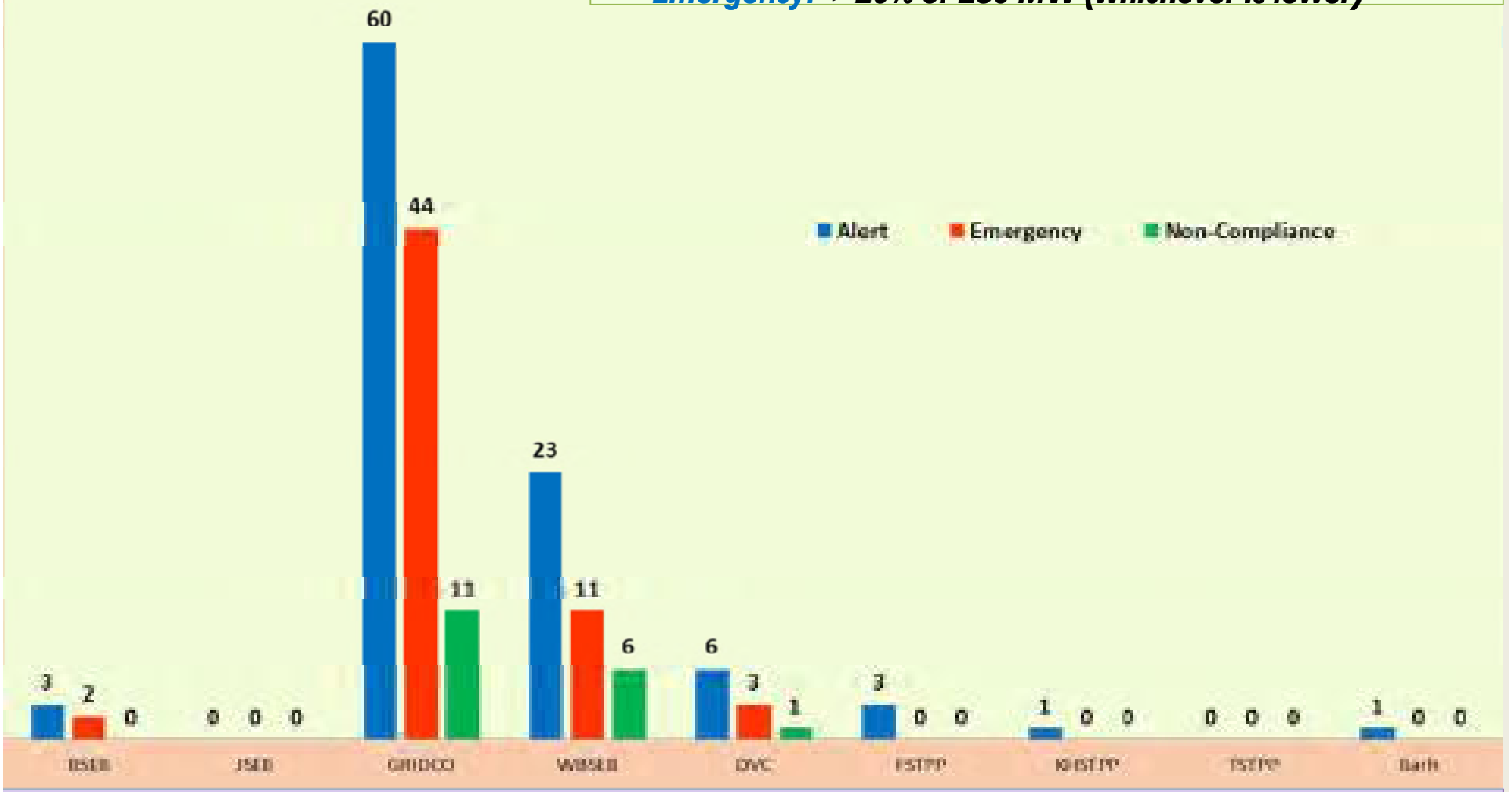
January 2018 Schedule Vs Actual Drawl

	Schedule (Mu)	Actual (Mu)	Deviation (Mu)	Daily Avg. Dev (Mu)	% Deviation (Daily Average)
Bihar	2089	2091	3	0.1	0.1
Jharkhand	439	462	24	0.8	5.4
DVC	-1076	-1104	-28	-0.9	2.6
Odisha	758	851	93	3.0	12.2
West Bengal	471	520	49	1.6	10.4
Sikkim	53	48	-4	-0.1	-8.4
FSTPP I & II	903	897	-6	-0.2	-0.7
FSTPP III	215	214	-1	0.0	-0.5
KHSTPP I	451	450	-1	0.0	-0.2
KHSTPP II	825	824	-1	0.0	-0.1
TSTPP I	598	597	0	0.0	-0.1
BARH II	879	875	-5	-0.1	-0.5


January 2018 Percentage Daily Average Deviation
% Deviation
0.1
5.4
2.6
12.2
10.4
-8.4
-0.7
-0.5
-0.2
-0.1
-0.1
-0.5
Bihar
Jharkhand
DVC
Odisha
West Bengal
Sikkim
FSTPP I & II
FSTPP III
KHSTPP I
KHSTPP II
TSTPP I
BARH II

Deviation Messages issued to the ISGS and States during month of December 2017

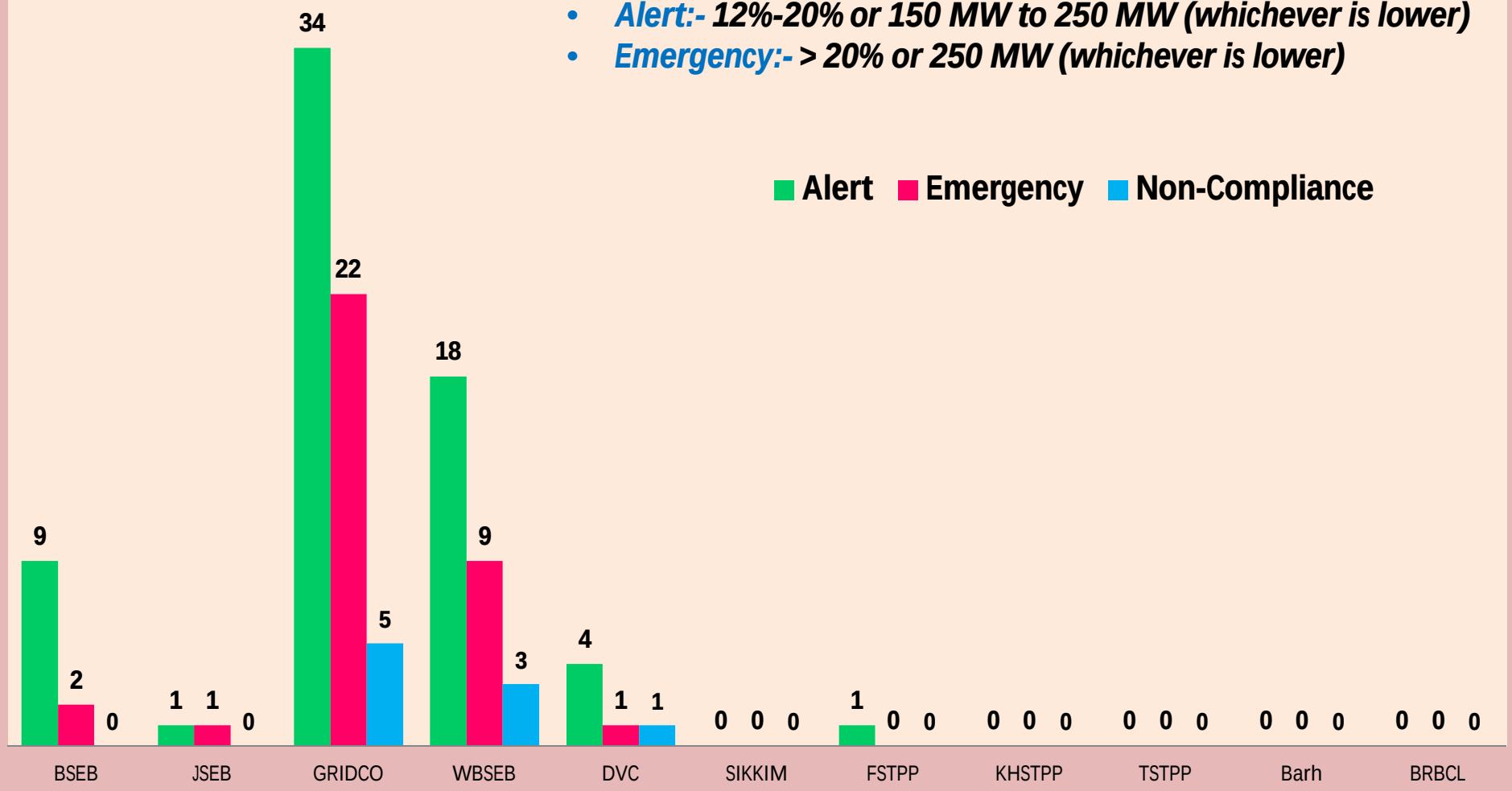
- ***Alert:- 12%-20% or 150 MW to 250 MW (whichever is lower)***
- ***Emergency:- > 20% or 250 MW (whichever is lower)***



- **Total Number of Deviation violation and zero crossing violation messages issued during December-2017 :- 196**
- **Deviation Violation Messages :- 175 & Zero Crossing Violation :- 21**

Deviation Messages issued to ISGS and States during month of January 2018

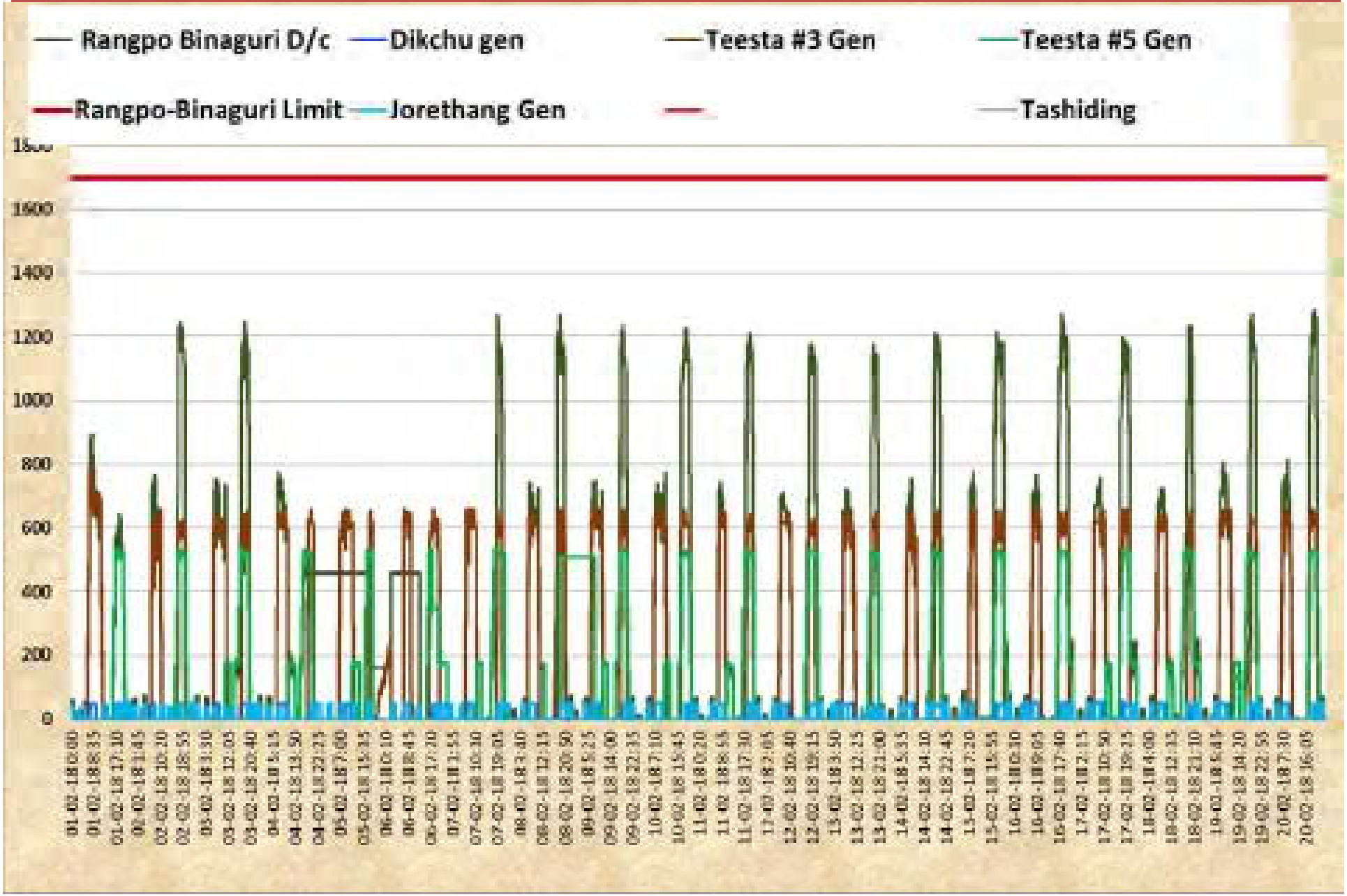
- *Alert:- 12%-20% or 150 MW to 250 MW (whichever is lower)*
- *Emergency:- > 20% or 250 MW (whichever is lower)*



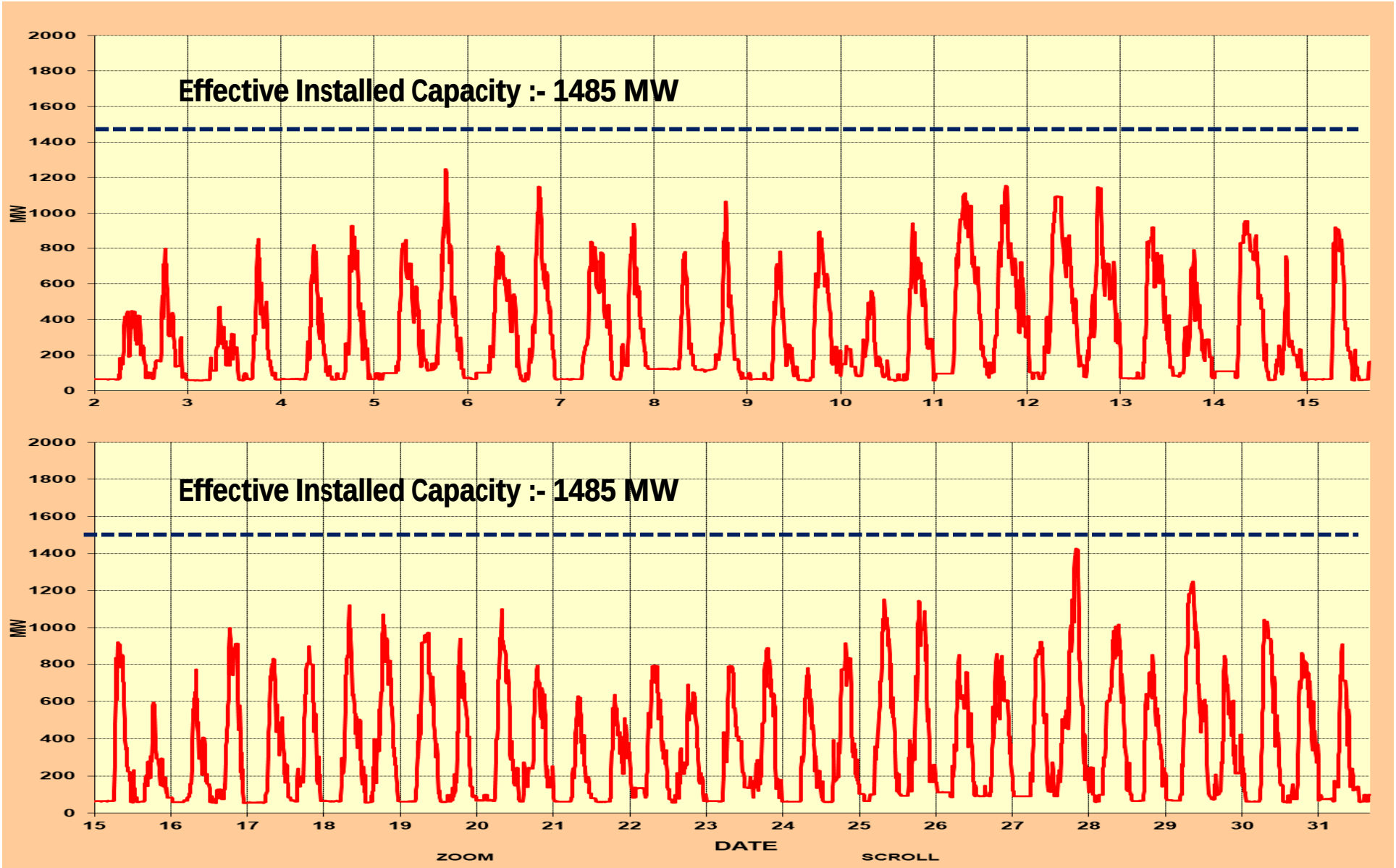
- **Total Number of Deviation violation and zero crossing violation messages issued during January – 2018 :- 157**
- **Deviation Violation Messages :- 111 & Zero Crossing Violation :- 46**

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

Rangpo – Binaguri D/C & Generation Pattern of Generators in Sikkim
01-02-2018 to 20-02-2018



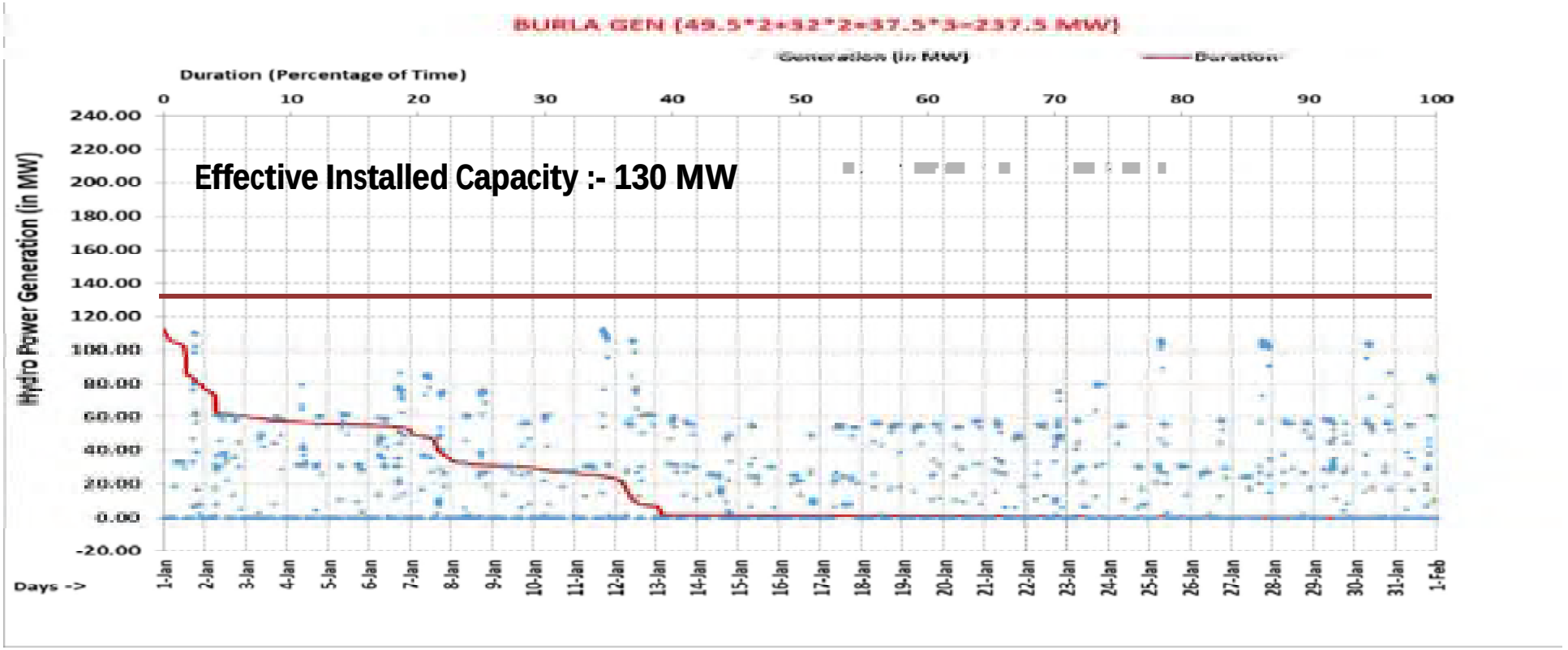
State Hydro Generators Performance

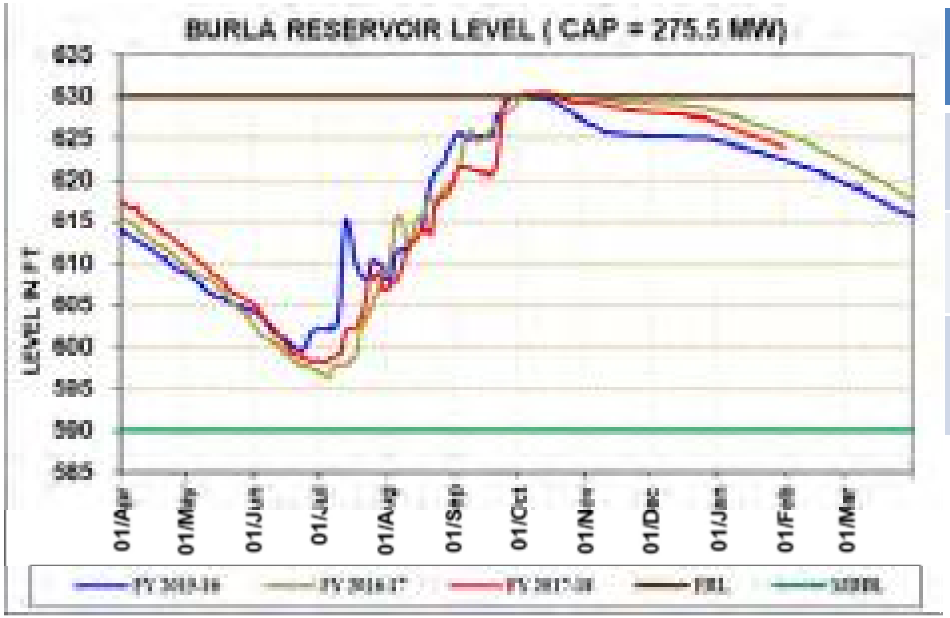


Total Installed Capacity of Odisha Hydro = 1917.5 MW

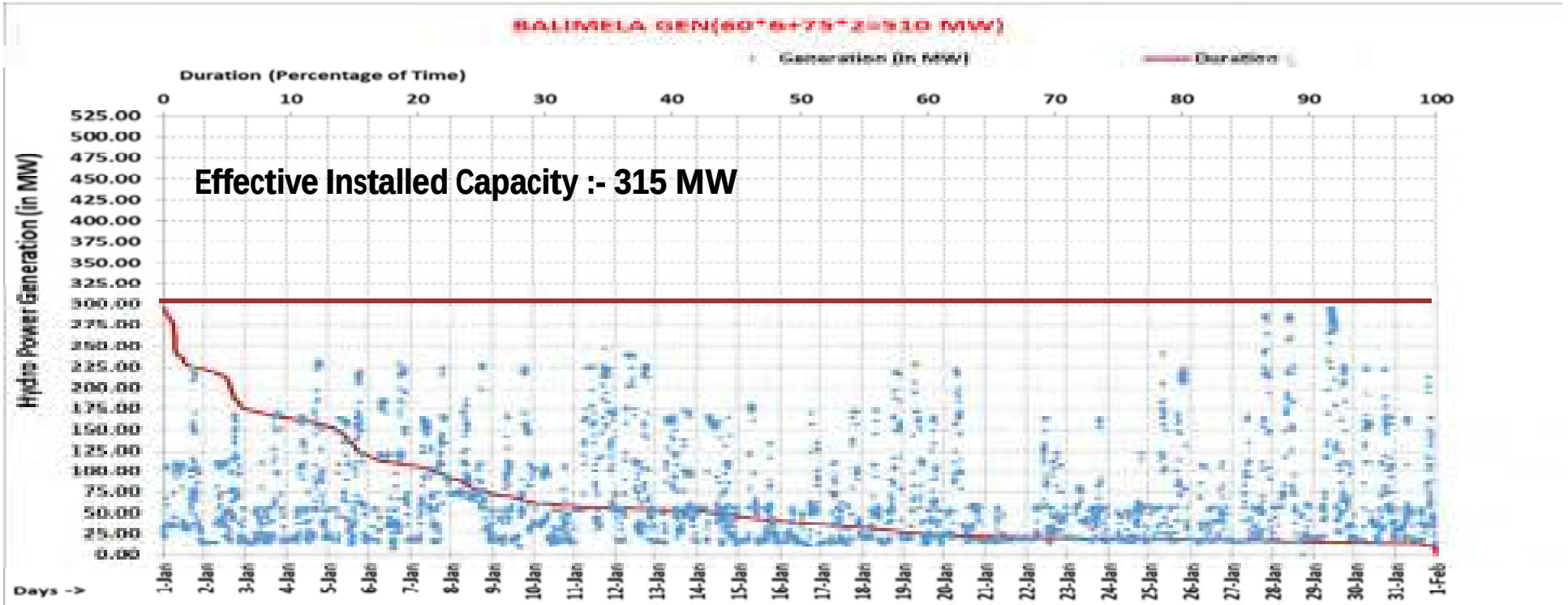
Total Effective Installed Capacity* = 1485 MW

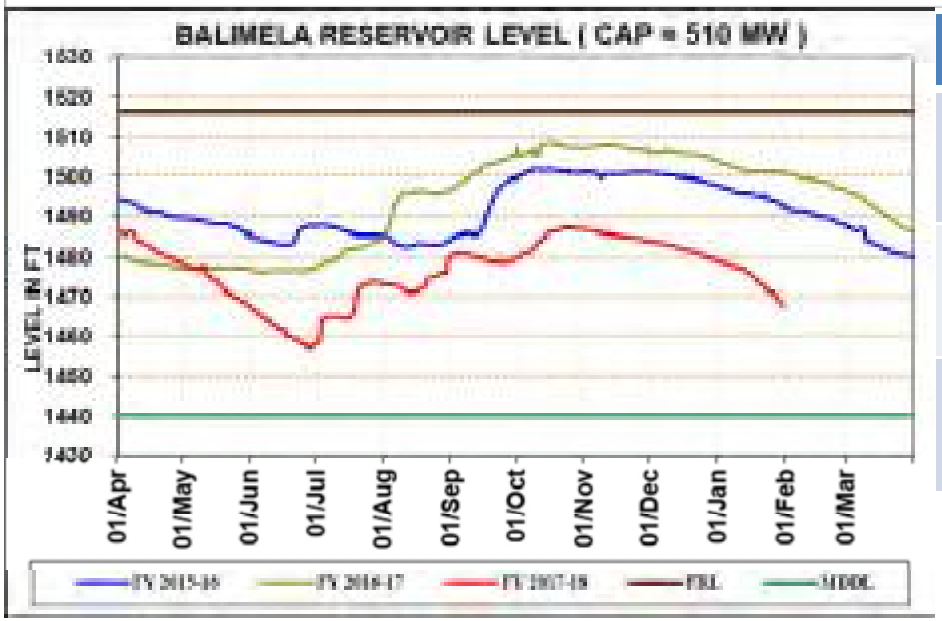
**Effective Installed capacity is calculated considering units on bar at different Hydro Stations*





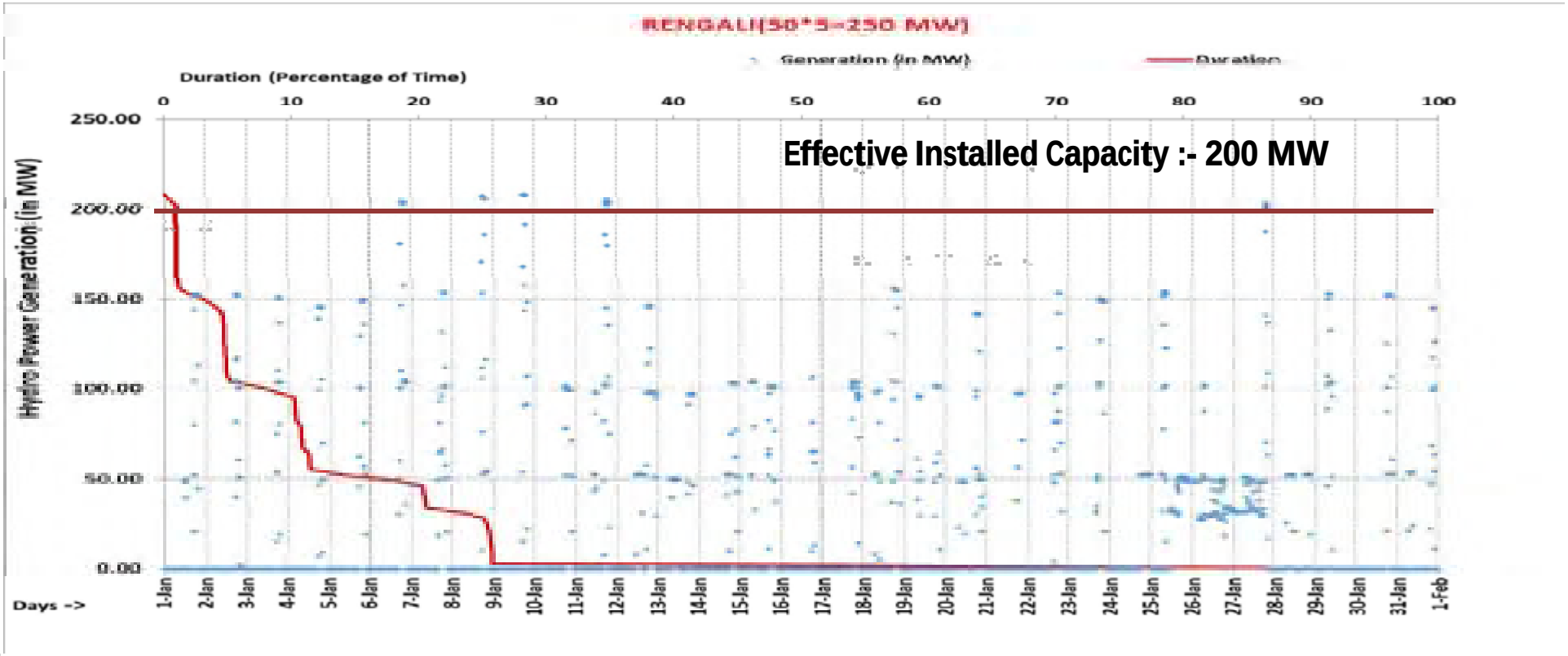
Unit No	Date of Outage	Reason
U - 3	02.01.2018	Annual Maint.
U - 5	25.10.2016	R & M Work
U - 6	16.10.2015	R & M Work

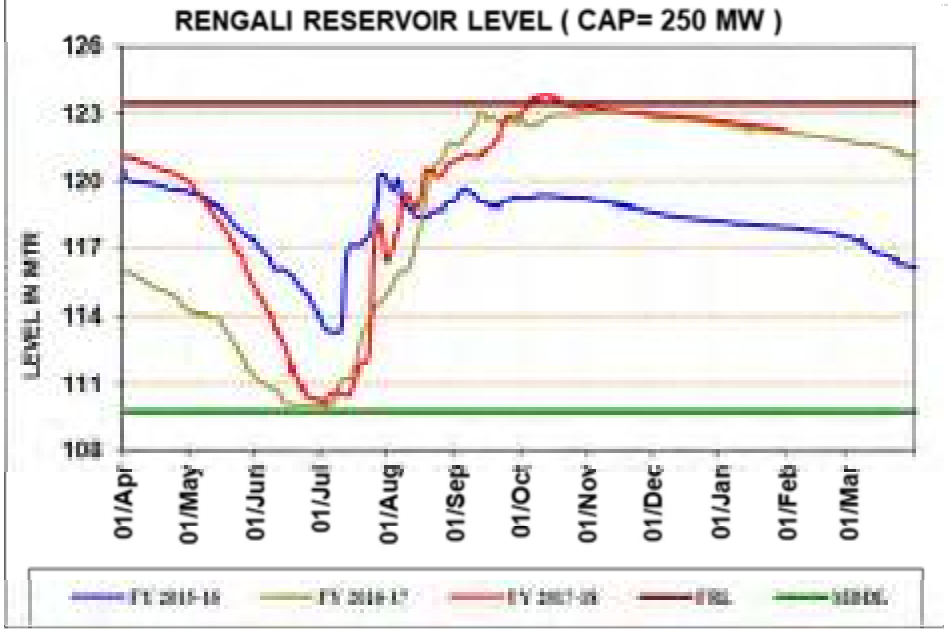




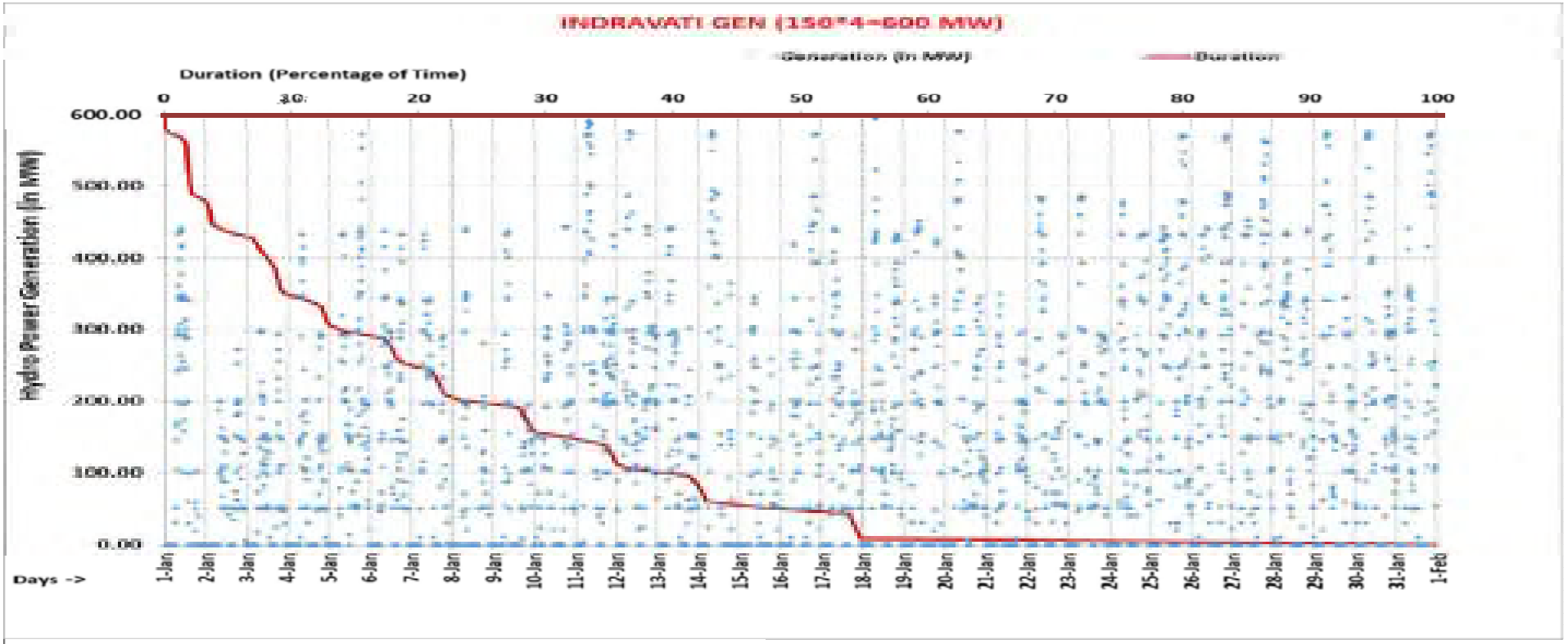
Unit No	Date of Outage	Reason
U – 1(60 MW)	05.08.16	R & M Work
U – 7 (75 MW)	12.10.17(17:30)	Generator problem
U – 2(60 MW)	20.11.17	R & M Work

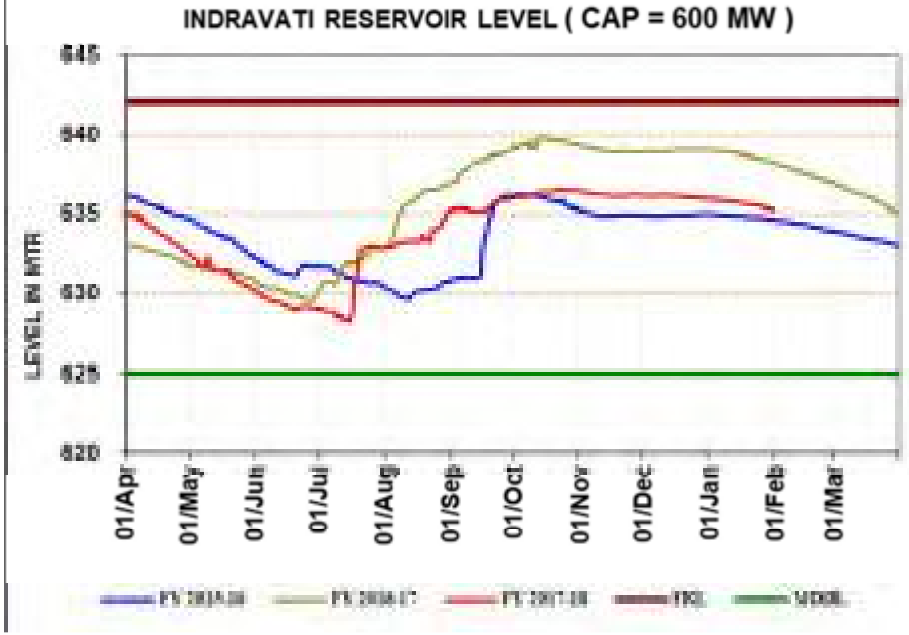
U – 5 synchronize date?



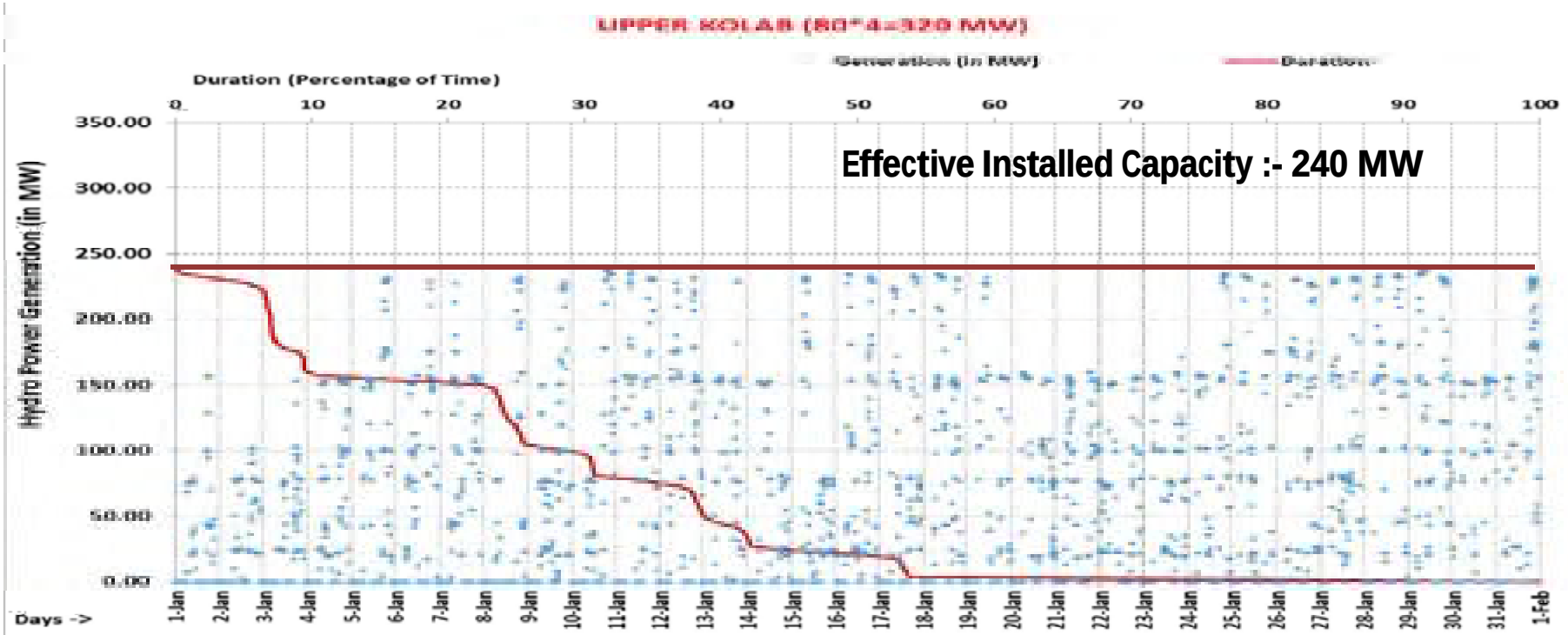


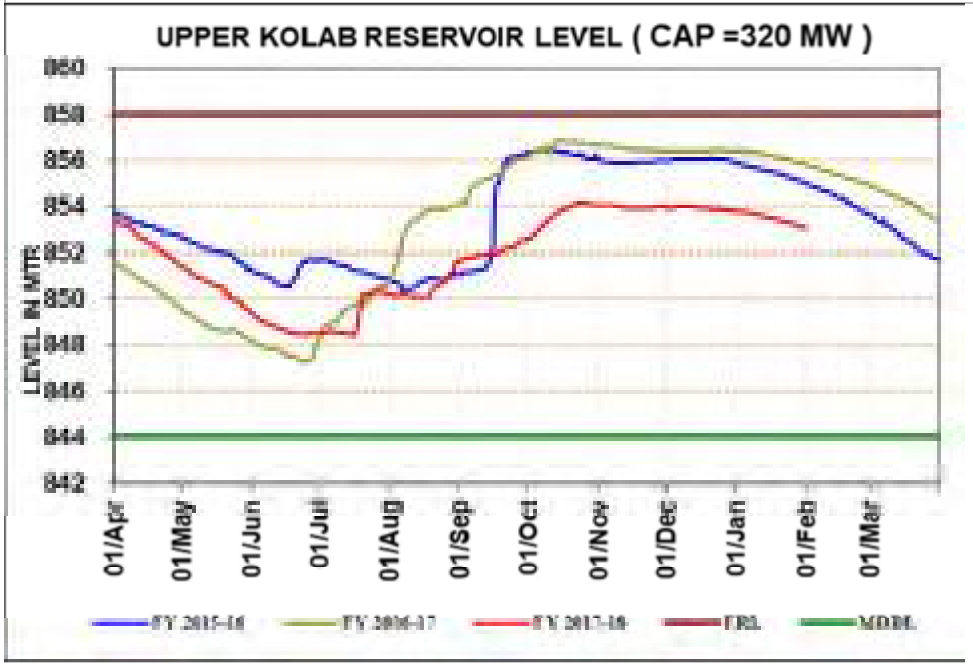
Unit No	Date of Outage	Reason
U - 5	21.03.2017	Hoist Gate Problem



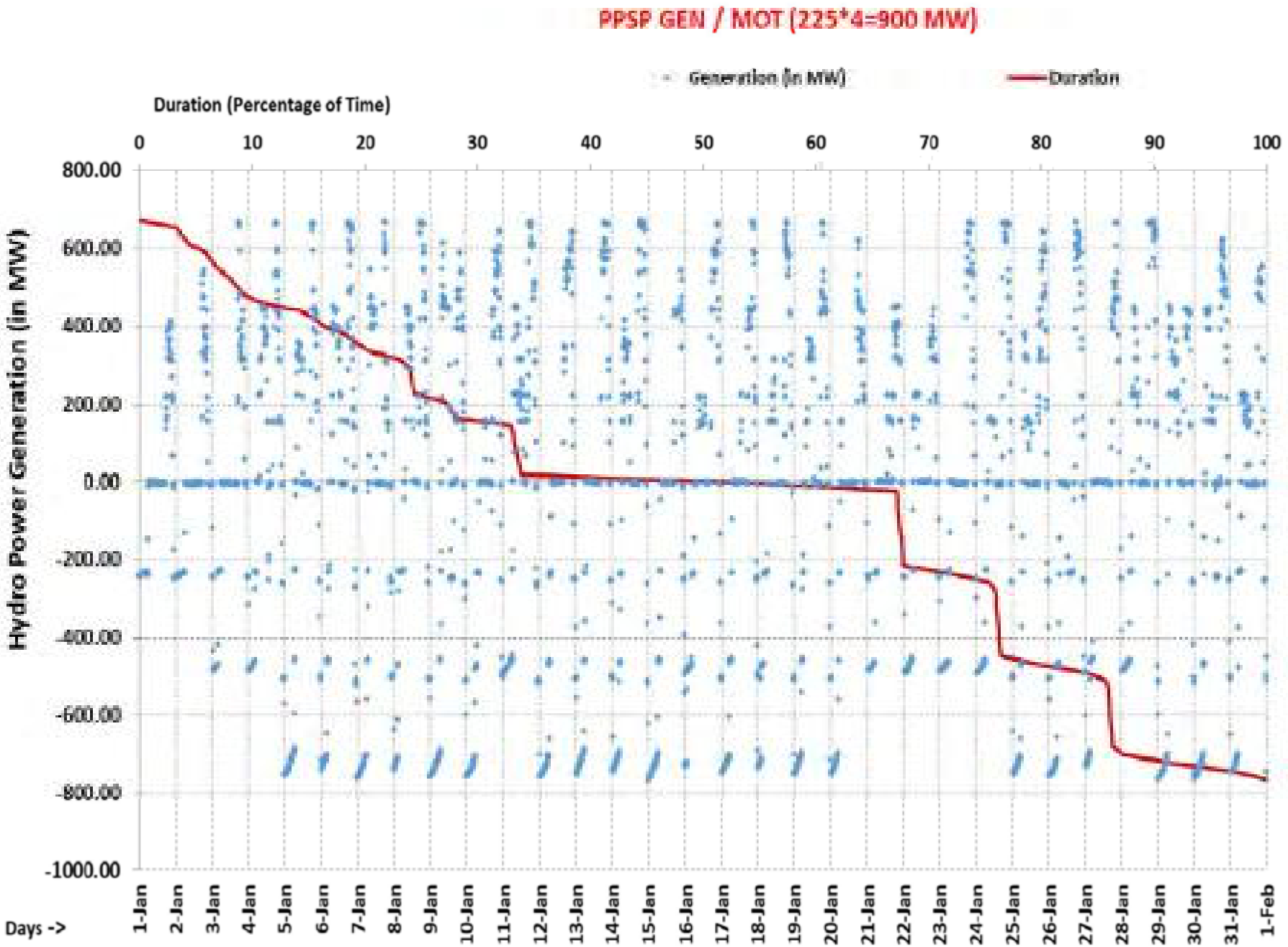


Effective Installed Capacity :- 600 MW





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

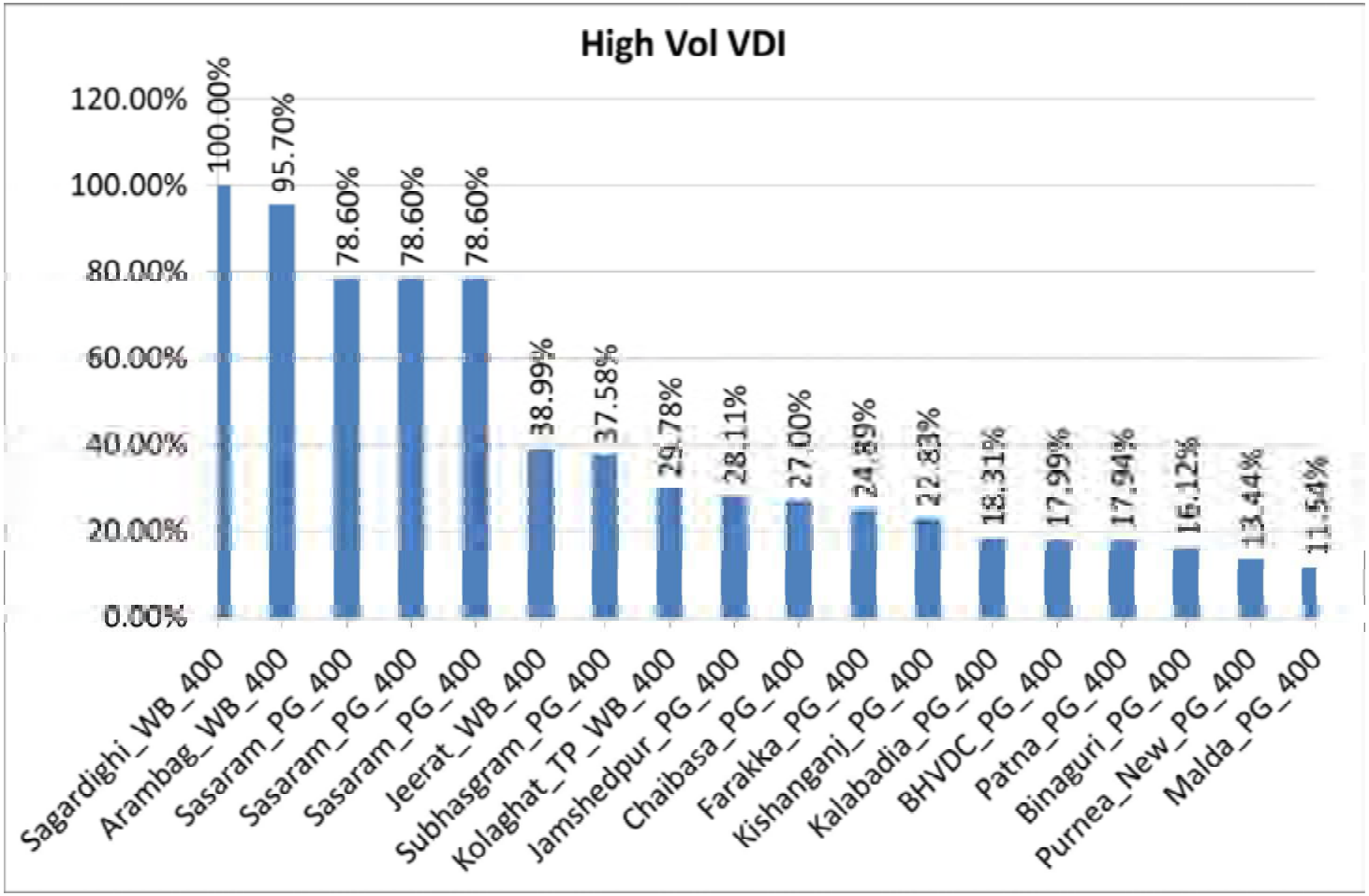

PPSP GEN / MOT (225*4=900 MW)
Generation (in MW)
Duration
Duration (Percentage of Time)
0
10
20
30
40
50
60
70
80
90
100
Hydro Power Generation (in MW)
800.00
600.00
400.00
200.00
0.00
-200.00
-400.00
-600.00
-800.00
-1000.00
Days ->
1-Jan
2-Jan
3-Jan
4-Jan
5-Jan
6-Jan
7-Jan
8-Jan
9-Jan
10-Jan
11-Jan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

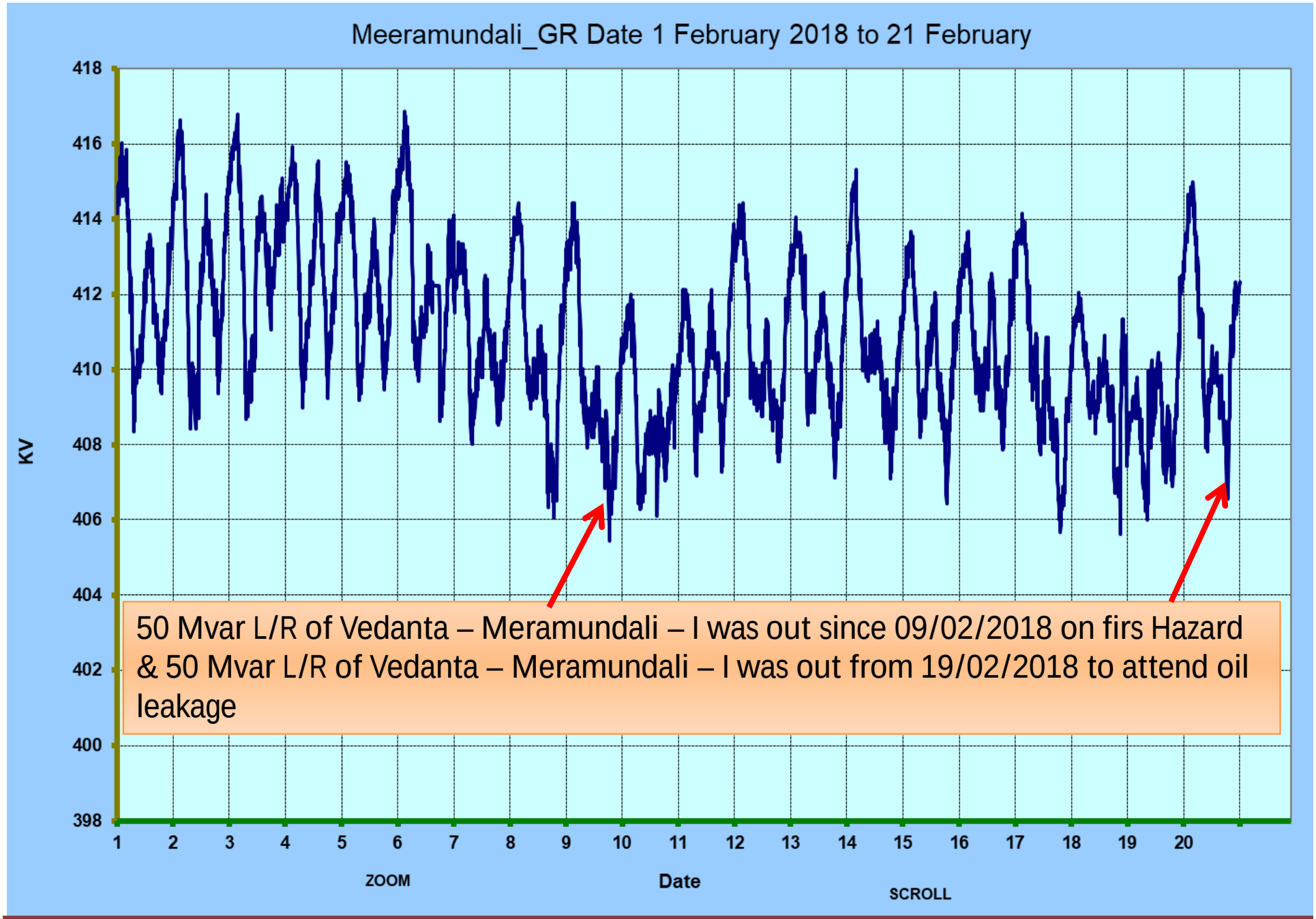
Statistics of VDI of various S/S* in Eastern Region for January, 2018

% 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%	1	0	1
>= 50% but < 100%	4	0	4
>= 30% but < 50%	2	0	2
>= 10% but < 30%	11	0	11

* 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





Voltage profile at Meramundali may rise due to outage of Line Reactor

Network Inadequacy of DVC system

For meeting load as well as generation evacuation

Wide spread blackout on 19.01.18 in DVC system

- Due to Wrong operation Kalyaneswari 220 KV Main Bus -1 tripped and trigger a wide spread black out in DVC system as shown in the next slide.
- **Prevailing System Conditions :**

i. Line Line #24,25 (Howrah-Belmuri) : Loop open at Howrah end
ii. Line # 76 (Burdwan-DTPS) : Shut down due to maintenance activities
iii. Line #12 : Kept OFF from Patherdih end.
iv. Line#61 (CTPS-Ramkanali-Jamuria): CTPS-Ramkanali section open at Ramkanali and Ramkanali-Jamuria section was in servive.

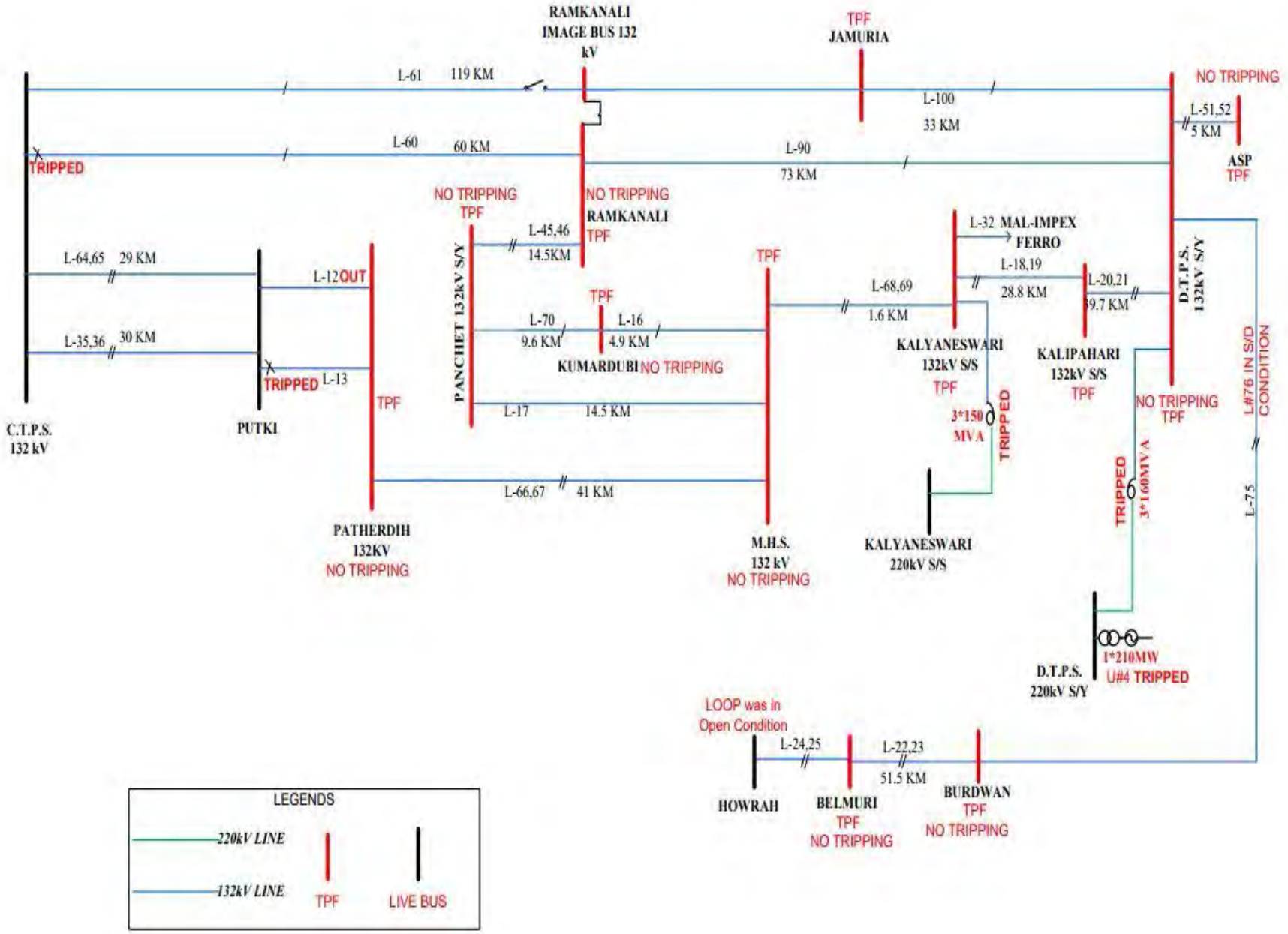
Sequence

After tripping of 2 ATR of 220 KV BUS 1 at Kalyaneswari 3rd ATR of BUS 2 tripped on over load

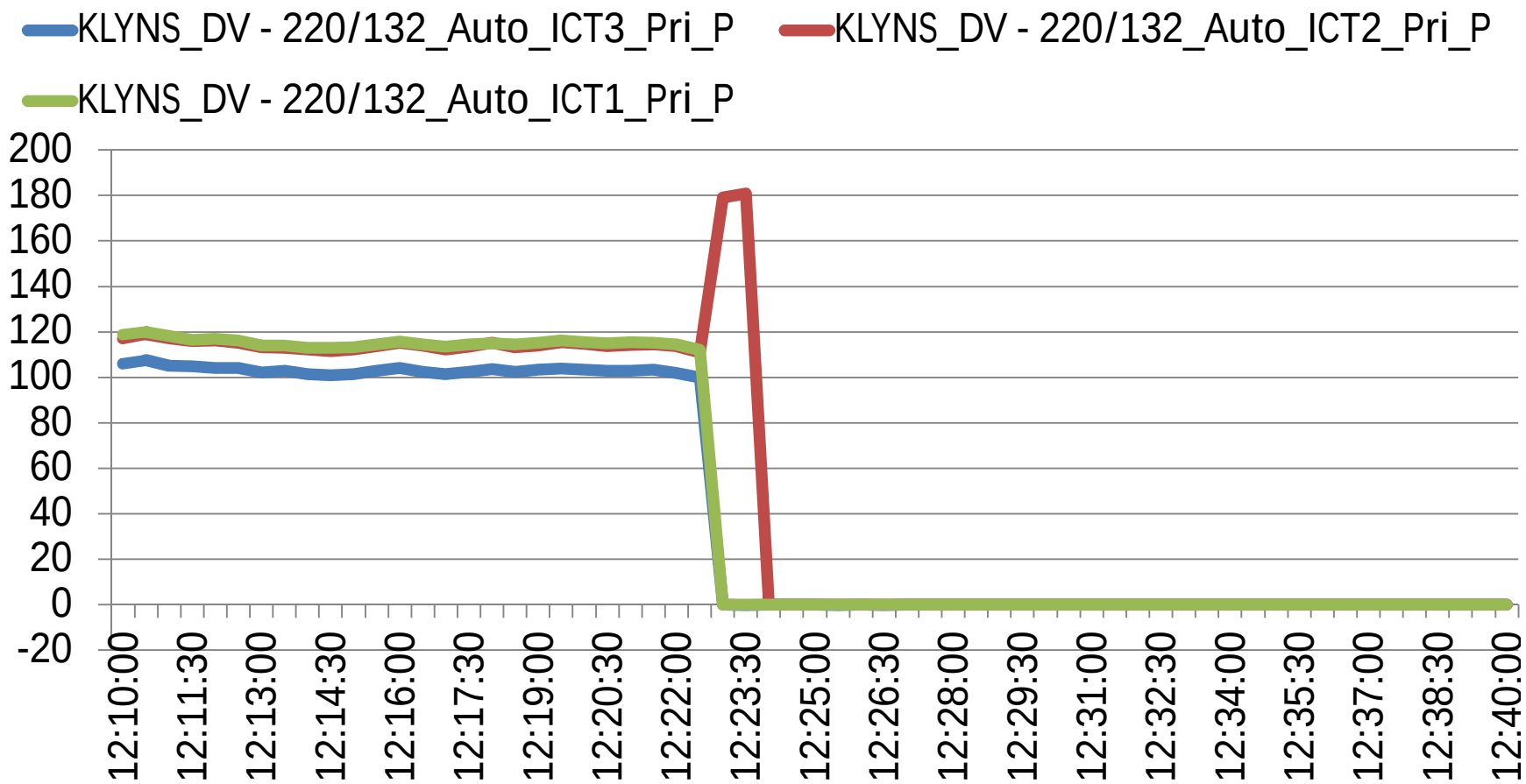
Then DTPS 3 ATRs tripped

Then Tripping of 132 KV CTPS Ramkanali and Putki-Patherdih took place

Wide spread black out


RAMKANALI
IMAGE BUS 132
kV
TPF
JAMURIA
L-61
119 KM
L-100
33 KM
NO TRIPPING
L-51,52
5 KM
ASP
TPF
L-60
60 KM
L-90
73 KM
TRIPPED
NO TRIPPING
TPF
NO TRIPPING
RAMKANALI
TPF
L-45,46
14.5KM
PANCHET 132kV S/Y
L-64,65
29 KM
L-12 OUT
L-35,36
30 KM
TRIPPED
L-13
C.T.P.S.
132 kV
PUTKI
TPF
PATHERDIH
132KV
NO TRIPPING
L-70
9.6 KM
TPF
L-16
4.9 KM
KUMARDUBI NO TRIPPING
L-17
14.5 KM
L-66,67
41 KM
TPF
M.H.S.
132 kV
NO TRIPPING
L-68,69
1.6 KM
L-32 MAL-IMPEX
FERRO
L-18,19
28.8 KM
L-20,21
39.7 KM
D.T.P.S.
132kV S/Y
KALYANESWARI
132kV S/S
TPF
3*150
MVA
TRIPPED
KALIPAHARI
132kV S/S
TPF
NO TRIPPING
TPF
L#76 IN S/D
CONDITION
L-75
TRIPPED
3*160MVA
KALYANESWARI
220kV S/S
D.T.P.S.
220kV S/Y
1*210MW
U#4 TRIPPED
LOOP was in
Open Condition
L-24,25
L-22,23
51.5 KM
HOWRAH
BELMURI
TPF
NO TRIPPING
BURDWAN
TPF
NO TRIPPING
LEGENDS
220kV LINE
132kV LINE
TPF
LIVE BUS

Kalyaneswari ATR flows (19.01.18)



Other frequently occurring congestion

- **Bokaro 315 MVA 400/220 ICT –**

During shutdown or forced outage of 220kV Jindal-Jamshedpur tie ,generally its overloading took place .

- **Bokaro-A generation evacuation:**

During outage of 400 KV Bokaro-Koderma D/C only one ICT at Bokaro in not enough to evacuate its generation.

- **220kV Bokaro-B – CTPS-B D/C line:**

During low generation at CTPS-B, its overloading took place and n-1 security criteria is not satisfied

Recommendation

- Long term proper system strengthening plan .

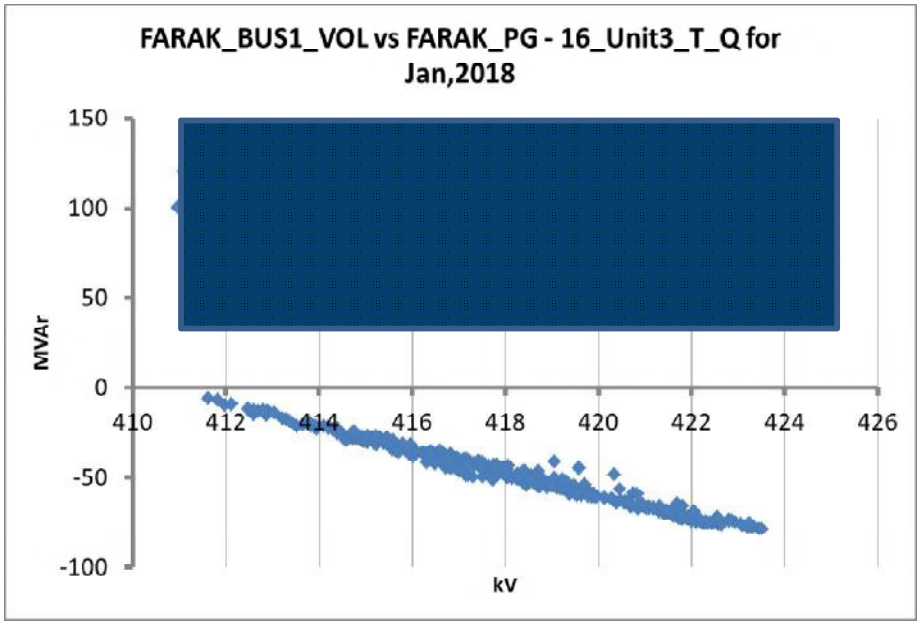
- As the network is well meshed in DVC system that's why tripping at one point have high impact on other point. So proper **short term Load shedding scheme taking load pattern into account** may be designed to restrict wide spread black out in DVC system ,which could also have impact on the other grid connected utility.

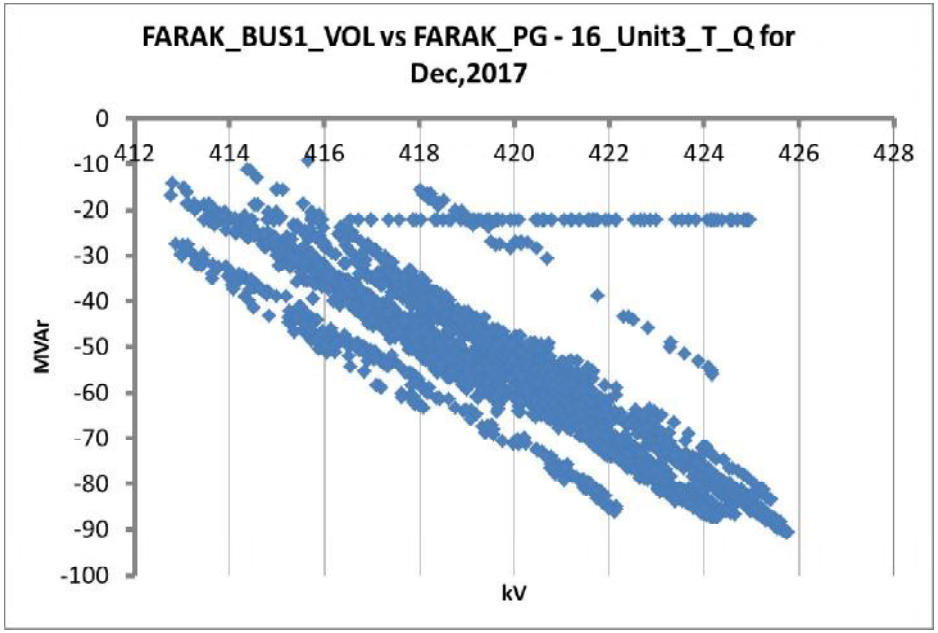
Reactive power performances of various units in the month of January, 2018

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

FSTPP unit #III





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

December, 2017 :
Maximum MVAr absorption is 90 MVAr
% of time with positive VAR injection when voltage was more than IEGC limit 0%

There was no MVAR injection during high voltage condition in the month of December, 2017 whereas during January some instances observed for injection during High Voltage

Governor response observed in ER generating units

1. 1050 MW generation loss at Teesta at 17:34 hrs at 10-01-18
2. 1250 MW generation loss at Koderma at 10:46 hrs on 30-01-18

Generation loss at Teesta at 17:34 hrs at 10-01-18. Frequency changed from 50.02 Hz to 49.96 Hz

Name	Initial generation	Final generation	Change in generation	Ideal response	% of Ideal response	Remarks
FSTPP #1	188.4	193.6	5.1	4.7	110%	Satisfactory
JITPL #2	529.0	533.0	4.0	13.1	30%	Below Satisfactory
KhSTPP #1	189.9	191.2	1.3	4.7	27%	Unsatisfactory
FSTPP #3	199.9	201.3	1.3	5.0	27%	Unsatisfactory
MPL #2	507.0	509.0	2.0	12.6	16%	Unsatisfactory
MPL #1	509.0	511.0	2.0	12.6	16%	Unsatisfactory
KhSTPP #5	495.9	496.2	0.3	12.3	2%	Unsatisfactory
KhSTPP #6	431.8	431.8	0.0	10.7	0%	Unsatisfactory
Barh Unit-5	642.0	641.6	-0.5	15.9	-3%	Unsatisfactory (Above 630 MW FGMO is not in service due to reheater problem)
FSTPP #4	471.3	470.6	-0.7	11.7	-6%	Unsatisfactory
FSTPP #2	199.3	198.8	-0.5	4.9	-10%	Unsatisfactory
FSTPP #5	471.9	469.9	-2.1	11.7	-18%	Unsatisfactory
KhSTPP #4	215.7	214.7	-1.0	4.8	-20%	Unsatisfactory
Barh Unit-4	651.7	646.5	-5.3	16.2	-33%	Unsatisfactory (Reduction of generation was being taken place due to tripping of coal mill)
KhSTPP #7	274.9	271.4	-3.5	6.8	-52%	Unsatisfactory
KhSTPP #2	203.7	200.5	-3.2	5.1	-63%	Unsatisfactory

Data/Reason given by generator
Initial generation more than I/C

1250 MW generation loss and 350 MW load loss at Koderma at 10:46 hrs on 30-01-18. Frequency changed from 49.90 Hz to 49.84 Hz

Name	Initial generation	Final generation	Change in generation	Ideal response	% of Ideal response	Remarks
KhSTPP #1	126.5	129.7	3.2	3.3	97%	Satisfactory
KhSTPP #2	210.7	212.9	2.2	5.5	41%	Below Satisfactory
KhSTPP #4	212.8	214.7	1.9	5.5	35%	Below Satisfactory
FSTPP #4	346.5	349.5	3.1	9.0	34%	Below Satisfactory
KhSTPP #5	491.8	493.3	1.5	12.8	11%	Unsatisfactory
KhSTPP #7	507.1	508.3	1.2	13.2	9%	Unsatisfactory
MPL #2	506.0	507.0	1.0	13.2	8%	Unsatisfactory
Barh Unit-4	634.6	633.6	-1.0	16.5	-6%	Unit generation was more than schedule, further loading could not be contributed due to boiler side transient conditions
Barh Unit-5	428.6	427.6	-1.0	11.1	-9%	RGMO was out due to FD fan problem
FSTPP #3	155.3	155.0	-0.4	4.0	-9%	Unsatisfactory
FSTPP #1	147.4	146.9	-0.5	3.8	-13%	Unsatisfactory
FSTPP #2	158.6	157.8	-0.9	4.1	-21%	Unsatisfactory
KhSTPP #6	492.1	487.1	-5.0	12.8	-39%	Unsatisfactory

Initial generation more than I/C

Data/Information received from the generator

VDI of Selected 765 kV & 400 kV in Eastern Region in the month of January - 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	758	0.00	426	409	19.90	417	388	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)
421	399	0.09	425	399	15.22	432	397	39.10

राउरकेला / Rourkela			जयपोर / Jeypore			कोडरमा / Koderma		
MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)
420	404	0.00	424	367	0.65	427	403	0.97

मैथन / Maithon			तीस्ता / Teesta			रांगपो / Rangpo		
MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)
421	403	0.12	425	389	10.48	422	386	1.76

Annexure- 9.12

Eastern Regional Power Committee, Kolkata

Details of islanding schemes in Eastern Region

Sr. No	State	Name of Islanding Scheme	Generating Stations Covered	Electrical Size(in MW)	Present Status	Area / Load covered
1	West Bengal	CESC	Titagarh, Budge-Budge	1100 MW	Operational.	CESC load of Kolkata area LOADS: All major city loads are covered
		Bakreswar TPS, WBPDCL	Bakreswar TPS	715 MW	Operational wef from 31.03.2015	LOADS: Satgachia, Krishnanagar, Ranaghat, Debagram, Katwa, Kalna, Gokarna, Behrampur, Amtala, Rampurhat, Raghunathganj&Lalgola
		Tata Power, Haldia	Haldia 120 MW	92 MW	Operational wef 24.04.2015.	Haldia and its adjoining area LOADS: Industrial areas of Haldia and Port
		Bandel TPS, WBPDCL	Bandel TPS	110 MW	Being implemented through PSDF	LOADS: Khanyan, Chanditala & Bighati
2	Jharkhand	Farakka STPS	One unit of Farakka STPS	180 MW	Operational with unit 1 & 3 of FSTPS	Lalmatia, Dumka and Sahebgunj LOADS : Coal mines and Indo-Bangladesh international border
3.	DVC	Chandrapura TPS (132KV) of DVC system	Chandrapura TPS	125 MW	Operational wef from 15.06.2015	Chaddrapura connected area
3.	Bihar	Studies in progress to extend above Farakka islanding scheme to include Bihar areas as well.				
4.	Odisha*	Islanding Scheme of IB TPS	IB TPS	420 MW	Scheme finalized. Under implementation stage.	Budhipadar LOADS : local loads to power plant

* Many CPPs like NALCO, HINDALCO, IFFCO, Rourkela Steel Plant, etc. in Odisha are also having islanding schemes.

Annexure-B6

JHARKHAND URJA SANCHARN NIGAM LIMITED

Office of the

Chief Engineer, SLDC/ULDC & Telecom

Kusai Colony, Doranda, Ranchi

Phone: 0651-2490090, Fax: 0651-2490486, Email: sldcranchi@gmail.com

Letter No. 58 **' SLDC/ ULDC, Ranchi,** **Dated,** 09-02-2018

From,

C.M. Sharma
C.E. (SLDC/ULDC & Telecom),
Kusai Colony, Ranchi

To,

Shri J.Bandyopadhyay
Member Secretary (ERPC)
14 Golf club road,
Tollygunge, Kolkata,

Sub: **Request for inclusion of an item in the agenda of 142th OCC meeting regarding charging of Daltonganj (PG)-Daltonganj (JUSNL) Transmission line.**

Ref: **Email dated 7th Feb 2018 of Sri S.Bannerjee, ERLDC.**

Sir,

With reference to the above; it is to intimate that Load flow analysis of 132KV Daltonganj (PG)-Daltonganj (JUSNL) Transmission Line has been conducted by ERLDC keeping minimum one unit of TTPS in service. In case of availability of only one unit of TTPS the loading on 220KV Ranchi (PG)-Hatia (II) will increase drastically to compensate the load in Ranchi Zone. Due to this the voltage profile in Loherdaga, Gumla, Latehar and Daltonganj will be affected adversely. Neither JUSNL nor JBVNL are having capacitor bank arrangement for arresting the low voltage profile in the system, in this situation.

We have traction load connected from Hatia-I, Namkum and Kamdara for feeding important railway TSS in Ranchi-Rourkela section, which suffer a lot due to such low voltage profile in case of non availability of TTPS units.

To give a relief on Ranchi (PG)-Hatia (II) Transmission Line in case of outage of TTPS units the supply load of Daltonganj (50 to 60 MW peak) needs to be shifted to Daltonganj (PG) either by considering Radial Mode of connection or by exploring any other suitable arrangement so that the loading on Daltonganj (PG) should remain minimum 50-60 MW.

It is therefore requested to kindly include this item in the Agenda of 142th OCC meeting for proper discussion and decision.

Yours faithfully,

09.02.2018

(C.M. Sharma)
C.E, SLDC/ULDC

Annexure-B10

Generation Projection (April 2018 - June 2018)

				Generation declared Commercial from 1st July '17 to 31st Dec'17					Generation declared/expected to be declared Commercial from 1st Jan'18 to 31st Mar'18								
Sl. No.	Entities	Region	Projections based on 3 Years Data	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	TOTAL	Comments From DICs /Others (if any)	Figure as per Comments/ PoC Data	Projected Generation before normalization w.r.t projected All India Peak Demand
			(MW)			(MW)	(MW)	(MW)			(MW)	(MW)	(MW)	(MW)			(MW)
1	West Bengal	ER	5234											5234			5234
2	Odisha	ER	3050											3050	As per data given by GRIDCO	3177	3177
3	Bihar	ER	241											241			241
4	Jharkhand	ER	340											340			340
5	Sikkim	ER	0											0			0
6	Chujachan	ER	113											113	As per CERC order dated: 22.06.2017	99	99
7	DVC	ER	4738											4738	As per data given by DVC	4527	4527
8	Durgapur Steel	ER															
9	Koderma TPP	ER															
10	Bokaro TPS	ER															
11	Raghunathpur	ER															
12	MPL	ER	1013											1013			1013
13	Teesta V	ER	533											533	As per NHPC data	510	510
14	Kahalgaon	ER	2155											2155	As per NTPC	2178	2178
15	Farakka	ER	1857											1857		1968	1968
16	Talcher	ER	972											972			972
17	Rangit	ER	70											70	As per NHPC data	60	60
18	Adhunik Power	ER	519											519			519
19	Barh	ER	1252											1252	As per NTPC	1057	1057

Generation Projection (April 2018 - June 2018)

				Generation declared Commercial from 1st July '17 to 31st Dec'17					Generation declared/expected to be declared Commercial from 1st Jan'18 to 31st Mar'18								
Sl. No.	Entities	Region	Projections based on 3 Years Data	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	TOTAL	Comments From DICs /Others (if any)	Figure as per Comments/ PoC Data	Projected Generation before normalization w.r.t projected All India Peak Demand
			(MW)			(MW)	(MW)	(MW)			(MW)	(MW)	(MW)	(MW)			(MW)
20	Kamalanga TPP (GMR)	ER	595											595			595
21	JITPL	ER	894											894			894
22	Jorethang	ER	102											102	As per CERC order dated: 22.06.2017	96	96
23	Bhutan	ER	1213											1213			1213
24	Teesta-III	ER	959											959	As per CERC order dated: 22.06.2017	782	782
		ER															
		ER															
		ER															
		ER															
		ER															
		ER															
25	Dikchu HEP	ER	83						Dikchu	1	48	48	95	95			95
26		ER							Dikchu	2	48	48					
27	Nabinagar BRBCL	ER		Nabinagar BRBCL	1	230	151	151	Nabinagar BRBCL	2	230	151	151	301			301
28	Tashiding HEP	ER							Tashiding HEP	1	49	48	96	96			96
		ER							Tashiding HEP	2	49	48					
	TOTAL		25933					151					342	26342			25968

Note:

1. Projections are based on monthly maximum injection in the last 3 years from actual metered data.
2. Generation forecast has been done based on the following criteria
(i) If there is an increasing trend then last year average generation has been considered
(ii) Otherwise average of past three year average generation has been considered
3. In case of new generators where past data was not available following has been assumed
(i) 1.0 plf for hydro generators
(ii) 0.7 plf for thermal generators.
(iii) 0.3 plf for gas stations

DEMAND FORECAST USING PAST 3 YEARS DATA (April 2018 - June 2018)

	2015-16			2016-17			2017-18			1	2	3	4		
	Apr-15	May-15	Jun-15	Apr-16	May-16	Jun-16	Apr-17	May-17	Jun-17	2015-16 Average	2016-17Average	2017-18 Average	Projected Demand for (April 2018 - June 2018) before normalization	Data given by DICs	Comments
Bihar	2,945	2,630	2,892	3,521	3,638	3,441	3,904	4,021	4,131	2,822	3,533	4,019	4,654		
DVC	2,547	2,610	2,719	2,562	2,478	2,686	2,651	2,684	2,518	2,625	2,575	2,618	2,598	2945	As per data given by DVC
Jharkhand	1,043	1,067	1,083	1,177	1,498	1,119	1,197	1,211	1,228	1,064	1,265	1,212	1,328		
Odisha	3,850	3,880	3,824	4,012	3,898	3,970	4,227	4,208	3,929	3,851	3,960	4,121	4,248	4401	As per data given by GRIDCO
West Bengal	7,517	7,629	7,853	7,602	7,641	7,542	7,793	7,495	7,768	7,666	7,595	7,685	7,668		
Sikkim	77	77	83	112	93	93	91	78	78	79	99	82	90		
Eastern Region	**17,304**	**17,221**	**17,710**	**18,345**	**18,596**	**18,213**	**19,191**	**19,032**	**18,987**						

Notes

1. Projections are based on the past 3 years' monthly Peak Demand Met data available on the website of CEA
2. The above projections are being done for financial year 2018-2019 (Q1) i.e April 2018 to June 2018
3. Projections are being done based on the forecast function available in MS Office Excel
4. CEA Reports can be accessed from the following links:

http://www.cea.nic.in/reports/monthly/powersupply/2017/psp_peak-04.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2017/psp_peak-05.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2017/psp_peak-06.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2016/psp_peak-04.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2016/psp_peak-05.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2016/psp_peak-06.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2015/psp_peak-04.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2015/psp_peak-05.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2015/psp_peak-06.pdf

Annexure-B16

PPA details for the year 2017-18 to 2019-20

Name of the State :

		2017-18			2018-19			2019-20		
		Share/Contracted power (in MW)	Fixed Charges (Rs/kwh)	Variable charges (Rs/kwh)	Share/Contracted power (in MW)	Fixed Charges (Rs/kwh)	Variable charges (Rs/kwh)	Share/Contracted power (in MW)	Fixed Charges (Rs/kwh)	Variable charges (Rs/kwh)
1. Hydro Generation										
(a)	**Own generation**									
i.	Power station I									
ii.	Power station II									
iii.	Power station III									
iv.	Power station IV									

(b)	**CGS generation**									
i.	Power station I									
ii.	Power station II									
iii.	Power station III									
iv.	Power station IV									

(c)	**IPP`s generation**									
i.	Power station I									
ii.	Power station II									
iii.	Power station III									
iv.	Power station IV									

	---									
2. Thermal Generation (Coal/Gas/Nuclear)										
(a)	**Own generation**									
i.	Power station I									
ii.	Power station II									
iii.	Power station III									
iv.	Power station IV									

(b)	**CGS generation**									
i.	Power station I									
ii.	Power station II									
iii.	Power station III									
iv.	Power station IV									

(c)	**IPP`s generation**									
i.	Power station I									
ii.	Power station II									
iii.	Power station III									
iv.	Power station IV									

	---									
	3. RES Generation									
(a)	**Own generation**									
i.	Power station I									
ii.	Power station II									
iii.	Power station III									
iv.	Power station IV									

(b)	**CGS generation**									
i.	Power station I									
ii.	Power station II									
iii.	Power station III									
iv.	Power station IV									

(c)	**IPP`s generation**									
i.	Power station I									
ii.	Power station II									
iii.	Power station III									
iv.	Power station IV									

Annexure-B17

FoR Technical Committee on Grid Integration of Renewable Energy (RE), with reference to regional cooperation and other options for managing intra-day load / generation variation due to RE or otherwise -– Record of Proceedings of the meeting held on 18.8.2017.

In order facilitate implementation of Framework on Renewables at State Level, FoR constituted a Technical Committee under the Chairmanship of Shri A.S. Bakshi, Member, CERC. The mandate given to the Committee *inter alia* includes evolving a roadmap for implementation of Framework on Forecasting, Scheduling and Deviation Settlement of Wind & Solar generating stations at State Level, implementation of ABT Framework, introduction of Ancillary Services and Reserves, implementation of Automatic Generation and Primary Control etc.

2. The Technical Committee in its meeting held on 28.3.2017 at Chennai, discussed the matter related to Co-operation among States for Optimum Utilization of their Generation Resources, amongst the other issues. During the discussion, it was decided that sub-groups be constituted in the Northern Region, Western Region and Southern Region (the three RE rich regions) headed by the Member Secretaries of the respective Regional Power Committees (RPCs). The Sub-groups were mandated to examine the feasibility and modality of co-operation among States in the respective region for ensuring optimum utilization of generation resources with least cost options for balancing across the region and submit their findings before the Technical Committee.

3. A meeting of the Heads / Representatives of the Sub-Groups was convened under the Chairmanship of Shri A.S.Bakshi, Member, CERC on 18.8.2017 in CERC, New Delhi to review the progress on framework for regional co-operation. The list of participants is at **Annexure - I.**

4. The following emerged during the deliberations in the meeting:-

- Of late, the States have recognized the value of electricity resource vis-à-vis the cost of generation. Some of the States are not willing to cooperate with other States in the Region on “cost” basis.
- It was also observed that some of the Regions are predominantly “Surplus” in power, leaving little scope for co-operation within the region. This necessitates a national level framework / product for optimum resource utilization.
- Various other options for handling intra-day load / generation variation due to RE or otherwise were also discussed as at **Annexure-II,** viz. (i) Banking; (ii) DAM price on PX as reference; (iii) Pool based on VC as approved by the Regulator and on payment of cost; (iv) Pool based on VC as approved by the Regulator and on payment of MC; (v) Pool based on auction for intra-day for the rest of the day; (vi) Pool based on auction for intra-day on hourly basis; (vii) Pool based on auction for intra-day on intra-hour basis i.e for 15 min. block-wise etc.

5. During the meeting it was decided to share with all RPCs the options raised therein and seek feedback.

Annexure - I

List of participants attended meeting of the Sub-Group under FOR Technical Committee Meeting held on 18.8.2017 under the Chairmanship of Shri A.S. Bakshi, Member, CERC

1. Shri A.S. Bakshi, Member, CERC
2. Dr. M.K. Iyer, Member, CERC
3. Shri M.A.K.P. Singh, Member Secretary, NRPC
4. Shri A. Balan, Member Secretary, WRPC
5. Shri S.R. Bhat, Member Secretary, SRPC
6. Shri S.C. Shrivastava, Chief (Engineering), CERC
7. Dr. S.K. Chatterjee, Joint Chief (Regulatory Affairs), CERC
8. Shri K.V.S. Baba, CEO, POSOCO
9. Shri S.K. Soonee, Advisor (POSOCO)
10. Smt. Shilpa Agarwal, Joint Chief (Engg.)
11. Shri S.S. Barpanda, GM, NLDC
12. Shri Samir Saxena, DGM, NLDC
13. Shri M.M. Chaudhari Deputy Chief (Engg.)
14. Smt. Shruti Deorah, Advisor (RE), CERC
15. Shri Anil, SRPC
16. Shri H.K. Pandey, S.E, NRPC
17. Shri Rajasekhar Devaguptapu, Regulatory Executive Officer, CERC
18. Shri Siddharth Arora, Research Officer, CERC

Annexure-II

I. Options for Intra-Day / Hour Ahead transactions:

Seven options have been proposed for Hour Ahead Transactions.

Option-1: Banking

- Pros: Voluntary; No price transaction; Easy to implement
- Cons: Still bilateral; Opaque to cheaper options; True marginal cost of meeting demand not known; Elements of Cost and Value missing; No knowledge of gain or loss

Option-2: Day Ahead Market Price on Power Exchange as reference

- Pros: Well accepted reference price; Dispute free
- Cons: Very remote chance of availability of generation sources with marginal cost equal to or less than Day Ahead Market(DAM) price; Liquidity will always be an issue

Option-3: Pool, based on variable cost as approved by the Regulator and on payment of cost

- Pros: Visibility of all options for purchase decision; Dispute free as regulator approved Variable Cost (VC); All resources get paid as per their cost or marginal cost; Improvement over option 2, liquidity
- Cons: Still based on cost and not on value; VC difficult to ascertain; Merchant plants cannot participate as their tariffs are not determined by regulator

Option-4: Pool, based on variable cost as approved by the Regulator and on payment of marginal cost

- Pros: Same as Option 3; Improvement over Option 3 – element of 'value' introduced because of marginal cost based payment
- Cons: VC difficult to ascertain; Merchant plants cannot participate as their tariffs are not determined by regulator; Payment based on marginal cost may lead to heart burn; still administered

Option-5: Pool, based on auction (intra-day for the rest of the day)

- Pros: Market Discovered Price; Dispute free; Not administered; Akin to DAM but closer to real time
- Cons: Preparedness of Power Exchange (PX); Discoms' decision making process; OA registry, a pre-requisite

Option-6: Pool, based on auction (hourly)

- Pros: Market Discovered Price; Dispute free; Not administered; Akin to DAM but closer to real time
- Cons: Preparedness of PX; Discoms decision making process; OA registry, a pre-requisite

Option-7: Pool, based on auction (intra-hour i.e. 15 min. block)

- Pros: Market Discovered Price; Dispute free; Not administered; Akin to DAM but closer to real time
- Cons: Preparedness of PX; Discoms' decision making process; OA registry, a pre-requisite

II. Illustration:

a. Auction: 7.30 Hrs. – 8.00 Hrs. window, transaction for 'rest of the day' (Intra-day : Option 5) / 'for 9.00 – 10.00 Hrs.' (Hourly : Option 6) / 'for 9.00 – 9.15 Hrs.' (Intra-hour : Option 7), and so on
b. Generators can participate for sale of surplus power (over and above already scheduled on day-ahead basis)
c. Sellers (other than generators) and buyers can participate for surplus / deficit vis-à-vis their schedule on day-ahead basis
d. After the trade materializes under Option 5, 6 or 7 as the case may be, net schedule for the buyers and sellers shall be prepared, which will serve as reference point for DSM / UI
e. However, payment for 'Day-ahead' transaction and 'Intra-day' (Option 5) / 'Hourly' (Option 6) / 'Intra-hour' (Option 7) transactions shall be settled separately based on the schedules for the respective segments
f. Open Access Registry and delegation of decision making authority to operating level at Discom are pre-conditions to success of this framework.

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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 Chhatrapur – Ganjam 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

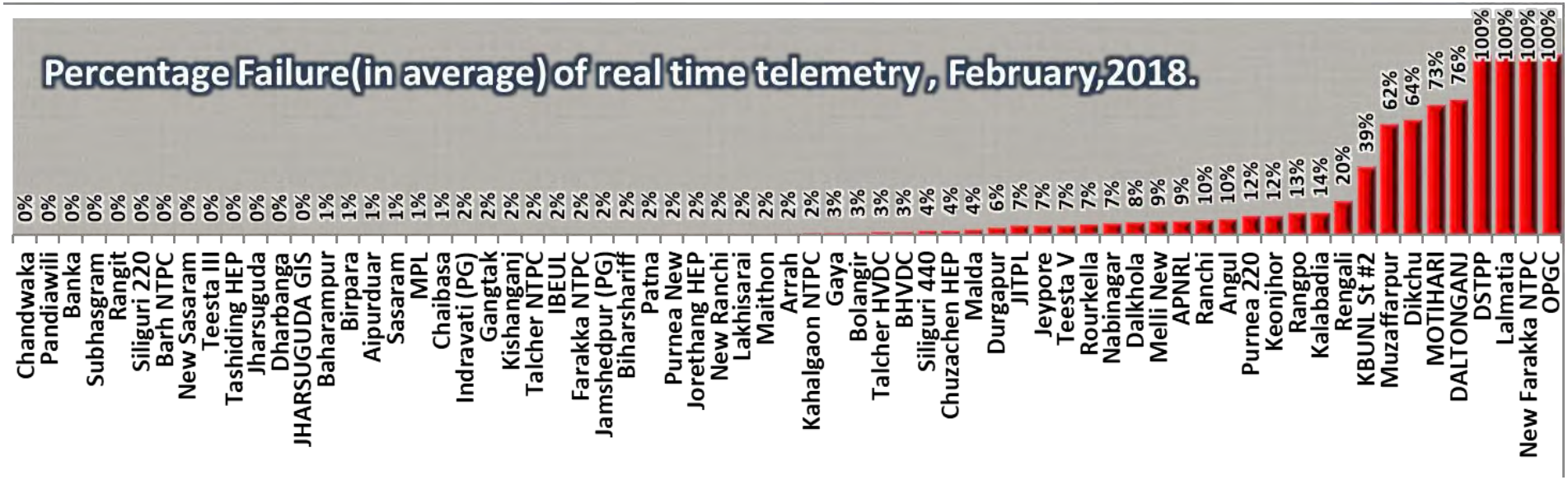
Priority	Feeders/ICTs	Point of Disconnection
1	One 400/220 kV 315 MVA ICT Jamsedpur	400 kV Jamsedpur
2	220 kV Ranchi(PG)-Chandil(JUVNL)	220 kV Ranchi-PG
Intra-state Feeders		**Remarks**
132kV Chandil – Golmuri D/C		
132kV Dumka-Pakur S/C		

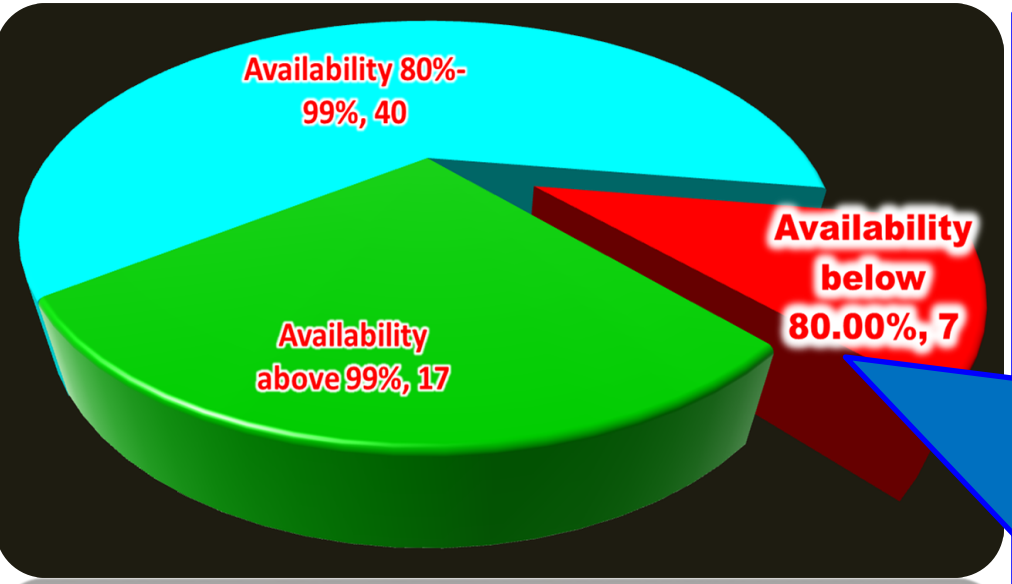
BSPTCL System

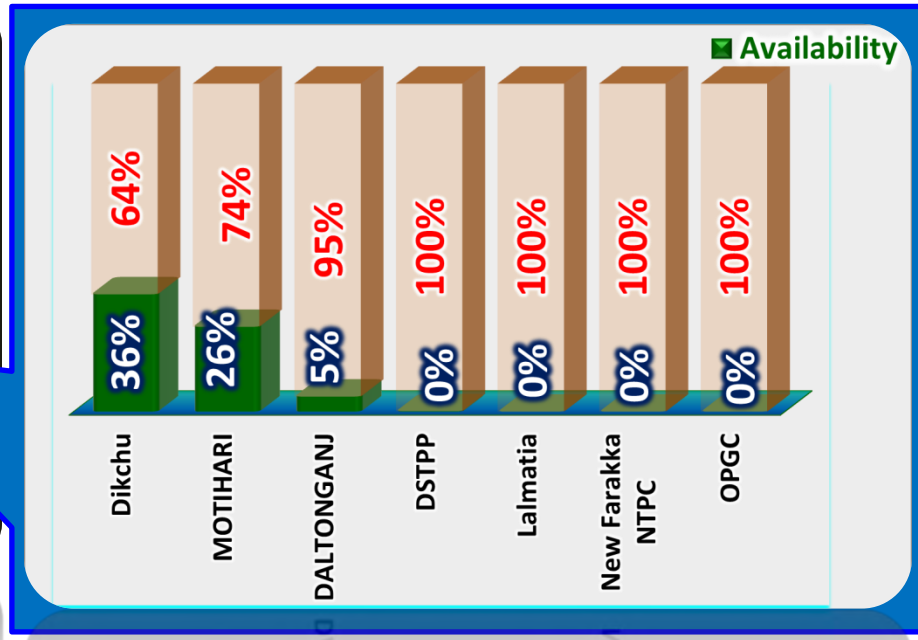
Priority	Feeders/ICTs	Point of Disconnection
1	132kV Banka(PG)-Banka D/C line	132kV Banka PG
2	132kV Banka(PG)-Sultanganj D/C	132kV Banka PG
3	132kV Ara(PG)-Jagdishpur S/C line	132 kV Ara PG

Overview of real time telemetry of Eastern region

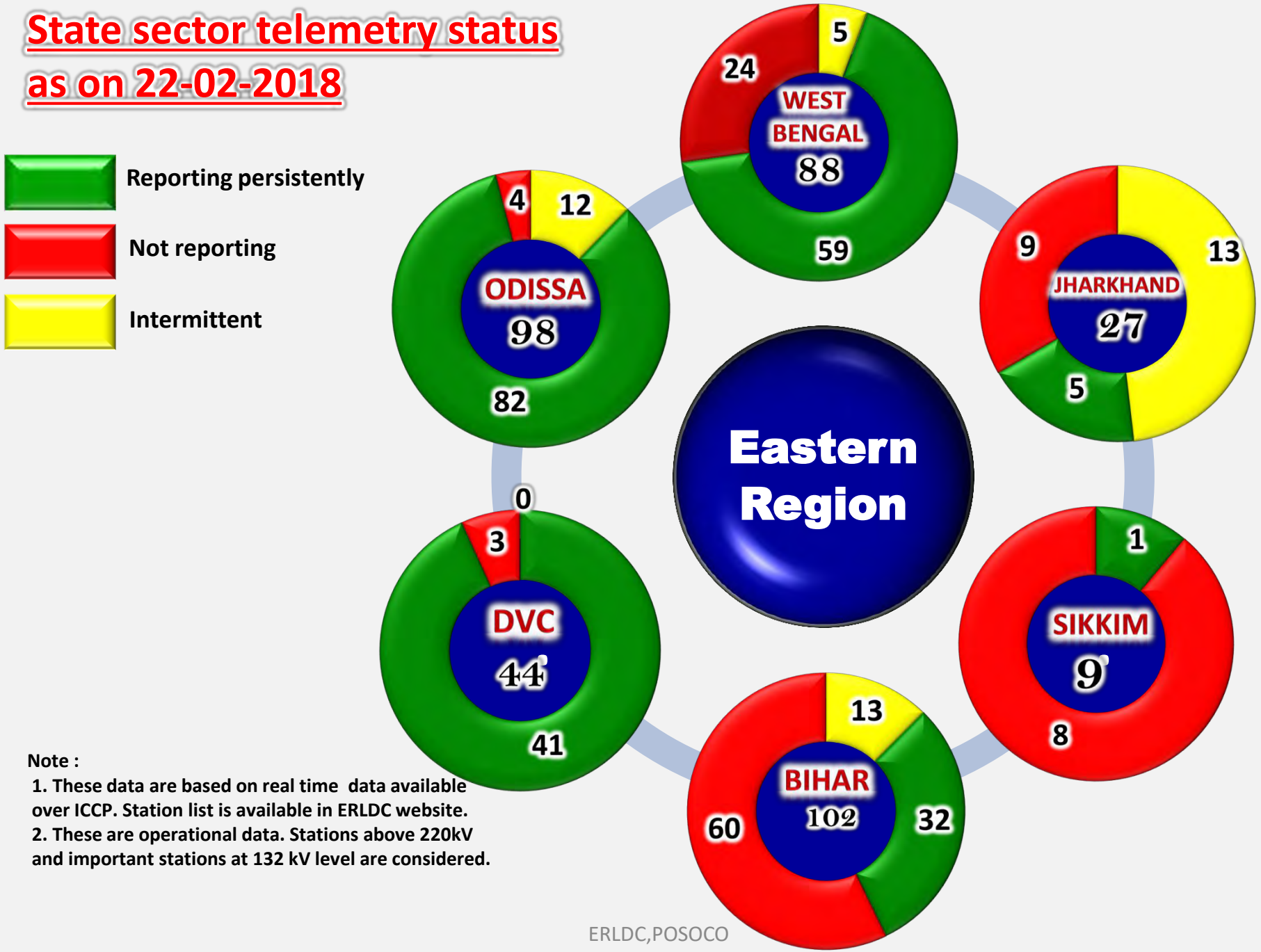
Annexure-C17







State sector telemetry status as on 22-02-2018



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:**
  - **Sagardighi TPS (WB) since 13-12-2017.**
  - **New Farakka (NTPC) since 09-09-2017.**
  - **Lalmatia(NTPC) since 01-01-2018.**
- **Non availability of Unit side data→**
  - **Farakka STPS (Unit #6).**
  - **GMR (Unit #1, Unit #2, Unit #3)**

BIHAR

List of station having availability higher than 90%

Biharsharif(220kV)	BODH GAYA(220kV)	Darbhanga(220kV)	Hajipur(220kV)	KHAGAUL(220kV)	Kishanganj new(220kV)
Madhepura(220kV)	Pusauli(220kV)	Sipara(220kV)	BARH(132kV)	BARIPAHARI(132kV)	BETIAH(132kV)
BIHTA(132kV)	Chhapra(132kV)	DIGHA(132kV)	Hajipur Old(132kV)	Jakkanpur(132kV)	Khagaria(132kV)
Kundra(132kV)	LAKHISARAI(132kV)	Raxaul (132kV)	Sabour(132kV)	Sasaram(132kV)	Shekhpura(132kV)
Sitamarhi(132kV)	Sonenagar(132kV)	Vaishali(132kV)	Valmikinagar(132kV)	Wazirganj(132kV)	

List of station having availability higher than 10% and less than 90%

GOPALGANJ(220kV)	Samastipur new(220kV)	Uda Kishanganj(220kV)	BANJARI(132kV)	DHAKA(132kV)	Dumraon(132kV)
Jagdishpur(132kV)	Jai Nagar(132kV)	Runisaidpur(132kV)	SAHARSA(132kV)	Sherghati(132kV)	Shitalpur(132kV)
SKMCH(132kV)					

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

Begusarai(220kV)	DEHRI(220kV)	Fatuha(220kV)	sonenagar new(220kV)	Arrah(132kV)	Aurangabad(132kV)
Banka(132kV)	Belaganj(132kV)	BIKRAMGANJ(132kV)	BUXAR(132kV)	Chandauti(132kV)	Dalsinghsarai(132kV)
Dhandaha(132kV)	Ekangarsarai(132kV)	Ekma(132kV)	Forbisganj(132kV)	Gaighat(132kV)	Gangwara(132kV)
GOH(132kV)	Harnaut(132kV)	Hathidah(132kV)	HULASGANJ(132kV)	Imamgunj(132kV)	Jahanabad(132kV)
Jamalpur(132kV)	Jamui(132kV)	Jandaha(132kV)	Kahalgaon(132kV)	KARBIGAHIA(132kV)	Karmnasa(132kV)
Karpi(132kV)	Katihar(132kV)	Katra(132kV)	Kishanganj(132kV)	Kochas (Dinara)(132kV)	Koshi(132kV)
Kusheswar Asthan (132kV	Madhubani(132kV)	MASAURHI(132kV)	MASRAKH(132kV)	Mithapur(132kV)	Mohania(132kV)
Motihari(132kV)	affarpur (Ramdayalu)(132	Nalanda(132kV)	Naugachhia(132kV)	Nawada(132kV)	Pandaul(132kV)
Phulparas (132kV)	Purnea(132kV)	RAFIGANJ(132kV)	Rajgir(132kV)	Ramnagar(132kV)	Samastipur(132kV)
Siwan(132kV)	Sonebarsa(132kV)	Sultanganj(132kV)	Supaul(132kV)	TEHTA(132kV)	Tekari(132kV)

DVC

List of station having availability higher than 90%

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

List of station having availability higher than 10% and less than 90%

List of station having availability less than 10%

GIRIDHI(132kV) KHARAGPUR(132kV) NIMIAGHAT(132kV)

JHARKHAND

List of station having availability higher than 90%

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

List of station having availability higher than 10% and less than 90%

Adityapur(132kV) Chakradharpur(132kV) Daltonganj(132kV) Dumka(132kV) Golmuri(132kV) Japla(132kV)
Kamdara(132kV) Kanke(132kV) Lalmatia(132kV) Latehar(132kV) Namkum(132kV) Noamundi(132kV)
Pakur(132kV)

List of station having availability less than 10%

Hatia-II(220kV) Ramchandrapur(220kV) Deoghar(132kV) Garawah(132kV) Goilkera(132kV) Jamtara(132kV)
Manique(132kV) Rajkharsawan(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)	CHANDITALA(400kV)	Asansol(220kV)
DPL(220kV)	Durgapur(220kV)	Gokarna(220kV)	Rishra(220kV)	NJP(220kV)	BTPS(132kV)
Liluah(132kV)	Rammam(132kV)	Saltlake(132kV)	Titagarh(132kV)	NBU(132kV)	Ashoknagar(132kV)
Adisaptagram(132kV)	Borjora(132kV)	Bighati(132kV)	Kursiang(132kV)	NPPSP(400kV)	FOUNDRY PARK(220kV)
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 higher than 10% and less than 90%

STPS(220kV)	Bishnupur(132kV)	Maldah(132kV)	Tcf-2(132kV)	New Bishnupur(220kV)	

List of station having availability less than 10%

Haldia New(220kV)	Dalkhola(220kV)	Sagardighi(400kV)	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)	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)	Chandaka(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)
IB TPS(220kV)	Bolangir New(220kV)	Tarkera(220kV)	Barkote(220kV)	TATA POWER(220kV)	JSL(220kV)
TSIL(220kV)	VEDANTA(220kV)	JSPL(220kV)	MIL(220kV)	OPTCL (Podia)(220kV)	Sunabeda(132kV)
Machhkund HPS(132kV)	Rayagada(132kV)	Chhatrapur(132kV)	Aska(132kV)	Bhubaneswar (132kV)	Khurda(132kV)
Puri(132kV)	Cuttack(132kV)	Choudwar(132kV)	ICCL(132kV)	Chainpal(132kV)	Rairangpur(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)	ARATI(132kV)	AISCL(132kV)	IMFFA(132kV)	MINAKHEE(132kV)
OPCL(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)
Patnagarh(132kV)	Pattamundai(132kV)	Phulbani(132kV)	Kalarangi(132kV)		

List of station having availability higher than 10% and less than 90%

Bidanasi(220kV)	Akhusinga(132kV)	Basta(132kV)	Balugaon(132kV)	Dhenkanal(132kV)	Kamakhyanagar(132kV)
SHYAM(132kV)	OCLRJ(132kV)	OCL(132kV)	Kesura(132kV)	Parlakhemundi(132kV)	Sundargarh(132kV)

List of station having availability less than 10%

VISA(220kV)	Kesinga(132kV)	Sijua(132kV)	VEDANTA(LANGIGARH)(132kV)

Annexure-C19

List of the ICT/ATR/TRF belong to ISGS & ISTS transmission licensees

Name of S/S	Voltage level	Capacity (MVA)	No of ICT	Tap provided in which side	No of Taps	Voltage (kV) change per Tap	Present Tap position	Nominal Tap position	Make
Angul	765/400	1500	4	HV	23	4	12	12	NA
Gaya	765/400	1500	3	HV	23	4	12	12	NA
Jharsuguda	765/400	1500	2	HV	23	4	12	12	NA
New Ranchi	765/400	1500	2	HV	23	4	12	12	NA
New Sasaram	765/400	1500	2	HV	23	4	12	12	NA
Alipurduar	400/220	315	2	NA	NA	NA	NA	NA	NA
Baripada	400/220	315	2	HV	17	5	11	9	NA
Baripada	400/220	500	1	NA	NA	NA	NA	NA	NA
Biharshariff	400/220	315	3	HV	17	5	12	9	NA
Binaguri	400/220	315	2	HV	17	5	10	9	NA
Bolangir	400/220	315	2	HV	17	5	9B	9	NA
Chaibasa	400/220	315	2	HV	17	5	9B	9B	NA
Darbhanga	400/220	500	2	NA	NA	NA	NA	NA	NA
FSTPP	400/220	315	1	HV	17	5	11	9B	NA
Gaya	400/220	315	1	HV	17	5	12	9	NA
Gaya	400/220	500	1	HV	17	5	12	9	NA
Indravati	400/220	315	1	HV	17	5	9B	9	NA
Jamshedpur	400/220	315	3	HV	17	5	15	9	NA
Jeypore	400/220	315	2	HV	17	5	14	9	NA
Keonjhar	400/220	315	2	HV	17	5	9B	9B	NA
Kishangunj	400/220	500	2	HV	17	5	9B	9B	NA
Maithon	400/220	315	1	HV	17	5	9B	9B	NA
Maithon	400/220	500	1	HV	17	5	9B	9B	NA
Malda	400/220	315	2	HV	17	5	10	9	NA
Muzzaffarpur	400/220	315	2	HV	17	5	12	9B	NA
Muzzaffarpur	400/220	500	1	HV	17	5	12	9B	NA
New Purnea	400/220	500	2	HV	17	5	11	9	NA
Pandiabili	400/220	500	2	HV	17	5	9B	9B	NA
Parulia	400/220	315	2	HV	17	5	11	9	NA
Patna	400/220	315	1	HV	17	5	9B	9B	NA
Patna	400/220	500	1	HV	17	5	9B	9B	NA
Ranchi	400/220	315	2	HV	17	5	9B	9	NA
Rangpo	400/220	315	5	HV	17	5	9	9	NA
Rengali	400/220	315	2	HV	17	5	9	9	NA
Rourkela	400/220	315	2	HV	17	5	10	9	NA
Sasaram	400/220	315	1	HV	17	5	14	9	NA
Sasaram	400/220	500	1	HV	17	5	14	9	NA
Subhasgram	400/220	315	4	HV	17	5	9	9	NA
Subhasgram	400/220	500	1	HV	17	5	9	9	NA
TSTPP	400/220	315	2	HV	17	5	13	9	NA
Banka	400/132	200	2	HV	17	5	7	9	NA
Barh	400/132	200	2	NA	NA	NA	NA	NA	NA
KhSTPP	400/132	200	2	HV	17	5	10	9	NA
Lakhisarai	400/132	200	2	HV	17	5	9	9	NA
Nabinagar	400/132	200	2	NA	NA	NA	NA	NA	NA
Arrah	220/132	100	2	LV	17	1.65	9	13	NA
Arrah	220/132	160	1	LV	17	1.65	9	13	NA
Baripada	220/132	160	2	NA	NA	NA	NA	NA	NA
Birpara	220/132	160	2	LV	17	1.65	12	13	NA
Bolangir	220/132	160	1	NA	NA	NA	NA	NA	NA
Dikchu	400/132	270	1	NA	NA	NA	NA	NA	NA
Malda	220/132	160	2	LV	17	1.65	10	13	NA
Malda	220/132	50	1	LV	17	1.65	10	13	NA
Muzzaffarpur	220/132	100	1	NA	NA	NA	NA	NA	NA
NJP	220/132	100	2	LV	17	1.65	9	13	NA
NJP	220/132	160	1	LV	13	1.65	7	13	NA
Purnea	220/132	160	3	LV	17	1.65	9	13	NA
Rangpo	220/132	100	3	LV	17	1.65	NA	13	NA
Gangtok	132/66	50	2	HV	17	1.65	9B	9	NA

* NA means data not available

List of the ICT/ATR/TRF belong to BSPHCL

Name of S/S	Voltage level	Capacity (MVA)	No of ICT	Tap provided in which side	No of Taps	Voltage (kV) change per Tap	Present Tap position	Nominal Tap position	Make
Begusarai	220/132	100	2	HV	17	1.75	4	9	NA
Biharshariff	220/132	150	3	HV	17	2.75	4	5	NA
Bodhgaya	220/132	150	4	HV	25	1.85	9 (216.5 kV)	7	NA
Darbhanga	220/132	100	2	HV	13	2.75	10	9	NA
Dehri	220/132	100	4	HV	17	2.75	5	5	NA
Fatuah	220/132	100	4	HV	17	2.75	7	9	NA
Gopalgunj	220/132	100	2	HV	13	2.75	7	9	NA
Hazipur	220/132	100	3	HV	17	2.75	NA	9	NA
Khagul	220/132	100	3	HV	17	2.75	7	9	NA
Madhepura	220/132	100	2	NA	NA	NA	NA	NA	NA
Madhepura	220/132	160	1	NA	NA	NA	NA	NA	NA
MTPS	220/132	100	2	LV	17	1.65	1	9	NA
MUSHAHRI	220/132	160	2	HV	17	1.65	9	9	NA
Muzzaffarpur	220/132	100	3	HV	17	2.75	NA	9	NA
New Kishangunj	220/132	160	2	HV	17	2.75	NA	9	NA
Pusouli	220/132	150	2	HV	17	1.75	9	9	NA
Samastipur	220/132	160	2	LV	17	1.65	1	9	NA
Sipara	220/132	150	2	HV	17	1.65	9	9	NA
Sipara	220/132	160	1	HV	17	1.65	9	9	NA
Sonenagar	220/132	160	2	HV	17	2.75	NA	9	NA

* NA means data not available

List of the ICT/ATR/TRF belong to JUVNL

Name of S/S	Voltage level	Capacity (MVA)	No of ICT	Tap provided in which side	No of Taps	Voltage (kV) change per Tap	Present Tap position	Nominal Tap position	Make
Chaibasa	220/132	50	2	HV	17	2.75	5	9	
Chaibasa	220/132	150	2	HV	13	2.75	9	9	
Chandil	220/132	100	4	HV	17	2.75	9	5	
Dumka	220/132	150	2	HV	17	2.75	7	9	
Hatia	220/132	150	3	HV	17	2.75	5	9	
Lalmatia	220/132	100	2	HV	17	2.75	5	9	
Patratu	220/132	150	2	HV	17	2.75	12	9	
Ramchandrapur	220/132	150	2	HV	19	2.75	10	9	
Ramchandrapur	220/132	150	1	HV	17	2.75	5	9	

* NA means data not available

List of the ICT/ATR/TRF belong to DVC

Name of S/S	Voltage level	Capacity (MVA)	No of ICT	Tap provided in which side	No of Taps	Voltage (kV) change per Tap	Present Tap position	Nominal Tap position	Make
Bokaro A	400/220	315	2	NA	NA	NA	NA	NA	NA
Koderma	400/220	315	2	HV	17	5	9B	9B	NA
RTPS	400/220	315	2	NA	NA	NA	NA	NA	NA
TISCO	400/220	315	2	HV	17	5	9B	9B	NA
Bokaro B	220/132	150	2	HV	17	2.75	NA	9	NA
Borojora	220/132	150	2	HV	17	2.75	7	9	NA
CTPS	220/132	150	2	HV	17	2.75	NA	9	NA
CTPS	220/132	100	2	LV	17	1.65	NA	9	NA
Giridih	220/132	150	1	HV	17	2.75	9B	9B	NA
Giridih	220/132	160	1	HV	17	2.75	9B	9B	NA
Jamshedpur	220/132	150	1	HV	17	2.75	3	9	NA
Jamshedpur	220/132	160	1	HV	17	2.75	3	9	NA
Kalyaneswari	220/132	150	3	HV	17	2.75	11	9	NA
Ramgarh	220/132	150	2	HV	17	2.75	10	9	NA
Waria	220/132	150	2	HV	17	2.75	NA	9	NA
Borojora	220/33	50	2	NA	NA	NA	NA	NA	NA
Burnpur	220/33	50	2	NA	NA	NA	NA	NA	NA
Durgapur	220/33	80	1	NA	NA	NA	NA	NA	NA
Giridih	220/33	80	1	NA	NA	NA	NA	NA	NA
Muchipara	220/33	80	1	NA	NA	NA	NA	NA	NA
Muchipara	220/33	50	2	NA	NA	NA	NA	NA	NA

* NA means data not available

List of the ICT/ATR/TRF belong to GRIDCO

Name of S/S	Voltage level	Capacity (MVA)	No of ICT	Tap provided in which side	No of Taps	Voltage (kV) change per Tap	Present Tap position	Nominal Tap position	Make
Indravati	400/220	315	1	HV	17	5	9B	9B	NA
Mendasal	400/220	315	2	HV	17	5	9	9	NA
Meramundali	400/220	315	2	HV	17	5	10	9	NA
New Duburi	400/220	315	2	HV	17	5	9	9	NA
STERLITE	400/220	315	2	HV	17	5	11	9	NA
Atri	220/132	160	1	NA	NA	NA	NA	NA	NA
Balasore	220/132	160	2	LV	17	1.65	NA	9	NA
Bhanjanagar	220/132	160	2	LV	17	1.65	NA	9	NA
Bidansi	220/132	160	1	LV	17	1.65	NA	9	NA
Bidansi	220/132	100	2	LV	17	1.65	NA	9	NA
Budipadar	220/132	160	2	LV	17	1.65	NA	9	NA
Chandaka	220/132	100	3	LV	17	1.65	NA	9	NA
Duburi	220/132	100	3	LV	17	1.65	NA	9	NA
Jaynagar	220/132	100	2	HV	17	2.75	NA	9	NA
Joda	220/132	100	3	LV	33	-0.83	11	17	NA
Katapalli	220/132	160	1	LV	17	1.65	NA	9	NA
Katapalli	220/132	100	2	LV	17	1.65	NA	9	NA
Mendasal	220/132	160	2	NA	NA	NA	NA	NA	NA
Meramundali	220/132	100	3	LV	17	1.65	NA	9	NA
Narendrapur	220/132	160	2	NA	NA	NA	NA	NA	NA
Narendrapur	220/132	100	1	LV	17	1.65	NA	13	NA
Paradeep	220/132	160	1	NA	NA	NA	NA	NA	NA
Paradeep	220/132	100	1	NA	NA	NA	NA	NA	NA
Puri	220/132	160	2	NA	NA	NA	NA	NA	NA
New Bolangir	220/132	160	2	LV	17	1.65	NA	9	NA
Samungara	220/132	NA	NA	HV	17	2.75	NA	9	NA
Tarkera	220/132	100	4	LV	17	1.65	NA	9	NA
Theruvali	220/132	100	2	LV	17	1.65	NA	9	NA
TTPS	220/132	160	2	LV	17	1.65	NA	9	NA
TTPS	220/132	150	1	LV	33	-0.83	NA	17	NA

* NA means data not available

List of the ICT/ATR/TRF belong to WBPDCL/WBSETCL/WBSEDCL

Name of S/S	Voltage level	Capacity (MVA)	No of ICT	Tap provided in which side	No of Taps	Voltage (kV) change per Tap	Present Tap position	Nominal Tap position	Make
Arambag	400/220	315	4	HV	17	5	13	9	NA
Bakreswar	400/220	315	2	HV	17	5	11	9	NA
Bidhannagar	400/220	315	2	HV	17	5	9B	9	NA
Gokarna	400/220	315	2	NA	NA	NA	NA	NA	NA
Jeerat	400/220	315	4	LV	17	2.88	11	NA	NA
Kharagpur	400/220	315	3	HV	17	5	7	9	NA
KTPP	400/220	315	2	HV	17	5	12	9	NA
Sagardighi	400/220	315	1	HV	17	5	NA	9	NA
Arambag	220/132	160	1	LV	17	1.65	NA	9	NA
Arambag	220/132	100	1	LV	17	1.65	NA	9	NA
Asansol	220/132	160	2	LV	17	1.65	NA	9	NA
BBGS	220/132	NA	2	HV	16	5.55	10	9	NA
Bantala	220/132	160	1	NA	NA	NA	NA	NA	NA
Bidhannagar	220/132	160	2	LV	17	1.65	NA	9	NA
Dalkhola	220/132	160	2	LV	17	1.65	NA	9	NA
Dharma	220/132	160	2	LV	17	1.65	NA	9	NA
Domjur	220/132	160	2	LV	17	1.65	NA	9	NA
DPL (AREVA)	220/132	160	1	LV	17	1.65	9	9	NA
DPL (BHEL)	220/132	100	1	LV	17	1.65	9	9	NA
DPL (China)	220/132	160	1	HV	19	2.75	10	10	NA
EMSS	220/132	160	3	NA	NA	NA	NA	NA	NA
Egra	220/132	160	2	NA	NA	NA	NA	NA	NA
Foundry Park	220/132	160	2	NA	NA	NA	NA	NA	NA
Gokarna	220/132	160	2	LV	17	1.65	NA	9	NA
Howrah	220/132	150	3	LV	17	1.65	NA	9	NA
Howrah	220/132	160	1	NA	NA	NA	NA	NA	NA
Jeerat	220/132	160	3	LV	17	1.65	NA	9	NA
Kasba	220/132	160	2	LV	17	1.65	NA	9	NA
Kasba	220/132	150	2	NA	NA	NA	NA	NA	NA
Kharagpur	220/132	160	2	NA	NA	NA	NA	NA	NA
Krishnanagar	220/132	160	2	LV	17	1.65	NA	9	NA
KTPP	220/132	160	1	LV	17	1.65	NA	9	NA
KTPP	220/132	150	2	LV	17	1.65	NA	9	NA
Laxmikantapur	220/132	160	3	LV	17	1.65	NA	9	NA
New Bishnupur	220/132	160	3	NA	NA	NA	NA	NA	NA
New Haldia	220/132	160	2	NA	NA	NA	NA	NA	NA
N Jalpaiguri	220/132	160	2	LV	17	1.65	NA	9	NA
Rajarhat	220/132	160	2	NA	NA	NA	NA	NA	NA
Rishra	220/132	160	2	LV	17	1.65	NA	9	NA
Santaldih	220/132	100	1	LV	17	1.65	NA	9	NA
Santaldih	220/132	130	1	NA	NA	NA	NA	NA	NA
Satgachia	220/132	160	2	LV	17	1.65	NA	9	NA
Subhasgram	220/132	160	2	NA	NA	NA	NA	NA	NA
Vidyasagar Park	220/132	160	2	NA	NA	NA	NA	NA	NA

* NA means data not available

List of the GT situated in the Eastern Region

Name of Generating Unit	Voltage level	Capacity (MVA)	No of GT	Tap provided in which side	No of Taps	Voltage (kV) change per Tap	Present Tap position	Nominal Tap position	Owner	Make
APNRL I	400/16.5	330	1	HV	19	4.83	8(420 KV)	NA	APNRL	NA
APNRL II	400/16.5	340	1	HV	5	10.5	3 (420 KV)	NA	APNRL	NA
CHPC - I	220/11	105.882353	1	HV	5	4.5	NA	4 (220 KV)	Bhutan	NA
Nabinagar (250 MW)	NA	NA	1	NA	NA	NA	NA	NA	BRBCL	NA
Nabinagar (250 MW)	NA	NA	1	NA	NA	NA	NA	NA	BRBCL	NA
BTPS VI & VII	139/11	147.058824	2	HV	5	3.475	2 (142.5 KV)	3 (139 KV)	BSPHCL	NA
MTPS - I & II	230/11	164.705882	2	HV	6	5.75	NA	4 (230 KV)	BSPHCL	NA
MTPS -III (195 MW)	NA	NA	1	NA	NA	NA	NA	NA	BSPHCL	NA
BBGS I & II	132/16.5	294.117647	2	LV	9	0.4125	6 (16.09 KV)	5 (16.50 KV)	CESC	NA
BBGS III	235/16.5	294.117647	1	HV	9	5.875	5 (235 KV)	5 (235 KV)	CESC	NA
Jorethang (48 MW)	NA	NA	2	NA	NA	NA	NA	NA	DEPL	NA
Bokaro A (500 MW)	NA	NA	1	NA	NA	NA	NA	NA	DVC	NA
Bokaro B (210 MW)	NA	NA	3	NA	NA	NA	NA	NA	DVC	NA
CTPS (140 MW)	132/13.8	164.705882	2	HV	5	3.3	NA	3 (132 KV)	DVC	NA
CTPS B (210 MW)	NA	NA	2	NA	NA	NA	NA	NA	DVC	NA
DSTPS I & II	400/21	588.235294	2	HV	9	10.5	5 (420 KV)	7 (399 KV)	DVC	NA
Koderma I & II	400/21	588.235294	2	HV	9	10.5	5 (420 KV)	7 (399 KV)	DVC	NA
Mejia I - IV	220/15.75	247.058824	4	HV	5	5.5	NA	3 (220 KV)	DVC	NA
Mejia V & VI	220/16.5	294.117647	2	HV	5	6	NA	NA	DVC	NA
Mejia VII & VIII	400/21	588.235294	2	HV	9	10.5	4 (430.5)	7 (399 KV)	DVC	NA
RTPS (600 MW)	NA	NA	2	NA	NA	NA	NA	NA	DVC	NA
Waria IV	220/16	294.117647	1	HV	5	5.5	NA	3 (220 KV)	DVC	NA
Chujachen (110 MW)	NA	NA	2	NA	NA	NA	NA	NA	GIPL	NA
GMR (350 MW)	NA	NA	3	NA	NA	NA	NA	NA	GKEL	NA
Haldia (300 MW)	NA	NA	2	NA	NA	NA	NA	NA	HEL	NA
Ind Bharat (350 MW)	NA	NA	1	NA	NA	NA	NA	NA	IBEUL	NA
Ind Bharat (350 MW)	NA	NA	1	NA	NA	NA	NA	NA	IBEUL	NA
IBTPS I & II	220/15.75	294.117647	2	HV	5	5.5	NA	3 (220 KV)	IBTPS	NA
JITPL (600 MW)	NA	NA	2	NA	NA	NA	NA	NA	JITPL	NA
SUBARNAREKHA	132/11	94.1176471	2	HV	5	3.3	2 (138.6 KV)	4 (132 KV)	JUVNL	NA
Maithon RB (525 MW)	NA	NA	2	NA	NA	NA	NA	NA	MPL	NA
NALCO I - VIII	220/10.5	141.176471	8	HV	5	5.875	NA	NA	NALCO	NA
Teesta V (170 MW)	400/13.8	70	9	HV	5	10	3 (400 kV)	3 (400 kV)	NHPC	ALSTOM
Barh IV & V (660 MW)	NA	NA	2	NA	NA	NA	NA	NA	NTPC	NA
FSTPP -I	400/15.75	247.058824	1	HV	5	10.5	3 (420 KV)	5 (399 KV)	NTPC	NA
FSTPP -II & III	400/15.75	247.058824	2	HV	13	5.25	6 (414.8 KV)	9(399 KV)	NTPC	NA
FSTPP -IV, V & VI	400/21	588.235294	3	HV	13	5.25	7 (409.5 KV)	9(399 KV)	NTPC	NA
KhSTPP I, II, III & IV (210 MW)	NA	NA	4	NA	NA	NA	NA	NA	NTPC	NA
KhSTPP V, VI & VII (500 MW)	NA	NA	3	NA	NA	NA	NA	NA	NTPC	NA
TSTPP I & II	400/21	588	2	HV	13	5.25	8 (404.3 KV)	9(399 KV)	NTPC	NA
Balimela I - VI	132/11	70.5882353	6	HV	5	3.615	NA	NA	OHPC	NA
Balimela VII - VIII	132/11	88.2352941	2	HV	7	3.615	NA	NA	OHPC	NA
Rengali I - V	220/11	58.8235294	5	HV	5	5	NA	NA	OHPC	NA
U Indravati (150 MW)	NA	NA	4	NA	NA	NA	NA	NA	OHPC	NA
U Kolab I - IV	220/11	94.1176471	4	HV	6	6.25	NA	NA	OHPC	NA
TTPS I - IV	132/13.8	70.5882353	4	HV	6	3.2	NA	NA	OPGC	NA
TTPS V - VI	132/11	129.411765	2	HV	9	6	NA	NA	OPGC	NA
SEL	242.4/22	750	4	HV	5	5.45	3 (242.45)	3 (242.45)	SEL	NA
Dikchu (48 MW)	NA	NA	2	NA	NA	NA	NA	NA	SKPPPL	NA
Teesta III (200 MW)	NA	NA	6	NA	NA	NA	NA	NA	TUL	NA
TENUGHAT	220/15.75	294.117647	2	HV	9	5.5	1 (231 KV)	3 (220 KV)	TVNL	NA
BKTPS	420/15.75	247.058824	5	HV	5	10.5	3 (420 KV)	NA	WBPDCL	NA
BTPS I, II & IV	132/13.2	117.647059	3	HV	7	3.3	2 (135.3 KV)	3 (132 KV)	WBPDCL	NA
BTPS V	138/15.75	276.470588	1	HV	3	3.45	3 (134.55)	2 (138 KV)	WBPDCL	NA
DPL III & V	132/10.5	100	2	HV	18	1.88	8 (135.76)	10 (132 KV)	WBPDCL	NA
DPL VI	235/11	125	1	HV	5	5.87	3(235 KV)	3(235 KV)	WBPDCL	NA
DPL VII	220/20	370	1	HV	5	5.87	3(235 KV)	NA	WBPDCL	NA
DPL VIII	220/16.5	315	1	HV	5	5.87	3(235 KV)	NA	WBPDCL	NA
KTPS I, II, III	220/15.75	247.058824	3	HV	5	5.75	3 (230 KV)	NA	WBPDCL	NA
KTPS IV, VI	420/15.75	247.058824	2	HV	5	10.5	4 (409.5 KV)	3 (420 KV)	WBPDCL	NA
KTPS V	420/15.75	247.058824	1	HV	5	10.5	5 (399 KV)	3 (420 KV)	WBPDCL	NA
Sagardighi I & II	400/20	352.941176	2	HV	5	10	NA	3 (400 KV)	WBPDCL	NA
STPS	220/13.8	164.705882	4	HV	5	5.5	NA	3 (220 KV)	WBPDCL	NA
STPS V & VI	220/16.5	294.117647	2	HV	5	5.875	4 (229.13)	NA	WBPDCL	NA

* NA means data not available

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:

JINDAL INDIA THERMAL POWER LIMITED
VILL/P.O : DERANG, TEH. : KANIHA, DIST. : ANGUL, ODISHA, PIN-759117
Phone : +91 9583040700/701/702/703

Date: 05.02.2018

To,
The Member Secretary,
ERPC,
Kolkata.

Kind attention: **Mr. P. Mukhopadhyay**

Subject: Energy meter time drift between JITPL power plant and PGCIL, 400 KV Phoolpada receiving station

Dear Sir,

With reference to attached emails we wish to inform that there was time drift between SEM energy meters of 400 KV transmission lines 1 and 2 emanating from 2 X 600 MW JITPL Derang power station to PGCIL Phoolpada receiving station. The matter was taken up with PGCIL for time synchronization of these energy meters. Subsequently PGCIL suggested us to adjust time drift as per their laid down procedure. Time drift adjustment activity was started in check meters at JITPL end on 09 July 2016. As per OEM of SEM meters M/S L&T time drift is adjustable at rate one minute per week.

On 23.07.2016 when activity of time drift was initiated, both the check meters failed. The same was intimated to PGCIL and ERLDC on 23rd July 2016. ERLDC / PGCIL suggested shifting SEM meters of GT 1 and GT 2 to line 1 and line 2 respectively at JITPL end due to non availability of SEM meter at PGCIL stock as per verbal feedback. Hence on 26th July 2016 these meters were shifted as suggested by ERLDC.

Since then both the check meters of GT 1 and GT2 are not available at JITPL end. As well as activity of adjusting time drift is also on HOLD as per PGCIL instruction. Due to time drift we are not able to maintain the load schedule. Still PGCIL is not responding on the same issue.

Kindly advise PGCIL to arrange the replacement of failed SEM meters and initiate adjustment of time drift between JITPL and PGCIL Phoolpada receiving station.

Thanking you,

Yours faithfully,
B.K. Pandey,
Plant Head,
JITPL

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	Commissio ning	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
Mar-18

SL.NO		PARTICULARS	PEAK DEMAND MW	ENERGY MU
1		**BIHAR**		
	i)	NET MAX DEMAND	4250	2300
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	1160	162
		- Central Sector	2300	1597
	iii)	SURPLUS(+)/DEFICIT(-)	-790	-542
2		**JHARKHAND**		
	i)	NET MAX DEMAND	1210	810
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	435	266
		- Central Sector	700	312
	iii)	SURPLUS(+)/DEFICIT(-)	-75	-232
3		**DVC**		
	i)	NET MAX DEMAND (OWN)	2850	1734
	ii)	NET POWER AVAILABILITY- Own Source	5000	2718
		- Central Sector	240	321
		Long term Bi-lateral (Export)	1500	967
	iii)	SURPLUS(+)/DEFICIT(-)	890	337
4		**ORISSA**		
	i)	NET MAX DEMAND	4100	2492
	ii)	NET POWER AVAILABILITY- Own Source	2800	1820
		- Central Sector	1183	705
	iii)	SURPLUS(+)/DEFICIT(-)	-117	33
5		**WEST BENGAL**		
5.1		**WBSEDCL**		
	i)	NET MAX DEMAND (OWN)	6460	3573
	ii)	CESC's DRAWAL	0	0
	iii)	TOTAL WBSEDCL's DEMAND	6460	3573
	iv)	NET POWER AVAILABILITY- Own Source	3613	2149
		- Import from DPL	170	0
		- Central Sector	3157	1397
	v)	SURPLUS(+)/DEFICIT(-)	480	-27
	vi)	EXPORT (TO B'DESH & SIKKIM)	5	4
5.2		**DPL**		
	i)	NET MAX DEMAND	260	195
	ii)	NET POWER AVAILABILITY	430	189
	iii)	SURPLUS(+)/DEFICIT(-)	170	-6
5.3		**CESC**		
	i)	NET MAX DEMAND	1840	958
	ii)	NET POWER AVAILABILITY - OWN SOURCE	765	486
		FROM HEL	540	339
		FROM CPL/PCBL	45	0
		Import Requirement	490	133
	iii)	TOTAL AVAILABILITY	1840	958
	iv)	SURPLUS(+)/DEFICIT(-)	0	0
6		**WEST BENGAL (WBSEDCL+DPL+CESC)** **(excluding DVC's supply to WBSEDCL's command area)**		
	i)	NET MAX DEMAND	8560	4726
	ii)	NET POWER AVAILABILITY- Own Source	4808	2824
		- Central Sector+Others	4232	1736
	iii)	SURPLUS(+)/DEFICIT(-)	480	-166
7		**SIKKIM**		
	i)	NET MAX DEMAND	90	38
	ii)	NET POWER AVAILABILITY- Own Source	5	3
		- Central Sector+Others	122	64
	iii)	SURPLUS(+)/DEFICIT(-)	37	29
8		**EASTERN REGION** **At 1.03 AS DIVERSITY FACTOR**		
	i)	**NET MAX DEMAND**	20447	12100
		Long term Bi-lateral by DVC	1500	967
		EXPORT BY WBSEDCL	5	4
	ii)	**NET TOTAL POWER AVAILABILITY OF ER** **(INCLUDING C/S ALLOCATION)**	22985	12526
	iii)	**PEAK SURPLUS(+)/DEFICIT(-) OF ER** **(ii)-(i)**	1033	-545

Annexure- D.2

Proposed Maintenance Schedule of Thermal Generating Units of ER during March, 2018
(as finalised in LGBR meeting)

System	Station	Unit	Size (MW)	Period		No. of Days	Reason
				From	To		
DVC	MTPS	5	210	05.03.18	25.03.18	21	AOH (Boiler), Shutdown would be deferred to March 2018

EASTERN REGIONAL LOAD DESPATCH CENTRE

KOLKATA

TRANSMISSION ELEMENTS OUTAGE APPROVED IN 142TH 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	401 (RNC-MTN-I MAIN BAY) BAY at Ranchi	26/02/18	10:00	28/02/18	17:00	OCB	POWERGRID ER-1	OVER HAULING of CB & AMP	
2	402 (TIE OF MTN-1 & ICT-I) at Ranchi	01/03/18	10:00	04/03/18	17:00	OCB	POWERGRID ER-1	OVER HAULING of CB & AMP	
3	404 (RNC-RGP-I MAIN BAY) BAY at Ranchi	05/03/18	10:00	07/03/18	17:00	OCB	POWERGRID ER-1	OVER HAULING of CB & AMP	
4	405 (TIE of RGP-I & ICT-II) at Ranchi	08/03/18	10:00	10/03/18	17:00	OCB	POWERGRID ER-1	OVER HAULING of CB & AMP	
5	418 (80MVAR B/R Main Bay) at Ranchi	12/03/18	10:00	14/03/18	17:00	OCB	POWERGRID ER-1	OVER HAULING of CB & AMP	
6	417 (Tie of 80MVAR B/R Main Bay & RGP-II) at Ranchi	15/03/18	10:00	17/03/18	17:00	OCB	POWERGRID ER-1	OVER HAULING of CB & AMP	
7	420 (Tie bay of Sipat-I) at Ranchi	19/03/18	10:00	21/03/18	17:00	OCB	POWERGRID ER-1	OVER HAULING of CB & AMP	
8	421 (Main Bay of Sipat-I) at Ranchi	22/03/18	10:00	23/03/18	17:00	OCB	POWERGRID ER-1	OVER HAULING of CB & AMP	
9	403 (ICT-I Main Bay) at Ranchi	26/03/18	10:00	28/03/18	17:00	OCB	POWERGRID ER-1	OVER HAULING of CB & AMP	
10	315 MVA ICT-I at Ranchi	28/03/18	10:00	28/03/18	17:00	ODB	POWERGRID ER-1	For fixing of Heatshrink at tertiary bushing	JUSNL
11	406 (ICT-II Main Bay) at Ranchi	29/03/18	10:00	31/03/18	17:00	OCB	POWERGRID ER-1	OVER HAULING of CB & AMP	
12	315 MVA ICT-II at Ranchi	31/03/18	10:00	31/03/18	17:00	ODB	POWERGRID ER-1	For fixing of Heatshrink at tertiary bushing	JUSNL
13	400kV JSR-ANDAL 1 LINE	05/03/18	09:30	05/03/18	11:30	ODB	POWERGRID ER-1	CT OIL SAMPLING	DVC
14	400/220kV, 315MVA ICT-3 AT JSR	07/03/18	09:30	07/03/18	17:30	ODB	POWERGRID ER-1	CSD TESTING WORK	JUSNL
15	400kV BUS- 1 AT JSR	09/03/18	09:30	09/03/18	17:30	ODB	POWERGRID ER-1	AMP WORK	
16	400 KV BUS- 2 AT JSR	13/03/18	09:30	13/03/18	17:30	ODB	POWERGRID ER-1	AMP WORK	
17	125 MVAR BR-2 AT JSR	15/03/18	09:30	15/03/18	17:30	ODB	POWERGRID ER-1	CSD TESTING WORK	
18	200 MVA ICT-I AT BANKA SS	08/03/18	10:00	08/03/18	18:00	ODB	POWERGRID ER-1	PROVIDING INSULATION SLEEVES ON TERTIARY CONDUCTOR	BSPHCL
19	200 MVA ICT-II AT BANKA SS	09/03/18	10:00	09/03/18	18:00	ODB	POWERGRID ER-1	PROVIDING INSULATION SLEEVES ON TERTIARY CONDUCTOR	BSPHCL
20	132 KV MAIN BUS AT BANKA	12/03/18	11:00	12/03/18	13:30	ODB	POWERGRID ER-1	AMP WORK. NO POWERFLOW TO BSPTCL ALL 132 KV LINES WILL BE UNDER S/D.	BSPHCL
21	400kV HVDC North side Converter Tnx Main Bay @ Pusauli	01/03/18	09:00	03/03/18	18:00	OCB	POWERGRID ER-1	For Breaker Drive overhauling and Bay AMP work	NLDC
22	400kV HVDC East side Converter Tnx Main Bay @ Pusauli	05/03/18	09:00	07/03/18	18:00	OCB	POWERGRID ER-1	For Breaker Drive overhauling and Bay AMP work	NLDC
23	400/220kV 500MVA ICT-I AT PUSAULI	05/03/18	09:00	05/03/18	18:00	ODB	POWERGRID ER-1	For Tertiary Insulation	BSPHCL
24	400kV Pusauli-Biharsharif-I	06/03/18	09:00	06/03/18	18:00	ODB	POWERGRID ER-1	To attend Line CVT Problem	NLDC
25	765kV Pusauli-Fatehpur Line	07/03/18	08:00	07/03/18	18:00	ODB	POWERGRID ER-1	Replacement of Porcelain insulator with Polymer insulator.	NLDC
26	400kV HVDC East side Converter Tnx_Filter Tie Bay @ Pusauli	08/03/18	09:00	10/03/18	18:00	OCB	POWERGRID ER-1	For Breaker Drive overhauling and Bay AMP work	NLDC
27	3*110MVAR 765kV Bus Reactor Bay@Pusauli	08/03/18	09:00	08/03/18	18:00	ODB	POWERGRID ER-1	AMP work	NLDC
28	400/220kV 315MVA ICT-II at Pusauli	09/03/18	09:00	09/03/18	18:00	ODB	POWERGRID ER-1	For Oil Top Up in Main tank	BSPHCL
29	400kV Pusauli-Biharsharif-II	12/03/18	09:00	12/03/18	18:00	ODB	POWERGRID ER-1	To attend Line CVT Problem	NLDC
30	400kV North Side Filter Main Bay@Pusauli	12/03/18	09:00	14/03/18	18:00	OCB	POWERGRID ER-1	For Breaker Drive overhauling and Bay AMP work	NLDC
31	765/400kV, 1500MVA, ICT for regular changeover in 06 month	11/03/18	09:00	13/03/18	18:00	765/400kV, 1500MVA ICT, B-Phase will be out from 11.03.2018to 13.03.2018 on continuous basis for 03 days only.	POWERGRID ER-1	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. Bus Reactor 703-52 will be out during isolation of ICT and thereafter reactor will be back in service through dia closing. There will not be any power flow in 765 kv Sasaram - Fatehpur line during the s/d of the ICT.	NLDC
32	220kV Main Bus-I @ Pusauli	14/03/18	09:00	14/03/18	18:00	ODB	POWERGRID ER-1	AMP work	BSPHCL
33	HVDC BTB System @ Pusauli	20/03/18	09:00	25/03/18	18:00	S/D required on Continuous Basis for 11 days	POWERGRID ER-1	For Overhauling of 6 nos Converter Transformer .During The S/D period there shall be no power flow between 400kV East Bus and North Bus at Pusauli Through HVDC system .However 400kV East and North Bus shall remain connected through AC Bypass .	NLDC
34	400kV East Side Filter Main Bay@Pusauli	15/03/18	09:00	17/03/18	18:00	OCB	POWERGRID ER-1	For Breaker Drive overhauling and Bay AMP work	NLDC
35	400kV HVDC North side Converter Tnx_Filter Tie Bay @ Pusauli	19/03/18	09:00	21/03/18	18:00	OCB	POWERGRID ER-1	For Breaker Drive overhauling and Bay AMP work	NLDC
36	400kV Allahabad Main bay @ Pusauli	22/03/18	09:00	24/03/18	18:00	OCB	POWERGRID ER-1	For Breaker Drive overhauling and Bay AMP work	
37	400kV Nabinagar-I Main Bay @ Pusauli	22/03/18	09:00	22/03/18	18:00	ODB	POWERGRID ER-1	AMP work	
38	400kV Saranath Future Tie bay @ Pusauli	26/03/18	09:00	28/03/18	18:00	OCB	POWERGRID ER-1	For Breaker Drive overhauling and Bay AMP work	
39	125MVAR Bus Reactor-II Main Bay AT PUSAULI	24/03/18	09:00	24/03/18	18:00	ODB	POWERGRID ER-1	AMP work	
40	400kV Biharsharif-IV Main Bay @ Pusauli	27/03/18	09:00	27/03/18	18:00	ODB	POWERGRID ER-1	AMP work. At present the mentioned bay is available but feeder is non existing	
41	400kV 125MVAR Bus Reactor-II at pusauli	28/03/18	09:00	28/03/18	18:00	ODB	POWERGRID ER-1	AMP work	
42	400kV Allahabad Future Tie Bay @ Pusauli	29/03/18	09:00	31/03/18	18:00	OCB	POWERGRID ER-1	For Breaker Drive overhauling and Bay AMP work	
43	765 kV Gay a- Varanasi - I	17/03/18	09:00	27/03/18	18:00	OCB	POWERGRID ER-1	FOR RECTIFICATION/SHIFTING OF LOCATION NO 448.	NLDC
44	765 kV Gay a- Varanasi - II	24/02/18	09:00	15/02/18	18:00	OCB	POWERGRID ER-1	FOR SHIFTING/RECTIFICATION OF TOWER NO 338 AND 339 (RAILWAY CROSSING)	NLDC
45	400 KV FKK- KAHALGAON -3 AND 4	13/03/18	08:00	28/03/18	18:00	OCB	POWERGRID ER-1	CONST. WORK OF 400 KV D/C RAJARHAT - PURNEA TL	
46	400 KV FKK- KAHALGAON -1 AND 2	29/03/18	08:00	31/03/18	18:00	OCB	POWERGRID ER-1	CONST. WORK OF 400 KV D/C RAJARHAT - PURNEA TL	
47	400 KV RNC - NRNC Ckt-3	20/03/18	09:00	20/03/18	18:00	ODB	POWERGRID ER-1	Replacement of Insulators damaged by miscreants.	
48	400 KV RNC - NRNC Ckt-4	21/03/18	09:00	21/03/18	18:00	ODB	POWERGRID ER-1	Replacement of Insulators damaged by miscreants.	
49	400 KV Chandawa - Gaya Ckt-1	14/03/18	09:00	14/03/18	18:00	ODB	POWERGRID ER-1	Replacement of Insulators damaged by miscreants.	
50	400 KV Chandawa - Gaya Ckt-2	15/03/18	09:00	15/03/18	18:00	ODB	POWERGRID ER-1	Replacement of Insulators damaged by miscreants.	
51	3X500 MVA ICT-I AT NRNC	05/03/18	08:00	07/03/18	18:00	ODB	POWERGRID ER-1	STATCOM CONSTRUCTION	NLDC
52	765 KV , 3X80 MVAR B/R-II AT NRNC	09/03/18	08:00	09/03/18	18:00	ODB	POWERGRID ER-1	Spare switching after carrying out stability	NLDC
53	3X500 MVA ICT-II AT NRNC	12/03/18	08:00	14/03/18	18:00	ODB	POWERGRID ER-1	STATCOM CONSTRUCTION	NLDC
54	400 KV Ranchi-NPPSP-I line	15/03/18	08:00	15/03/18	18:00	ODB	POWERGRID ER-1	STATCOM CONSTRUCTION	WB
55	400 KV BUS -I AT NRNC	16/03/18	08:00	17/03/18	18:00	ODB	POWERGRID ER-1	STATCOM CONSTRUCTION	
56	400 KV Ranchi-NPPSP-II line	19/03/18	08:00	19/03/18	18:00	ODB	POWERGRID ER-1	STATCOM CONSTRUCTION	WB
57	400 KV BUS -2 AT NRNC	20/03/18	08:00	21/03/18	18:00	ODB	POWERGRID ER-1	STATCOM CONSTRUCTION	
58	765 KV , NEW RANCHI - DHARMAJAYGARH-II Line	05/03/18	08:00	05/03/18	10:00	ODB	POWERGRID ER-1	STATCOM CONSTRUCTION	NLDC
59	765 KV , NEW RANCHI - DHARMAJAY GARH - II LR (Switchable)	05/03/18	08:00	14/03/18	18:00	OCB	POWERGRID ER-1	STATCOM CONSTRUCTION	NLDC
60	315 MVA ICT 2 AT MUZ	07/03/18	10:00	08/03/18	18:00	ODB	POWERGRID ER-1	AMP & BUSHING REPLACEMENT	BSPHCL
61	800 KV BNC - AGRA HVDC LINE	15/03/18	10:00	25/03/18	18:00	OCB	POWERGRID ER-1	FOR SHIFTING OF LINE TO PILE FOUNDATION AT LOC 1787.	NLDC
62	400kV BSF-Varanasi CKT-I	07/03/18	10:00	07/03/18	18:00	ODB	POWERGRID ER-I	For Installation of Insulation sleeve on Conductor & Earthwire	NLDC
63	400kV BSF-Varanasi CKT-II	08/03/18	10:00	08/03/18	18:00	ODB	POWERGRID ER-I		NLDC
64	400kV BSF-SASARAM CKT-I	13/03/18	10:00	13/03/18	18:00	ODB	POWERGRID ER-I		NLDC
65	400kV BSF-SASARAM CKT-II	14/03/18	10:00	14/03/18	18:00	ODB	POWERGRID ER-I		NLDC
66	400kV BSF-Muzaffarpur-I	20/03/18	10:00	20/03/18	18:00	ODB	POWERGRID ER-I	OPGW RECTIFICATION WORK	
67	400kV BSF-Muzaffarpur-II	21/03/18	10:00	21/03/18	18:00	ODB	POWERGRID ER-I	Replacement of Insulators damaged by miscreants.	
68	400 k V Biharsarif - Balia - I & II	26/02/18	09:00	27/02/18	18:00	ODB	POWERGRID ER-I	FOR POWER LINE CROSSING WORK OF 400 kV NABINAGAR - II - PATNA TRANSMISSION INE BETWEEN LOC NO 166 & 167	NLDC
69	400 kV Patna - Kishanganj - I & II	06/03/18	09:00	07/03/18	18:00	ODB	POWERGRID ER-I	FOR POWER LINE CROSSING WORK OF 400 kV NABINAGAR - II - PATNA TRANSMISSION INE BETWEEN LOC NO 895 &896	
70	400 kV Patna - Balia - III & IV	09/03/18	09:00	10/03/18	18:00	ODB	POWERGRID ER-I	FOR POWER LINE CROSSING WORK OF 400 kV NABINAGAR - II - PATNA TRANSMISSION INE BETWEEN LOC NO 182 & 183	NLDC

71	132 kV Gaya - Sipara D/c Line	13/03/18	09:00	14/03/18	18:00	ODB	POWERGRID ER-I	FOR POWER LINE CROSSING WORK OF 400 kV NABINAGAR - II - PATNA TRANSMISSION INE BETWEEN LOC NO 240 & 241	BSPHCL
72	400 kV Biharsarif - Varanasi - I & II	16/03/18	09:00	17/03/18	18:00	ODB	POWERGRID ER-I	FOR POWER LINE CROSSING WORK OF 400 kV NABINAGAR - II - PATNA TRANSMISSION INE BETWEEN LOC NO 312 & 313	NLDC
73	220 kV Gaya - Sonenagar D/c line	20/03/18	09:00	21/03/18	18:00	ODB	POWERGRID ER-I	FOR POWER LINE CROSSING WORK OF 400 kV NABINAGAR - II - PATNA TRANSMISSION INE BETWEEN LOC NO 284 & 285	BSPHCL
74	132 kV Sonenagar - Aurangabad D/c line and Under Constaruction 132 kV D/C Barun - aurangabad Line	23/03/18	09:00	24/03/18	18:00	ODB	POWERGRID ER-I	FOR POWER LINE CROSSING WORK OF 400 kV NABINAGAR - II - PATNA TRANSMISSION INE	BSPHCL
75	400 kV Sasaram - Datonganj D/C Line	27/03/18	09:00	28/03/18	18:00	ODB	POWERGRID ER-I	FOR POWER LINE CROSSING WORK OF 400 kV NABINAGAR - II - PATNA TRANSMISSION INE	
76	400 kV Biharsarif - Sasaram I & II	20/03/18	09:00	21/03/18	18:00	ODB	POWERGRID ER-I	FOR POWER LINE CROSSING WORK OF 400 kV NABINAGAR - II - PATNA TRANSMISSION INE BETWEEN LOC NO 296 & 297.	NLDC
77	400kV Maithon-Gaya-1 line	20/03/18	08:00	21/03/18	18:00	ODB	POWERGRID ER-I	For replacement of insulators damaged by miscreant	
78	400kV Maithon-Gaya-2 line	22/03/18	08:00	23/03/18	18:00	ODB	POWERGRID ER-I	For replacement of insulators damaged by miscreant	
79	400kV Koderma-Gaya-1 line	22/03/18	08:00	23/03/18	18:00	ODB	POWERGRID ER-I	For replacement of insulators damaged by miscreant	DVC
80	400kV Koderma-Gaya-2 line	20/03/18	08:00	21/03/18	18:00	ODB	POWERGRID ER-I	For replacement of insulators damaged by miscreant	DVC
81	220 KV BUS-I at Gaya S/S	05/03/18	08:00	05/03/18	18:00	ODB	POWERGRID ER-I	For KHIJARSARAI bay commisioning work	BSPHCL
82	220 KV BUS-II at Gaya S/S	07/03/18	08:00	07/03/18	18:00	ODB	POWERGRID ER-I	For KHIJARSARAI bay commisioning work	BSPHCL
83	400 KV BUS-I at Gaya S/S	09/03/18	08:00	09/03/18	18:00	ODB	POWERGRID ER-I	for isolator mantanance work	
84	400 KV BUS-II at Gaya S/S	10/03/18	08:00	10/03/18	18:00	ODB	POWERGRID ER-I	for isolator mantanance work	
85	765 KV BUS-I at Gaya S/S	12/03/18	08:00	12/03/18	18:00	ODB	POWERGRID ER-I	For isolator rectification work under S/S extn. Package	NLDC
86	765 KV BUS-II at Gaya S/S	14/03/18	08:00	14/03/18	18:00	ODB	POWERGRID ER-I	For isolator rectification work under S/S extn. Package	NLDC
87	Main Bay of 765kV Gaya-VNS Ckt-I	26/03/18	08:00	26/03/18	18:00	ODB	POWERGRID ER-I	AMP work	NLDC
88	765 KV GAYA BALIA	06/03/18	08:00	07/03/18	18:00	ODB	POWERGRID ER-I	LINE MAINTENANCE WORK.	NLDC
89	Tie Bay of 765kV Gaya-VNS Ckt-I	28/03/18	08:00	28/03/18	18:00	ODB	POWERGRID ER-I	AMP work	NLDC
90	408 (Tie Bay of 400 kV KHG-2 & 80 MVAR Bus Reactor) at Lakhisarai	02/03/18	10:00	02/03/18	14:00	ODB	POWERGRID ER-I	Cable replacement of CB Spring Charging Motor and AMP	
91	200 MVA ICT-1 at Lakhisarai	03/03/18	08:00	04/03/18	18:00	ODB	POWERGRID ER-I	Checking of Air Cell & AMP	BSPHCL
92	400 kV Main Bus-1 at Lakhisarai	06/03/18	10:00	06/03/18	14:00	ODB	POWERGRID ER-I	AMP	
93	400 kV Main Bus-2 at Lakhisarai	08/03/18	10:00	08/03/18	14:00	ODB	POWERGRID ER-I	AMP	
94	407 (Main Bay of 400 kV LKR-KHG-2) at Lakhisarai	09/03/18	10:00	10/03/18	14:00	ODB	POWERGRID ER-I	AMP	
95	200 MVA ICT-2 & 80 MVAR Bus Reactor at Lakhisarai	13/03/18	08:00	16/03/18	18:00	ODB	POWERGRID ER-I	Fire wall Construction, Checking of Aircel of ICT-2 and AMP	
96	132 Kv Transfer Bus Coupler at Lakhisarai	17/03/18	10:00	17/03/18	14:00	ODB	POWERGRID ER-I	AMP	BSPHCL
97	409 (Main Bay of 80MVAR Bus Reactor) at Lakhisarai	18/03/18	10:00	18/03/18	14:00	ODB	POWERGRID ER-I	AMP	
98	401 (Main Bay of 400 kV LKR-BSF-1) at Lakhisarai	19/03/18	10:00	19/03/18	14:00	ODB	POWERGRID ER-I	AMP	
99	402 (Tie Bay of 400 kV BSF-1 & ICT-1) at Lakhisarai	21/03/18	10:00	21/03/18	14:00	ODB	POWERGRID ER-I	AMP	
100	403 (Main Bay of 200 MVA ICT-1) at Lakhisarai	23/03/18	10:00	23/03/18	14:00	ODB	POWERGRID ER-I	AMP	
101	404 (Main Bay of 400 kV LKR-BSF-1) at Lakhisarai	24/03/18	10:00	24/03/18	14:00	ODB	POWERGRID ER-I	AMP	
102	405 (Tie Bay of 400 kV BSF-2 & ICT-2) at Lakhisarai	26/03/18	10:00	26/03/18	14:00	ODB	POWERGRID ER-I	AMP	
103	406 (Main Bay of 200 MVA ICT-2) at Lakhisarai	28/03/18	10:00	28/03/18	14:00	ODB	POWERGRID ER-I	AMP	
104	410 (Main Bay of 400 kV LKR-KHG-1) at Lakhisarai	29/03/18	10:00	29/03/18	14:00	ODB	POWERGRID ER-I	AMP	
105	411 (Tie Bay of 400 kV KHG-1 & Future Bay) at Lakhisarai	31/03/18	10:00	31/03/18	14:00	ODB	POWERGRID ER-I	AMP	
106	400 KV Lakhisarai Kahalgaon -1	05/03/18	08:00	05/03/18	18:00	ODB	POWERGRID ER-I	L/R AMP work	
107	400 KV Lakhisarai Kahalgaon -2	06/03/18	08:00	06/03/18	18:00	ODB	POWERGRID ER-I	L/R AMP work	
108	400 kV PTN-BALIA CKT III	07/03/18	08:00	08/03/18	17:30	ODB	POWERGRID ER-I	Replacement of Porcelain insulator with Polymer insulator	NLDC
109	400 kV PTN-BALIA CKT IV	09/03/18	08:00	10/03/18	17:30	ODB	POWERGRID ER-I	Replacement of Porcelain insulator with Polymer insulator	NLDC
110	400 kV PTN-KSNGJ CKT I	13/03/18	08:00	13/03/18	17:30	ODB	POWERGRID ER-I	Replacement of Porcelain insulator with Polymer insulator	
111	400 kV PTN-KSNGJ CKT II	14/03/18	08:00	14/03/18	17:30	ODB	POWERGRID ER-I	Replacement of Porcelain insulator with Polymer insulator	
112	400 kV PTN-BAL CKT I	20/03/18	08:00	21/03/18	17:30	ODB	POWERGRID ER-I	Replacement of Porcelain insulator with Polymer insulator	NLDC
113	400 kV PTN-BAL CKT II	22/03/18	08:00	23/03/18	17:30	ODB	POWERGRID ER-I	Replacement of Porcelain insulator with Polymer insulator	NLDC
114	400 kV PTN-BRH CKT – II & 400KV KHL BARH CKT-I	27/03/18	08:00	28/03/18	17:30	ODB	POWERGRID ER-I	Replacement of Porcelain insulator with Polymer insulator	
115	400 kV PTN-BRH CKT – I & 400KV KHL BARH CKT-II	29/03/18	08:00	30/03/18	17:30	ODB	POWERGRID ER-I	Replacement of Porcelain insulator with Polymer insulator	
116	400KV Main bay of Patna Ballia 3(422 bay) at Patna	07/03/18	09:30	07/03/18	17:30	ODB	POWERGRID ER-I	AMP	
117	400 kV Bus -1 at Patna	09/03/18	09:30	10/03/18	17:30	ODB	POWERGRID ER-I	AMP	BSPHCL
118	400KV main bay of Patna Barh 3(421 bay) at Patna	12/03/18	09:30	10/03/18	17:30	ODB	POWERGRID ER-I	AMP	
119	400KV main bay of Patna Barh 3(421 bay) at Patna	15/03/18	09:30	15/03/18	17:30	ODB	POWERGRID ER-I	AMP	
120	220KV Bus 2 at Patna	16/03/18	09:30	17/03/18	17:30	ODB	POWERGRID ER-I	AMP	BSPHCL
121	401(Main bay of Patna Kishanganj 1) at Patna	19/03/18	09:30	19/03/18	17:30	ODB	POWERGRID ER-I	AMP	
122	404(Main bay of Patna Kishanganj 2) at Patna	20/03/18	09:30	20/03/18	17:30	ODB	POWERGRID ER-I	AMP	
123	409(Main bay ICT2) at Patna	21/03/18	09:30	21/03/18	17:30	ODB	POWERGRID ER-I	AMP	
124	410(Main bay 80 Bus reactor) at Patna	22/03/18	09:30	22/03/18	17:30	ODB	POWERGRID ER-I	AMP	
125	412(Main bay ICT1) at Patna	23/03/18	09:30	23/03/18	17:30	ODB	POWERGRID ER-I	AMP	
126	220 KV Patna Fatuha line	24/03/18	09:30	24/03/18	17:30	ODB	POWERGRID ER-I	AMP	BSPHCL
127	220KV Bus coupler at Patna	26/03/18	09:30	26/03/18	17:30	ODB	POWERGRID ER-I	AMP	BSPHCL
128	220 KV Ara khagaul line 1	27/03/18	10:00	27/03/18	17:30	ODB	POWERGRID ER-I	AMP	BSPHCL
129	220 KV Ara khagaul line 2	28/03/18	10:00	28/03/18	17:30	ODB	POWERGRID ER-I	AMP	BSPHCL
130	400KV Berhampore Sagardighi Ckt-I	25/02/18	08/00	25/02/18	18/00	ODB	ER-II	Bay construction activity under ERSS-XV.	WB
131	400KV Farakka-Sagardighi	25/02/18	09:00	26/02/18	17:00	ODB	ER-II	Stringing of 400KV D/C Farakka Jeerat LILO line at Sagardighi under ERSS-XV.	WB
132	400KV Subhasgram-Sagardighi	25/02/18	09:00	26/02/18	17:00	ODB	ER-II		WB
133	220KV KLC Bantala Line by Subhasgram	02/03/18	08:00	02/03/18	17:30	ODB	ER-II	Bay AMP	WB
134	220KV WBSETCL CKT#2 by Subhasgram	03/03/18	08:00	03/03/18	17:30	ODB	ER-II	Bay AMP	WB
135	100 MVAR Bus Reactor at WBSETCL, Jeerat S/s by Subhasgram	12/03/18	08:00	15/03/18	17:30	OCB	ER-II	Replacement of Bushing of CGL Reactor	WB
136	50 MVAR Sagardighi Line Reactor at Subhasgram	26/03/18	08:00	31/03/18	17:30	OCB	ER-II	HV Bushing replacement.	WB
137	315 MVA ICT-I by Subhasgram	19/03/18	08:00	23/03/18	17:30	OCB	ER-II	OLTC inspection to rectify oil migration problem	WB
138	132kV Rangit-Kurseong Ckt	27/02/18	09:00	27/02/18	17:30	ODB	ER-II	Sag Adjustment & Damaged Conductor Repairing at Loc No 86-87	WB
139	400 kV Malda-Farakka-I	06/03/18	08:00	06/03/18	17:00	ODB	ER-II	NTAMC Adaptation works including modification of exsiting scheme.	Farakka-Malda-Punrea shutdown will be clubbed
140	400 kV Malda-Farakka-II	07/03/18	08:00	06/03/18	17:00	ODB	ER-II	NTAMC Adaptation works including modification of exsiting scheme.	
141	400 KV Mald-Purnea-I	10/03/18	08:00	11/03/18	17:00	ODB	ER-II	Insulators replacement from Porcealin to Polymer.	
142	400 KV Mald-Purnea-II	12/03/18	08:00	12/03/18	17:00	ODB	ER-II	Insulators replacement from Porcealin to Polymer.	
143	315 MVA-ICT-III (400 /220 kV) at Malda	14/03/18	08:00	14/03/18	17:00	ODB	ER-II	Numerical Over Current Relay Retrofitting & Bucholz alarm to trip configuration FOR NTAMC WORK	WB
144	315 MVA-ICT-V (400 /220 kV) at Malda	15/03/18	08:00	15/03/18	17:00	ODB	ER-II	Numerical Over Current Relay Retrofitting & Bucholz alarm to trip configuration FOR NTAMC WORK	WB
145	50 MVA ICT-IV (220/132 kV) at Malda	16/03/18	08:00	16/03/18	17:00	ODB	ER-II	Numerical Over Current Relay Retrofitting & Bucholz alarm to trip configuration FOR NTAMC WORK	WB
146	160 MVA ICT-I (220/132 kV) at Malda	17/03/18	08:00	17/03/18	12:00	ODB	ER-II	RELAY ADAPTION WORK FOR NTAMC WORK	WB
147	160 MVA ICT-II (220/132 kV) at Malda	17/03/18	13:00	17/03/18	17:00	ODB	ER-II	RELAY ADAPTION WORK FOR NTAMC WORK	WB
148	400kV MTN Mejia-1 line	03/03/18	09:00	03/03/18	17:30	ODB	ER-II	Insulator replacement due to damage by miscreants.	DVC
149	400kV MTN Mejia-2 line	05/03/18	09:00	05/03/18	17:30	ODB	ER-II	Insulator replacement due to damage by miscreants.	DVC
150	400kV MTN Mejia-3 line	07/03/18	09:00	07/03/18	17:30	ODB	ER-II	Insulator replacement due to damage by miscreants.	DVC
151	400KV Maithon-Jamshedpur	12/03/18	09:00	13/03/18	17:30	ODB	ER-II	Insulator replacement due to damage by miscreants.	
152	400KV Mejia-Jamshedpur	09/03/18	09:00	09/03/18	17:30	ODB	ER-II	Insulator replacement due to damage by miscreants.	DVC
153	500MVA, ICT-1 at Maithon SS	15/03/18	10:00	15/03/18	17:30	ODB	ER-II	Onload testing of CSD and validation of OFS	DVC
154	400KV Maithon-Kahalgaon Line 1	17/03/18	10:00	17/03/18	13:00	ODB	ER-II	Retrofitting of Diff relay (Upgradation to IEC61850 compliance relay).	
155	400KV Maithon-Kahalgaon Line 2	19/03/18	10:00	19/03/18	13:00	ODB	ER-II	Retrofitting of Diff relay (Upgradation to IEC61850 compliance relay).	
156	400kV 125MVA Bus Reactor-2 at Maithan	23/03/18	10:00	23/03/18	17:00	ODB	ER-II	GD replacement due to configuration change.	

157	125 MVAR-Bus Reactor-2 at Durgapur	06/03/18	09:00	06/03/18	17:00	ODB	ER-II	FF commissioning balance works under BHEL (ERSS-IX)	
158	125MVAR BUS REACTOR-3 at Durgapur	14/03/18	09:00	14/03/18	17:00	ODB	ER-II	FF commissioning balance works under BHEL (ERSS-IX)	
159	50 MVAR Bus Reactor-I at Durgapur	06/03/18	09:00	06/03/18	17:00	ODB	ER-II	FF commissioning balance works under BHEL (ERSS-IX)	
160	400 KV Maithon #2 line by Durgapur	09/03/18	09:00	09/03/18	17:00	ODB	ER-II	LBB relay modification work under ERSS-XVII.	
161	400 KV Bidhannagar line-I by Durgapur	16/03/18	09:00	16/03/18	17:00	ODB	ER-II	CVT JB Upgradation.	
162	400 KV Bidhannagar line-II by Durgapur	26/03/18	09:00	26/03/18	17:00	ODB	ER-II	CVT & LA shifting in new foundation & AR checking.	
163	400 KV Maithon #1line by Durgapur	29/03/18	09:00	29/03/18	17:00	ODB	ER-II	A/R checking.	
164	220KV BIRPARA -NSLG-I	12/03/18	08:00	13/02/18	17:30	ODB	ER-II	For fitting of Arcing Horn and tightening checking of Jumpers.	
165	220KV BIRPARA -NSLG-II	15/03/18	08:00	16/03/18	17:30	ODB	ER-II	For fitting of Arcing Horn and tightening checking of Jumpers.	
166	400KV D/C New Siliguri - New Purnea-I	13/03/18	09:00	14/03/18	17:00	ODB	ER-II	Balance insulator replacement	
167	400KV D/C New Siliguri - New Purnea-II	15/03/18	09:00	16/03/18	17:00	ODB	ER-II	Balance insulator replacement	
168	220KV DLK-K'GANJ -I	20/03/18	09:00	21/03/18	17:00	ODB	ER-II	BAY & Line MTC at Dalkhola	
169	220KV DLK-K'GANJ -II	22/03/18	09:00	23/03/18	17:00	ODB	ER-II	BAY & Line MTC at Dalkhola	
170	220KV DLK-DLK -I	27/03/18	09:00	27/03/18	17:00	ODB	ER-II	BAY MTC at Dalkhola	WB
171	220KV DLK-DLK -II	28/03/18	09:00	28/03/18	17:00	ODB	ER-II	BAY MTC at Dalkhola	WB
172	220 KV Binaguri-Birpara Ckt-1	01/03/18	09:00	02/03/18	17:00	OCB	ER-II	Line AMP works	WB
173	220 KV Binaguri-Birpara Ckt-2	03/03/18	09:00	04/03/18	17:00	OCB	ER-II	Line AMP works	WB
174	132 KV Kursoeng-Rangit S/c Line	07/03/18	09:00	15/02/18	17:00	OCB	ER-II	Insulator Replacemnt	WB
175	220 KV Siliguri -Kishangang Ckt-1	19/03/18	09:00	19/03/18	17:00	OCB	ER-II	Line AMP works	WB
176	220 KV Siliguri-Kishangang Ckt-2	20/03/18	09:00	20/03/18	17:00	OCB	ER-II	Line AMP works	
177	400 KV ICT#1 at Binaguri	15/03/18	09:00	15/03/18	17:00	ODB	ER-II	Back up O/C Relay Replacement	
178	400 KV ICT#2 at Binaguri	16/03/18	09:00	16/03/18	17:00	ODB	ER-II	Back up O/C Relay Replacement	
179	400 KV Binaguri-Rangpo Line-1 & Bus-1	20/03/18	08:00	21/03/18	12:00	ODB	ER-II	Strung Bus Replacement	
180	400 KV TEESTA -III-Rangpo LINE	01/03/18	11:00	01/03/18	15:00	ODB	ER-II	For SAS Configuration change.	
181	132KV BUS SECTIONALISER-I At Rangpo	22/03/18	09:00	22/03/18	17:00	ODB	ER-II	BAY AMP	
182	410 Main Bay of 400KV Berhampore Sagardighi Ckt-II at BHP	26/02/18	09:00	26/02/18	18:00	ODB	ER-II	BAY AMP WORK	
183	50 MVA ICT-I at Gangtok	06/03/18	09:00	06/03/18	17:00	ODB	ER-II	IEC 61850 COMPLIANT RELAY COMMISSIONING.	SIKKIM
184	50 MVA ICT-II at Gangtok	09/03/18	09:00	09/03/18	17:00	ODB	ER-II	IEC 61850 COMPLIANT RELAY COMMISSIONING.	SIKKIM
185	66 KV Lagyap Gangtok	13/03/18	09:00	13/03/18	17:00	ODB	ER-II	AMP WORK	SIKKIM
186	66 KV Tadong Gangtok	14/03/18	09:00	14/03/18	17:00	ODB	ER-II	AMP WORK	SIKKIM
187	66 KV Bulbulay Gangtok	15/03/18	09:00	15/03/18	17:00	ODB	ER-II	AMP WORK	SIKKIM
188	132 KV SLG-WBSEB-II	26/02/18	10:00	26/02/18	13:00	ODB	ER-II	Hot spot in dropper connecting to jack bus in 132KV SLG-WBSEB-II	WB
189	500 MVA ICT#1 AT MAITHON	10/03/18	10:00	10/03/18	17:00	ODB	ER-II	FOR FINE TUNING OF CSD.	DVC
190	220 KV MALDA-DALKHOLA-I	04/03/18	10:00	05/03/18	17:00	OCB	ER-II	Replacement of old relays with IEC compliant relay.	
191	220 KV MALDA-DALKHOLA-II	06/03/18	10:00	07/03/18	17:00	ODB	ER-II	Replacement of old relays with IEC compliant relay.	
192	132 KV MALDA-MALDA-I	08/03/18	10:00	08/03/18	17:00	ODB	ER-II	Replacement of old relays with IEC compliant relay.	
193	132 KV MALDA-MALDA-II	09/03/18	10:00	09/03/18	17:00	ODB	ER-II	Replacement of old relays with IEC compliant relay.	WB
194	400 KV BUS COUPLER AT MALDA	10/03/18	10:00	11/03/18	17:00	ODB	ER-II	NTAMC adaptation works for BCU/RTU.	WB
195	220 KV BUS COUPLER AT MALDA	12/03/18	10:00	13/03/18	17:00	ODB	ER-II	NTAMC adaptation works for BCU/RTU.	
196	160 MVA ICT#1 AT BIRPARA	13/03/18	10:00	13/03/18	17:00	ODB	ER-II	NTAMC adaptation works for BCU/RTU.	WB
197	160 MVA ICT#2 AT BIRPARA	14/03/18	10:00	14/03/18	17:00	ODB	ER-II	NTAMC adaptation works for BCU/RTU.	WB
198	220 KV MAITHON-DHANBAD-II	02/03/18	10:00	02/03/18	17:00	ODB	ER-II	NTAMC adaptation works for BCU/RTU.	DVC
199	220 KV MAITHON-DHANBAD-I	03/03/18	10:00	03/03/18	17:00	ODB	ER-II	NTAMC adaptation works for BCU/RTU.	DVC
200	400 KV Binaguri-Bongaigaon-I	15/03/18	10:00	21/03/18	17:00	OCB	ER-II	CONDUCTOR REPLACEMENT DUE TO THEFT	NLDC
201	400 KV Binaguri-Bongaigaon-II	22/03/18	10:00	30/03/18	17:00	OCB	ER-II	CONDUCTOR REPLACEMENT DUE TO THEFT	NLDC
202	315 MVA ICT - I & 220kV Main Bus 2 AT Alipurduar	01/03/18	08:00	02/03/18	18:00	OCB	ER-II	R ph CB alignment not proper to be adjusted (Pole to be dismantled and structure alignment to be adjusted)	
203	400kV Bus Section 2A at Alipurduar	05/03/18	08:00	05/03/18	16:00	ODB	ER-II	Replacement of damaged BPI (B - ph) of Bus Section 2A	
204	220kV Alipurduar - Salakati Ckt - I	06/03/18	10:00	06/03/18	13:00	ODB	ER-II	Replacement of damaged Bird Guard of WT	NLDC
205	220kV Alipurduar - Salakati Ckt - II	07/03/18	10:00	07/03/18	13:00	ODB	ER-II	Replacement of damaged Bird Guard of WT	NLDC
206	400 KV Farakka- Sagardighi TL	27/02/18	09:00	27/02/18	18:00	ODB	ER-II	For Transmission line AMP	WB
207	400 KV Farakka- Durgapur-II TL	05/03/18	09:00	05/03/18	18:00	ODB	ER-II	For Transmission line AMP	
208	400 KV BUS-I of NTPC Farakka	06/03/18	10:00	06/03/18	16:00	ODB	ER-II	For disconnecting BUS isolator of bay no-22 & 33 from BUS-I (For augmentation of BUS Isolator from 2000A to 3150 A rating under ERSS-XV projects).	
209	Main Bay of 400 KV Farraka- Kahalgaon-II (Bay-22)	06/03/18	10:00	31/03/18	18:00	OCB	ER-II	For augmentation of Isolator & CT from 2000A to 3150 A rating under ERSS-XV projects.	
210	Tie Bay of 400 KV Farrak- Kahalgaon-III (Bay-33 & 34)	06/03/18	10:00	31/03/18	18:00	OCB	ER-II	For augmentation of Isolator & CT from 2000A to 3150 A in bay-34 & for installation of new equipment in Bay-33 under ERSS-XV projects.	
211	400 KV Farraka- Kahalgaon-II line	07/03/18	10:00	07/03/18	18:00	ODB	ER-II	For disconnecting bay-22 (Main Bay of 400 KV Farakka- Kahalgaon-II) from line side for augmentation of Isolator & CT from 2000A to 3150 A rating under ERSS-XV projects.	
212	400 KV Farraka- Kahalgaon-III line	08/03/18	10:00	08/03/18	18:00	ODB	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.	
213	50 MVAR Bus Reactor-II at Farakka	26/03/18	10:00	20/04/18	18:00	OCB	ER-II	For Installation of new CB and other associated work for Bus Reactor-II to make Bus Reactor-II switchable.	
214	400 KV Farraka- Kahalgaon-II line	31/03/18	10:00	31/03/18	18:00	ODB	ER-II	For connecting bay-22 (Main Bay of 400 KV Farakka- Kahalgaon-II) from line side after augmentation of Isolator & CT from 2000A to 3150 A rating under ERSS-XV projects.	
215	400 KV Farraka- Kahalgaon-III line	01/04/18	10:00	01/04/18	18:00	ODB	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 3150 A rating under ERSS-XV projects.	
216	400 KV BUS-I of NTPC Farakka	02/04/18	10:00	02/04/18	16:00	ODB	ER-II	For connecting BUS isolator of bay no-22 & 33 to BUS-I1 (After augmentation of BUS Isolator from 2000A to 3150 A rating under ERSS-XV projects).	
217	132 KV BIRPARA-BIRPARA-I	20/03/18	10:00	20/03/18	15:00	ODB	ER-II	FOR VARIABLE FREQUENCY TAN DELTA MEASURMENT	WB
218	132 KV BIRPARA-BIRPARA-II	20/03/18	10:00	20/03/18	15:00	ODB	ER-II	FOR VARIABLE FREQUENCY TAN DELTA MEASURMENT	WB
219	Non auto mode of auto reclose of 400KV Talcher-Rourkela D/C Line	25/02/18	09:00	15/03/18	17:00	ODB	ER-II/Odisha/Rengali	For PID testing of Porceline insulator	
220	Tie Bay-408 of 400KV Raigarh Line-I & Future at Sundargarh	01/03/18	09:00	01/03/18	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
221	Tie Bay-414 of 400KV Bus Reactor-I&Future at Sundargarh	02/03/18	09:00	02/03/18	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
222	Tie Bay-417 of 400KV Bus Reactor-II & Future at Sundargarh	03/03/18	09:00	03/03/18	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
223	400KV BARIPADA - PANDIABILI LINE	09/03/18	08:00	09/03/18	18:00	ODB	ER-II/Odisha/Cuttack TL	For AMP	
224	400KV PANDIABILI - MENDHASAL CKT#-I	09/03/18	08:00	09/03/18	18:00	ODB	ER-II/Odisha/Cuttack TL	For AMP	GRIDCO
225	400KV DUBURI - PANDIABILI LINE	10/03/18	08:00	10/03/18	18:00	OCB	ER-II/Odisha/Cuttack TL	For AMP	GRIDCO
226	400KV PANDIABILI - MENDHASAL CKT#-II	13/03/18	08:00	13/03/18	18:00	ODB	ER-II/Odisha/Cuttack TL	For AMP	GRIDCO
227	765 KV Bus-I at Sundargarh	24/02/18	09:00	24/02/18	13:00	ODB	ER-II/Odisha/Sundergarh	Replacement of CVT connector to reduce load on CVT under system improvement scheme.	NLDC
228	400KV NTPC(Kanhia)-POWERGRID feeder-I	26/02/18	09:00	26/02/18	18:00	ODB	ER-II/Odisha/Kanhia	Commissioning of redundant bus bar protection	NLDC
229	Main Bay-722 of 765KV Darlipali(NTPC)-I at Sundargarh	26/02/18	08:00	26/02/18	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	NLDC
230	400KV NTPC(Kanhia)-POWERGRID feeder-II	27/02/18	09:00	27/02/18	18:00	ODB	ER-II/Odisha/Kanhia	Commissioning of redundant bus bar protection	NLDC

231	Main Bay-719 of 765KV Darlipali(NTPC)-II at Sundargarh	27/02/18	08:00	27/02/18	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	NLDC
232	400KV NTPC(Kanhia)-POWERGRID feeder-III	28/02/18	09:00	28/02/18	18:00	ODB	ER-II/Odisha/Kanhia	Commissioning of redundant bus bar protection	NLDC
233	Tie Bay-723 of 765KV Darlipali(NTPC)-I & 765KV Dharamjaygarh-II at Sundargarh	28/02/18	08:00	28/02/18	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	NLDC
234	400KV NTPC(Kanhia)-POWERGRID feeder-IV	01/03/18	09:00	01/03/18	18:00	ODB	ER-II/Odisha/Kanhia	Commissioning of redundant bus bar protection	NLDC
235	132 kV 101 BAY (Jaleswar Line main Bay) at Baripada	01/03/18	09:00	01/03/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CT & CVT junction Box Replacement	
236	Auto Recloser to be kept in Non Auto mode of 400Kv Indrvati-Rengali S/c Line	01/03/18	08:00	15/03/18	17:00	OCB	ER-II/Odisha/Bhawanipatna	For Online PID testing of of 400Kv Indravati-Rengali S/c Line.	NLDC
237	A/R to be kept Non-Auto mode in 400KV Rengali-Indravati Line	01/03/18	08:00	31/03/18	18:00	ODB	ER-II/Odisha /Bolangir	PID testing of Insulators, Auto-Reclosure to be kept in Non-Auto mode at both end.	NLDC
238	400kv Bay 401 (Keonjhar Main) at Rengali	01/03/18	09:00	02/03/18	17:00	OCB	ER-II/Odisha/Rengali	For CT replacement works.	
239	315MVA ICT#2 TIE BAY (BAY NO.- 414) at Rourkela	01/03/18	09:00	01/03/18	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP Work.	
240	Tie Bay-720 of 765KV Darlipali(NTPC)-II & 765KV Dharamjaygarh-I at Sundargarh	01/03/18	08:00	01/03/18	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	
241	A/R switch is to be kept in non auto mode at both end 400kv Rourkela-Sundargarh -I(one)	01/03/18	08:00	31/03/18	17:00	ODB	ER-II/Odisha/Sundargarh TLM	For PID testing of Porceline insulator	
242	A/R switch is to be kept in non auto mode at both end 400kv Sundargarh - Raigarh- I (one)	01/03/18	08:00	31/03/18	17:00	ODB	ER-II/Odisha/Sundargarh TLM	For PID testing of Porceline insulator	NLDC
243	A/R switch is to be kept in non auto mode at both end 400kv Rourkela-Sundargarh -II(Two)	01/03/18	08:00	31/03/18	17:00	ODB	ER-II/Odisha/Sundargarh TLM	For PID testing of Porceline insulator	
244	A/R switch is to be kept in non auto mode at both end 400kv Sundargarh - Raigarh- II (Two)	01/03/18	08:00	31/03/18	17:00	ODB	ER-II/Odisha/Sundargarh TLM	For PID testing of Porceline insulator	NLDC
245	A/R switch is to be kept in non auto mode at both end 400kv Rourkela- Sundargarh- III (Three)	01/03/18	08:00	31/03/18	17:00	ODB	ER-II/Odisha/Sundargarh TLM	For PID testing of Porceline insulator	
246	A/R switch is to be kept in non auto mode at both end 400kv Sundargarh - Raigarh- III (Three)	01/03/18	08:00	31/03/18	17:00	ODB	ER-II/Odisha/Sundargarh TLM	For PID testing of Porceline insulator	NLDC
247	A/R switch is to be kept in non auto mode at both end 400kv Rourkela- Sundargarh- IV (Four)	01/03/18	08:00	31/03/18	17:00	ODB	ER-II/Odisha/Sundargarh TLM	For PID testing of Porceline insulator	
248	A/R switch is to be kept in non auto mode at both end 400kv Sundargarh - Raigarh- IV(Four)	01/03/18	08:00	31/03/18	17:00	ODB	ER-II/Odisha/Sundargarh TLM	For PID testing of Porceline insulator	NLDC
249	315MVA ICT#2 MAIN BAY (BAY NO.- 415) at Rourkela	02/03/18	09:00	02/03/18	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORK.	
250	132 kV 103 BAY (BhograiLine main Bay) at Baripada	02/03/18	09:00	02/03/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CT & CVT junction Box Replacement	
251	400 kV Bus -I at Jeypore	02/03/18	09:00	02/03/18	17:00	ODB	ER-II/Odisha/Jeypore	For Pipe structure connection from Existing 400KV Bus-I to Ongoing 400KV Bus-I Erection under ongoing STATCOM Project Works and Testing of Bus bar protection. (Outage to be booked under Construction Head)	GRIDCO
252	Main Bay-721 of 765KV Dharamjaygarh-I at Sundargarh	03/03/18	08:00	03/03/18	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	NLDC
253	400 kV Bus -II at Jeypore	03/03/18	09:00	03/03/18	17:00	ODB	ER-II/Odisha/Jeypore	For Pipe structure connection from Existing 400KV Bus-II to Ongoing 400KV Bus-II Erection under ongoing STATCOM Project Works and Testing of Bus bar protection (Outage to be booked under Construction Head)	GRIDCO
254	400 kV Bus-II at Baripada	03/03/18	08:30	03/03/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	For GIS bay EXTN works(for isolation of GIS Bus-II)	
255	400 kV Bay 415 CB(GIS) at Baripada	03/03/18	08:30	12/03/18	17:30	OCB	ER-II/Odisha/BARIPADA S/S	For GIS Bus-II ext. works	
256	220KV Kantapali Line BAY CB (203 CB) at Bolangir	03/03/18	09:00	03/03/18	18:00	ODB	ER-II/Odisha /Bolangir	AMP work for 203 CB and 203 CT	GRIDCO
257	400KV Keonjhar-Baripada Line CVT	03/03/18	09:00	03/03/18	18:00	ODB	ER-II/Odisha/Keonjhar	Checking of CVT due to low secondary voltage	
258	400kv Bay 407 (ICT-1 Main) at Rengali	03/03/18	09:00	04/03/18	17:00	OCB	ER-II/Odisha/Rengali	For CT replacement works.	
259	125MVAR BUS REACTOR#2 MAIN BAY (BAY NO.-425) at Rourkela	03/03/18	09:00	03/03/18	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORK.	
260	63MVAr Dubri Line reactor(407R) at Baripada	04/03/18	09:30	04/03/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
261	Dubri Bus reactor at Dubri end	05/03/18	09:30	05/03/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
262	765kV Angul-Srikakulam Line -1	05/03/18	09:00	05/03/18	18:00	ODB	ER-II/Odisha/Angul SS	Improvement & strenghthening of line jumpers to prevent swing during high speed wind to avoid tripping in future & improvement of line availability & reliability.	NLDC
263	400 kV Jeypore-Indravati S/C Line	05/03/18	09:00	07/03/18	18:00	ODB	ER-II/Odisha/Jeypore	For Replacement of PID Defective Insulators in Jey-Ivt Line	NLDC
264	400KV Bus-I at Keonjhar	05/03/18	09:00	10/03/18	18:00	ODB	ER-II/Odisha/Keonjhar	Stringing of Jack Bus over Bus-I for 125 MVAR Reactor	
265	400kv Bay 408 (ICT-1 & ICT-II Tie) at Rengali	05/03/18	09:00	05/03/18	17:00	ODB	ER-II/Odisha/Rengali	For CT replacement works.	
266	315MVA ICT#1 at Rourkela	05/03/18	09:00	08/03/18	18:00	OCB	ER-II/ODISHA/ROURKELA	For attending the oil mix up problem of OLTC of the said Transformer.	GRIDCO
267	Main Bay-724 of 765KV Dharamjaygarh-II at Sundargarh	05/03/18	08:00	05/03/18	18:00	ODB	ER-II/Odisha/Sundergarh	AMP Work	NLDC
268	Main Bay of Mendhasal-pandiabili Ckt-1 at Pandiabili	05/03/18	09:00	05/03/18	18:00	ODB	ER-II/Odisha/Pandiabili	For DCRM of CB	
269	Tie Bay of pandiabili Ckt-1-pandiabili Ckt-2 at Pandiabili	06/03/18	09:00	06/03/18	18:00	ODB	ER-II/Odisha/Pandiabili	For DCRM of CB	
270	765/400KV ICT-I & 765/400KV ICT-II at Sundargarh	06/03/18	08:00	06/03/18	18:00	ODB	ER-II/Odisha/Sundergarh	Stringing of 400KV side jack bus for commissioning of 765/400KV ICT-3&4 under construction head.	NLDC
271	400kV Rengali-Talcher # 1 Main Bay-404 at Rengali	06/03/18	09:00	09/03/18	17:00	OCB	ER-II/Odisha/Rengali	For CB Mechanism and Pole overhaulling work and AMP.	
272	765kV Angul-Srikakulam Line -2	06/03/18	09:00	06/03/18	18:00	ODB	ER-II/Odisha/Angul SS	Improvement & strenghthening of line jumpers to prevent swing during high speed wind to avoid tripping in future & improvement of line availability & reliability.	NLDC
273	160 MVA ICT#1 at Baripada	06/03/18	09:00	06/03/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CT junction Box Replacement	GRIDCO

274	220KV Future Line-iii BAY CB (207 CB) at Bolangir	06/03/18	09:00	06/03/18	18:00	ODB	ER-II/Odisha /Bolangir	AMP work for 207 CB and 207 CT	
275	765 KV D/C Angul Jharsuguda Trans line (Ckt-I & II)	07/03/18	08:00	18/03/18	17:00	OCB	ER-II/Odisha/Sundargarh TLC	Swapping arrangement : Stringing work of 765KV Angul - Jharsuguda CktIII & IV with Ckt-I & II	NLDC
276	765KV 240 MVAr Bus reactor-II at Sundargarh	07/03/18	09:00	07/03/18	12:00	ODB	ER-II/Odisha/Sundergarh	Shifting of R-Ph Reactor to Spare Reactor to attend oil leakage in R-Ph Reactor.	NLDC
277	315 MVA, ICT-I BAY CB (402 CB) at Bolangir	07/03/18	09:00	07/03/18	18:00	ODB	ER-II/Odisha /Bolangir	AMP work for 402 CB and 402 CT	
278	132 kV 109 BAY (Baripada Line bay) at Baripada	07/03/18	09:00	07/03/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CVT & CT junction Box Replacement	
279	765kV Bus Reactor-2 at Angul	07/03/18	10:00	07/03/18	16:00	ODB	ER-II/Odisha/Angul SS	B-phase Reactor to be taken in service after attending Oil Leakage by full Gasket replacement by M/s. TBEA under TBEA	NLDC
280	400kv Sundargarh - Raigarh- I (one)	07/03/18	08:00	07/03/18	18:00	ODB	ER-II/Odisha/Sundargarh TLM	Flash Insulator replacement works at Loc 763 and loc 641	NLDC
281	765KV Sundargarh-Dharmajaygarh ckt-I	08/03/18	08:00	08/03/18	18:00	ODB	ER-II/Odisha/Sundargarh TLM	For AMP work	NLDC
282	400kV Bus Reactor-3 Main Bay (404) at Angul	08/03/18	10:00	08/03/18	16:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	
283	132 kV 108 BAY (Bangripositine bay) at Baripada	08/03/18	09:00	08/03/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CVT & CT junction Box Replacement	
284	Tie bay (417) of 63Mvar Reactor & 315MVA ICT #2 at Jeypore	08/03/18	10:00	10/03/18	16:00	OCB	ER-II/Odisha/Jeypore	For rectification of SF6 gas leakage and overhaulling of B-ph CB of Tie bay (417) of 63Mvar Reactor & 315MVA ICT #2	
285	400KV BUS-II at Mendhasal and Main Bay of Mendhasal-Pandiabili Ckt-2	08/03/18	09:00	08/03/18	18:00	ODB	ER-II/Odisha/Pandiabili	For correcting the alignment and operation of isolator towards BUS side of main Bay of Mendhasal-Pandiabili Ckt-2	GRIDCO
286	400KV BUS-II at Mendhasal and Main Bay of Mendhasal-Pandiabili Ckt-2	08/03/18	09:00	08/03/18	18:00	ODB	ER-II/Odisha/Pandiabili	For correcting the alignment and operation of isolator towards BUS side of main Bay of Mendhasal-Pandiabili Ckt-2	GRIDCO
287	765KV Sundargarh-Dharmajaygarh ckt-II	09/03/18	08:00	09/03/18	18:00	ODB	ER-II/Odisha/Sundargarh TLM	For AMP work	NLDC
288	Main Bay of Mendhasal-Pandiabili Ckt-2 at Pandiabili	09/03/18	09:00	09/03/18	18:00	ODB	ER-II/Odisha/Pandiabili	For DCRM of CB	
289	Main Bay of Mendhasal-Pandiabili Ckt-2 at Pandiabili	09/03/18	09:00	09/03/18	18:00	ODB	ER-II/Odisha/Pandiabili	For DCRM of CB	
290	132kV BUS at Baripada	09/03/18	09:30	09/03/18	12:30	ODB	ER-II/Odisha/BARIPADA S/S	Bus CVT JB replacement	GRIDCO
291	400kV B/R-2 & Meramundali Line-1 Tie Bay (405) at Angul	09/03/18	10:00	09/03/2018	16:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	
292	Angul Line Reactor Bay CB(401R CB) at Bolangir	09/03/18	09:00	09/03/18	18:00	ODB	ER-II/Odisha /Bolangir	AMP work for 401R CB	
293	220KV BUS COUPLER BAY (BAY NO.- 202) at Rourkela	09/03/18	09:00	09/03/18	18:00	OCB	ER-II/ODISHA/ROURKELA	AMP WORK.	
294	765KV Bus-I at Sundargarh	09/03/18	08:00	11/03/18	18:00	OCB	ER-II/Odisha/Sundergarh	Dismantling, shifting and re-erection of 765 Bus E/s to a new location for casting of foundation of 765KV GIS Bus sectionalizer under construction work	NLDC
295	220KV BUS TRANSFER BAY (BAY NO.- 205) at Rourkela	10/03/18	09:00	10/03/18	18:00	OCB	ER-II/ODISHA/ROURKELA	AMP WORK.	
296	400KV ICT-2 & TALCHER LINE TIE (408) at Angul	10/03/18	10:00	10/03/18	16:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	
297	400kV Rengali-Talcher # 1 Tie Bay-406 at Rengali	10/03/18	09:00	13/03/18	17:00	OCB	ER-II/Odisha/Rengali	For CB Mechanism and Pole overhaulling work and AMP.	
298	400 kV Bus-II at Baripada	12/03/18	08:30	12/03/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	For GIS bay EXTN works(for recoonecting jumpers to GIS Bus-II)	
299	400kV Meramundali Line-1 Main Bay (406) at Angul	12/03/18	10:00	12/03/18	16:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	
300	400KV Gazuwaka Line1 Main Bay CB (413) at Jeypore	12/03/18	10:00	14/03/18	16:00	OCB	ER-II/Odisha/Jeypore	For rectification of SF6 gas leakage and overhaulling of B-ph CB of Main bay (413) of 400KV Gazuwaka Line1	
301	400KV Bus-II at Keonjhar	12/03/18	09:00	17/03/18	18:00	ODB	ER-II/Odisha/Keonjhar	Stringing of Jack Bus over Bus-II for 125 MVAR Reactor	
302	220KV ICT#2 INCOMER BAY (BAY NO.- 208) at Rourkela	12/03/18	09:00	12/03/18	18:00	OCB	ER-II/ODISHA/ROURKELA	AMP WORK.	
303	765KV Bus-II at Sundargarh	12/03/18	08:00	14/03/18	18:00	OCB	ER-II/Odisha/Sundergarh	Dismantling, shifting and re-erection of 765 Bus E/s to a new location for casting of foundation of 765KV GIS Bus sectionalizer under construction work	NLDC
304	Main Bay-701 of 765KV 240MVAR B/R-I at Sundargarh	12/03/18	08:00	12/03/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	NLDC
305	Tie Bay-702 of 765KV 240MVAR B/R-I & 765/400KV ICT-I at Sundargarh	13/03/18	08:00	13/03/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	NLDC
306	220KV RORKELA-TARKERA#2 BAY (BAY NO.- 209) at Rourkela	13/03/18	09:00	13/03/18	18:00	OCB	ER-II/ODISHA/ROURKELA	AMP WORK.	
307	400KV BUS-1 at Angul	13/03/18	08:00	13/03/18	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	
308	400 kV Bus-I at Baripada	13/03/18	08:30	13/03/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	For GIS bay EXTN works(for isolation of GIS Bus-I)	
309	400 kV Bay 413CB(GIS) at Baripada	13/03/18	08:30	22/03/18	17:30	OCB	ER-II/Odisha/BARIPADA S/S	For GIS Bus-I ext. works	
310	220KV side ICT-I BAY CB (208 BAY CB) at Bolangir	13/03/18	09:00	13/03/18	18:00	ODB	ER-II/Odisha /Bolangir	AMP work for 208 CB and 208 CT	
311	400KV BUS-2 at Angul	14/03/18	08:00	14/03/18	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	
312	400kV Rengali-Talcher # 2 Main Bay-403 at Rengali	14/03/18	09:00	17/03/18	17:00	OCB	ER-II/Odisha/Rengali	For CB Mechanism and Pole overhaulling work and AMP.	
313	220KV ROURKELA-TARKERA#1 BAY (BAY NO.- 210) at Rourkela	14/03/18	09:00	14/03/18	18:00	OCB	ER-II/ODISHA/ROURKELA	AMP WORK.	
314	Main Bay-703 of 765/400KV ICT-I at Sundargarh	14/03/18	08:00	14/03/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	
315	Main Bay-704 of 765KV 240MVAR B/R-II at Sundargarh	15/03/18	08:00	15/03/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	
316	220KV ICT#1 INCOMER BAY (BAY NO.- 211) at Rourkela	15/03/18	09:00	15/03/18	18:00	OCB	ER-II/ODISHA/ROURKELA	AMP WORK.	
317	400kV Side ICT-4 Main Bay (419) at Angul	15/03/18	10:00	15/03/18	16:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	

318	220 kV Balaosre-I	15/03/18	09:00	15/03/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CVT & CT junction Box Replacement	GRIDCO
319	220KV side ICT-II BAY CB (212 BAY CB) at Bolangir	15/03/18	09:00	15/03/18	18:00	ODB	ER-II/Odisha /Bolangir	AMP work for 212 CB	
320	315MVA ICT #2 at Jeypore	15/03/18	09:30	16/03/18	17:30	ODB	ER-II/Odisha/Jeypore	ELPRO isolator(02 Nos) allignment work	GRIDCO
321	400kV Side ICT-4 & Future Tie Bay (420) at Angul	16/03/18	10:00	16/03/18	16:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	
322	125MVAR BUS REACTOR#1 at Rourkela	16/03/18	09:00	16/03/18	18:00	OCB	ER-II/ODISHA/ROURKELA	Overhauling of mechanically jammed Isolators & Commissioning of CSD in Tie Bay CB.	
323	Tie Bay-705 of 765KV 240MVAR B/R-II & 765/400KV ICT-II at Sundargarh	16/03/18	08:00	16/03/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	NLDC
324	Main Bay-706 of 765/400KV ICT-II at Sundargarh	17/03/18	08:00	17/03/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	NLDC
325	765kV ICT-4 & B/R-2 Tie Bay (714) at Angul	17/03/18	09:00	17/03/18	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	NLDC
326	408 BAY(Duburi &jamshedpur line tie bay) at Baripada	17/03/18	09:00	17/02/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP work	
327	Transfe Bus coupler BAY CB (210 BAY CB) at Bolangir	17/03/18	09:00	17/03/18	18:00	ODB	ER-II/Odisha /Bolangir	AMP work for 210 CB and 210 CT	
328	ICT-I (3x 105 MVA) at Jeypore	17/03/18	09:00	17/03/18	18:00	ODB	ER-II/Odisha/Jeypore	For Extending Tertiary of Existing ICT-I (3x105MVA) for STATCOM Projects for Back-up Auxiliary supply, AMP Works & Isolator Retrofitting work (Outage to be booked under Construction Head)	GRIDCO
329	220KV JEYNAGAR-I Line	18/03/18	09:30	18/03/18	17:30	ODB	ER-II/Odisha/Jeypore	For Isolator Retrofitting works (220KV Jeynagarl TBC Isolator)	GRIDCO
330	410 BAY(pandiabilli line main bay) at Baripada	18/03/18	09:00	18/02/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP work	
331	220 KV Bus Coupler Bay-204 at Rengali	18/03/18	09:00	20/03/18	17:00	OCB	ER-II/Odisha/Rengali	For CB Pole overhaulling work and AMP.	
332	Main Bay-707 of 765KV Angul L/R-II at Sundargarh	18/03/18	08:00	18/03/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	NLDC
333	Tie Bay-708 of 765KV Anul L/R-II at Sundargarh	19/03/18	08:00	19/03/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	NLDC
334	400 KV Indravati-Jeypore line	19/03/18	08:00	19/03/18	18:00	ODB	ER-II/Odisha/Indravati	Fixing of BPI structures on BPI foundation	NLDC
335	765kV Bus Reactor-2 Main Bay (715) at Angul	19/03/18	09:00	19/03/18	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	NLDC
336	220KV Future Line-iv BAY CB (209 CB) at Bolangir	19/03/18	09:00	19/03/18	18:00	ODB	ER-II/Odisha /Bolangir	AMP work for 209 CB and 209 CT	
337	220KV JEYNAGAR-II Line	19/03/18	09:30	19/03/18	17:30	ODB	ER-II/Odisha/Jeypore	For Isolator Retrofitting works (220KV JeynagarII TBC Isolator)	GRIDCO
338	400KV ROURKELA-SUNDARGARH#1	19/03/18	09:00	19/03/18	18:00	ODB	ER-II/ODISHA/ROURKELA	Retrofitting & Commissioning of its Main CB A/R Relay and Fixing of Quarter Pins/Split Pins, CC-Ring Nuts & bolts.	
339	125MVAR B/R of baripada SS	19/03/18	09:30	19/02/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
340	400KV ROURKELA-SUNDARGARH#3	20/03/18	09:00	20/03/18	18:00	ODB	ER-II/ODISHA/ROURKELA	Retrofitting & Commissioning of its Main CB A/R Relay and Fixing of Quarter Pins/Split Pins, CC-Ring Nuts & bolts.	
341	ICT-I (3x 105 MVA) at Jeypore	20/03/18	09:30	20/03/18	17:30	ODB	ER-II/Odisha/Jeypore	For Isolator Retrofitting works (220KV ICT I TBC Isolator)	GRIDCO
342	765KV SRIKAKULAM LINE 2 REACTOR BAY (726R) at Angul	20/03/18	09:00	20/03/18	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	NLDC
343	400 KV Indravati-Jeypore line	20/03/18	08:00	21/03/18	18:00	OCB	ER-II/Odisha/Indravati	Shifting or interchanging the position of LAs & CVTs and pre commissioning testing.	NLDC
344	Main Bay-710 of 765KV Angul L/R-I at Sundargarh	20/03/18	08:00	20/03/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	NLDC
345	Tie Bay-711 of 765KV Anul L/R-I at Sundargarh	21/03/18	08:00	21/03/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	NLDC
346	220 kV BUS-I at Baripada	21/03/18	09:30	21/02/18	13:30	ODB	ER-II/Odisha/BARIPADA S/S	CVT JB replacement works	GRIDCO
347	765KV 240 MVAR Line Reactor-1 at Angul	21/03/18	10:00	21/03/18	16:00	ODB	ER-II/Odisha/Angul SS	B-phase Reactor to be taken out of service for attending Oil Leakage by full Gasket replacement by M/s. TBEA under TBEA warranty.	NLDC
348	220 kV Bus -II at Jeypore	21/03/18	09:30	21/03/18	13:30	ODB	ER-II/Odisha/Jeypore	Isolator Retrofitting Works of Bus-II side Isolators of Jeynagar I	GRIDCO
349	220 KV OPTCL # 1 Bay-208 at Rengali	21/03/18	09:00	23/03/18	17:00	OCB	ER-II/Odisha/Rengali	For CB Pole overhaulling work and AMP.	
350	400KV ROURKELA-CHAIBASA#1	21/03/18	09:00	22/03/18	18:00	OCB	ER-II/ODISHA/ROURKELA	Retrofitting & Commissioning of its Main & Tie CB A/R Relays.	
351	220 kV Bus -II at Jeypore	22/03/18	09:30	22/03/18	13:30	ODB	ER-II/Odisha/Jeypore	Isolator Retrofitting Works of Bus-II side Isolators of Jeynagar II	GRIDCO
352	765KV ICT-2 SUNDARGARH LINE 1 TIE BAY (708) at Angul	22/03/18	09:00	22/03/18	18:00	ODB	ER-II/Odisha/Angul SS	AMP Work.	NLDC
353	400 kV Bus-I at Baripada	22/03/18	08:30	22/02/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	For GIS bay EXTN works(for recoonecting jumpers to GIS Bus-I)	
354	Tie Bay-714 of 765KV Sundargarh-Dharamjaygarh Line-I at Sundargarh	22/03/18	08:00	22/03/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	NLDC
355	Main Bay-715 of 765KV Sundargarh-Dharamjaygarh Line-I at Sundargarh	23/03/18	08:00	23/03/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	NLDC
356	220 kV BUS-II at Baripada	23/03/18	09:30	23/02/18	13:30	ODB	ER-II/Odisha/BARIPADA S/S	CVT JB replacement works	GRIDCO
357	765kV Angul-Sundargarh Line-1	23/03/18	08:00	23/03/18	18:00	ODB	ER-II/Odisha/Angul TLAM	Replacement of disc insulator ,Improvement & strenghthening of line jumpers to prevent swing during high speed wind to avoid tripping in future & improvement of line availability & reliability.	NLDC
358	220 kV Bus -II at Jeypore	23/03/18	09:30	23/03/18	13:30	ODB	ER-II/Odisha/Jeypore	Isolator Retrofitting Works of Bus-II side Isolators of ICT- I	GRIDCO
359	400KV ROURKELA-TALCHER#1	23/03/18	09:00	23/03/18	18:00	ODB	ER-II/ODISHA/ROURKELA	Overhauling of mechanically jammed Isolators.	
360	315MVA ICT#2 at Rourkela	24/03/18	09:00	24/03/18	18:00	ODB	ER-II/ODISHA/ROURKELA	Overhauling of mechanically jammed Isolators.	GRIDCO
361	220 kV Bus -II at Jeypore	24/03/18	09:30	24/03/18	13:30	ODB	ER-II/Odisha/Jeypore	Isolator Retrofitting Works of Bus-II side Isolators of Bus Coupler	GRIDCO
362	765kV Angul-Sundargarh Line-2	24/03/18	09:00	24/03/18	18:00	ODB	ER-II/Odisha/Angul TLAM	Replacement of disc insulator, Improvement & strenghthening of line jumpers to prevent swing during high speed wind to avoid tripping in future & improvement of line availability & reliability.	NLDC

363	400kV baripada-Kharagpur line	24/03/18	09:30	24/02/18	13:30	ODB	ER-II/Odisha/BARIPADA S/S	Replacement of CVT JB	WB
364	220 KV OPTCL # 2 Bay-207 at Rengali	24/03/18	09:00	26/03/18	17:00	OCB	ER-II/Odisha/Rengali	For CB Pole overhaulling work and AMP.	
365	Tie Bay-717 of 765KV Sundargarh-Dharamjaygarh Line-I at Sundargarh	24/03/18	08:00	24/03/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	NLDC
366	Main Bay-718 of 765KV Sundargarh-Dharamjaygarh Line-I at Sundargarh	25/03/18	08:00	25/03/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	NLDC
367	220 kV Bus -I at Jeypore	25/03/18	09:30	25/03/18	13:30	ODB	ER-II/Odisha/Jeypore	Isolator Retrofitting Works of Bus-I side Isolators of Jeynagar I	GRIDCO
368	220 kV Bus -I at Jeypore	26/03/18	09:30	26/03/18	13:30	ODB	ER-II/Odisha/Jeypore	Isolator Retrofitting Works of Bus-I side Isolators of Jeynagar II	GRIDCO
369	315MVA ICT-I at Baripada	26/03/18	09:00	26/02/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CT junction Box Replacement on 400 Kv AND 220 kV Side	GRIDCO
370	400KV ROURKELA-CHAIBASA#2	26/03/18	09:00	26/03/18	18:00	ODB	ER-II/ODISHA/ROURKELA	Overhauling of mechanically jammed Isolators.	
371	400KV ROURKELA-SUNDARGARH#2	27/03/18	09:00	27/03/18	18:00	ODB	ER-II/ODISHA/ROURKELA	Fixing of Quarter Pins/Split Pins, CC-Ring Nuts & bolts.	
372	160 MVA ICT#1 at Baripada	27/03/18	09:00	27/02/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CT junction Box Replacement on 220 kV Side	GRIDCO
373	220 kV Bus -I at Jeypore	27/03/18	09:30	27/03/18	13:30	ODB	ER-II/Odisha/Jeypore	Isolator Retrofitting Works of Bus-I side Isolators of ICT- I	GRIDCO
374	220 KV ICT # 1 Bay-201 at Rengali	27/03/18	09:00	28/03/18	17:00	OCB	ER-II/Odisha/Rengali	For CB Pole overhaulling work and AMP.	
375	220 kV Bus -I at Jeypore	28/03/18	09:30	28/03/18	13:30	ODB	ER-II/Odisha/Jeypore	Isolator Retrofitting Works of Bus-I side Isolators of Bus Coupler	GRIDCO
376	50MVAr Reactor of keonjhar at baripada end	28/03/18	09:30	28/02/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
377	400KV ROURKELA-SUNDARGARH#4	28/03/18	09:00	28/03/18	18:00	ODB	ER-II/ODISHA/ROURKELA	Fixing of Quarter Pins/Split Pins, CC-Ring Nuts & bolts.	
378	400KV ROURKELA-SUNDARGARH#1	29/03/18	09:00	29/03/18	09:30	ODB	ER-II/ODISHA/ROURKELA	FOR ISOLATION OF LINE REACTOR	
379	63 MVAR SUNDARGARH#1 LINE REACTOR at Rourkela	29/03/18	09:30	29/03/18	17:30	ODB	ER-II/ODISHA/ROURKELA	AMP WORK OF LINE REACTOR	
380	400KV ROURKELA-SUNDARGARH#1	29/03/18	17:30	29/03/18	18:00	ODB	ER-II/ODISHA/ROURKELA	FOR TAKING LINE REACTOR INTO SERVICE.	
381	220 kV Bus Coupler Bay - 203 Bay at Baripada	29/03/18	09:30	29/03/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CVT & CT junction Box Replacement	
382	220KV JEYNAGAR-I Line	29/03/18	09:30	29/03/18	13:30	ODB	ER-II/Odisha/Jeypore	For Isolator Retrofitting works (220KV JeynagarI 89C Isolator)	GRIDCO
383	220 KV ICT # 1 Bay-202 at Rengali	29/03/18	09:00	30/03/18	17:00	OCB	ER-II/Odisha/Rengali	For CB Pole overhaulling work and AMP.	
384	220KV JEYNAGAR-II Line	30/03/18	09:30	30/03/18	13:30	ODB	ER-II/Odisha/Jeypore	For Isolator Retrofitting works (220KV JeynagarII 89C Isolator)	GRIDCO
385	500MVA ICT #3 at Baripada	30/03/18	09:30	30/03/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	PRD replacement & Insulation sleeves work on 52 kV buhsings	GRIDCO
386	220KV BUS-I at Rourkela	30/03/18	09:00	30/03/18	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORK	GRIDCO
387	220KV BUS-II at Rourkela	31/03/18	09:00	31/03/18	18:00	ODB	ER-II/ODISHA/ROURKELA	AMP WORK.	GRIDCO
388	80 MVAR B/R of Duburi SS	31/03/18	09:30	31/03/18	18:00	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
389	ICT-I (3x 105 MVA) at Jeypore	31/03/18	09:30	31/03/18	13:30	ODB	ER-II/Odisha/Jeypore	For Isolator Retrofitting works (220KV ICT I 89C Isolator)	GRIDCO
390	400KV Bay 409 (ICT-II Main) at Rengali	31/03/18	09:00	31/03/18	17:00	ODB	ER-II/Odisha/Rengali	AMP works	
391	400kv Sundargarh-Raigarh-Fdr-III	27/02/18	08:00	10/03/18	17:00	OCB	POWERGRId/odisha/SUNDARGARH	for rectification work of TL no-426	NLDC
392	400kv Sundargarh-Raigarh-Fdr-IV	27/02/18	08:00	10/03/18	17:00	OCB	POWERGRId/odisha/SUNDARGARH	for rectification work of TL no-426	NLDC
393	765Kv Sundargarh-Dharmajayharh D/C Ckt#3&4	01/03/18	08:00	10/03/18	17:00	ODB	POWERGRId/odisha/SUNDARGARH	For rectification of defects(This line is anti theft charged from Jharsuguda end)	NLDC
394	765Kv Sundargarh-Dharmajayharh ckt-I	09/03/18	08:00	09/03/18	18:00	ODB	POWERGRId/odisha/SUNDARGARH	For rectification of defects	NLDC
395	765Kv Sundargarh-Dharmajayharh ckt-II	10/03/18	08:00	10/03/18	18:00	ODB	POWERGRId/odisha/SUNDARGARH	For rectification of defects	NLDC
396	765kV Angul-Sundargarh Line-I	13/03/18	08:00	13/03/18	18:00	ODB	ER-II/Odisha/Angul TLAM	Replacement of disc insulator ,Improvement & strenghthening of line jumpers to prevent swing during high speed wind to avoid tripping in future & improvement of line availability & reliability.	NLDC
397	765kV Angul-Sundargarh Line-II	14/03/18	08:00	14/03/18	18:00	ODB	ER-II/Odisha/Angul TLAM	Replacement of disc insulator ,Improvement & strenghthening of line jumpers to prevent swing during high speed wind to avoid tripping in future & improvement of line availability & reliability.	NLDC
398	400 KV Bus#2 (BRBCL)	27/02/18	09:30	27/02/18	18:00	OCB	BRBCL	DRIFT IN 400KV BUS#2 -B PAHSE- CVT SECONDARY VOLTAGE IS BEING OBSERVED WHICH REQUIRES REPLACEMENT OF THE CVT *BKRS/CKTS TO BE ISOLATED : 403-CB , 403-89-A , 409-CB, 409-89-A 412-CB , 412-89-A	
399	400kv Barh Patna line -3	06/03/18	09:30	07/03/18	18:00	OCB	BARH	Attending defect of isolator & annual testing of bay equipments.	
400	400kv Bus-1 at Barh	09/03/18	09:30	09/03/18	18:00	ODB	BARH	Attending defect of isolator connected to Bus	
401	315MVA ICT#2 at Barh	19/03/18	09:30	23/03/18	18:00	OCB	BARH	Annual testing of ICT#2	
402	315MVA ICT#2 BAY Equipments at Barh	19/03/18	09:30	23/03/18	18:00	OCB	BARH	Annual testing of Bay equipments	
403	400KV Kahalgaon-Banka Line-1	14/03/18	09:30	14/03/18	17:30	ODB	KAHALGAON	PM works & relay testing	
404	400KV Kahalgaon-Banka Line-2	21/03/18	09:30	21/03/18	17:30	ODB	KAHALGAON	PM works & relay testing	
405	400KV Kahalgaon-Barh Line-1	28/03/18	09:30	28/03/18	17:30	ODB	KAHALGAON	PM works & relay testing	
406	400kV Fkk-Dgp-1	01/03/18	09:00	01/03/18	17:00	ODB	FARAKKA	Relay & CB test	
407	400/200kV Auto Transformer	08/03/18	09:00	09/03/18	17:00	ODB	FARAKKA	Relay & Transformer test	JUSNL
408	220KV Fkk-Kahalgaon Line-2	13/03/18	09:00	14/03/18	17:00	ODB	FARAKKA	Relay, CB & CT Testing	
409	400kV Fkk-Malda Line-2	20/03/18	09:00	21/03/18	17:00	ODB	FARAKKA	Relay & CT testing	
410	400kV Fkk-Kahalgaon Line-2	13/03/18	09:00	14/03/18	17:00	ODB	FARAKKA	Relay, CB & CT Testing	
411	400kV Fkk-Sagardighi Line	27/03/18	09:00	28/03/18	17:00	ODB	FARAKKA	Relay, CB & CT Testing	WB
412	132kv NBU-Siliguri(PGCL)	05/03/18	09:00	06/03/18	15:00	ODB	WB	Maintenance work	

413	220kv KLC Bantala-Subhasgram(PG)	05/03/18	07:00	05/03/18	15:00	ODB	WB	Maintenance work	
414	220kv N.Town AA3-Subhasgram(PG)	06/03/18	07:00	06/03/18	15:00	ODB	WB	Maintenance work	
415	400 KV SGTPP-Subhasgram line & bay with line reactor at SGTPP	01/03/18	07:00	01/03/18	15:00	ODB	WB	Maintenance work	
416	400 KV SGTPP-Farakka line &bay	02/03/18	07:00	02/03/18	15:00	ODB	WB	Maintenance work	
417	400 KV SGTPP-Parulia 1 line & bay	03/03/18	07:00	03/03/18	15:00	ODB	WB	Maintenance work	
418	400 KV SGTPP-Parulia 2 line & bay	04/03/18	07:00	04/03/18	15:00	ODB	WB	Maintenance work	
419	400 KV SGTPP-Baharampur 1 line & bay	05/03/18	07:00	05/03/18	15:00	ODB	WB	Maintenance work	
420	400 KV SGTPP-Baharampur 2 line & bay	06/03/18	07:00	06/03/18	15:00	ODB	WB	Maintenance work	
421	At SGTPP: 400 KV MB 1	07/03/18	07:00	08/03/18	15:00	ODB	WB	Maintenance work	
422	SGTPP: ST 3 & Bay	09/03/18	07:00	09/03/18	15:00	ODB	WB	Maintenance work	
423	SGTPP: ST 4 & Bay	10/03/18	07:00	10/03/18	15:00	ODB	WB	Maintenance work	
424	400KV Kaniha-Meramundali # I (400 KV Bay17 – 18)	06/03/18	09:00	08/03/18	18:00	OCB	TSTPP	For annual maint activities of bay equipments	GRIDCO
425	400KV Kaniha-Angul (400 KV Bay19 – 20)	13/03/18	09:00	15/03/18	18:00	OCB	TSTPP	For annual maint activities of bay equipments	
426	400 KV Kaniha- RENGALI # 1(400 KV Bay –8,9)	20/03/18	09:00	22/03/18	18:00	OCB	TSTPP	For annual maint activities of bay equipments	
427	400 KV Kaniha- RENGALI # 2(400 KV Bay –16,17)	27/03/18	09:00	29/03/18	18:00	OCB	TSTPP	For annual maint activities of bay equipments	
428	400KV TEESTA-III-RANGPO	13/03/18	21:30	14/03/18	04:30	OCB	TEESTA-III	AMP OF TEESTA-II POTHEADYARD	
429	400KV TEESTA-III-DIKCHU	15/03/18	21:30	16/03/18	04:30	ODB	TEESTA-III	AMP OF TEESTA-II POTHEADYARD	
430	400KV D/C RTPS - Ranchi line (Ckt#2 & 3)	05/03/18	08:00	19/04/18	17:00	OCB	DVC	for tower rectification work at Loc-48	
431	400 kV BUS-I at Biharsharif	20/03/18	10:00	20/03/18	17:30	ODB	POWERGRID ER-I	AMP	
432	400 kV BUS-II at Biharsharif	21/03/18	10:00	21/03/18	17:30	ODB	POWERGRID ER-I	AMP	
433	400 Kv Biharsharif-Koderma-I	10/03/18	10:00	10/03/18	14:00	ODB	POWERGRID ER-I	NTAMC adaptation work	DVC
434	400 Kv Biharsharif-Koderma-II	14/03/18	10:00	14/03/18	14:00	ODB	POWERGRID ER-I	NTAMC adaptation work	DVC
435	400 Kv Biharsharif-Lakhisarai-I	27/02/18	10:00	27/02/18	14:00	ODB	POWERGRID ER-I	NTAMC adaptation work	
436	400kv Talcher-Rourkela ckt#1	12/03/18	08:00	12/03/18	18:00	ODB	POWERGRID/odisha/	AMP	
437	400kv Talcher-Rourkela ckt#2	13/03/18	08:00	13/03/18	18:00	ODB	POWERGRID/odisha/	AMP	
438	315MVA ICT-II at Baripada	06/03/18	09:00	06/03/18	17:00	ODB	POWERGRID/odisha/	AMP	
439	500 mva ICT#1 AT PATNA	19/03/18	09:00	23/03/18	17:00	ODB	POWERGRID ER-I	To attend manufacturing defect of gaskets of various joints.	BSPHCL
440	400 KV BERHAMPUR-JEERAT	08/03/18	09:00	10/03/18	17:00	ODB	ER-II	FOR CONSTRUCTION ACTIVITY UNDER ERSS-XV.	
441	400 KV BERHAMPUR-FARAKKA	08/03/18	09:00	14/03/18	17:00	OCB	ER-II	FOR SHIFTING OF EXISTING BAYS TO NEWLY CONSTRUCTED BAY UNDER ERSS-XV AT BERHAMPUR SS.	
442	400 KV BUS-I	10/03/18	09:00	10/03/18	17:00	ODB	ER-II	FOR STABILITY TEST OF NEW BAYS TO NEWLY CONSTRUCTED BAY UNDER ERSS-XV AT BERHAMPUR SS.	
443	410 BAY OF BERHAMPUR SS	26.03.18	09:00	26.03.18	17:00	ODB	ER-II	AMP	
444	400 KV FARAKKA-SGTPP & 400 KV SUBHASGRAM-SAGARDIGHI	25.02.18	09:00	26.02.18	17:00	ODB	ER-II	FOR POWERLINE CROSSING WORK UNDER ERSS-XV.	
445	220 KV BIRPARA-ALIPURDUAR-I	02.03.18	09:00	03.03.18	17:00	ODB	ER-II	FOR REPLACEMENT OF DAMAGED INSULATOR BY MISCREANTS	
446	220 KV BIRPARA-ALIPURDUAR-II	04.03.18	09:00	05.03.18	17:00	ODB	ER-II	FOR REPLACEMENT OF DAMAGED INSULATOR BY MISCREANTS	
447	400 KV BINAGURI-TALA-I	02.03.18	09:00	05.03.18	17:00	ODB	ER-II	FOR REPLACEMENT OF THEFT CONDUCTOR .	
448	400 KV BINAGURI-TALA-II	06.03.18	09:00	09.03.18	17:00	ODB	ER-II	FOR REPLACEMENT OF THEFT CONDUCTOR .	
449	400 KV BINAGURI-TALA-III	10.03.18	09:00	13.03.18	17:00	ODB	ER-II	FOR REPLACEMENT OF THEFT CONDUCTOR .	
450	400 KV BINAGURI-TALA-IV	14.03.18	09:00	17.03.18	17:00	ODB	ER-II	FOR REPLACEMENT OF THEFT CONDUCTOR .	
451	Auto reclose to be non auto mode 765 Angul-Jharsuguda ckt#2	15/03/18	08:00	23/03/18	18:00	ODB	ER-II	for OPGW rectification work	
452	400KV ANGUL-JITPL CKT#1 &#2	08/03/18	08:00	09/03/18	18:00	OCB	ER-II/ODISHA PROJECTS	FOR STRINGING OF ANGUL-JHARSUGUDA CKT#3 & #4	

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				
	AGRA-BISHWANATH CHARIALI POLE-1 &2 & APD-3&4	15-Mar-18	09:00	25-Mar-18	18:00	Continuous	NRPC	FOR SHIFTING OF LINE TO PILE FOUNDATION AT LOC 1787	
	CWC35 (Pole-1 South Filter) at Gazuwaka SS	23-Feb-18	09:00	23-Feb-18	18:00	Continuous	SRPC	AMP Works	
	WA2.Z11.Q4 (Pole 2 East Reactor) at Gazuwaka SS	06-Mar-18	09:00	12-Mar-18	18:00	Continuous	SRPC	For overhauling works on interrupter & pole column	
	220 Korba-Budhipadar Feeder No-2 at KTPS, Korba East.	08-Mar-18	08:00	09-Mar-18	17:30	Cont.	WRPC	Annual Maintenance	
	765 D'JAIGARH-RANCHI II	05-Mar-18	08:00	07-Mar-18	18:00	Daily	WRPC	Replacement of Broken Insulator	
	765 D'JAIGARH-RANCHI II	09-Mar-18	09:00	09-Mar-18	18:00	Daily	WRPC	First time swapping of (Non-switachble) Y-phase line reactor unit with Spare unit.	
	765 D'JAIGARH- JHARSUGUDA I	12-Mar-18	09:00	12-Mar-18	18:00	Daily	WRPC	For Replacement of Line Earth switch with the new E/S supplied with induced contacts by OEM	
	765 D'JAIGARH-RANCHI I	13-Mar-18	08:00	15-Mar-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.	
	765 D'JAIGARH- JHARSUGUDA I	23-Mar-18	09:00	25-Mar-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.	
	765 D'JAIGARH- JHARSUGUDA II	26-Mar-18	09:00	28-Mar-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.	

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		1	150	No	

			SS	Indravati	2	150	No	
			SS		3	150	No	
			SS		4	150	No	
			64					
Central Sector	Thermal	DVC	CS	Bokaro-A	1	500	No	RGMO will be service once the unit comes in CMC mode of operation. It will be done shortly in presence of BHEL experts.
			CS	Bokaro-B	1	210	No	Not possible due to non availability of Electro hydraulic governing. The units will be decommissioned shortly.
			CS		2	210	No	
			CS		3	210	No	
			CS	CTPS	2	140	No	Not possible due to non availability of Electro hydraulic governing. The units will be decommissioned shortly.
			CS		3	140	No	
			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
			CS		2	40	No	would not be possible for
	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	
			45					
	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	

IPP	Hydro	IPP	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	Teesta Urja	1	200	No	could be put in RGMO mode but because of transmission evacuation constraint RGMO/FGMO is disabled
			PS		2	200	No	
			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	

20

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	

Annexure- E.5

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	ERS towers in use
1	Durgapur, ER-II	1 Set (8 towers)	
2	Rourkela, ER-II	3 towers incomplete shape	
3	ER-I (located at Jamshedpur)	15 towers (10 nos Tension tower and 5 nos suspension tower)	

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

- 220 kV ERS towers: 42 nos located at Mancheswar, Chatrapur & Budhipadar
- 400 kV ERS towers: 2 nos located at Mancheswar.
- 12 nos. of new 400 kV ERS towers have been recieved.
- Another, 16 nos of 400 kV towers accompanied with 6 sets of T&P are required which is under process

3) WBSETCL informed that they have placed order for 2 sets of ERS towers on 31.10.2014 and expected by June, 2015.

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

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

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

Availability of Emergency Restoration System in BSPTCL system

Sl. No.	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**	

Note:-

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

MOP/POSOCO/NLDC/RLDC/ SLDC	Name	Designation	Tel. Nos.	Mobile No.	Fax No.	E-mail Address
SLDC OPTCL						
Nodal Officer	Sh M R Mohanty	Sr. GM, SLDC		9438907310		sldcgridco@yahoo.com
SLDC W.B.						
Nodal Officer	Sh. A.RaiChoudhuri	C.E, SLDC	033- 26887186	9434910021	033- 26886132	wbsldc-power@yahoo.co.in
SLDC Ranchi, Jharkhand						
Nodal Officer	Md Shakeel Ahamed	ESE, SLDC	0651-2490090/ 2490486	9430730503	0651-2490486	sldcranchi@gmail.com
Second in Command	Shri S. K. Mishra	E.S.E. (Trans)	0651-2490090/ 2490863	9431708981	0651-2490486	sldcranchi@gmail.com
SLDC Ptana, Bihar						
Nodal Officer	Sh Prabhat Kumar Govil	Chiief Engineer (Head of SLDC)		7763817701	0612-2504557	cetransom.bsptcl@gmail.com
SLDC DVC						
Nodal Officer	Sh. B.Pan	C.E.(SO), CLD, Maithon	06540- 252423	9903247102	06540- 274838	brahmananda.pan@dvc.gov.in
SLDC J&K						
Nodal Officer	Sh. Shahnaz Goni	CE/ M & RE Wing	0191-2554426	9419191674	0191-2505708	cemrejammu2@gmail.com
Nodal Officer	Sh. Umesh Parihar	XEN (LD)	0191-2475371	9419185439	0191-2475371	
SLDC PUNJAB						
Nodal Officer	Sh. G. S. Sohi	CE (SO)	0175-2653660	9646118001	0175-2365340	ce_sldc@pstcl.org
Second in Command	Sh. S. S. Mall	SE (SO)	0175-2366074	9646118004	0175-2365340	se_sldcop@pstcl.org
SLDC BBMB						
Nodal Officer	Sh. Ashok Ghai	Director (Power Regulation)	0172-2652820	9417216047	0172-2652820	dirpr@bbmb.nic.in
Second in Command	Sh. Kuldeep Singh	Sr. XEN/ Add. SE (Power	0172-2659324	9417200352	0172-2652820	powerc@bbmb.nic.in
SLDC CHANDIGARH						
Nodal Officer	Sh. Sunil Sharma	P.C. Cum Executive Engineer	0172-2655531	8054104511	0172-2637880	elop2_chd@nic.in
Second in Command	Sh. Surendra	APC cum AEE	0172-2637880	8054104512	0172-2637880	apc_chandigarh@hotmail.com
SLDC DELHI						
Nodal Officer	Sh. P. K. Gupta	GM (SLDC)	011-23221091	9999533626	011-23221069	psdpvr2012@gmail.com
Second in Command	Sh. V. Venugopal	DGM (SO)	011-23221175	9871093902	011-23221059	dtldata@rediffmail.com
SLDC HARYANA						
Nodal Officer	Sh. Rajesh Gupta	Chief Engineer (SO)	0172-2560547	9313472673	0172-2560622	hvpncecoml@yahoo.com
Second in Command	Sh. N.K.Makkar	EE (LD & PC)	0180-2661515	9300278204	0180-2670819	sldcharyanacr@gmail.com

Annexure-E10.5A

List of Meter & Location for AMR 4th Phase

S.No	MAKE	Meter Serial No	LOCATION
1	L&T	NP-7885-A	LAKHISARAI(PG)
2	L&T	NP-7886-A	
3	L&T	NP-7429-A	
4	L&T	NP-7429-A	
5	L&T	NP-7887-A	
6	L&T	NP-7430-A	
7	L&T	NP-7888-A	
8	L&T	NP-7431-A	
9	ELSTER	NR-4451-A	ALIPURDUAR(PG)
10	ELSTER	NR-4452-A	
11	ELSTER	NR-3717-A	
12	ELSTER	NR-4622-A	
13	ELSTER	NR-4625-A	
14	ELSTER	NR-4447-A	
15	ELSTER	NR-4446-A	
16	ELSTER	NR-3725-A	
17	ELSTER	NR-4617-A	
18	ELSTER	NR-3716-A	
19	ELSTER	NR-3718-A	
20	GENUS	ER-1104-A	
21	GENUS	ER-1146-A	
22	GENUS	ER-1005-A	
23	GENUS	ER-1006-A	
24	GENUS	ER-1002-A	
25	GENUS	ER-1004-A	
26	ELSTER	ER-1295-A	KISHANGANJ(BSPTCL)
27	GENUS	ER-1158-A	
28	GENUS	ER-1156-A	
29	GENUS	ER-1157-A	
30	GENUS	ER-1287-A	NPGC(BSPTCL)
31	GENUS	ER-1282-A	
32	GENUS	ER-1052-A	OPGC
33	GENUS	ER-1063-A	
34	GENUS	ER-1027-A	
35	GENUS	ER-1112-A	
36	GENUS	ER-1026-A	
37	GENUS	ER-1030-A	
38	GENUS	ER-1053-A	
39	GENUS	ER-1066-A	
40	GENUS	ER-1068-A	
41	GENUS	ER-1060-A	
42	ELSTER	NR-3714-A	TEESTA-III
43	ELSTER	NR-3715-A	
44	ELSTER	NR-4450-A	
45	ELSTER	NR-3720-A	
46	ELSTER	NR-4623-A	
47	ELSTER	NR-3719-A	
48	ELSTER	NR-4456-A	
49	ELSTER	NR-4618-A	
50	ELSTER	NR-4454-A	
51	ELSTER	NR-4453-A	
52	GENUS	ER-1250-A	MOTIHARI(BSPTCL)
53	GENUS	ER-1245-A	
54	GENUS	ER-1286-A	MOTIPUR(BSPTCL)
55	GENUS	ER-1288-A	
56	GENUS	ER-1111-A	ATRI(GRIDCO)
57	GENUS	ER-1007-A	
58	GENUS	ER-1248-A	RAXAUL(BSPTCL)
59	GENUS	ER-1249-A	

16 New Locations with 68 Meters

S.No	MAKE	Meter Serial No	LOCATION
69	GENUS	ER-1290-A	APNRL
70	GENUS	ER-1135-A	BERHAMPORE(PG)
71	GENUS	ER-1140-A	
72	GENUS	ER-1265-A	BIHARSHARIFF(PG)
73	GENUS	ER-1108-A	BINAGURI(PG)
74	GENUS	ER-1102-A	
75	GENUS	ER-1076-A	
76	GENUS	ER-1128-A	
77	GENUS	ER-1125-A	
78	GENUS	ER-1106-A	BIRPARA(PG)
79	GENUS	ER-1109-A	
80	GENUS	ER-1110-A	
81	GENUS	ER-1071-A	DALKHOLA(PG)
82	GENUS	ER-1072-A	
83	GENUS	ER-1166-A	DARBHANGA(DMTCL)
84	GENUS	ER-1263-A	GAYA(PG)
85	GENUS	ER-1170-A	
86	GENUS	ER-1297-A	JAMSHEDPUR(PG)
87	GENUS	ER-1215-A	
88	GENUS	ER-1043-A	KHARAGPUR(WB)
89	GENUS	NR-4615-A	KISHANGANJ(PG)
90	GENUS	NR-4434-A	
91	GENUS	ER-1293-A	
92	GENUS	ER-1296-A	
93	GENUS	ER-1159-A	
94	GENUS	ER-1154-A	
95	GENUS	ER-1143-A	MALDA(PG)
96	GENUS	ER-1150-A	
97	GENUS	ER-1008-A	MEJIA(DVC)
98	GENUS	ER-1031-A	
99	GENUS	ER-1055-A	MIRAMUNDALI(GRIDCO)
100	GENUS	ER-1054-A	
101	GENUS	ER-1165-A	MOTIHARI(DMTCL)
102	GENUS	ER-1167-A	
103	GENUS	ER-1122-A	MPL
104	GENUS	ER-1123-A	
105	GENUS	ER-1124-A	
106	GENUS	ER-1129-A	
107	GENUS	ER-1226-A	MUZAFFARPUR(PG)
108	GENUS	ER-1299-A	NABINAGAR(BRBCL)
109	GENUS	ER-1292-A	
110	GENUS	ER-1294-A	
111	ELSTER	NR-4620-A	NEW MELLI(PG)
112	ELSTER	NR-4621-A	
113	GENUS	ER-1099-A	PANDIABILI(PG)
114	L&T	NP-8052-A	
115	GENUS	ER-1175-A	PURNEA(PG)
116	GENUS	ER-1176-A	
117	GENUS	ER-1298-A	RAMCHANDARPUR(PG)
118	GENUS	ER-1020-A	RENGALI(PG)
119	GENUS	ER-1028-A	ROURKELA(PG)
120	GENUS	ER-1029-A	
121	GENUS	ER-1012-A	
122	GENUS	ER-1093-A	
123	GENUS	ER-1100-A	
124	GENUS	ER-1019-A	
125	GENUS	ER-1118-A	
126	GENUS	ER-1022-A	
127	GENUS	ER-1021-A	

25 Existing Locations with 68 Meters

60	GENUS	ER-1113-A	SAMANGARA(GRIDCO)		128	GENUS	ER-1023-A	SUNDERGARH(PG)	
61	GENUS	ER-1073-A			129	GENUS	ER-1117-A		
62	GENUS	ER-1223-A	SAMASTIPUR(BSPTCL)		130	GENUS	ER-1119-A		
63	GENUS	ER-1121-A	EMSS(CESC)		131	GENUS	ER-1062-A		
64	GENUS	ER-1126-A			132	GENUS	ER-1067-A		
65	GENUS	ER-1227-A	BETIAH(BSPTCL)		133	GENUS	ER-1061-A		
66	GENUS	ER-1173-A			134	GENUS	ER-1070-A		
67	GENUS	ER-1116-A	BHOGRAI(GRIDCO)		135	GENUS	ER-1065-A		
68	GENUS	ER-1114-A	JALESWAR(GRIDCO)		136	GENUS	ER-1064-A		

Approximate cost for integrating 150 new meters with AMR (by taking 20% escalation from the AMR Phase-2 PO (LOA Ref # ER-II/KOL/CS/I-1352/P-1398 Dated 27.10.2016**))**

Supply Portion

SL No.	Line Item	Unit	Qty (Old LOA)	New Qty	Unit Price in old LOA	New Unit price (20% escalation)	Total Price
1	Supply of all required hardware along with Accessories	per SEM	249	150	874	1048.8	157320
2	Armored RS-485 Cable	mtr	14000	8500	90	108	918000
3	PVC pipes of ISI make min dia 50 mm or higher	mtr	16148	3700	84	100.8	372960
4	Data Concentrator Unit	no	37	22	90000	108000	2376000
5	MOXA Converter	no	37	27	4091	4909.2	132548.4
						Total	**3956828.4**

Service Portion

SL No.	Line Item	Qty (Old LOA)	New Qty	Unit Price in old LOA	New Unit price (20% escalation)	Total Price
1	Installation , Testing and commissioning Including integration with ERLDC / customization Cost for works of Implementation of Automatic Meter Reading (AMR) for SEM in Eastern Region At Data Center	249	150	5858	7029.6	1054440
2	Installation , Testing and commissioning Including integration with ERLDC / customization Cost for works of Implementation of Automatic Meter Reading (AMR) for SEM in Eastern Region At Sub Station	249	150	7500	9000	1350000
3	Laying of Armored RS-485 cable in PVC pipe	14000	8500	22.9	27.48	233580
					Total	**2638020**

AMC Portion

SL No.	Line Item	Qty (Old LOA)	New Qty	Unit Price in old LOA	New Unit price (20% escalation)	Total Price
1	Comprehensive AMC for all hardware /software/ Equipment installed under this project for 1st year After warranty (per SEM) -KIOSK type Sub Station	249	150	3306	3967.2	595080
2	Comprehensive AMC for all hardware /software/ Equipment installed under this project for 2nd year After warranty (per SEM) -KIOSK type Sub Station	249	150	3637	4364.4	654660
3	Comprehensive AMC for all hardware /software/ Equipment installed under this project for 3rd year After warranty (per SEM) -KIOSK type Sub Station	249	150	4001	4801.2	720180
4	Comprehensive AMC for all hardware /software/ Equipment installed under this project for 4th year After warranty (per SEM) -KIOSK type Sub Station	249	150	4401	5281.2	792180
					Total	**2762100**

Total cost for Supply	3956828
Total cost for Service	2638020
Total cost for AMC	2762100
Total	**9356948**